



SUBMITTAL APPROVAL

TEN Project #17-01-009

PROJECT:

Portland ME Parking Garage Retrofit

Upon Customer's execution of this Submittal Approval, TCS is hereby authorized to commence the Installation Work on the above referenced Project.

Execution of this Submittal Approval by Customer:

Signature: 

By: Troy Moon

Title: Sustainability Coordinator

Date: 11/16/2017

Design Approval Acknowledgement by TCS:

Signature: _____

By: Shawn Deegan

Title: Senior Project Manager

Date: November 15, 2017

List of equipment/material provided in this efficiency upgrade:

Street Lighting

LIGHTING EQUIPMENT & LED LAMP WATTAGES

Sylvania SLMWPK1A/013UNV740/CO/BZ/P

Sylvania SLMWPK1A/060UNV740/CO/BZ/P

Sylvania HIBAY1A/100UNVD840/GR

Keystone KT-RKIT-HCP-8-1150-840-FDIM

Keystone KT-RKIT-CP-8-1600-840-FDIM

Sylvania LED12T8/L48/DIM/841/SUB/G6

Sylvania LED8T8/L24/841/SUB/G6

Sylvania QHE1xLEDT8/UNV ISL-SC

Sylvania QHE2xLEDT8/UNV ISL-SC

Sylvania QHE3xLEDT8/UNV ISL-SC

Sylvania QHE4xLEDT8/UNV ISL-SC

CK2x4

Line By Line – Attached.

SYLVANIA Luminaires

Slim Wall Pack



Product Features

The Wall Pack luminaires are environmentally preferable LED alternatives to traditional HID or Incandescent luminaires, offering up to 87% in energy savings. Ideal in place of traditional luminaires, or as new installations, the Wall Pack series is offered in four wattages/lumen packages for illuminating building exteriors, outdoor corridors, walkways, and stairwells.

The slim design of these luminaires is aesthetically pleasing and they are available with optional photo control. SYLVANIA luminaires assure optimum light engine performance for extended service and rated life ($\geq 125,000$ hours L_{70}).

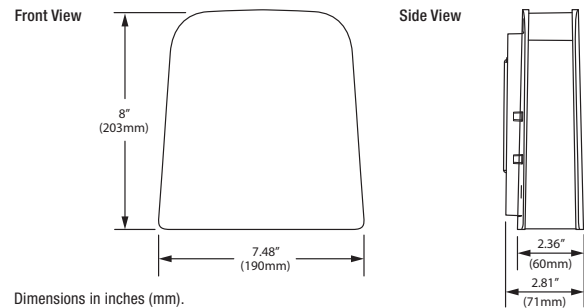
Wattage Comparison Chart

Slim Wall Pack

Traditional Source	Traditional System Wattage	LED System Wattage	Energy Savings
23 W CFL	23	13	43%
100 W Inc	100	13	87%
150 W Inc	150	30	80%
50 W HPS	62	30	52%
70 W HPS	91	30	67%
70 W HPS	91	30	67%
70 W HPS	91	40	56%
100 W HPS	120	40	67%
100 W MH	130	40	69%
150 W HPS	170	60	65%
150 W MH	188	60	68%
175 W MH	210	60	71%

Catalog #	Type
Project	
Notes	
Date	
Prepared by	

Dimensions



Specifications

Weight: UNV: 5.9 lbs (2.7 kg) 347V: 65 lbs (2.9 kg)

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 $\geq 125,000$ hours at L_{70} @25°C. Luminaire efficacy up to 121 LPW.

Electrical: Offered in 13, 30, 40, and 60 Watts, the luminaire is designed to operate through the 120-277 VAC universal voltage range (30 and 40 Watts in 347VAC). 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 fixture power factor is $\geq 90\%$ and THD is $\leq 20\%$.

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

Optics: Cutoff distribution with a flat tempered glass lens.

Options Available: Photocontrol (120V Only).

Installation: Luminaire mounts to exterior wall (knuckle and trunnion mount accessories available). Level included in back plate and luminaire can be mounted in any orientation.

Operating Temperature: -40°F to +104°F (-40°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.



*DLC Premium only applicable on 2A versions

Ordering Guide

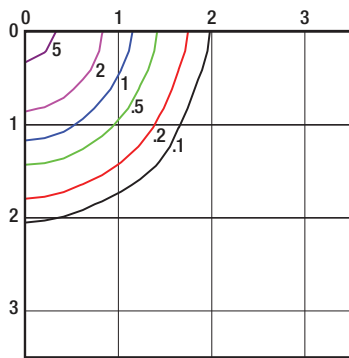
Item Number:

SLMWPK	XX	/	XXX	XXX	7	XX	/	CO	/	BZ	/	X
Product Name	Generation		Wattage (UNV)	Voltage	CRI	Color Temp (CCT)		Optics		Color/Finish		Options
SLMWPK	1A		013 = 13 Watts	UNV = 120-277V	7 ≥ 70	40 = 4000K		CO = Cutoff Distribution		BZ = Bronze		Blank = No Option
	2A		030 = 30 Watts	120 = 120V		50 = 5000K						P = Photocontrol (120V only)
			040 = 40 Watts	347 = 347V								
			060 = 60 Watts									
			Wattage (347V)									
			030 = 30 Watts									
			040 = 40 Watts									

