Call to Order	6:00PM
Roll Call	Council Members Velasquez, Watson, Cortes, Mayor Pro Tem Salinas & Mayor Kimball
Pledge	Council Member Velasquez
Invocation	To Be Announced at the Council Meeting

ITEM 1	**PUBLIC COMMENT**
Details	The public is invited to comment on any subject under the jurisdiction of the Lindsay City Council, including agenda items, other than noticed public hearings. Comments shall be limited to three minutes per person, with 30 minutes overall for the entire comment period, unless otherwise indicated by the Mayor. Participants speak at the stand after clearly stating their name for the Clerk.

ITEM 2	**CITY COUNCIL REPORTS**
Details	Council Members report on events, activities or matters

ITEM 3	**LHS STUDENT REPORT – IRELAND MCCALL**
Details	Student reports on recent, current or upcoming events, activities or matters related to the High School

ITEM 4	**STAFF REPORTS**
Details	City Manager or designee reports on events, activities or matters

ITEM 5	**CONSENT CALENDAR**
Details	These are routine items. Agenda Pages 1-9 1. Approve City Council Meeting Minutes for September 11, 2018 2. Accept Warrant List for September 18, 2018 3. Resolution 18-41 Opposition to Proposition 6 on the November 2018 Statewide Ballot.

ITEM 6	**NAMING OF THE SOCCER PARK**
Details	Presented by Mayor Pro-Tem Salinas and Council member Cortes

ITEM 7	**LIGHTING OPTIONS FOR SOCCER FIELDS**
Details	Presented by Director of City Services, Mike Camarena

ITEM 8	**Public Hearing to consider two Energy Services Agreements with Climatec, LLC and to apply for financing through IBANK**
Details	Continuance of Public Hearing to consider Resolution 18-42 authorizing two agreements with Climatec, LLC (1. Climatec Installation Agreement, 2. Climatec Measurement & Verification Agreement) and Approval of Resolution 18-43 authorizing financing for the projects through IBANK Presented by Finance Director, Bret Harmon Agenda Pages 10-177
ITEM 9	**WELL 15 CONTACT TIME PROJECT CONTRACT CHANGE ORDER**
Details	Approval of Project Contract Change Order Presented by Director of City Services, Mike Camarena Agenda Pages 178-180
ITEM 10	**DISINFECTION BY PRODUCTS AND 1,2,3 TRICHLOROPROPANE WATER QUALITY PUBLIC NOTIFICATIONS**
Details	Presented by Director of City Services, Mike Camarena Agenda Pages 181-186
ITEM 11	**FUTURE AGENDA ITEMS**
Details	City Council Members request items for future agenda items.
ITEM 12	**EXECUTIVE SESSION**
Details	None
ITEM 13	**ADJOURN**
Details	Council adjourns meeting. The next Regular City Council meeting will be held at 251 E. Honolulu Street, Lindsay at 6:00PM on October 9, 2018.

Call to Order	6:00PM
Roll Call	Council Members Velasquez, Watson, Cortes, Mayor Pro Tem Salinas & Mayor Kimball
	All present except Watson with notice.
Pledge	Mayor Kimball
Invocation	Pastor Roger Wright, New Life Lindsay Assembly of God

ITEM 1	**PUBLIC COMMENT**
Details	The public is invited to comment on any subject under the jurisdiction of the Lindsay City Council, including agenda items, other than noticed public hearings. Comments shall be limited to three minutes per person, with 30 minutes overall for the entire comment period, unless otherwise indicated by the Mayor. Participants speak at the stand after clearly stating their name for the Clerk.
SPEAKER	COMMENTS
None	

ITEM 2	**CEREMONY**
Details	The City Clerk will swear in three (3) Public Safety Sergeants
SPEAKER	COMMENTS
Lieutenant Heinks	Presented Sergeants Robinson, Alcantar and Moreno.
Harmon	Swore in the new sergeants

ITEM 3	**CITY COUNCIL REPORTS**
Details	Council Members report on events, activities or matters
SPEAKER	COMMENTS
Velasquez	Thanked officers for participation in the lip sync.
Salinas	Reported on ad-hoc committee on the naming of the soccer park. Identified five names. Want to hold vote at the next council meeting. Lindsay Sports Complex, Lindsay Recreation Complex, Lindsay Athletic Complex, Lindsay Community Sports Park, Lindsay Community Sports Complex.
Zigler	Asked about doing a survey on an online survey tool to narrow the list.
Council	Asked for the survey to go out online as well.
Kimball	Reported on school-related meetings. Reported on artist event coming up soon at the museum, Friday or Sundays through October.

ITEM 4	LHS STUDENT REPORT – IRELAND MCCALL
Details	Student reports on recent, current or upcoming events, activities or matters related to the High School
SPEAKER	COMMENTS
McCall	ASB will attend event at the Tulare County Fair Grounds. Homecoming is 9/28. Listed various high school sporting games/events. The legal pathway is registered for the mock trial competition.
Salinas	The Class of 1968 will have its 50th year reunion at Homecoming.

ITEM 5	STAFF REPORTS
Details	City Manager or designee reports on events, activities or matters
SPEAKER	COMMENTS
Zigler	Heading to the League of California Cities Conference. Thanked staff for caring for the community while he was out of town. Issuing RFP for planning services. Church of the Nazarene wants to do a Saxophone performance on September 22nd. Will be a free event to the public. Utilities are working well. The water plant is generating more gallons per minute than it has in many, many years. Working on the soccer park water. NDS employees did a community beautification service project last week. TulareWorks is doing a hazardous household waste cleanup on 9/29. Fall clean up in October. WC parking lot will be fixed in November. WC staff are working hard and saving money.

ITEM 6	CONSENT CALENDAR
Details	These are routine items. Agenda Pages 1-12 1. Approve City Council Meeting Minutes for August 28, 2018 2. Accept Warrant List for September 4, 2018 3. Accept Treasurer's Report for August 2018 4. Approval of Temporary Use Permit Request 18-27 for Menudo and Pozole Cook-Off and Car Show 5. Proclamation declaring September 17-23 Constitution Week

Motion:

1st	2nd	Velasquez	Watson	Cortes	Salinas	Kimball	Result
Salinas	Cortes						4-0, Approved

ITEM 7	Update on Hermosa and Westwood Roundabout
Details	Presented by Director of City Services, Mike Camarena
SPEAKER	COMMENTS
Camarena	Reviewed plan with school district on traffic and pedestrian pathways near Jefferson school. City staff have met with the school district many times. Neyba met with Merced last week. The school approved the planned map. Neyba is the project manager. She will continue to work with the school. Westwood will be closed from Hermosa to Kern during the same time periods as they are currently, during drop off and pick up times. Explained how the buses will navigate the area. Staff is working

	with Self Help Enterprises to mark area for new fence and with utility companies to arrange for moving utilities in conformance with the project. It will cleanup overhead areas around the school. Discussed the challenges in working with Frontier communications as they need to move some utilities.
Salinas	Asked about the alley on Kern.
Camarena	The alley will be closed off.
Velasquez	Asked about potential speed humps on Tulare to slow traffic.
Kimball	Asked the City to add the link to the Highway video about roundabout safety.

ITEM 8	**FUTURE AGENDA ITEMS**
Details	City Council Members request items for future agenda items.
SPEAKER	COMMENTS
None	

ITEM 9	**EXECUTIVE SESSION**
Details	**NONE**

ITEM 10	**ADJOURN**
Details	Council adjourns meeting. The next Regular City Council meeting will be held at 251 E. Honolulu Street, Lindsay at 6:00PM on September 25, 2018.

Motion/Time:

1st	2nd	Velasquez	Watson	Cortes	Salinas	Kimball	Result
Cortes	Salinas						4-0, Approved

ATTEST: *CITY COUNCIL OF THE CITY OF LINDSAY*

Bret Harmon, City Clerk *Pamela Kimball, Mayor*

FUND	Check #	Date	Vendor #	Vendor Name	Description	Amount
TOTAL					$	245,688.25
101 - GENERAL FUND	92882	9/7/2018	2873	ADVANTAGE ANSWERING	7/1/18-7/31/18	174.24
101 - GENERAL FUND	92883	9/7/2018	7	AG IRRIGATION SALES	Multiple	974.65
101 - GENERAL FUND	92884	9/7/2018	4924	ASI ADMINISTRATIVE	JULY 2018	35.00
101 - GENERAL FUND	92885	9/7/2018	3428	AT&T MOBILITY	7/9/18-8/8/18 HUGHE	93.44
101 - GENERAL FUND	92886	9/7/2018	5457	AUTO ZONE COMMERCIA	Multiple	257.42
101 - GENERAL FUND	92887	9/7/2018	6179	BADAWI & ASSOCIATES	FY2018 AUDIT	15,016.50
101 - GENERAL FUND	92888	9/7/2018	4135	BILL WALL'S DIRECT	Multiple	558.36
101 - GENERAL FUND	92891	9/7/2018	2872	CHIEF SUPPLY	SAFETY FLARES,GLOVE	571.42
101 - GENERAL FUND	92893	9/7/2018	279	CITY OF PORTERVILLE	ANIMAL01-000680 JUN	636.00
101 - GENERAL FUND	92894	9/7/2018	2122	COLLEGE OF THE SEQU	SYLVIA ROCHA	161.00
101 - GENERAL FUND	92895	9/7/2018	2319	COMPUTER SYSTEMS PL	8/31/18 ANTIVIRUS	45.00
101 - GENERAL FUND	92896	9/7/2018	6118	CVIN LLC D.B.A. VAS	Multiple	1,050.00
101 - GENERAL FUND	92897	9/7/2018	316	DEPT OF JUSTICE	BLOOD ALCOHOL ANALY	70.00
101 - GENERAL FUND	92899	9/7/2018	119	DOUG DELEO WELDING	Multiple	90.80
101 - GENERAL FUND	92904	9/7/2018	6010	FRONTIER COMMUNICAT	Multiple	465.58
101 - GENERAL FUND	92907	9/7/2018	148	GOMEZ AUTO & SMOG	Multiple	4,805.52
101 - GENERAL FUND	92908	9/7/2018	5647	GRISWOLD,LASSALLE,C	Multiple	12,067.60
101 - GENERAL FUND	92911	9/7/2018	4956	LAWRENCE TRACTOR CO	MOWER BLADE	72.29
101 - GENERAL FUND	92912	9/7/2018	6225	LIFTOFF LLC	Multiple	324.00
101 - GENERAL FUND	92914	9/7/2018	4067	LINCOLN NAT'L INSUR	Multiple	2,648.05
101 - GENERAL FUND	92915	9/7/2018	6328	MARICELA DE LA FUEN	457 LOAN PAID REFUN	56.87
101 - GENERAL FUND	92916	9/7/2018	234	MARTIN'S TIRE & AUT	Multiple	1,053.78
101 - GENERAL FUND	92917	9/7/2018	6162	MUNISERVICES	SUTA-END QTR DEC201	36.93
101 - GENERAL FUND	92918	9/7/2018	5625	NGLIC-SUPERIOR VISI	SEPT 2018 VISION PL	414.46
101 - GENERAL FUND	92919	9/7/2018	4323	OASIS	SEP2018-NOV2018	105.00
101 - GENERAL FUND	92920	9/7/2018	3260	PACIFIC EMPLOYERS	4THQTR2018 DUES	180.00
101 - GENERAL FUND	92922	9/7/2018	276	PORTERVILLE RECORDE	Multiple	176.49
101 - GENERAL FUND	92925	9/7/2018	285	QUILL CORPORATION	Multiple	681.42
101 - GENERAL FUND	92926	9/7/2018	3016	QUINN COMPANY	INSPECT LIFT TRUCK	585.00
101 - GENERAL FUND	92928	9/7/2018	5356	RAY MORGAN COMPANY	Multiple	429.35
101 - GENERAL FUND	92929	9/7/2018	3924	SECURITY FIRST ALAR	Multiple	658.80
101 - GENERAL FUND	92930	9/7/2018	3054	SHERWIN-WILLIAMS CO	Multiple	571.56
101 - GENERAL FUND	92932	9/7/2018	6146	SUPERION, LLC	Multiple	3,370.34
101 - GENERAL FUND	92933	9/7/2018	6020	SYLVIA ROCHA	PC832 9/10-9/14/18	85.00
101 - GENERAL FUND	92934	9/7/2018	957	TULARE COUNTY PROBA	APRIL12018-JUNE3020	2,215.23
101 - GENERAL FUND	92935	9/7/2018	4849	U.S. BANK EQUIPMENT	Multiple	1,402.37
101 - GENERAL FUND	92937	9/7/2018	356	USA BLUEBOOK	Multiple	778.63
101 - GENERAL FUND	92938	9/7/2018	4240	VALLEY UNIFORM CENT	Multiple	1,527.33
101 - GENERAL FUND	92940	9/7/2018	1041	VERIZON WIRELESS	642065758-00002	84.00
101 - GENERAL FUND	92941	9/7/2018	2811	VISALIA TOYOTA	LICENSE 1322839	204.63
101 - GENERAL FUND	92942	9/7/2018	368	VOLLMER EXCAVATION,	LOAD DG-CORP YARD	247.83
101 - GENERAL FUND	92943	9/7/2018	2790	WILLDAN INC.	Multiple	4,575.00
101 - GENERAL FUND	92952	9/17/2018	310	SOUTHERN CA. EDISON	Multiple	26,282.03
400 - WELLNESS CENTER	92913	9/7/2018	5788	LINCOLN AQUATICS	Multiple	3,188.22
400 - WELLNESS CENTER	92944	9/17/2018	6097	ANGELICA BERMUDEZ	SUB POUND CLASS	25.00
400 - WELLNESS CENTER	92945	9/17/2018	6229	CLAUDIA PAYAN	ZUMBA SUB	50.00
400 - WELLNESS CENTER	92946	9/17/2018	6039	DINA RESTIVO	YOGA	720.00
400 - WELLNESS CENTER	92947	9/17/2018	6093	GFIT	SUBSTITUTE G FIT	75.00
400 - WELLNESS CENTER	92948	9/17/2018	5804	KELSIE AVINA	AUGUST 2018 ZUMBA	250.00
400 - WELLNESS CENTER	92949	9/17/2018	5448	KIRBY D. MANNON	CHAIR CLASS	225.00
400 - WELLNESS CENTER	92950	9/17/2018	5633	ROSA MARIA HOWELL	ZUMBA SUB	50.00
400 - WELLNESS CENTER	92951	9/17/2018	3208	SHANNON PATTERSON	WATER AEROBICS	300.00
400 - WELLNESS CENTER	92953	9/17/2018	4914	STEPHANIE OROSCO	ZUMBA	280.00
400 - WELLNESS CENTER	92954	9/17/2018	6310	TE 'MARCUS WHITNEY	SUB EXERCISE CLASS	375.00

FUND	Check #	Date	Vendor #	Vendor Name	Description	Amount
551 - SJVAQCB	92939	9/7/2018	6091	VANTAGE VEHICLE INT	C.S TRUCK	20,615.43
552 - WATER	92889	9/7/2018	51	BSK	Multiple	1,660.00
552 - WATER	92901	9/7/2018	3461	FERGUSON ENTERPRISE	Multiple	623.49
552 - WATER	92903	9/7/2018	137	FRIANT WATER AUTHOR	Multiple	3,774.41
552 - WATER	92909	9/7/2018	6007	JT2 INC DBA TODD CO	WELL 15	108,149.55
552 - WATER	92910	9/7/2018	4754	KAWEAH DELTA WATER	ADMIN FEE IRWM GROU	2,666.67
552 - WATER	92923	9/7/2018	5796	PRESORT OF FRESNO L	Multiple	260.94
552 - WATER	92927	9/7/2018	6095	RALPH GUTIERREZ WAT	Multiple	4,000.00
552 - WATER	92936	9/7/2018	5413	UNIVAR USA INC	CAUSTIC MINIBULK SV	3,217.33
553 - SEWER	92898	9/7/2018	5978	DOMINO SOLAR LTD	7/1/18-7/31/18	3,467.96
553 - SEWER	92924	9/7/2018	4618	PROVOST & PRITCHARD	JULY GWM REPORTING	542.50
553 - SEWER	92931	9/7/2018	310	SOUTHERN CA. EDISON	3-035-4725-72	45.66
555 - RECYCLE/BOTTLED I	92890	9/7/2018	6329	CALRECYCLE	UNEXPENDED FUNDS	11.00
555 - RECYCLE/BOTTLED I	92892	9/7/2018	6330	CITY OF FARMERSVILL	RECYCLE MAGNET	598.18
600 - CAPITAL IMPROVEM	92902	9/7/2018	1363	FIRST AMERICAN TITL	303 VAN NESS REPORT	400.00
600 - CAPITAL IMPROVEM	92905	9/7/2018	6300	GHD INC	ROUNDABOUT -WESTWOO	944.00
779 - 00-HOME-0487	92900	9/7/2018	5284	FARMERS	Multiple	2,623.99
779 - 00-HOME-0487	92921	9/7/2018	1566	PACIFIC PROPERTY &	AVALOS 04-X-W63509-	710.00

STAFF REPORT

AGENCY: CITY OF LINDSAY, CALIFORNIA
DATE: September 25, 2018
AGENDA #: 5.3
STAFF: Bret Harmon, Director of Finance

AGENDA ITEM

TITLE	***Resolution 18-41 Opposition to Proposition 6 on the November 2018 Statewide Ballot.***
ACTION	Consideration of Resolution 18-41
PURPOSE	Oppose Statewide Ballot Measure
OBJECTIVE	Live in a safe, clean, comfortable and healthy environment

RECOMMENDATION

Staff respectfully recommends the City Council adopt Resolution 18-41 in opposition to Proposition 6 on the November 2018 statewide ballot.

BACKGROUND | ANALYSIS

SB 1 invests more than $5 billion annually directly for maintenance, repair, and safety improvements on state highways, local streets and roads, bridges, tunnels and overpasses. SB 1 also provides investments in mass transit to help relieve congestion. The average motorist pays $10 per month in SB 1 gas tax, which is constitutionally protected for use only in street, road, bridge, and overpass projects. None of the funds go to the state's general fund. The state cannot borrow or take SB1 funds. The $10 per month cost is less than the average $739 motors pay annually per vehicle in vehicle repairs due to deteriorating roads. SB1 is a cost savings to residents.

SB 1 strengthens the oversight and audit process by establishing an independent Inspector General who is appointed by the Governor to oversee programs to ensure all SB 1 funds are spent as promised. The Inspector General is also required to report annually to the state Legislature.

SB1 supports over 600,000 jobs annually across the state.

Proposition 6 is attempting to overturn SB1. Proposition 6 will increase costs to consumers through higher vehicle repair costs, will prevent the state and locals from sufficiently funding critical repairs on bridges, overpasses, streets and roads, which naturally results in an increase in risk to public safety.

The City has 10 projects dependent on this funding identified and approved on the State's eligibility list.

STAFF REPORT

AGENCY: CITY OF LINDSAY, CALIFORNIA
DATE: September 25, 2018
AGENDA #: 5.3
STAFF: Bret Harmon, Director of Finance

IMPACT

The City is at risk of losing millions in local transportation project funds, which will result in postponed temporarily or indefinitely road rehabilitation and improvement projects over the coming years.

ALTERNATIVES

- Approve Resolution 18-41
- Do not approve Resolution 18-41

PUBLIC OUTREACH

Published in this agenda.

ATTACHMENTS

- Resolution 18-41

RESOLUTION OF THE CITY OF LINDSAY

NUMBER	18-41
TITLE	A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LINDSAY OPPOSING PROPOSITION 6 ON THE NOVEMBER 2018 STATEWIDE BALLOT.
MEETING	At a regularly scheduled meeting of the City of Lindsay City Council held on September 25, 2018 at 6:00PM at 251 E. Honolulu Street, Lindsay, CA 93247.

WHEREAS, residents of California cities and counties rely on local roads for safe transportation by vehicle, bicycle or on foot as they travel to work, school, transit stop, the store, or recreation locations; and

WHEREAS, cities and counties own and operate more than 81 percent of streets and roads in California; and

WHEREAS, the condition of the local transportation network is deteriorating at an ever-increasing rate according to the 2016 California Statewide Local Streets and Roads Needs Assessment, which provides critical analysis and information on the local transportation network's condition and funding needs; and

WHEREAS, California has more than 1,600 bridges and overpasses that are structurally deficient and unsafe in addition to many roads 'poor' or 'at-risk' condition; and

WHEREAS, poor road conditions can contribute to vehicle collisions and accidents in addition to accelerating wear and tear on vehicles; and

WHEREAS, Prop 6 would eliminate more than $52 billion over the next 10 years in existing transportation funding, including $15 billion in direct apportionments, and $11 billion in available competitive grant funding, to cities and counties statewide; and

WHEREAS, Prop 6 would stop funding for more than 6,500 transportation improvement projects currently underway or planned statewide, including some in every community; and

WHEREAS, Prop 6 would eliminate thousands of projects to fix unsafe bridges and overpasses, to repair crumbling and unsafe roads, and to enhance pedestrian safety. The loss of which will jeopardize public safety; and

WHEREAS, Prop 6 would postpone or eliminate 10 important projects in the first few years for the City of Lindsay and eliminate millions in future dollars dedicated to the City of Lindsay for critical investments in future transportation improvement projects in our community.

WHEREAS, the overwhelmingly voter-approved Prop 69 in June (1) ensures transportation funds can only be used for transportation purposes and (2) ensures accountability of State and local governments to taxpayers; and

RESOLUTION OF THE CITY OF LINDSAY

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LINDSAY DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. The City of Lindsay hereby opposes Prop 6 on the November 2018 ballot.

SECTION 2. the City of Lindsay can be listed as a member of the No on Prop 6 coalition, a diverse coalition of local governments, public safety organizations, business, labor, environmental leaders, transportation advocates and other organizations throughout the state.

SECTION 3. Staff will email a copy of this adopted resolution to Kyle Griffith of the No on Prop 6 campaign at kgriffith@bcfpublicaffairs.com.

PASSED AND ADOPTED by the City Council of the City of Lindsay as follows:

MEETING DATE	
MOTION	
2nd MOTION	
AYES	
ABSENT	
ABSTAIN	
NAYS	

CERTIFICATION OF THE FOREGOING RESOLUTION AS FULL, TRUE, PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF LINDSAY AS DETAILED.

Bret Harmon, City Clerk

Pamela Kimball, Mayor

RULES FOR CITY OF LINDSAY PUBLIC HEARING PROCEDURES

1. OPENING

Mayor opens the public hearing.

2. ARGUMENTS

Proponents (those is favor) are permitted to speak first. The Council may ask questions of the proponents and they may respond.

Opponents (those against) are permitted to speak second. The Council may ask questions of the opponents and they may respond.

3. REBUTTALS

Proponents and Opponents are permitted to offer rebuttals.

4. COUNCIL QUESTIONS

Council may ask additional questions. However, the parties may not engage in further debate.

5. CLOSING

Mayor closes the Public Hearing

Council discusses the subject of the public hearing

Council members make a motion, if necessary

Council votes

STAFF REPORT

AGENCY: CITY OF LINDSAY, CALIFORNIA
DATE: September 25, 2018
AGENDA #: 8
STAFF: Bret Harmon, Finance Director

AGENDA ITEM

TITLE	***Public Hearing to consider two Energy Services Agreements with Climatec, LLC and to apply for financing through IBANK.***
ACTION	Continuance of Public Hearing to consider Resolution 18-42 authorizing two agreements with Climatec, LLC 1. Climatec Installation Agreement 2. Climatec Measurement & Verification Agreement and of Resolution 18-43 authorizing financing for the projects through IBANK.
PURPOSE	Contract Requirement
OBJECTIVE	• Live in a safe, clean, comfortable and healthy environment. • Nurture attractive residential neighborhoods and business districts. • Yield a fiscally self-reliant city government while providing effective, basic municipal services.

RECOMMENDATION

Staff respectfully recommends the City Council conduct the Public Hearing only through the closure of public comment stage of the public hearing before continuing the public hearing to a future council meeting date. Staff is concerned:

1. The original expectation for this project was the perceived availability of grants. Unfortunately, there is no grant money available for this project, so the funding mechanism becomes long-term debt. The City will need to incur additional debt of nearly $3.3M to do these projects with roughly $1M+ for General Fund and about $2M+ for Water.
2. Additional debt for these projects may cause a problem when the City needs to secure additional financing for its major water and sewer projects over the next five years. The City may pay higher rates or not have access to additional financing if the City takes on additional debt through this project now.
3. Expected savings in the water projects (meter replacements) includes approximately $80,000 per year in staffing costs. The City would likely not reduce its staffing levels, so the City would not recognize those savings as the costs would roll to the General Fund. Combining the added cost to the General Fund with the new fixed cost of long-term debt will constrict the General Fund to a point the General Fund may not be able to meet other obligations.

Staff recognizes the great benefit these projects will be to the City. Staff requests time to study the complete, true costs of the project, and to consult with lending sources about the impact the project will have on future borrowing.

BACKGROUND | ANALYSIS

In 2017, staff began investigating creative ways to upgrade and/or replace aging energy/water infrastructure in a comprehensive manner. Staff initiated a Feasibility Assessment (FA) to catalog energy and water infrastructure needs in the areas of: building energy efficiency, water conservation and water/wastewater infrastructure. The study also researched non-traditional funding sources to enable implementation without need of capital.

Based on the results of the FA, staff requested and council agreed to publish a Request for Proposals (RFP) to solicit proposals from interested firms that could provide energy performance contracting solutions in the areas identified above. The selected firm would support the City's goal by offering a turnkey energy/water infrastructure and sustainability program that accomplishes the following:

- Upgrades old and/or inefficient systems
- Maintains consistent and reasonable levels of occupant comfort
- Maintains building functionality and compatibility with existing equipment
- Improves utilization of technology to achieve optimum performance and savings
- Minimizes financial and technical risk to the City
- Achieves persistent long-term cost savings through reduced energy usage
- Provides comprehensive funding solutions
- Provides training to employees on maintenance and repair of equipment and controls
- Promotes private sector job creation

The awarded firm would perform an in-depth audit of City energy and water infrastructure, identifying potential improvements and provide a funding plan for their implementation. Selected measures would then be implemented by the awarded firm.

City Council approved the RFP and staff released it on April 24, 2018. RFP responses were vetted by staff and Climatec, LLC was approved as the awardee. Climatec, LLC is a nationally recognized energy services company that provides cost-effective solutions for the upgrade/replacement of energy/water-related infrastructure. Climatec has designed and implemented over 100 of these type projects for other California public agencies.

Since award of the RFP, Climatec has completed a Detailed Assessment (DA) that included development of an historical utility baseline, conducted staff interviews to uncover needs, audited all City facilities and their associated energy/water infrastructure. From this DA a comprehensive list of energy/water infrastructure recommendations was developed along with turnkey cost and savings estimates and a

multi-year project cash flow. This information was presented to staff and highlights of the DA results were presented to council at the August 28, 2018 meeting.

Climatec's DA contains recommendations that include: new City-wide LED interior and exterior Lighting, HVAC at 4 facilities, networked HVAC Temperature Controls at 7 sites, high efficiency dual pane windows at City Hall, pumping improvements at the wastewater plant and Well #14, park irrigation control upgrades with leak detection technology and new water meters equipped with AMR technology for improved accuracy and more efficient meter reading. Solar PV was also reviewed for possible inclusion at City-owned sites. There is currently solar installed on the McDermott Field House roof and at the wastewater treatment plant. The DA concluded that due to SCE rules/tariff structures and age and condition of roofing systems at potential candidate buildings no additional solar recommendations should be contemplated at this time.

The recommended new equipment will improve efficiencies, reduce utility costs and reduce impact on the environment. The savings in operational costs are transformed into debt service payments. Useful life of the equipment is estimated to be 20 years or more for most of the recommended equipment.

Project funding comes from SCE utility rebates and a loan from the California Infrastructure and Economic Development Bank (IBank) or other municipal financing firm with a savings guarantee from Climatec. The latest indicative IBank interest rate is 3.40% for a 20-year term which is lower than current market rates.

IBank was created in 1994 to finance public infrastructure and private development that promote a healthy climate for jobs, contribute to a strong economy and improve the quality of life in California communities. IBank is located within the Governor's Office of Business and Economic Development and is governed by a five-member Board of Directors. IBank has broad authority to issue tax-exempt and taxable revenue bonds, provide financing to public agencies, provide credit enhancements, acquire or lease facilities, and leverage State and Federal funds. IBank's current programs include the Infrastructure State Revolving Fund (ISRF) Loan Program, California Lending for Energy and Environmental Needs (CLEEN) Center, Small Business Finance Center and the Bond Financing Program.

As the DA results indicate, this program will allow the City to prioritize and fund a comprehensive list of energy/water efficiency upgrades, reduce annual utility and O&M costs, conserve resources and reduce greenhouse gas emissions. It also enables the City to fund these improvements by freeing up savings within existing budgets to pay for the recommended improvements over time. In addition to its technical and financial benefits, this project will directly benefit the environment by reducing greenhouse gas emissions. These reductions equate to:

- 603,456lbs of GHG emissions per year
- 51 cars removed from the road per year
- 36 American homes powered for a year
- 7,284 trees saved per year

IMPACT

Staff is working with representatives of IBank, a State funding program, to provide subsidized, low-interest State of California financing for this project. Savings will be guaranteed by Climatec over the life of the program. However, the guaranteed savings do not cover the additional costs in staffing on the General Fund. A project financing recommendation will be brought back to Council for consideration at a future meeting.

ALTERNATIVES

- Approve staff recommendations
- Reject staff recommendations
- Make changes to staff recommendations

PUBLIC OUTREACH

Public notice of public hearing placed in the Porterville Recorder on September 8, 2018.

ATTACHMENTS

- Resolution 18-42 Authorizing Installation and Measurement & Verification Contracts with Climatec
- Resolution 18-43 Authorizing the submission of an application to the California Infrastructure Bank (IBank)
- Climatec Installation Agreement
- Climatec Measurement and Verification (Guarantee) Agreement
- Sample Project Cash Flow
- Climatec Presentation to City Council in August 2018

RESOLUTION OF THE CITY OF LINDSAY

NUMBER	18-42
TITLE	**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LINDSAY AUTHORIZING TWO ENERGY SERVICES AGREEMENTS WITH CLIMATEC COVERING INSTALLATION SERVICES AND MEASUREMENT & VERIFICATION SERVICES.**
MEETING	At a regularly scheduled meeting of the City of Lindsay City Council held on September 25, 2018 at 6:00PM at 251 E. Honolulu Street, Lindsay, CA 93247.

WHEREAS, The City of Lindsay issued a Request For Proposals (RFP) for Energy Performance Contracting Services on April 24, 2018 to assess the City's energy performance weaknesses and needs; and

WHEREAS, The City of Lindsay selected Climatec, LLC as the company to perform the Energy Performance Contracting Services after conducting the RFP process; and

WHEREAS, Climatec, LLC conducted a thorough energy performance contracting service, which identified specific opportunities to improve the City's energy conservation efforts by upgrading and purchasing certain equipment and systems in City Facilities and water system; and

WHEREAS, In order to effectuate the upgrades and new equipment the City proposes to enter in a Climatec Installation Agreement ("Installation Agreement") to purchase and install the equipment and a Climatec Measurement & Verification Agreement with Climatec ("MV Agreement") to measure the savings provided by the Installation Agreement.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LINDSAY DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1.	The forms of Installation Agreement and MV Agreement on file with the City Clerk are approved in substantially the forms presented at this meeting, with such insertions, omissions, and changes as shall be approved by the City Attorney or other members of the governing body of the City executing the same, the execution of such documents being conclusive evidence to execute, the Installation Agreement and the MV Agreement.
SECTION 2.	This resolution shall be effective immediately upon its approval and adoption.
SECTION 3.	The Mayor, or presiding officer, is hereby authorized to affix her/his signature to the Resolution signifying its adoption by the City Council of the City of Lindsay, and the City Clerk, or his duly appointed deputy, is directed to attest thereto.

RESOLUTION OF THE CITY OF LINDSAY

PASSED AND ADOPTED by the City Council of the City of Lindsay as follows:

MEETING DATE	September 25, 2018
MOTION	
2nd MOTION	
AYES	
ABSENT	
ABSTAIN	
NAYS	

CERTIFICATION OF THE FOREGOING RESOLUTION AS FULL, TRUE, PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF LINDSAY AS DETAILED.

Bret Harmon, City Clerk

Pamela Kimball, Mayor

RESOLUTION OF THE CITY OF LINDSAY

NUMBER 18-43

TITLE **A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LINDSAY AUTHORIZING THE SUBMISSION OF AN APPLICATION TO THE CALIFORNIA INFRASTRUCTURE AND ECONOMIC DEVELOPMENT BANK ("IBANK") FOR FINANCING A CAPITAL IMPROVEMENT PROJECT FOR THE GENERAL FUND AND A CAPITAL IMPROVEMENT PROJECT FOR THE WATER FUND, AUTHORIZING THE INCURRING OF AN OBLIGATIONS PAYABLE TO IBANK FOR THE FINANCING OF A CAPITAL IMPROVEMENT PROJECT FOR THE GENERAL FUND AND A CAPITAL IMPROVEMENT PROJECT FOR THE WATER FUND IF IBANK APPROVES SAID APPLICATION, DECLARATION OF OFFICIAL INTENT TO REIMBURSE CERTAIN EXPENDITURES FROM THE PROCEEDS OF AN OBLIGATION, AND APPROVING CERTAIN OTHER MATTERS IN CONNECTION THEREWITH.**

MEETING At a regularly scheduled meeting of the City of Lindsay City Council held on September 25, 2018 at 6:00PM at 251 E. Honolulu Street, Lindsay, CA 93247.

WHEREAS, the California Infrastructure and Economic Development Bank ("IBank") administers a financing program to assist local governments with the financing of eligible projects in accordance with Section 63000 *et seq.* of the California Government Code (the "Act"); and

WHEREAS, IBank created the Infrastructure State Revolving Fund Program ("ISRF Program") pursuant to the provision of the Act; and

WHEREAS, IBank has instituted an application process for financing under its ISRF Program; and

WHEREAS, IBank's Criteria, Priorities and Guidelines for the Selection of Projects for Financing under the ISRF Program, dated February 23, 2016, and as may thereafter be amended from time to time (the "Criteria"), establishes requirements for the financing of projects under the ISRF Program; and

WHEREAS, the City of Lindsay ("Applicant") desires to submit an application ("Financing Application") to IBank under the ISRF Program for financing and refinancing the costs of upgrades to lighting, HVAC, windows and other equipment in City facilities under the General Fund and upgrades to meters and other equipment in the City's water system under the Water Fund ("Projects") in an amount not to exceed $3,330,000 (with $1,210,426 for the General Fund Project and $2,117,975 for the Water Fund Project); and

WHEREAS, the Act and the Criteria require the Applicant to make, by resolution of its governing body, certain findings prior to a project being selected for financing by IBank; and

WHEREAS, the Applicant expects to incur or pay certain expenditures in connection with the General Fund Project and the Water Fund Project from its respective funds that are reimbursable with the proceeds of tax exempt bonds or other tax exempt securities under Federal Tax Law (defined below) prior to incurring indebtedness for the purpose of financing costs associated with the Project on a long-term basis (the "Reimbursement Expenditures"); and

WHEREAS, the Applicant reasonably expects that a financing arrangement ("Obligation") in an amount not expected to exceed $3,330,000 (with $1,210,426 for the General Fund Project and $2,117,975 for the Water Fund Project) will be entered into under and memorialized by one or more financing agreements and related documents (collectively, the "Financing Agreement") and that certain proceeds of such Obligation will be used to reimburse the Applicant for Reimbursement Expenditures incurred or paid prior to incurring the Obligation; and

WHEREAS, the Applicant acknowledges that IBank funds the ISRF Program, in part, with the proceeds of tax exempt bonds and, as such, has certain compliance obligations that may require it to have the Applicant enter into one or more new financing agreements to replace the Financing Agreement (collectively, the "Replacement Agreement") on terms and conditions substantially identical to the original Financing Agreement.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LINDSAY DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. The City Council approves confirms, ratifies, and affirms all actions of the Applicant's representatives, employees and officers heretofore taken in connection with, or with respect to, submitting the Financing Application, and the consideration and approval of the Obligation and the Financing Agreement, if IBank approves the Financing Application and the Obligation, and in connection therewith the City Council finds and certifies:

a. The Projects facilitate the effective and efficient use of existing and future public resources so as to promote both economic development and conservation of natural resources;
b. The Projects develop and enhance public infrastructure in a manner that will attract, create, and sustain long-term employment opportunities;
c. That the Projects are consistent with the General Plan of the City of Lindsay, and the General Plan of the County of Tulare;
d. The proposed financing is appropriate for the Projects;
e. The Projects are consistent with the Criteria; and
f. It has considered (i) the impact of the Projects on California's land resources and the need to preserve such resources; (ii) whether the Projects are economically or socially desirable; and (iii) whether the projects are consistent with, and in furtherance of the State Environmental Goals and Policy Report (as defined in the Criteria).

SECTION 2. The Applicant hereby declares its official intent to use proceeds of the Obligation to reimburse itself for the Reimbursement Expenditures with the proceeds of tax-exempt bonds or other tax-exempt securities issued under the provisions of the Internal Revenue Code of 1986, as amended, and those Treasury Regulations implementing such provisions (collectively, "Federal Tax Law"). This declaration is made solely for purposes of establishing compliance with applicable requirements of Federal Tax Law and its date is controlling for purposes of reimbursement under

Federal Tax Law. This declaration does not bind the Applicant to make any expenditure, incur any indebtedness, or proceed with the Project.

SECTION 3. All of the Reimbursement Expenditures were made no earlier than 60 days prior to the date of this Resolution. The Applicant will allocate proceeds of the Obligation to pay Reimbursement Expenditures within eighteen (18) months of the later of the date the original expenditure was paid or the date the Projects were placed in service or abandoned, but in no event more than three (3) years after the original expenditure was paid.

SECTION 4.1 **General Fund Project**

General Fund The Mayor and his or her designee is hereby authorized and directed to act on behalf of the Applicant in all matters pertaining to the Financing Application, and if IBank approves the Financing Application and the Obligation, the execution of related financial documents, including but not limited to, the authority to: (i) pledge the revenues of the **General Fund** and all legally available amounts in the **General Fund**, on a parity basis with the Applicant's obligations in connection with the other existing General Fund debt, to the repayment of the Obligation, (ii) provide covenants relating to, among other things, maintaining the debt service coverage ratio required by IBank, rates and charges to be pledged, and as to any other security or collateral securing the Obligation, and (iii) take any other action necessary or desirable to enable the Applicant to enter into the Financing Agreement and incur the Obligation.

SECTION 4.2 **Water Fund Project**

Water Fund The Mayor and her designee is hereby authorized and directed to act on behalf of the Applicant in all matters pertaining to the Financing Application, and if IBank approves the Financing Application and the Obligation, the execution of related financial documents, including but not limited to, the authority to: (i) pledge the revenues of the **Water Fund** and all legally available amounts in the **Water Fund**, on a parity basis with the Applicant's obligations in connection with the other existing Water Fund debt, to the repayment of the Obligation, (ii) provide covenants relating to, among other things, maintaining the debt service coverage ratio required by IBank, rates and charges to be pledged, and as to any other security or collateral securing the Obligation, and (iii) take any other action necessary or desirable to enable the Applicant to enter into the Financing Agreement and incur the Obligation.

SECTION 5. If the Financing Application and the Obligation is approved by IBank, the Mayor and her designee is authorized to negotiate, enter into and sign financing documents and any amendments thereto, including, but not limited to the Financing Agreement and the Replacement Agreement, with IBank for the purposes of financing the Obligation.

SECTION 6. The Mayor, or presiding officer, is hereby authorized to affix her/his signature to the Resolution signifying its adoption by the City Council of the City of Lindsay, and the City Clerk, or his duly appointed deputy, is directed to attest thereto.

SECTION 7. This Resolution shall become effective immediately upon adoption.

PASSED AND ADOPTED by the City Council of the City of Lindsay as follows:

MEETING DATE	September 25, 2018
MOTION	
2nd MOTION	
AYES	
ABSENT	
ABSTAIN	
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CERTIFICATION OF THE FOREGOING RESOLUTION AS FULL, TRUE, PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF LINDSAY AS DETAILED.

Bret Harmon, City Clerk

Pamela Kimball, Mayor

INSTALLATION AGREEMENT FOR

City of Lindsay

TERMS AND CONDITIONS

ATTACHMENTS

Attachment "A" – Scope of Work

Attachment "B" - Lighting Summary

Attachment "C" – Mechanical Equipment Schedule

Attachment "D" – Irrigation Control Schedule

Attachment "E" – Water Meter Schedule

Attachment "F" – Technical Appendix

CLIMATEC INSTALLATION AGREEMENT

This Installation Agreement ("Agreement") entered into as of September 25, 2018 ("Effective Date") is made by and between:

City of Lindsay
("Purchaser") with its principal place of business at
251 E. Honolulu Street
Lindsay, CA 93247
and

Climatec LLC
With its principal place of business at
2150 Towne Centre Place, Suite 200, Anaheim, CA 92805

Purchaser and Climatec LLC agree as follows:

1. **INSTALLATION.** Climatec LLC shall provide Purchaser with an Energy Efficiency Program, as identified in **Attachment(s) A, B, C, D, and E** and incorporated herein by reference (hereinafter referred to as the "Work") at the total fixed price of three million two hundred ninety five thousand four hundred forty seven and 00/100 dollars ($3,295,447.00) including required taxes and Performance Bond (the "Contract Amount").

   Climatec LLC is responsible for the design, engineering, permits, fees, approvals (except DSA inspections unless specifically noted in Attachment A) , project management, installation, startup, training, checkout, warranty, and insurance specifically associated with the Work to be performed. Climatec LLC is not responsible for any equipment, systems, controls, comfort problems, balancing, duct cleaning, existing deficient conditions, etc. not specifically included in this Agreement. Climatec LLC will provide submittals and engineered drawings (if required), for Purchaser's technical review and written approval, prior to initiating construction. All construction and associated cleanup shall be performed and scheduled so as to minimize any disruption with any ongoing Purchaser activities. Climatec LLC requires all underground conduits between buildings to be clear of obstruction, of sufficient size to accommodate new wire and cable, and easily accessible. The Purchaser is responsible for Ethernet drops at each location for Energy Management System communication. This proposal offer is valid until December 24, 2018.

2. **SCOPE OF WORK.** Once this contract is executed by the Purchaser and Climatec LLC, Climatec LLC may not revise the contract in any way except by mutual agreement with the Purchaser. Prior to the contract being signed by both parties, Climatec LLC reserves the right to revise any or all portions of the agreement.

   This agreement is based upon the use of straight time labor only unless stated otherwise in this agreement. Purchaser agrees to provide Climatec LLC with required field utilities (electricity, toilets, drinking water, etc.) without charge. Climatec LLC agrees to keep the jobsite clean of debris arising out of its own operations. Purchaser shall not back charge Climatec LLC for any cost or expenses without Climatec LLC's written consent. Unless specifically noted in the statement of the scope of the work or services undertaken by Climatec LLC under this agreement, Climatec LLC's obligations under this agreement expressly exclude any work or service of any nature associated or connected with the identification, abatement, clean up, control, removal or disposal of environment Hazards or dangerous substances, to include but not to be limited to asbestos, PCBs, or mold discovered in or on the premises. Any language or provision of the agreement elsewhere contained which may authorize or empower the Purchaser to change, modify or alter the scope of work or services to be performed by Climatec LLC shall not operate to compel Climatec LLC to perform any work relating to Hazards without Climatec LLC's express written consent.

3. **INVOICING & PAYMENTS.** Climatec LLC may invoice the Purchaser for any equipment and/or materials installed at a job site. Purchaser agrees to pay Climatec LLC amounts invoiced upon receipt of invoice. Waivers of lien will be furnished upon request, as the work progresses; to the extent payments are received. If Climatec LLC's invoice is not paid within 30 days of its issuance, it is delinquent and Climatec LLC may add 1% per month interest onto delinquent amounts.

4. **INDEPENDENT CONTRACT.** It is agreed between Purchaser and Climatec LLC that Climatec LLC shall perform the Work as an independent contractor. Climatec LLC may use subcontractors to perform work hereunder, provided Climatec LLC shall fully pay said subcontractors and in all instances remain fully responsible for (a) the proper completion of this agreement and (b) supervising such subcontractor's work and for the quality of the work they produce.

5. **MATERIALS.** All materials shall be new, in compliance with all applicable laws and codes, and shall be covered by a manufacturer's warranty, if appropriate. If the materials or equipment included in this agreement become temporarily or permanently unavailable, the time for performance of the work shall be extended to the extent thereof, and in case of permanent unavailability, Climatec LLC shall (a) be excused from furnishing said materials or equipment, and (b) be reimbursed for the difference between the cost of the materials or equipment permanently unavailable and the cost of a reasonable substitute therefore.

6. **COMPLETION.** The work specified in Section 1 shall be considered completed upon approval by the Purchaser, provided that the Purchaser's approval shall not be unreasonably withheld.

7. **WARRANTY.** Climatec LLC warrants that the equipment and systems provided under this contract shall be free from defects in material and workmanship arising from normal usage for a period of one year from the date of beneficial use or eighteen months from delivery of said equipment or systems. Within the warranty period, if Purchaser provides written notice to Climatec LLC of any such defects within thirty (30) days after the appearance or discovery of such defect, Climatec LLC shall, at its option, repair or replace the defective equipment and return said equipment to Purchaser. All transportation charges incurred in connection with the warranty for equipment shall be borne by Purchaser, unless otherwise provided for in manufacturer warranties. These warranties do not extend to any equipment which has been repaired by others, abused, altered or misused, or which has not been properly and reasonably maintained. All transferrable manufacturer warranties associated with the equipment will be transferred to the Purchaser. These warranties are in lieu of all other warranties, expressed or implied, including but not limited to those of merchantability and fitness for a specific purpose.

8. **LIABILITY.** Neither Party shall be liable for any special, indirect, or consequential damages arising in any manner from the equipment, material, or systems furnished or the work performed pursuant to this agreement.

9. **TAXES.** The price of this agreement includes duties, sale, use, excise or other similar taxes required by federal, state or local laws in effect at the time of agreement execution.

10. **DELAYS.** Climatec LLC shall not be liable for any delay in the performance of the work resulting from or attributed to acts of circumstance beyond Climatec LLC's control, including but not limited to acts of God, riots, labor disputes, conditions of the premises, acts or omissions of the Purchaser, or other Contractors or delays caused by suppliers or subcontractors of Climatec LLC, etc. If Purchaser delays project for greater than 60 days, Climatec LLC can recover any cost inflation on un-billed materials that were either stored or yet to be purchased.

11. **REBATES, UTILITY INCENTIVES, AND GRANTS** Unless otherwise stated in the project scope-of-work, or cash flow analysis, any and all rebates, incentives, grants that are earned through the course of this project from public or private utilities, municipalities, development districts or state funding are 100% the property of Climatec LLC or their designee. The paperwork, inspections and verification required to collect these monies are the sole responsibility of Climatec LLC. The customer agrees to assist Climatec LLC where required by the jurisdiction in the form of data required for the application and authorizing signatures. In the event the Customer incurs expenses related to the processing of the applications, Climatec LLC shall reimburse these direct costs. All rebates will be initially received by Climatec LLC and disbursed according to this contract.

12. **TAX CREDITS, TAX DEDUCTIONS AND 179d QUALIFYING CREDITS** Unless otherwise stated in the contract, any and all eligible tax credits or incentives that can be earned through the course of this project from

State, Local or Federal agencies for energy efficient design are 100% the property of Climatec LLC or their designee. The paperwork, inspections and verification required to collect these credits are the sole responsibility of Climatec LLC. The customer agrees to assist Climatec LLC where required by the jurisdiction in the form of data required for the application and authorizing signatures and/or transfers. In the event the Customer incurs expenses related to the processing of the applications, Climatec LLC shall reimburse these direct costs.

13. **COMPLIANCE WITH LAWS.** Climatec LLC shall comply with all applicable federal, state, and local laws and regulations. All licenses and permits required for the prosecution of the work shall be obtained and paid for by Climatec LLC. Purchaser agrees to provide Climatec LLC with the DIR project registration number within 5 days of execution of this agreement as required per statute.

14. **CLIMATEC LLC'S LICENSE AND DIR REGISTRATION**. In order to perform the work required by this Agreement, Climatec LLC shall possess a valid, active license in the classification(s) required issued by the State of California, which shall remain valid and active throughout the Project. In addition, Climatec LLC must be registered with DIR as a public works contractor.

15. **WAGE RATES**. Pursuant to the provisions of Article 2, commencing with Section 1770 of the Labor Code, OWNER has ascertained the general prevailing rate of per diem wages in the locality in which this public work is to be performed for each craft, classification, or type of worker needed to execute this Agreement. The general rates of per diem wages are available at OWNER's office. In the event that the listed or posted rates are in error, CLIMATEC LLC is responsible to pay those rates determined by the Director of Industrial Relations to be applicable, and OWNER shall not be responsible for any damages arising from the error.

16. **PAYROLL RECORDS.** It is the responsibility of CLIMATEC LLC to comply with the provisions of Labor Code Section 1776 dealing with the maintenance and inspection of employee payroll records.

17. **PREVAILING WAGE**. The project is subject to prevailing wage monitoring and enforcement by the Department of Industrial Relations (DIR). Climatec LLC and all subcontractors will be subject to the requirements of Subchapter 4.5 of Chapter 8 of Title 8 of the California Code of Regulations. Climatec LLC and all subcontractors will be required to furnish electronic certified payroll records to the DIR on a frequency not less than monthly using the DIR's eCPR system at http://www.dir.ca.gov/Public-Works/eCPR_System-iForm.html. Climatec LLC shall comply with all requirements of the Labor Code and attendant regulations pertaining to prevailing wage monitoring and compliance as required by the DIR, including, but not limited to, posting job site notices prescribed by Title 8 CCR § 16451(d). Climatec LLC shall permit OWNER, the DIR or their designee to interview Climatec LLC's employees concerning compliance with prevailing wage, apprenticeship, and related matters, whether or not during work hours, and shall require each subcontractor to provide OWNER, the DIR or their designee with such access to its employees.

18. **APPRENTICES**. If applicable, CLIMATEC LLC shall comply with the requirements of Labor Code Section 1777.5 dealing with the employment of apprentices.

19. **DISPUTES.**

a. In the event of any dispute whatsoever between the Parties, Parties shall exhaust every reasonable effort to settle or dispose of the same, including a discussion of the matter between senior executives of each Party.

b. Claims between Purchaser and Contractor shall first be resolved using the procedures set forth at California Public Contract Code section 9204. "Claims" are defined, pursuant to California Public Contract Code section 9204, as a separate demand by Contractor for one of the following: a time extension for relief from penalties for delay; payment of money or damages arising from work done; or payment of an amount disputed by Purchaser.

c. Upon receiving a claim sent by registered or certified mail, Purchaser must review and provide a written response within forty-five (45) days that identifies the disputed and undisputed portions of the claim. The forty-five (45) day period to respond may be extended by mutual agreement between the Parties. The claim is deemed rejected in its entirety if Purchaser does not issue a response. Any payment due on an undisputed portion of the claim must be processed within sixty (60) days after Purchaser's response. If a claimant disputes Purchaser's response or lack thereof, the claimant may demand to meet and confer for settlement of the issues in dispute. Any portion of a

claim that remains in dispute after a meet and confer conference will be subject to nonbinding mediation process, as described in California Public Contract Code section 9204. Undisputed and unpaid claims accrue interest at seven percent (7%) per annum. A subcontractor or lower tier subcontractor may make a claim to the Purchaser through Contractor, as specified in California Public Contract Code section 9204. However, the procedures in this section shall not supersede the requirements of the Agreement with respect to Contractor's notification to Purchaser of such claim or extend the time for the giving of such notice as provided in the Agreement.

d. Any controversy or claim arising out of or relative to the Agreement, or the breach thereof, not adjusted or disposed of by mutual agreement between the Parties as described above, shall be first settled by mediation and then (in the absence of settlement after mediation), by arbitration under the American Arbitration Association Construction Arbitration Rules then in effect, and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof, and arbitration decision shall be final and binding on the Parties and on all Parties subject to the following. Said arbitration proceedings shall be filed in the Regional office of the American Arbitration Association nearest to Purchaser. All arbitrators shall be bound by the terms of the Agreement. The expenses of any arbitration shall be borne equally by the Parties to the arbitration, provided that each Party shall pay for and bear the cost of its own experts, evidence, and counsel.

20. CHANGE ORDER (Mid-Performance Amendments). Climatec LLC and the Purchaser recognize that:
a. Purchaser may desire a mid-job change in the specifications or scope that would add time and cost to the specified work or inconvenience Climatec LLC.
b. Other provisions of the Agreement may be difficult to carry out because of unforeseen events, such as material shortage or labor strikes. If these or other events beyond the control of the parties reasonably require adjustments to this agreement, the parties shall make a good faith attempt to agree on all necessary particulars. Such agreements shall be put in writing, signed by the parties and added to this agreement. Failure to reach agreement shall be deemed a dispute to be resolved as agreed in section 14 of this agreement.

21. INSURANCE.

General Liability

Climatec LLC shall maintain commercial general liability insurance with coverage at least as broad as Insurance Services Office form CG 00 01, in an amount not less than two million dollars ($2,000,000) per occurrence for bodily injury, personal injury, and property damage, including, blanket contractual liability. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. Climatec LLC's general liability policies shall be primary and shall not seek contribution from the City's coverage, and be endorsed using Insurance Services Office form CG 20 10 to provide that City and its officers, officials, employees, and agents shall be additional insureds under such policies. For construction contracts, an endorsement providing completed operations coverage to the additional insured, ISO form CG 20 37, is also required.

Auto Liability

Climatec LLC shall provide auto liability coverage for owned, non-owned, and hired autos using ISO Business Auto Coverage form CA 00 01, or the exact equivalent, with a limit of no less than two million dollars ($2,000,000) per accident.

Workers' Compensation

Climatec LLC shall maintain Workers' Compensation Insurance (Statutory Limits) and Employer's Liability Insurance with limits of at least one million dollars ($1,000,000). Climatec LLC shall submit to City, along with the certificate of insurance, a Waiver of Subrogation endorsement in favor of City, its officers, agents, employees, and volunteers.