Photometric Data

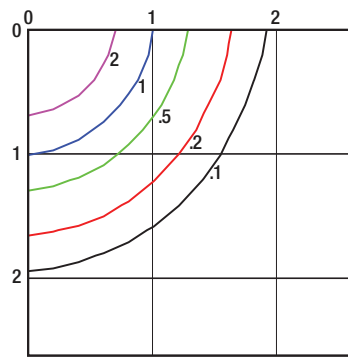
SLMWPK2A/030UNV750/CO

Isofootcandle Lines at 15' Mounting Height



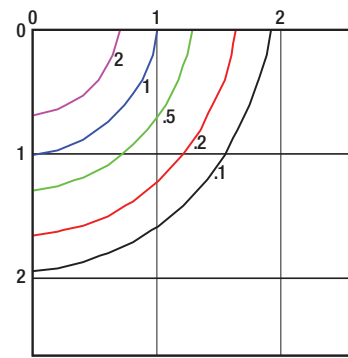
SLMWPK1A/040UNV750/CO (UNV/347V)

Isofootcandle Lines at 18' Mounting Height



SLMWPK2A/060UNV750/CO

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
74340	SLMWPK1A/013UNV740/CO/BZ	13	120-277V	>70	4000K	Cutoff	1400	113	Std	B1-U0-G1	—
74341	SLMWPK1A/013UNV750/CO/BZ	13	120-277V	>70	5000K	Cutoff	1400	113	Std	B1-U0-G1	—
74192	SLMWPK1A/030UNV740/CO/BZ	30	120-277V	>70	4000K	Cutoff	2800	92	Std	B1-U0-G1	—
74195	SLMWPK1A/030UNV750/CO/BZ	30	120-277V	>70	5000K	Cutoff	2800	84	—	B1-U0-G1	—
74193	SLMWPK1A/040UNV740/CO/BZ	40	120-277V	>70	4000K	Cutoff	4100	99	Std	B2-U0-G1	—
74196	SLMWPK1A/040UNV750/CO/BZ	40	120-277V	>70	5000K	Cutoff	3900	98	Std	B2-U0-G1	—
74194	SLMWPK1A/060UNV740/CO/BZ	60	120-277V	>70	4000K	Cutoff	5500	94	Std	B2-U0-G1	—
74197	SLMWPK1A/060UNV750/CO/BZ	60	120-277V	>70	5000K	Cutoff	5100	83	—	B2-U0-G1	—
74342	SLMWPK1A/013120740/CO/BZ/P	13	120V	>70	4000K	Cutoff	1400	113	Std	B1-U0-G1	Photocontrol
74343	SLMWPK1A/013120750/CO/BZ/P	13	120V	>70	5000K	Cutoff	1400	113	Std	B1-U0-G1	Photocontrol
74204	SLMWPK1A/030120740/CO/BZ/P	30	120V	>70	4000K	Cutoff	2800	92	Std	B1-U0-G1	Photocontrol
74207	SLMWPK1A/030120750/CO/BZ/P	30	120V	>70	5000K	Cutoff	2800	84	—	B1-U0-G1	Photocontrol
74205	SLMWPK1A/040120740/CO/BZ/P	40	120V	>70	4000K	Cutoff	4100	99	Std	B2-U0-G1	Photocontrol
74208	SLMWPK1A/040120750/CO/BZ/P	40	120V	>70	5000K	Cutoff	3900	98	Std	B2-U0-G1	Photocontrol
74206	SLMWPK1A/060120740/CO/BZ/P	60	120V	>70	4000K	Cutoff	5500	94	Std	B2-U0-G1	Photocontrol
74209	SLMWPK1A/060120750/CO/BZ/P	60	120V	>70	5000K	Cutoff	5100	83	—	B2-U0-G1	Photocontrol
72966	SLMWPK1A/030347750/CO/BZ	30	347V	>70	5000K	Cutoff	3400	109	Std	B1-U0-G1	—
72992	SLMWPK1A/040347750/CO/BZ	40	347V	>70	5000K	Cutoff	4300	104	Std	B2-U0-G1	—
74381	SLMWPK2A/030UNV750/CO/BZ	30	120-277V	>70	5000K	Cutoff	3300	112	Prm	B1-U0-G1	—
74380	SLMWPK2A/060UNV740/CO/BZ	60	120-277V	>70	4000K	Cutoff	7000	117	Prm	B2-U0-G1	—
74382	SLMWPK2A/060UNV750/CO/BZ	60	120-277V	>70	5000K	Cutoff	7200	121	Prm	B2-U0-G1	—
74384	SLMWPK2A/030120750/CO/BZ/P	30	120V	>70	5000K	Cutoff	3300	112	Prm	B1-U0-G1	Photocontrol
74383	SLMWPK2A/060120740/CO/BZ/P	60	120V	>70	4000K	Cutoff	7000	117	Prm	B2-U0-G1	Photocontrol
74385	SLMWPK2A/060120750/CO/BZ/P	60	120V	>70	5000K	Cutoff	7200	121	Prm	B2-U0-G1	Photocontrol

*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.

Accessories and Replacement Parts

Item Number	Ordering Abbreviation	Item Description
74392	SLMWPK1A/JBOX/BZ	Junction Box, Bronze Finish
74393	SLMWPK1A/TRUNNION/BZ	Junction Box Trunnion Mount, Bronze Finish
74394	SLMWPK1A/KNUCKLE/BZ	Junction Box Knuckle Mount, Bronze Finish



LEDVANCE LLC

200 Ballardvale Street

Wilmington, MA 01887 USA

Phone 1-800-LIGHTBULB (1-800-544-4828)

www.sylvania.com

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Licensee of product trademark SYLVANIA in general lighting.

Specifications subject to change without notice.



LEDVANCE Luminaires

HIGH BAY



Product Features

The High Bay luminaires are environmentally preferable LED alternatives to traditional HID luminaires, offering up to 67% in energy savings. Ideal in place of traditional luminaires, or as new installations, the High Bay series is offered in two wattages/ lumen packages for use in warehouses, manufacturing facilities, big-box retail, gymnasiums, and loading docks.

The polycarbonate reflector minimizes the cave effect and the luminaire is light weight with a traditional design. LEDVANCE luminaires assure optimum light engine performance for extended service and rated life ($\geq 63,000$ hours L_{70}).

Wattage Comparison Chart

Traditional Source	Traditional System Wattage	LED System Wattage	Energy Savings
250W MH	290	100	66%
250W HPS	295	100	66%
320W MH	370	200	67%
400W HPS	460	200	57%
400W MH	450	200	56%

Catalog #

Type

Project

Notes

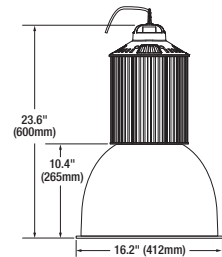
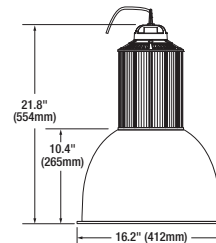
Date

Prepared by

Dimensions

100 Watt

200 Watt



Dimensions are in inches (mm)

Specifications

Weight: 100W: UNV: 9.5lbs (4.3kg) Sensor: 9.9lbs (4.47kg) 347V: 10.3lbs (4.7kg)
200W: UNV: 12.5lbs (5.7kg) Sensor: 13lbs (5.9kg) 347V: 13lbs (5.9kg)

Construction: Two-piece cast, low copper (<0.4% Cu) aluminum alloy with powder coat paint and UV stabilized polycarbonate refractor. The standard color is gray.

LED System: LED system with a life rating of $\geq 63,000$ hours at L_{70} @25°C.

Luminaire efficacy up to 122 LPW.

Electrical: Offered in 100 and 200 Watts, the luminaire is designed to operate through 120-277 or 347 Vac voltage. The LED driver is a constant current device and meets UL1310 and UL48 Class 1 with built-in over temperature protection. The power factor is $\geq 90\%$ and THD is $\leq 20\%$.

Dimming: The driver is 0-10V dimmable (down to 16%). Please reference the dimmer compatibility document (LEDLUM012).

Color Characteristics: CRI >80; CCT of 4000K or 5000K.

Optics: Type V distribution with a 16 inch polycarbonate open refractor.

Installation: Luminaire mounts via hook (included).

Operating Temperature: -4°F to +104°F (-20°C to +40°C).

Listings: cULus listed to UL1598 standards for damp locations.

Warranty: Standard 5-year luminaire warranty (LEDLUM002).

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



Ordering Guide

Item Number:

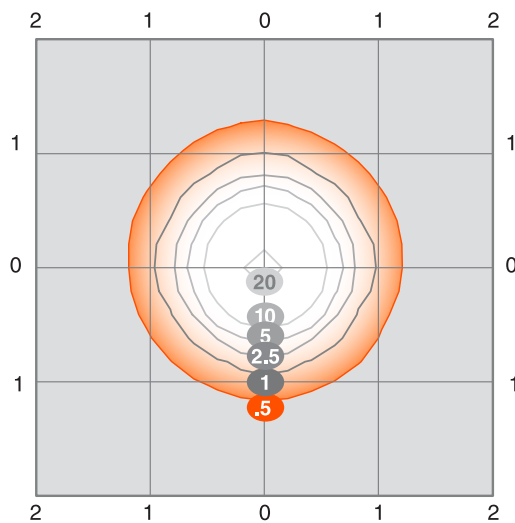
HIBAY	1A	/	XXX	XXX	D	8	XX	/	GR
Product Name	Generation		Wattage	Voltage	Dimming	CRI	Color Temp (CCT)		Color/Finish
HIBAY	1A		100 = 100 Watts 200 = 200 Watts	UNV = 120-277V 347 = 347V	D = 0-10V	8 = >80	40 = 4000K 50 = 5000K		GR = Gray



Photometric Data

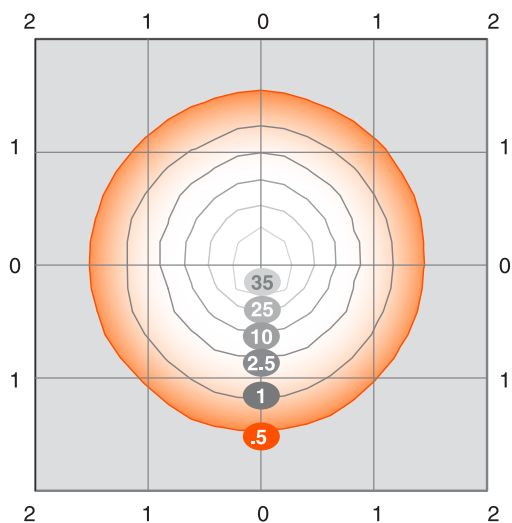
HIBAY1A/100UNVD750

Isofootcandle Lines at 20' Mounting Height



HIBAY1A/200UNVD750

Isofootcandle Lines at 20' Mounting Height



For other mounting heights apply the following multipliers:

Mounting Height	18'	20'	22'	25'	30'
Multiplier	1.23	1.00	0.83	0.64	0.44

Mounting Height	18'	20'	22'	25'	30'
Multiplier	1.23	1.00	0.83	0.64	0.44

Ordering Information

Housing (A)