22. INDEMNITY.

Climatec LLC shall indemnify and hold harmless City, its officers, employees, agents and volunteers from and against all liability, loss, damage, expense, and cost (including, without limitation, reasonable legal counsel fees, expert fees and all other costs and fees of litigation) of every nature arising out of or in connection with Climatec LLC's negligence, recklessness, or willful misconduct in the performance of work hereunder, or its failure to comply with any of its obligations contained in this Agreement, except such loss or damage caused by the active negligence, sole negligence or willful misconduct of the City. It is expressly understood and agreed that the foregoing provisions

are intended to be as broad and inclusive as is permitted by the law of the State of California and will survive termination of this Agreement.

23. **OCCUPATIONAL SAFETY AND HEALTH.** The Parties hereto agree to notify each other immediately upon becoming aware of any alleged violation of, the Occupational Safety and Health Act (OSHA) relating in any way to the project or project site.

24. **ENTIRE AGREEMENT.** This agreement, upon acceptance, shall constitute the entire agreement between the parties and supersedes any prior representations or understandings.

25. **CHANGES.** No change or modification of any of the terms and conditions stated herein shall be binding upon Climatec LLC unless accepted by Climatec LLC in writing.

26. **SEVERABILITY.** If one or more of the provisions of this agreement are held to be unenforceable under laws, such provision(s) shall be excluded from these terms and conditions and the remaining terms and conditions shall be interpreted as if such provision were so excluded and shall be enforced in accordance to their terms and conditions.

27. **COUNTERPARTS.** This agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same instrument. A signature on a copy of this agreement received by either party by facsimile or portable document format (PDF) is binding upon the other party as an original. The parties shall treat a photocopy of such facsimile as a duplicate original.

28. **ASSIGNMENT.** Climatec LLC retains the right to assign its rights and obligations of this agreement with written consent of Purchaser.

29. **ACKNOWLEDGMENT.** Both Climatec LLC and the Purchaser acknowledge having read this agreement and all contract documents incorporated herein and have executed this agreement on the date written above.

30. **APPROVAL.** Each party represents that the person that has executed this agreement on its' behalf is authorized to do so.

IN WITNESS WHEREOF, the parties have caused their duly authorized officers to execute this Agreement effective as of the date first above written.

City of Lindsay	**Climatec LLC**
_____	_____
Signature	Signature
_____	_____
Print Name	Print Name
_____	_____
Title	Title
_____	_____
Date	Date

Attachment "A"

Scope of Work

City Hall

Controls

- Provide and install a new wireless HVAC control system on six (6) HVAC units. The system allows access to the local network for remote temperature set point and schedule adjustments, and system alerts. Each unit will include a locally mounted zone temperature sensor to allow local control and override capabilities within a pre-programmed range. The new control system will be connected through the City's existing LAN and excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes evaporative cooling units, ductless split system units, and window AC units.

Mechanical

- Replace one (1) existing water-cooled air conditioning (A/C) system with one (1) new high efficiency split system heat pump of similar size and capacity. The scope includes demolition and removal of the existing self-contained water-cooled A/C unit and cooling tower, proper disposal or containment of refrigerant, installation of one (1) new outdoor heat pump unit on a new concrete pad, installation of one (1) new indoor air handling unit (AHU), necessary duct modifications for connection to the new AHU, installation of a new outside air duct, economizer installation, installation of new electrical wiring from the existing electrical panel to the new unit, installation of a new refrigerant line set, installation of a new condensate drain line, start-up/testing of the new unit, and connection to the new HVAC control system. All equipment removed shall be disposed of per EPA guidelines. Existing unused piping will be abandoned in place. Undisclosed electrical and structural upgrades/modifications are excluded from the scope. Please refer to the HVAC Replacement Inventory in Attachment C for equipment size and location.

- Replace three (3) split system gas/electric units with new high efficiency units of similar size and capacity. The scope includes removal of existing split system units (natural gas-fired furnace, evaporator coil and condensing unit), proper disposal or containment of refrigerant, disconnection/reconnection of the existing electrical and gas lines, installation of new electrical disconnects, condensate connections, start-up/testing of the new units, and connection to the new HVAC control system. All equipment removed shall be disposed of per EPA guidelines. Undisclosed electrical and structural upgrades/modifications are excluded from the scope. Please refer to the HVAC Replacement in Attachment C for equipment size and location.

Lighting

- Retrofit existing interior T8 and T12 fluorescent lighting systems with new high efficiency LED lighting systems. Interior dimming controller, dimming switch and dimming occupancy sensors will be included on select fixtures. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior pole mount HID lighting systems with new high efficiency LED lighting systems with onboard fixture mounted dimming occupancy sensors on select fixtures. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Building Envelope

- Provide and install forty-four (44) new energy efficient, double pane, low-E windows (located on first floor of the City Hall building). The new windows will be sized to match the existing openings and will include necessary hardware, weather-stripping, window screens, and interior/exterior paint. Demolition, removal and disposal of existing windows, as well as removal/re-installation of existing window coverings, will be the City's responsibility. The scope excludes any form of hazardous material testing and abatement, if required.

Irrigation

- Replace one (1) existing irrigation controller with one (1) new networked irrigation controller. The new controller will be capable of being managed remotely via a web-based control dashboard. The scope includes removal of the existing controller, installation of one (1) new controller with enough valve wire slots for current irrigation requirements, disconnection/reconnection of the existing electrical wiring, zone resequencing as necessary and start-up/testing. The new irrigation control system will be connected through the City's existing Wi-Fi network, and the scope excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes replacement

and/or repair of existing irrigation system deficiencies, irrigation control valves or irrigation heads. Please refer to the Irrigation Control Schedule in Attachment D for details.

City Service Department

Controls

- Provide and install a new wireless HVAC control system on two (2) HVAC units. The system allows access to the local network for remote temperature set point and schedule adjustments, and system alerts. Each unit will include a locally mounted zone temperature sensor to allow local control and override capabilities within a pre-programmed range. The new control system will be connected through the City's existing LAN and excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes evaporative cooling units, heating only units, ductless split system units, and window AC units.

Mechanical

- Replace two (2) packaged gas/electric units with new high efficiency units of similar size and capacity. The scope includes removal of existing units, proper disposal or containment of refrigerant, necessary duct/curb modifications, disconnection/reconnection of the existing electrical and gas lines, installation of new electrical disconnects, condensate connections, economizers on units 4.5 tons and larger, start-up/testing of the new units, and connection to the new HVAC control system. All equipment removed shall be disposed of per EPA guidelines. Undisclosed electrical and structural upgrades/modifications are excluded from the scope. Please refer to the HVAC Replacement Inventory in Attachment C for equipment size and location.

Lighting

- Retrofit existing interior T8 fluorescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior building mount CF and HID lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Community Center

Controls

- Provide and install a new wireless HVAC control system on four (4) HVAC units. The system allows access to the local network for remote temperature set point and schedule adjustments, and system alerts. Each unit will include a locally mounted zone temperature sensor to allow local control and override capabilities within a pre-programmed range. The new control system will be connected through the City's existing LAN and excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes evaporative cooling units, heating only units, ductless split system units, and window AC units.

Mechanical

- Replace three (3) packaged gas/electric units with new high efficiency units of similar size and capacity. The scope includes removal of existing units, proper disposal or containment of refrigerant, necessary duct/curb modifications, disconnection/reconnection of the existing electrical and gas lines, installation of new electrical disconnects, condensate connections, start-up/testing of the new units, and connection to the new HVAC control system. All equipment removed shall be disposed of per EPA guidelines. Undisclosed electrical and structural upgrades/modifications are excluded from the scope. Please refer to the HVAC Replacement Inventory in Attachment C for equipment size and location.

Lighting

- Retrofit existing interior T8 fluorescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing interior CF lighting with new high efficiency LED lighting. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior building mount CF and HID lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior pole mount HID lighting systems with new high efficiency LED lighting systems with onboard fixture mounted dimming occupancy sensors. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Irrigation

- Replace one (1) existing irrigation controller with one (1) new networked irrigation controller. The new controller will be capable of being managed remotely via a web-based control dashboard. The scope includes removal of the existing controller, installation of one (1) new controller with enough valve wire slots for current irrigation requirements, disconnection/reconnection of the existing electrical wiring, zone resequencing as necessary and start-up/testing. The new irrigation control system will be connected through the City's existing Wi-Fi network, and the scope excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes replacement and/or repair of existing irrigation system deficiencies, irrigation control valves or irrigation heads. Please refer to the Irrigation Control Schedule in Attachment D for details.

Corporation Yard

Lighting

- Retrofit existing interior T8 and T12 fluorescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing interior CF and incandescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior pole mount HID lighting systems with new high efficiency LED lighting systems with onboard fixture mounted dimming occupancy sensors. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Golf Course / Clubhouse

Controls

- Provide and install a new wireless HVAC control system on one (1) HVAC unit. The system allows access to the local network for remote temperature set point and schedule adjustments, and system alerts. Each unit will include a locally mounted zone temperature sensor to allow local control and override capabilities within a pre-programmed range. The new control system will be connected through the City's existing LAN and excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes evaporative cooling units, heating only units, ductless split system units, and window AC units.

Lighting

- Retrofit existing interior T8 fluorescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing interior CF and incandescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior building mount CF lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Irrigation

- Remove one (1) existing irrigation controller and extend existing valve wiring to the City Park irrigation controls. The Golf Course (future Soccer Complex) irrigation controls will be combined with the City Park controls and consolidated to a single controller. See City Park Irrigation scope of work for additional information on new controller installation. Please refer to the Irrigation Control Schedule in Attachment D for details.

Library

Controls

- Provide and install a new wireless HVAC control system on three (3) HVAC units. The system allows access to the local network for remote temperature set point and schedule adjustments, and system alerts. Each unit will include a locally mounted zone temperature sensor to allow local control and override capabilities within a pre-programmed range. The new control system will be connected through the City's existing LAN and excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes evaporative cooling units, heating only units, ductless split system units, and window AC units.

Lighting

- Retrofit existing interior CF lighting with new high efficiency LED lighting. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior building and ground mount CF and HID lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Irrigation

- Replace one (1) existing irrigation controller with a new networked irrigation controller. The new controller will be capable of being managed remotely via a web-based control dashboard. The scope includes removal of the existing controller, installation of one (1) new controller with enough valve wire slots for current irrigation requirements, disconnection/reconnection of the existing electrical wiring, zone resequencing as necessary and start-up/testing. The new irrigation control system will be connected through the City's existing Wi-Fi network, and the scope excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes replacement and/or repair of existing irrigation system deficiencies, irrigation control valves or irrigation heads. Please refer to the Irrigation Control Schedule in Attachment D for details.

Mason House

Irrigation

- Replace one (1) existing irrigation controller with one (1) new networked irrigation controller. The new controller will be capable of being managed remotely via a web-based control dashboard and will automatically adjust watering times based on real-time weather data. The scope includes removal of the existing controller,

installation of one (1) new controller with enough valve wire slots for current irrigation requirements, disconnection/reconnection of the existing electrical wiring, zone resequencing as necessary and start-up/testing. The new irrigation control system will be connected through the City's existing Wi-Fi network, and the scope excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes replacement and/or repair of existing irrigation system deficiencies, irrigation control valves or irrigation heads. Please refer to the Irrigation Control Schedule in Attachment D for details.

Museum

Irrigation

- Replace one (1) existing irrigation controller with one (1) new networked irrigation controller. The new controller will be capable of being managed remotely via a web-based control dashboard. The scope includes removal of the existing controller, installation of one (1) new controller with enough valve wire slots for current irrigation requirements, disconnection/reconnection of the existing electrical wiring, zone resequencing as necessary and start-up/testing. The new irrigation control system will be connected through the City's existing Wi-Fi network, and the scope excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes replacement and/or repair of existing irrigation system deficiencies, irrigation control valves or irrigation heads. Please refer to the Irrigation Control Schedule in Attachment D for details.

Police / Fire Department

Controls

- Provide and install a new wireless HVAC control system on two (2) HVAC units. The system allows access to the local network for remote temperature set point and schedule adjustments, and system alerts. Each unit will include a locally mounted zone temperature sensor to allow local control and override capabilities within a pre-programmed range. The new control system will be connected through the City's existing LAN and excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes evaporative cooling units, heating only units, ductless split system units, and window AC units.

Mechanical

- Replace one (1) packaged gas/electric unit with a new high efficiency unit of similar size and capacity. The scope includes removal of existing unit, proper disposal or containment of refrigerant, necessary duct/curb modifications, disconnection/reconnection of the existing electrical and gas lines, installation of a new electrical disconnect, condensate connections, economizer installation, start-up/testing of the new unit, and connection to the new HVAC control system. All equipment removed shall be disposed of per EPA guidelines. Undisclosed electrical and structural upgrades/modifications are excluded from the scope. Please refer to the HVAC Replacement Inventory in Attachment C for equipment size and location.

Lighting

- Retrofit existing interior T8 fluorescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing interior high bay T8 fluorescent lighting systems with new high efficiency LED lighting systems with onboard fixture mounted dimming occupancy sensors. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing interior CF and incandescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior building mount CF, incandescent and HID lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior pole mount HID lighting systems with new high efficiency LED lighting systems with onboard fixture mounted dimming occupancy sensors. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Wastewater Treatment Plant

Controls

- Provide and install a new wireless HVAC control system on one (1) HVAC unit. The system allows access to the local network for remote temperature set point and schedule adjustments, and system alerts. The unit will include a locally mounted zone temperature sensor to allow local control and override capabilities within a pre-programmed range. The new control system will be connected through the City's existing LAN and excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes evaporative cooling units, heating only units, ductless split system units, and window AC units.

Mechanical

- Replace two (2) 75 horsepower (HP) aerator motors with new premium efficiency motors of similar size and performance, and install two (2) new variable frequency drives (VFD). The scope includes removal and proper disposal of existing motors, disconnection/reconnection of the existing electrical power to the motors, installation of two (2) new inverter duty motors, installation of two (2) new VFDs (to be mounted on the wall in the existing electrical room), installation of new electrical conductors and conduit for the newly installed VFDs and start-up/testing. The VFDs will be controlled manually by the site operator. The scope excludes replacement and/or repair of remaining components of the aerator assemblies.

Lighting

- Retrofit existing interior T8 fluorescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing interior and exterior CF lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior building and pole mount HID lighting systems with new high efficiency LED lighting systems with onboard fixture mounted dimming occupancy sensors on select fixtures. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Wellness Center

Controls

- Provide and install a new wireless HVAC control system on four (4) HVAC units. The system allows access to the local network for remote temperature set point and schedule adjustments, and system alerts. Each unit will include a locally mounted zone temperature sensor to allow local control and override capabilities within a pre-programmed range. The new control system will be connected through the City's existing LAN and excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes evaporative cooling units, heating only units, ductless split system units, and window AC units.

Lighting

- Retrofit existing interior T8 fluorescent lighting systems with new high efficiency LED lighting systems. Interior dimming controller, dimming switch and dimming occupancy sensors will be included on select fixtures. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing interior CF and HID lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior building mount CF, incandescent, and HID lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Irrigation

- Replace one (1) existing irrigation controller with one (1) new networked irrigation controller. The new controller will be capable of being managed remotely via a web-based control dashboard. The scope includes removal of the existing controller, installation of one (1) new controller with enough valve wire slots for current irrigation requirements, disconnection/reconnection of the existing electrical wiring, zone resequencing as necessary and start-up/testing. The new irrigation control system will be connected through the City's existing Wi-Fi network, and the scope excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes replacement and/or repair of existing irrigation system deficiencies, irrigation control valves or irrigation heads. Please refer to the Irrigation Control Schedule in Attachment D for details.

City Park

Lighting

- Retrofit existing interior T8 fluorescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior building mount CF and incandescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior pole mount HID lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Irrigation

- Replace one (1) existing irrigation controller with one (1) new networked irrigation controller. The new controller will be capable of being managed remotely via a web-based control dashboard. The scope includes removal of the existing controller, installation of one (1) new controller with enough valve wire slots for current irrigation requirements at the City Park and Golf Course, disconnection/reconnection of the existing electrical wiring, zone resequencing as necessary and start-up/testing. The new irrigation control system will be connected through the City's existing Wi-Fi network, and the scope excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes replacement and/or repair of existing irrigation system deficiencies, irrigation control valves or irrigation heads. Please refer to the Irrigation Control Schedule in Attachment D for details.

- Install one (1) new master valve and one (1) new flow sensor on the existing irrigation supply line and connect to the new irrigation controller. The scope includes piping modifications as required for new valve and flow sensor installation, necessary wiring to connect new master valve and flow sensor to the new irrigation controller, and start-up/testing. The new master valve and flow sensor installed at City Park will also be used for the irrigation to the Golf Course. Please refer to the Irrigation Control Schedule in Attachment D for details.

Harvard Park

Irrigation

- Remove two (2) existing irrigation valve nodes and install one (1) new networked irrigation controller to control both existing irrigation valves. The new controller will be capable of being managed remotely via a web-based control dashboard. The scope includes removal of the existing valve nodes, installation of one (1) new controller with enough valve wire slots for current irrigation requirements, disconnection/reconnection of the existing electrical wiring, zone resequencing as necessary and start-up/testing. The new irrigation control system will be connected through the City's existing Wi-Fi network, and the scope excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes replacement and/or repair of existing irrigation system deficiencies, irrigation control valves or irrigation heads. Please refer to the Irrigation Control Schedule in Attachment D for details.

- Install one (1) new master valve and one (1) new flow sensor on the existing irrigation supply line and connect to the new irrigation controller. The scope includes piping modifications as required for new valve and flow sensor installation, necessary wiring to connect new master valve and flow sensor to the new irrigation controller, and start-up/testing. Please refer to the Irrigation Control Schedule in Attachment D for details.

Olive Bowl Park

Lighting

- Retrofit existing exterior pole mount HID lighting systems with new high efficiency LED lighting systems with onboard fixture mounted dimming occupancy sensors on select fixtures. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Irrigation

- Replace one (1) existing irrigation controller with one (1) new networked irrigation controller. The new controller will be capable of being managed remotely via a web-based control dashboard. The scope includes removal of the existing controller, installation of one (1) new controller with enough valve wire slots for current irrigation requirements, disconnection/reconnection of the existing electrical wiring, zone resequencing as necessary and start-up/testing. The new irrigation control system will be connected through the City's existing Wi-Fi network, and the scope excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes replacement and/or repair of existing irrigation system deficiencies, irrigation control valves or irrigation heads. Please refer to the Irrigation Control Schedule in Attachment D for details.

- Install one (1) new master valve and one (1) new flow sensor on the existing irrigation supply line and connect to the new irrigation controller. The scope includes piping modifications as required for new valve and flow sensor installation, necessary wiring to connect new master valve and flow sensor to the new irrigation controller, and start-up/testing. Please refer to the Irrigation Control Schedule in Attachment D for details.

Sweetbriar Park

Lighting

- Retrofit existing interior and exterior T8 fluorescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior pole mount HID lighting systems with new high efficiency LED lighting systems with onboard fixture mounted dimming occupancy sensors on select fixtures. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Irrigation

- Replace one (1) existing irrigation controller with one (1) new networked irrigation controller. The new controller will be capable of being managed remotely via a web-based control dashboard. The scope includes removal of the existing controller, installation of one (1) new controller with enough valve wire slots for current irrigation requirements, disconnection/reconnection of the existing electrical wiring, zone resequencing as necessary and start-up/testing. The new irrigation control system will be connected through the City's existing Wi-Fi network, and the scope excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes replacement and/or repair of existing irrigation system deficiencies, irrigation control valves or irrigation heads. Please refer to the Irrigation Control Schedule in Attachment D for details.

- Install one (1) new master valve and one (1) new flow sensor on the existing irrigation supply line and connect to the new irrigation controller. The scope includes piping modifications as required for new valve and flow sensor installation, necessary wiring to connect new master valve and flow sensor to the new irrigation controller, and start-up/testing. Please refer to the Irrigation Control Schedule in Attachment D for details.

Downtown Landscape

Irrigation

- Replace twelve (12) existing irrigation controllers with twelve (12) new networked irrigation controllers. The new controllers will be capable of being managed remotely via a web-based control dashboard. The scope includes removal of the existing controllers, installation of twelve (12) new controllers with enough valve wire slots for current irrigation requirements, disconnection/reconnection of the existing electrical wiring, zone resequencing as necessary and start-up/testing. The new irrigation control system will be connected through the City's existing Wi-Fi network, and the scope excludes any upgrades or improvements to the existing network. Any required upgrades or improvements to the network would be the City's responsibility. The scope excludes replacement and/or repair of existing irrigation system deficiencies, irrigation control valves or irrigation heads. Please refer to the Irrigation Control Schedule in Attachment D for details.

Pump Stations (Clean Water Facility)

Lighting

- Retrofit existing interior T8 fluorescent lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing interior CF lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior building mount CF and HID lighting systems with new high efficiency LED lighting systems. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

- Retrofit existing exterior pole mount HID lighting systems with new high efficiency LED lighting systems with onboard fixture mounted dimming occupancy sensors. Please see the Lighting Room by Room in Attachment B for detailed information on lighting scope, quantities, and locations.

Well 14

VFD Installation

- Remove and replace one (1) existing non-functional 125 HP VFD with a new VFD of similar size and configuration. The scope includes demolition, removal and proper disposal of the existing VFD; installation of one (1) new VFD mounted in the existing electrical cabinet; electrical connections; and start-up/testing. The scope excludes replacement and/or repair of remaining components including the existing well pump motor, well pump assembly and electrical switchgear.

City-Wide

Water Meters

- Upgrade the Purchaser's water metering infrastructure by providing and installing new water meters, data transmitters and an Automatic Meter Reading (AMR) system that will allow for remote meter readings and identification of system failures. This scope will include the following:
    - Replace two thousand two hundred twelve (2,212) existing water meters to Sensus SII or OMNI™ models (see Water Meter Schedule, Attachment E for detail).
    - Provide an AMR system including equipment, testing, commissioning and billing system integration comprised of the following elements:
        - Two thousand two hundred twelve (2,212) 520-M SmartPoint transmitters for the new water meters above.
        - Eight hundred nineteen (819) 520-M SmartPoint transmitters for water meters not being replaced.
        - Programming of the new AMR system.
        - Sensus software for collection and exporting to billing system (AutoRead and AutoView).
        - Integration of the new AMR system with the Purchaser's billing system.
        - One (1) handheld programmer/collector.
        - One (1) Vehicle mounted drive-by Vehicle Gateway Base.
        - First year of Sensus hosted software.
        - Provide maintenance and operations training to Purchaser's personnel.

- Scope excludes cost of repair or replacement of existing water system deficiencies outside of failed meters. This includes but is not limited to:
    - Meter boxes that need to be lowered, reset or replaced.
    - Valves that are rusted or need to be replaced.
    - Lines that are piped directly into the meter.
    - Re-plumbing existing water lines.
    - General contracting work required for access or replacement.
    - Meter box lids.

Attachment "B"

Lighting Summary

City of Lindsay - Lighting Detail Report
(sorted by building, floor, area)

City Hall -

PRE-RETROFIT			POST RETROFIT	
Location	**Existing Fixture Description**	**Qty**	**Retrofit Code Description (Sensor in RED)**	**Qty**
Building/Area: Main Building				
1st Floor				
Rf#-1 Rm - Finance Bullpen	1x8x 2L pm hood (behind lens), F96T8 59w, electronic ballast	12	NL023/tkit - (1) LED 23w 2x4 rec trf w/volumetric lens 70,000-Hr L70 rated life L-DS	12
Rf#-2 Rm - Finance Vault	1x8x 2L sm strip, F96T8 59w, electronic ballast	2	RL044/skit - (1) 8' LED 44w linear led strip kit, 50,000-Hr L70 rated life, 120/277, 4000K	2
Rf#-3 Rm - Restroom Hall	LED 2L dome, LED 12w A19, n/a	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-4 Rm - W RR	(est) LED 1L globe, LED 12w A19, n/a	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-5 Rm - Finance Office	1x4x 4L sm wp, F32T8 32w 850, electronic ballast	1	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-6 Rm - break room off above	1x4x 4L sm wp, F32T8 32w 850, electronic ballast	1	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-7 Rm - Space to left of Counsel Chambers	(est) 2x4x 2L rec trf, F32T8 32w 850, electronic ballast	8	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	8
Rf#-8 Rm - Counsel Chambers	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	18	RL023/tkit - (1) LED 23w 2x4 rec trf kit w/volumetric lens 70,000-Hr L70 rated life L-DS	18
Rf#-9 Rm - City Manager Office	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast L-D	4
Rf#-10 Rm - Conf Room in above	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	5	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast L-DS	5
Rf#-11 Rm - M RR	(est) LED 1L globe, LED 12w A19, n/a	3	DND - DND: (do not do, fixtures left as is)	3
Rf#-12 Rm - W RR	(est) LED 1L globe, LED 12w A19, n/a	3	DND - DND: (do not do, fixtures left as is)	3
Rf#-13 Rm - Conf Room (west end)	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	8	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	8
Rf#-14 Rm - Office in above	(est) 2x4x 2L rec trf, F32T8 32w 850, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-16 Rm - Ext-Bldg Mnt	DND (do not do, left as is), n/a, n/a		DND - DND: (do not do, fixtures left as is)	0
Rf#-17 Rm - Ext-Pole Mnt (nxt to bldg)	HPS 1L shoe box SqP DB SH, HPS 400w, HID ballast	2	NL072/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 72w, onboard dimming OCC sensor oemb	2
Rf#-18 Rm - Ext-Pole Mnt (Flag Pole)	HPS 1L flood, tenon, HPS 250w, HID ballast	2	NL072/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 72w, onboard dimming OCC sensor oemb	2
Rf#-19 Rm - Ext-Pole Mnt (Flag Pole)	MH 1L flood, knuckle, MH 175w, HID ballast	2	NL026/fld - New LED flood, knuckle mount, 50,000-Hr L70 rated life, 26w	2
Basement				
Rf#-15 Rm - DND (do not do, left as is)	DND (do not do, left as is), n/a, n/a		DND - DND: (do not do, fixtures left as is)	0
	Qty for City Hall :	**77**		**77**

City of Lindsay - Lighting Detail Report
(sorted by building, floor, area)

City Park -

PRE-RETROFIT			POST RETROFIT	
Location	**Existing Fixture Description**	**Qty**	**Retrofit Code Description (Sensor in RED)**	**Qty**

Building/Area: Main Building

1st Floor

Location	Existing Fixture Description	Qty	Retrofit Code Description (Sensor in RED)	Qty
Rf#-1 Rm - RR Bldg B RR	1x4x 2L sm vapor tight, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast ec	1
Rf#-2 Rm - RR Bldg G RR	1x4x 2L sm vapor tight, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast ec	1
Rf#-3 Rm - RR Bldg Storage	(est) 1x4x 2L sm vapor tight, F32T8 32w, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-4 Rm - Ext-Bldg Mnt (walls) RR Bldg	CF 1L wm vandal, CFP-26w, CF ballast	1	NL012/wp - New LED wall pack full, 50,000-Hr L70 rated life, 12w, built in photo cell	1
Rf#-5 Rm - Ext-Bldg Mnt (walls) RR Bldg	Inc. 2L par flood (motion), Inc 65w P38, n/a	2	RL091/s/r30 - (1) LED 8w R30 screw in lamp, 4000K	2
Rf#-6 Rm - Picnic Tables	CF 2L sm square (12"), CFP-32w, CF ballast	13	RL0132/h - (2) LED 4 pin lamp, direct wire, 120/277v, 9.5w, 50,000-Hr L70 rated life	13
Rf#-7 Rm - Ext-Pole Mnt (walkways)	MH 1L post top acorn, MH 175w, HID ballast	20	RL027/s/gc - (1) LED 27w corn cob style screw in lamp, 120/277, 50,000-Hr rated life, 5K, medium base	20
	Qty for City Park :	**42**		**42**

City of Lindsay - Lighting Detail Report

(sorted by building, floor, area)

City Services -

PRE-RETROFIT			POST RETROFIT	
Location	**Existing Fixture Description**	**Qty**	**Retrofit Code Description (Sensor in RED)**	**Qty**

Building/Area: Main Building

1st Floor

Location	Existing Fixture Description	Qty	Retrofit Code Description (Sensor in RED)	Qty
Rf#-1 Rm - Main Entry Lobby	4x4x 6L sm box, F32T8 32w, electronic ballast	1	RLT846 - (6) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-2 Rm - office bullpen	2x4x 2L rec trf, F32T8 32w, electronic ballast	8	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	8
Rf#-3 Rm - Copy Room	2x4x 2L rec trf, F32T8 32w, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-4 Rm - RR hallway	1x4x 2L sm wp, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-5 Rm - W RR	LED 2L wm vanity, LED 12w A19, n/a	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-6 Rm - Plan room	2x2x 2L sm box, FB31T8 32w, electronic ballast	1	RLT822u - (2) 2' LED "U" T8 lamp 17w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-7 Rm - Office #1 left of above	2x4x 2L rec trf, F32T8 32w, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-8 Rm - M RR	LED 2L wm vanity, LED 12w A19, n/a	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-9 Rm - Office #2 end of hall	2x4x 2L rec trf, F32T8 32w, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-10 Rm - Office #3 left of above	2x4x 2L rec trf, F32T8 32w, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-11 Rm - small storage in above	1x4x 2L sm wp, F32T8 32w, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-12 Rm - small hall #2 (N of Copy room)	2x4x 2L rec trf, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-13 Rm - Office #4	2x4x 2L rec trf, F32T8 32w, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-14 Rm - Office #5	2x4x 2L rec trf, F32T8 32w, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-15 Rm - Ext-Bldg Mnt (wall) for sign	MH 1L flood, knuckle, MH 175w, HID ballast	1	NL026/fld - New LED flood, knuckle mount, 50,000-Hr L70 rated life, 26w	1
Rf#-16 Rm - Ext-Bldg Mnt (walls)	CF 1L wm globe, CFS-15w, CF ballast intragal	2	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	2
Rf#-17 Rm - Ext-Bldg Mnt (eves)	CF 1L rec can, CFS-15w, CF ballast intragal	1	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	1
	Qty for City Services :	**32**		**32**

W* = wall switch sensor, C* = ceiling sensor, F* = existing sensor

Community Center -

PRE-RETROFIT			POST RETROFIT	
Location	**Existing Fixture Description**	**Qty**	**Retrofit Code Description (Sensor in RED)**	**Qty**

Building/Area: Main Building

1st Floor

Location	Existing Fixture Description	Qty	Retrofit Code Description (Sensor in RED)	Qty
Rf#-1 Rm - Main entry hall	1x4x 4L sm wp, F32T8 32w, electronic ballast	6	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	6
Rf#-2 Rm - Meeting Room 1 S Side	2x4x 2L rec trf, F32T8 32w, electronic ballast	35	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	35
Rf#-3 Rm - Closet in Above	CF 1L bare bulb, CFS-23w, CF ballast intragal	1	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	1
Rf#-4 Rm - Kitchen	1x4x 4L sm wp, F32T8 32w, electronic ballast	4	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-5 Rm - Meeting Room #2 N Side	2x4x 2L rec trf, F32T8 32w, electronic ballast	18	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	18
Rf#-6 Rm - Main Office	2x4x 2L rec trf, F32T8 32w, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-7 Rm - M RR	1x4x 2L sm wp, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-8 Rm - M RR	1x4x 2L wm vanity, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-9 Rm - W RR	1x4x 2L sm wp, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-10 Rm - W RR	1x4x 2L wm vanity, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-11 Rm - Office #2	2x4x 2L rec trf, F32T8 32w, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-12 Rm - Ext-Bldg Mnt (walls)	CF 2L wm sqaure 12", CFP-32w, CF ballast	3	NL012/wp - New LED wall pack full, 50,000-Hr L70 rated life, 12w, built in photo cell	3
Rf#-13 Rm - Ext-Bldg Mnt (eves)	CF 2L rec square, CFP-26w, CF ballast	5	NL012/wp - New LED wall pack full, 50,000-Hr L70 rated life, 12w, built in photo cell	5
Rf#-14 Rm - Ext-Bldg Mnt (walls)	MH 1L wm barn light, MV 175w, HID ballast	1	NL040/brn - New LED area "barn light", 50,000-Hr L70 rated life, 40w, twist lock photo cell	1
Rf#-15 Rm - Ext-Blg Mnt (walls) Pic N. Table	CF 1L wm vandal, CFP-32w, CF ballast	1	NL012/wp - New LED wall pack full, 50,000-Hr L70 rated life, 12w, built in photo cell	1
Rf#-16 Rm - Ext-Pole Mnt (parking)	HPS 1L flood, tenon, MH 400w, HID ballast	8	NL110/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 110w, onboard dimming OCC sensor oemb	8
Rf#-17 Rm - Ext-Pole Mnt (horseshoes)	MH 1L flood, tenon, HPS 400w, HID ballast	1	NL110/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 110w, onboard dimming OCC sensor oemb	1
	Qty for Community Center :	**95**		**95**

W* = wall switch sensor; C* = ceiling sensor; E* = existing sensor

Corp Yard Storage -

PRE-RETROFIT			POST RETROFIT	
Location	Existing Fixture Description	Qty	Retrofit Code Description (Sensor in RED)	Qty

Building/Area: Main Building

1st Floor

Location	Existing Fixture Description	Qty	Retrofit Code Description (Sensor in RED)	Qty
Rf#-1 Rm - Main Entry lobby	2x4x 4L rec trf, F40T12 34w, magnetic ballast	3	RLT844b - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, (1) new electronic ballast/ driver	3
Rf#-2 Rm - office	2x4x 4L rec trf, F40T12 34w, magnetic ballast	4	RLT844b - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, (1) new electronic ballast/ driver	4
Rf#-3 Rm - W RR	Inc. 2L sm dome, Inc. 60w A19, n/a	1	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	1
Rf#-4 Rm - Closet	Inc. 2L sm dome, Inc. 60w A19, n/a	1	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	1
Rf#-5 Rm - Street Super Office	2x4x 4L rec trf, F40T12 34w, magnetic ballast	5	RLT844b - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, (1) new electronic ballast/ driver	5
Rf#-6 Rm - Empty office to right	2x4x 4L rec trf, F40T12 34w, magnetic ballast	4	RLT844b - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, (1) new electronic ballast/ driver	4
Rf#-7 Rm - hallway	1x4x 1L sm strip, F40T12 34w, magnetic ballast	1	RLT841b - (1) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, (1) new electronic ballast/ driver	1
Rf#-8 Rm - break room	2x4x 4L sm box, F40T12 34w, magnetic ballast	6	RLT844b - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, (1) new electronic ballast/ driver	6
Rf#-9 Rm - locker room	2x4x 4L sm box, F40T12 34w, magnetic ballast	3	RLT844b - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, (1) new electronic ballast/ driver	3
Rf#-10 Rm - old RR/storage	2x2x 2L sm box, FB40T12 34w, magnetic ballast	3	RLT822u - (2) 2' LED "U" T8 lamp 17w, 50,000-Hr L70 rated life, re-use existing electronic ballast	3
Rf#-11 Rm - Garage Bays	CF 1L wm vapor jar, CFS-15w, CF ballast intragal	3	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	3
Rf#-12 Rm - Garage Bays	1x8x 2L pm ind hood, F96T12 60w, magnetic ballast	1	RL044/skit - (1) 8' LED 44w linear led strip kit, 50,000-Hr L70 rated life, 120/277, 4000K	1
Rf#-13 Rm - Garage Bays	1x8x 2L sm strip, F96T12 60w, magnetic ballast	3	RL044/skit - (1) 8' LED 44w linear led strip kit, 50,000-Hr L70 rated life, 120/277, 4000K	3
Rf#-14 Rm - Garage Bays (South one)	(est) 1x8x 2L sm strip, F96T12 60w, magnetic ballast	4	RL044/skit - (1) 8' LED 44w linear led strip kit, 50,000-Hr L70 rated life, 120/277, 4000K	4
Rf#-15 Rm - Ext-Bldg Mnt (walls)	MH 1L flood, tenon, MH 400w, HID ballast	3	NL110/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 110w, onboard dimming OCC sensor oemb	3
Rf#-16 Rm - Ext-Blg Mnt (roofline)	2x2x 6L flood, slip, FP24T5 24w HO, electronic ballast ho	2	NL052/p/s - New LED area light, pole or bldg mount, 100,000-Hr L70 rated life, 52w, onboard dimming OCC sensor oemb	2
	Qty for Corp Yard Storage :	**47**		**47**

Golf Course -

PRE-RETROFIT			POST RETROFIT	
Location	**Existing Fixture Description**	**Qty**	**Retrofit Code Description (Sensor in RED)**	**Qty**
Building/Area: Main Building				
1st Floor				
Rf#-1 Rm - Various Interior	Inc. 2L sm dome, Inc. 60w A19, n/a	3	NL034/4w - New 4' wrap fixture, 100,000-Hr L70 rated life, 34w	3
Rf#-2 Rm - Various Interior	Inc. 1L rec square, Inc. 60w A19, n/a	4	NL017/sq - New LED surface mnt sq, 50,000-Hr L70 rated life, 17w (XT)	4
Rf#-3 Rm - Various Interior	CF 4L pm ceilng fan, CFS-15w, CF ballast intragal	3	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	3
Rf#-4 Rm - Various Interior	CF 1L pm globe, CFS-15w, CF ballast intragal	3	NL034/4w - New 4' wrap fixture, 100,000-Hr L70 rated life, 34w	3
Rf#-5 Rm - Various Interior	(est) CF 2L sm dome, CFS-15w, CF ballast intragal	5	NL034/4w - New 4' wrap fixture, 100,000-Hr L70 rated life, 34w	5
Rf#-6 Rm - Ext-BLdg Mnt (eves)	CF 1L rec sqare, CFS-15w, CF ballast intragal	3	NL017/sq - New LED surface mnt sq, 50,000-Hr L70 rated life, 17w (XT)	3
Rf#-7 Rm - Ext-BLdg Mnt (walls)	CF 1L wm jelly jar, CFS-15w, CF ballast intragal	3	NL012/wp - New LED wall pack full, 50,000-Hr L70 rated life, 12w, built in photo cell	3
Rf#-8 Rm - Ext-BLdg Mnt (walls)	CF 2L par flood, CFS-23w P38, CF ballast intragal	3	RL091/s/r30 - (1) LED 8w R30 screw in lamp, 4000K	3
	Qty for Golf Course :	**27**		**27**

Library -

PRE-RETROFIT			POST RETROFIT	
Location	Existing Fixture Description	Qty	Retrofit Code Description (Sensor in RED)	Qty
Building/Area: Main Building				
1st Floor				
Rf#-1 Rm - Entry lobby	CF 2L rec can 6", CFP-26w, CF ballast	3	RL013/ckit - (1) LED 6" rec can kit, 4000K, 8.5/13/21w, 120/277, 50,000-Hr L70 rated life	3
Rf#-2 Rm - Display case	CF 1L rec can V, CFP-32w, CF ballast	4	RL013/ckit - (1) LED 6" rec can kit, 4000K, 8.5/13/21w, 120/277, 50,000-Hr L70 rated life	4
Rf#-3 Rm - Main open area	CF 4L pm deco fixture, Biax, CF ballast	20	RL0174/bx - (4) LED BIAX PL-L lamp, direct wire, 120/277v, 17.5w, 50,000-Hr L70 rated life	20
Rf#-4 Rm - Main open area	CF 2L wm sconce, CFP-18w 2 pin, CF ballast	29	RL062/h - (2) LED 2 pin lamp, direct wire, 120/277v, 6.5w, 50,000-Hr L70 rated life	29
Rf#-5 Rm - Main open area	CF 1L rec can V, CFP-32w, CF ballast	34	RL013/ckit - (1) LED 6" rec can kit, 4000K, 8.5/13/21w, 120/277, 50,000-Hr L70 rated life	34
Rf#-6 Rm - M RR	CF 2L rec can 6", CFP-26w, CF ballast	5	RL013/ckit - (1) LED 6" rec can kit, 4000K, 8.5/13/21w, 120/277, 50,000-Hr L70 rated life	5
Rf#-7 Rm - W RR	CF 2L rec can 6", CFP-26w, CF ballast	5	RL013/ckit - (1) LED 6" rec can kit, 4000K, 8.5/13/21w, 120/277, 50,000-Hr L70 rated life	5
Rf#-8 Rm - storage	CF 2L rec can 6", CFP-26w, CF ballast	2	RL013/ckit - (1) LED 6" rec can kit, 4000K, 8.5/13/21w, 120/277, 50,000-Hr L70 rated life	2
Rf#-9 Rm - Ext-Bldg Mnt (eves)	CF 2L rec can 6", CFP-26w, CF ballast	2	RL013/ckit - (1) LED 6" rec can kit, 4000K, 8.5/13/21w, 120/277, 50,000-Hr L70 rated life	2
Rf#-10 Rm - Ext-Bdld Mnt (walkways)	MH 1L sm dome grey, MH 100w, HID ballast	12	RL0181/s - (1) LED 16.5w A21 style screw in lamp, 120/277, 50,000-Hr rated life	12
Rf#-11 Rm - Ext-Bdld Mnt (walkways)	MH 1L flood, slip, grey, MH 175w, HID ballast	16	NL026/fld - New LED flood, knuckle mount, 50,000-Hr L70 rated life, 26w	16
Rf#-12 Rm - Ext-Bdld Mnt (walkways)	MH 1L wm sonce, MH 100w, HID ballast	16	RL0181/s - (1) LED 16.5w A21 style screw in lamp, 120/277, 50,000-Hr rated life	16
Rf#-13 Rm - Ext-Grnd Mnt (walkway)	MH 1L rec well mnt fixt, MH 100w, HID ballast	3	RL0181/s - (1) LED 16.5w A21 style screw in lamp, 120/277, 50,000-Hr rated life	3
	Qty for Library :	**151**		**151**

W* = wall switch sensor, C* = ceiling occupancy sensor

Olive Bowl Park -

PRE-RETROFIT			POST RETROFIT	
Location	**Existing Fixture Description**	**Qty**	**Retrofit Code Description (Sensor in RED)**	**Qty**
Building/Area: Main Building				
1st Floor				
Rf#-2 Rm - Ext-Pole Mnt (parking)	HPS 1L cobra (utility?), HPS 70w, HID ballast	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-3 Rm - Ext-Pole Mnt (park area)	MH 1L shoe box SqP, DB, 2DH, 2SH, MH 400w, HID ballast	6	NL110/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 110w, onboard dimming OCC sensor oemb	6
	Qty for Olive Bowl Park :	**7**		**7**

W* = wall switch sensor; C* = ceiling sensor; F* = existing sensor

Police/Fire Dept -

PRE-RETROFIT			POST RETROFIT	
Location	Existing Fixture Description	Qty	Retrofit Code Description (Sensor in RED)	Qty
Building/Area: Main Building				
1st Floor				
Rf#-1 Rm - Entry Lobby	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-2 Rm - Reception Desk	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-3 Rm - Records in above	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-4 Rm - hallway	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	3	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	3
Rf#-5 Rm - W RR	LED 2L wm vanity, LED 12w A19, n/a	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-6 Rm - Watch Com. Office	1x4x 4L sm wp, F32T8 32w 850, electronic ballast	2	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-7 Rm - RR in above	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-8 Rm - Open area Squad Room	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	14	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	14
Rf#-9 Rm - Holding cell	CF 1L rec square (vandal), CFS-15w, CF ballast intragal	1	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	1
Rf#-10 Rm - Break Room in above	(est) Inc. 2L sm dome, Inc. 60w A19, n/a	1	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	1
Rf#-11 Rm - Ambulatory (enter from Squad Rm)	1x4x 4L sm wp, F32T8 32w 850, electronic ballast	2	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-12 Rm - RR in above	LED 2L wm vanity, LED 12w A19, n/a	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-13 Rm - RR in above	LED 2L sm dome, LED 12w A19, n/a	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-14 Rm - Rm w/Bed in above	1x4x 4L sm wp, F32T8 32w 850, electronic ballast	2	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-15 Rm - Drive Through garage	2x4x 6L pm high bay, F32T8 32w 850, electronic ballast HO	7	NL095/hb/s - New LED area interior high bay, 75,000-Hr L70 rated life, lens, wire guard, 95w, onboard dimming OCC sensor oemb	7
Rf#-16 Rm - Garage Shop Room	1x4x 2L pm ind hood, F32T8 32w 850, electronic ballast	10	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	10
Rf#-17 Rm - Investigation Entry Area	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-18 Rm - Storage in above	1x4x 4L sm wp, F32T8 32w 850, electronic ballast	4	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-19 Rm - Office #1 in above	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-20 Rm - Office #2 in above	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-21 Rm - Conf Room	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	3	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	3
Rf#-22 Rm - Closet in Above	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-23 Rm - RR hallway	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-24 Rm - M RR	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-25 Rm - M RR	LED 2L wm vanity, LED 12w A19, n/a	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-26 Rm - M RR	LED 2L sm dome, LED 12w A19, n/a	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-27 Rm - W RR	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-28 Rm - W RR	LED 2L wm vanity, LED 12w A19, n/a	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-29 Rm - W RR	LED 2L sm dome, LED 12w A19, n/a	1	DND - DND: (do not do, fixtures left as is)	1
Rf#-30 Rm - short hall to Ambulance Office	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4

W* = wall switch sensor, C* = ceiling sensor, E* = exterior sensor

City of Lindsay - Lighting Detail Report

(sorted by building, floor, area)

Police/Fire Dept -

PRE-RETROFIT			POST RETROFIT	
Location	**Existing Fixture Description**	**Qty**	**Retrofit Code Description (Sensor in RED)**	**Qty**
Rf#-31 Rm - Ambulance Office	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-32 Rm - Office #1 in above	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-33 Rm - Ext-Bldg Mnt (walls)	CF 1L wm vapor jar, CFS-15w, CF ballast intragal	8	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	8
Rf#-34 Rm - Ext-Bldg Mnt (walls)	MH 1L flood, yoke (wall mount), MH 400w, HID ballast	1	NL110/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 110w, onboard dimming OCC sensor oemb	1
Rf#-35 Rm - Ext-Bldg Mnt (walls)	MH 1L barn light (long arm), MH 175w, HID ballast	1	NL030/wp/fc - New LED wall pack full cut off, 50,000-Hr L70 rated life, 30w	1
Rf#-36 Rm - Ext-Bldg Mnt (walls)	Inc. 2L par flood, Inc. 75w P38, n/a	1	RL091/s/r30 - (1) LED 8w R30 screw in lamp, 4000K	1
Rf#-37 Rm - Ext-Bldg Mnt (eve)	CF 2L (was flood) motion sensor, CFS-23w P38, CF ballast intragal	2	RL091/s/r30 - (1) LED 8w R30 screw in lamp, 4000K	2
	Qty for Police/Fire Dept :	**100**		**100**

W* = wall switch sensor, C* = ceiling sensor, E* = existing sensor

City of Lindsay - Lighting Detail Report
(sorted by building, floor, area)

CLIMATEC

Pump Stations -

PRE-RETROFIT			POST RETROFIT	
Location	Existing Fixture Description	Qty	Retrofit Code Description (Sensor in RED)	Qty
Building/Area: Clean H2O Chem Bldg				
1st Floor				
Rf#-1 Rm - Main room	1x4x 2L sm strip, F32T8 32w, electronic ballast	6	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	6
Rf#-2 Rm - Ext-Bldg Mnt (walls)	MV 1L barn light, MV 250w, HID ballast	1	NL040/brn - New LED area "barn light", 50,000-Hr L70 rated life, 40w, twist lock photo cell	1
Rf#-3 Rm - Ext-Bldg Mnt (just N of bldg on	CF 1L flood, knuckle, CFP-65w, CF ballast	2	NL026/fld - New LED flood, knuckle mount, 50,000-Hr L70 rated life, 26w	2
Building/Area: Clean H2O Mcc Bldg				
1st Floor				
Rf#-8 Rm - Main Room	1x4x 2L sm wp, F32T8 32w, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-9 Rm - Ext-Bldg Mnt (walls)	CF 1L flood, knuckle, CFP-65w, CF ballast	1	NL026/fld - New LED flood, knuckle mount, 50,000-Hr L70 rated life, 26w	1
Rf#-10 Rm - Ext-Bldg Mnt (walls)	HPS 1L wm vandal, HPS 70w, HID ballast	1	NL012/wp - New LED wall pack full, 50,000-Hr L70 rated life, 12w, built in photo cell	1
Building/Area: Clean H2O office Bldg				
1st Floor				
Rf#-4 Rm - Main room	1x4x 4L sm wp, F32T8 32w, electronic ballast	1	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-5 Rm - RR	CF 2L wm vanity, CFS-15w, CF ballast intragal	1	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	1
Rf#-6 Rm - Ext-Bldg Mnt (walls)	CF 1L flood, knuckle, CFP-65w, CF ballast	1	NL026/fld - New LED flood, knuckle mount, 50,000-Hr L70 rated life, 26w	1
Building/Area: Clean H2O Pumps area				
1st Floor				
Rf#-7 Rm - Ext-Pole Mnt	HPS 1L shoe box tenon RdP, HPS 400w, HID ballast	4	NL110/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 110w, onboard dimming OCC sensor oemb	4
	Qty for Pump Stations :	**22**		**22**

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(sorted by building, floor, area)

Sweetbriar Park -

PRE-RETROFIT			POST RETROFIT	
Location	**Existing Fixture Description**	**Qty**	**Retrofit Code Description (Sensor in RED)**	**Qty**

Building/Area: Main Building

1st Floor

Rf#-1 Rm - RR Bldg B RR	(est) 1x4x 2L sm vapor tight, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-2 Rm - RR Bldg G RR	(est) 1x4x 2L sm vapor tight, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-3 Rm - Ext-Pole Mnt (walkways)	MH 1L post top acorn, MH 175w, HID ballast	6	RL027/s/gc - (1) LED 27w corn cob style screw in lamp, 120/277, 50,000-Hr rated life, 5K, medium base	6
Rf#-4 Rm - Ext-Pole Mnt (park lights)	MH 1L flood, tenon 4QH, 2SH, 3SH, MH 400w, HID ballast	24	NL110/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 110w, onboard dimming OCC sensor oemb	24
Rf#-5 Rm - Ext-Canopy Mnt	MV 1L marine vandal, MV 175w, HID ballast	44	RL0181/s - (1) LED 16.5w A21 style screw in lamp, 120/277, 50,000-Hr rated life	44
	Qty for Sweetbriar Park :	**76**		**76**

W* = wall sensor, C* = Ceiling sensor, E* = existing sensor

Wastewater-Admin Bldg -

PRE-RETROFIT			POST RETROFIT	
Location	Existing Fixture Description	Qty	Retrofit Code Description (Sensor in RED)	Qty
Building/Area: Admin Building				
1st Floor				
Rf#-1 Rm - entry lobby	2x4x 2L sm box, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-2 Rm - Lab	2x4x 2L rec trf, F32T8 32w, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-3 Rm - RR	1x4x 2L sm wp, F32T8 32w, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-4 Rm - Office	2x4x 2L rec trf, F32T8 32w, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-5 Rm - file Room	CF 1L bare bulb, CFS-15w, CF ballast intragal	2	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	2
Rf#-6 Rm - Elec MCC room	1x8x 2L sm ind hood, F96T8 59w, electronic ballast	6	RL044/skit - (1) 8' LED 44w linear led strip kit, 50,000-Hr L70 rated life, 120/277, 4000K	6
Rf#-7 Rm - storage	CF 1L bare bulb, CFS-15w, CF ballast intragal	1	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	1
Rf#-8 Rm - Ext-Bldg Mnt (back awning)	1x4x 2L sm vapor tight, F32T8 32w, electronic ballast	5	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	5
Rf#-9 Rm - Ext-Bldg Mnt (eves)	CF 1L rec square, CFS-23w, CF ballast intragal	2	RL091/s - (1) LED 8.5w A19 screw in lamp, 4000K	2
Rf#-10 Rm - Ext-Bldg Mnt (roofline)	MH 1L flood, tenon, MH 400w, HID ballast	2	NL110/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 110w, onboard dimming OCC sensor oemb	2
Rf#-11 Rm - Ext-Bldg Mnt (roofline)	MH 1L wm wall pack, MH 175w, HID ballast	2	NL030/wp/ft - New LED wall pack (FT), 50,000-Hr L70 rated life, 30w	2
Building/Area: Clarifier 1-3				
1st Floor				
Rf#-18 Rm - Ext-Pole Mnt	HPS 1L shoe box SqP DB swtch, HPS 150w, HID ballast	3	NL052/p/s - New LED area light, pole or bldg mount, 100,000-Hr L70 rated life, 52w, onboard dimming OCC sensor	3
Rf#-19 Rm - Ext-Pole Mnt	HPS 1L flood, tenon silver 1DH, HPS 400w, HID ballast	2	NL110/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 110w, onboard dimming OCC sensor oemb	2
Building/Area: Drying Beds				
1st Floor				
Rf#-17 Rm - Ext-Pole Mnt (north side)	MV 1L barn light, MV 250w, HID ballast	1	NL040/brn - New LED area "barn light", 50,000-Hr L70 rated life, 40w, twist lock photo cell	1
Building/Area: Headworks/Screen				
1st Floor				
Rf#-13 Rm - Ext-Pole Mnt	HPS 1L shoe box SqP DB swtch, HPS 150w, HID ballast	2	NL052/p/s - New LED area light, pole or bldg mount, 100,000-Hr L70 rated life, 52w, onboard dimming OCC sensor	2
Rf#-14 Rm - Ext-Pole Mnt area light	HPS 1L flood, tenon silver 1TH, HPS 400w, HID ballast	3	NL110/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 110w, onboard dimming OCC sensor oemb	3
Building/Area: Screw/Lift				
1st Floor				
Rf#-12 Rm - Ext-Pole Mnt	HPS 1L shoe box SqP DB swtch, HPS 150w, HID ballast	1	NL052/p/s - New LED area light, pole or bldg mount, 100,000-Hr L70 rated life, 52w, onboard dimming OCC sensor	1
Building/Area: Shed next to Headworks				
1st Floor				
Rf#-15 Rm - Ext-Bldg Mnt (walls)	HPS 1L wm wall pack PC, HPS 150w, HID ballast	2	NL030/wp/ft - New LED wall pack (FT), 50,000-Hr L70 rated life, 30w	2
Rf#-16 Rm - Ext-Bldg Mnt (walls)	1x4x 2L sm vapor tight, F32T8 32w, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Building/Area: Track #1				
1st Floor				
Rf#-20 Rm - Ext-Pole Mnt area light	HPS 1L shoe box SqP DB swtch, HPS 150w, HID ballast	2	NL052/p/s - New LED area light, pole or bldg mount, 100,000-Hr L70 rated life, 52w, onboard dimming OCC sensor	2
Building/Area: Track #2				
1st Floor				