Item Number	Ordering Abbreviation	Power (W)	Input Voltage	Dimming	CRI	Color Temp (CCT)	Total Fixture Lumens	LPW*
74230	HIBAY1A/100UNVD840/GR	100	120-277	0-10V	>80	4000K	11,100	112
74231	HIBAY1A/100UNVD850/GR	100	120-277	0-10V	>80	5000K	11,500	122
74232	HIBAY1A/200UNVD840/GR	200	120-277	0-10V	>80	4000K	19,400	103
74233	HIBAY1A/200UNVD850/GR	200	120-277	0-10V	>80	5000K	20,300	105
74269	HIBAY1A/100347D840/GR	100	347	0-10V	>80	4000K	10,900	111
74270	HIBAY1A/100347D850/GR	100	347	0-10V	>80	5000K	11,200	115
74271	HIBAY1A/200347D840/GR	200	347	0-10V	>80	4000K	19,900	103
74272	HIBAY1A/200347D850/GR	200	347	0-10V	>80	5000K	20,700	108

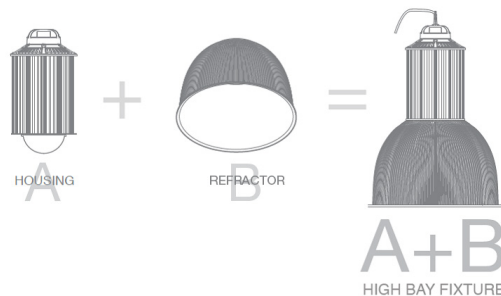
*LPW per LM79 report

To learn more about utility rebates please visit <http://www.foia.com/osram/usamap.asp>
For further information contact your local SYLVANIA sales representative.

Refractor (B)

Item Number	Ordering Abbreviation
74234	HIBAY1A/16H5

Housing (A) + Refractor (B) =



OSRAM SYLVANIA Inc.
200 Ballardvale Street
Wilmington, MA 01887 USA
Phone 1-800-LIGHTBULB (1-800-544-4828)
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8" CIRCULAR LED KITS

1600 AND 2200 LUMEN OPTIONS

FUTURE>FIT
LED KITS

DESCRIPTION

Pre-assembled UL 1598C Classified LED retrofit kit. Includes the following components:

• (1) LED Driver • (1) LED Module • (1) Metal Pan • Mounting Accessories (Threaded Rod, Mounting Hardware, and Wiring Hardware)



RoHS
Compliant

10YEAR
WARRANTY

APPLICATION

Upgrade circular surface-mount fluorescent-style luminaires to an LED solution. Suitable for after-market or OEM installation. (OEM must have UL LED Luminaire General Coverage file.)

TYPICAL INSTALLATION APPLICATION



SYSTEM FEATURES

Module Features

- For Use in Class 2 Lighting Systems
- Highly Reflective White Soldermask
- Low Profile WAGO Push Connectors
- UL Recognized Components
- Single-Sided CEM3 Substrate
- 3-Step MacAdam Color Binning
- LM80 Tested LEDs by Samsung
- Beam Angle: 120°
- Reported Life Expectancy: L70 > 36,000 hours at Tc <85°C
- Calculated Life Expectancy: L70 = 93,000 hours at Tc <85°C
- Maximum Board Temperature at Tc Point: 85°C

Driver Features

- Dimming Options: 120V Phase Control or 120-277V 0-10V
- High Power Factor
- UL 8750 Recognized Component LED Power Unit
- Meets FCC Part 15 Class B (Consumer) Limit for EMI
- Over Current, Short Circuit, and Open Circuit Protection
- Class 2 Output
- Type 1 Outdoor, Suitable for Dry and Damp Locations
- Up to 194°F/90°C Maximum Case Temperature
- THD: <20%



8" CIRCULAR LED KITS

1600 AND 2200 LUMEN OPTIONS

PERFORMANCE SPECIFICATIONS

8", 1600 LUMEN CIRCULAR

Dimming Type: Phase Control

KIT CONTENTS:

Driver: KTLD-20-1-560-FDIM-AQ7

Module: (1) KTLN-900-C2-8xx-48A

Metal Pan: Yes

Mounting Hardware and Accessories

Color Temp	Input Voltage	LED Retrofit Kit Catalog Number	No. of Modules	Total System Drive Current	Drive Current per Module	Total System Lumens	Total Module Power	Module Efficacy	Driver Efficiency	Total System Power	Total System Efficacy
3000K	120V	KT-RKIT-CP-8-1600-830-FDIM	1	560mA	560mA	1700	13W	130 lm/W	80%	16.2W	105 lm/W
4000K	120V	KT-RKIT-CP-8-1600-840-FDIM	1	560mA	560mA	1750	13W	135 lm/W	80%	16.2W	108 lm/W
5000K	120V	KT-RKIT-CP-8-1600-850-FDIM	1	560mA	560mA	1800	13W	138 lm/W	80%	16.2W	111 lm/W

Dimming Type: 0-10V

KIT CONTENTS:

Driver: KTLD-20-UV-560-VDIM-AQ7

Module: (1) KTLN-900-C2-8xx-48A

Metal Pan: Yes

Mounting Hardware and Accessories

Color Temp	Input Voltage	LED Retrofit Kit Catalog Number	No. of Modules	Total System Drive Current	Drive Current per Module	Total System Lumens	Total Module Power	Module Efficacy	Driver Efficiency	Total System Power	Total System Efficacy
3000K	120-277V	KT-RKIT-CP-8-1600-830-VDIM	1	560mA	560mA	1700	13W	130 lm/W	80%	16.2W	105 lm/W
4000K	120-277V	KT-RKIT-CP-8-1600-840-VDIM	1	560mA	560mA	1750	13W	135 lm/W	80%	16.2W	108 lm/W
5000K	120-277V	KT-RKIT-CP-8-1600-850-VDIM	1	560mA	560mA	1800	13W	138 lm/W	80%	16.2W	111 lm/W

8", 2200 LUMEN CIRCULAR

Dimming Type: Phase Control

KIT CONTENTS:

Driver: KTLD-20-1-560-FDIM-AQ7

Module: (1) KTLN-900-C2-8xx-60A

Metal Pan: Yes

Mounting Hardware and Accessories

Color Temp	Input Voltage	LED Retrofit Kit Catalog Number	No. of Modules	Total System Drive Current	Drive Current per Module	Total System Lumens	Total Module Power	Module Efficacy	Driver Efficiency	Total System Power	Total System Efficacy
3000K	120V	KT-RKIT-CP-8-2200-830-FDIM	1	560mA	560mA	2110	16.3W	129 lm/W	80%	20.4W	103 lm/W
4000K	120V	KT-RKIT-CP-8-2200-840-FDIM	1	560mA	560mA	2180	16.3W	134 lm/W	80%	20.4W	107 lm/W
5000K	120V	KT-RKIT-CP-8-2200-850-FDIM	1	560mA	560mA	2240	16.3W	137 lm/W	80%	20.4W	109 lm/W

Dimming Type: 0-10V

KIT CONTENTS:

Driver: KTLD-20-UV-560-VDIM-AQ7

Module: (1) KTLN-900-C2-8xx-60A

Metal Pan: Yes

Mounting Hardware and Accessories

Color Temp	Input Voltage	LED Retrofit Kit Catalog Number	No. of Modules	Total System Drive Current	Drive Current per Module	Total System Lumens	Total Module Power	Module Efficacy	Driver Efficiency	Total System Power	Total System Efficacy
3000K	120-277V	KT-RKIT-CP-8-2200-830-VDIM	1	560mA	560mA	2110	16.3W	129 lm/W	80%	20.4W	103 lm/W
4000K	120-277V	KT-RKIT-CP-8-2200-840-VDIM	1	560mA	560mA	2180	16.3W	134 lm/W	80%	20.4W	107 lm/W
5000K	120-277V	KT-RKIT-CP-8-2200-850-VDIM	1	560mA	560mA	2240	16.3W	137 lm/W	80%	20.4W	109 lm/W



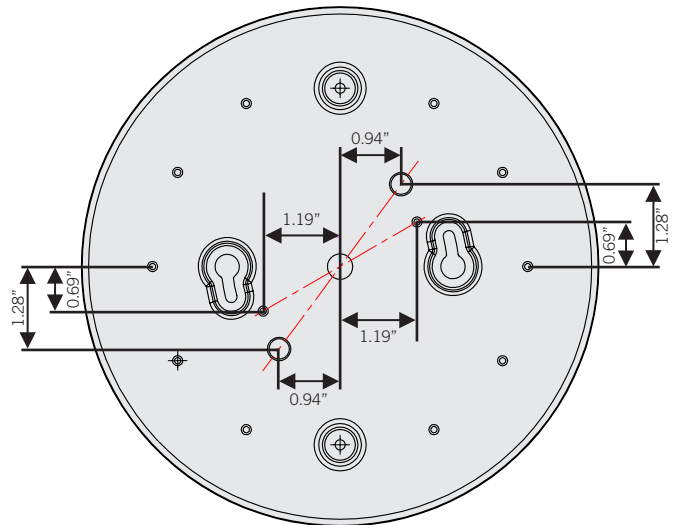
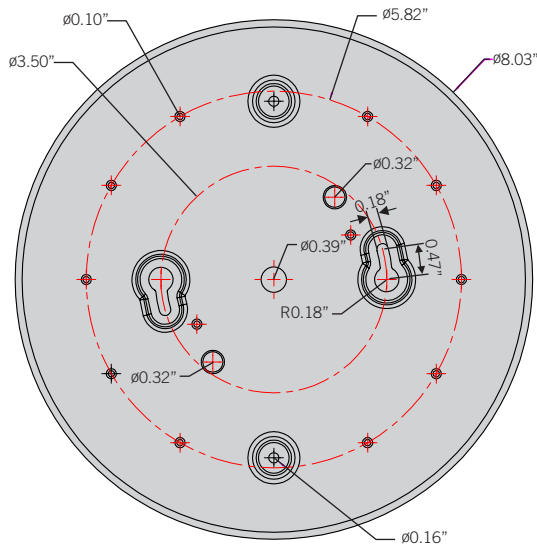
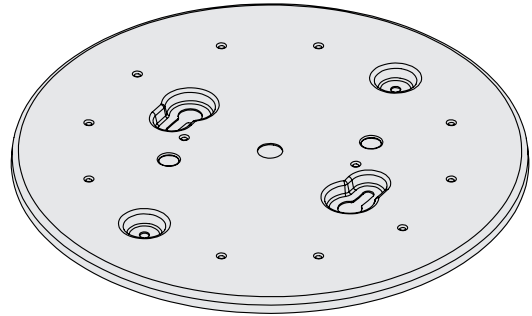
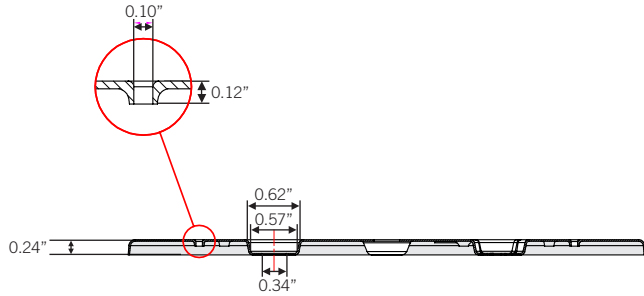
8" CIRCULAR LED KITS