W* = wall switch sensor, C* = ceiling sensor, E* = exterior sensor

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Wastewater-Admin Bldg -

PRE-RETROFIT			POST RETROFIT	
Location	**Existing Fixture Description**	**Qty**	**Retrofit Code Description (Sensor in RED)**	**Qty**
Rf#-21 Rm - Ext-Pole Mnt	MV 1L barn light, MH 175w, HID ballast	2	NL040/brn - New LED area "barn light", 50,000-Hr L70 rated life, 40w, twist lock photo cell	2
Rf#-22 Rm - Ext-Pole Mnt area light	HPS 1L flood, tenon silver 1TH, HPS 400w, HID ballast	3	NL110/p/s - New LED area light, tenon mount, 100,000-Hr L70 rated life, 110w, onboard dimming OCC sensor oemb	3
Qty for Wastewater-Admin Bldg :		**51**		**51**

Wellness Center -

PRE-RETROFIT			POST RETROFIT	
Location	Existing Fixture Description	Qty	Retrofit Code Description (Sensor in RED)	Qty
Building/Area: Main Building				
1st Floor				
Rf#-1 Rm - Entry Lobby	MH 1L pm DECO high bay, MH 175w, HID ballast	4	RL027/s/gc - (1) LED 27w corn cob style screw in lamp, 120/277, 50,000-Hr rated life, 5K, medium base	4
Rf#-2 Rm - Entry Lobby	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	8	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	8
Rf#-3 Rm - Entry Lobby	LED 2L par flood, LED 13w R30, n/a	2	DND - DND: (do not do, fixtures left as is)	2
Rf#-4 Rm - Hallway left of stairs	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-5 Rm - Office #1 end of above	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-6 Rm - Main MPR Room	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	20	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	20
Rf#-7 Rm - Main MPR Room	1x4x 2L rec trf, F32T8 32w 850, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-8 Rm - Main MPR Room	2x2x 2L rec trf, FB31T8 32w, electronic ballast	2	RLT822u - (2) 2' LED "U" T8 lamp 17w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-9 Rm - Main MPR Room	MH 1L pm DECO high bay, MH 175w, HID ballast	9	RL027/s/gc - (1) LED 27w corn cob style screw in lamp, 120/277, 50,000-Hr rated life, 5K, medium base	9
Rf#-10 Rm - Meeting Room N Side	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	14	RL023/tkit - (1) LED 23w 2x4 rec trf kit w/volumetric lens 70,000-Hr L70 rated life L-D	14
Rf#-11 Rm - Server Room Closet	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-12 Rm - Old Doctors Office Open Area	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	7	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	7
Rf#-13 Rm - Exam Rm #1	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-14 Rm - Exam Rm #2	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-15 Rm - Exam Rm #3	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-16 Rm - M RR	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	7	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	7
Rf#-17 Rm - Kitchen	1x4x 2L sm vapor tight, F32T8 32w 850, electronic ballast	7	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	7
Rf#-18 Rm - Snack Bar	1x4x 4L sm wp, F32T8 32w 850, electronic ballast	3	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	3
Rf#-19 Rm - storage by elevator	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-20 Rm - W RR Hallway	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-21 Rm - W RR	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	7	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	7
Rf#-22 Rm - Prop PT entry lobby	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	6	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	6
Rf#-23 Rm - Pro PT gym area	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	24	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	24
Rf#-24 Rm - Pro PT gym area	2x2x 2L rec trf, FB31T8 32w, electronic ballast	9	RLT822u - (2) 2' LED "U" T8 lamp 17w, 50,000-Hr L70 rated life, re-use existing electronic ballast	9
Rf#-25 Rm - Pro PT Rm #1	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	3	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	3
Rf#-26 Rm - Pro PT Rm #2	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-27 Rm - Pro PT Rm #3	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-28 Rm - Pro PT Rm #4	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	2	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	2
Rf#-29 Rm - Pool M Locker/Shower	1x4x 4L sm wp, F32T8 32w 850, electronic ballast	14	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	14
Rf#-30 Rm - Pool M Locker/Shower	LED 1L rec can, LED 11w, n/a	4	DND - DND: (do not do, fixtures left as is)	4

W* = wall switch sensor, OS* = ceiling occupancy sensor, D* = daylight sensor

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Wellness Center -

PRE-RETROFIT			POST RETROFIT	
Location	**Existing Fixture Description**	**Qty**	**Retrofit Code Description (Sensor in RED)**	**Qty**
Rf#-31 Rm - Pool W Locker/Shower	1x4x 4L sm wp, F32T8 32w 850, electronic ballast	14	RLT844 - (4) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	14
Rf#-32 Rm - Pool W Locker/Shower	LED 1L rec can, LED 11w, n/a	4	DND - DND: (do not do, fixtures left as is)	4
Rf#-48 Rm - Ext-Bldg Mnt (eves)	CF 2L rec can, CFP-26w, CF ballast	11	RL013/ckit - (1) LED 6" rec can kit, 4000K, 8.5/13/21w, 120/277, 50,000-Hr L70 rated life	11
Rf#-49 Rm - Ext-Bldg Mnt (walls)	MH 1L wm wall pack FCO, MH 175w, HID ballast	15	RL027/s/gc - (1) LED 27w corn cob style screw in lamp, 120/277, 50,000-Hr rated life, 5K, medium base	15
Rf#-50 Rm - Ext-Bldg Mnt (walls)	CF 2L wm wall pack FCO, CFP-32w, CF ballast	2	RL0132/he - (2) LED 4 pin lamp, direct wire, 120/277v, 9.5w, 50,000-Hr L70 rated life	2
Rf#-51 Rm - Ext-Bldg Mnt (eves)	Inc. 1L par flood, Inc. 75w P38, n/a	14	RL091/s/r30 - (1) LED 8w R30 screw in lamp, 4000K	14
Rf#-52 Rm - Ext-Bldg Mnt (eves)	1x4x 2L sm strip (TG, Red & ?), F32T8 32w 850, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-53 Rm - Ext-Pole Mnt (pool)	MH 1L sports flood, MH 1500w, HID ballast	8	DND - DND: (do not do, fixtures left as is)	8
Rf#-54 Rm - Ext-Pole Mnt (parking)	LED 1L Shoe box (CC), LED 80w?, n/a	26	DND - DND: (do not do, fixtures left as is)	26
Rf#-55 Rm - Ext-Bldg Mnt (skate park)	LED 1L pm high bay, LED 100w?, n/a	6	DND - DND: (do not do, fixtures left as is)	6
Rf#-56 Rm - Ext-Bldg Mnt (wall) N Side	MH 1L wm wall pack FT, MH 250w, HID ballast	1	NL030/wp/fc - New LED wall pack full cut off, 50,000-Hr L70 rated life, 30w	1
Rf#-57 Rm - Ext-Bldg Mnt (wall) N Side	MH 1L wm wall pack FT large, MH 175w, HID ballast	1	NL030/wp/fc - New LED wall pack full cut off, 50,000-Hr L70 rated life, 30w	1
Rf#-58 Rm - Ext-Bldg Mnt (walls) entry	HPS 1L wm vandal, HPS 70w, HID ballast	1	NL030/wp/fc - New LED wall pack full cut off, 50,000-Hr L70 rated life, 30w	1
Rf#-59 Rm - Ext-Bldg Mnt (walls) entry	CF 2L wm ind/dir RnD sconce, CFP-26w, CF ballast	2	RL0132/h - (2) LED 4 pin lamp, direct wire, 120/277v, 9.5w, 50,000-Hr L70 rated life	2
2nd Floor				
Rf#-33 Rm - Stairwell	CF 2L wm dome, CFP-26w, CF ballast	1	RL0131/h - (1) LED 4 pin lamp, direct wire, 120/277v, 9.5w, 50,000-Hr L70 rated life	1
Rf#-34 Rm - Gym area N Side (machines)	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	14	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	14
Rf#-35 Rm - Gym area N Side (machines)	2x2x 2L rec trf, FB31T8 32w, electronic ballast	1	RLT822u - (2) 2' LED "U" T8 lamp 17w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-36 Rm - RR hallway (up short stairs)	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-37 Rm - M RR	1x4x 2L sm vapor tight, F32T8 32w 850, electronic ballast	3	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	3
Rf#-38 Rm - M RR	CF 1L rec can V, CFP-32w, CF ballast	1	RL013/ckit - (1) LED 6" rec can kit, 4000K, 8.5/13/21w, 120/277, 50,000-Hr L70 rated life	1
Rf#-39 Rm - W RR	1x4x 2L sm vapor tight, F32T8 32w 850, electronic ballast	3	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	3
Rf#-40 Rm - W RR	CF 1L rec can V, CFP-32w, CF ballast	1	RL013/ckit - (1) LED 6" rec can kit, 4000K, 8.5/13/21w, 120/277, 50,000-Hr L70 rated life	1
Rf#-41 Rm - Meeting Room	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	7	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	7
Rf#-42 Rm - Closet in Above	1x4x 2L sm wp, F32T8 32w 850, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-43 Rm - Gym area E Side (treadmill)	MH 1L pm DECO high bay, MH 175w, HID ballast	6	RL027/s/gc - (1) LED 27w corn cob style screw in lamp, 120/277, 50,000-Hr rated life, 5K, medium base	6
Rf#-44 Rm - Ramp to north	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	1	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	1
Rf#-45 Rm - Ramp to South (elev area)	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	4	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	4
Rf#-46 Rm - Gym area to S Side (bikes)	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	24	RLT842 - (2) 4' LED T8 lamp 12w, 50,000-Hr L70 rated life, re-use existing electronic ballast	24
Rf#-47 Rm - Aeorobics	2x4x 2L rec trf, F32T8 32w 850, electronic ballast	12	RL023/tkit - (1) LED 23w 2x4 rec trf kit w/volumetric lens 70,000-Hr L70 rated life L-DS	12
	Qty for Wellness Center :	**365**		**365**

W* = wall switch sensor, C* = ceiling sensor, E* = exterior sensor

Attachment "C"

Mechanical Equipment Schedule

City of Lindsay - HVAC Replacement Inventory

Site Name	Area Served	Existing Equipment						
		Equipment	Manuf.	Model No.	Serial No.	Capacity	Unit of Measure	Year
City Hall	Counsel Chambers	Self-Contained Water-Cooled A/C	Trane	SUW-1003B	7E-15524	10	Ton	1977
City Hall	Counsel Chambers	Cooling Tower	Marley	-	4720 1477	-	-	-
City Hall	Office	Split Sys Furnace	ICP	CA5542VKD1	L9630 60065	3 1/2	Ton	1996
City Hall	Office	Split Sys Furnace	RUUD	-	-	3	Ton	1995
City Hall	Office	Split Sys Furnace	Armstrong	SCU12E36A-2	8401J11742	3	Ton	2001
City Services	Office	Packaged Gas/Elec	Lennox	GCS16R-651-125-1P	-	5	Ton	-
City Services	Office	Packaged Gas/Elec	Payne	584ANW018040ABAE	-	1 1/2	Ton	1991
Community Center	North	Packaged Gas/Elec	RUUD	-	-	3 1/2	Ton	-
Community Center	Center	Packaged Gas/Elec	RUUD	-	-	4	Ton	-
Community Center	South	Packaged Gas/Elec	RUUD	-	-	4	Ton	-
Police/Fire Dept	Office	Packaged Gas/Elec	-	-	-	7 1/2	Ton	-

Attachment "D"

Irrigation Control Schedule

City of Lindsay - Proposed Irrigation Schedule

Location	Proposed Irrigation Controls			
	Qty	Manuf.	Model No.	Replacement Notes
City Hall	1	Rain Bird	ESP-TM2	
Community Center	1	Rain Bird	ESP-TM2	
Library	1	Rain Bird	ESP-TM2	
Mason House	1	Rain Bird	ESP-TM2	
Museum	1	Rain Bird	ESP-TM2	
Wellness Center	1	Rain Bird	ESP-LXME	
Downtown Sidewalks	12	Rain Bird	ESP-TM2	
City Park & Golf Course	1	Rain Bird	ESP-LXME	Include Master Valve & Flow Sensor
Harvard Park	1	Rain Bird	ESP-LXME	Include Master Valve & Flow Sensor
Olive Bowl Park	1	Rain Bird	ESP-LXME	Include Master Valve & Flow Sensor
Sweetbriar Park	1	Rain Bird	ESP-LXME	Include Master Valve & Flow Sensor

Attachment "E"

Water Meter Schedule

City of Lindsay - Water Meter Schedule

	Water Meters and Transmitters		
Meter Size	Qty	Manuf.	Model No.
5/8"	1907	Sensus	SII
1"	175	Sensus	SII
1.5"	20	Sensus	Omni C2
2"	78	Sensus	Omni C2
3"	15	Sensus	Omni C2
4"	14	Sensus	Omni C2
6"	3	Sensus	Omni C2

Attachment "F"

Technical Appendix

Tech Spec

ESP-TM2 Fixed Station Controller

ESP-TM2 Series Controllers

Rain Bird's ESP Series of controllers has been expanded to offer a contractor grade irrigation controller for residential and light commercial applications.

The ESP-TM2 Controller is available in four models suitable for indoor or outdoor applications (4-Station, 6-Station, 8-Station and 12-Station).

Applications

The ESP-TM2 provides flexible scheduling features to accommodate a wide variety of landscape applications. Plus powerful advanced irrigation features that help to meet any type of regional watering restrictions.

Easy to Use

The ESP-TM2 Controller is designed to be an easy to use, program-based controller with the familiar ESP user interface, a large LCD screen and universal icons on both the controller overlay and the LCD.

Easy to Install

The ESP-TM2 Controller requires only two screws for easy wall mounting. For professional installation, it has a guide for ½" or ¾" conduit to run field wires into the unit. A factory installed 6' pigtail offers a plug and play solution out of the box.

Controller Hardware

- Plastic wall-mount cabinet with door
- 4, 6, 8 or 12 station models
- Mounting screws with anchor shields
- Factory installed pigtail

Controller Features

- NEW large back-lit LCD display for improved visibility in low-light and direct sunlight conditions
- Familiar, easy to navigate user interface
- Rain sensor input with bypass capability
- Master valve/pump start circuit
- Nonvolatile (100 year) storage memory
- Electronic diagnostic circuit breaker
- Remote accessory port for Rain Bird approved accessory devices

Scheduling Features

- Program based scheduling with 3 individual programs and 4 independent start times per program for 12 total start times
- Watering schedule options: Custom Days of the week, ODD or EVEN calendar days, or Cyclic (every 1 – 30 days)

Advanced Features

- Manual Watering option for all stations, a single station or an individual program
- Seasonal Adjust applied to all programs or an individual program
- Delay Watering up to 14 days (applies only to stations set to obey Rain sensor)
- Permanent Days Off (for Odd, Even or Cyclic programming)
- Sensor bypass for all programs or for individual stations
- Adjustable delay between stations
- Contractor Default™ Program Save and Restore saved program(s)
- Master Valve on/off by station
- Automatic short detect with station specific alarm messages

Operating Specifications

- Station timing: 1 minute to 6 hours
- Seasonal Adjust: 5% to 200%
- Max operating temperature: 149°F (65°C)

Electrical Specifications

- Input required: 120VAC (±10%) @ 60Hz
- Output: 1A at 24VAC
- Master Valve/Pump Start Relay
- External battery back-up not required. Nonvolatile memory permanently saves the current programming and a 10 year life lithium battery maintains the controllers time and date during power outages.

Certifications

- UL, cUL, FCC Part 15b
- IP24
- WaterSense© certified with up to 30% water savings when installed with Rain Bird LNK™ WiFi Module and WR2 Rain Sensor. Meets EPA criteria for high-performing, water-efficient products.

Dimensions

- Width: 7.92 in. (20,1 cm)
- Height: 7.86 in. (20,0 cm)
- Depth: 3.51 in. (9,0 cm)

How To Specify:

ESP-TM2 Models

- TM2-4-120V
- TM2-6-120V
- TM2-8-120V
- TM2-12-120V

Specifications

The ESP-TM2 Controller is a hybrid type combining electromechanical and micro-electronic circuitry. The controller shall be capable of fully automatic or manual operation. The controller shall be housed in a wall-mountable, weather resistant plastic cabinet with lockable door (lock not included).

The controller shall have 3 independent programs that allow 4 different start times per program. Firmware programming shall automatically stack multiple start times in sequence to prevent hydraulic overload. All programs shall run consecutively.

Watering day schedules shall be: Custom Days of the Week, Odd or Even calendar days and Cyclic (such as every 2 days, or every 3 days, etc.). When the dial is turned to the RUN DAYS position, the display shall indicate the active schedule type (Odd, Even, or Cyclic) for the selected program. Station run times shall range from 1 minute to 6 hours.

The controller shall have a 12-hour AM/PM and/or 24 hour mode clock with a midnight day change over. The controller shall have a 365-day calendar backed up against power interruptions by an internal lithium battery that shall maintain date and time for approximately 10 years.

The controller shall offer Manual Watering options including all stations, any single station or any individual program. When manual watering is triggered, the unit shall ignore the status of a rain sensor (if connected) and re-enable the sensor when manual watering is completed.

The controller shall be capable of bypassing a rain sensor (if connected) for each station independently.

The controller shall have a Seasonal Adjust feature to adjust the run time from 5% to 200% in 5% increments. Seasonal Adjust shall be capable of being applied to all programs simultaneously or to individual programs.

The controller shall have a Delay Watering feature that can override and suspend programmed watering for up to 14 days.

The controller shall have a Permanent Days Off feature that is available for Odd, Even, and Cyclic days programming. A day set to "Permanent Off" shall override the normal repeating schedule.

The controller shall be equipped with a variety of Special Features that can be accessed by turning the dial to the appropriate dial position and then pressing and holding both the left and right arrow (or back and next) keys simultaneously for 3 seconds.

Special Features shall include:

- Set Interstation Delay
- Reset to Factory Defaults
- Rain Sensor Bypass by Station
- Save/Restore Programming
- Set Master Valve By Station

The controller shall provide the ability to clear all programming and reset to factory default settings if desired.

The controller shall provide a method for the operator to save an irrigation schedule into nonvolatile memory for future recall.

The controller shall be capable of operating one 24VAC solenoid valve per station plus a separate master valve or remote pump start relay.

The controller shall operate on 120VAC (±10%) at 60Hz. If connected, a master valve or pump start shall operate on 24VAC at 60Hz.

The controller shall have an electronic diagnostic circuit breaker that can detect if a station has an electrical overload or short circuit condition. The controller shall then bypass the error detected station while continuing to operate all other stations.

The controller shall have a reset button to re-boot the factory default firmware, in case of controller interface "freezing" due to a power surge or interruption of power to the power supply.

The controller shall be upgradable to an EPA WaterSense approved smart controller without having to replace the cabinet, nor disconnect station modules.

The controller shall provide an option for the installer to run field wires through a ½" or ¾" wire conduit fitting, allowing for a clean, professional installation.

The controller shall be compatible with Rain Bird's LNK WiFi Module, allowing wireless connectivity to the controller.

The controller shall be compatible with Rain Bird's LIMR (Landscape Irrigation Maintenance Remote) and have a 5-pin accessory port to communicate with Rain Bird approved expansion accessories.

Suggested accessories for use with this controller:

- LNK WiFi Module (wireless connectivity)
- Rain Bird RSD Series Rain Sensors
- Rain Bird WR2 Wireless Rain/Freeze Sensors
- Rain Bird Landscape Irrigation & Maintenance Remote (Available in USA/Canada Only)
- All Rain Bird residential and commercial rotors, valves, nozzles, sprays and drip products

The ESP-TM2 controller shall be manufactured by Rain Bird Corporation in a NAFTA member country.

Rain Bird Corporation
6991 East Southpoint Road
Tucson, AZ 85756
Phone: (520) 741-6100
Fax: (520) 741-6522

Rain Bird Technical Services
(800) RAINBIRD (1-800-724-6247)
(U.S. and Canada)

Rain Bird Corporation
970 West Sierra Madre Ave.
Azusa, CA 91702
Phone: (626) 812-3400
Fax: (626) 812-3411

Specification Hotline
1-800-458-3005 (U.S. and Canada)

Rain Bird International, Inc.
1000 West Sierra Madre Ave.
Azusa, CA 91702
Phone: (626) 963-9311
Fax: (626) 852-7343

The Intelligent Use of Water™
www.rainbird.com

Tech Spec

LNK WiFi Module

WiFi Mobile Application

The LNK WiFi Module shall allow users to connect remotely to a Rain Bird ESP-Me or ESP-TM2 Irrigation Controller through a plug-in accessory and using an Apple iOS or Android compatible mobile device with access to the Internet.

Easy to Install Hardware

The LNK WiFi Module shall connect directly to the accessory port featured on compatible controllers.

Mobile Application

A mobile application with user interface shall install on the user's smart device and allow remote configuration of multiple Irrigation Controllers. Options for irrigation scheduling shall be provided as well as access to current weather conditions.

Supported Mobile Devices

The LNK WiFi Module Mobile Application shall be available for devices running the following operating systems:

- iOS 8.0 or later
- Android 4.4 (KitKat) or later

WiFi Networking

- The LNK WiFi Module shall provide direct wireless communication to compatible smart devices through a WiFi Access Point
- Connecting to the Rain Bird Cloud Server shall allow the server to send a daily seasonal adjustment once per day based upon the Controller's ZIP code
- Push notifications shall be available through Google Cloud Messaging or Apple Push Notification Service
- A multi-color LED light on the LNK WiFi Module shall indicate status of the Access Point and Internet connections

WiFi Connection Security

The LNK WiFi Module shall automatically detect the appropriate WiFi security mode using a user-provided network SSID and network key.

The following security modes are available:

- None
- Open
- WEP
- WPA-TKIP
- WPA-AES
- WPA2-TKIP
- WPA2-AES
- WPA2-AES-TKIP

Mobile App Features

- Controller View shall display an image of the Controller with name, station or zone list and local weather report
- Expanded View shall allow remote programming of irrigation schedules including a Manual Watering feature
- General Information View shall display the selected Controller by name, location by ZIP code and a notifications list
- Calendar View shall show a graphical representation of the selected Controller's irrigation schedule
- Remote Control View shall provide instant access to manual operation for each station or zone
- Program View shall provide access to all irrigation scheduled parameters for program based Controllers
- Add Controller View shall provide access to a setup wizard for adding one or more controllers to the mobile app home screen
- Controller Settings View shall provide configuration and editing of Controller information, network settings and notification preferences
- App Settings View shall provide access the mobile app version, help screens, enable or disable of push notifications, and access to group controllers

Operating Specifications

- Operating Temperature: 14° F (-10° C) to 149°F (65°C)
- Storage Temperature: -40°F (-40°C) to 150°F (66°C)
- Operating Humidity: 95% max @ 50°F to 120°F (10°C to 49°C) non-condensing environment

Electrical Specifications

- 24VAC(RMS) 50/60Hz; 55mA max

Certifications

- UL, cUL, CE, CSA, FCC Part 15b, WEEE, S-Mark, IP30, IFETEL

Dimensions

- Width: 1.13"
- Height: 1.83"
- Depth: 0.48"

How To Specify:
Models
LNKWIFI

Specifications

The LNK WiFi Module is designed for direct plug-in connection to the accessory port on Rain Bird ESP-Me or ESP-TM2 Irrigation Controllers.

The connector interface shall have adequate mechanical resistance to prevent accidental disconnect during normal use, while allowing easy tool-less insertion and removal by the user.

The LNK WiFi Module shall support direct WiFi communication to a mobile device through a WiFi Access Point (hotspot) broadcast by the LNK WiFi Module, or through a LAN connection broadcast by a WiFi router. At power-up, the LNK WiFi Module's internal WiFi Access Point (hotspot) shall be automatically enabled if a LAN connection is unavailable.

The LNK WiFi Module shall support network communications over a WiFi network connection.

The LNK WiFi Module shall have a user accessible push button for configuration and incorporates a dual green and red color LED for status indicators.

Momentary push button presses shall toggle the LNK WiFi Module's WiFi Access Point (hotspot) Mode functionality ON/OFF.

The LNK WiFi Module shall have a Factory Default settings reset feature that is accessed through the device push button. To execute a Factory Default, press and hold the push button on the LNK WiFi Module for 5 seconds.

The Mobile Apps weather report shall display the current day plus 4 day weather forecast for the target location. The source of weather data is as follows:

- United States: NOAA
- Canada: Environment Canada
- Europe: European Centre for Medium-Range Weather Forecasts (ECMWF)
- Japan: Japan Meteorological Agency
- All other International: METAR

The Mobile Device App shall represent Controllers through "cards" that may be organized into groups. The Mobile App Home Screen contains all Controllers. Users can create additional Controller Groups with selected Controllers. Controller cards can be deleted manually by the user.

The Mobile App Home View Controller cards shall show an image of the Controller with name, type, the number of zones supported and interface icons for Remote, Calendar, Share and Delete features.

The LNK WiFi Module shall support server communications by connecting to (polling) the server on regular intervals. The server check-in interval is interval is every 10 seconds.

The server shall allow Mobile Apps to subscribe to push notifications using Apple Push Notification Service (APNS) or Google Cloud Messaging (GCM).

The Server shall disassociate all Mobile Apps from a LNK WiFi Module that reported an access pass code change.

The LNK WiFi Module shall store a remote access pass code in nonvolatile memory and report an access pass code change to the Server. If a connection to the Server is not available at the time of the pass code change, the LNK WiFi Module shall continue to attempt to report the change until successful.

The LNK WiFi Module has no built-in surge protection and relies on the Irrigation Controller's Electrical Surge Protection features.

LED Operational States

LED	Indication
Solid red	System booting
3 green flashes at power up	Authentication with Controller confirmed
Flashing red	Not in WiFi Access Point mode and no LAN connection programmed
Alternating red/green/OFF flashing	ON and broadcasting
5 rapid green flashes, followed by regular green flashing	LNK WiFi Module successfully authenticated to WiFi router
Solid amber (orange/yellow)	Factory Default Reset successful

Rain Bird Corporation
6991 East Southpoint Road
Tucson, AZ 85756
Phone: (520) 741-6100
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www.rainbird.com

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ESP-LXME Controller

ESP-LX Series Controllers

The popular Rain Bird ESP-LX Series commercial controllers have been enhanced to provide additional features and station capacity. The ESP-LXME Enhanced Controller provides flow sensing and management with modular station capacity from 8 to 48 stations. Station modules are available in 4-, 8-, and 12-station models.

Applications

The ESP-LXME provides flexible features and modular options that make the controller ideal for a wide variety of applications including light-commercial, commercial, and industrial irrigation systems. Modular options include modular station capacity, flow sensing, metal case and pedestal, ETC Manager Smart Cartridge, and NCC Network Control Communication Cartridges. These options are field installed and can upgrade and enhance the ESP-LXME at any time in the future.

Easy to Use

The ESP-LXME Controller utilizes the Rain Bird ESP Extra-Simple Programming user interface. The dial, switches, and buttons interface which Rain Bird first introduced in the early 1990's is easy to learn and use and has become a standard controller interface for the irrigation industry. The large LCD display incorporates softkey text labels for the button functions rather than dedicated buttons.

Multiple language support allows the end-user or maintenance personnel to interface with the controller in their primary language. User selectable languages include English, Spanish, French, German, Italian, and Portuguese. Date, time, and unit formats are also user configurable.

Easy to Install

The ESP-LXME Controller has a spacious case and quick-connect terminals making installation fast and easy. Multiple size wiring knockouts are provided on the bottom and back side of the case to adapt to a wide variety of wiring applications. The door and front panel are removable so the case can be easily mounted to the wall.

Controller Hardware

- Plastic, locking, UV resistant, wall-mount case
- Optional painted steel and stainless steel cases and pedestals
- 8-, or 12-stations base unit expandable to 48 stations with 4-, 8-, & 12-Station Modules
- Flow Smart Module™ factory installed or field upgradable

Controller Features

- Large LCD display with easy to navigate softkey user interface
- Hot-swappable modules, no need to power down the controller to add/remove modules
- Dynamic station numbering eliminates station numbering gaps
- Weather Sensor input with override switch
- Master valve/pump start circuit
- 6 user-selectable languages
- Non-Volatile (100- year) program memory
- Standard 10kV surge protection
- Front panel is removable and programmable under battery power

Water Management Features

- Optional Flow Smart Module™ with Learn Flow utility and flow usage totalizer
- FloWatch™ protection for high and low flow conditions with user defined reactions
- FloManager™ manages hydraulic demand, making full use of available water to shorten total watering time
- SimulStations™ are programmable to allow up to 5 stations to operate at the same time
- Water Windows by program plus Manual MV Water Window
- Cycle+Soak™ by station
- Rain Delay
- 365-Day Calendar Day Off
- Programmable Station Delay by program
- Normally Open or Closed Master Valve programmable by station
- Weather Sensor programmable by station to prevent or pause watering
- Program Seasonal Adjust
- Global Monthly Seasonal Adjust

Diagnostic Features

- Alarm light with external case lens
- Electronic diagnostic circuit breaker
- Program summary and review
- Variable test program
- RASTER™ station wiring test

Operating Specifications

- Station timing: 0 min to 12 hrs
- Seasonal Adjust; 0% to 300% (16 hrs maximum station run time)
- 4 independent programs (ABCD)
- ABCD programs can overlap
- 8 start times per program
- Program Day Cycles include Custom days of the week, Odd, Odd31, Even, & Cyclical dates
- Manual station, program, test program

Electrical Specifications

- Input required: 120 VAC ± 10%, 60Hz (International models: 230 VAC ± 10%, 50Hz or 60Hz; Australian Models: 240 VAC ± 10%, 50Hz)
- Output: 26.5 VAC 1.9A
- Power back-up: Lithium coin-cell battery maintains time and date while nonvolatile memory maintains the programming
- Multi-valve capacity: Maximum five 24 VAC, 7VA solenoid valves simultaneous operation including the master valve, maximum two solenoid valves per station

Certifications

- UL, CUL, CE, CSA, C-Tick, FCC Part 15

Dimensions

- Width: 14.32 in. (36,4 cm)
- Height:12.69 in. (32,2 cm)
- Depth: 5.50 in. (14,0 cm)

How To Specify

ESP-LXME

Base Controller without Flow Smart Module
ESP-8LXME:
8-station base

Base Controller with Flow Smart Module
ESP-12LXMEF:
12-station base

ESPLXMSM4

Station Modules
ESPLXMSM4:
4-Station Module
ESPLXMSM8:
8-Station Module
ESPLXMSM12:
12-Station Module

FSM-LXME

Flow Smart Modules
FSM-LXME Flow Smart Module

Specifications

The ESP-LXME Controller shall be of a hybrid type that combines electro-mechanical and microelectronic circuitry capable of fully automatic or manual operation. The controller shall be housed in a wall-mountable, weather-resistant plastic cabinet with a key-locking cabinet door suitable for either indoor or outdoor installation. The controller shall have the ability to be programmed and operated in any one of six languages: English, Spanish, French, German, Italian, & Portuguese. The display shall show programming options and operating instructions in the chosen language without altering the programming or operation information.

The controller shall have a base station capacity of 8 or 12 stations as well as 3 expansion slots capable of receiving station modules of 4, 8, or 12 stations to create a controller capacity of up to 48 stations. All stations shall have the capability of independently obeying or ignoring the weather sensor as well as using or not using the master valve. Station timing shall be from 0 minutes to 12 hours. The controller shall have a Seasonal Adjustment by program which adjusts the station run time from 0 to 300% in 1% increments. The controller shall also have a Monthly Seasonal Adjustment of 0 to 300% by month. Station timing with Seasonal Adjustment shall be from 1 second to 16 hours.

The controller shall have 4 separate and independent programs which can have different start times, start day cycles, and station run times. Each program shall have up to 8 start times per day for a total of 32 possible start times per day. The 4 programs shall be allowed to overlap operation based on user defined settings which control the number of simultaneous stations per program and total for the controller. The controller shall allow up to 5 valves to operate simultaneously per program and total for the controller including the master valve/pump start circuit. The controller shall have an electronic, diagnostic circuit breaker that shall sense a station with an electrical overload or short circuit and shall bypass that station and continue to operate all other stations.

The controller shall have a 365-day calendar with Permanent Day Off feature that allows a day(s) of the week to be turned off on any user selected program day cycle. (Custom, Even, Odd, Odd31, & Cyclical). Days set to Permanent Day Off shall override the normal repeating schedule and not water on the specified day(s) of the week. The controller shall also have a Calendar Day Off feature allowing the user to select up to 5 dates up to 365-days in the future when the controller shall not start programs. The controller shall incorporate a Rain Delay feature allowing the user to set the number of days the controller should remain off before automatically returning to the auto mode.

The controller shall have Cycle+Soak water management software which is capable of operating each station for a maximum cycle time and a minimum soak time to reduce water run-off. The maximum cycle time shall not extended by Seasonal Adjustment.

The controller shall incorporate a FloManager feature providing real-time flow, power, and station management. FloManager shall manage the number of stations operating at any point in time based on water source capacity, station flow rate, number of valves per station; user-defined simultaneous stations per program and for the controller. FloManager shall incorporate the ability to provide station priorities to determine the order in which stations shall operate. The controller shall ignore the station number and instead operate the highest priority stations first and the lower priority stations last when FloManager is enabled. FloManager shall be an option that is disabled by default and the controller shall operate zones in order of station number, started with the lowest numbered zone set to irrigate and ending with the highest number zone.

The controller shall offer Water Windows for each program. This function sets the allowed start and stop time where watering is allowed. If the watering cannot be completed by the time the Water Window closes, the stations with remaining run time are paused and watering automatically resumes when the Water Window opens the next time.

The controller shall offer a Flow Smart Module option which adds flow sensing functionality. The Flow Smart Module sensor input shall accept a direct input from a flow sensor with no flow scaling device required.

Module features shall include a FloWatch Learn Flow Utility which learns the normal flow rate of each station. Each time the station runs FloWatch compares the current real-time flow rate to the learned rate and takes user defined actions if high flow, low flow, or no flow is detected. FloWatch shall automatically determine the location of the flow problem and isolate the problem by turning off the affected station or master valve. FloWatch shall be compatible with both normally closed and open master valves. A Manual Master Valve Water Windows shall be provided to coordinate day time manual watering with the flow sensing. This Water Windows shall offer programmable days of the week and manual watering additional flow rate.

The controller shall have an alarm indicator light on the front panel visible through the outer door with the door closed and locked. The alarm light shall prompt the user to select the alarm softkey to review the alarm condition(s).

The controller shall be compatible with the ETC-LX ET Manager Cartridge which upgrades the controller to a Smart controller. A weather service signal received by the cartridge shall automatically adjust the individual controller program day cycles and station run times to apply the minimum amount of water required based on the current plant water requirements.

The controller shall be compatible with the IQ™ Platform utilizing NCC Network Communication Cartridges. The NCC Cartridge shall provide communication with the IQ Central Computer and other controllers via a variety of communication options (Direct Connect Cable, Phone, GPRS/Cellular, Ethernet, WiFi, Radio, and IQNet Communication Cable). The IQ Platform shall provide remote computer control of the controller providing automatic or manual program adjustments.

The controller shall offer an optional metal cabinet and pedestal.

The controller shall be as manufactured by Rain Bird Corporation.

Rain Bird Corporation
6991 E. Southpoint Road
Tucson, AZ 85756
Phone: (520) 741-6100
Fax: (520) 741-6522

Rain Bird Technical Services
(800) RAINBIRD (1-800-724-6247)
(U.S. and Canada)

Rain Bird Corporation
970 West Sierra Madre Avenue
Azusa, CA 91702
Phone: (626) 812-3400
Fax: (626) 812-3411

Specification Hotline
800-458-3005 (U.S. and Canada)

Rain Bird International, Inc.
1000 West Sierra Madre Ave.
Azusa, CA 91702
Phone: (626) 963-9311
Fax: (626) 852-7343

The Intelligent Use of Water™
www.rainbird.com

D40030BEO

IQ™ Platform

The IQ Platform offers state-of-the-art command and control features in an easy to learn and use interface. IQ provides advanced water management features saving money and time. The IQ Platform consists of three options: IQ-Desktop v. 3.0, IQ-Cloud v. 3.0, and IQ-Enterprise v. 3.0.

Applications

All IQ versions provide remote programming, management, and monitoring of ESP-LX Series Controllers from the computer in your office. IQ is the perfect irrigation control solution for parks departments, school districts, property managers, landscape maintenance contractors, and water managers. IQ can manage small single-controller sites as well as large multi-controller sites and supports both ESP-LX Series traditionally-wired and 2-wire decoder controllers.

IQ-Desktop is installed and operated on a single desktop computer. IQ-Desktop is ideal for organizations with one administrator who can control the system from their computer in their office. The IQ-Desktop software package provides 5-satellite controller capacity. IQ software satellite controller capacity can be upgraded in 5-satellite increments with the IQ5SATSWU.

IQ-Cloud is a cloud-based service allowing users to login and control their irrigation system from any internet connected device. IQ-Cloud is ideal for organizations with multiple irrigation system administrators and/or users that require mobility. IQ-Cloud features IQ-Mobile which provides quick access to key features in an interface designed for touchscreen devices found in smartphones or tablets. Users are not restricted to an initial capacity and can add satellites at will. Internet access is required.

IQ-Enterprise enables organizations with internet access restrictions, tight security protocols, and a robust local area network to install a version of the software on their servers. Users can access all the features of the software on their approved mobile devices. The IQ-Enterprise software package provides 5-satellite controller capacity. IQ software satellite controller capacity can be upgraded in 5-satellite increments with the IQ5SATSWU.

IQ Platform Software Features

- Software 5-satellite controller capacity upgradable in 5-satellite increments (IQ-Desktop and IQ-Enterprise)
- Compatible with ESP-LXM & ESP-LXME traditionally-wired and ESP-LXD 2-wire decoder controllers
- Site, satellite, and station names
- Programming in seconds, minutes, and hours
- Daily or Monthly Seasonal Adjust % or ET station run time adjustments by site
- Dry-Run™ Graphical Program Review
- Manual Program, Test Program, Station starts
- Detailed logs and reports
- Automated or user initiated satellite Synchronize & Retrieve Logs and Weather Source Retrieve Weather Data communication
- Automated Email Alarm/Warning and Satellite Station Run Time Reports
- Satellite PIN-Code Protection (4-digit PIN-Code required to make programming changes at the satellite)
- Satellite 2-Way Programming (changes made at the satellite can be viewed and accepted in the IQ software)
- Copy/Move Satellite Utility (copy or move a satellite to another site)
- Automated MAD (Management Allowed Depletion) Irrigation Scheduling adjustments
- Software uses Irrigation Association terminology and formulas
- ET/Rainfall Weather Sources include:
  - CIMIS Internet Service (California only)
  - ETMI ET Manager Weather Reach Service (North America only)
  - Rain Bird WSPROLT Weather Station
  - Rain Bird WSPRO2 Weather Station
- IQ Global Weather Internet Service which provides local weather data including rain fall
- 4 ET Checkbooks per satellite controller
- Export to Microsoft Excel® for customized reports
- Retrieves minute-by-minute flow logs from flow sensor equipped ESP-LXMEF and ESP-LXD Satellite Controllers
- Flow Logs vs. Projected Flow Graphical Report (identifies which programs & stations where running at any point in time)
- Actual Flow Totals added to Satellite Station Run Time Report (included in Automated Email Reports)
- Context-sensitive help system. Click on the help icon available in most screens and be taken directly to the help topic feature you are using
- User selectable languages include English, Spanish, French, German, Chinese, Italian, and Portuguese

Additional 5-Satellite Capacity Upgrade

- IQ Software satellite controller capacity can be upgraded in 5-satellite increments
- Additional capacity is added through a purchased software activation keycode

Building Management Software Integration

- IQ SCADA delivers the proven water management features of IQ, combined with the SCADA user interface customers require for simple, remote daily operations
- Standard setup using OPC Unified Architecture
- The IQ SCADA upgrade is added through a purchased software activation keycode

Recommended Computer Requirements for IQ-Desktop

- Operating System: Windows® XP, 7 or 8, 32-bit or 64-bit
- Processor: Intel I5-540M or equivalent
- RAM Memory: 3 GB
- Available Hard Disk Space: 10 GB
- CD-ROM Drive: 8X speed minimum
- Display Resolution: 1024 x 768 minimum
- Network Connection (for Ethernet, WiFi, GPRS communication)
- Serial Port or USB to Serial Adapter (for Direct Connect and External Modem communication)

Recommended Server Requirements for IQ-Enterprise

- Intel I5-540M processor
- 3GB RAM
- 10 GB free disk space
- Windows Server 2008

IQ-Mobile (Available with IQ-Cloud and IQ-Enterprise

- Use smartphones and tablets as a remote
- Start stations, start programs, start test programs
- Set Rain delays and turn controllers off/auto
- View current satellite controller status
- View logs
- Accessible from all smartphone and tablet internet browsers: www.rainbird.com/iqmobile

How to specify

IQ Platform

IQ-Desktop (IQ2006):	Desktop Software Package, 5-Satellite Capacity
IQ-Enterprise (IQ2008):	Enterprise Software 5-Satellite Capacity
IQ5SATSWU:	5-Satellite Capacity for Enterprise & Desktop Versions
IQ-SCADA (IQ2008S):	Enterprise Software, 5-Satellite Capacity, SCADA/BMS Software
IQSCADABMS:	Software Feature Pack for IQ Enterprise

Specifications

The irrigation central control system shall be the IQ™ Platform as hereafter specified and as shown on the drawings. The system shall be fully programmable, providing the operator with absolute and full control of the entire control system. The system shall provide a degree of flexibility such that, in effect, anything that could be done at the satellite controller shall be capable of being done at the central computer.

The system shall have a Windows® graphical user interface (GUI) that allows easy programming and graphical depiction of the satellite controller programming.

The system shall be compatible with the ESP-LXME Series traditionally-wired controllers with 1 to 48 station capacity. The system shall also be compatible with ESP-LXD Series Two-wire decoder controllers with 1 to 200 station capacity. The system shall have an adjustable satellite controller capacity allowing the customer to expand the system capacity over time.

The system shall allow virtual log-on passwords to administer access privileges to multiple users of the system. The system shall support multiple languages including English, Spanish, French, German, Chinese, Italian, and Portuguese. The system shall also support user defined date/time, number, and unit formats.

The system shall allow virtual site configurations, allowing the user to group satellite controllers into a site to simplify common adjustments. The system shall incorporate a satellite controller dry-run feature that graphically depicts the program operation, showing minute-by-minute program activity, expected flow rates, and the programs/stations operating at any point in time.

The system shall incorporate program adjust values for each satellite controller program. The system shall also include a site-level daily or monthly seasonal adjust percentage that adjusts the station run times for all satellite controllers in the site. The system shall also offer site-level daily or monthly ET value adjustments as an alternative to seasonal adjustment percentage. The software shall utilize NCC Network Communication Cartridges to interface with the system controllers. The cartridges shall be available with internal 3G Cellular, Ethernet, & WiFi modems or RS-232 external modem port. The cartridges installed in the controller shall be field configurable as a Direct, Server, or Client Satellite. The Server satellite shall share its IQ central computer communication link with up to 149 Client satellites and be capable of sharing weather sensors and master valves amongst the 150 satellite controllers.

The software shall incorporate a site configuration utility that contacts the satellite controller, reports the hardware configuration and retrieves the configuration and programming data. The software shall verify the satellite hardware configuration has not changed each time it contacts the satellite controller. The controller and NCC cartridge firmware shall be upgradeable from the system central computer.

The software shall be capable of manually starting a program, test program, or station on any satellite controller. The software shall be capable of over-riding the satellite controller Auto/Off dial position and sensor Active/Bypass switch position.

Satellite controllers equipped with flow sensors shall provide a learn flow utility to measure the nominal flow rate of each station. The learn flow rate shall be compared to the actual flow sensor flow rate each time the station operates. A user defined percentage above and below the learned flow rate shall be used to determine if the flow rate is problematic. User defined reactions shall be programmable including a diagnose mode where the cause of the problem flow rate is identified and the problem station or water source is shut off. A manual MV water window shall be provided to automatically open the master valve and account for manual watering flow rates without turning off the flow sensing functions of the satellite controller. Both normally closed and open master valves shall be supported. All flow sensing features shall be programmable through the software. The system shall offer user definable station-level priorities and a program-level water window. Stations are selected to operate based on their priority with high priority stations operating first. If a program cannot complete the run time of all stations in the water window the station operation shall be paused and resumed at the start of the next water window.

The system shall provide user definable number of simultaneous station to operate per program and for the whole satellite controller. The combination of these features shall be used to automatically shorten the overall operating time of the satellite controller programs. All features listed shall be programmable through the software.

The system shall provide automatic communication and email reports.

The system shall provide satellite controller PIN-code lock-out and 2-way programming. Each satellite shall have minimum of 5 assigned PIN-codes. Lockout options shall include full or partial lockout. All PIN-codes shall be programmed through the software.

The system shall provide automatic program adjustment based management allowed depletion scheduling. ET/rain weather sources shall include CIMIS Internet, ETMI Weather Reach, and WSPROLT and WSPRO2 Weather Stations, and IQ Global Weather.

The system shall provide minute-by-minute flow logs in a graph comparing actual flow and projected flow. Actual flow totals shall be included in the automated email reports.

The IQ™ Platform shall be as manufactured by Rain Bird Corporation.

Rain Bird Corporation
6991 East Southpoint Road
Tucson, AZ 85756
Phone: (520) 741-6100
Fax: (520) 741-6522

Rain Bird Technical Services
(800) RAINBIRD (1-800-724-6247)
(U.S. and Canada)

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970 West Sierra Madre Ave.
Azusa, CA 91702
Phone: (626) 812-3400
Fax: (626) 812-3411

Specification Hotline
1-800-458-3005 (U.S. and Canada)

Rain Bird International, Inc.
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Phone: (626) 963-9311
Fax: (626) 852-7343

The Intelligent Use of Water ™
www.rainbird.com

D40031C

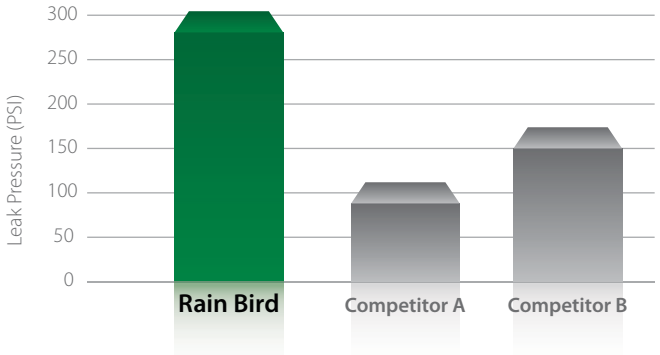
Stronger and Tougher

1.5" and 2" PE series valves

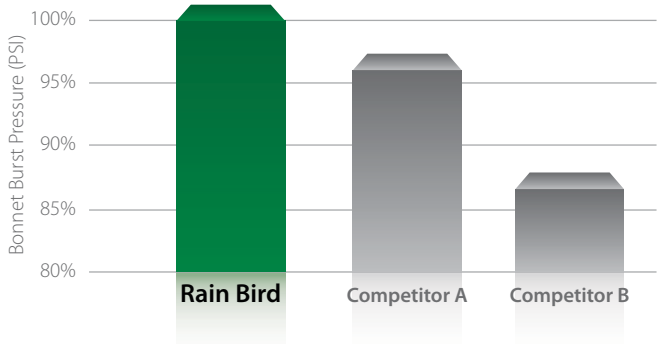
Designed for Your Most Challenging Irrigation Needs

- High pressure capable (200 psi)
- Designed to save water (dirty water/recycled water capability)
- Ability to be used with PRS-Dial for water savings up to 25%.
- Two wire/latching solenoid compatible
- Industry-leading 5 year warranty

65% Higher Leak Resistance
after extreme temperature swings



Up to 15% Stronger Bonnet



FOR MORE INFORMATION, CONTACT:

Name Here, Company

Title to go here

Other information (region covered, etc)

(xxx) xxx-xxxx

bob@companyname.com

Rain Bird® PE Series Valves

Stronger, Tougher Valve Outperforms Competition

The new look and stronger bonnet are available on the 1.5" and 2" PEB, PESB and PESB-R Series Valves.

PEB

PESB

PESB-R

NEW Spares information:

PE/PESB/PESBR	100	150	200
Diaphragm Assembly			
PEB	208143	236482	236483
PESB	20814402	23648401	23648501
PESBR	20814404S	23648402	23648502
Bonnet Assembly	20936701	Discontinued *(diaphragm assembly now comes with bonnet assembly)*	
Non-Potable Handle	231230	231232	231232
Solenoid Assembly	236239	236239	236239
Bleed Screw Assembly	204152	204152	204152
Commercial Valve Miscellaneous Parts Kit *Includes:* • Solenoid seal • Solenoid O-ring • Adaptor O-ring • Retainer white and tan • Solenoid spring • Universal filter	210464	210464	210464

www.rainbird.com
D40866 03/16

Flow Sensors – NPT

Flow Sensing for Maxicom²®, SiteControl™, IQv2.0, ESP-LXD, ESP-LXMEF

Rain Bird flow sensors send flow data to central control or stand-alone control systems for precise and accurate flow monitoring. Rain Bird flow sensors enable you to capitalize on the advantages of Flow Sensing functionality. Use Rain Bird Flow Sensors with Rain Bird Maxicom², SiteControl and IQ v2.0 central control applications or in standalone systems using Rain Bird ESP-LXD and ESP-LXMEF controllers to benefit from:

Flo-Watch™. Flo-Watch constantly monitors for low flow and excess flow conditions caused by broken lines or heads, automatically quarantines and shuts down the problem area and continues to irrigate non affected areas. Saves water, saves plant material and enables irrigation programs to continue and complete. (Note: SiteControl does not offer low flow detection.)

Learned Flow. The controller automatically learns station flow rates resulting in more accurate flow rates. The automatic collection prevents you from having to manually enter data from drawings or physically visiting each valve to collect flow data and manually entering the data into a controller. (Note: Maxicom and SiteControl do not offer Learned Flow.)

FloManager®. FloManager determines the optimal station irrigating sequence. The system runs at its fullest capacity until programs are complete. The controller automatically selects and runs multiple valves at the same time within hydraulic parameters allowing for shorter water windows. Flow rates may be manually measured and entered into the controller to utilize FloManager functionality. Using a flow sensor and learned flow capabilities can help to optimize system performance.

Customers with ESP-LXME units only need to purchase a Flow Smart Module for the ESP-LXME to capitalize on Flo-Watch, Learned Flow and FloManager. Add IQ v2.0 to remotely manage your ESP-LXD, ESP-LXMEF and ESP-LXME controllers. Centrally managing your controllers with IQ v2.0 saves labor and time by eliminating constant monitoring of the site and trips to the controllers. Retrieve alarms or receive alarms via email regarding problem areas to dispatch maintenance personnel to check and repair. (Note: In addition to IQ2, Maxicom and SiteControl can also be used to remotely monitor flow from a computer.)

Configuration

Maxicom² and SiteControl - (Hard Wire) Two-Wire Satellite Systems: The Flow Sensor is installed with a Pulse Transmitter and a Rain Bird Pulse Decoder (DECPULLR). (Note: Pulse Decoders can be hooked up directly to a two wire path.)

Maxicom² - Link Radio Satellite Systems: The Flow Sensor is installed with a Pulse Transmitter (no decoder required). (Note: Pulse Transmitter connects to the Satellite sensor input.)

SiteControl - Decoder System: Software version 2.X or lower, the flow sensor is installed with a Pulse Transmitter and a Two-Wire Decoder Sensor Decoder (SD210TURF). Software version 3.X or higher, the flow sensor is installed with a Two-Wire Decoder Sensor Decoder (pulse transmitter is optional). (Note: Sensor Decoders can be hooked up directly to a two wire path.)

ESP-LXD Decoder Two-Wire Controller: The Flow Sensor is installed with a Two-Wire Decoder Sensor Decoder (SD210TURF) connected to the two-wire path (no pulse transmitter required).

ESP-LXMEF Traditionally-Wired Controller: The flow sensor connects to the controller Flow Smart Module (no pulse transmitter, no decoder required). Maximum distance from flow sensor to controller is 2000ft.

Surge protection (FSSURGEKIT) is recommended for most systems - One at the Flow Sensor, and if more than 50' of wire run, one at the Pulse Transmitter. FSSURGEKIT is not required for Two-Wire Decoder Systems and not compatible with the ESP-LXMEF Flow Smart Module.