1600 AND 2200 LUMEN OPTIONS

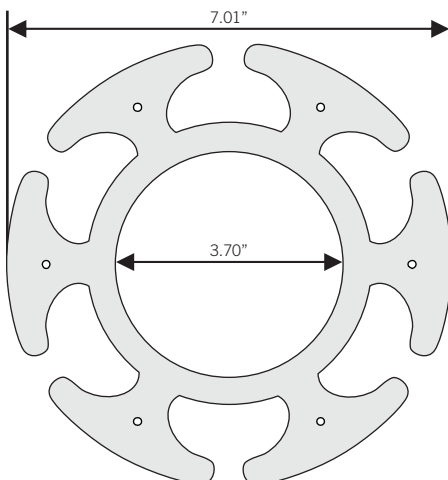
Page 3 of 3

PHYSICAL SPECIFICATIONS

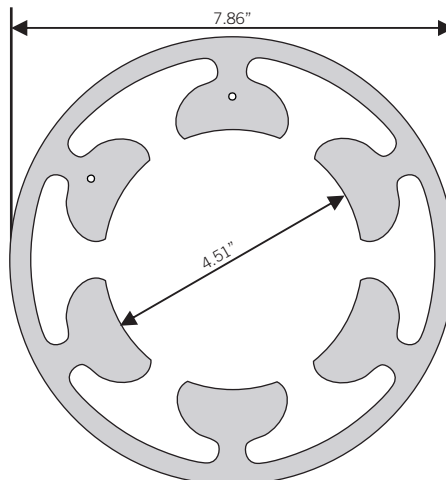
METAL PAN



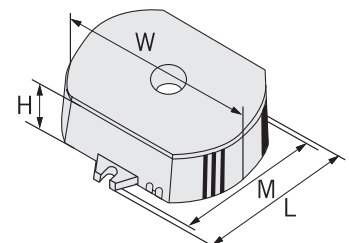
LED MODULE A FOR 1600 LUMEN KITS



LED MODULE B FOR 2200 LUMEN KITS



LED DRIVER



LENGTH	6.46"
WIDTH	1.32"
HEIGHT	1.00"
MOUNTING	6.00"

SCONCE LED KITS

8", 1100 AND 700 LUMEN OPTIONS

FUTURE>FIT
LED KITS



RoHS
Compliant

10 YEAR
WARRANTY

DESCRIPTION

Pre-assembled UL 1598C Classified (pending) LED retrofit kit. Includes the following components:

- (1) LED Driver • (1) LED Module • (1) Metal Pan • Mounting Accessories (Mounting Hardware and Wiring Hardware)

APPLICATION

Upgrade wall-mount fluorescent-style luminaires to an LED solution. Suitable for after-market or OEM installation. (OEM must have UL LED Luminaire General Coverage file.)

TYPICAL INSTALLATION APPLICATION



SYSTEM FEATURES

Module Features

- For Use in Class 2 Lighting Systems
- Highly Reflective White Soldermask
- Low Profile WAGO Push Connectors
- UL Recognized Components
- Single-Sided CEM3 Substrate
- 3-Step MacAdam Color Binning
- LM80 Tested LEDs by Samsung
- Beam Angle: 120°
- Reported Life Expectancy: L70 > 36,000 hours at Tc <85°C
- Calculated Life Expectancy: L70 = 93,000 hours at Tc <85°C
- Maximum Board Temperature at Tc Point: 85°C

Driver Features

- 120V Input, High Power Factor, Phase Control Dimming
- UL 8750 Recognized Component LED Power Unit
- Meets FCC Part 15 Class B (Consumer) Limit for EMI
- Over Current, Short Circuit, and Open Circuit Protection
- Class 2 Output
- Type 1 Outdoor, Suitable for Dry and Damp Locations
- Up to 194°F/90°C Maximum Case Temperature
- THD: <20%

SCONCE LED KITS

8", 1100 AND 700 LUMEN OPTIONS

PERFORMANCE SPECIFICATIONS

8", 1100 LUMEN WALL SCONCE

Dimming Type: Phase Control

KIT CONTENTS:

Driver: (1) KTLD-10-1-350-FDIM-AF5

Module: (1) KTLM-450-R2-8xx-24A

Metal Pan: Yes

Mounting Hardware and Accessories

Color Temp	Input Voltage	LED Retrofit Kit Catalog Number	No. of Modules	Total System Drive Current	Drive Current per Module	Total Lumens per Module	Total System Lumens	Total Module Power	Module Efficacy	Driver Efficiency	Total System Power	Total System Efficacy
3000K	120V	KT-RKIT-HCP-8-1150-830-FDIM	1	350mA	350mA	1115	1115	8.5W	131 lm/W	80%	10.6W	105 lm/W
4000K	120V	KT-RKIT-HCP-8-1150-840-FDIM	1	350mA	350mA	1150	1150	8.5W	135 lm/W	80%	10.6W	108 lm/W
5000K	120V	KT-RKIT-HCP-8-1150-850-FDIM	1	350mA	350mA	1180	1180	8.5W	138 lm/W	80%	10.6W	111 lm/W

8", 700 LUMEN WALL SCONCE

Dimming Type: Phase Control

KIT CONTENTS:

Driver: (1) KTLD-10-1-350-FDIM-AF5

Module: (1) KTLM-450-R2-8xx-15A

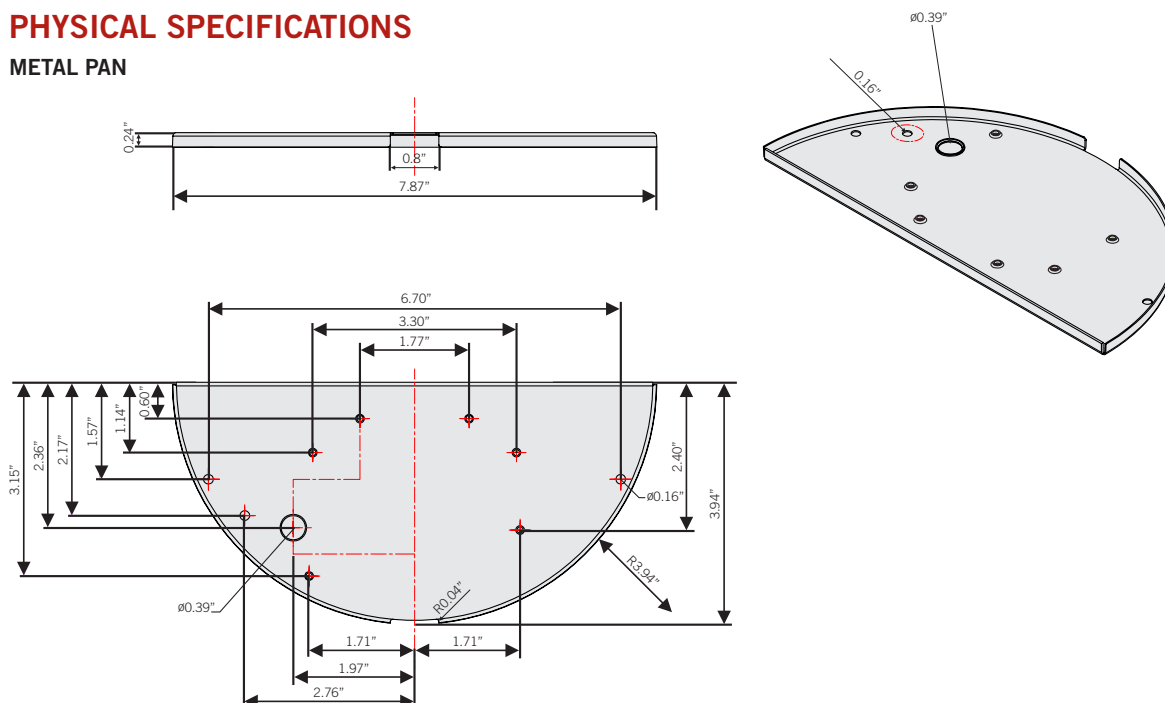
Metal Pan: Yes

Mounting Hardware and Accessories

Color Temp	Input Voltage	LED Retrofit Kit Catalog Number	No. of Modules	Total System Drive Current	Drive Current per Module	Total Lumens per Module	Total System Lumens	Total Module Power	Module Efficacy	Driver Efficiency	Total System Power	Total System Efficacy
3000K	120V	KT-RKIT-HCP-8-650-830-FDIM	1	350mA	350mA	680	680	5.5W	123 lm/W	80%	6.9W	98 lm/W
4000K	120V	KT-RKIT-HCP-8-650-840-FDIM	1	350mA	350mA	700	700	5.5W	127 lm/W	80%	6.9W	101 lm/W
5000K	120V	KT-RKIT-HCP-8-650-850-FDIM	1	350mA	350mA	720	720	5.5W	130 lm/W	80%	6.9W	104 lm/W

PHYSICAL SPECIFICATIONS

METAL PAN

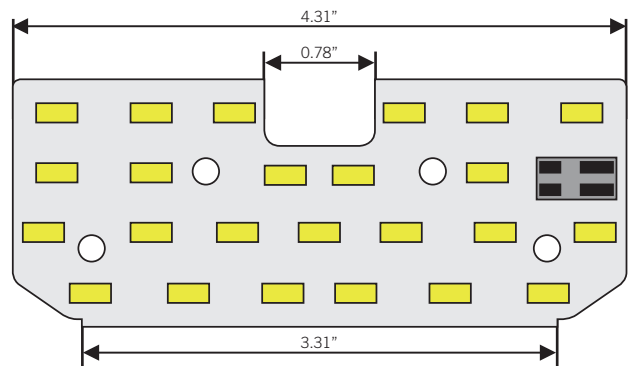


PHYSICAL SPECIFICATIONS

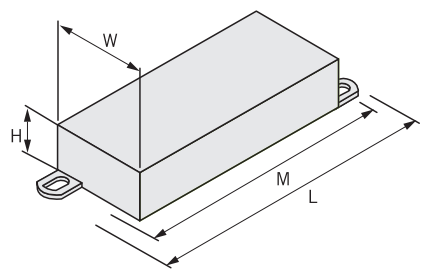
LED MODULES

Part No. KTLM-450-R2-8xx-24A and Part No. KTLM-450-R2-8xx-15A

Note: LEDs on modules below are to show placement only.



LED DRIVER



LENGTH	3.70"
WIDTH	1.30"
HEIGHT	0.79"
MOUNTING	3.40"

ORDERING INFORMATION

Order Code	Packaging Style	Package Quantity	Item Status
KT-RKIT-HCP-8-1150-840-FDIM-BP	Bulk Packaged	20	Quick Ship
KT-RKIT-HCP-8-1150-840-FDIM-IP	Individually Packaged	1	Quick Ship
KT-RKIT-HCP-8-650-840-FDIM-BP	Bulk Packaged	20	Quick Ship
KT-RKIT-HCP-8-650-840-FDIM-IP	Individually Packaged	1	Quick Ship

CATALOG NUMBER BREAKDOWN

KT-RKIT-HCP-8-1150-830-FDIM

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

1 Keystone Technologies

2 Retrofit Kit

3 Pan Type: HCP = Half Circle Pan

4 Nominal Size: 8 = 8" Circular

5 Nominal Lumens

6 CRI: 8 = 800 Series

7 CCT: 30 = 3000K, 40 = 4000K, 50 = 5000K

8 Dimming Type: FDIM = Phase Control Dimming

SubstiTUBE® IPS LED T8

Compatible glass LED T8 for use with instant start and select programmed rapid start electronic T8 ballasts



SubstiTUBE IPS LED T8 lamps are an energy saving alternative, designed to replace traditional fluorescent T8 lamps. These LED T8 lamps contain no mercury, provide instant light and a uniform light distribution.