Features (Sensors)

- Simple six-bladed impeller design
- Designed for outdoor or underground applications
- Available in PVC, brass or stainless steel construction
- Pre-installed in tee or insert versions

Features (Transmitters)

- Reliable solid-state design
- Display or signal-alone versions
- Easy-to-program, menu-driven design
- Programmable from a laptop computer (PT322 – Maxicom and SiteControl Systems only – not required for ESP-LXMEF or ESP-LXD)
- Operates with both MAXILink™ and (hard wire) two-wire satellite systems
- Mounted in optional NEMA enclosure (PT3002 only)

How To Specify

FS - 100 - B (Flow Sensors)

FS = Flow Sensor

100 = 1" (25mm)
150 = 1½" (40mm)
200 = 2" (50mm)
300 = 3" (75mm)
400 = 4" (110mm)
350 = 3" (75mm) and higher

B = Brass
P = Plastic (PVC)
SS = Stainless Steel

PT - 322 (Pulse Transmitters)

PT = Pulse Transmitter

322 = No read out
3002 = Digital readout

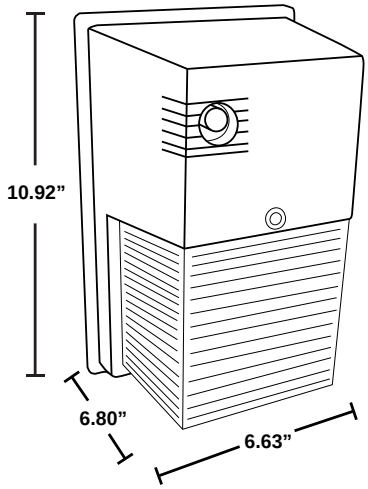
MaxLiTe
A NEW WAVE OF LIGHT

PROJECT NAME:_____ CATALOG NUMBER:_____

NOTES:_____FIXTURE SCHEDULE:_____

TRADITIONAL SECURITY LIGHT WITH PHOTOCELL

SEC SERIES



PRODUCT DESCRIPTION:

MaxLite’s 12-watt MaxLED® Security Light Fixture with dusk-to-dawn PhotoCell provides optimal illumination for outdoor commercial and industrial environments. Available in an architectural bronze finish, the fixture saves up to 81% of the energy consumed by incumbent lamps, and is backed by MaxLite’s five-year limited warranty.

FEATURES:

- Replaces up to 70-watt high-pressure sodium
- Maintenance free and constructed without any hazardous materials
- Mounts to recessed junction box or directly to a wall
- Conduit holes on back and bottom for mounting and wiring flexibility
- 5 Year limited warranty

CONTROLS:

120VAC Photocontrol: Photocontrol powers the fixture when light levels reach 20 lux or below, and turn it off at 30 lux or higher. The operating temperature of the photocontrols are -30°F - 120°F. Photocell mounted internally.

MODEL SELECTION (Full list of order codes on pg. 2) Typical order example: SEC12U50BPC12

SEC	12U	50	B	PC12
FAMILY	**NOMINAL WATTAGE, EQUIVALENCY**	**CCT**	**FINISH**	**PHOTOCONTROL**
SEC= Sercurity Light	**12U=** 12W, 70W High Pressure Sodium equivalent	**50=** 5000K	**B=** Bronze	**PC12=** 120V

SPECIFICATIONS:

		SEC12U50BPC12
ITEM	**SPECIFICATION**	**DETAILS**
GENERAL PERFORMANCE	Lumens Delivered (lm)	1,300
	Efficacy (lm/W)	107
	CCT	5000K
	Lumen Maintenance (L70, TM-21 @ 25°C)	135,000 hours
	Color Rendering Index (CRI)	> 80
ELECTRICAL	Input Voltage (V)	120V, 60Hz
	Power Factor	> 0.99
	Input Power (W)	12
PHYSICAL	Mounting	Can be mounted to recessed outlet box or directly to walls
	Operating Temperature	-30°F-115°F
	Lens	Impact- and UV-resistant polycarbonate
	Housing	Aluminum and polycarbonate
APPLICATION	Certification	Energy Star, cETLus, LM-79, LM-80, TM-21
	Environment	Outdoor wet locations
	Humidity	20% - 85% RH, non condensing
	Warranty	5 Years

ORDERING*:

ORDER CODE	MODEL	OPTIONS	VOLTAGE (V)	NOMINAL POWER (WATTS)	CCT	FINISH
76589	SEC12U50BPC12	Photocontrol	120	12	5000K	Bronze

***Please contact your MaxLite representative to order products that don't have order codes listed here.**

CONSTRUCTION:

FIXTURE: The heavy duty die-cast, powder-coat aluminum base, with a one-piece injection molded polycarbonate prismatic lens/housing masked and painted for a seamless cover. The fixture is gasketed and assembled with two screws to produce a sealed fixture that is free of water, dirt and insects.

LENS: Polycarbonate lens with UV stabilizers

LED MODULE: Aluminum components in the LED module act as a heat sink to reduce heat and ensure long life. The module uses directional settings to control the fall of light and the light levels. This fixture is an efficient replacement for metal halide and incandescent fixtures that reduces wattage and extends life.

LED DRIVER: Self contained driver meets UL 1310 UL 48 Class2

FINISH: The bronze base is powder-coat painted, and the housing is masked and painted bronze to match the base.

INSTALLATION: Can mount to recessed J-box or directly to the wall

XtraLight™
LED Lighting Solutions

PROJECT INFORMATION

Project Name	Type
Catalog #	Date

COMPACT SQUARE CANOPY LED

CSC LED

APPLICATIONS
- Walkway/Canopy
- Security Lighting
- Building Entrances

APPROVALS
- Complies with UL1598 and CSA 22.2; Suitable for damp locations.
- Select Models DLC Qualified. For a complete list of
- DLC Qulaified products visit: www.xtralight.com/dlc or www.designlights.org/qpl

PRODUCT PERFORMANCE

REPLACES	MODEL	WATTS	LUMENS	EFFICACY
100W HID	17	16.3	1895	116.3
	34	36.5	3444	94.4

FEATURES
- Energy-efficient replacement for up to 100W HID.
- High Color Rendering Index (CRI).
- Rugged construction.
- Exceptional lumen maintenance.

CONSTRUCTION
- Housing - prepainted white aluminum.
- Finish - RoHS compliant, low VOC. TGIC polyester bronze powder coat. Custom colors available upon request.
- Polycarbonate lens sealed to door frame.

ELECTRICAL
- Voltage - 120-277VAC input. Optional 480V.
- Driver - 24VDC electronic power supply, factory calibrated to LED modules.
- Wiring - Quick disconnect allows for ease of maintenance.
- Photocell option.
- Optional 10kV/10kA surge protection available.

WARRANTY
- 10-year limited warranty.

ORDER LOGIC

SAMPLE CATALOG NUMBER: CSCLED102034X5XUINXXL8XXW

CSC LED	1			X		X	UIN	X	X	L8		X	W	
	LENGTH	MODULE	MODEL	OPTICS	CCT	MOUNTING	DRIVER	CORD LENGTH	NEMA PLUG	SHIELDING	OCCUPANCY SENSOR	EMERGENCY BACKUP	COLOR	SPECIAL OPTIONS

LENGTH
1 1 Ft

MODULE
01
02

MODEL
017
034

OPTICS
X None

CCT
3 3000K
4 4000K
5 5000K

MOUNTING
X None

DRIVER
UIN Multi-Volt 120-277V

CORD LENGTH
X None

NEMA PLUG
X None

SHIELDING
L8 Lens, Polycarbonate

OCCUPANCY SENSOR
P Photocell
X None

EMERGENCY BACKUP
X None

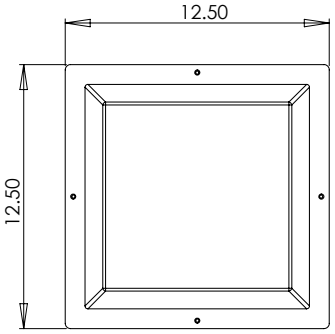
COLOR
W White

SPECIAL OPTIONS
SRG 10kV/10kA Surge Protection

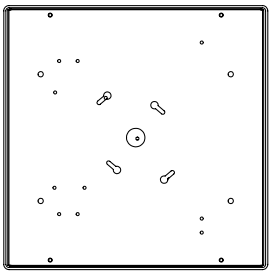
COMPACT SQUARE CANOPY LED

CSC LED

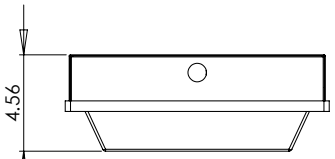
DIMENSIONAL DATA



BOTTOM VIEW



TOP VIEW



SIDE VIEW

PHOTOMETRIC DATA

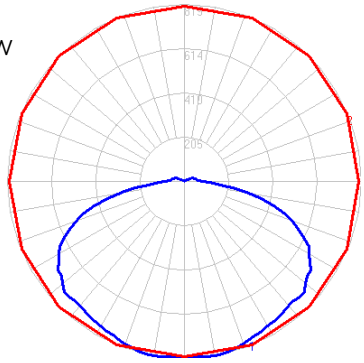
CSC LED 34

Catalog Number:
CSCLED102034X5XUINXXL8XXW

Report Number:	ATAL004723.ies
Issue Date:	05/05/14
Lamp:	2 Module
Optics/Lens	Polycarbonate
IESNA:	LM-79-08
Total Input Watts:	36.5
Efficacy (Lm/W):	94.4
Total Lumens:	3444

Prepared by: American Testing & Assessment Laboratory

NOTE: Data shown is absolute for product shown.



BUG RATING B1-U3-G1

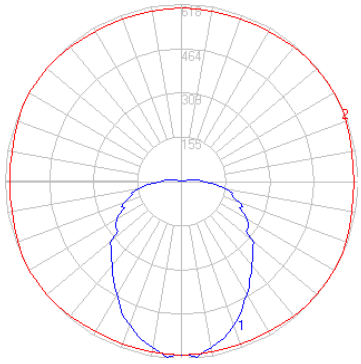
CSC LED 17

Catalog Number:
CSCLED101017X5XDIMXXL8XXW

Report Number:	ATAL016931.ies
Issue Date:	01/23/17
Lamp:	1 Module
Optics/Lens	Polycarbonate
IESNA:	LM-79-08
Total Input Watts:	16.3
Efficacy (Lm/W):	116.3
Total Lumens:	1895

Prepared by: American Testing & Assessment Laboratory

NOTE: Data shown is absolute for product shown.



BUG RATING B1-U3-G1

Project	
Notes	
Type	Date
Cat. No.	

LT-CD™ XE Series — Volumetric LED Troffer Center Diffuser

DESCRIPTION

The Aleo LT-CD™ XE Series Volumetric LED Troffer delivers industry-leading performance with deep energy savings and continuous dimming. The precision-formed diffuser produces comfortable and pleasant illumination, enhancing productive spaces in various applications.

APPLICATIONS

Provides architectural aesthetics for retail, schools, offices, healthcare, and other various commercial applications .

LT-CD Series

2x4 25W, 34W
2x2 18W, 26W
1x4 26W

Rated Life 75,000 hours
Limited Warranty 7-years
Efficacy Up to 133 LPW
Continuous Dimming

CONTINUOUS DIMMING 0-10V Continuous

Specification Features

Construction
Simple construction with minimal parts allows for easy handling and installation. Low profile design optimizes shipping, storage, and handling. Luminaire features matte white durable finish. Integral T-Bar clips built into luminaire. Diffuser requires no additional frame or fastener for easy installation.

Optical System
Reflector systems features highly reflective coating and delivers balanced, comfortable illuminance for productive spaces. Diffuser lens reduces glare and improves occupant comfort while maintaining high efficiency emission.

Certification
UL Listed. All components have UL certification. UL Class 2. Driver: SCP, OTP, OVP protection, FCC Part 15 Class B, UL8750 Class 2. DLC Premium QPL

Warranty
7-year Limited Warranty. See warranty documentation for more information.

Electrical
Luminaire utilizes high-efficacy LED packages maintained at cool temperatures for long life, high efficacy. Reliable driver features continuous dimming. Universal voltage (120-277V) for convenient installation. Comes equipped with luminaire quick-disconnect.

Installation / Mounting
Installs in most standard T-Bar ceiling grid systems. Flange kit available for hard-lid/drywall appplications. Surface-mount kit accessory available.

Controls / Dimming
Continuous dimming (0-10V) comes standard. Suitable for use with dimmers, sensors, daylight harvesting and other control strategies to achieve deeper energy-savings and code compliance.

Quick Ship

LT-CD-22LE-18/840 XE G3
LT-CD-22HE-26/840 XE G3
LT-CD-24VLE-25/840 XE G3
LT-CD-24LE-34/840 XE G3
LT-CD-14HE-26/840 XE G3

Ordering Information

Example: LT-CD-14HE-34/840 XE G3

LT-CD	24	LE	36	8	40	[Blank]	[Blank]

Series
LT-CD Volumetric LED Troffer - Center Diffuser

Form Factor
24 2'x4'
22 2'x2'
14 1'x4'

Lumen Package
VLE Very Low Wattage
LE Low Wattage
HE High Lumen

Nominal Wattage
2'x4'
25 25W
34 34W
48 46W
2'x 2'
18 18W
26 26W
1'x4'
26 26W

CRI
8 83+

Color Temp
35 3500K[1]
40 4000K
50 5000K[1]

Input Voltage
Blank 120V-277V

Dimming
Blank 0-10V Continuous Dimming

Options

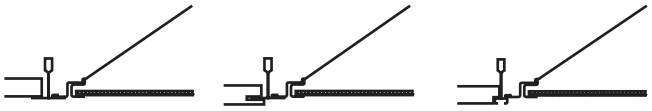
Emergency Backup
EM700 700lm
EM1400 1400lm

Specifications and Dimensions subject to change without notice.

Performance Summary

Input Voltage	120V-277V
Input Frequency	50/60 Hz
Rated Wattage	See Performance Table
Delivered Lumens	See Performance Table
Efficacy	> 124 LPW (typ.)
CRI	82+, R9 > 0
Available CCT[1]	4000K
Color Consistency[2]	5-step MacAdam Ellipse
Rated Life	75,000 hours
L70[3]	> 72,000 hours
Power Factor	> 0.9
THD	< 20%
Dimming	0-10V Continuous (10-100%)
Operating Temp.	-20°C to 50°C

Mounting Information



Lay-in (Standard) Concealed Slot Grid

* Fits 9/16, 15/16 and SS T-bar grid.
Flange kit available upon request

Performance Data

				3500K[1]		4000K		5000K[1]	
Form Factor	Catalog No.	Rated Wattage (W)	Tested Wattage (W)	Delivered Lumens (lm)	Efficacy (lm/W)	Delivered Lumens (lm)	Efficacy (lm/W)	Delivered Lumens (lm)	Efficacy (lm/W)
2' x 4'	LT-CD-24VLE-25 XE G3	25	23.7	3450	138	3500	140	3550	142
	LT-CD-24LE-34 XE G3	34	31.6	4556	134	4590	135	4624	136
	LT-CD-24HE-48 XE G3	46	TBD	TBD	TBD	TBD	TBD	TBD	TBD
2' x 2'	LT-CD-22LE-18 XE G3	18	17.8	2304	128	2340	130	2376	132
	LT-CD-22HE-26 XE G3	26	25.2	3224	124	3250	125	3276	126
1' x 4'	LT-CD-14HE-26 XE G3	26	25.2	-	-	3250	125	3276	126

NOTES:

1 Quick ship: 4000K. Other CCTs may require a lead time or be special order

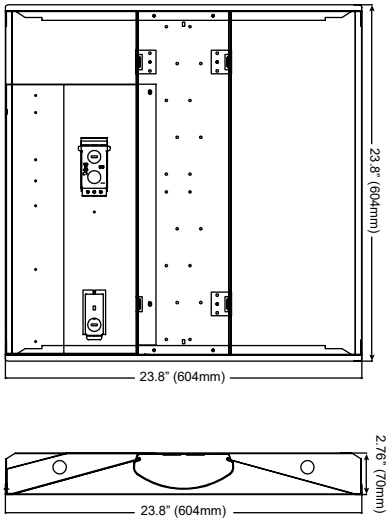
2 Typical color consistency. May vary or be changed.

3 L70 hours calculated based on LED package manufacturer LM80 report and ISTMT report of LED in luminaire. Stated values are for select catalog numbers.

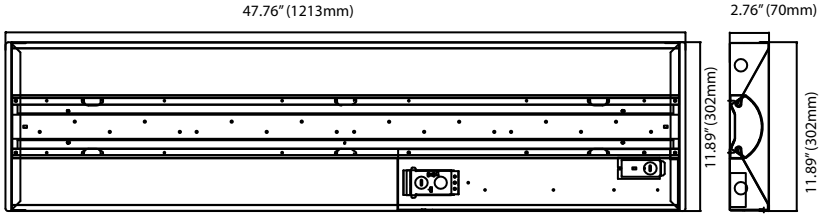
Specifications and Dimensions subject to change without notice.

Product **Dimensions**

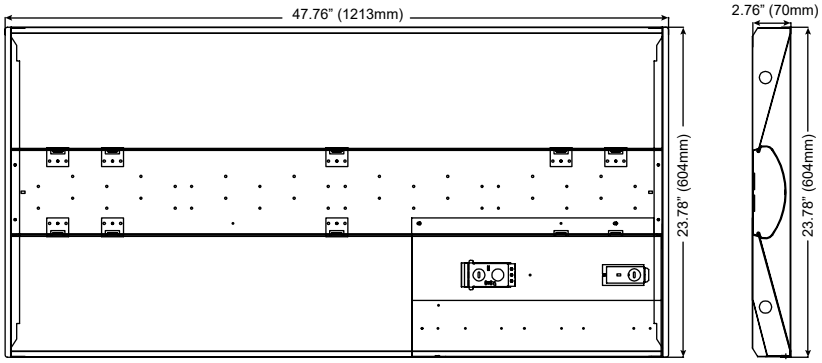
LT-CD-**22**



LT-CD-**14**



LT-CD-**24**



DLC QPL Data

QPL Model No.	Product ID	Technical Req.	Classification	Primary Use
LT-CD-24VLE-25/835 XE G3	PZZ8SQZU	4.2	Premium	2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-24VLE-25/840 XE G3	PV4WSFCY	4.2	Premium	2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-24VLE-25/850 XE G3	PKEYB3EP	4.2	Premium	2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-24LE-34/835 XE G3	P5HJTKK2	4.2	Premium	2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-24LE-34/840 XE G3	P1XYMFFD	4.2	Premium	2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-24LE-34/850 XE G3	PPAYKVG6	4.2	Premium	2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-22LE-18/835 XE G3	PDPTM6CM	4.2	Premium	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-22LE-18/840 XE G3	PJPG3DXW	4.2	Premium	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-22LE-18/850 XE G3	P21EYDDK	4.2	Premium	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-22HE-26/835 XE G3	PL4JQM6KLQJQ	4.2	Premium	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-22HE-26/840 XE G3	PL6C5WBBHYV6	4.2	Premium	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-22HE-26/850 XE G3	PL7XX6T3G2DY	4.2	Premium	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-14HE-26/840 XE G3	PL6KWK359EYA	4.2	Premium	1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
LT-CD-14HE-26/850 XE G3	PLPJDVX7YQO6	4.2	Premium	1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces

Aleo Lighting, Inc.
www.aleolighting.com
13924 Bettencourt St.
Cerritos, CA 90703
Ph: 877-358-8825

FSL LED
DECORATIVE FLOOD

Cat.#

Job

Type

HUBBELL Outdoor Lighting

Approvals

SPECIFICATIONS

Intended Use:
Ultra compact LED flood with a variety of NEMA distributions for lighting applications such as safety/security, accent, flag pole, columns, or signs

Construction:
- Corrosion resistant, rugged die-cast aluminum housing with powder coat paint finish
- High impact UV stabilized acrylic outer lens protects LEDs and allows for cleaning and debris removal
- Vented housing isolates LED module from driver, maximizing product life and performance
- Visor and vandal lens available

LED:
- 7 high powered LED's (Stock)
- 10 high powered LED's (MTO)
- Ambient operating temperature -35°C to 40°C
- Stock Versions: 4000K and 5000K CCT
- MTO Versions: 3000K CCT nominal with 80 CRI, 4000K and 5000K CCT nominal with 70 CRI

Optical/Electrical
- Variety of NEMA distributions: - N (3x3), M (4x4), RM (5x4) and W (6x6) - for wide range of lighting applications; Stock version Wide (6x6) only
- 120-277V operation, 50/60Hz
- Driver IP66 and RoHS compliant

Optical/Electrical (Cont.)
- Comes standard with 10KV surge protection device
- 0-10V dimming driver standard, continuous dimming option to have leads pulled out for easy connection

Installation:
- Traditional ½" x 14 NPS threaded adjustable knuckle mounting
- Easy maintenance access to electrical components with removal of 4 screws from back of fixture housing.

Listings:
- IP66
- Listed to UL1598 for use in wet locations
- DLC Qualified (4000K and 5000K models only); Consult DLC website for more details: http://www.designlights.org/QPL

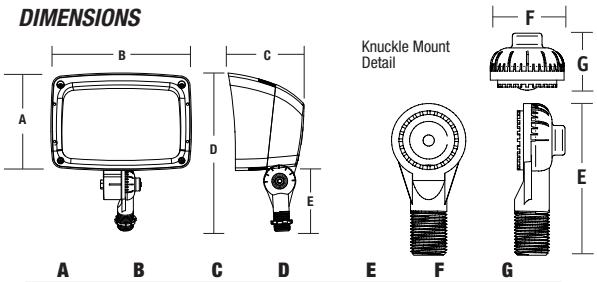
Warranty:
5 year limited warranty, for more information visit:
http://www.hubbelllighting.com/resources/warranty/

CERTIFICATIONS/LISTINGS

IP66

PRODUCT IMAGE(S)

DIMENSIONS



A	B	C	D	E	F	G
4.5"	7.49"	4.03"	8.02"	3.52"	1.71"	1.54"
114mm	190mm	102mm	203mm	89mm	43mm	29mm

SHIPPING INFORMATION

Catalog Number	G.W(kg)/CTN	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
FSL-25 (Single carton 1pc.)	2.66 lbs (1.2)	9.45" (24)	7.87" (20)	6.69" (17)
FSL-25 (Master carton 2 pcs.)	5.31 lbs (2.4)	16.54" (42)	10.04" (25.5)	7.68" (19.5)
FSL-25 (Single carton 1 pc.)	3.18 lbs (1.4)	11.81" (30)	9.45" (24)	7.48" (19)

Carton dimensions for shipping purposes only

ORDERING INFORMATION - STOCK VERSION

Catalog Number	Mount	Max Candle Power	Beam Pattern	Wattage	Drive Current	Voltage	Color Temperature	Lumens	LPW	Weight lbs. (kg)	Finish
FSL-25	1/2" thread	1814	Wide	25	700mA	120-277V	5000K	2664	106.5	6 (2.7)	Bronze
FSL-25-PCU	1/2" thread	1814	Wide	25	700mA	120-277V	5000K	2664	106.5	6 (2.7)	
FSL-25-4K	1/2" thread	1794	Wide	26	1050mA	120-277V	4000K	2406	92.5	6 (2.7)	
FSL-25-4K-PCU	1/2" thread	1668	Wide	26	700mA	120-277V	4000K	2463	98.5	6 (2.7)	

ORDERING INFORMATION - MADE TO ORDER

FSL - 10L - 25 - ____ - ____ - ____ - K - ____ - ____ - F

FAMILY	# LEDS	WATTS	CCT	DISTRIBUTION	VOLTAGE	MOUNTING	FINISH	CONTROL OPTION	OPTIONS
FSL FACTOR Flood Small	**10L** 10 LED	**25** 25W	**3K** 3000K	**N** 3x3	**U** 120V-277V	**K** Knuckle	**DB** Bronze	**PC**[1] Photocontrol (voltage specified and determined by voltage field)	**F**[1] Fusing 120 or 277V only (determined by voltage field)
			4K 4000K	**M** 4x4	**1** 120V		**BL** Black		
			5K 5000K	**RM** 5x4	**2** 208V		**WH** White	**CD** Continuous dimming	
				W 6x6	**3** 240V		**GR** Gray		
					4 277V		**PS** Platinum silver		
							CC Custom Color		

1 - PC - photocell and F - Fusing options cannot be combined, only available as separate options

ACCESSORIES/REPLACEMENT PARTS - Order Separately

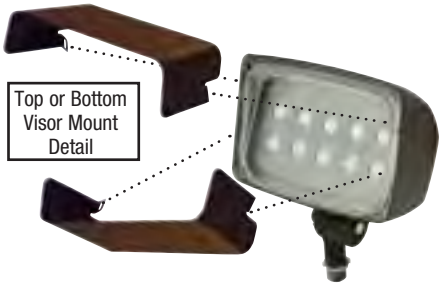
Catalog Number	Description
FSL-SPC	Vandal resistant polycarbonate lens (Replaces existing acrylic fixture lens)
FSL-VISOR-XX[1]	Top/Bottom visor (Tap holes in lens frame for field installation)
93047942AC	Acrylic lens w/ gasket
93047957	FSL7, 25w, 120-277V Dimming driver, 1050mA
93043808	FSL10, 25w, 120-277V Dimming driver, 700mA
20750110264	Knuckle mount Dark Bronze finish. Contact factory for additional finishes
S-302	Slipfits 1 1/2" or 2" pipe (1.9" OD or 2 3/8" OD) with 1/2" N.P.S.M. hub; Gray
S-302-M51	Slipfits 1 1/2" or 2" pipe (1.9" OD or 2 3/8" OD) with 1/2" N.P.S.M. hub; Bronze
S-302-M52	Slipfits 1 1/2" or 2" pipe (1.9" OD or 2 3/8" OD) with 1/2" N.P.S.M. hub; White
TRN-XX[1]	Trunnion adaptor for 1/2" threaded knuckle mount

1 Specify finish color to match fixture, e.g. DB - Bronze.

FSL-SPC


FSL-VISOR – 3/4 View


Front View




TRN-XX


S-302-XXX

PERFORMANCE DATA - MTO

# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	NEMA	FIELD ANGLE H° X V°	5K (5100K nominal, 70 CRI) LUMENS	5K LPW[1]	5K MAX BEAM CANDLEPOWER	4K (4200K nominal, 70 CRI) LUMENS	4K LPW[1]	4K MAX BEAM CANDLEPOWER	3K (3000K nominal, 80 CRI) LUMENS	3K LPW[1]	3K MAX BEAM CANDLEPOWER
7	1050mA	26W	W	6 X 6	W	-	-	-	2406	92.5	1794	-	-	-
10	700mA	25w	N	3 x 3	32 x 32	2735	110	22259	2583	108	20172	2007	84	17546
			M	4 x 4	54 x 54	2742	109	8210	2511	105	7162	2008	84	5761
			RM	5 x 4	85 x 68	2250	88	3822	2124	89	3468	1714	71	2977
			W	6 x 6	107 x 107	2664	106.5	1814	2463	98.5	1668	1984	83	1494

1 - Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

PROJECTED LUMEN MAINTENANCE - Stock

AMBIENT TEMP.	OPERATING HOURS - FSL-7 0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
40°C / 104°F	0.99	0.91	0.85	0.84	0.76	>137,000

PROJECTED LUMEN MAINTENANCE - MTO

AMBIENT TEMP.	OPERATING HOURS - FSL-10 0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°F	1.00	0.98	0.96	0.96	0.94	>696,000
40°C / 104°F	0.99	0.96	0.95	0.94	0.92	>565,000

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

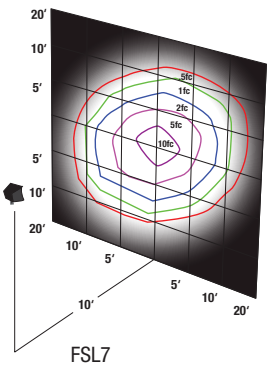
AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	77°F	1.00
30°C	86°F	1.00
40°C	104°F	0.99
50°C	122°F	0.98

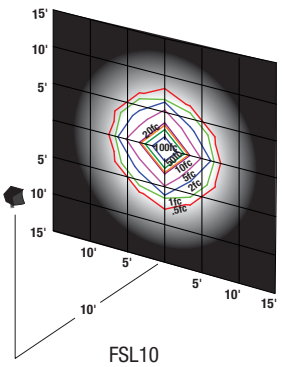
Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

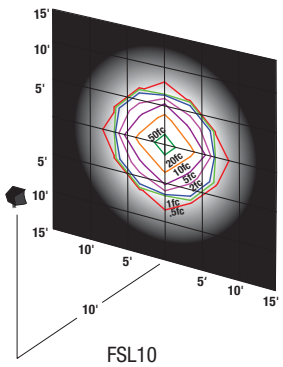
ELECTRICAL DATA

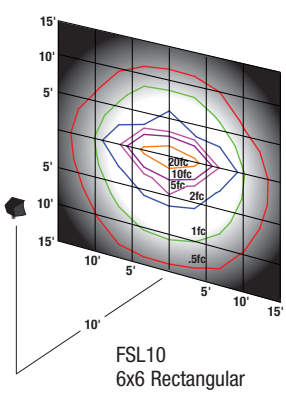
# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	CURRENT (Amps)	SYSTEM POWER (W)
7	1	1050mA	120	0.23	26
			277	0.11	26
10	1	700mA	120	0.204	25
			277	0.09	25

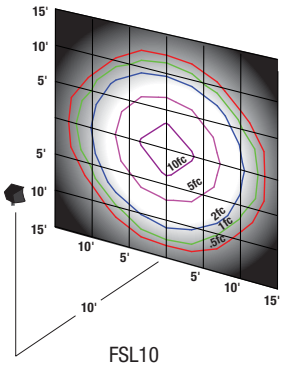
PHOTOMETRICS For additional photometric information and IES downloads, visit our web site at www.hubbelloutdoor.com


FSL7
6x6 Wide


FSL10
3x3 Narrow


FSL10
4x4 Medium


FSL10
6x6 Rectangular
Medium


FSL10
6x6 Wide

Due to our continued efforts to improve our products, product specifications are subject to change without notice.
 January 19, 2018 9:28 AM **FSLLED-SPEC**

SYLVANIA

LEDVANCE Luminaires

Wall Pack Cutoff

Catalog #	Type
Project	
Notes	
Date	
Prepared by	

Product Features

The Wall Pack luminaires are environmentally preferable LED alternatives to traditional HID luminaires, offering up to 76% in energy savings. Ideal in place of traditional luminaires, or as new installations, the Wall Pack series is offered in seven wattages/lumen packages for illuminating building exteriors, outdoor corridors, walkways, and stairwells.

The housing is a perfect fit for replacing existing traditional luminaires and minimizes light pollution through its cut-off design. The luminaires are available with optional photo control. LEDVANCE luminaires assure optimum light engine performance for extended service and rated life (≥150,000 hours L_{70}).

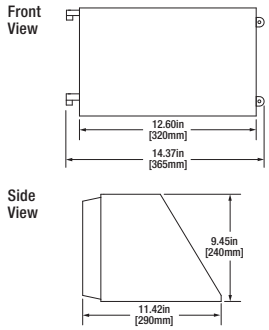
Wattage Comparison Chart

Cutoff Wall Packs (UNV/347)

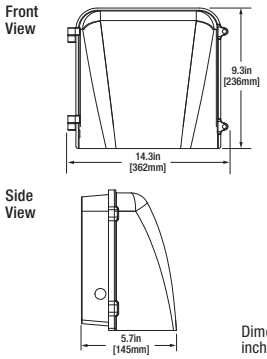
Traditional Source	Traditional System Wattage	LED System Wattage	Energy Savings
70W HPS	91	30 / 36 / 40	67% / 60% / 56%
100W HPS	120	30 / 36 / 40	75% / 70% / 67%
100W MH	130	30 / 36 / 40	77% / 72% / 69%
70W HPS	91	50 / 55	45% / 40%
100W HPS	120	50 / 55	58% / 54%
100W MH	130	50 / 55	62% / 58%
150W HPS	170	50 / 55	71% / 68%
150W MH	188	50 / 55	73% / 71%
175W MH	210	50 / 55	76% / 74%
175W MH	210	75 / 80	64% / 62%
250W MH	290	75 / 80	74% / 72%
250W HPS	295	75 / 80	75% / 73%

Dimensions

Cutoff Wall Pack Generation 1



Cutoff Wall Pack Generation 2



Dimensions in inches (mm).

Specifications

Weight: Gen. 1 – UNV: 16.2lbs (7.4kg) 347V: 17lbs (7.9kg)
Gen. 2 – UNV: 9.9lbs (4.3kg)

Construction: Two-piece cast aluminum alloy housing with powder coat paint finish and a glass lens. The standard color is bronze.

LED System: LED system with a life rating of ≥150,000 hours at L_{70} @25°C. Luminaire efficacy up to 135 LPW.

Electrical: Offered in 30, 36, 50, and 75 Watts, the luminaire is designed to operate through the 120-277 VAC universal voltage range. Offered in 40, 55, and 80 Watts, the luminaire is designed to operate at the 347VAC voltage range. The LED driver has a 4kV inherent surge suppression and is a constant current device, meeting UL1310 and UL48 Class 2 with built-in over temperature protection. The power factor is ≥90% and THD is ≤20%.

Color Characteristics: CRI>70; CCT of 4000K or 5000K.

Optics: Cutoff distribution with a flat tempered glass lens.

Installation: Luminaire mounts to exterior wall.

Operating Temperature: -40°F to +104°F (-40°C to +40°C); EM: +32°F to +104°F (0°C to +40°C).

Listings: cULus listed to UL1598 standards for wet locations.

Warranty: Standard 5-year luminaire warranty (LEDLUM001).

Note: Specifications subject to change without notice. IES files available online.

c UL us LISTED · RoHS compliant · FC · DLC LISTED · DLC PREMIUM *

*DLC Premium only applicable on 2C versions

Ordering Guide

Item Number:

WALPAK	XX	/	XXX	XXX	7	XX	/	CO	/	BZ	/	X
Product Name	Generation		Wattage (UNV)	Voltage	CRI	Color Temp (CCT)		Optics		Color/Finish		Options
WALPAK	1C		030 = 30 Watts	UNV = 120-277V	7 = >70	40 = 4000K*		CO = Cutoff Distribution		BZ = Bronze		Blank = No Option
	2C		036 = 36 Watts	347 = 347V		50 = 5000K						P = Photocontrol*
			050 = 50 Watts									E = Emergency**
			075 = 75 Watts									
			Wattage (347V)									
			040 = 40 Watts									
			055 = 55 Watts									
			080 = 80 Watts									

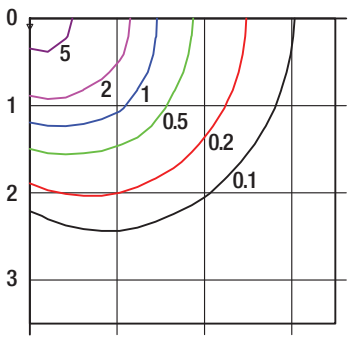
* Available in UNV only
** Made to order (MTO); Available in 50W UNV only

SYLVANIA

Photometric Data (UNV/347V)

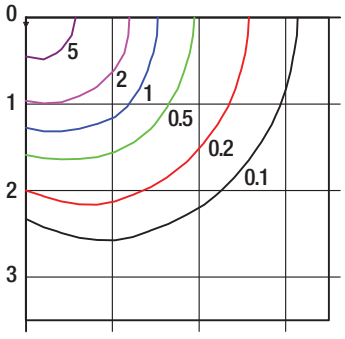
WALPAK2C/030UNV740/CO/BZ

Isofootcandle Lines at 15' Mounting Height



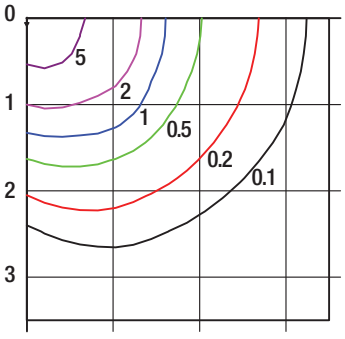
WALPAK2C/050UNV740/CO/BZ

Isofootcandle Lines at 18' Mounting Height



WALPAK2C/075UNV740/CO/BZ

Isofootcandle Lines at 20' Mounting Height



For other mounting heights apply the following multipliers:

Mounting Height	12'	15'	18'	20'	22'
Multiplier	1.56	1.00	0.69	0.56	0.46

Mounting Height	15'	18'	20'	22'	25'
Multiplier	1.44	1.00	0.81	0.67	0.52

Mounting Height	15'	18'	20'	22'	25'
Multiplier	1.78	1.23	1.00	0.83	0.64

Ordering Information

Item Number	Ordering Abbreviation	Power (W)	Input Voltage	CRI	Color Temp (CCT)	Distribution	Total Fixture Lumens	LPW*	DLC**	BUG Rating	Options
74186	WALPAK1C/036UNV740/CO/BZ	36	120-277V	>70	4000K	Cutoff	3300	92	Std	B1-U0-G1	–
74189	WALPAK1C/036UNV750/CO/BZ	36	120-277V	>70	5000K	Cutoff	2900	82	-	B1-U0-G1	–
74187	WALPAK1C/050UNV740/CO/BZ	50	120-277V	>70	4000K	Cutoff	5200	107	Std	B2-U0-G1	–
74190	WALPAK1C/050UNV750/CO/BZ	50	120-277V	>70	5000K	Cutoff	5000	102	Std	B2-U0-G1	–
74188	WALPAK1C/075UNV740/CO/BZ	75	120-277V	>70	4000K	Cutoff	6600	91	-	B2-U0-G1	–
74191	WALPAK1C/075UNV750/CO/BZ	75	120-277V	>70	5000K	Cutoff	6400	88	-	B2-U0-G1	–
74210	WALPAK1C/036UNV740/CO/BZ/P	36	120-277V	>70	4000K	Cutoff	3300	92	Std	B1-U0-G1	Photocontrol
74213	WALPAK1C/036UNV750/CO/BZ/P	36	120-277V	>70	5000K	Cutoff	2900	82	-	B1-U0-G1	Photocontrol
74211	WALPAK1C/050UNV740/CO/BZ/P	50	120-277V	>70	4000K	Cutoff	5200	107	Std	B2-U0-G1	Photocontrol
74214	WALPAK1C/050UNV750/CO/BZ/P	50	120-277V	>70	5000K	Cutoff	5000	102	Std	B2-U0-G1	Photocontrol
74212	WALPAK1C/075UNV740/CO/BZ/P	75	120-277V	>70	4000K	Cutoff	6600	91	-	B2-U0-G1	Photocontrol
74215	WALPAK1C/075UNV750/CO/BZ/P	75	120-277V	>70	5000K	Cutoff	6400	88	-	B2-U0-G1	Photocontrol
72993	WALPAK1C/040347750/CO/BZ	40	347V	>70	5000K	Cutoff	4500	107	Std	B1-U0-G1	–
72994	WALPAK1C/055347750/CO/BZ	55	347V	>70	5000K	Cutoff	5500	101	Std	B2-U0-G1	–
72995	WALPAK1C/080347750/CO/BZ	80	347V	>70	5000K	Cutoff	8900	113	Std	B2-U0-G1	–
74497	WALPAK1C/050UNV840/CO/BZ/E (MTO)	50	120-277V	>70	4000K	Cutoff	5200	107	Std	B2-U0-G1	Emergency Battery Backup
74498	WALPAK1C/050UNV850/CO/BZ/E (MTO)	50	120-277V	>70	5000K	Cutoff	5000	102	Std	B2-U0-G1	Emergency Battery Backup
74912	WALPAK2C/030UNV740/CO/BZ	30	120-277V	>70	4000K	Cutoff	3800	135	Prm	B2-U1-G1	–
74915	WALPAK2C/030UNV750/CO/BZ	30	120-277V	>70	5000K	Cutoff	3800	135	Prm	B2-U1-G1	–
74913	WALPAK2C/050UNV740/CO/BZ	50	120-277V	>70	4000K	Cutoff	6200	126	Prm	B2-U1-G2	–
74916	WALPAK2C/050UNV750/CO/BZ	50	120-277V	>70	5000K	Cutoff	6300	128	Prm	B2-U1-G2	–
74914	WALPAK2C/075UNV740/CO/BZ	75	120-277V	>70	4000K	Cutoff	9000	120	Prm	B3-U1-G2	–
74917	WALPAK2C/075UNV750/CO/BZ	75	120-277V	>70	5000K	Cutoff	9100	121	Prm	B3-U1-G2	–

*LPW per LM79 report. **Prm for DLC Premium; Std for DLC Standard
For further information and to learn more about utility rebates, contact your local SYLVANIA sales representative.

Options Information

Emergency Battery Backup:

Activates when normal power supply to fixture fails, providing a minimum of 500 lumens for at least 90 minutes.

Accessories and Replacement Parts

Item Number	Ordering Abbreviation	Item Description
74396	WALPAK1C/LENS/BZ	Replacement Lens with Frame

LEDVANCE LLC
200 Ballardvale Street
Wilmington, MA 01887 USA
Phone 1-800-LIGHTBULB (1-800-544-4828)
www.sylvania.com

/sylvania /sylvania

SYLVANIA

LEDVANCE Luminaires

Wall Pack Non-Cutoff

Catalog #	Type
Project	
Notes	
Date	
Prepared by	

Product Features

The Wall Pack luminaires are environmentally preferable LED alternatives to traditional HID luminaires, offering up to 77% in energy savings. Ideal in place of traditional luminaires, or as new installations, the Wall Pack series is offered in several wattages/lumen packages for illuminating building exteriors, outdoor corridors, walkways, and stairwells.

The housing is a perfect fit for replacing existing traditional luminaires. The luminaires are available with optional photo control. LEDVANCE luminaires assure optimum light engine performance for extended service and rated life (≥150,000 hours L_{70}).

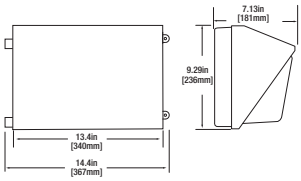
Wattage Comparison Chart

Non-Cutoff Wall Packs (UNV/347)

Traditional Source	Traditional System Wattage	LED System Wattage	Energy Savings
70W HPS	91	30 / 36 / 40	67% / 60% / 56%
100W HPS	120	30 / 36 / 40	75% / 70% / 67%
100W MH	130	30 / 36 / 40	77% / 72% / 69%
70W HPS	91	50 / 55	45% / 40%
100W HPS	120	50 / 55	58% / 54%
100W MH	130	50 / 55	62% / 58%
150W HPS	170	50 / 55	71% / 68%
150W MH	188	50 / 55	73% / 71%
175W MH	210	50 / 55	76% / 74%
175W MH	210	75 / 80	64% / 62%
250W MH	290	75 / 80	74% / 72%
250W HPS	295	75 / 80	75% / 73%
320W MH	370	105	72%
400W HPS	460	105	77%
400W MH	450	105	77%

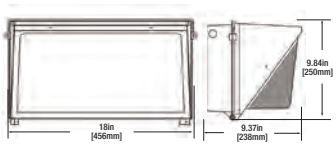
Dimensions

Front View 30W-80W



Side View

Front View 105W



Side View

Dimensions in inches (mm).

Specifications

Weight: UNV: 13.8lbs (6.3kg) 347V: 15lbs (6.8kg)
UNV (105W): 16.5lbs (6.8kg)

Construction: Two-piece cast aluminum alloy housing with powder coat paint finish and a glass lens. The standard color is bronze.

LED System: LED system with a life rating of ≥150,000 hours at L_{70} @25°C. Luminaire efficacy up to 125 LPW.

Electrical: Offered in 30, 36, 50, 75 and 105 Watts, the luminaire is designed to operate through the 120-277 VAC universal voltage range. Offered in 40, 55, and 80 Watts, the luminaire is designed to operate at the 347VAC voltage range. The LED driver has a 4kV inherent surge suppression and is a constant current device, meeting UL1310 and UL48 Class 2 with built-in over temperature protection. The power factor is ≥90% and THD is ≤20%.

Color Characteristics: CRI>70; CCT of 4000K or 5000K.

Optics: Non-cutoff distribution with a borosilicate glass lens (top visor accessory available).

Installation: Luminaire mounts to exterior wall.

Operating Temperature: -40°F to +104°F (-40°C to +40°C);
EM: +32°F to +104°F (0°C to +40°C).

Listings: cULus listed to UL1598 standards for wet locations.

Warranty: Standard 5-year luminaire warranty (LEDLUM001).

Note: Specifications subject to change without notice. IES files available online.

Ordering Guide

Item Number:

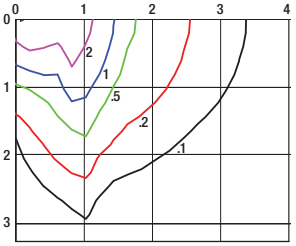
WALPAK	XX	/	XXX	XXX	7	XX	/	NC	/	BZ	/	X
Product Name	Generation		Wattage (UNV)	Voltage	7 = >70	Color Temp (CCT)		Optics		Color/Finish		Options
WALPAK	1N		030 = 30 Watts	UNV = 120-277V		40 = 4000K*		NC = Non-cutoff		BZ = Bronze		Blank = No Options
	2N		036 = 36 Watts	347 = 347V		50 = 5000K		Distribution				P = Photocontrol*
	3N		050 = 50 Watts									E = Emergency**
			075 = 75 Watts									
			105 = 105 Watts									
			Wattage (347V)									
			040 = 40 Watts									
			055 = 55 Watts									
			080 = 80 Watts									

* Available in UNV only
** Made to order (MTO); Available in 50W UNV only

Photometric Data (UNV/347V)

WALPAK2N/030UNV750/NC

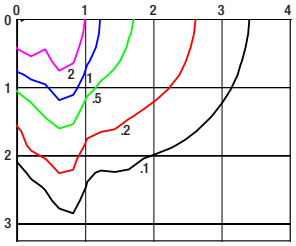
Isofootcandle Lines at
15' Mounting Height



Mounting Height	12'	15'	18'	20'	22'
Multiplier	1.56	1.00	0.69	0.56	0.46

WALPAK2N/050UNV750/NC

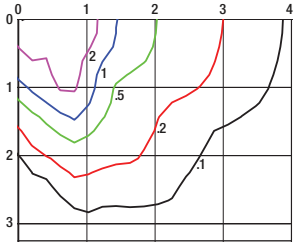
Isofootcandle Lines at
18' Mounting Height



Mounting Height	15'	18'	20'	22'	25'
Multiplier	1.44	1.00	0.81	0.67	0.52

WALPAK2N/075UNV750/NC

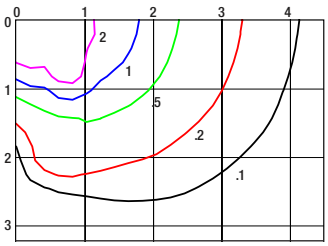
Isofootcandle Lines at
20' Mounting Height



Mounting Height	15'	18'	20'	22'	25'
Multiplier	1.78	1.23	1.00	0.83	0.64

WALPAK3N/105UNV740/NC

Isofootcandle Lines at
25' Mounting Height



Mounting Height	22'	25'	30'	32'	35'
Multiplier	1.29	1.00	0.69	0.61	0.51

For other mounting heights apply the following multipliers:

Ordering Information

Item Number	Ordering Abbreviation	Power (W)	Input Voltage	CRI	Color Temp (CCT)	Distribution	Total Fixture Lumens	LPW*	DLC**	BUG Rating	Options
74198	WALPAK1N/036UNV740/NC/BZ	36	120-277V	>70	4000K	Type IV	3500	96	–	B1-U4-G3	–
74201	WALPAK1N/036UNV750/NC/BZ	36	120-277V	>70	5000K	Type IV	3300	95	–	B1-U3-G3	–
74202	WALPAK1N/050UNV750/NC/BZ	50	120-277V	>70	5000K	Type IV	5300	108	–	B1-U4-G3	–
74200	WALPAK1N/075UNV740/NC/BZ	75	120-277V	>70	4000K	Type IV	8600	115	–	B1-U5-G5	–
74203	WALPAK1N/075UNV750/NC/BZ	75	120-277V	>70	5000K	Type IV	8600	115	–	B1-U5-G5	–
74216	WALPAK1N/036UNV740/NC/BZ/P	36	120-277V	>70	4000K	Type IV	3500	96	–	B1-U4-G3	Photocontrol
74219	WALPAK1N/036UNV750/NC/BZ/P	36	120-277V	>70	5000K	Type IV	3300	95	–	B1-U3-G3	Photocontrol
74217	WALPAK1N/050UNV740/NC/BZ/P	50	120-277V	>70	4000K	Type IV	5000	104	–	B1-U4-G3	Photocontrol
74220	WALPAK1N/050UNV750/NC/BZ/P	50	120-277V	>70	5000K	Type IV	5300	108	–	B1-U4-G3	Photocontrol
74218	WALPAK1N/075UNV740/NC/BZ/P	75	120-277V	>70	4000K	Type IV	8600	115	–	B1-U5-G5	Photocontrol
74221	WALPAK1N/075UNV750/NC/BZ/P	75	120-277V	>70	5000K	Type IV	8600	115	–	B1-U5-G5	Photocontrol
72996	WALPAK1N/040347750/NC/BZ	40	347V	>70	5000K	Type IV	4300	102	–	B1-U4-G3	–
72997	WALPAK1N/055347750/NC/BZ	55	347V	>70	5000K	Type IV	6300	108	–	B1-U4-G3	–
72998	WALPAK1N/080347750/NC/BZ	80	347V	>70	5000K	Type IV	9400	120	Std	B1-U5-G5	–
74499	WALPAK1N/050UNV840/NC/BZ/E (MTO)	50	120-277V	>70	4000K	Type IV	5000	104	–	B1-U4-G3	Emergency Battery Backup
74500	WALPAK1N/050UNV850/NC/BZ/E (MTO)	50	120-277V	>70	5000K	Type IV	5300	108	–	B1-U4-G3	Emergency Battery Backup
74386	WALPAK2N/030UNV740/NC/BZ	30	120-277V	>70	4000K	Type IV	3400	122	Prm	B1-U4-G3	–
74482	WALPAK2N/030UNV750/NC/BZ	30	120-277V	>70	5000K	Type IV	3500	125	Prm	B1-U3-G3	–
74485	WALPAK2N/050UNV740/NC/BZ	50	120-277V	>70	4000K	Type IV	5500	113	Std	B1-U4-G3	–
74486	WALPAK2N/050UNV750/NC/BZ	50	120-277V	>70	5000K	Type IV	5600	116	Std	B1-U4-G3	–
74489	WALPAK2N/075UNV740/NC/BZ	75	120-277V	>70	4000K	Type IV	8900	118	Std	B1-U5-G5	–
74490	WALPAK2N/075UNV750/NC/BZ	75	120-277V	>70	5000K	Type IV	9200	121	Std	B1-U5-G5	–
74387	WALPAK2N/030UNV740/NC/BZ/P	30	120-277V	>70	4000K	Type IV	3400	122	Prm	B1-U4-G3	Photocontrol
74483	WALPAK2N/030UNV750/NC/BZ/P	30	120-277V	>70	5000K	Type IV	3500	125	Prm	B1-U3-G3	Photocontrol
74487	WALPAK2N/050UNV740/NC/BZ/P	50	120-277V	>70	4000K	Type IV	5500	113	Std	B1-U4-G3	Photocontrol
74488	WALPAK2N/050UNV750/NC/BZ/P	50	120-277V	>70	5000K	Type IV	5600	116	Std	B1-U4-G3	Photocontrol
74491	WALPAK2N/075UNV740/NC/BZ/P	75	120-277V	>70	4000K	Type IV	8900	118	Std	B1-U5-G5	Photocontrol
74492	WALPAK2N/075UNV750/NC/BZ/P	75	120-277V	>70	5000K	Type IV	9200	121	Std	B1-U5-G5	Photocontrol
74528	WALPAK3N/105UNV740/NC/BZ	105	120-277V	>70	4000K	Type IV	12500	119	Std	B3-U4-G4	–
74529	WALPAK3N/105UNV750/NC/BZ	105	120-277V	>70	5000K	Type IV	12400	118	Std	B2-U4-G5	–

*LPW per LM79 report.
**Prm for DLC Premium; Std for DLC Standard
For further information and to learn more about utility rebates, contact your local SYLVANIA sales representative.

Options Information

Emergency Battery Backup:

Activates when normal power supply to fixture fails, providing a minimum of 500 lumens for at least 90 minutes.

Accessories and Replacement Parts

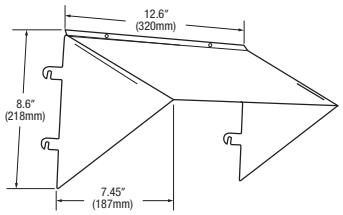
30W-80W

Item Number	Ordering Abbreviation	Item Description
74390	WALPAK1N/TOPVISOR/BZ	Top Visor, Bronze Finish
74391	WALPAK1N/WIREGUARD	Wire Guard
74397	WALPAK1N/LENS/BZ	Replacement Glass Lens with Frame
74445	WALPAK1N/PCLENS/BZ	Polycarbonate Lens with Frame

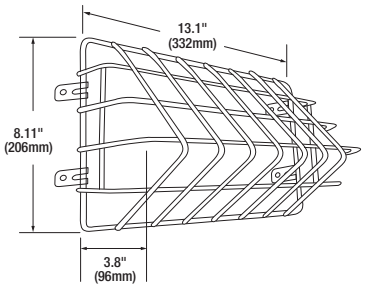
105W

Item Number	Ordering Abbreviation	Item Description
74539	WALPAK3N/TOPVISOR/BZ	Top Visor, Bronze Finish
74540	WALPAK3N/WIREGUARD	Wire Guard
74595	WALPAK3N/LENS	Replacement Glass Lens with Frame

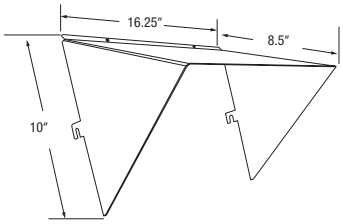
Top Visor



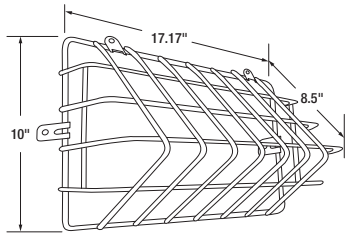
Wire Guard



Top Visor



Wire Guard



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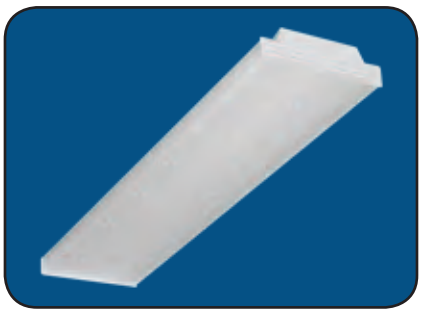
TEXAS FLUORESCENTS

209 Series

LED Shallow Economy Wraparound



FEATURES & SPECIFICATIONS

INTENDED USE A shallow economy designed wrap around high efficiency luminaire available in either two or four foot lengths. Low initial cost, maintenance free, this series also delivers excellent brightness control.

SIZE W x L x H in inches (mm)

9.375W x 48L x 3.1Dp (4ft.)

CONSTRUCTION

Completely die formed from heavy gauge cold rolled steel. Design embossed ends are locked and secures to the housing. Wireway cover snaps on or off without tools.

MOUNTING

Suitable for individual or continuous run installations. May be surface or pendant mounted.

DIFFUSERS

A crystal clear diffuser extruded from 100% virgin acrylic that will maintain its color under normal conditions, indefinitely. Linear prisms on the interior side walls direct the light ceilingwards, which can then refract back down, The bottom is composed of an evenly spaced pattern of conical prisms yeilding low brightness, glarefree diffused light. Diffuser is lift and shift for ease of relamping and cleaning and is capable of hanging down from either side of the housing.

ORDERING INFORMATION

Example: 209A24LF28W2700LDMV40K

209 2ft

STANDARD

209 | A | 24L | F28W2700L | DMV | 40K

Series
209

Lens
A Prismatic Acrylic #12 Pattern

Size
24L 24"

Wattage and Lumen
F24W2400L 24 System Watts, 2400 Delivered Lumens
F28W2700L 28 System Watts, 2700 Delivered Lumens

Driver
DMV 0-10V Dimming
* Field installed-Dimming Wire
DMVFID 0-10V Dimming
*Factory installed-Dimming Wire

Kelvin Temperature
30K 3000K
35K 3500K
40K 4000K
50K 5000K

HIGH OUTPUT

209 | A | 24L | H36W3500L | DMV | 40K

Series
209

Lens
A Prismatic Acrylic #12 Pattern

Size
24L 24"

Wattage and Lumen
H36W3500L 36 System Watts, 3500 Delivered Lumens

Driver
DMV 0-10V Dimming
* Field installed-Dimming Wire
DMVFID 0-10V Dimming
*Factory installed-Dimming Wire

Kelvin Temperature
30K 3000K
35K 3500K
40K 4000K
50K 5000K

*** Consult Factory for more options**

Intertek

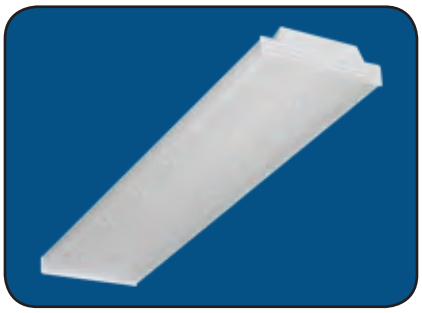
Texas Fluorescents
2055 Luna Rd. Suite 142 Carrollton, TX 75006
Phone: 972.247.8171 Fax: 972.247.0200
www.texasfluorescents.com emaiil: sales@texasfluorescents.com

Catalog Number:
Notes:

TEXAS FLUORESCENTS

209 Series

LED Shallow Economy Wraparound



Intertek

209 4ft

Example: 209A48LF32W3450LDMV40K

STANDARD

209	A	48L	F32W3450L	DMV	40K
Series	LENS	Size	Wattage and Lumen	Driver	Kelvin Temperature

Series
209

LENS
A Prismatic Acrylic #12 Pattern

Size
48L 48"

Wattage and Lumen

F32W3450L	32 System Watts, 3450 Delivered Lumens
F48W4800L	48 System Watts, 4800 Delivered Lumens
F57W5400L	57 System Watts, 5400 Delivered Lumens

Driver

DMV	0-10V Dimming *Field installed-Dimming Wire
DMVFID	0-10V Dimming *Factory installed-Dimming Wire

Kelvin Temperature

30K	3000K
35K	3500K
40K	4000K
50K	5000K

HIGH OUTPUT

209	A	48L	H72W7000L	DMV	40K
Series	LENS	Size	Wattage and Lumen	Driver	Kelvin Temperature

Series
209

LENS
A Prismatic Acrylic #12 Pattern

Size
48L 48"

Wattage and Lumen

H72W7000L	72 System Watts, 7000 Delivered Lumens

Driver

DMV	0-10V Dimming *Field installed-Dimming Wire
DMVFID	0-10V Dimming *Factory installed-Dimming Wire

Kelvin Temperature

30K	3000K
35K	3500K
40K	4000K
50K	5000K

209 8ft

STANDARD

209	A	96L	F65W7000L	DMV	40K
Series	LENS	Size	Wattage and Lumen	Driver	Kelvin Temperature

Series
209

LENS
A Prismatic Acrylic #12 Pattern

Size
96L 96"

Wattage and Lumen

F65W7000L	65 System Watts, 7000 Delivered Lumens
F97W9600L	97 System Watts, 9600 Delivered Lumens

Driver

DMV	0-10V Dimming *Field installed-Dimming Wire
DMVFID	0-10V Dimming *Factory installed-Dimming Wire

Kelvin Temperature

30K	3000K
35K	3500K
40K	4000K
50K	5000K

HIGH OUTPUT

209	A	96L	H144W14000L	DMV	40K
Series	LENS	Size	Wattage and Lumen	Driver	Kelvin Temperature

Series
209

LENS
A Prismatic Acrylic #12 Pattern

Size
96L 96"

Wattage and Lumen

H144W14000L	144 System Watts, 14000 Delivered Lumens

Driver

DMV	0-10V Dimming *Field installed-Dimming Wire
DMVFID	0-10V Dimming *Factory installed-Dimming Wire

Kelvin Temperature

30K	3000K
35K	3500K
40K	4000K
50K	5000K

*** Consult Factory for more options**

Texas Fluorescents
2055 Luna Rd. Suite 142 Carrollton, TX 75006
Phone: 972-247-9125 Fax: 972-247-0200
www.texasfluorescents.com emaiil: sales@texasfluorescents.com

Catalog Number:
Notes:

DUSK-TO-DAWN DDL

MULTIPURPOSE LED LUMINAIRE

Cat.#

Job

Type

HUBBELL® Outdoor Lighting

Approvals

SPECIFICATIONS

Intended Use:
Multi-purpose dusk-to-dawn LED lumianire provides general purpose area/security, roadway and landscape lighting. For operation in -35˚C - 40˚C ambient temperatures.

Construction:
- Rugged die-cast aluminum housing with both 2-3/8" & 1-5/8" OD mast arm mount capability as well as direct wall/ surface mounting; Textured gray powder paint provides corrosion resistance and clean finish

LED:
- 9 high power LEDs deliver 3437 lumens with symmetrical lens and 3246 with asymmetrical lens
- 5100 CCT, 67 CRI

Optical/Electrical
- Symmetric LED lens installed standard
- Field rotatable asymmetric LED lens included for pathway/ roadway applications
- 120V operation with integral surge protection, 50/60Hz
- 120V twist-lock style photocontrol included
- Refractor provides enhanced security lighting and LED brightness control
- Zero uplight design for environmentally friendly installations

Installation:
Versatile mounting options include:
- Three 1/4" slots for wall/surface
- 24" (18" projection) aluminum mast arm included
- Mast arm clamp adjusts to 2-3/8"or 1-5/8" OD arms

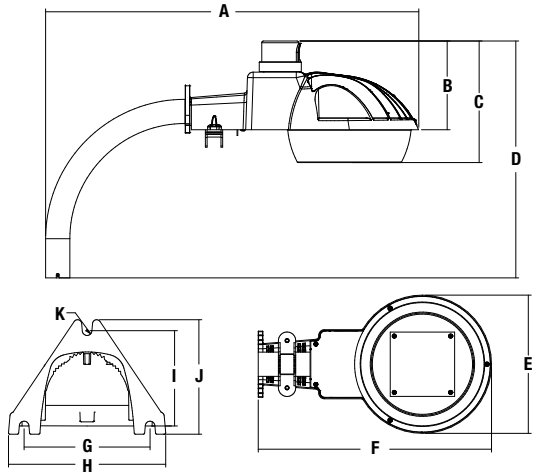
Listings:
- Meets DesignLights Consortium (DLC) qualifications
- Listed to UL1598 for use in wet locations
- Driver IP66 and RoHS compliant
- EPA = 0.5

Warranty:
For more information visit:
http://www.hubbelloutdoor.com/resources/warranty/

PRODUCT IMAGE(S)

NEW

DIMENSIONS



A	B	C	D	E	F
29.72" 754 mm	6" 152 mm	8.25" 209 mm	16.19" 411 mm	9.45" 240 mm	16" 406 mm

G	H	I	J	K
3.62" 92 mm	4.52" 115 mm	2.74" 69 mm	3.29" 84 mm	.138" 3.5 mm

CERTIFICATIONS/LISTINGS

SHIPPING INFORMATION

Catalog Number	G.W(kg)/ CTN	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
DDL-9L-1 (Single carton 1pc.)	4.57	17.83"	14.49"	7.68"
DDL-9L-1 (Master carton 2 pcs.)	10.00	18.23"	14.88"	16.34"

Carton dimensions for shipping purposes only – Pallet Quantity 40

ORDERING INFORMATION

Catalog Number	Construction	Mount	Wattage	Drive Current	Voltage	Color Temperature	Lumens	LPW	Weight lbs. (kg)
DDL-9L-1	Die-cast aluminum	Arm/Wall/Surface	40	1280mA	120V	5100K	3437	86	6.8 (3.08)

ACCESSORIES/REPLACEMENT PARTS - Order Separately

Catalog Number	Description
DDL-DRIVER-120V	Driver for DDL9L - 120V
DDL-LENS2	LED Asymmetric lens for DDL-9L
DDL-LENS5	LED Symmetric lens for DDL-9L
DDL-REFR	Refractor for DDL-9L

Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

PERFORMANCE DATA

# OF LEDS	DRIVE CURRENT (MILLIAMPS	SYSTEM WATTS	DISTRIBUTION TYPE	5K (5100K nominal, 67 CRI) LUMENS	LPW	B	U	G
9	1280mA	40W	Symmetric	3437	86	1	0	1
9	1280mA	40W	Asymmetric	3246	81	1	0	1

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment, application and inherent performance tolerances of the electrical components.

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	77°F	1.00
30°C	86°F	1.00
40°C	104°F	0.99
50°C	122°F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

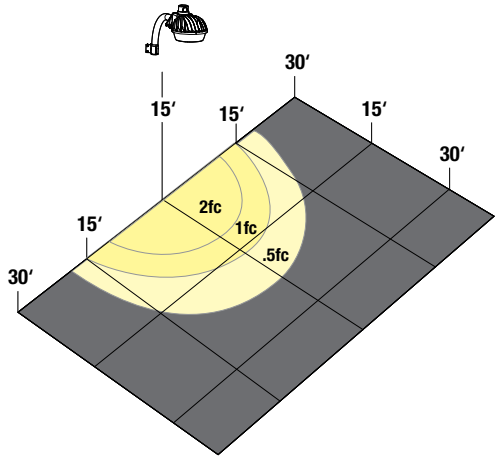
PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	OPERATING HOURS 0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
40°C / 104°F	0.99	0.94	0.91	0.89	0.84	>216,000

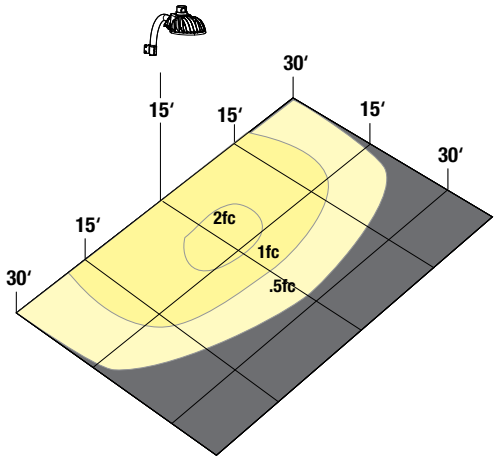
ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	CURRENT (Amps)	SYSTEM POWER (W)
9	1	STD. (1280mA)	120	0.35	40

PHOTOMETRICS For additional photometric information and IES downloads, visit our web site at www.hubbelloutdoor.com

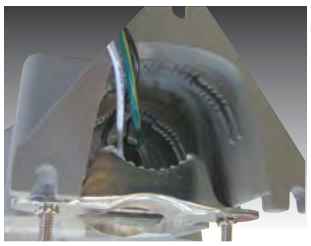


Symmetric LED lens

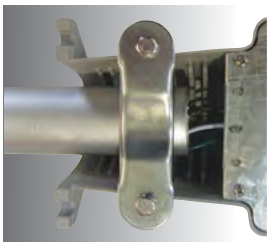


Asymmetric LED lens

MOUNTING OPTIONS

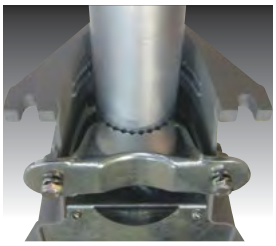


Dual rows of serrated teeth ensure positive grip on mast arm, preventing loosening due to continuous vibration

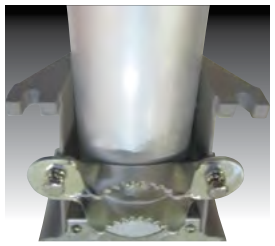


Bottom view of stainless steel mast arm clamp

Stainless steel mast arm clamp is reversible accommodating either 2-3/8" or 1-5/8" OD arms



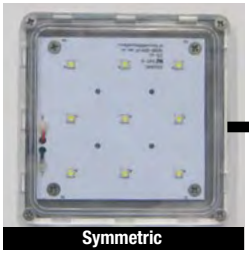
Mast arm clamp easily adjusts to 1-5/8" OD arms with two 3/8" bolts



Reversible clamp easily adjusts to 2-3/8" OD arms with two 3/8" bolts

Molded orientation marker for rotatable LED asymmetric lens, align lens with "house" icon for desired light direction

Asymmetric



Symmetric

Field rotatable/exchangeable LED lenses included

BOW SX LED

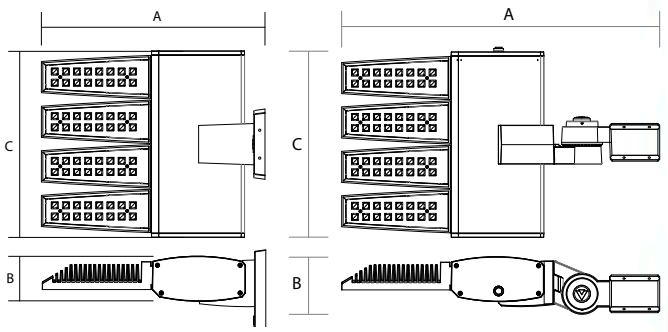
Project Name:	Catalog Number:	Type

AREA

BSX-3 Shown with Decorative Shroud

BSX-4 Wall Mount Shown

Dimensional Drawings



Fixture	A	B	C	Max. Watts	Lbs
BSX-2	20" or 28.5"	5"	8.75"	111	16
BSX-3	20" or 28.5"	5"	12.75"	166	21
BSX-4	20" or 28.5"	5"	16.75"	222	26

The new BOW SX LED Series continues the unique contemporary design inspired by the sleek styling of the BOW family. Separating the extruded aluminum driver housing and the individual die-cast aluminum linear LED engines: optimize the life of the LEDs and the Driver(s);

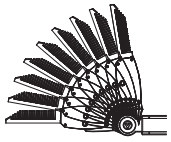
Each of the individual LED light engines come with 16 LEDs; for a max total of 64 LEDs. Nine optical distribution patterns are available.

Available in 3000, 4000 or 5000 Kelvin temperature.

A durable polyester powder coat is guaranteed for years; and is available in standard or custom colors.

The BOW SX LED series is an exceptional choice for shopping centers, schools, buildings, and general area lighting.

Model	Optics	Source	Current	Kelvin	Voltage	Mounting	Finish	Options
BSX-2	Type I **(T1)**	# Of LEDs	mA	3000K *Warm white **(3K)**	120-277 *Universal Voltage **(UNV)**	Knuckle Mount *Slips over 2 3/8" Tenon with adjustable Increments of 10˚ **(KM)**	Bronze **(BZ)**	Button Type Photocell *Specify voltage. **(PC120) (PC208) (PC240) (PC277)**
BSX-3	Type II **(T2)**	32 **(32LC)**	350 **(3)**	4000K *Neutral white **(4K)**	480 **(5)**	Bolt-On Arm 6" **(BOA6)**	Black **(BK)**	Photocell & Receptacle *Specify voltage **(PCR120) (PCR208) (PCR240) (PCR277) (PCR347) (PCR480)**
BSX-4	Type III **(T3)**	48 **(48LC)**	530 **(5)**	5000K *Cool white **(5K)**	347 **(8)**	Wall Mount **(WM)** *PCR & PER not available	Smooth Black **(SBK)**	Photo Receptacle **(PER)** *With shorting cap
	Type IV **(T4)**	64 **(64LC)**	700 **(7)**			Adjustable Wall Mount **(AWM)**	White **(WH)**	Round Pole Plate Adaptor For 4"Ø Pole **(RPP4)** For 5"Ø Pole **(RPP5)**
	Type IVA **(T4A)**		1000 **(10)**				Smooth White **(SWH)**	Motion Sensor *Works with FSP-211 **(WSC-8)** 8' Mounting Height **(WSC-20)** 9-20' Mounting Height **(WSC-40)** 21-40' Mounting Height ***For BOA Mounting Option Only** This option will require(1) FSIR 100 remote for programing
	Type V **(T5)**						Graphite **(GP)**	Pole Mounted Motion Sensor **(SBOR OEX) (SBOR ODP)** *w/ photocell
	Type V-W **(T5W)**						Grey **(GY)**	Universal Pole Mount Adaptor *Specify if pole is round or square **(UPMA)**
	Type Flood Narrow **(FN)**						Silver Metallic **(SL)**	Decorative Shroud **(DS)**
	Type Flood Medium **(FM)**						Custom Color **(CC)**	Back Side Cutoff Louver Shield **(CLS)**
								Right Side Cutoff Louver Shield **(RCLS)**
								Left Side Cutoff Louver Shield **(LCLS)**



NOTE: UNIT IS ADJUSTABLE FROM HORIZONTAL TO 90° UPWARD MAX WITH THE KNUCKLE MOUNT.

VISIONAIRE LIGHTING
Performance In A Whole New Light®

Housing

• The LED light engines are constructed of heavy-duty, die-cast aluminum, with external heat

Driver Compartment

• The separate driver housing is constructed of extruded aluminum, with vented cast aluminum end covers and stainless steel fasteners; for easy access to the LED driver(s); allowing for

weather tight operation.

Thermal Management

• The BOW SX Series provides excellent overall thermal management by maximizing the s heat sink capabilities. This enables the BOW SX Series to withstand higher ambient temperatures and drive currents without degrading LED life.

• The L70 test determines the point in an LEDs life when it reaches 70 percent of its initial output. The BOW SX Series LEDs have been determined to last a minimum of 100,000 hours in 25°C environments when driven at 350 mA.

Optical System

• The highest lumen output, LEDs are utilized in the BOW SX Series. IES distribution Types I, II, III, IV, IV-A, V, V-W, FN & FM are available. LED light engines come in multiples of 16 LEDs.

• CRI values are 70.

Quali-Guard® Finish

• ,

hardness.

Mounting

• Tenon, and allows for up to 90° degrees of vertical adjustment in 10° degree increments from horizontal, as well as full side to side adjustment with the knuckle mount.

• A round extruded 6" aluminum, Bolt -On Arm (BOA) with an in-pole nut plate. A Round Pole Plate Adapter (RPP) is required for mounting to round poles.

• A cast wall mount plate is available for wall mount applications.

Electrical Assembly

• The BOW SX Series is supplied with a choice of 350, 530, 700, or 1000 mA high-performance LED drivers, that accept 120v thru 480v, 50 Hz to 60 Hz, input. Power factor of 95%. Rated for -40 °C to +55 ° C operations.

• 10 kV surge protector supplied as standard.

• 0-10v Dimming Driver supplied as standard

Warranty

• Five (5) year Limited W
please visit VisionaireLighting.com.

Options

• Button Type Photocell
• Photocell & Receptacle
• Photo Receptacle
• Round Pole Plate Adaptor
• Motion Sensor
• Pole Mounted Motion Sensor
• Universal Pole Mount Adaptor
• Decorative Shroud

Listings

• BOW SX Series is UL Listed, suitable for wet locations.
• IP-65
• Powder Coated Tough™
• DLC Listed

POWDER COATED TOUGH™ IP65 LISTED c UL us LISTED DLC PREMIUM™ LISTED

DesignLights Consortium (DLC) qualified Product. Some configurations of this product family may not be DesignLights Consortium (DLC) listed, please refer to the DLC qualified products list to confirm listed configurations. http://www.designlights.org/

AREA

BSX EPA Data			
Tilt Deg.	BSX-2	BSX-3	BSX-4
0	.58	.58	.59
10	.58	.62	.77
20	.62	.82	1.02
30	.76	1.02	1.28
40	.9	1.2	1.53
50	1.01	1.36	1.75
60	1.11	1.5	1.93
70	1.14	1.6	2.06
80	1.19	1.66	2.13
90	1.21	1.68	2.14

Bolt-On Arm Detail

BSX Knuckle Mount Shown

BOW SX 5K Lumen Data

Lumen Data Chart Updated 12.14.16

# LEDs	mA	Type 1	Type 2	Type 3	Type 4	Type 4A	Type 5	Type 5W	Type FN	Type FM	Watts
32	350	5677	5200	5210	5228	5904	5277	4994	6005	6152	36
	530	7989	7318	7332	7358	8309	7426	7028	8451	8659	53
	700	10458	9580	9598	9632	10878	9722	9200	11064	11335	72
	1000	13810	12651	12674	12719	14364	12838	12148	14609	14968	109
48	350	8237	7546	7559	7586	8567	7657	7246	8714	8927	57
	530	11862	10866	10886	10925	12338	11027	10435	12549	12856	81
	700	15017	13756	13782	13830	15619	13960	13210	15886	16276	106
	1000	20839	19089	19124	19192	21674	19372	18331	22045	22585	162
64	350	11357	10404	10423	10460	11813	10558	9991	12015	12309	73
	530	16608	15214	15242	15296	17274	15439	14610	17570	18000	107
	700	20901	19146	19182	19249	21739	19429	18386	22111	22653	139
	1000	27620	25301	25348	25437	28727	25675	24296	29219	29935	213

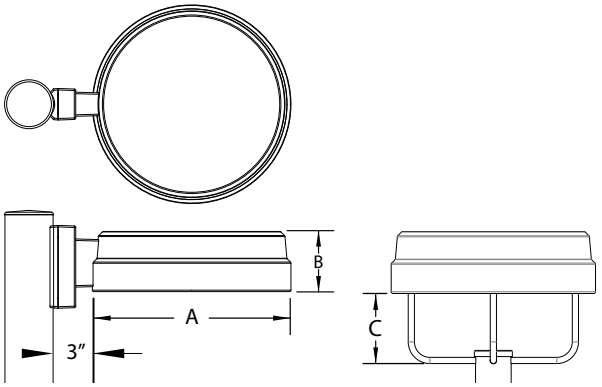
Visit www.VisionaireLighting.com for up-to-the-minute chart information, including types not listed here.
* For 4000K multiply values by 0.95 * For 3000K multiply values by 0.90

19645 Rancho Way Rancho Dominguez, CA 90220
Tel: (310) 512-6480 Fax: (310) 512-6486
www.visionairelighting.com

PGR LED

Project Name:	Catalog Number:	Type

Dimensional Drawings



Fixture	A	B	C	Max. LEDs	Lbs
PGR	16.5”	5”	6”	48	20

The new PGR LED luminaire from Visionaire combines contemporary design with new LED technology; while maintaining a traditional architectural fixture image. The LEDs Performance and Life are maximized by the unique integral aluminum heat sink. It is an ideal replacement for the high-maintenance HID fixtures of yesterday.

The LED housing is spun aluminum; with either 16, 32 or 48 LEDs. Mounting options include Spider Mount, Arm Mount or Wall Mount. The Arm Mount is available with either a Quick Mount Pole Adaptor; or a Universal Quick Mount Pole Adaptor for retrofitting existing poles.

Six optical distribution patterns are available. Choose between 3000, 4000 or 5000 Kelvin temperature of the LED’s; with Lumen Packages ranging from 2,000 to 12,000+ Lumens.

A durable polyester powder coat finish is guaranteed for five years; and is available in standard or custom colors.

The PGR LED series is an exceptional choice for universities, shopping centers, parks and recreational areas; and general site lighting.

Model	Optics	Source	Milliamps	Kelvin	Voltage	Mounting	Finish	Options
PGR-1	Type I **(T1)** Type II **(T2)** Type III **(T3)** Type IV **(T4)** Type V **(T5)** Type V-W **(T5W)**	# of LEDs 16 **(16LC)** 32 **(32LC)** 48 **(48LC)**	mA 350 **(3)** 530 **(5)** 700 **(7)**	3000K *Warm white **(3K)** 4000K *Neutral white **(4K)** 5000K *Cool white **(5K)**	120-277 *Universal voltage **(UNV)** 480 **(5)** 347 **(8)** *347V & 480 V not Available in 16LC *347V & 480 V not Available in 32LC 350 mA	Spider Mount Fits 2 3/8” O.D. **(SM)** Arm Mount **(AM)** *RPP to be ordered separately. Universal Bolt-On Arm **(UBOA)** *RPP to be ordered separately. *Retro-fit applications only. Wall Mount **(WM)**	Bronze **(BZ)** Black **(BK)** White **(WH)** Graphite **(GP)** Grey **(GY)** Silver Metallic **(SL)** Custom Color **(CC)**	Photocell & Receptacle *Specify Voltage **(PCR120) (PCR208) (PCR240) (PCR277)** *Specify BOA or Spider Mount Photo & Receptacle with shorting cap **(PER)** *Specify BOA or Spider Mount Motion Sensor/Control Watt Stopper FSP-211 8’ Mounting Height Must specify Dimming Driver. *120V-277V Only **(WSC-8)** 8’ Mounting Height **(WSC-20)** 9-20’ Mounting Height **(WSC-40)** 21-40’ Mounting Height This option will require(1) FSIR 100 remote for programing Motion Sensor **(MS-8)** 8’ Mounting Height **(MS-20)** 9-20’ Mounting Height **(MS-40)** 21-40’ Mounting Height 0-10v Dimming Driver No Controls **(DIM)** Emergency Battery Pack *120V-277V Only **(EBPL)** Round Pole Plate Adapter **(RPP)** Diffused Lens **(DL)** Cutoff Louver Shield **(CLS)**

VISIONAIRE LIGHTING
Performance In A Whole New Light®

Housing

Heavy duty formed aluminum housing with internal heat sink for maximum heat dissipation. Silicone gasket is used for weather tight operation.

Mounting

For post top mounting, an adaptor fits over a 2 3/8" tenon secured with stainless steel hardware.

A Pre-Attached Aluminum Arm (AM) is supplied along with a Quick Mount pole adaptor, for fast and easy attachment to the pole.

For retro-fit applications, a Pre-Attached Aluminum Arm (UBOA) is supplied along with a Universal Quick Mount pole adaptor for fast and easy attachment to the pole.

Thermal Management

The PGR series provides excellent thermal management by mounting the LEDs to the substantial heat sink within the housing. This enables the Luminaire to withstand higher ambient temperatures and driver currents without degrading LED life.

Optical System

• The hightest lumen output LEDs are utilized. High-performance acrylic optics feature industry leading Type I, II, III, IV, V and V-W optical distributions. Acrylic optics are impact-resistant and rated to 94 percent translucence.
• L70 life of our LEDs is rated over 100,000 hours (for 350 mA), The optical system qualifies as IES full cutoff to restrict light trespass, glare and light pollution for neighborhood-friendly lighting.
• CRI values are 70.

Quali-Guard® Finish

The finish is a Quali-Guard® textured, chemically pretreated through a multiple-stage washer, electrostatically applied, thermoset polyester powder coat finish, with a minimum of 3-5 millimeter thickness. Finish is oven-baked at 400º F to promote maximum adherence and finish hardness. All finishes are available in standard and custom colors.

Finish is guaranteed for five (5) years.

Electrical Assembly

The PGR LED series is supplied with a choice of 350, 530, 700 or 1000mA high-performance LED drivers that accept 120v thru 480v, 50 Hz to 60 Hz, input. Power factor of 90%. Rated for -40°C operations.

10kV Surge Protector supplied as standard.

Warranty

Five (5) year Limited Warranty on entire system, including finish. For full warranty information, please visit visionairelighting.com.

Options

• Photocell & Receptacle
• Photo & Receptacle
• Motion Sensor/Control Watt Stopper FSP-211
• Motion Sensor
• 0-10 Volt Dimming Driver
• 10 kV surge protector
• Emergency Battery Pack
• Round Pole Plate Adapter
• Cutoff Louver Shield

Listings

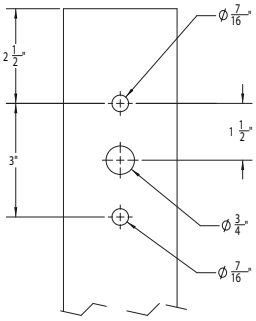
• PGR is cUL listed, suitable for wet locations.
• IP65 Rated
• Powder Coated Tough
• DLC Listed

POWDER COATED TOUGH™ IP65 RATED c UL us LISTED DLC PRO LISTED

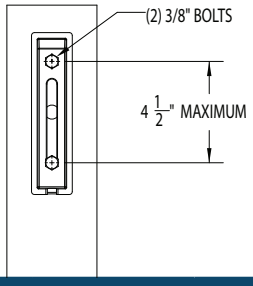
DesignLights Consortium (DLC) qualified Product. Some configurations of this product family may not be DesignLights Consortium (DLC) listed, please refer to the DLC qualified products list to confirm listed configurations. http://www.designlights.org/

Spider Mount Detail

Arm Mount Drill Diagram



UBOA Drill Diagram



5K Lumen Data

*Lumen data 02.14.17

# LEDs	mA	Type 1	Type 2	Type 3	Type 4	Type 5	Type 5 W	Watts
16	350	2402	2222	2214	2169	2431	2195	18
	530	3433	3176	3164	3101	3474	3138	26
	700	4509	4172	4156	4073	4564	4122	37
32	350	5021	4645	4627	4535	5081	4589	35
	530	6956	6436	6411	6283	7040	6358	52
	700	8725	8073	8041	7881	8831	7975	71
48	350	7598	7030	7003	6863	7690	6945	52
	530	10484	9700	9662	9470	10611	9582	80
	700	12234	11320	11276	11051	12383	11183	108

Visit www.VisionaireLighting.com for up-to-the-minute chart information, including types not listed here.
* For 4000K multiply values by 0.95 * For 3000K multiply values by 0.90

19645 Rancho Way Rancho Dominguez, CA 90220
Tel: (310) 512-6480 Fax: (310) 512-6486
www.visionairelighting.com

PGR LED

3000 K Lumen Data								
# LEDs	mA	Type 1	Type 2	Type 3	Type 4	Type 5	Type 5 W	Watts
16	350	2236	2069	2061	2020	2263	2044	18
	530	3196	2957	2946	2887	3235	2921	26
	700	4198	3885	3870	3792	4249	3837	37
32	350	4674	4325	4308	4222	4731	4272	35
	530	6476	5992	5969	5850	6554	5919	52
	700	8123	7516	7487	7337	8221	7425	71
48	350	7074	6545	6520	6390	7160	6466	52
	530	9760	9031	8996	8816	9878	8921	80
	700	11390	10539	10498	10289	11528	10411	108
Visit www.VisionaireLighting.com for up-to-the-minute chart information, including types not listed here.								

4000 K Lumen Data								
# LEDs	mA	Type 1	Type 2	Type 3	Type 4	Type 5	Type 5 W	Watts
16	350	2354	2178	2169	2126	2382	2151	18
	530	3364	3113	3101	3039	3405	3075	26
	700	4419	4089	4073	3992	4473	4039	37
32	350	4920	4553	4535	4444	4980	4497	35
	530	6817	6307	6283	6157	6899	6231	52
	700	8550	7911	7881	7723	8654	7815	71
48	350	7446	6890	6863	6726	7536	6806	52
	530	10274	9506	9469	9280	10398	9391	80
	700	11990	11094	11051	10830	12135	10959	108
Visit www.VisionaireLighting.com for up-to-the-minute chart information, including types not listed here.								

Bug & Efficacy

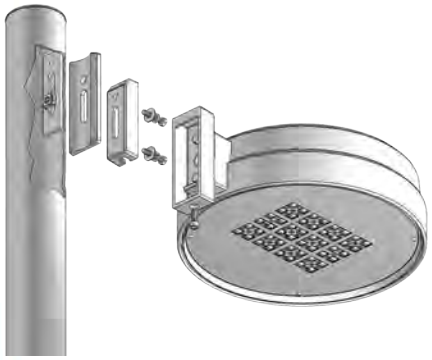
# LEDs	Type 1				Type 2				Type 3				Type 4				Type 5				Type 5W			
	B	U	G	LPW	B	U	G	LPW	B	U	G	LPW	B	U	G	LPW	B	U	G	LPW	B	U	G	LPW
16 3K	1	0	1	126	1	0	1	117	0	0	1	116	1	0	1	114	1	0	0	128	2	0	1	115
	2	0	2	123	1	0	1	113	1	0	1	113	1	0	1	111	2	0	0	124	2	0	1	112
	2	0	2	114	1	0	2	106	1	0	1	105	1	0	1	103	2	0	1	116	2	0	1	105
32 3K	2	0	2	133	1	0	2	123	1	0	1	122	1	0	1	120	2	0	1	134	3	0	1	121
	3	0	3	124	2	0	2	115	1	0	2	115	1	0	2	112	3	0	1	126	3	0	1	114
	3	0	3	114	2	0	2	106	1	0	2	105	2	0	2	103	3	0	1	116	3	0	2	104
48 3K	3	0	3	136	2	0	2	126	1	0	2	125	2	0	2	123	3	0	1	138	3	0	1	124
	3	0	3	122	2	0	3	113	1	0	2	112	2	0	2	110	3	0	1	123	3	0	2	111
	3	0	3	105	2	0	3	98	1	0	2	97	2	0	2	95	3	0	2	107	4	0	2	96
16 4K	1	0	1	133	1	0	1	123	0	0	1	122	1	0	1	120	1	0	0	134	2	0	1	121
	2	0	2	129	1	0	1	119	1	0	1	119	1	0	1	117	2	0	0	131	2	0	1	118
	2	0	2	120	1	0	2	111	1	0	1	111	1	0	1	109	2	0	1	122	2	0	1	110
32 4K	2	0	2	140	1	0	2	129	1	0	1	129	1	0	1	126	2	0	1	141	3	0	1	128
	3	0	3	131	2	0	2	121	1	0	2	121	1	0	2	118	3	0	1	132	3	0	1	120
	3	0	3	120	2	0	2	111	1	0	2	111	2	0	2	109	3	0	1	122	3	0	2	110
48 4K	3	0	3	143	2	0	2	132	1	0	2	132	2	0	2	129	3	0	1	145	3	0	1	131
	3	0	3	128	2	0	3	119	1	0	2	118	2	0	2	116	3	0	2	130	3	0	2	117
	3	0	3	111	2	0	3	103	2	0	2	102	2	0	2	100	3	0	2	112	4	0	2	101
16 5K	1	0	1	135	1	0	1	125	0	0	1	125	1	0	1	122	1	0	0	137	2	0	1	124
	2	0	2	132	1	0	1	122	1	0	1	121	1	0	1	119	2	0	0	133	2	0	1	120
	2	0	2	123	1	0	2	114	1	0	1	113	1	0	1	111	2	0	1	124	3	0	1	112
32 5K	2	0	2	143	1	0	2	132	1	0	1	131	1	0	1	129	2	0	1	144	3	0	1	130
	3	0	3	133	2	0	2	123	1	0	2	123	1	0	2	121	3	0	1	135	3	0	1	122
	3	0	3	123	2	0	2	114	1	0	2	113	2	0	2	111	3	0	1	124	3	0	2	112
48 5K	3	0	3	146	2	0	2	135	1	0	2	135	2	0	2	132	3	0	1	148	3	0	1	134
	3	0	3	131	2	0	3	121	1	0	2	121	2	0	2	118	3	0	2	132	3	0	2	120
	3	0	3	113	2	0	3	105	2	0	2	104	2	0	2	102	3	0	2	115	4	0	2	104

BOA EPA Data	Single	D90	D180	T120	T90	Quad	Spider Mount EPA Data	Single
	.70	1.08	1.40	1.78	1.56	1.56		.9

For more detailed information on mounting, wiring or installation instructions, please consult factory. If poles are not ordered with fixtures, please specify mounting requirements. This document contains proprietary information of Visionaire Lighting LLC. Any use of this information requires the written approval of Visionaire Lighting, LLC. In keeping with our TQM policy of continuous improvement, Visionaire reserves the right to change any specifications contained herein without prior notice.

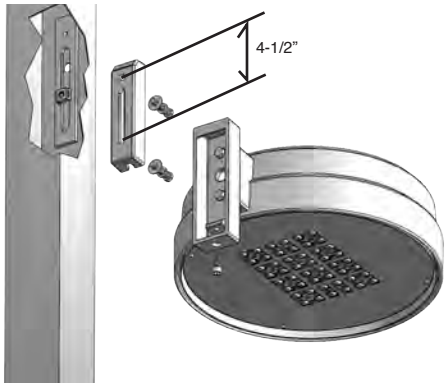
VISIONAIRE LIGHTING
Performance In A Whole New Light®

Arm Mount Assembly Drawing



*Round Pole Plate Adapter ordered separately.

PGR UBOA Assembly Drawing

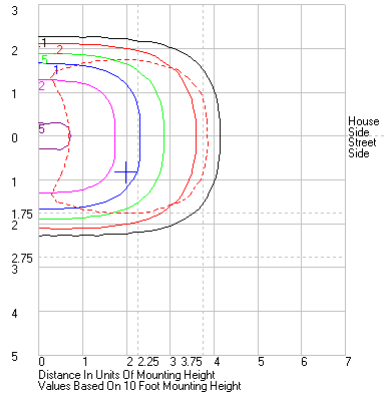


*Round Pole Plate Adapter ordered separately.

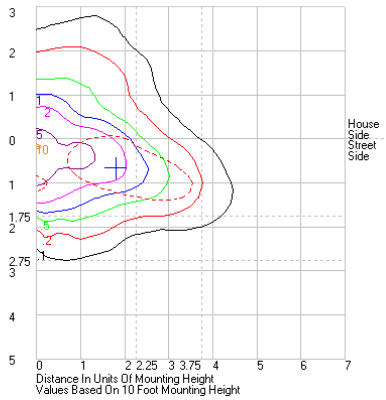
PGR Wall Mount Drawing

Photometrics

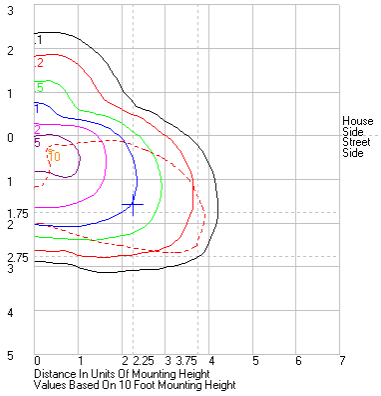
Type 1



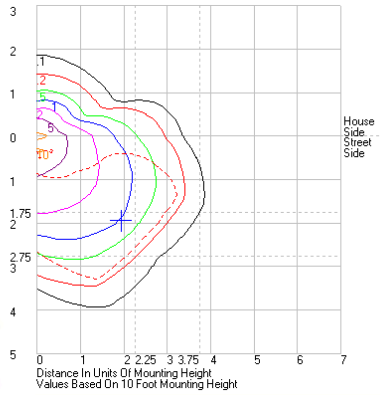
Type 2



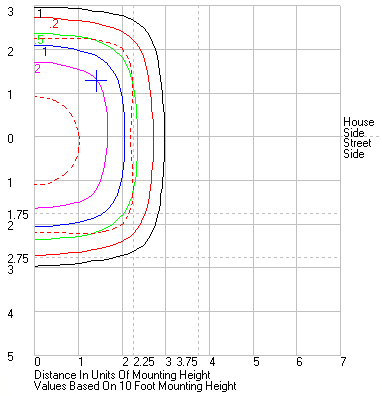
Type 3



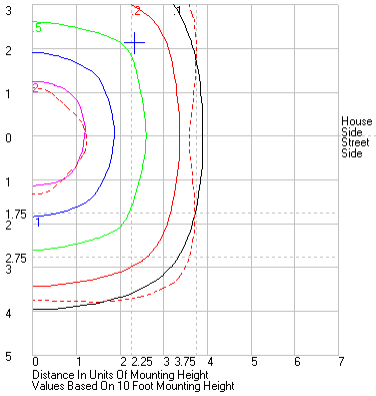
Type 4



Type 5



Type 5W



19645 Rancho Way Rancho Dominguez, CA 90220
Tel: (310) 512-6480 Fax: (310) 512-6486
www.visionairelighting.com

LEHB LED High Bay Series

The LEHB Series is the perfect lighting solution for a wide variety of applications. LED technology allows power and light levels to be customized to meet both energy and design needs.

APPLICATIONS

- Warehouse
- Distribution Centers
- Food Processing Plants
- Gymnasiums
- Retail
- Industrial
- Commercial

FEATURES

- Low maintenance
- Energy efficient
- 5 year warranty
- Wireguard, top mount and no vents are optional
- Sensors can be integrated for additional energy savings
- Emergency battery back-up & Dimming optional
- UL Damp Listed and DLC Premium Listed

SPECIFICATIONS

- Die formed 24 gauge cold rolled steel body
- Post painted with high gloss baked white matte powder coat
- Frosted diffuser
- Mounting: Chain or Cable Mount Ready (V- Hooks Included) Cord and plug options offered

TECHNICAL INFORMATION

- Voltage: Universal 100-305V
- Operating Temperature: -40°C – 50°C Ambient
- CCT: 40K, 50K & 57K
- CRI: 85+
- L70 Rated Life: 122,000 hours
- Lumens Per Watt: 131
- Power Factor: >0.9
- TDH: < 20%
- Driver capable of 0-10V dimming
- Dimensions:
  (68WT, 90WT, & 110WT) D 3.62” x L 23.8” x W 12.6”
  (135WT & 162WT) D 3.62” x L 23.8” x W 17.3”
  (178WT & 223WT) D 3.62” x L 45.9” x W 12.6”
  (265WT) D 3.62” x L 45.9” x W 17.3”

FSC Lighting
9120 Center Avenue | Rancho Cucamonga CA 91730
Ph 909-948-8878 Fax 909-948-8510

LEHB LED High Bay Series

CATALOG ORDERING EXAMPLE: **LEHB-22-135W-40K**

LEHB			

FAMILY TYPE	LENGTH IN FEET/ WATTAGE	COLOR TEMPERATURE	OPTIONS
LEHB	22 - 68W (1 x 2 Foot, 65 Watt/ 8,515 lms)*	40K (4000 Kelvin Temp)	OS (Occupancy Sensor)
	22 - 90W (1 x 2 Foot, 90 Watt/ 11,790 lms)*	50K (5000 Kelvin Temp)	OSD (Occupancy Sensor w/ Daylight)
	22 - 110W (1 x 2 Foot, 110 Watt/ 14,440 lms)*	57K (5700 Kelvin Temp)	PRGOS-LS (Sensorswitch LSXR-ADC-3v Occ Sensor w/ Dimming Photocell)
	22 - 135W (1.5 x 2 Foot, 135 Watt/ 17,685 lms)*		PRGOS-LO (IRTEC LOD509 Bi-Level Occ Sensor w/ Photocell)
	22 - 162W (1.5 x 2 Foot, 162 Watt/ 21,222 lms)		PRGOS-LR (IRTEC LRD509 Programmable Occ Sensor w/ Remote Control)
	24 - 178W (1 x 4 Foot, 178 Watt/ 23,318 lms)*		EMR (Emergency Battery)
	24- 223W (1 x 4 Foot, 223 Watt/ 29,312 lms)		480SD (480 Step-Down)
	24 - 265W (1.5 x 4 Foot, 265 Watt/ 34,715 lms)*		PLG (6' SJT Cord & Plug)
			10GL (10' Loop w/ Gripple Hanging Kit)
			TMB (Top Mount Box)
			NV (No Vents)
			WG (Wireguard)

***Quick Ship- Stocked Items.**

Specifications and Dimensions subject to change without notice. Contact factory for updates. (909) 948-8878

SAFETY WARNING

FOR YOUR SAFETY, READ AND FOLLOW ALL INSTRUCTIONS TO PREVENT ELECTRIC SHOCK OR FIRE

- **INSTALLATION REQUIRES KNOWLEDGE OF LIGHTING LUMINAIRE ELECTRICAL SYSTEMS**
  Contact qualified electrician prior to installation.

- **DISCONNET POWER BEFORE INSTALLATION**
- **DO NOT ALTER PRE-EXISTING HOLES OR DRILL NEW HOLES**
- **CHECK FOR INCLOSED WIRING COMPONENTS PRIOR TO DRILLING**
  Luminaire wiring, ballasts, power supplies or other electrical parts may be damaged.
- **USE ONLY ON COMPATIBLE LUMINAIRES**
  Installation requires specific dimensions and construction features.
- **PROTECT WIRING FROM ABRASION**
  Do not expose wiring to sharp objects or edges of sheet metal.

INSTALLATION INSTRUCTIONS

1. Disconnect Power to the circuit supplying power to the fixture
2. Removed the existing lamps and fixture
3. Disassemble new fixture to allow access to the LED Driver
4. Run existing power supply wires into fixture through fixture knock-out or end plug on fixture
5. Mount the fixture to surface, or hang fixture with appropriate fixture mounting hardware or install fixture in T-bar Ceiling *(Be sure to follow local building codes for the appropriate fixture installation methods.)*
6. Connect power supply wires to supplied wire disconnect to provide power to fixture
7. Re-assemble fixture
8. Re-connect power and check installation

Revised 10/12/17

GREENCREATIVE

Bringing You the Latest in LED Technology

INNOFIT SERIES

CDL INNOFIT SERIES

COMMERCIAL DOWNLIGHT PRODUCT FEATURES

Adjustable Lumen Output

This commercial downlight features adjustable lumen output for three distinct lumen levels equivalent to various CFL lamp combinations. Simply adjust the lamp power to the desired lumen output by sliding the selector switch on top of the fixture.

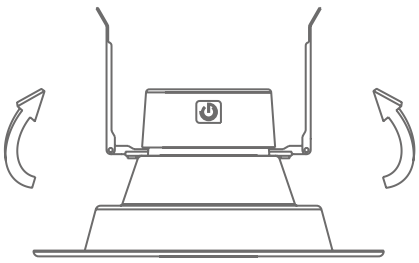
INNOFIT SERIES

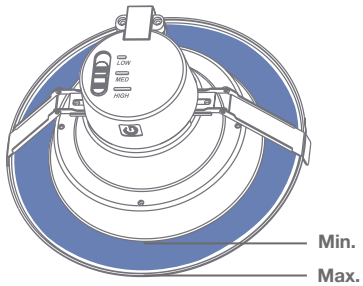
120-277V UNIVERSAL

LUMEN OUTPUT ADJUSTABLE

Easy-Fit Installation

The adjustable housing clips allow for installation in a large range of commercial and architectural housings. These spring-action clips push up easily and fit securely for both retrofit and new construction installations.



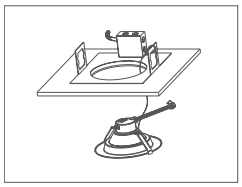


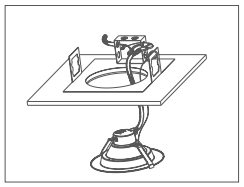
Housing Compatibility

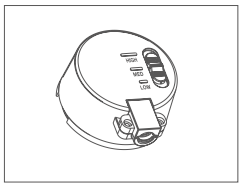
Model	Aperture Min.	Aperture Max.
9.5"	8.6" (220mm)	10.4" (265mm)
8"	7.6" (195mm)	9.4" (240mm)
6"	6.0" (153mm)	7.4" (190mm)
4"	3.9" (100mm)	5.1" (130mm)

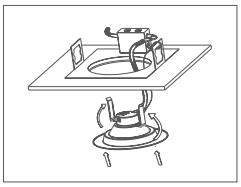
Simple Retrofit or Economical New Construction Installation

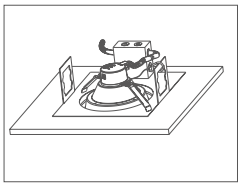
Retrofit Installation


Attach safety clip

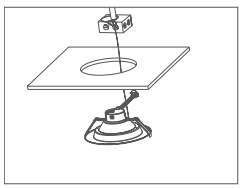

Bypass ballast & wire to j-box

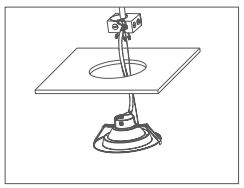

Adjust lumens to desired output

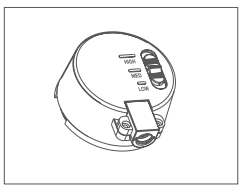

Push clips up & install into fixture

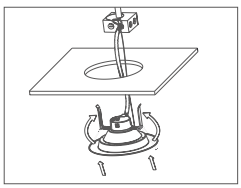

Ensure fixture is flush. Installation is complete

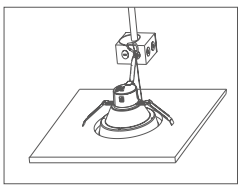
New Construction Installation


Attach safety clip


Wire to j-box

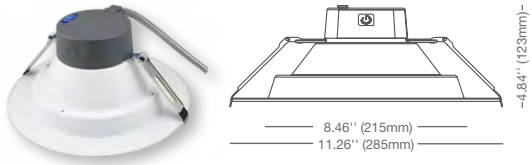

Adjust lumens to desired output


Push clips up & install into opening


Ensure fixture is flush. Installation is complete

CDL INNOFIT SERIES

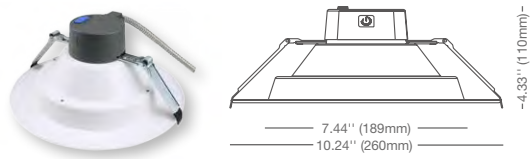
9.5” CDL 45W



- 120-277V Universal voltage
- 23.5W / 32W / 45W
- 2000lm / 2500lm / 3200lm
- 2700K / 3000K / 3500K / 4000K CCT

Fluorescent Equivalence		
Power	**Lumens**	**Equivalent**
LOW-23.5W	2000	1X42W / 2X26W
MED-32W	2500	1X57W / 2X32W
HIGH-45W	3200	2X42W

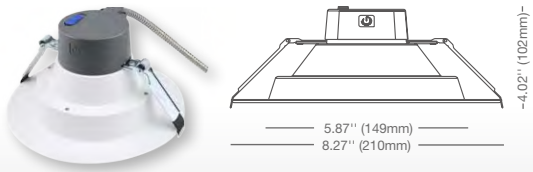
8” CDL 27W



- 120-277V Universal voltage
- 12W / 19W / 27W
- 1000lm / 1500lm / 2000lm
- 2700K / 3000K / 3500K / 4000K CCT

Fluorescent Equivalence		
Power	**Lumens**	**Equivalent**
LOW-12W	1000	1X26W / 2X13W
MED-19W	1500	1X32W / 2X18W
HIGH-27W	2000	1X42W / 2X26W

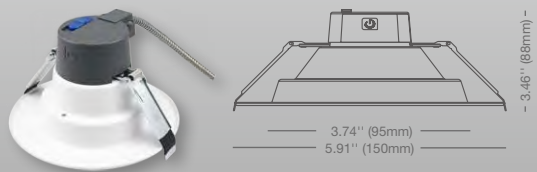
6” CDL 21W



- 120-277V Universal voltage
- 8.5W / 13.5W / 21W
- 700lm / 1000lm / 1500lm
- 2700K / 3000K / 3500K / 4000K CCT

Fluorescent Equivalence		
Power	**Lumens**	**Equivalent**
LOW-8.5W	700	1X18W
MED-13.5W	1000	1X26W / 2X13W
HIGH-21W	1500	1X32W / 2X18W

4” CDL 14W



- 120-277V Universal voltage
- 6W / 9W / 14W
- 500lm / 700lm / 1000lm
- 2700K / 3000K / 3500K / 4000K CCT

Fluorescent Equivalence		
Power	**Lumens**	**Equivalent**
LOW-6W	500	1X13W
MED-9W	700	1X18W
HIGH-14W	1000	1X26W / 2X13W

SPECIFICATIONS*

	Model	Product	CCT	Power (W)	Lumens (lm)	LPW	Beam Angle	CRI (typ.)	Dim	Life (hrs)	Voltage	ENERGY STAR
 CDL 9.5" 45W	45CDLA9.5/827/277V	57878	2700K	23.5/32/45	1860/2325/2975	79/73/66	110°	80	No	40,000	120-277V	Mar.
	45CDLA9.5/830/277V	57879	3000K	23.5/32/45	2000/2500/3200	85/78/71	110°	80	No	40,000	120-277V	Mar.
	45CDLA9.5/835/277V	57880	3500K	23.5/32/45	2000/2500/3200	85/78/71	110°	80	No	40,000	120-277V	Mar.
	45CDLA9.5/840/277V	57881	4000K	23.5/32/45	2000/2500/3200	85/78/71	110°	80	No	40,000	120-277V	Mar.
 CDL 8" 27W	27CDLA8/827/277V	57873	2700K	12/19/27	930/1400/1860	78/74/69	110°	80	No	40,000	120-277V	✓
	27CDLA8/830/277V	57874	3000K	12/19/27	1000/1500/2000	83/79/74	110°	80	No	40,000	120-277V	✓
	27CDLA8/835/277V	57875	3500K	12/19/27	1000/1500/2000	83/79/74	110°	80	No	40,000	120-277V	✓
	27CDLA8/840/277V	57876	4000K	12/19/27	1000/1500/2000	83/79/74	110°	80	No	40,000	120-277V	✓
 CDL 6" 21W	21CDLA6/827/277V	57868	2700K	8.5/13.5/21	650/930/1400	76/69/67	110°	80	No	40,000	120-277V	✓
	21CDLA6/830/277V	57869	3000K	8.5/13.5/21	700/1000/1500	82/74/71	110°	80	No	40,000	120-277V	✓
	21CDLA6/835/277V	57870	3500K	8.5/13.5/21	700/1000/1500	82/74/71	110°	80	No	40,000	120-277V	✓
	21CDLA6/840/277V	57871	4000K	8.5/13.5/21	700/1000/1500	82/74/71	110°	80	No	40,000	120-277V	✓
 CDL 4" 14W	14CDLA4/827/277V	57863	2700K	6/9/14	465/650/930	78/72/66	110°	80	No	40,000	120-277V	Mar.
	14CDLA4/830/277V	57864	3000K	6/9/14	500/700/1000	83/78/71	110°	80	No	40,000	120-277V	Mar.
	14CDLA4/835/277V	57865	3500K	6/9/14	500/700/1000	83/78/71	110°	80	No	40,000	120-277V	Mar.
	14CDLA4/840/277V	57866	4000K	6/9/14	500/700/1000	83/78/71	110°	80	No	40,000	120-277V	Mar.

* Specification data is preliminary and may be subject to change
** Suitable for damp locations

GREEN CREATIVE
1200 Bayhill Drive, Suite 220
San Bruno, CA 94066
Tel / Fax: (866) 774-5433
info@greencreative.com
www.greencreative.com
/ GREENCREATIVELED
/ GClightingLED
/ GREEN CREATIVE

PL H 9.5W BYP TITANIUM LED SERIES

GREENCREATIVE

PL EDGE SERIES

PRO

9.5W REPLACES

26W CFL

60% Energy Savings

- **HYBrid installation - DIRect or BYPass**
- **Compatible with magnetic ballasts - DIRect installation**
- **Built-in universal voltage driver - Bypass installation**
- **Compatible with G24d, GX24d, G24q & GX24q bases**
- **Exceptional efficacy 100 LPW**
- **Lasts 4 times longer than CFL**

50,000 H

MAGNETIC BALLAST COMPATIBLE

120-277V UNIVERSAL

5 YR WARRANTY

82 CRI (Ra)

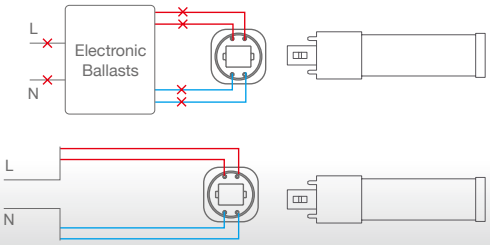
SEMI DIRECTIONAL

CLASSIFIED cULus FC lighting facts LED Product Partner LM 79 LM 80 TM 21 IES

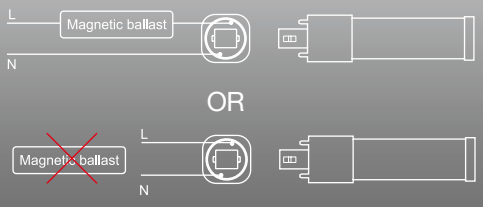
PL PRODUCT FEATURES

BYPass Installation - Electronic Ballasts

This PL H lamp is not compatible with electronic ballasts and requires bypassing the ballast during installation. The lamp runs directly off line voltage to eliminate compatibility problems, incidental power loss, lifetime issues, and maintenance costs associated with ballasts.



HYBrid Installation - DIRect or BYPass - Magnetic Ballasts



When used with a magnetic ballast, the PL H can function as a plug & play lamp and operate with the existing ballast. If the ballast is not compatible, it can be bypassed and the lamp can run directly off line voltage.

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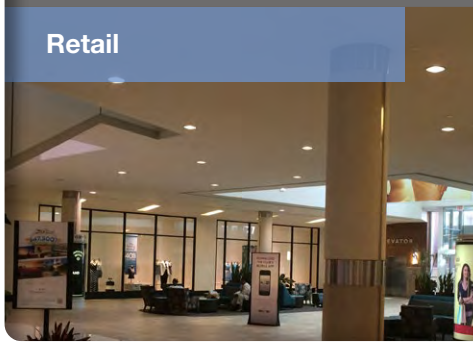
PL H 9.5W BYP TITANIUM LED SERIES

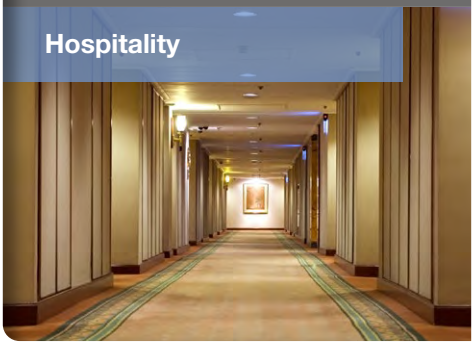
GREENCREATIVE

APPLICATIONS

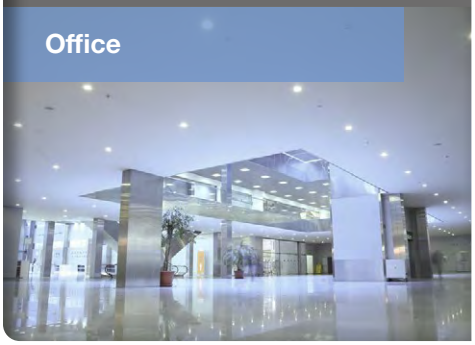
Retail



Hospitality



Office



Ref.#: DS182-PLH-9.5W-BYP-291216

Base:	G24d, GX24d, G24q & GX24q (2/4-pin CFL)
Voltage:	Magnetic ballast compatible 120-277V
Dimmable:	No
PF:	0.9
Lifetime (L70):	50,000 hrs
Weight:	0.18lb / 82g

SPECIFICATIONS

Model	Product	Power (W)	CCT	CRI (typ.)	Lumens	LPW	Beam Angle
9.5PLH/827/BYP	28354	9.5	Soft White 2700K	82	870	92	110°
9.5PLH/830/BYP	28355	9.5	Warm White 3000K	82	920	97	110°
9.5PLH/835/BYP	28356	9.5	Neutral White 3500K	82	920	97	110°
9.5PLH/840/BYP	28357	9.5	Cool White 4000K	82	950	100	110°

* Suitable for damp locations. Not for use where directly exposed to weather or water
** Not intended for use in enclosed fixtures
*** Full installation guide and more details available on website

Features & Benefits

- Internal Driver
- Smooth, Consistent Light
- UL for Safety
- No UV, No Mercury
- Long Life
- High CRI
- Instant on, no delay or warm up time
- Convenient and quick installation
- Utilizes non-shunted(rapid start) sockets
- Compatible with controls and sensors
- Works in cold temperature applications
- 5 Year Warranty

Flex™

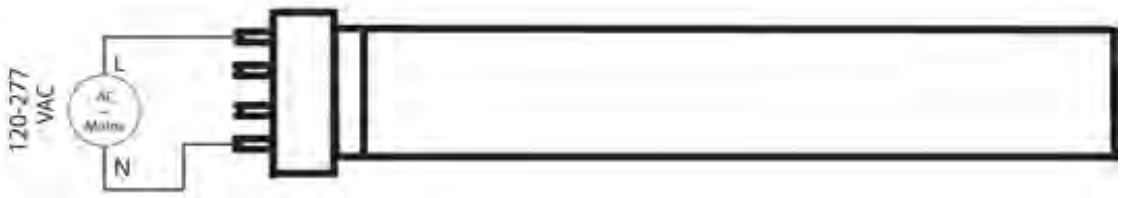
Internal Driver LED FT Lamp

Commercial Grade **LED FT Lamp**

Specification Data

Model No.	Replace	Lamp Wattage	Input Voltage	CCT	Initial Lumens	CRI	Lamp Efficacy	Life
LT40W/835-ID	FT40W/FT55W	18	120-277	3500	1800	83	100	50000
LT40W/840-ID	FT40W/FT55W	18	120-277	4000	1800	83	100	50000
LT40W/850-ID	FT40W/FT55W	18	120-277	5000	1800	83	100	50000

Wiring diagram



LT series	Overall Length (cm)	Base face to top (cm)
LT40	54.00	49.30
LT36	42.10	37.40
LT24	32.60	27.80
LT18	23.10	18.30

Espen Technology Inc. | 12257 Florence Ave. | Santa Fe Springs, CA 90670
Toll Free: (866) 933-7736 | Tel.: (562) 529-2938 | Fax: (562) 529-2978 | Email: info@espentech.com

Project	
Notes	
Type	Date
Cat. No.	

LTR™ XE Series — LED Troffer Retrofit Kit

DESCRIPTION

The Aleo LTR™ XE Series Troffer Retrofit Kit delivers industry-leading performance with deep energy savings and continuous dimming. Easy and quick installation reduces labor cost and optimizes ROI. The retrofit kit eliminates the need to replace existing luminaire housing, which reduces install time and disposal/removal costs. The precision-formed diffuser produces comfortable and pleasant illumination, enhancing productive spaces in various applications.

APPLICATIONS

Provides architectural aesthetics for retail, schools, offices, healthcare, and other various commercial applications.

LTR Series

2x4 22W, 36W
2x2 25W, 30W
1x4 23W

Specification Features

Construction

Simple construction with minimal parts allows for easy handling and installation. Luminaire features matte white durable finish.

Optical System

Reflector systems features highly reflective coating and delivers balanced, comfortable illuminance for productive spaces. Diffuser lens reduces glare and improves occupant comfort while maintaining high efficiency emission.

Certification

UL Classified. All components have UL certification. UL Class 2. Driver: SCP, OTP, OVP protection, FCC Part 15 Class B, UL8750 Class 2. DLC Premium

Warranty

7-year Limited Warranty. See warranty documentation for more information.

Electrical

Luminaire utilizes high-efficacy LED packages maintained at cool temperatures for long life, high efficacy. Reliable driver features continuous dimming. Universal voltage (120-277V) for convenient installation.Comes equipped with luminaire quick-disconnect.

Installation / Mounting

Installs in most troffer luminaires. Retrofit kit fits within troffer and ceiling T-bar grid, eliminating need to remove existing fixture housing.

Controls / Dimming

Continuous dimming (0-10V) comes standard. Suitable for use with dimmers, sensors, daylight harvesting and other control strategies to achieve deeper energy-savings and code compliance.

Rated Life 75,000 hours
Limited Warranty 7-years
Efficacy Up to 126 LPW
Continuous Dimming

CONTINUOUS DIMMING 0-10V Continuous

Quick Ship

LTR-14LE-23/840 XE G3-HD
LTR-22LE-25/840 XE G3
LTR-22HE-30/840 XE G3
LTR-24LE-36/840 XE G3
LTR-24LE-36/840 XE G3-HD
LTR-24VLE-22/840 XE G3

Ordering Information

Example: LTR-22LE-25/840 XE G3

LTR	22	LE	25	8	40	[Blank]	[Blank]

Series
LTR LED Troffer Retrofit Kit

Form Factor
24 2'x4'
22 2'x2'
14 1'x4' (HD)

Lumen Package
VLE Very Low Wattage
LE Low Wattage
HE High Lumen

Nominal Wattage
2'x4'
22 22W
36 36W
2'x2'
25 25W
30 30W
1'x4'
23 23W

CRI
8 83+

Color Temp
40 4000K
50 5000K

Design
Blank Model Kit Design
HD Hinged Door Design

Input Voltage
Blank 120V-277V

[Blank]

Dimming
Blank 0-10V Continuous Dimming

Options

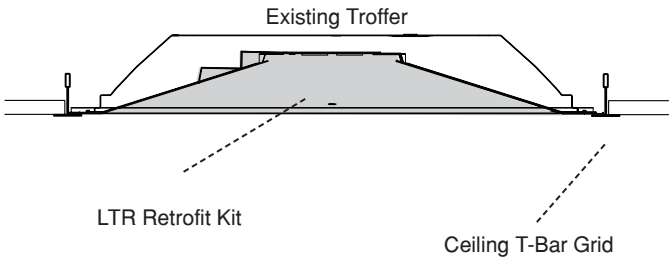
Emergency Backup
EM700 700lm
EM1400 1400lm

Specifications and Dimensions subject to change without notice.

Performance Summary

Input Voltage	120V-277V
Input Frequency	50/60 Hz
Rated Wattage	See Performance Table
Delivered Lumens	See Performance Table
Efficacy	> 126 LPW (typ.)
CRI	83+, R9 > 0
Available CCT[1]	3500K, 4000K, 5000K
Color Consistency[2]	5-step MacAdam Ellipse
Rated Life	75,000 hours
L70[3]	> 72,000 hours
Power Factor	> 0.9
THD	< 20%
Dimming	0-10V Continuous (10-100%)
Operating Temp	-20°C to 50°C

Mounting Information



Performance Data

				3500K[1]		4000K		5000K[1]	
Form Factor	Catalog No.	Rated Wattage (W)	Tested Wattage (W)	Delivered Lumens (lm)	Efficacy (lm/W)	Delivered Lumens (lm)	Efficacy (lm/W)	Delivered Lumens (lm)	Efficacy (lm/W)
2' x 4'	LTR-24VLE-22 XE G3	22	22.7	2948	134	2970	135	2992	136
	LTR-24LE-36 XE G3	36	36	4680	130	4758	132	4854	134
	LTR-24LE-36 XE G3-HD	36	36.7	4536	126	4572	127	4608	128
2' x 2'	LTR-22LE-25 XE G3	23	22.5	2944	128	3000	130	3013	131
	LTR-22HE-30 XE G3	30	27.7	3780	126	3840	128	3900	130
1' x 4'	LTR-14LE-23 XE G3-HD	23	-	2875	125	2944	128	2967	129

NOTES:

1 Quick ship: 4000K. Other CCTs may require a lead time or be special order

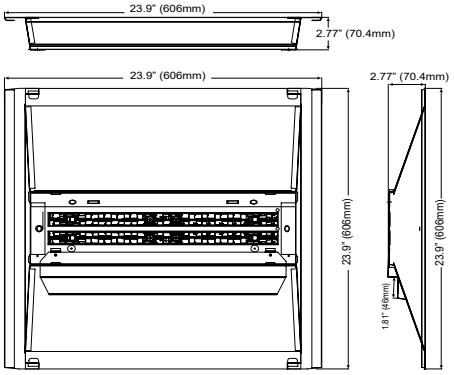
2 Typical color consistency. May vary or be changed.

3 L70 hours calculated based on LED package manufacturer LM80 report and ISTMT report of LED in luminaire. Stated values are for select catalog numbers.

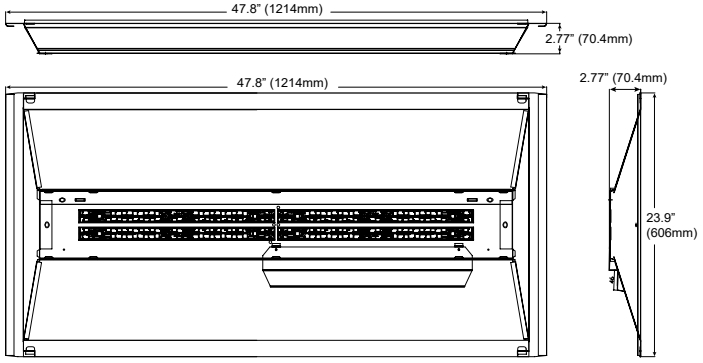
Specifications and Dimensions subject to change without notice.

Product **Dimensions**

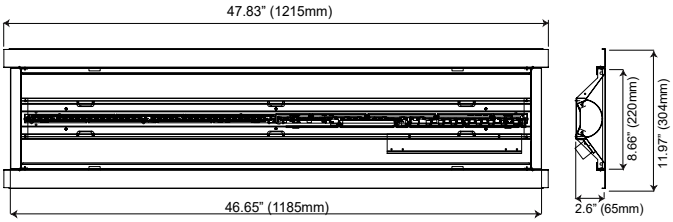
LTR-22



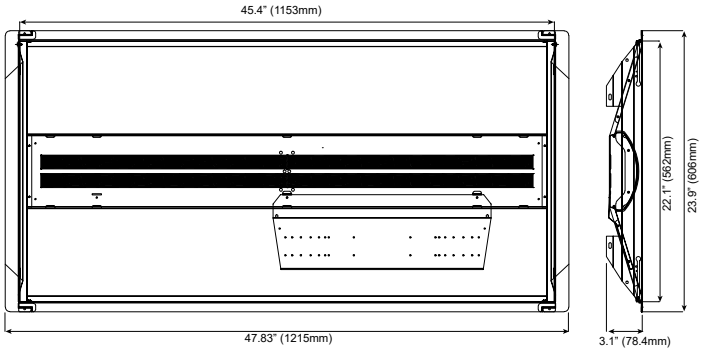
LTR-24



LTR-14LE-HD



LTR-24LE-HD



DLC QPL Data

QPL Model No.	Product ID	Technical Req.	Classification	Primary Use
LTR-14LE-23/840 XE G3-HD	PLK8KL5RXHKH	4.2	Premium	Integrated Retrofit Kits for 1x4 Luminaires
LTR-22LE-25/840 XE G3	PLQ1JP9VCBQ4	4.2	Premium	Integrated Retrofit Kits for 2x2 Luminaires
LTR-22HE-30/840 XE G3	PL533BQIC48J	4.2	Premium	Integrated Retrofit Kits for 2x2 Luminaires
LTR-24LE-36/840 XE G3	PVCG5J8S	4.2	Premium	Integrated Retrofit Kits for 2x4 Luminaires
LTR-24LE-36/840 XE G3-HD	PMM8MRRH	4.2	Premium	Integrated Retrofit Kits for 2x4 Luminaires
LTR-24VLE-22/840 XE G3	PL7ZF7WTY9R8	4.2	Premium	Integrated Retrofit Kits for 2x4 Luminaires
LTR-24VLE-24/840 XE G3	PWZG2MEP	4.2	Premium	Integrated Retrofit Kits for 2x4 Luminaires

Aleo Lighting, Inc.
www.aleolighting.com
13924 Bettencourt St.
Cerritos, CA 90703
Ph: 877-358-8825

Specifications and Dimensions subject to change without notice.

HID LED 16.5W HO 277V TITANIUM LED SERIES

GREENCREATIVE

ENERGY STAR

PRO

Optional Lamp Extender

16.5W REPLACES

50-70W HID

70% Energy Savings

$72 Savings per lamp*

- **Direct line voltage 120-277V - Not compatible with ballasts**
- **Compact form factor - Ideal for bollards & post tops**
- **Exceptional efficacy 121 LPW in Cool White**
- **Frosted diffuser maintains low glare**
- **Optional lamp extender available for use in larger fixtures**
- **Suitable for use in totally enclosed fixtures**

40,000 H | 120-277V UNIVERSAL | 121 LPW EFFICACY | 5 YR WARRANTY | 82 CRI (Ra) | ENCLOSED**

c UL us LISTED | FC | LM 79 | LM 80 | TM 21 | IES

HID LED PRODUCT FEATURES

Suitable for Enclosed Fixtures

This HID LED lamp replaces a 50-70W HID and is suitable for use in enclosed fixtures. Its high lumen output and exceptional efficacy make it an ideal choice for bollard, post top and other outdoor applications. An optional lamp extender is also available for use in larger fixtures.

Omnidirectional Lighting

This HID LED emits 330° of uniform light and meets ENERGY STAR requirements. Its compact form factor and omnidirectional output provides a fuller distribution than other LED lamps.

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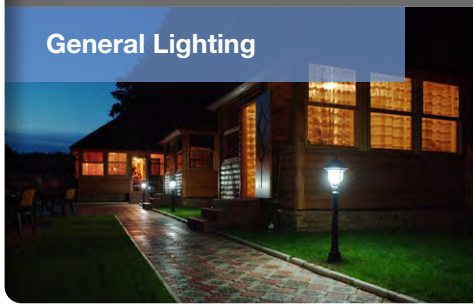
HID LED 16.5W HO 277V TITANIUM LED SERIES

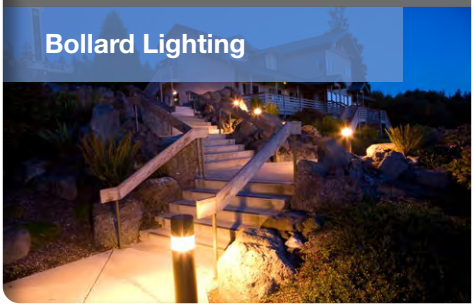
GREENCREATIVE

APPLICATIONS

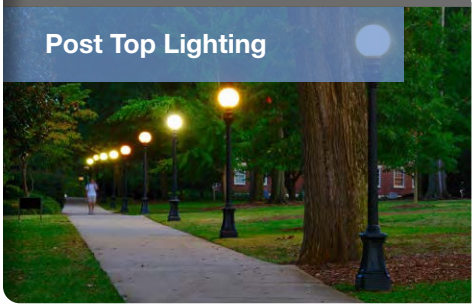
General Lighting



Bollard Lighting



Post Top Lighting



Ref.#: DS180-A21-16.5W-277V-100217

SPECIFICATIONS

Product Model	58238 16.5A21/830/277V	58239 16.5A21/840/277V	58240 16.5A21/850/277V
Type	HID LED	HID LED	HID LED
Base	E26	E26	E26
Power (W)	16.5	16.5	16.5
Voltage - Frequency	120-277V 50/60Hz	120-277V 50/60Hz	120-277V 50/60Hz
Color Temp. (ANSI)	Warm White 3000K	Cool White 4000K	Daylight 5000K
CRI (Ra) (typ.)	82	82	82
Typical lumens (lm)	2000	2000	2050
Efficacy (LPW)	121	121	124
Beam Angle	330°	330°	330°
Dimmable	No	No	No
Power Factor	0.9	0.9	0.9
Rated Lifetime - L70 (hrs.)	40,000	40,000	40,000
Dia. x MOL	2.55''x5.00'' (65x127mm)	2.55''x5.00'' (65x127mm)	2.55''x5.00'' (65x127mm)
Weight (lb. / g)	0.50lb. / 227g	0.50lb. / 227g	0.50lb. / 227g

* Savings per lamp based on $0.11 / kw energy cost, 12 hrs / day lamp usage, $12 HID with 10,000-hr lifetime, $35 LED with 40,000-hr lifetime

** Suitable for use in totally enclosed fixtures

*** Suitable for damp locations. Not for use where directly exposed to weather or water

PLS 6W HYB GX23 TITANIUM LED SERIES

GREENCREATIVE

PL EDGE SERIES

PRO

6W REPLACES

13W CFL

60% Energy Savings

- HYBrid installation - DIRect or BYPass
- Compatible with magnetic ballasts - DIRect installation
- Built-in universal voltage driver - BYPass installation
- Exceptional efficacy 92 LPW
- Lasts 5 times longer than CFL
- 310° rotatable base

50,000 H

MAGNETIC BALLAST COMPATIBLE

120-277V UNIVERSAL

5 YR WARRANTY

80 CRI (Ra)

NON ENCL.*

CLASSIFIED cULus FC lighting facts LED Product Partner LM 79 LM 80 TM 21 IES

COMPACT FORM FACTOR AND ROTATABLE BASE SUITABLE FOR ALL APPLICATIONS

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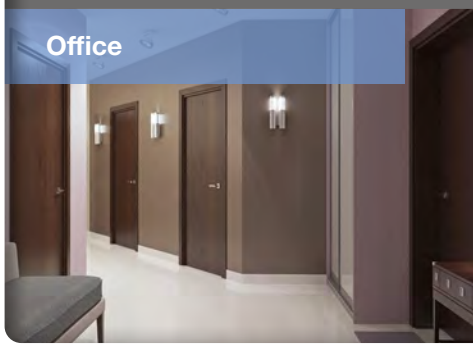
PLS 6W HYB GX23 TITANIUM LED SERIES

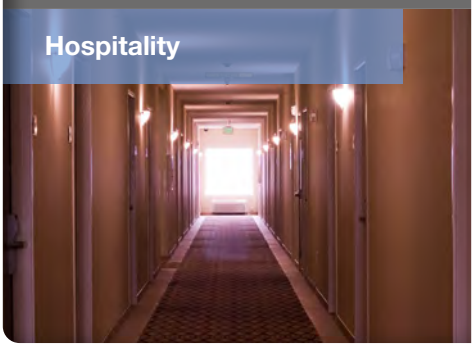
GREENCREATIVE

APPLICATIONS

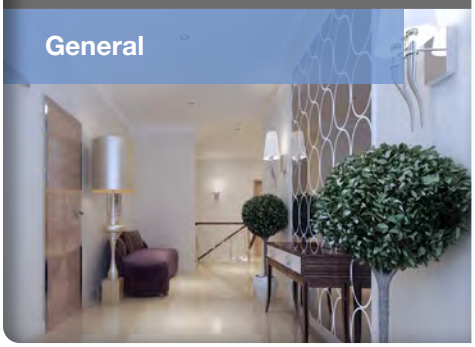
Office



Hospitality



General



Base:	GX23 (2-pin CFL)
Voltage:	Magnetic ballast compatible 120-277V
Dimmable:	No
PF:	0.9
Lifetime:	50,000 hrs
Weight:	0.15lb / 68g

Note: Product designed to replace 13W Double Twin Tube CFL. For Single Twin Tube CFL replacement, please use PLS 5.5W HYB GX23.

SPECIFICATIONS

Model	Product	Power (W)	CCT	CRI (typ.)	Lumens	LPW	Beam Angle
6PLS/827/HYB/GX23	57962	6	Soft White 2700K	80	520	87	120°
6PLS/830/HYB/GX23	57963	6	Warm White 3000K	80	550	92	120°
6PLS/835/HYB/GX23	57964	6	Neutral White 3500K	80	550	92	120°
6PLS/840/HYB/GX23	57965	6	Cool White 4000K	80	560	93	120°

* Not intended for use in totally enclosed fixtures
** Suitable for damp locations. Not for use where directly exposed to weather or water
*** Full installation guide and more details available on website

A19 8.5W DIM. TITANIUM LED SERIES

GREENCREATIVE

ENERGY STAR

PRO

8.5W REPLACES

60W Inc.

80% Energy Savings

$157 Savings per lamp*

- Omnidirectional: 330° beam angle
- Exceptional efficacy 94 LPW in Warm White
- 40% more energy savings than CFL
- Comfortable warm diffused light
- Natural A-lamp shape fits all applications
- Ideal for lamps with shades

25,000 H

DIMMABLE

94 LPW EFFICACY

3 YR WARRANTY

80 CRI (Ra)

OMNI DIRECTIONAL

c UL us LISTED

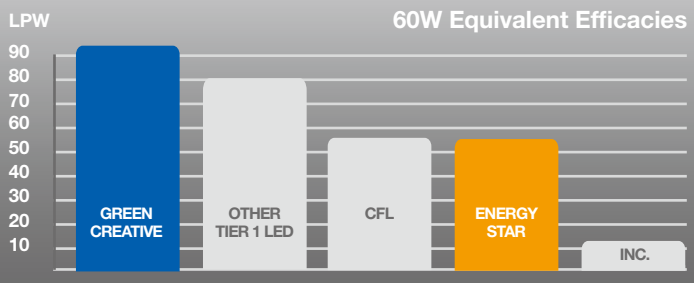
lighting facts LED Product Partner

LM 79 LM 80 TM 21 IES

A19 PRODUCT FEATURES

This A19 meets the new ENERGY STAR V1.1 requirements for omnidirectional bulbs by providing 330° of evenly distributed light intensity. In the 135° to 180° zone, this lamp emits 65% more lumens than what is required by ENERGY STAR, providing a fuller light than other LED A-lamps.

Exceptional Efficacy



At 94 LPW, this lamp's efficacy is more than 15% higher than the Tier 1 LED A19 60W replacement industry average and exceeds new ENERGY STAR requirements by upwards of 65%. This energy-saving performance makes this lamp a smart retrofit choice for incandescent and CFL bulbs.

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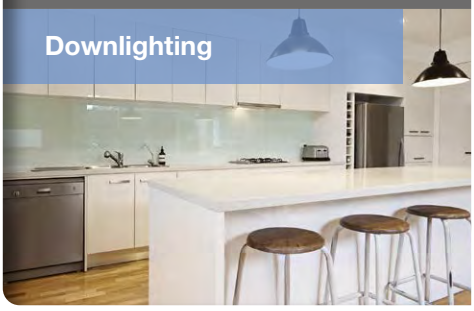
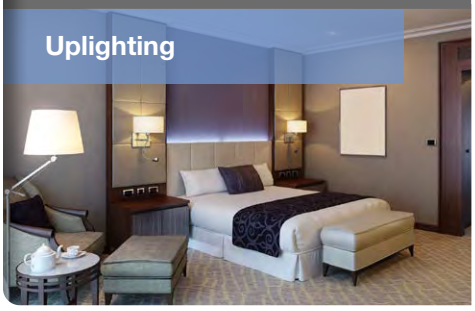
A19 8.5W DIM. TITANIUM LED SERIES

GREENCREATIVE

Ref.#: DS118-A19-8.5W

APPLICATIONS





SPECIFICATIONS

Product Model	57856 8.5A19DIM/827	57857 8.5A19DIM/830	57858 8.5A19DIM/840
Type	A19	A19	A19
Base	E26	E26	E26
Power (W)	8.5	8.5	8.5
Voltage - Frequency	120V 60Hz	120V 60Hz	120V 60Hz
Color Temp. (ANSI)	Soft White 2700K	Warm White 3000K	Cool White 4000K
CRI (Ra) (typ.)	80	80	80
Typical lumens (lm)	800	800	850
Efficacy (LPW)	94	94	100
Beam Angle	330°	330°	330°
Dimmable	Yes**	Yes**	Yes**
Power Factor	0.9	0.9	0.9
Rated Lifetime - L70 (hrs.)	25,000	25,000	25,000
Dia. x MOL	2.36"x4.35" (60x110mm)	2.36"x4.35" (60x110mm)	2.36"x4.35" (60x110mm)
Weight (lb. / g)	0.13lb. / 59g	0.13lb. / 59g	0.13lb. / 59g

* Savings per lamp based on $0.11 / kw energy cost, 12 hrs / day lamp usage, $2 incandescent with 1000-hr lifetime, $11 LED with 25,000-hr lifetime

** List of tested dimmer switches available on website
*** Not intended for use in totally enclosed fixtures
**** Suitable for damp locations. Not for use where directly exposed to weather or water

BR30 8W DIM. TITANIUM LED SERIES 4.0

GREENCREATIVE

ENERGY STAR

PRO

CLOUD DESIGN

2014 PROGRESS Report SELECTION

8W REPLACES

65W Inc.

80% Energy Savings

$195 Savings per lamp*

- **Revolutionary CLOUD design**
- **60% lighter due to environmentally friendly construction**
- **Exceptional efficacy 81 LPW in Warm White**
- **Smooth dimming with existing installations**
- **Accurate color rendering CRI 82**
- **Extra Warm White, Warm White & Natural White CCT**

25,000 H

DIMMABLE

81 LPW EFFICACY

3 YR WARRANTY

82 CRI (Ra)

ENCLOSED**

c UL us LISTED

FC

lighting facts LED Product Partner

LM 79 LM 80 TM 21 IES

BR PRODUCT FEATURES

Revolutionary CLOUD Design

The BR30 CLOUD features an innovative design that provides more efficient light output than previous generations while using 35% less material. This environmentally friendly lamp weighs less than 100g and maintains a traditional incandescent form factor, making it suitable for all applications.

Exceptional Efficacy

At 81 LPW, this lamp's efficacy is more than 20% higher than the Tier 1 LED BR30 65W replacement industry average and exceeds ENERGY STAR requirements by upwards of 100%. This energy-saving performance makes this lamp a smart retrofit choice for incandescent bulbs.

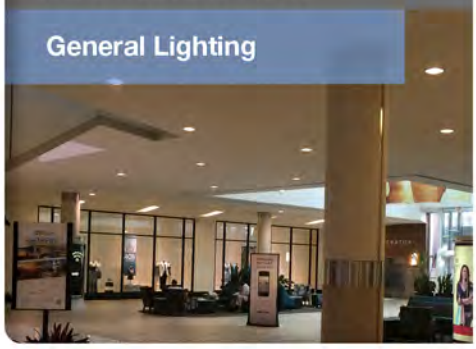
Fax: (866) 774-5433 - / GREENCREATIVELED / GClightingLED / GREEN CREATIVE

BR30 8W DIM. TITANIUM LED SERIES 4.0

GREENCREATIVE

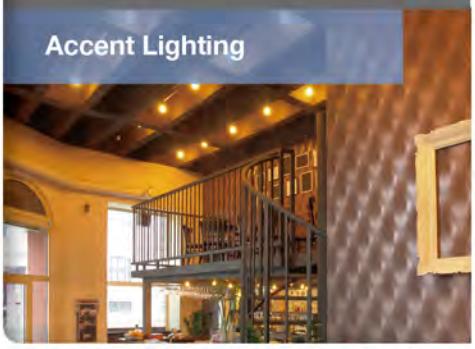
APPLICATIONS

General Lighting



Recessed Lighting

Accent Lighting



Ref #: DS033-BR30-8W

SPECIFICATIONS

Product Model	40770 8BR30G4DIM/824	40771 8BR30G4DIM/827	40772 8BR30G4DIM/830	40773 8BR30G4DIM/840
Type	BR30	BR30	BR30	BR30
Base	E26	E26	E26	E26
Power (W)	8	8	8	8
Voltage - Frequency	120V 60Hz	120V 60Hz	120V 60Hz	120V 60Hz
Color Temp. (ANSI)	Extra Warm White 2400K	Warm White 2700K	Warm White 3000K	Natural White 4000K
CRI (Ra)	80	82	82	82
Typical lumens (lm)	585	650	685	710
Efficacy (LPW)	73	81	86	89
Beam Angle	110°	110°	110°	110°
Dimmable	Yes***	Yes***	Yes***	Yes***
Power Factor	0.9	0.9	0.9	0.9
Rated Lifetime - L70 (hrs.)	25,000	25,000	25,000	25,000
Dia. x MOL	3.74"x5.20" (95x132mm)	3.74"x5.20" (95x132mm)	3.74"x5.20" (95x132mm)	3.74"x5.20" (95x132mm)
Weight (lb. / g)	0.21lb. / 96g	0.21lb. / 96g	0.21lb. / 96g	0.21lb. / 96g

* Savings per lamp based on $0.11 / kw energy cost, 12 hrs / day lamp usage, $4 incandescent with 1000-hr lifetime, $30 LED with 25,000-hr lifetime
** Suitable for use in totally enclosed fixtures
*** List of tested dimmer switches available on website
**** Suitable for damp locations. Not for use where directly exposed to weather or water

Features & Benefits

- No rewiring needed
- Works with fluorescent electronic ballast (Instant Start and Programmed Start)
- Long life
- High CRI
- Instant on, no delay
- Convenient and quick installation
- Utilizes existing instant start or rapid start sockets
- Works with dimming ballast
- Compatible with controls and sensors
- Works in cold temperature applications
- Glass tube for superior optical performance
- 5 Year Warranty

* EMERGENCY BALLAST RESTRICTIONS

RetroFlex™
LED T8 LAMP • Simplicity.
Commercial Grade **LED T8 Lamp**

Specification Data

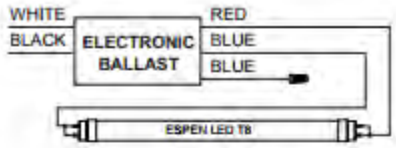
Order Code	Length	Power	Input Voltage (Depend on Ballast)	CCT	Initial Lumens	CRI	Beam Angle	Lamp Efficacy	System Efficacy	Life	DLC
LB48T8U6/830/12P-EB	48	16	120/277V, 347V	3000K	1800	83	240	150	112	50,000	Yes
LB48T8U6/835/12P-EB	48	16	120/277V, 347V	3500K	1800	83	240	150	112	50,000	Yes
LB48T8U6/840/12P-EB	48	16	120/277V, 347V	4000K	1800	83	240	150	112	50,000	Yes
LB48T8U6/850/12P-EB	48	16	120/277V, 347V	5000K	1800	83	240	150	112	50,000	Yes

System Performance

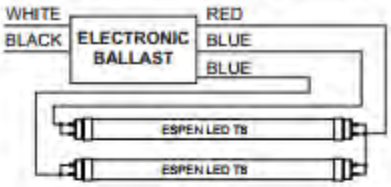
	Low Ballast Factor				High Ballast Factor			
Lamp Model	Lamp Power	System Power	Lumen Output	Lamp Efficacy	Lamp Power	System Power	Lumen Output	Lamp Efficacy
LB48T8U6/830/12P-EB								
LB48T8U6/835/12P-EB								
LB48T8U6/840/12P-EB								
LB48T8U6/850/12P-EB								

Wiring diagram

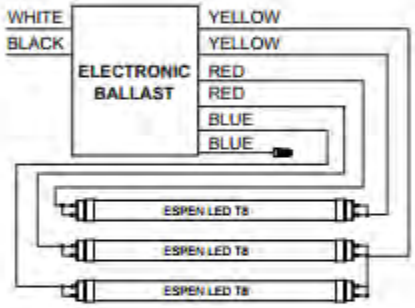
1-LAMP Instant Start Electronic Ballast



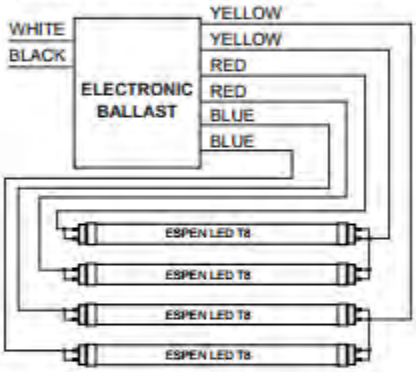
2-LAMP Instant Start Electronic Ballast



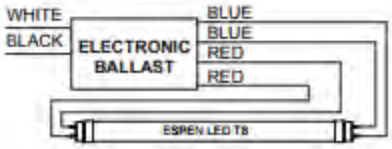
3-LAMP Instant Start Electronic Ballast



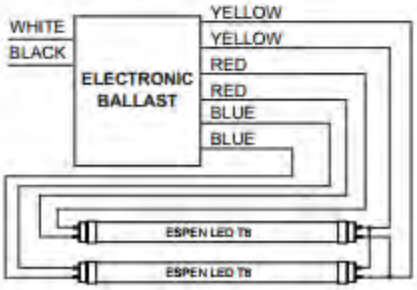
4-LAMP Instant Start Electronic Ballast



1-LAMP Programmed Start Electronic Ballast



2-LAMP Programmed Start Electronic Ballast



* Please check ballast compatibility list before installation.

Specification data is based on tests performed in a controlled environment and represents relative performance. Actual performance can vary depending on operating conditions. Application and performance data subject to change without notice. All specifications are nominal unless noted otherwise.

Espen Technology Inc. | 12257 Florence Ave. | Santa Fe Springs, CA 90670
Toll Free: (866) 933-7736 | Tel.: (562) 529-2938 | Fax: (562) 529-2978 | Email: info@espentech.com

Features & Benefits

- NSF 2 Rated with ArmorCoat Shatterproof Technology
- Integrated Thermal Fuse Protection
- No rewiring needed
- Works with fluorescent electronic ballast (Instant Start, Programmed Start, and Dimming)*
- Long life
- High CRI
- Instant on, no delay
- Convenient and quick installation
- Utilizes existing instant start or rapid start sockets
- Compatible with controls and sensors
- Dimmable
- Works in cold temperature applications
- Glass tube for superior optical performance
- Wide View Angle
- 5 Year Warranty
- New Version with Integrated ArmorCoat
  For use in food areas and refrigerated food displayers

* EMERGENCY BALLAST RESTRICTIONS

RetroFlex™
LED T8 LAMP • Simplicity.
Commercial Grade **LED T8 Lamp**

Specification Data

Order Code	Length	Lamp Power	System Power	CCT	Initial Lumens	CRI	Beam Angle	Lamp Efficacy	System Efficacy	Life	DLC
L48T8/835/12G-EB-AC	48	12	14	3500K	1900	83+	325	138	136	50000	Yes
L48T8/840/12G-EB-AC	48	12	14	4000K	1900	83+	325	138	136	50000	Yes
L48T8/850/12G-EB-AC	48	12	14	5000K	1900	83+	325	138	136	50000	Yes

* Based on Normal Ballast Factor.

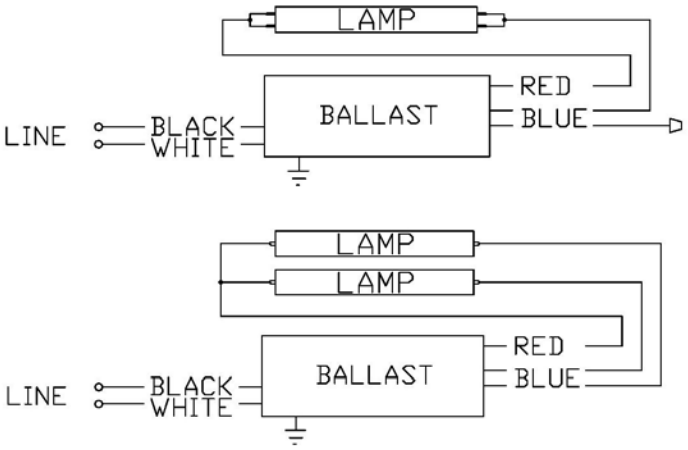
Ordering Information

EXAMPLE: **L48T8/840/15G-EB-AC**

L		**48**	**T8**	**8**	**40**	**15 G**	-	**EB**	-	**AC**
	Manufacturer's Code	**Normal Length** **48**=48"	**Lamp Shape** **T8**=T8	**CRI** **8**=>80	**CCT** **50** =5000K **40** =4000K **35** =3500K	**Wattage** **15G-15W**		**Electronic Ballast Compatible**		**ArmorCoat Shatterproof Coating**

* Not compatible with products equipped with battery backup and/or emergency ballasts.
* Please refer to "Ballast Compatibility List" on Related Downloads.

Wiring Diagram



Specification data is based on tests performed in a controlled environment and represents relative performance. Actual performance can vary depending on operating conditions. Application and performance data subject to change without notice. All specifications are nominal unless noted otherwise.

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Toll Free: (866) 933-7736 | Tel.: (562) 529-2938 | Fax: (562) 529-2978 | Email: info@espentech.com

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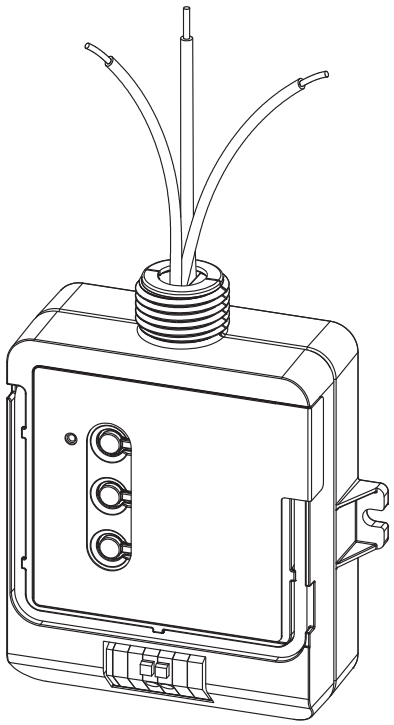
Vive PowPak Dimming Module with 0–10 V⎓ Control

The PowPak Dimming Module with 0–10 V⎓ Control is a radio frequency (RF) control that operates 0–10 V⎓ controlled fluorescent ballasts or LED drivers based on input from Pico remote controls and Radio Powr Savr sensors. The Dimming Module with 0–10 V⎓ Control is ideal for small areas (e.g., classrooms, conference rooms, private offices).

Communication with RF input devices (e.g., Pico remote controls, Radio Powr Savr sensors) is accomplished by using Lutron Clear Connect RF Technology.



These products are also compatible with the Vive hub which enables a simple setup process using a standard web browser on any Wi-Fi enabled phone, tablet or computer. It also enables control and monitoring of all Vive devices. The Vive hub can be added at any time. System reprogramming will be required. For a complete list of features supported with the Vive hub, see specification submittal 369902.

Note for Replacement: RMJS/URMJS - the “S” model can replace the non-”S” model.

Features

- Controls up to 60 mA of 0–10 V⎓ controlled fixtures together
- Switches up to 8 A total
- 0–10 V⎓ control link automatically sources or sinks to the third party fixtures
- Configurable high- and low-end trim
- Various operating voltages available; refer to model number chart below for details on voltage requirements
- Receives wireless inputs from up to 10 Pico remote controls, 10 Radio Powr Savr occupancy/vacancy sensors, and 1 Radio Powr Savr daylight sensor
- Utilizes Lutron Clear Connect RF Technology; refer to model number chart below for frequency band data
- Mounts to a US-style junction box through a standard-size knockout

Models

Model Number	Region	Operating Voltage	Frequency Band
RMJS-8T-DV-B	U.S.A., Canada, Mexico	120/277 V~	431.0–437.0 MHz
URMJS-8T-DV-B	U.S.A. (BAA Compliant)	120/277 V~	431.0–437.0 MHz

NOTE: Contact Lutron for frequency band compatibility for your geographic region if it is not indicated above.

Specifications

Regulatory Approvals

RMJS- and URMJS- models

- UL Listed
- FCC approved. Complies with the limits for a Class B device, pursuant to Part 15 of the FCC rules
- Complies with requirements for use in other spaces used for environmental air (plenums) per NEC 2014 300.22(C)(3)
- Listed in accordance to CAN/ULC S102.2-2010 with a Flame Spread Rating of 0 and a Smoke Developed Classification of 40, with a minimum spacing of 6 ft (1.83 m) off center
- cUL and IC (Canada) (RMJS- only)
- COFETEL (Mexico) (RMJS- only)
- NOM (Mexico) (RMJS- only)

Power

- Operating voltage
  - **RMJS- and URMJS- models:** 120/277 V~ 50/60 Hz

Output Ratings

- Switch rating of 8 A. Rated for resistive or capacitive loads as defined by IEC/EN 60669-2-1
- 0–10 V⎓ control link for 60 mA maximum output, source or sink automatically configures

Other Power Specifications

- Standby power:
  - 240–277 V~ 610 mW
  - 120 V~ 550 mW
- BTU/hour when fully loaded: 9
- Works with all ballasts and drivers that provide a current source that is compliant to IEC 60629 Annex E.2, and whose inrush current does not exceed NEMA410 standards for electronic ballast/driver

System Communication

- Operates using Clear Connect RF Technology for reliable wireless communication; refer to model number chart on page 1 for frequency band details
- RF range is 30 ft (9 m)
- Wireless sensors and controls must be located within 60 ft (18 m) line of sight, or 30 ft (9 m), through walls, of the associated control module. The 60 ft (18 m) range is not reduced by a ceiling tile obstruction.

Environment

- Ambient operating temperature: 32 °F to 104 °F (0 °C to 40 °C)
- 0% to 90% humidity, non-condensing
- For indoor use only
- All drivers and ballasts used with Vive wireless controls must comply with the limits for a Class A device pursuant to Part 15 of the FCC Rules

0–10 V⎓ Control Link

- Communicates with up to 60 mA of fixtures
- Control link is IEC SELV/NEC Class 2
- 0–10 V⎓ control can be installed using NEC Class 1 or Class 2 wiring methods. Alternately, it can be wired to basic or double-insulated devices
- Terminals accept one 18 AWG to 16 AWG (0.75 mm^2 to 1.5 mm^2) solid wire
- Always consult local wiring codes
- Compatible with ANSI E1.3 2001 (R2006), IEC 60929 Annex E

Specifications *(continued)*

Default Operation

- Associated wireless input devices control all connected fixtures together
- Occupancy Sensors:
  - Occupied: 100%; Unoccupied: 0% (OFF)
- Pico Remote Controls:
  - On: 100%; Favorite Level: 50%; Off: 0% (OFF)
- Daylight Sensor: Decreases electric light in response to additional available daylight

Key Design Features

- LED status indicator shows load status and provides programming feedback
- Configurable high-end and low-end trim
- Power failure memory: If power is interrupted, connected loads will return to the previous level prior to interruption
- 0–10 V⎓ control mis-wire protection up to 30 V⎓

Advanced Configurations

Pico Remote Controls

- Up to 10 Pico remote controls
- Favorite levels can be set for each Pico remote control

Radio Powr Savr Daylight Sensor

- The Radio Powr Savr daylight sensor will affect all connected ballast and LED drivers equally
- For multple rows of daylighting, a separate PowPak Dimming Module with 0–10 V⎓ must be used for each daylighting row

Minimum Light Level Setting (optional)

- Certain applications, such as hallways, may require that the lights never turn off. For these areas, select the minimum light level option and the load will lower to programed low-end level. Default operation lowers to OFF.

High- and Low-End Trim

- High-end and low-end trim affect all connected fixtures equally, and can be configured from the PowPak Dimming Module.
- Adjustable low-end trim (0%–45%). Trimmable low-end can ensure a stable light level. Some fixtures will flicker or drop out if trimmed too low.
- The maximum light output of connected fixtures can be decreased down to 55% for energy savings in over-lit spaces.

  Note: The perceived light output of low-end trim may vary between fixture manufacturers and model numbers. For best results, do not mix different ballasts or drivers on the same 0–10 V⎓ circuit.

Radio Powr Savr Occupancy Sensors

- Radio Powr Savr occupancy and vacancy sensors control all connected ballasts or drivers.
- Pico remote controls can be used to adjust the Occupied levels of fixtures that they control from 1% to 100% (of output signal) or can make them unaffected by Occupancy events.
- Vacancy events (area becomes unoccupied) turn all ballasts and driver models off or to minimum light level.

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Wireless Wall-Mount Sensor

Lutron® wall-mounted occupancy and vacancy sensors are wireless, battery-powered, passive infrared (PIR) sensors that automatically control lights via RF communication to compatible dimming or switching devices. These sensors detect the heat from people moving within an area to determine when the space is occupied. The sensors then wirelessly transmit the appropriate commands to the associated dimming or switching devices to turn the lights on or off automatically. They combine both convenience and exceptional energy savings along with ease of installation.

Features

- Wireless occupancy/vacancy sensor has 2 settings available: Auto-On/Auto-Off, and Manual-On/Auto-Off
- Vacancy model meets CA Title 24 requirements
- Passive infrared motion detection with exclusive Lutron® XCT™ Technology for fine motion detection
- 180° field of view model:
  - Minor motion = 1500 ft^2 (139.4 m^2)
  - Major motion = 3000 ft^2 (278.7 m^2)
- 90° field of view model:
  - Minor motion = 1225 ft^2 (113.8 m^2)
  - Major motion = 2500 ft^2 (232.3 m^2)
- Hallway model with long, narrow field of view:
  - Major motion = coverage of up to 150 ft (45.7 m)
- Simple and intuitive adjustments available for Timeout, Activity, and Auto-On settings
- Accessible test buttons make setup easy
- Lens illuminates during test mode to verify ideal locations
- Multiple sensors can be added for extended coverage; refer to product specification submittal of receiving device to determine system limits
- 10-year battery life design
- RoHS compliant

Compatible RF Devices

- For use with Lutron® products only
- Communicates to various wireless Lutron® Clear Connect® systems*

* Contact Lutron Customer Service at www.lutron.com for frequency/channel code compatibility with your particular geographic region, and for integrating with other Lutron® lighting and shading products.

Models Available

- LRF__-__ __ LB-P-WH
  - Coverage Type
  - Sensor Type
  - Frequency/Channel Code

Example:
LRF**2**-**VH**LB-P-WH
(434 MHz White Hallway Vacancy Sensor)

Frequency/Channel Code

2 = 431.0 – 437.0 MHz (US, Canada, Mexico, Brazil)*
3 = 868.125 – 869.850 MHz (Europe and UAE)
4 = 868.125 – 868.475 MHz (China and Singapore)
5 = 865.5 – 866.5 MHz (India)
7 = 433.0 – 433.7 MHz (Hong Kong)

Sensor Type

O = Occupancy/Vacancy (Auto-On/Auto-Off)
V = Vacancy (Manual-On/Auto-Off)**

Coverage Type

H = Hallway
K = 90° Corner-Mount
W = 180° Wall-Mount

* BAA compliant models available for LRF2 configurations. Add a "U" prefix to your chosen model number. Example: **U**LRF2-OWLB-P
** Vacancy sensor type for LRF2 models only

LUTRON® SPECIFICATION SUBMITTAL Page 1

Job Name:	Model Numbers:	
Job Number:		

Specifications

Regulatory

- Lutron Quality Systems Registered to ISO 9001:2008

Regulatory Approvals

LRF2-

- cULus listed
- FCC certified
- IC certified
- COFETEL certified
- ANATEL certified
- SUTEL certified
- Meets CA (U.S.A.) Energy Commission Title 24 requirements

LRF3-

- CE marked (European Union)
- TRA type approved (United Arab Emirates)
- CITC type approved (Saudi Arabia)

LRF4-

- SRRC type approved (Mainland China)
- iDA registered (Singapore)

LRF5-

- WPC type approved (India) [expected Q1 2014]

Power/Performance

- Operating voltage: 3 V⎓
- Operating current: 14 µA nominal
- Requires one CR 123 lithium battery
- 10-year battery-life design
- Non-volatile memory (saved changes are stored during power loss)

Environment

- Temperature: 32 °F to 104 °F (0 °C to 40 °C)
- For indoor use only

RF Range

- Distance between local load controls and sensor should not exceed 60 ft (18 m) line-of-sight or 30 ft (9 m) through walls.

Sensor Coverage Test

- Dedicated test button
- Lens illuminates orange in response to motion during test mode

Wireless Communication Test

- Dedicated test button
- Turn associated loads on and off

Timeout Options

- 1 minute*
- 5 minutes
- 15 minutes (default setting)
- 30 minutes

Auto-On Options (Occupancy Versions Only)

- *Enabled*: Sensor turns lights ON and OFF automatically (default setting)
- *Disabled***: Lights must be turned ON manually from dimming or switching device. Sensor turns lights OFF automatically

Sensitivity Options

- *Low Activity*: (default setting)
- *Medium Activity*:
- *High Activity*:

* Intended for use in high-activity, briefly-occupied areas only

** There is a 15-second grace period that begins when the lights are automatically turned off, during which the lights will automatically turn back on in response to motion. This grace period is provided as a safety and convenience feature in the event the lights turn off while the room is still occupied, so that the user does not need to manually turn the lights back on. After 15 seconds, the grace period expires and the lights must be manually turned on.

Installation Overview

Sensor Placement

- The mounting height of the sensor should be between 6 ft and 8 ft (1.6 m and 2.4 m).
- For smaller rooms less than 12 ft × 12 ft (3.7 m × 3.7 m), detection may be improved by mounting the sensor at 6 ft (1.8 m) from the floor.
- The ability to detect motion requires that the sensor have line-of-sight of all room occupants. The sensor must have an unobstructed view of the room. **DO NOT** mount behind or near tall cabinets, shelves, hanging fixtures, etc. The sensor cannot detect occupants through glass objects such as patio- or shower doors.
- Hot objects and moving air currents can affect the performance of the sensor. To ensure proper operation, the sensor should be mounted at least 4 ft (1.2 m) away from light bulbs and HVAC vents.
- The performance of the sensor depends on a temperature differential between the ambient room temperature and that of room occupants. Warmer rooms may reduce the sensor's ability to detect occupants.
- Distance between local load controls and sensor should not exceed 60 ft (18 m) line-of-sight or 30 ft (9 m) through walls.

Mounting

- 180° and hallway sensors mount directly to wall with mounting bracket (included). See Figure A.
- 90° sensors mount directly in corner or on wall offset away from corner with mounting bracket (included). See Figure B.
  - Temporary mounting is recommended to test sensor coverage and wireless communication before permanently installing the sensor.
    - Temporary mounting: A 3M™ Command™ adhesive strip is provided for temporarily mounting and testing the sensor. This strip is designed for easy, damage-free removal and is not reusable.
    - Permanent mounting: Mounting bracket, screws, and anchors are provided to mount sensor.
- The Flexible Mounting Armature, LRF-ARM-WH (purchased separately), allows sensors to be mounted at greater heights on a ceiling, wall, or other flat surface.
  - The ball-and-clamp design expands the coverage area for Lutron® standard wall-, corner-, or hall-mount sensors. See Figure C.
  - Common mounting areas: warehouse aisles, loading docks, long hallways.

Figure A. 180° Wall-Mount Sensor and Hallway Sensor

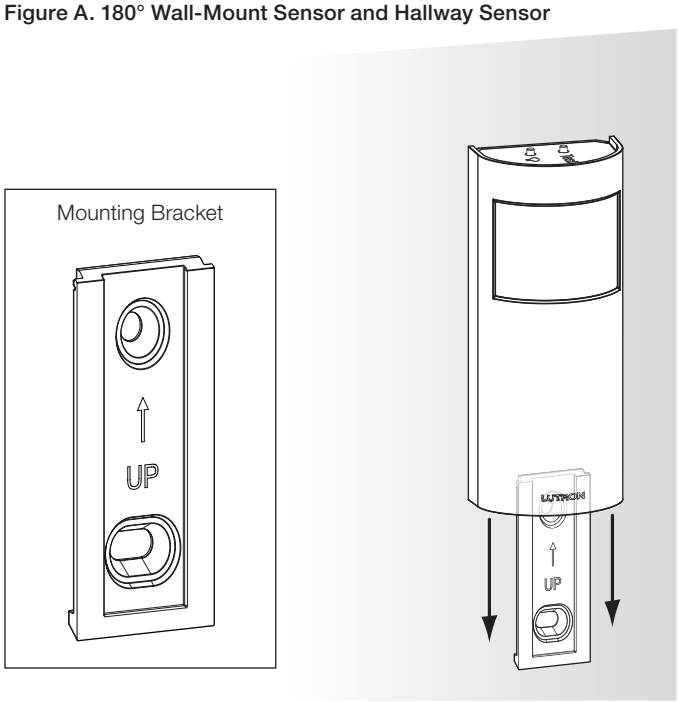


Figure B. 90° Corner-Mount Sensor

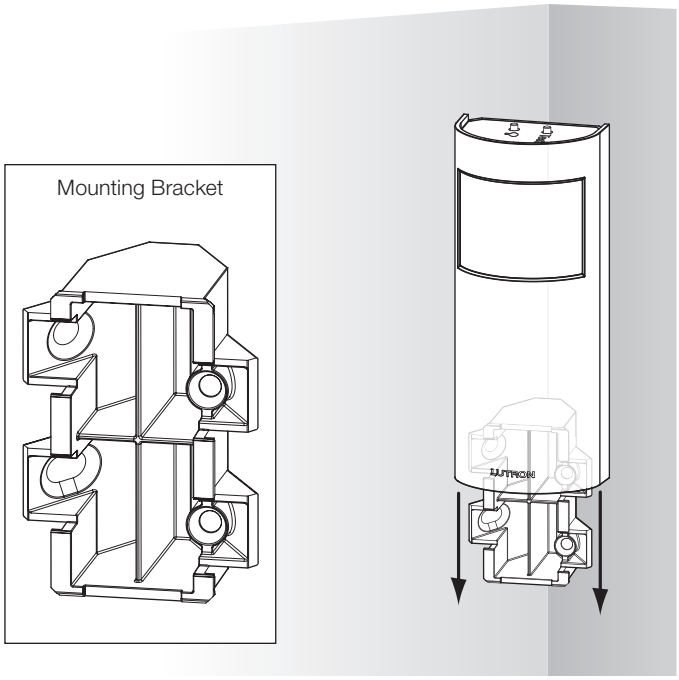
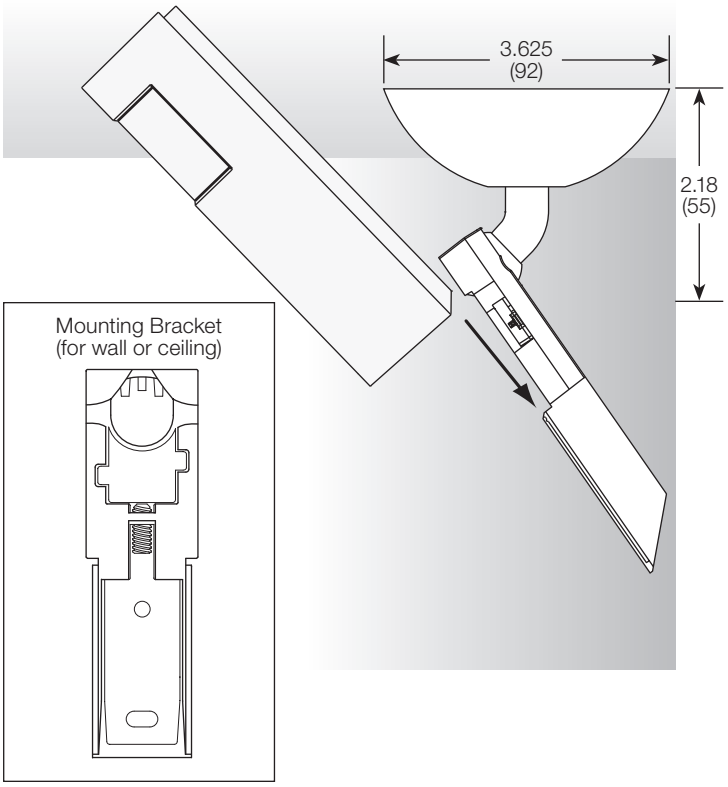


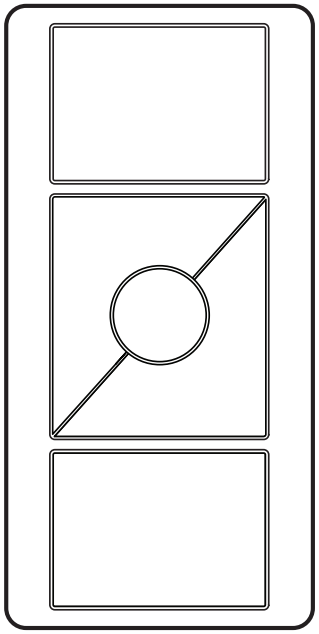
Figure C. Flexible Mounting Armature
Measurements are: in (mm)



3M and Command are trademarks of 3M Company.

Pico® Wireless Control and Mounting Accessories (for North, Central, and South America)

The Pico® wireless control is a flexible and easy to use device that allows the user to control Lutron® wireless load control devices from anywhere in the space. This battery operated control requires no external power or communication wiring.



Pico® wireless control

Features

- Provides control for the following:
  - Maestro Wireless® controls
  - PowPak™ Modules
  - Sivoia® QS wireless systems
  - Energi Savr Node™ and Quantum® systems, through the use of a QS sensor module (QSM)
  - GRAFIK Eye® QS wireless systems
  - RadioRA® 2 systems
  - HomeWorks® QS wireless systems
- Control available in a variety of button marking options.
- Easy reconfiguration for use as:
  - Handheld remote
  - Wall mount control (with or without faceplate; faceplate adapter kit sold separately)
  - Car visor control (car visor clip sold separately)
  - A table top control (table top pedestal sold separately).
- Battery powered Pico® wireless control requires no wiring.
- 10 year battery life (one CR2032 battery included).
- Can provide control to blinds, curtains or lighting devices within a 30 ft (9 m) range.

Specifications

Regulatory

- Lutron® Quality Systems registered to ISO 9001:2008.
- FCC Certified (U.S.A.)
- IC Certified (Canada)
- COFETEL Certified (Mexico)
- SUTEL Certified (Costa Rica)

Power

- Operating Voltage 3 V⎓
- (1) CR2032 Battery (included)

System Communication and Capacity

- Pico® wireless controls communicate using Radio Frequency (RF) at 431 - 437 MHz.
- Thousands of system addresses prevent interference between systems.
- Pico® wireless controls can be assigned to control blinds, curtains or lighting devices that are within a 30 ft (9 m) range.
- Can be configured as a scene or zone control in GRAFIK Eye® QS wireless applications.

Mounting Considerations

- Mounting of any RF devices on or in close proximity to a metal surface will drastically reduce the effective range of radio signal transmission or reception.
- All RF devices must be mounted on non-conductive materials to ensure proper performance.
- Coming soon! If you wish to mount your Pico® wireless control to a metal surface, the “Metal Mounter” will be required in order to maintain proper RF performance. Please contact Lutron® Customer Service for availability at 1.888.LUTRON1 (1.888.588.7661).

Environment

- Ambient operating temperature: 32 ˚F to 140 ˚F (0 ˚C to 60 ˚C)
- Maximum 90% non-condensing relative humidity
- Indoor use only

Warranty

- 1 Year Limited Warranty
  For additional Warranty information, please visit http://www.lutron.com/TechnicalDocumentLibrary/369-119_Wallbox_Warranty.pdf

Model Number

For order quantities of 96 pieces or greater of the same model number, bulk packaging may be available. Mounting hardware is not available with bulk packaging. Please contact Lutron® Customer Service for availability at 1.888.LUTRON1 (1.888.588.7661).

Frequency/Channel Code
Button Configuration Code
Color Code
Button Marking Type Code (see next page)
Button Marking Code (see next page)

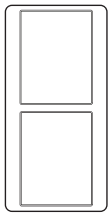
PJ-XXXX-GXX-XXX

Frequency/Channel Codes:

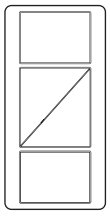
Code	
J — 431.0 - 437.0 MHz	Contact Lutron's Customer Service at www.lutron.com for frequency/channel code compatibility with your particular geographic region, and for integrating with other Lutron® lighting and shading products.

Button Configuration Codes:

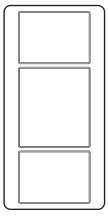
Button Configuration	Code
2 Button	2B
2 Button with Raise/Lower	2BRL
3 Button	3B
3 Button with Raise/Lower	3BRL



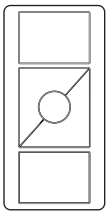
2 Button (2B)



2 Button with Raise/Lower (2BRL)



3 Button (3B)



3 Button with Raise/Lower (3BRL)

Color Codes:

Gloss Color	Code
White	WH
Black	BL
Ivory	IV
Light Almond	LA
White/Gray	WG (Top and Raise buttons are White; Preset, Lower, and Bottom buttons are Gray)

Continued on next page...

Model Number (continued)

Frequency/Channel Code (see previous page)
Button Configuration Code (see previous page)
Color Code (see previous page)
Button Marking Type Code
Button Marking Code

PX-XXXX-GXX-XXX

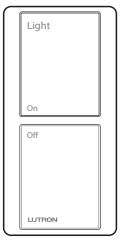
Button Marking Type Codes:

Button Marking Type Options	Code
Text	T
Icons	I

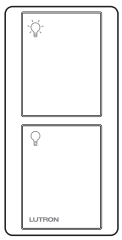
Button Marking Codes:

Button Marking Options	Code	Button Marking Options	Code
Light	01	Drapery	08
Shade	02	Blackout	09
Shade 1	05	Sheer	10
Shade 2	06	Blind	13
Screen	07	Power	14

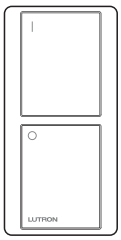
2 Button



Light (text)
(01)



Light (icons)
(01)



Power (icons)
(14)

Continued on next page...

FSP-211 Digital High/Low Passive Infrared Fixture Integrated Outdoor Sensor

Fully adjustable high and low dimmed light levels

Designed for LED fixtures; rated for extreme temperatures and up to 200,000 on/off cycles

Hold off setpoint with automatic calibration option for convenience and added energy savings

Adjustable via handheld wireless configuration tool

IP66 rated with choice of lenses for wet and outdoor locations, and mounting heights from 8' to 40'

Adjustable time delay and cut off delay

PROJECT

LOCATION/TYPE

Product Overview

Description

The FSP-211 mounts in an outdoor lighting fixture and provides multi-level control based on motion. The sensor also includes a photocell to measure the ambient light level. It controls 0-10 VDC LED drivers or dimming ballasts, as well as non-dimming ballasts and, with an FSP-Lx Lens, is rated for wet and cold locations. All control parameters are adjustable via a wireless configuration tool capable of storing and transmitting sensor profiles.

Operation

The sensor ramps lighting On to the selected High mode level when motion is first detected and the ambient light level is below the hold off setpoint. After the sensor stops detecting movement and the time delay elapses, lights fade to the Low mode level. If there is no motion during the subsequent cut off time delay, the lights will turn Off. If the sensor detects motion before the lights turn Off, it ramps the light level back to High, unless the daylight contribution is sufficient to hold lighting at Low.

Wireless Handheld Configuration Tool

Initial setup and subsequent sensor adjustments are made using a handheld configuration tool (FSIR-100). This tool enables adjustment of parameters including high and low modes, sensitivity, time delay, cut off and more. The FSIR-100 is also used to initiate automatic calibration of the FSP-211 ambient light level setpoint. The setpoint is used to hold the controlled lighting off or at low level when there is sufficient daylight. The wireless tool stores up to five sensor parameter profiles to speed configuration of multiple sensors.

Applications

The slim, low-profile FSP-211 is designed for installation inside the bottom of a light fixture body. When fully assembled and installed in an IP66-rated fixture, the sensor and FSP-Lx lenses are IP66 outdoor rated. The sensor is ideal for areas such as parking facilities, gas stations, pedestrian pathways and warehouses. A choice of four lenses ensures complete coverage for mounting heights up to 40'.

Features

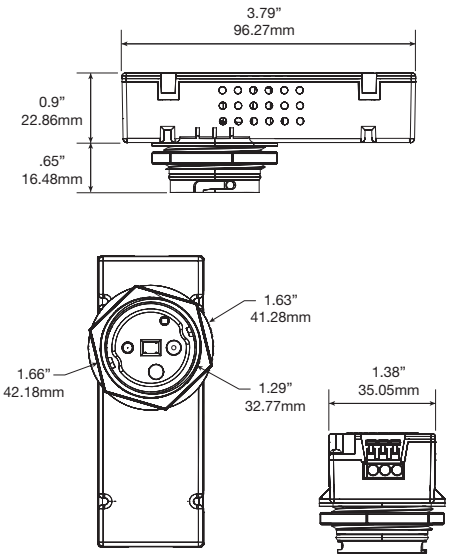
- Provides line voltage On/Off switching and 0-10 VDC dimming control
- Works with ballasts or LED drivers
- High and low modes fully adjustable from 0 to 10V
- Time delay from 5 to 30 minutes
- Optional cut off delay
- Adjustable ramp up and fade down times
- Optional daylighting setpoint features automatic calibration, or permits manual adjustment
- Configuration tool stores five sensor profiles for quick setup and adjustment of multiple sensors
- Polycarbonate construction; flame retardant, UV resistant, impact resistant, recyclable
- UL244A and UL508; IP66 rated (when fully assembled and installed) for use in wet locations

Specifications

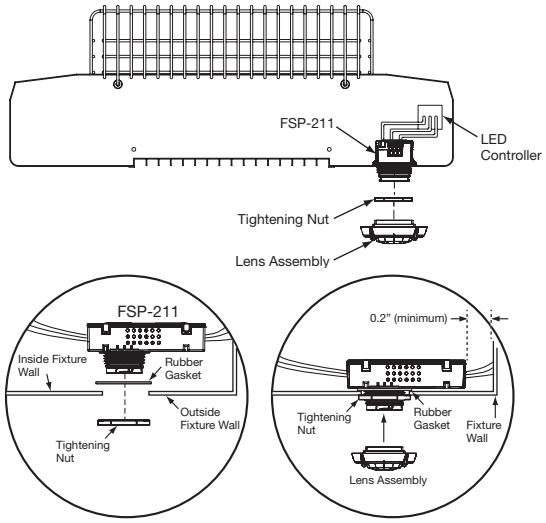
- 120/277 VAC, 50/60Hz
  - Load @120 VAC 0-800W ballast or incandescent
  - Load @277 VAC 0-1200W ballast
- 230 VAC, 50Hz; Load 0-300W ballast
- Relay life rating: 200,000 cycles (120/277 VAC); 50,000 cycles (230 VAC)
- High mode: 0-10 V; default 10 V
- Low mode: Off, 0-9.8 V; default 1 V
- Time delay: 30 sec., 5-30 min.; default 5 min.
- Cut off delay: none, 1-60 min. 1-5 hrs.; default 1 hr.
- Sensitivity: none, low, med, max; default max
- Setpoint: none, 1-250 fc, auto; default 4 fc
- Ramp up time: none, 1-60 sec.; default none
- Fade down time: none, 1-60 sec.; default none
- Operating temperature: -40-167°F (-40-75°C)
- Operating Humidity: 20-90%
- Weight: 2.8 oz (80 grams)
- IP66, CE compliant
- TUV, UL and cUL listed
- Five year warranty

Dimensions & Mounting

Sensor Dimensions



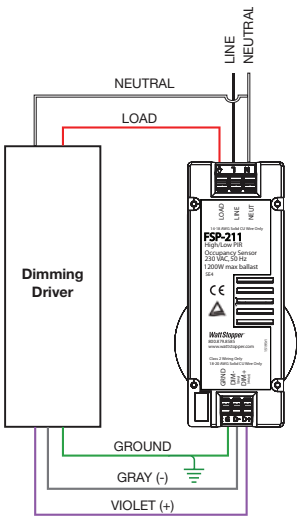
Sensor Mounting



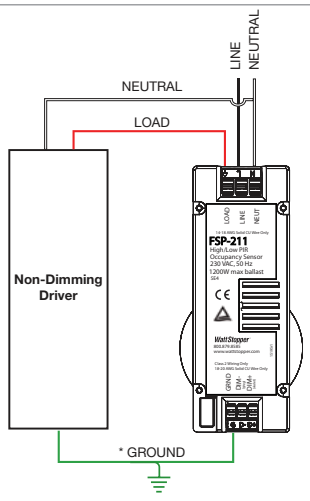
The FSP-211 accommodates fixture wall thickness up to 0.125" (3.18mm).

Wiring

Dimming Wiring Diagram



Non-Dimming Wiring Diagram



*The FSP-211 must be properly grounded.

Ordering Information

Catalog No.	Color	Description	Input Voltage
☐ FSP-211	White	Fixture mount, passive infrared motion sensor	120/277V, 50/60Hz or 230V, 50Hz
☐ FSIR-100	Black	Remote handheld configuration tool	(3) 1.5V AAA alkaline batteries

Pub. No. 38801 rev. 12/2011

OMNI™ Compound (C^2) Water Meter

1-1/2", 2", 3", 4", 6", 8" and 10" OMNI C^2 Meter

The OMNI Compound (C^2) Water Meter operation is based on advanced Floating Ball Technology (FBT).

DESCRIPTION:

- Floating Ball Technology (FBT)

ELECTRONIC REGISTER DISPLAY DIAGRAM

Totalization Mode

AMR/AMI Mode

Resettable Test Mode

Rate of Flow Mode

Conformance to Standards

The OMNI C^2 meter meets and far exceeds the most recent revision of AWWA Standard C701 and C702 class II. Additionally, the meter does not require a valve to meet these standards. Each meter is performance tested to ensure compliance. All OMNI meters are NSF/ANSI Standard 61, Annex F and G approved latest standards.

Performance

The patented measurement principles of the OMNI C^2 meter ensure greater accuracy, expanded accuracy range and longer service life than any other comparable class meter. The OMNI C^2 meter has no restrictions on sustained flow rates within its continuous range. The floating ball measurement technology allows installation in any orientation and flows up to maximum rated capacity without undue wear or accuracy degradation.

Construction

The OMNI C^2 meter consists of two basic assemblies; the maincase and the measuring chamber. The measuring chamber assembly includes the "floating ball" impeller with a coated titanium shaft, hybrid axial bearings, integral flow straightener and an all electronic programmable register with protective bonnet. The maincase is made from industry proven Ductile Iron with an approved NSF epoxy coating. Maincase features are; easily removable measuring chamber, unique chamber seal to the maincase using a high pressure o-ring, testing port and an AWWA compliant strainer.

OMNI Electronic Register

The OMNI C² electronic register is hermetically sealed with an electronic pickup containing no mechanical gearing. The large character LCD displays AMR, totalization, rate of flow and a resettable test totalizer. OMNI register features include AMR resolution units that are fully programmable, fully programmable pulse output frequency, integral customer data logging capability and integral resettable accuracy testing feature compatible with UniPro and Sensus flow verification software. The large, easy-to-read LCD also displays both forward and reverse flow directions. The OMNI C² electronic register has a 10-year battery life guarantee.

Magnetic Drive

Meter registration is achieved by utilizing a fully magnetic pickup system. This is accomplished by the magnetic actions of the embedded rotor magnets and the ultra sensitive register pickup probe. The only moving component in water is the "floating ball" impeller.

Measuring Element

The hydro-dynamically balanced impeller floats between the bearings. The Floating Ball Technology (FBT) allows the measuring element to operate virtually without friction or wear, thus creating the extended upper and lower flow ranges capable on only the OMNI C² meter.

Strainer

The OMNI C² with the AWWA compliant "V" shaped strainer uses a stainless steel screen along with Floating Ball Technology (FBT). This creates a design that greatly improves accuracy, even in difficult settings. A removable strainer cover permits easy access to the screen for routine maintenance.

Maintenance

The OMNI C² meter is designed for easy maintenance. Should any maintenance be required, the measuring chamber and/or strainer cover can be removed independently. Replacement parts or complete measuring chambers are available for repairs. OMNI C² replacement measuring chambers may also be utilized to upgrade some third-party meters to achieve increased accuracy and extended service life.

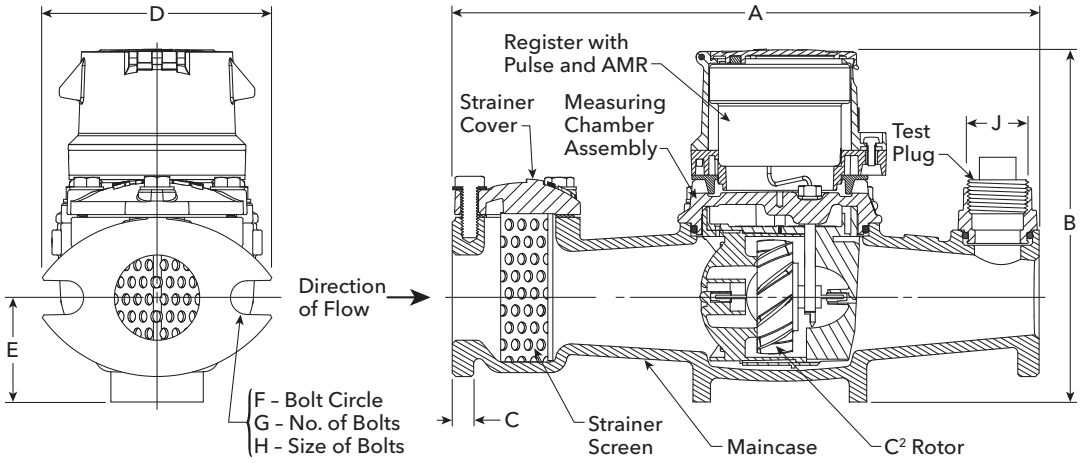
AMR/AMI Systems

Meters and Electronic Registers are compatible with current Sensus AMR/AMI systems and other AMI communication systems that use the Sensus UI1203 protocol.

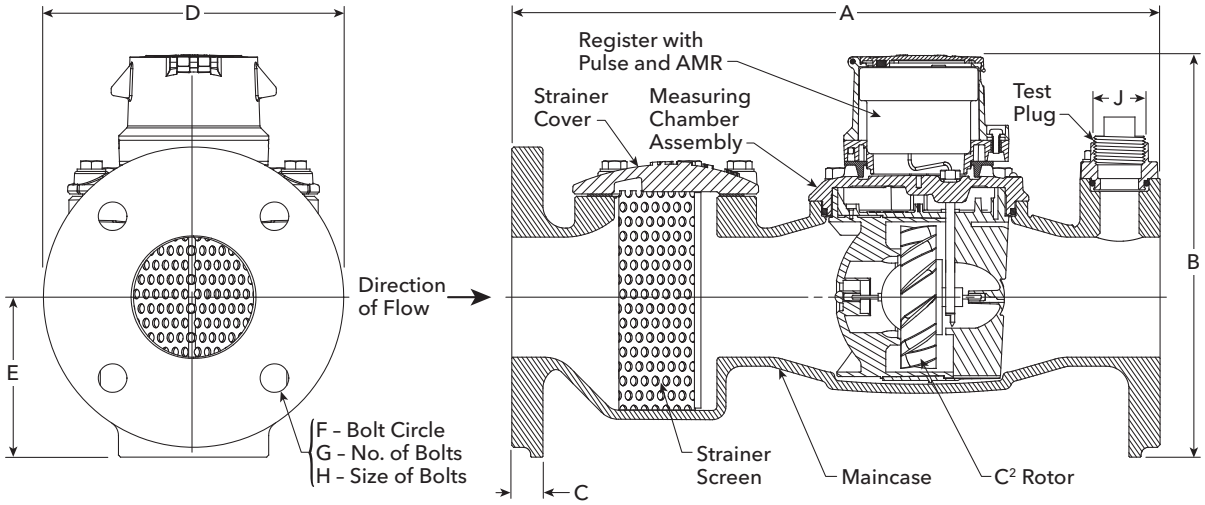
Guarantee

Sensus OMNI C² Meters are backed by "The Sensus Guarantee." Ask your Sensus representative for details or see Bulletin G-500.

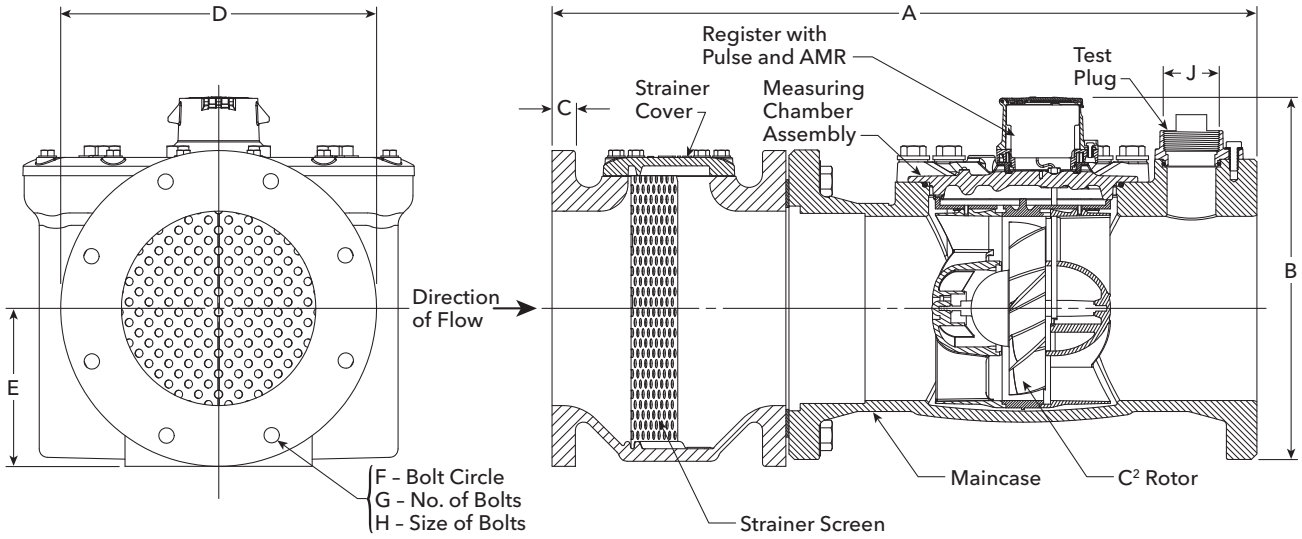
OMNI C²: 1-1/2″ - 2″



OMNI C²: 3″ - 6″



OMNI C²: 8″ - 10″



Dimensions and Net Weights

Meter and Pipe Size	Normal Operating Range		Connections	A	B	C	D	E	F	G	H	J	Net Weight	Shipping Weight
1-1/2″ DN 40mm	.5 gpm .11 m³/hr	200 gpm 45 m³/hr	Flanged	13″ 330mm	7-7/8″ 200mm	15/16″ 24mm	5-1/8″ 130mm	2-5/16″ 59mm	4″ 102mm	2	5/8″ 16mm	1″ 25mm	18.8 lbs. 8.53 kg.	22.5 lbs. 10.20 kg.
2″ DN 50mm	.5 gpm .11 m³/hr	200 gpm 45 m³/hr	Flanged	15-1/4″ 387mm	7-7/8″ 200mm	1″ 25mm	5-3/4″ 146mm	2-5/16″ 59mm	4-1/2″ 114mm	2	3/4″ 19mm	1″ 25mm	25.4 lbs. 11.5 kg.	32.5 lbs. 14.74 kg.
3″ DN 80mm	1 gpm .23 m³/hr	500 gpm 114 m³/hr	Flanged	17″ 432mm	8-3/4″ 225mm	3/4″ 19mm	7-7/8″ 200mm	4-1/8″ 105mm	6″ 152mm	4	5/8″ 16mm	1″ 25mm	45 lbs. 20.41 kg.	48.0 lbs. 21.8 kg.
4″ DN 100mm	1.5 gpm .34 m³/hr	1000 gpm 227 m³/hr	Flanged	20″ 508mm	11-3/16″ 284mm	15/16″ 24mm	9-1/8″ 232mm	4-3/4″ 121mm	7-1/2″ 191mm	8	5/8″ 16mm	1-1/2″ 38mm	64.9 lbs. 29.44 kg.	72.8 lbs. 33.02 kg.
6″ DN 150mm	3 gpm .68 m³/hr	2000 gpm 454 m³/hr	Flanged	24″ 610mm	13-1/4″ 337mm	15/16″ 24mm	11″ 279mm	5-3/4″ 146mm	9-1/2″ 241mm	8	3/4″ 19mm	1-1/2″ 38mm	130 lbs. 59.0 kg.	155 lbs. 70.3 kg.
8″ DN 200mm	4 gpm .91 m³/hr	2700 gpm 614 m³/hr	Flanged	30-1/8″ 765mm	15″ 381mm	11/16″ 17mm	13-1/2″ 343mm	6-3/4″ 172mm	11-3/4″ 298mm	8	3/4″ 19mm	2″ 51mm	471 lbs. 214 kg.	521 lbs. 236 kg.
10″ DN 250mm	5 gpm 1.1 m³/hr	4000 gpm 908 m³/hr	Flanged	41-1/8″ 1045mm	19″ 483mm	11/16″ 17mm	16″ 406mm	8-1/2″ 216mm	14-1/4″ 362mm	12	7/8″ 22mm	2″ 51mm	685 lbs. 311 kg.	745 lbs. 338 kg.

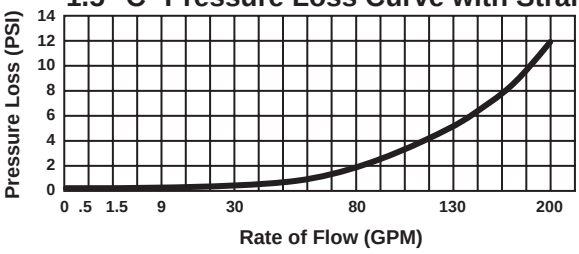
Specifications

Service	Measurement of potable and reclaim water. Storage temperature: -22F (-30C) to 155F (68.3C) Operating temperatures: Air: -22F (-30C) to 150F (65.6C) Water: 33F (0.6C) to 80F (26.7C)
Operating Range (100% ± 1.5%)	1-1/2″: 0.5 – 200 GPM (0.11 - 45 m³/hr) 2″: 0.5 – 200 GPM (0.11 - 45 m³/hr) 3″: 1.0 – 500 GPM (0.23 - 114 m³/hr) 4″: 1.5 – 1000 GPM (0.34 - 227 m³/hr) 6″: 3 – 2000 GPM (0.68 - 454 m³/hr) 8″: 4 – 2700 GPM (0.91 - 614 m³/hr) 10″: 5 – 4000 GPM (1.1 - 908 m³/hr)
Low flow (95% – 101.5%)	1-1/2″: 0.25 GPM (.06 m³/hr) 2″: 0.25 GPM (.06 m3/hr) 3″: 0.5 GPM (0.11 m³/hr) 4″: 0.75 GPM (0.17 m³/hr) 6″: 1.5 GPM (0.34 m³/hr) 8″: 2.5 GPM (0.57 m³/hr) 10″: 3.5 GPM (0.8 m³/hr)
Maximum Continuous Operation	1-1/2″: 160 GPM (36 m³/hr) 2″: 160 GPM (36 m³/hr) 3″: 400 GPM (91 m³/hr) 4″: 800 GPM (182 m³/hr) 6″: 1600 GPM (363 m³/hr) 8″: 2700 GPM (614 m³/hr) 10″: 4000 GPM (908 m³/hr)
Maximum Intermittent Operation	1-1/2″: 200 GPM (45 m³/hr) 2″: 200 GPM (45 m³/hr) 3″: 500 GPM (114 m³/hr) 4″: 1000 GPM (227 m³/hr) 6″: 2000 GPM (454 m³/hr) 8″: 3400 GPM (773 m³/hr) 10″: 5000 GPM (1136 m³/hr)

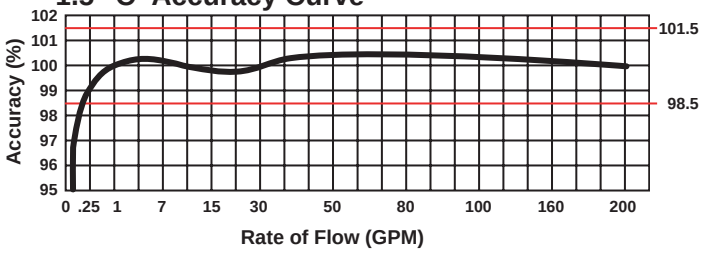
Pressure Loss	1-1/2″: 6.9 psi @ 160 GPM (0.48 bar @ 36 m³/hr) 2″: 4.3 psi @ 160 GPM (0.30 bar @ 36 m³/hr) 3″: 3.2 psi @ 400 GPM (0.22 bar @ 91 m³/hr) 4″: 6.4 psi @ 800 GPM (0.44 bar @ 182 m³/hr) 6″: 5.5 psi @ 1600 GPM (0.38 bar @ 363 m³/hr) 8″: 4 psi @ 2700 GPM (0.28 bar @ 614 m³/hr) 10″: 4.5 psi @ 4000 GPM (0.31 bar @ 908 m³/hr)
Maximum Operating Pressure	200 PSI (13.8 bar)
Flange Connections	U.S. ANSI B16.1 / AWWA Class 125
Test Ports	NPT
Register	Fully electronic sealed register with programmable registration (Gal. /Cu.Ft./ Cu. Mtr. / Imp. Gal. / Acre Ft.) Programmable AMR/AMI reading and pulse outputs Guaranteed 10-year battery life
NSF Approved Materials	Maincase: Coated Ductile Iron Measuring Chamber: Thermoplastic Rotor “Floating Ball”: Thermoplastic Radial Bearings: Hybrid Thermoplastic Thrust Bearings: Sapphire/Ceramic Jewel Magnets: Ceramic Strainer Screen: Stainless Steel Strainer Cover: Coated Ductile Iron Test Plug: Stainless Steel

Head Loss Curves

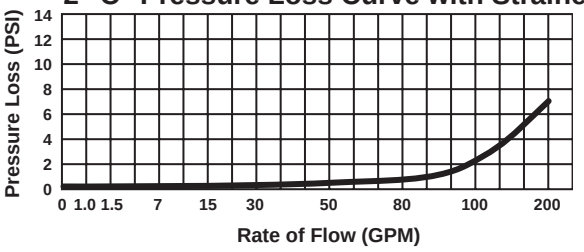
1.5" C² Pressure Loss Curve with Strainer



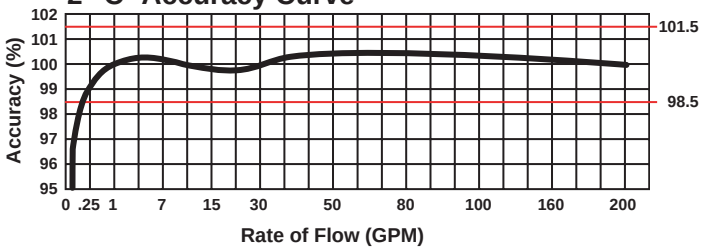
1.5" C² Accuracy Curve



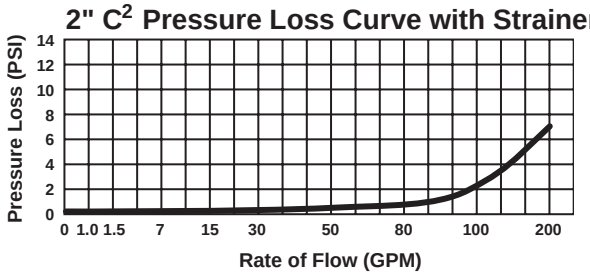
2" C² Pressure Loss Curve with Strainer



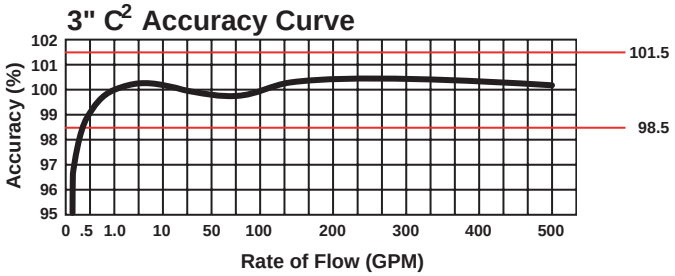
2" C² Accuracy Curve



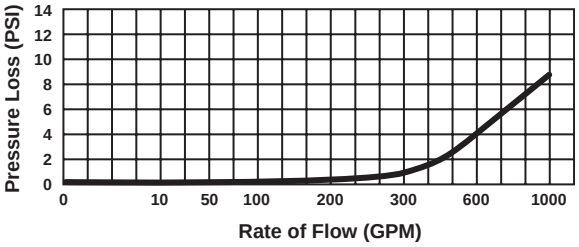
2" C² Pressure Loss Curve with Strainer



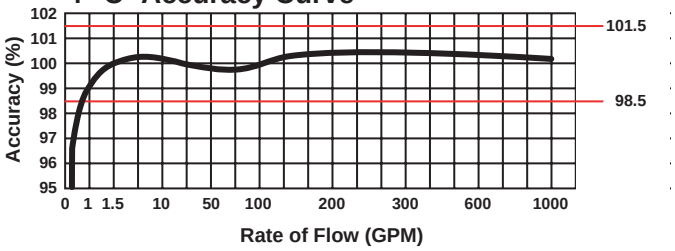
3" C² Accuracy Curve



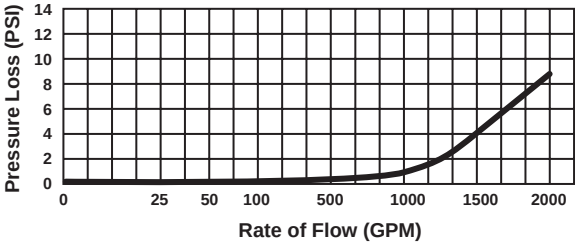
4" C² Pressure Loss Curve with Strainer



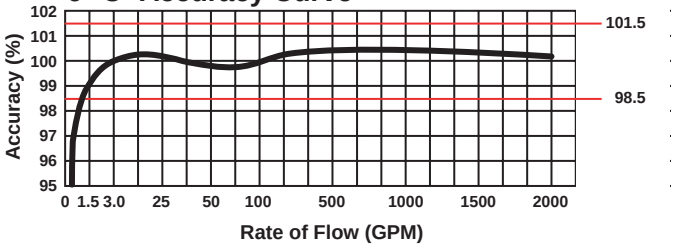
4" C² Accuracy Curve



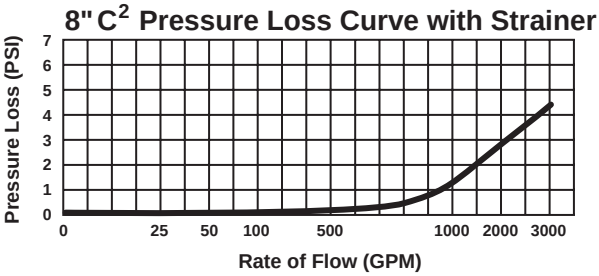
6" C² Pressure Loss Curve with Strainer

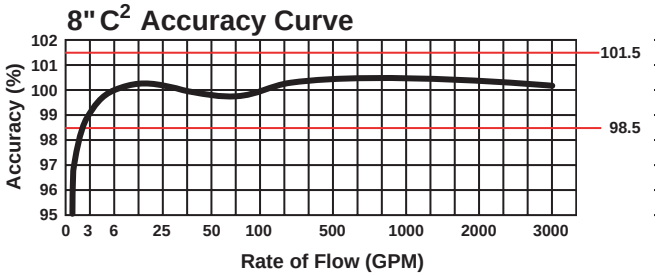


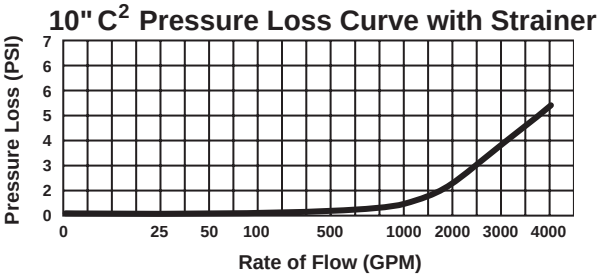
6" C² Accuracy Curve

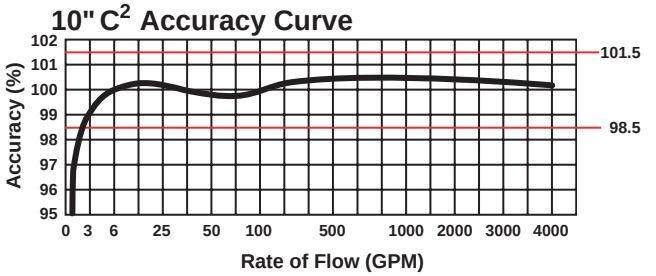


Head Loss Curves









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Raleigh, NC 27615
1-800-638-3748
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CLIMATEC MEASUREMENT AND VERIFICATION AGREEMENT FOR City of Lindsay

SCOPE OF SERVICES

TERMS AND CONDITIONS

ATTACHMENTS

Attachment "A" – Guaranteed Savings Measurement & Verification

I. Savings Guarantee
II. Measurement And Verification Methods
III. Selected Measurement And Verification Options
IV. Specific M&V Plan For Each ECM:
    a. Lighting System Upgrades
    b. HVAC System Installation
    c. HVAC Controls Upgrades

Attachment "B" – Utility Baseline Summary

Attachment "C" – Standards of Operation (Lighting & HVAC)

I. Standards of Operation for HVAC
II. Standards of Operation for Lighting

CLIMATEC M&V AGREEMENT

This Measurement and Verification ("M&V") Agreement ("Agreement") entered into as of September 25, 2018 ("Effective Date") is made by and between:

City of Lindsay ("Purchaser")
with its principal place of business at
251 E Honolulu St, Lindsay, CA 93247

and

Climatec LLC
with its principal place of business at
2150 Towne Centre Place, Suite 200, Anaheim, CA 92805

This agreement shall include the Attachment(s) listed below:

Attachment "A" - Guaranteed Savings Measurement & Verification

Attachment "B" – Utility Baseline Summary

Attachment "C" – Standards of Operation (Lighting & HVAC)

SCOPE OF SERVICES

Energy Savings Measurement & Verification Service:

Climatec LLC will provide measurement and verification services of the energy savings associated with Purchaser's Energy Retrofit Installation, as described in Attachment A - Scope of Work, located in the associated Installation Agreement. Energy Savings M&V reports will be provided to the Purchaser on an annual basis.

Term:

This Service Agreement shall commence upon the completion and acceptance of the Purchaser's energy retrofit installation project and receipt of final payment for the associated Installation Contract and shall continue for a term of 20 years. The Purchaser may terminate this service agreement at any time with a 60 day written notice. However, termination of this agreement will void any savings guarantee associated with this project.

Charges:

This Agreement shall be billed once per year and is due and payable within forty-five (45) days of the Purchaser's receipt of invoice, which shall be sent on or by June 30 of each year for the preceding twelve (12) month period. The annual Service Agreement charge is $6,500 for the first three years and escalated at 4% annually for every subsequent year thereafter. This rate does not include taxes.

TERMS AND CONDITIONS

1. General Provisions:

1.1 Unless stated otherwise, the services provided under this Agreement shall be provided during Climatec LLC's normal business hours. Normal business hours are Monday through Friday, 8:00 A.M. to 5:00 P.M. inclusive, excluding holidays.

1.2 The Purchaser shall provide reasonable means of access to the equipment being measured or verified. Climatec LLC shall not be responsible for any removal, replacement, or refinishing of the building structure, if required to gain access to the equipment. Climatec LLC shall be permitted to start and stop all equipment necessary to perform the services herein described as arranged with the Purchaser's representative.

1.3 This Agreement, when accepted in writing by authorized representatives of Purchaser and Climatec LLC, shall constitute the entire Agreement between the two (2) parties.

2. Charges:

2.1 For services not covered by this Agreement, but performed by Climatec LLC upon the Purchaser's authorization, the Purchaser agrees to pay Climatec LLC within forty-five (45) days of presentation of properly itemized invoice(s) at Climatec LLC's current rates.

2.2 If emergency service is requested by the Purchaser and inspection does not reveal any defect for which Climatec LLC is liable under this Agreement, the Purchaser will be charged at Climatec LLC's current emergency charge rates.

3. Limitations of Liability:

3.1 Climatec LLC shall not be liable for any loss, delay, injury, or damage that may be caused by circumstances beyond its control including, but not restricted to; acts of God, war, civil commotion, acts of government, fire, theft, corrosion, floods, lightning strikes, freezes, strikes, lockouts, differences with workmen, riots, explosions, quarantine restrictions, delays in transportation, shortage of vehicles, fuel, labor or materials, or malicious mischief. IN NO EVENT SHALL EITHER PARTY BE LIABLE FOR BUSINESS INTERRUPTION, LOSSES, OR CONSEQUENTIAL, INDIRECT, SPECIAL OR SPECULATIVE DAMAGES

3.2 Climatec LLC shall not be required to make safety tests, install new devices, or make modifications to any equipment to comply with recommendations or directives of insurance companies, governmental bodies, or for other reasons.

3.3 Climatec LLC shall not be required to make replacements or repairs necessitated by reason of negligence, abuse, misuse, or by reason of any other cause, unless such repairs are necessitated due to the actions or inaction of Climatec LLC, or its employees, representatives, agents, consultants, or subcontractors.

3.4 This agreement pre-supposes that all equipment is in satisfactory working order. Climatec LLC will inspect the equipment within sixty (60) days after the agreement takes effect and will advise the Purchaser of any equipment found to be in need of repair. If the Purchaser does not authorize Climatec LLC to make the repairs or if the Purchaser does not have the work performed, the equipment will be eliminated from coverage and the Agreement savings will be adjusted. Maintenance of existing equipment and systems is the responsibility of the Purchaser. Failure to properly maintain equipment and systems can result in reduced energy efficiency and may necessitate a baseline energy adjustment and annual Service Agreement charge will be proportionately reduced. There may be some equipment which, for reasons beyond Climatec LLC's control, cannot be inspected before this Agreement takes effect. Climatec LLC will inspect such equipment on the first visit where the equipment is available.

3.5 The amount of any present or future sales, use, occupancy excise, or other tax (federal, state, or local) which Climatec LLC hereafter shall be obligated to pay, either on its own behalf or on the behalf of the Purchaser or otherwise, with respect to the services covered by this Agreement, shall be paid by the Purchaser.

3.6 If the equipment or software included under this Agreement is altered, modified, or changed by a party other than Climatec LLC, this Agreement shall be modified to incorporate such changes and the Agreement price and/or Savings shall be adjusted accordingly, and the Annual Service Agreement charge shall be adjusted accordingly.

3.7 Following twelve (12) months of service or any time thereafter, if individual item(s) cannot, in Climatec LLC's opinion, be properly repaired on-site because of excessive wear or deterioration, Climatec LLC may withdraw the item(s) from coverage upon ninety (90) days prior written notice. Energy savings may be adjusted accordingly.

3.8 This Agreement shall be governed by, construed, and enforced in accordance with the laws of the State of California.

4. Miscellaneous Provisions:

4.1 Safety and Security:

The services provided hereunder may occur on active Purchaser sites. As such, Climatec LLC shall ensure that its services on and around the Purchaser site comply with all applicable laws, regulations and standards including but not limited to, the fingerprinting requirements of the Education Code and any other legal requirements which may be applicable to Climatec LLC's activities on or about the Purchaser sites. While the Purchaser shall reasonably assist Climatec LLC in determining the applicable requirements, it shall be Climatec LLC's sole responsibility for determining and complying with all applicable laws, regulations, and standards.

4.2 Dispute Resolution:

a. In the event of any dispute whatsoever between the Parties, Parties shall exhaust every reasonable effort to settle or dispose of the same, including a discussion of the matter between senior executives of each Party.

b. Claims between Purchaser and Contractor shall first be resolved using the procedures set forth at California Public Contract Code section 9204. "Claims" are defined, pursuant to California Public Contract Code section 9204, as a separate demand by Contractor for one of the following: a time extension for relief from penalties for delay; payment of money or damages arising from work done; or payment of an amount disputed by Purchaser.

c. Upon receiving a claim sent by registered or certified mail, Purchaser must review and provide a written response within forty-five (45) days that identifies the disputed and undisputed portions of the claim. The forty-five (45) day period to respond may be extended by mutual agreement between the Parties. The claim is deemed rejected in its entirety if Purchaser does not issue a response. Any payment due on an undisputed portion of the claim must be processed within sixty (60) days after Purchaser's response. If a claimant disputes Purchaser's response or lack thereof, the claimant may demand to meet and confer for settlement of the issues in dispute. Any portion of a claim that remains in dispute after a meet and confer conference will be subject to nonbinding mediation process, as described in California Public Contract Code section 9204. Undisputed and unpaid claims accrue interest at seven percent (7%) per annum. A subcontractor or lower tier subcontractor may make a claim to the Purchaser through Contractor, as specified in California Public Contract Code section 9204. However, the procedures in this section shall not supersede the requirements of the Agreement with respect to Contractor's notification to Purchaser of such claim or extend the time for the giving of such notice as provided in the Agreement.

d. Any controversy or claim arising out of or relative to the Agreement, or the breach thereof, not adjusted or disposed of by mutual agreement between the Parties as described above, shall be first settled by mediation and then (in the absence of settlement after mediation), by arbitration under the American Arbitration Association Construction Arbitration Rules then in effect, and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof, and arbitration decision shall be final and binding on the Parties and on all Parties subject to the following. Said arbitration proceedings shall be filed in the Regional office of the American Arbitration Association nearest to Purchaser. All arbitrators shall be bound by the terms of the Agreement. The expenses of any arbitration shall be borne equally by the Parties to the arbitration, provided that each Party shall pay for and bear the cost of its own experts, evidence, and counsel.

e. Pending a final resolution of a Dispute, the Parties shall each proceed diligently and faithfully with performance of their respective obligations under this Agreement.

4.3 Indemnification:

Climatec LLC shall indemnify and hold harmless City, its officers, employees, agents and volunteers from and against all liability, loss, damage, expense, and cost (including, without limitation, reasonable legal counsel fees, expert fees and all other costs and fees of litigation) of every nature arising out of or in connection with Climatec LLC's negligence, recklessness, or willful misconduct in the performance of work hereunder, or its failure to comply with any of its obligations contained in this Agreement, except such loss or damage caused by the active negligence, sole negligence or willful misconduct of the City. It is expressly understood and agreed that the foregoing provisions are intended to be as broad and inclusive as is permitted by the law of the State of California and will survive termination of this Agreement.

5. **Occupational Safety and Health:** The Parties hereto agree to notify each other immediately upon becoming aware of any alleged violation of, the Occupational Safety and Health Act (OSHA) relating in any way to the project or project site.

6. **Entire Agreement:** This Agreement, upon acceptance, shall constitute the entire agreement between the parties and supersedes any prior representations or understandings.

7. **Changes:** No change or modification of any of the terms and conditions stated herein shall be binding upon either Party unless accepted by both Parties in writing.

8. **Severability:** If one or more of the provisions of this Agreement are held to be unenforceable under laws, such provision(s) shall be excluded from these terms and conditions and the remaining terms and conditions shall be interpreted as if such provision were so excluded and shall be enforced in accordance to their terms and conditions.

9. **Counterparts:** This Agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same instrument. A signature on a copy of this agreement received by either party by facsimile or portable document format (PDF) is binding upon the other party as an original. The parties shall treat a photocopy of such facsimile as a duplicate original.

10. **Assignment:** Climatec LLC retains the right to assign its rights and obligations of this Agreement only with advance written consent of Purchaser.

11. **Acknowledgment:** Both Climatec LLC and the Purchaser acknowledge having read this Agreement, and all Attachments hereto, and have executed this agreement on the date written above.

12. **Approval:** Each party represents that the person that has executed this Agreement on its' behalf is authorized to do so.

City of Lindsay	**Climatec LLC**
_____	_____
Signature	Signature
_____	_____
Print Name	Print Name
_____	President – Energy Services
Title	Title
_____	_____
Date	Date

Attachment "A"

Guaranteed Savings Measurement & Verification

Attachment A

Guaranteed Savings Measurement & Verification

This document contains the energy savings Measurement and Verification (M&V) plan for the Energy Conservation Measures (ECMs) contained in the Installation Agreement. The following table summarizes the ECMs proposed. – See below Table 1.0

TABLE 1.0

Site	Lighting System Upgrades	HVAC System Installation	HVAC Control Upgrades	Water Meters
City Hall	X	X	X	
City Services	X	X	X	
Community Center	X	X	X	
Corporate Yard Storage	X			
Library	X		X	
Police/Fire Department	X	X	X	
Waste Water-Administration Building	X		X	
Wellness Center	X		X	
City Park	X			
Golf Course	X		X	
Olive Bowl Park	X			
Sweetbriar Park	X			
Pump Stations	X			
Wells and Tanks			X	
City Wide				X

A specific Measurement and Verification Plan is submitted for each Energy Conservation Measure (ECM) to provide a comprehensive overall Plan for Purchaser. New double pane, low-E windows will be installed on the first floor of the City Hall building. The irrigation controls system will be upgraded at the City Hall, Community Center, Library, Museum, Wellness Center, City Park, Harvard Park, Olive Bowl Park, Sweetbriar Park, downtown and Mason House. Each measure's M&V Plan provides:

- A description of how the savings shall be verified for each ECM.
- Selection of specific protocol for verification of savings of each ECM.
- Requirements for measurement or other means to establish the ECM savings.

Climatec Building Technologies Group (Climatec LLC) is responsible for the pre-retrofit measurement, energy savings calculations, equipment installation, and required post retrofit verification as outlined herein. Purchaser agrees to operate and maintain all equipment installed. **Proper operation and maintenance of equipment and systems is critical to long-term achievement of energy savings.**

SAVINGS GUARANTEE

Climatec LLC warrants that Purchaser shall realize total energy savings, total water savings, total water revenue increase, total operational savings and utility rebates ("Guaranteed Project Savings") in excess of the total project cost as shown in the Installation Agreement, during the course of the useful life of the equipment. The effective date will begin on the

date of final acceptance of the Installation project and receipt of final payment for the associated Installation Contract and continue for a term not to exceed 20 years (Guarantee Period). Climatec LLC agrees to complete the M&V Report on an annual basis and deliver to the Purchaser within sixty (60) days of the anniversary date of final acceptance and annually thereafter. Project savings that are verified during the course of construction will be applied to the 1st year guaranteed project savings.

Annual Savings & Water Revenue Increase	
Utility Savings	**Total**
Utility Savings	$ 48,170
Utility Savings	**$ 48,170**
Water Revenue Increase	**Total**
Water Revenue Increase	$ 48,180
Water Revenue Increase	**$ 48,180**
Operational Savings	**Total**
Lighting, HVAC & EMS Operational Savings	$ 10,132
AMR Water Meter Reading Operational Savings	$ 81,120
Water Meter Repair/Replacement Savings	$ 50,000
Operational Savings	**$ 141,252**
Total Annual Savings & Water Revenue Increase	**$ 237,602**

If the annual M&V Report demonstrates that the project will achieve one hundred percent (100%) or more of the Guaranteed Project Annual Savings, then Climatec LLC shall have satisfied its energy performance guarantee obligation and the Purchaser shall accept the Annual M&V Report.

In the event that an annual M&V Report savings value (including any excess, unapplied savings from previous years) does not meet the Guaranteed Project Savings in accordance with the M&V Plan, then Climatec LLC shall repair, replace, or substitute the ECM that is not performing at the required level, as identified in the M&V Report, and at Climatec LLC's expense. Following corrective action, Climatec LLC shall re-perform the relevant M&V work for the affected ECM(s) and amend or supplement the M&V Report. If the sum of the ECMs indicates that the Guaranteed Project Savings are met or exceeded, then no further remedy shall be required.

If, after the opportunity to make corrections, the M&V Report, as amended, indicates that verified savings are less than the Guaranteed Project Savings, then Climatec LLC shall pay the Purchaser the shortfall amount. However, under no circumstances will the amount(s) paid for the total of the energy savings shortfalls exceed the Installation Contract Amount.

The Purchaser agrees that project savings, which exceed the guaranteed amount in any one (1) year, may be applied to future year's savings to offset an energy savings shortfall. The savings guarantee will remain in effect for the term of this Agreement. Cancellation of this Agreement will result in the termination of the savings guarantee.

The Utility Baseline Summary, as shown in Attachment B, may be modified over the course of the Guarantee Period to adjust for changes in utility rates, number of days in utility billing cycle, square footage, energy using equipment, building occupancy and weather. This Guarantee is subject to the Purchaser's adherence to the Standards of Operation for Lighting and HVAC systems, as documented in Attachment "C" of this Agreement.

MEASUREMENT AND VERIFICATION METHODS

Measurement and Verification (M&V) of energy savings is a methodology based on standard industry protocol intended to provide reasonable assurance that energy savings calculated are realized over the term of the contract.

The development of the M&V plan is based on the IPMVP-2016 (International Performance Measurement and Verification Protocol) and the application of sound engineering and business guidelines to the overall need for verification of energy savings for each ECM. This plan contains methodology that shall cost effectively provide assurance of equipment savings through short term or spot measurements, engineering calculations and/or direct utility billing comparisons. The necessary components to a well-established M & V Plan are:

- Specific identification of each ECM and proposed M & V. Reporting requirements for overall savings.
- Participation of all parties and any necessary coordination with independent review.

Methods of M&V vary in accordance with the type of project, level of assurance of savings, cost, and availability of data, financing constraints, and energy costs. The methods selected must be cost effective given the financial savings to the Purchaser. The methods used for the ECMs detailed herein were selected to minimize M&V cost while still providing a reasonable assurance of the savings calculations.

The IPMVP-2016 guideline provides the following options related to methodology for M&V:

Option A – Partially Measured Retrofit Isolation. Option A uses a combination of stipulated and/or measured factors to calculate baseline usage and savings associated with the ECM. Spot or short-term measurement would be used for the measured values. Stipulated values are supported by Purchaser input, historical data, or manufacturer data.

- Baseline and savings calculations are provided through engineering calculations, component or system models.
- Depending on number of points measured, Option A provides the least cost alternative to M&V.

Option B – Retrofit Isolation. Option B provides for measurement to provide data for assessing values or variables. Spot or short-term measurement, taken at the component and/or system level are taken when variations in factors can be accounted for or eliminated. Continuous measurement at the component and/or system level can also be used to account for the variations in factors over time.

- Baseline and savings calculations are provided through engineering calculations, component or system models.
- Cost is variable depending on the points measured, and the term of the measurement process used. Option B provides a better scenario for ECMs where a small number of factors can be accurately measured with a measurement plan.

Option C – Whole Building. Option C involves the use of utility meters or whole building sub-metering to assess the energy performance of the entire building. After an ECM is implemented the billing data is assessed in accordance with an approved plan to determine actual ECM savings.

- Baseline is established through utility data and engineering/regression analysis.
- Engineering calculations or modeling initially provides estimated ECM savings.
- Actual ECM savings are based on the utility or metered data. Savings must be adjusted for changes in building operation and variables assumed in the engineering calculations or modeling (such as weather, occupancy, etc.).
- Cost of this approach is variable based on the availability of utility data, sub-metered data, and overall savings guarantee. If the metered data is used for a savings guarantee, all variables related to building performance must be measured and adjusted, usually on an annual basis. Option C usually requires a substantial amount of time and effort to establish the baseline, provide adjustments and track the savings.

Option D – Calibrated computer simulation. Option D uses computer-modeling techniques to provide an engineering model of component and/or system performance. The inputs to the computer simulation may be made by engineering estimates, short or long term measurements, and utility or other metered data. Once the model is properly calibrated it is used for the establishment of the baseline and savings by changing appropriate inputs.

- Baseline is established through a calibration process for the computer modeling. Appropriate measurements and inputs are reflected against regression analysis for the metered data.

- Once the model is calibrated and the baseline established inputs are varied for the proposed ECM to establish savings.
- Actual ECM savings are stipulated based on the computer model. There may be follow up calibration of the model with the ECM in place to affirm the overall building simulation model.

Cost of this method varies based on the complexity and accuracy of model desired, availability of data and overall measurement required.

SELECTED MEASUREMENT AND VERIFICATION OPTIONS

For the ECM's covered under this M&V plan, the Table of Selected M&V Options, located on the following page summarizes the proposed **IPMVP Options selected**: See table 1.1 below

TABLE 1.1

Site	Lighting System Upgrades	HVAC System Installation	HVAC Control Upgrades	Water Meters
City Hall	A	A	A	
City Services	A	A	A	
Community Center	A	A	A	
Corporate Yard Storage	A			
Library	A		A	
Police/Fire Department	A	A	A	
Waste Water-Administration Building	A		A	
Wellness Center	A		A	
City Park	A			
Golf Course	A		A	
Olive Bowl Park	A			
Sweetbriar Park	A			
Pump Stations	A			
Wells and Tanks			A	
City Wide				S*

*Stipulated

The particular option selected for each ECM was based on a number of related issues including: ECM cost, ECM savings, cost of Measurement and Verification and the ability to accurately determine whole building operations. The energy cost savings from upgrading the windows and water cost savings from irrigation control system upgrades are stipulated and agreed by the Purchaser and are met upon the completed installation of these projects.

The estimated water revenue increase is based on a conservative average weighted efficiency of 89.5% (based on AWWA standards) for existing water meters. The average weighted efficiency of the new water meters is estimated to be 98.5%. The 2016-17 water billing data, obtained from the City, along with the average water rate ($/1000 Gal) was used to calculate the annual increase in water revenue ($48,180/yr., as shown in the Savings Guarantee section). Installation of new water meters throughout the City will reduce ongoing repair/replacement costs by an estimated $50,000/yr. (as shown in the Savings Guarantee section). The AMR system will greatly reduce the amount of time spent on getting meter readings. Field staff will have more time to dedicate to other tasks and vehicle expenses will be reduced. Billing efficiency and support will also be vastly improved. It is estimated that the installation of the new water meters and the AMR system will reduce these operational costs and repair/replacement of existing aging water meters by an additional $81,120/yr. (as shown in the Savings Guarantee section). There are various factors that can affect the increase in billable water and revenue such as mandatory water use restrictions, changes in water usage patterns, drought conditions, weather, water saving measures implemented by customers, changes in water and sewer rates etc. that are beyond Climatec LLC's control and hence the above estimated increase in billable water, associated revenue and operational savings realized from installation of new water meters and the AMR system are stipulated and agreed by the Purchaser and are met upon the completed installation of the water meters and the AMR system.

The baseline and the post-installation energy use depend on various system and external factors, such as energy demand, operating hours, weather conditions, motor loading, energy rates, and occupancy. Development of the baseline, post ECM consumption, cost avoidances and simple payback for each ECM covered by this M&V plan includes:

- Stipulated Values – These values are important in the overall calculations for energy consumption, financial calculations, and operating conditions. Climatec LLC and Purchaser have agreed to these values for purposes of establishing savings.
- Developed/Measured Values – These are the values determined by spot or short-term measurement. Values are determined based on a sound engineering approach to variable determination. Both values used for baseline consumption and values to be measured/determined as parts of the post ECM implementation are detailed.
- Assumptions – Some values that are assumed in order to calculate energy use are necessary in certain circumstances.
- Calculations – The necessary calculations for baseline energy and demand usage, the calculation of the energy and demand components with implementation of the ECM, the calculation of costs, and annual savings are the primary tool for assessing the estimated and actual savings of any ECM.
- Instrumentation – The type and specifications, if applicable, for any instrumentation used for developed/measured values is provided to ensure appropriate meters and measurement equipment is used for specified applications.
- Pre Retrofit Measurements – Each ECM may have a section detailing the measurements required prior to the retrofit. These measurements are used to establish the baseline or adjustments required to establish an accurate baseline.
- Post Retrofit Measurements – Each ECM may have a section that details the measurements required if any after the retrofit is completed. This section is utilized to detail the type of measurements required for verification of the energy savings calculations.
- Adjustments – Each ECM may have a section for adjustments. This section includes possible adjustments to the actual Energy Audit Report and energy information, appropriate adjustments to the M&V plan, and adjustments to any savings guarantee. This section is utilized to anticipate changes necessary due to field conditions and provide an appropriate response in the verification of actual energy and cost avoidances.
- Commissioning – Each ECM may have a section regarding the commissioning process. This provides the detail for how the savings will be verified upon project completion, and the type of inspection that will be completed, and the billing method for verified savings. This section is utilized to provide a standard approach for each ECM upon project completion.

Climatec LLC will follow the agreed-upon M&V protocols for the measurement period and will prepare post-installation reports with supporting documentation for the Purchaser. The cost of M&V is included in the project cash flow requirements.

SPECIFIC MEASUREMENT AND VERIFICATION PLAN

"OPTION A"
FOR LIGHTING SYSTEM UPGRADES

Introduction
This Measurement and Verification Plan (M&V) is specific to all lighting retrofits and occupancy sensor installations. The sites receiving these upgrades are listed in the Table of Recommended Measures located at the beginning of this Attachment.

M&V Protocol
For this ECM, IPMVP Protocol – Option A shall be utilized. This option provides for the measurement of at least one variable pre and post retrofit with other variables allowed for stipulation. For this retrofit, a representative sample of each of the fixture types will be measured. The same sample will be used for both pre and post retrofit calculations. Wattage shall be measured with an appropriate instrument that is properly calibrated.

Light Levels
A representative sample of the light levels shall be measured. Where rooms have similar or identical lighting design, it is not required that each room be measured. Light levels shall be measured by an appropriate instrument that is properly calibrated. Light level measurements apply to both pre and post retrofit areas and shall be recorded at the work surface. Where rooms do not have a specific work surface, light levels shall be measured at the floor.

Documentation
All areas measured shall be documented. The data shall indicate areas that do not meet IESNA standard light level requirements. All instrumentation used shall be clearly documented.

Stipulated Values
Operating Hours are stipulated for purposes of M&V. Please see Attachment "C", Lighting Standards of Operation for a complete list of lighting hours of operation. Stipulated values are agreed to by the Purchaser.

Savings Calculations
The calculations for the baseline energy consumption and post retrofit savings provide the basis for the overall financial viability of this ECM.

kWh and/or kW Savings
The electrical consumption reduction of a particular lighting ECM is determined by comparing the pre and post conditions applied to the hours agreed upon in the Standards of Operation.

{[(Existing watts/fixture) x (existing quantity) x (existing hours of operation)] –
[(proposed watts/fixture) x (proposed quantity) x (proposed hours of operation)} / 1000 = kWh savings

Dollar Savings
After calculating the kWh saved, the specific facility's average cost per kilowatt hour shall be used to determine dollar savings.

(kWh saved) x (average kWh rate) = $ kWh saved
($ kWh saved) = the total dollars saved

Operational Savings
The Purchaser will realize maintenance and operational savings resulting from the new lighting system installations, extended warranties, and/or service agreements provided by Climatec LLC. The operational savings are stipulated and met upon the completed installation of the energy retrofit contract.

Adjustments
For this ECM the following adjustments are allowed for purposes of Measurement and Verification:

- Light level requirements may be modified as detailed in this plan.
- Changes in actual construction including number and/or type of fixtures. All changes shall be clearly documented and provided to the Purchaser's representative.
- Utility rates, billing days or degree days.

Commissioning
Commissioning shall consist of inspections and a final savings verification report. Inspections shall consist of:

- During the construction phase of the project, Climatec LLC shall keep a detailed record of the quantity and types of fixtures retrofitted and fixtures installed in each building. A post construction inspection is required by the responsible M&V party.
- After lighting modifications have been made, the installations shall be inspected to verify the retrofit counts by fixture code.
- Post retrofit lighting levels shall be measured to verify compliance with the contract standards.

SPECIFIC MEASUREMENT AND VERIFICATION PLAN

"OPTION A"
FOR HVAC SYSTEMS INSTALLATION

Introduction

This Measurement and Verification Plan (M&V) is specific to the installation of new high efficiency HVAC units at the sites listed in the Table of Recommended Measures located at the beginning of this Attachment.

M&V Protocol

For this ECM, IPMVP Protocol – Option A shall be utilized. This option shall provide for the measurement of at least one variable pre and post retrofit with other variables allowed for stipulation. For this retrofit, field data shall be collected which includes, unit counts, unit tonnage, nameplate horsepower and efficiency rating for each existing HVAC system.

Stipulated Values

Hours of Operation, heating/cooling loads and runtime hours of the existing HVAC systems are stipulated for purposes of M & V. Please refer to Attachment C, HVAC Standards of Operation in this agreement for specific operating hours and runtime hours for each HVAC unit or area. Stipulated values are agreed to by Purchaser.

Calculations

The calculations for the baseline energy consumption and post-retrofit savings provide the basis for the overall financial viability of these ECM's. The following equations summarize the calculation of savings:

Electric (kWh) Savings

The electrical usage reduction of this ECM is determined by the following equation:

((Size of Existing HVAC Unit) x (Unit Efficiency) x (Stipulated Load Factor) - (Size of New Cooling Unit) x (Unit Efficiency) x (Stipulated Load Factor)) x (Annual Operating Hours) = kWh Savings

Dollar Savings

After calculating the kWh saved, the specific facility's average cost per kilowatt hour shall be used to determine dollar savings.

(kWh saved) x (average kWh rate) = $ kWh saved
($ kWh saved) = Total dollars saved

Operational Savings

The Purchaser will realize maintenance and operational savings resulting from the new system installations, extended warranties, and/or service agreements provided by Climatec LLC. The operational savings are stipulated and met upon the completed installation of the energy retrofit contract.

Pre Retrofit Measurements

None required for this ECM.

Post Retrofit Measurements

None required for this ECM.

Adjustments

None required for this ECM.

Commissioning

Commissioning shall consist of inspections, and a final Commissioning report. The Inspections and Report shall consist of:

- Commissioning of the newly installed HVAC equipment shall include verification that each new unit is operating, as specified, in all modes (heat/cool).

SPECIFIC MEASUREMENT AND VERIFICATION PLAN

"OPTION A"
FOR HVAC CONTROLS UPGRADE

Introduction

This Measurement and Verification Plan (M&V) is specific to the energy management system upgrades at the sites, new aerator motors and variable frequency drives at the Wastewater-Administration Building and the variable frequency drive at the well # 14, listed in the Table of Recommended Measures located at the beginning of this Attachment.

M&V Protocol

For this ECM, IPMVP Protocol – Option A shall be utilized. This option shall provide for the measurement of at least one variable pre and post retrofit with other variables allowed for stipulation. The cooling and heating setpoints during occupied and unoccupied modes of the HVAC equipment will be verified and documented. For this retrofit, field data shall be collected which includes, unit counts, unit tonnage, nameplate horsepower, efficiency rating, operating schedules of the HVAC units and the aerator and pump motors, along with the cooling and heating temperature setpoints for each HVAC system.

Stipulated Values

Hours of operation and heating/cooling load factors are stipulated for purposes of M&V. Please refer to the Attachment C, HVAC Standards of Operations for specific existing and proposed operating hours for each HVAC unit or area. Stipulated values are agreed to by Purchaser.

Calculations

The calculations for the baseline energy consumption and post retrofit savings provide the basis for the overall financial viability of these ECM's. Post-retrofit operating schedules and trend reports will be used to verify the inputs such as operating hours, cooling/heating temperature setpoints that are used in the calculations to validate the savings. The following equations summarize the calculation of savings:

Electric (kWh) Savings

The electrical usage reduction of this ECM is determined by applying the stipulated runtime reduction to the calculated energy usage of the HVAC unit.

(Size of HVAC unit) x (Unit efficiency) x (Stipulated load factor) x (Existing annual operating hours – Proposed annual operating hours) = kWh savings

Natural Gas (Therms) Savings

The natural gas usage reduction of this ECM is determined by applying the stipulated runtime reduction to the calculated energy usage of the HVAC unit.

(Size of Heating unit) x (Unit efficiency) x (Stipulated load factor) x (Existing annual operating hours – Proposed annual operating hours) = Therm savings

Dollar Savings

After calculating the kWh saved and the Therms saved, the specific facility's average cost per kilowatt hour and the average cost per Therm of natural gas shall be used to determine dollar savings.

(kWh saved) x (average kWh rate) = $ kWh saved
(Therms saved) x (average Therm rate) = $ Therms saved
($ kWh saved) + ($ Therms saved) = Total dollars saved

Operational Savings

The Purchaser will realize maintenance and operational savings resulting from the new system installations, extended warranties, and/or service agreements provided by Climatec LLC. The operational savings are stipulated and met upon the completed installation of the energy retrofit contract.

Pre Retrofit Measurements

Existing operating hours and cooling/heating temperature setpoints for each HVAC unit or area will be obtained from current thermostats/EMS.

Post Retrofit Measurements

Post-retrofit operating schedules, cooling and heating temperature setpoints in both occupied and unoccupied modes for the HVAC equipment will be obtained using the new controls system.

Adjustments

For this ECM the following adjustments are allowed for purposes of Measurement and Verification:

- Addition or subtraction to the conditioned square footage of facilities.
- Utility rates, billing days or degree days.
- Equipment changes.
- Increase or decrease in facility usage as associated with daily occupancy times and special events.

Commissioning

Commissioning shall consist of inspections, and a final Commissioning report. The Inspections and Report shall consist of:

- Commissioning of the newly installed energy management system (EMS) shall include verification that the operating schedules, cooling and heating temperature set points and the control sequences for the HVAC equipment have been programmed as specified.

Attachment "B"

Utility Baseline Summary

Energy Baseline

City of Lindsay			1/1/2016	through	12/31/2016	1/1/2016	through	12/31/2016
Site Name	Address	Square Footage	Dollars Electric	kWh	$ / kWh	Dollars Gas	Therms	$ / Therms
Chamber of Commerce	133-139 West Honolulu	2,094	$3,515	22,052	$0.159	$0	0	$0.00
City Hall	251 E Honolulu	7,806	$9,762	38,733	$0.252	$1,792	1,696	$1.06
City Services	150 North Mirage	2,411	$2,825	18,167	$0.155	$684	471	$1.45
Community Center	911 North Parkside	4,498	$0	0	$0.000	$0	0	$0.00
Corp Yard Storage	476 North Mt. Vernon	4,534	$1,773	11,418	$0.155	$0	0	$0.00
Library	157 North Mirage	6,250	$663	2,356	$0.281	$0	0	$0.00
Museum	165 N. Gale Hill Ave	2,898	$856	3,966	$0.216	$0	0	$0.00
Police/Fire Dept	185 N. Gale Hill Ave	5,015	$11,326	94,613	$0.120	$1,742	1,592	$1.09
Wastewater-Admin Bldg	23611 Road 196	1,771	$62,312	711,594	$0.088	$0	0	$0.00
Wellness Center	860 N Sequoia	14,550	$46,214	318,786	$0.145	$19,119	22,353	$0.86
City Park	801 North Parkside	177,292	$12,376	20,000	$0.619	$0	0	$0.00
Golf Course	801 North Elmwood	1,800	$2,419	14,997	$0.161	$0	0	$0.00
Harvard Park	TULARE RD/HARVARD	424,651	$347	207	$1.677	$0	0	$0.00
Olive Bowl Park	18 N Olive Ave	326,288	$1,490	10,532	$0.141	$0	0	$0.00
Sweetbriar Park	NWC of Honolulu and Sweet Brier	94,355	$10,826	42,256	$0.256	$206	15	$13.75
Pump Stations	SWC of Ave. 228 @ Friant Canal		$153,724	1,477,151	$0.104	$0	0	$0.00
Wells & Tanks	Various		$420	896	$0.468	$0	0	$0.00
Bus Stop Arbors	Various		$0	0	$0.000	$0	0	$0.00
Landscape	Various		$9,894	20,930	$0.473	$0	0	$0.00
LS1	Various		$78,622	253,099	$0.311	$0	0	$0.00
LS3	Various		$5,633	71,060	$0.079	$0	0	$0.00
OL1	Various		$281	0	$0.000	$0	0	$0.00
Traffic Control	Various		$2,190	14,176	$0.154	$0	0	$0.00
Project Total		**1,076,213**	**$417,467**	**3,146,989**	**$0.13**	**$23,542**	**26,127**	**$0.90**

Attachment "C"

Standards of Operation for HVAC & Lighting

STANDARDS OF OPERATION

The hours of operation for the Purchaser's Lighting and HVAC systems, located on the following pages, were used to calculate the energy savings in the Savings Summary section of this agreement and will be used in all measurement and verification calculations.

City of Lindsay
HVAC Standards of Operation

Facility	Control System	Area Served	Week Day HVAC Schedule			Weekend HVAC Schedule			Temperature Setpoints	
			Day	Start Time	Stop Time	Day	Start Time	Stop Time	Cooling (All Areas)	Heating (All Areas)
General City Energy Policy	N/A	All Areas	Open Days Closed Days	1/2 Hr Before Open Unoccupied	Close Time	Open Days Closed Days	1/2 Hr Before Oper Unoccupied	Close Time	Occupied Setpoint: 76°F Unoccupied Setpoint: 90°F *Occupied Setpoint will have ± 2°F Local Adjustability	Occupied Setpoint: 68°F Unoccupied Setpoint: 55°F *Occupied Setpoint will have ± 2°F Local Adjustability
Chamber of Commerce	WiFi Based HVAC Control	Main Office Conference Room All Areas	Monday-Thursday Monday-Thursday Friday	8:30 AM By Event Only Unoccupied	5:00 PM	Saturday-Sunday Saturday-Sunday Saturday-Sunday	Unoccupied Unoccupied Unoccupied		Occupied Setpoint: 76°F Unoccupied Setpoint: 90°F *Occupied Setpoint will have ± 2°F Local Adjustability	Occupied Setpoint: 68°F Unoccupied Setpoint: 55°F *Occupied Setpoint will have ± 2°F Local Adjustability
City Hall	WiFi Based HVAC Control	Entry / Offices Counsel Chambers	Monday-Friday Monday-Friday	7:30 AM By Event Only	5:00 PM	Saturday-Sunday Saturday-Sunday	Unoccupied Unoccupied		Occupied Setpoint: 76°F Unoccupied Setpoint: 90°F *Occupied Setpoint will have ± 2°F Local Adjustability	Occupied Setpoint: 68°F Unoccupied Setpoint: 55°F *Occupied Setpoint will have ± 2°F Local Adjustability
City Services	WiFi Based HVAC Control	Offices	Monday-Friday	7:30 AM	5:00 PM	Saturday-Sunday	Unoccupied		Occupied Setpoint: 76°F Unoccupied Setpoint: 90°F *Occupied Setpoint will have ± 2°F Local Adjustability	Occupied Setpoint: 68°F Unoccupied Setpoint: 55°F *Occupied Setpoint will have ± 2°F Local Adjustability
Community Center	WiFi Based HVAC Control	All Areas	Monday-Friday	7:30 AM	5:00 PM	Saturday-Sunday	Unoccupied		Occupied Setpoint: 76°F Unoccupied Setpoint: 90°F *Occupied Setpoint will have ± 2°F Local Adjustability	Occupied Setpoint: 68°F Unoccupied Setpoint: 55°F *Occupied Setpoint will have ± 2°F Local Adjustability
Library	WiFi Based HVAC Control	All Areas	Monday Tuesday, Thursday Wednesday, Friday	Unoccupied 10:30 AM 8:30 AM	 8:00 PM 6:00 PM	Saturday-Sunday	Unoccupied		Occupied Setpoint: 76°F Unoccupied Setpoint: 90°F *Occupied Setpoint will have ± 2°F Local Adjustability	Occupied Setpoint: 68°F Unoccupied Setpoint: 55°F *Occupied Setpoint will have ± 2°F Local Adjustability
Golf Course Clubhouse (Future Soccer Complex)	WiFi Based HVAC Control	Clubhouse	Monday-Friday	4:30 AM	11:00 AM	Saturday-Sunday	Unoccupied		Occupied Setpoint: 76°F Unoccupied Setpoint: 90°F *Occupied Setpoint will have ± 2°F Local Adjustability	Occupied Setpoint: 68°F Unoccupied Setpoint: 55°F *Occupied Setpoint will have ± 2°F Local Adjustability
Police / Fire Department	WiFi Based HVAC Control	Police / Fire Department	Occupied 24 / 7			Occupied 24 / 7			Occupied Setpoint: 76°F Unoccupied Setpoint: 90°F *Occupied Setpoint will have ± 2°F Local Adjustability	Occupied Setpoint: 68°F Unoccupied Setpoint: 55°F *Occupied Setpoint will have ± 2°F Local Adjustability
Wastewater Admin Building	WiFi Based HVAC Control	Admin Building	Monday-Friday	When Occupied		Saturday-Sunday	When Occupied		Occupied Setpoint: 76°F Unoccupied Setpoint: 90°F *Occupied Setpoint will have ± 2°F Local Adjustability	Occupied Setpoint: 68°F Unoccupied Setpoint: 55°F *Occupied Setpoint will have ± 2°F Local Adjustability
Wellness Center	WiFi Based HVAC Control	Wellness Center Pro-PT	Monday-Thursday Friday Monday-Thursday Friday	4:30 AM 4:30 AM 6:30 AM 6:30 AM	8:00 PM 5:00 PM 6:00 PM 5:00 PM	Saturday Sunday Saturday-Sunday	6:30 AM Unoccupied Unoccupied	12:00 PM	Occupied Setpoint: 76°F Unoccupied Setpoint: 90°F *Occupied Setpoint will have ± 2°F Local Adjustability	Occupied Setpoint: 68°F Unoccupied Setpoint: 55°F *Occupied Setpoint will have ± 2°F Local Adjustability

City of Lindsay **Lighting Standards of Operations**

Space Usage	Chamber of Commerce	City Hall	City Services	Community Center	Corp Yard Storage	Library	Police/Fire Dept	Wastewater-Admin Bldg	Wellness Center	City Park	Golf Course	Harvard Park	Olive Bowl Park	Sweetbriar Park	Pump Stations
24/7	8760						8760		8760						
Admin Open Area	2800	3100	3100	1800	2900	2000	3100	1000	4316		1500	0			1500
Dusk/<Dawn		1460	1460	1460		1460		1460	1460	1460			1460	1460	
Dusk/Dawn	4380	4380	4380	4380	4380		4380	4380		4380	4380	4380	4380		4380
Gym									4316						
Hallway	3000		3000	3000	3000		4500		4316						
Mech/Elec	500	500	500		500		500	500	500	500					
Office Admin		2400	2400	2400	2400		3000	500	4316						
Restroom		900	900	2500	900	1500	1300	200	4316	300				300	300

City of Lindsay
Cash Flow Analysis
Detailed Assessment

9/10/2018

Total Project	$3,295,447	Term (Years)	Rate
		20	3.44%

Year	Program Inflows	Program Outflows			Net Cash Flow
	Annual Operating Savings	Annual Lease Payment	Savings Assurance	Total Outflows	Net General Fund Relief (Cumulative)
0	$9,634	$0	$0	$0	$9,634
1	$237,602	$230,520	$6,500	$237,020	$10,216
2	$239,528	$232,447	$6,500	$238,947	$10,797
3	$241,532	$234,450	$6,500	$240,950	$11,379
4	$243,616	$243,034		$243,034	$11,961
5	$245,784	$245,202		$245,202	$12,543
6	$248,038	$247,456		$247,456	$13,124
7	$250,382	$249,800		$249,800	$13,706
8	$252,820	$252,238		$252,238	$14,288
9	$255,355	$254,774		$254,774	$14,869
10	$257,992	$257,411		$257,411	$15,451
11	$260,735	$260,153		$260,153	$16,033
12	$263,587	$263,005		$263,005	$16,615
13	$266,553	$265,971		$265,971	$17,196
14	$269,638	$269,056		$269,056	$17,778
15	$272,846	$272,264		$272,264	$18,360
16	$179,300	$178,718		$178,718	$18,941
17	$179,300	$178,718		$178,718	$19,523
18	$179,300	$178,718		$178,718	$20,105
19	$179,300	$178,718		$178,718	$20,687
20	$179,300	$178,718		$178,718	$21,268
Totals	$4,712,142	$4,671,373	$19,500	$4,690,873	$21,268

CITY OF LINDSAY

Comprehensive Infrastructure & Sustainability Program

Council Information Item

August 28, 2018

Current Challenges

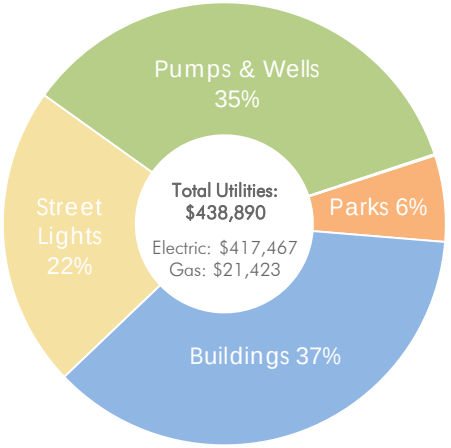
- Aging Infrastructure
  - Water Meters
  - Heating/Cooling – City Hall
- Comfort Issues
  - City Hall Windows, Heating & Cooling
- Insufficient Funding

UTILITY ANALYSIS

Site Name	Square Footage	Dollars Electric	kWh	Dollars Gas	Therms	Dollars All Utilities	$/kWh
Buildings							
Chamber of Commerce	2,094	$3,515	22,052	-	-	$3,515	$0.16
City Hall	7,806	$9,762	38,733	$1,801	1,786	$11,563	$0.25
City Services	2,411	$2,825	18,167	$723	527	$3,547	$0.16
Community Center	4,498	-	-	-	-	-	-
Corp Yard Storage	4,534	$1,773	11,418	-	-	$1,773	$0.16
Library	6,250	$663	2,356	-	-	$663	$0.28
McDermont Fieldhouse	172,000	$136,070	819,798	$7,908	8,836	$143,978	$0.17
Museum	2,898	$856	3,966	-	-	$856	$0.22
Police/Fire Dept	5,015	$11,326	94,613	$1,749	1,700	$13,074	$0.12
Wastewater-Admin Bldg	1,771	$62,312	711,594	-	-	$62,312	$0.09
Wellness Center	14,550	$46,214	318,786	$16,944	20,226	$63,158	$0.14
Parks							
City Park	-	$12,376	20,000	-	-	$12,376	$0.62
Golf Course	-	$2,419	14,997	-	-	$2,419	$0.16
Harvard Park	-	$347	207	-	-	$347	$1.68
Olive Bowl Park	-	$1,490	10,532	-	-	$1,490	$0.14
Sweetbriar Park	-	$10,826	42,256	$206	15	$11,032	$0.26
Pumps & Wells							
Pump Stations	-	$153,724	1,477,151	-	-	$153,724	$0.10
Wells & Tanks		$420	896	-	-	$420	$0.47
Streetlights							
Landscape	-	$9,894	20,930	-	-	$9,894	$0.47
LS1	-	$78,622	253,099	-	-	$78,622	$0.31
LS3	-	$5,633	71,060	-	-	$5,633	$0.08
OL1	-	$281	-	-	-	$281	-
Traffic Control	-	$2,190	14,176	-	-	$2,190	-
Totals	51,827	$417,467	3,146,989	$21,423	24,254	$438,890	$0.13

**McDermont Fieldhouse not included in PA*

OVERALL UTILITY DISTRIBUTION



HVAC

- New High Efficiency HVAC Equipment at:
  - City Hall
  - City Services
  - Police/Fire Dept.
  - Community Center

Building Automation Systems

- New BAS at:
  - City Hall
  - City Services
  - Police/Fire Dept.
  - Wellness Center
  - Soccer Complex (Golf Course)
  - WWTP
  - Library
  - Community Center

CLIMATEC®
MERGING BUILDINGS & TECHNOLOGY

VARIOUS LED LIGHTING RETROFITS

Interior & Exterior Buildings / Parking Lots / City Parks

New LED Interior Facility Lighting

New LED Exterior Facility Lighting (Before and After)

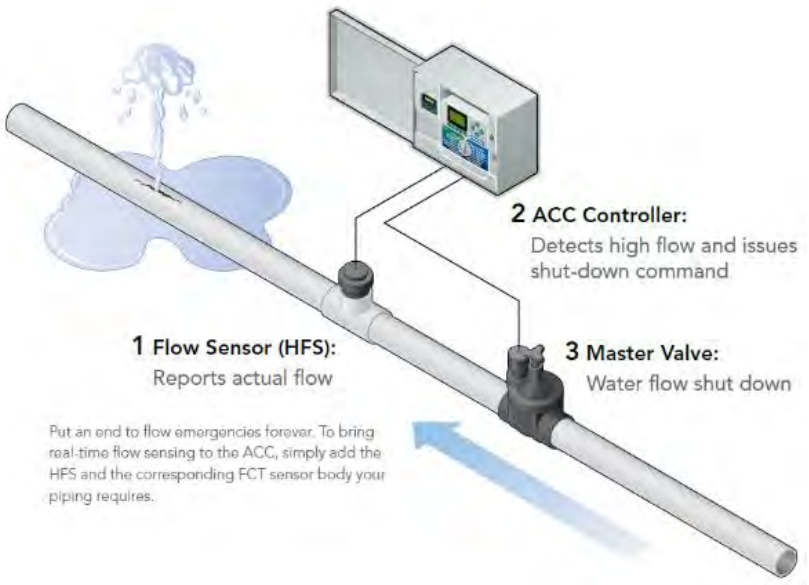
BUILDING ENVELOPE

- New Dual Pane Windows at City Hall (Match Existing Style)

WATER CONSERVATION

Weather- Based Irrigation Control System

- Irrigation Controls
- Master Valves/Flow Sensors
- Leak Detection



WATER METER SYSTEMS

How AMR Works

- Water Meter Replacement (Sensus)
- Automated Meter Reading Technology (AMR)
- Integrate AMR into City's Utility Billing System

WATER/WASTEWATER SYSTEMS

- New VFD on Well #14 pump
- Replace Both Oxidation Ditch Aerator Motors & Install VFDs

FINANCIAL HIGHLIGHTS

Comprehensive Energy, Water, & Renewable Program

Total Infrastructure Improvements	$ 3,295,447
Total Lifecycle Savings	$ 7,997,955

Funding Sources:

- Utility Incentives
- I-Bank State Funding
- Guaranteed Savings

Next Steps

Competitive Selection Process	*Completed*
Develop Utility Baseline Information	*Completed*
Site Audits	*Completed*
Review Preliminary Recommendations w/staff	*Complete*
Council Information Item	**Tonight**
Council Consideration	September 2018
Construction Period	12-18 Months

STAFF REPORT

AGENCY: CITY OF LINDSAY, CALIFORNIA
DATE: September 25, 2018
AGENDA #: 9
STAFF: Michael Camarena, Director of City Services

AGENDA ITEM

TITLE	Well 15 Contact Time Project Contract Change Order
ACTION	Approval of Project Contract Change Order
PURPOSE	Statutory/Contractual Requirement Council Vision/Priority Discretionary Action Plan Implementation
COUNCIL OBJECTIVE(S)	Live in a safe, clean, comfortable and healthy environment. Increase our keen sense of identity in a physically connected and involved community. Nurture attractive residential neighborhoods and business districts. Dedicate resources to retain a friendly, small-town atmosphere. Stimulate, attract and retain local businesses. Advance economic diversity. Yield a fiscally self-reliant city government while providing effective, basic municipal services.

RECOMMENDATION

Staff recommends Approval of Project Contract Change Order (CCO).

BACKGROUND | ANALYSIS

The Well 15 Contact Time Project is nearing completion. The project scope involved the installation of 2,000 lineal feet of 12" pipe and chlorine montoring equipment. The project will allow the City to remove a long-standing boil water advisory from the Avenue 240 water service accounts as well as remove our bottled water service deliveries to the 5 water accounts. The project has had a few change orders issued due to conditions that were encountered. The change orders that have been issued are;

CCO1; Unsuitable Native Backfill Material. During the installation of the pipeline, the native material that was identified as the backfill material was found to have nearly double the moisture content allowed. Both County testing and City contract lab field tests confirmed the moisture content to be well above acceptable range. There were 2 options to allow the project to move forward. The first option was to spread the trench material over a large area to allow to dry naturally. This would have to be accomplished at 100'-200' intervals per day with required open trench protection at the end of each day. Project production would have

been severely hampered by this option. Option 2 was to import suitable backfill material and not hinder progress to the project. Option 2 was selected and the project moved forward quickly.

CCO2; Installation of a new 12" gate valve. The water supply to the 5, Avenue 240 properties needed additional control capability and the solution to this was to install a new gate valve at the well discharge. The new gate valve also allows future isolation of Well 15, if and when needed.

Proposed CCO 3; Increased Paving Requirement. Initial County RMA permit requirements included standard paving of the trench section. During field inspections, RMA inspectors identified the "half street" paving requirement. City consultant and city staff identified original permit requirements however RMA held to half street paving requirement. Concessions were made by RMA to decrease width to not include restriping of existing centerline and to decrease paving depth.

Recap of project contract, approved and requested approval CCO's;

Original contract amount	:	$238,750.82
CCO No. 1	:	$22,788.00 (9.5%)
CCO No. 2	:	$2,863.00 (10.7%, aggregate increase)
Proposed CCO No. 3:	:	$52,080.00 (32.5%, aggregate increase)
Total Project	:	$316,481.52

Funding. Funding for this project comes from Integrated Regional Water Management Drought Program ($105,805) and the Self Help Enterprises, Affordable Housing and Sustainable Communities, Housing Related Infrastructure Program ($250,000). A total combined funding of $355,805 is available for this project. Excess funds not used for this project are targeted as reimbursement for the Water Treatment Plant Filter Renovation project (completed in July 2017).

ALTERNATIVES

- Approve of Project Contract Change Order No. 3 as recommended
- Do not Approve Project Contract Change Order No. 3. Alternate paving solution would need to be sought, with Tulare county RMA approval.
- Do not Approve Project Contract Change Order No. 3 and provide direction to staff.

BENEFIT TO OR IMPACT ON CITY RESOURCES

The project will allow the City to remove a long-standing boil water advisory from the Avenue 240 water service accounts as well as remove our bottled water service deliveries to the 5 water accounts.

ENVIRONMENTAL REVIEW

Previously completed.

STAFF REPORT

AGENCY: CITY OF LINDSAY, CALIFORNIA
DATE: September 25, 2018
AGENDA #: 9
STAFF: Michael Camarena, Director of City Services

POLICY ISSUES

The City Services Department Contract Change Order (CCO) Policy outlines how to deal with unforeseen construction costs. The policy allows a 10% approval process in which the City Manager shall authorize the City Services Director to execute CCO's that fall below 10%. For CCO's that exceed 25%, City Council must approve and authorize the City Manager to execute a supplemental agreement with the contractor.

PUBLIC OUTREACH

Posted in this agenda

ATTACHMENTS

- None

STAFF REPORT

AGENCY: CITY OF LINDSAY, CALIFORNIA
DATE: September 25, 2018
AGENDA #: 10
STAFF: Michael Camarena, Director of City Services

AGENDA ITEM

TITLE	Disinfection By Products and 1,2,3 Trichloropropane Water Quality Public Notifications
ACTION	Informational Items Only
PURPOSE	Statutory/Contractual Requirement Council Vision/Priority Plan Implementation
COUNCIL OBJECTIVE(S)	Live in a safe, clean, comfortable and healthy environment. Increase our keen sense of identity in a physically connected and involved community. Nurture attractive residential neighborhoods and business districts. Dedicate resources to retain a friendly, small-town atmosphere. Stimulate, attract and retain local businesses. Advance economic diversity. Yield a fiscally self-reliant city government while providing effective, basic municipal services.

RECOMMENDATION

Presented as informational items only

BACKGROUND | ANALYSIS

Disinfection By Products (DBP) Notification. As past updates have identified, the quarterly notification for DBP's is a requirement of the State of California Water Resources Control Board (DWR). As long as our system exceeds the maximum contaminant level (MCL) for DBP, quarterly notification will be required by DHS. The first notification was released January 2017.

The template for this letter was provided by the DWR. It is their approved language; we update this notice with our sample result values, in a running annual average. While the system exceeds the MCL for DBP, the notice states that this is not an emergency and that an alternate source of water in not needed. It also points out that persons with specific health concerns consult their doctor.

Disinfection byproducts are chemical, organic and inorganic substances that can form during a reaction of a disinfectant with naturally present organic matter in the water. Byproducts that are regulated are Total Trihalomethane (TTHM) and five Haloacidic acids (HAA5). The DBP's are a result of our primary chlorine

disinfection process of surface water. The City identified a time frame of 14 months to have the problem corrected, if necessary. Staff has pursued alternative disinfection solutions; avenues that were thought to be possible have stalled. Staff will now pursue more conventional methods to create solutions to the DBP issue. While a specific project or process has not been identified to resolve the DBP issue, the 2018-2019 adopted budget lists the DBP Mitigation in the 2020 Capital Project Schedule.

1,2,3 Trichloropropane (TCP). TCP is a regulated chemical with an established State Maximum Contaminant Level (MCL) in drinking water of 5 parts per trillion (ppt). The MCL for TCP was adopted by the State Water Resources Control Board Division of Drinking Water on July 18, 2017. Regulations require that public water systems statewide begin quarterly sampling for TCP in their drinking water sources in January 2018. Systems will be in or out of compliance with the new drinking water standard based on average of four quarters of sampling. If a water system's four quarter average is above the 5 ppt standard, it must publicly notify its customers of the violation and take corrective action to resolve the exceedance and avoid future violations of the standard.

TCP is a manmade chemical and in this area is typically associated with pesticide products used with past practices and typically found in groundwater sources.

The City began required sample collection and testing for TCP in January 2018. Our contract lab, BSK Associates has provided water quality lab services for many years and in the second quarter of 2018, failed to collect the required sample. Staff caught the oversight but as the second quarter period had elapsed, collection of a substitute sample was not possible.

Staff has worked with DWR to develop the approved public notification. The notification identifies the reason for the monitoring requirement not being met as well as the first quarter samples results all being "non-detect". It is also noted that the failed water supply monitoring location was the Friant Kern Canal (surface water supply).

As a result of not meeting the 4-quarter sample collection and testing, the City must release this public notice and extend the TCP quarterly testing to include the first quarter of 2019.

Both public notices are required to mailed to all water accounts and reporting to DWR must be completed by October 10, 2018.

ALTERNATIVES

- None presented

BENEFIT TO OR IMPACT ON CITY RESOURCES

As a result of missing the second quarter TCP sample collection and testing, public notification and extended sample collection of TCP is required.

ENVIRONMENTAL REVIEW

None required

POLICY ISSUES

None at this time.

PUBLIC OUTREACH

Posted in this Agenda.
To be distributed via U.S. Mail as required.

ATTACHMENTS

- DBP Notification
- TCP Notification
- Response from BSK Labs regarding 2018 Second Quarter Sampling

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Este informe contiene información muy importante sobre su agua potable.
Tradúzcalo o hable con alguien que lo entienda bien.
Si tiene alguna pregunta por favor llame al 559-562-7102 opción 4

City of Lindsay has levels of Disinfection Byproducts Above Drinking Water Standards

Our water system recently failed a drinking water standard. Although this is not an emergency, as our customers, you have a right to know what you should do, what happened and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. Test results continue show that our system exceeds the standard or maximum contaminant level (MCL), for Total Trihalomethane (TTHM) and/or 5 Haloacidic Acids (HAA5). The MCL standard for THM is 0.080 ug/L and for HAA5 is 0.060 ug/L. The running average level of TTHM and HAA5 over the last year at each site is listed below;

Site	*TTHM*	*HAA5*		*Site*	*TTHM*	*HAA5*		*Site*	*TTHM*	*HAA5*
S1	**.112**	.012		S2	**.090**	**.089**		S3	**.082**	.053
S4	**.097**	.072		S5	.048	.035		S6	.057	.035
S7	.009	.010		S8	.007	.006		S9	**.091**	**.062**

What should I do?

You do not need to use an alternative (e.g., bottled) water supply. This is not an immediate risk. If it had been, you would have been notified immediately.

Some people who drink water containing TTHM's in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer.
Some people who drink water containing HAA5's in excess of the MCL over many years may have an increased risk of getting cancer.

If you have other health issues concerning the consumption of this water, you may wish to consult your doctor.

What happened? What was done?

Disinfection byproducts (TTHM and HAA5) are chemical, organic and inorganic substances that can form during a reaction of a disinfectant with naturally present organic matter in a water supply. TTHM and HAA5 samples are collected each quarter and a running annual average (RAA) is calculated for compliance.

The City has identified preliminary costs of renovating our primary disinfection process and until the project is funded and completed, will closely monitor operations to strive to lower TTHM and HAA5 levels. We will continue to sample and test TTHM and HAA5 at locations throughout the City and provide public notification as required.

We anticipate resolution of the problem within 14 months. If testing results show a reduction in TTHM and HAA5 levels, this will be identified in the next quarterly water system update. For more information, please contact Mike Camarena at 559-562-7102, ext.4 or at the following mailing address: P.O. Box 369, Lindsay, CA. 93247.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Secondary Notification Requirements

Upon receipt of notification from a person operating a public water system, the following notification must be given within 10 days [Health and Safety Code Section 116450(g)]:

- SCHOOLS: Must notify school employees, students, and parents (if the students are minors).
- RESIDENTIAL RENTAL PROPERTY OWNERS OR MANAGERS (including nursing homes and care facilities): Must notify tenants.
- BUSINESS PROPERTY OWNERS, MANAGERS, OR OPERATORS: Must notify employees of businesses located on the property.

This notice is being sent to you by the City of Lindsay.

Date distributed: October 1, 2018.

BSK ASSOCIATES

1414 Stanislaus Street
Fresno, CA 93706
P 559.497.2888
F 559.485.6935
www.bskassociates.com

September 17, 2018

Mr. Mike Camarena, Director of City Services
City of Lindsay
P.O. Box 369
Lindsay, CA 93247

RE: System #5410006-001 Friant Kern Canal 1,2,3-TCP Sampling, Second Quarter, 2018

Dear Mr. Camarena,

The purpose of this letter is to provide a narrative of the missing second quarter sampling for 1,2,3-TCP testing of Friant Kern Canal (PSC# 5410006-001).

According to the sampling schedule directed by Keller-Wegley Engineering, BSK Associates was to collect sample at the Friant Kern Canal site for TCP testing every quarter in 2018. The first quarter was sampled on February 20, 2018 (BSK# A8B2170). However, the second quarter (April to June) sample was not collected because of an inadvertent oversight. The error was not discovered until you inquired about it on August 17, 2018. By then it was too late to sample for the second quarter.

Our project management team performs a scheduling check near the end of each quarter to verify that all required samplings have been conducted. Regretfully the omission at Friant Kern Canal was not detected in the scheduling review process. Part of the reason was the fact that the TCP monitoring at this site was newly added to the scheduling spreadsheet, and the laboratory was still getting used to the new frequency and missed it. To ensure such mistake does not happen again, we are requiring the Keller-Wegley sampling schedule be reviewed by at least two different staff members near the end of each quarter.

Per your instructions, we have performed the Q3 sampling at Friant Kern Canal today and will add another sampling event in the first quarter of 2019 to make up for the missing second quarter of 2018 to meet your TCP monitoring requirements.

We understand your regulatory compliance obligations and we apologize for the inconveniences due to our mistake. Please contact Project Manager Sarah K. Guenther if there is anything else we can be of help. Please also do not hesitate to contact me if you have further question on this matter at 559.497.2888 x124 or at mng@bskassociates.com.

Respectfully,

Michael Ng
Quality Assurance Manager

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Este informe contiene informaci6n muy importante sabre su agua potable.
Par favor hable con alguien que lo pueda traducir.

1, 2 ,3-Trichloropropane Monitoring Requirements Not Met for City of Lindsay During 2nd Quarter of 2018

Our water system/contracted laboratory recently failed to collect a required water sample during the 2nd Quarter of 2018 and; therefore was in violation of the regulations. Although this is not an emergency, as our customers, you have a right to know what happened, what you should do, and what we did to correct the situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 2nd Quarter 2018, we did not collect a 1, 2, 3-trichloropropane (1,2,3-TCP) sample from the Friant Kern Canal and therefore, cannot be sure of the quality of our drinking water during that time. All results collected from 1st Quarter 2018 were all Non-Detect.

What should I do?

- **There is nothing you need to do at this time.**
- The table below lists the contaminant we did not properly test for during the 2nd Quarter of 2018, how many samples we are required to take and how often, how many samples we took, when samples should have been taken, and the date on which follow-up samples will be taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples will be taken
1,2,3-TCP	4 quarterly samples	None	During 2nd Quarter 2018	By September 30, 2018

- If you have health issues concerning the consumption of this water, you may wish to consult your doctor.

What happened? What is being done?

Our contract lab failed to collect the 1, 2, 3 Trichloropropane sample in the 2nd quarter 2018. Samples will be taken in the 3rd & 4th Quarters 2018. The City will be adding an additional sample event in the first quarter of 2019.

For more information, please contact:

Water System Contact Name: Neyba Amezcua, City Services Assistant Director and/or Ralph Gutierrez, Water & Waste Water Treatment Plant Contract Operator
Phone Number: 559-562-7102 Extension 4
Mailing Address: P.O. BOX 369, Lindsay CA. 93247

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This notice is being sent to you by City of Lindsay in compliance with the California Domestic Water Quality and Monitoring Regulations as a means of keeping the public informed.

State Water System ID:5410006. Date distributed:_____