Engineered to operate on existing instant start and select programmed rapid start electronic T8 ballasts, these lamps minimize labor and recycling costs. Because the SubstiTUBE IPS LED T8 is not affected by switching cycles, the use of occupancy or vacancy sensors can be installed with the existing instant start ballasts for optimal energy savings.

Install a new QHE instant start ballast with the SubstiTUBE IPS LED T8 lamp for optimal performance and to take advantage of the QUICK 72SUB+ system warranty. (See website for details.)

Key Features & Benefits

- Optimized glass optics available in:
 - Dimmable on 0-10V 4ft/15.5W
 - Non-dimmable 4ft/12W, 3ft/12W, 2ft/8.5W
- Optimized plastics optics available in:
 - Non-dimmable 4ft/15.5W
- CCT: 3000K, 3500K, 4100K, 5000K
- Beam angle: 220°
- Compatible with instant start and select programmed rapid start electronic T8 ballasts with input voltage of 120-277V and 347V
- THD <20%, power factor >0.90
- G13 medium bi-pin base
- Long life: 50,000 hour life (L₇₀)
- 6 year limited system warranty with purchase of new QHE IS ballast (16/7 operation)
- 5 year limited lamp warranty (24/7 operation)
- No warm-up time, instant-on with full light output and stable lamp to lamp color
- No UV emission
- Suitable for dry and damp locations (cannot come in direct contact with water)
- Maximize energy savings with occupancy sensors
- Suitable for open and enclosed fixtures

Product Offering

Length	Color Temperature	CRI
48in.	3000K, 3500K, 4100K, 5000K	82
36in.	3000K, 3500K, 4100K, 5000K	82
24in.	3000K, 3500K, 4100K, 5000K	82

Application Information

Applications

- Cove lighting
- Display case
- General illumination
- Parking garage
- Tunnels

Specifications and Certifications



Specification Data

Catalog #	Type
Project	
Comments	
Prepared by	

Specifications

Energy Data

Ambient Operating Temperature: -4°F to 122°F (-20°C to 50°C)
EMI/RFI: FCC Title 47 CFR, Part 18, Non-Consumer
Max Case Temperature: LED15T8/L48 = 158°F (70°C),
LED12T8/L48 = 149°F (65°C)

Lighting Data

Lumen Output: See specification table (output is dependent on operating ballast)
Lumens per Watt: Up to 122
Correlated Color Temperature (CCT): 3000K, 3500K, 4100K, 5000K
Color Rendering Index (CRI): 82
R9: Up to 14

Ordering Information

Item Number	Ordering Abbreviation	Length	Lamp Power (W) ¹	Lamp Lumens (lm) ¹	Color Temp.	CRI	Beam Angle (°)	Package Quantity	DLC (Y/N)
Glass									
75286	LED15T8/L48/DIM/830/SUB/G6	4ft	15.5	2100	3000K	82	220	10	Y
75287	LED15T8/L48/DIM/835/SUB/G6	4ft	15.5	2100	3500K	82	220	10	Y
75288	LED15T8/L48/DIM/841/SUB/G6	4ft	15.5	2200	4100K	82	220	10	Y
75297	LED15T8/L48/DIM/850/SUB/G6	4ft	15.5	2200	5000K	82	220	10	Y
79526	LED12T8/L48/FG/830/SUB/G6	4ft	12	1650	3000K	82	220	10	Y
79527	LED12T8/L48/FG/835/SUB/G6	4ft	12	1650	3500K	82	220	10	Y
79528	LED12T8/L48/FG/841/SUB/G6	4ft	12	1650	4100K	82	220	10	Y
79529	LED12T8/L48/FG/850/SUB/G6	4ft	12	1650	5000K	82	220	10	Y
75128	LED12T8/L36/FG/830/SUB/G6	3ft	12.5	1650	3000K	82	220	10	N/A
75129	LED12T8/L36/FG/835/SUB/G6	3ft	12.5	1650	3500K	82	220	10	N/A
75130	LED12T8/L36/FG/841/SUB/G6	3ft	12.5	1650	4100K	82	220	10	N/A
75131	LED12T8/L36/FG/850/SUB/G6	3ft	12.5	1650	5000K	82	220	10	N/A
75064	LED8T8/L24/FG/830/SUB/G6	2ft	8.5	1100	3000K	82	220	10	N
75065	LED8T8/L24/FG/835/SUB/G6	2ft	8.5	1100	3500K	82	220	10	N
75066	LED8T8/L24/FG/841/SUB/G6	2ft	8.5	1100	4100K	82	220	10	N
75070	LED8T8/L24/FG/850/SUB/G6	2ft	8.5	1100	5000K	82	220	10	N
Plastic									
75132	LED15T8/L48/FP/830/SUB/G6	4ft	15.5	2100	3000K	82	150	10	Y
75133	LED15T8/L48/FP/835/SUB/G6	4ft	15.5	2100	3500K	82	150	10	Y
75134	LED15T8/L48/FP/841/SUB/G6	4ft	15.5	2200	4100K	82	150	10	Y
75135	LED15T8/L48/FP/850/SUB/G6	4ft	15.5	2200	5000K	82	150	10	Y

1. Average Lamp Power and Average Lamp Lumens rated on QHE2x32T8/UNV ISN.

Ordering Guide

LED	15	T8	/	L	48	/	DIM	/	8	41	/	SUB	/	G6
LED	Wattage (ISN ballast)	Lamp Type		Length	48 Inches		DIM = frosted glass dimmable FG = frosted glass non-dimmable FP = frosted plastic non-dimmable		CRI = 82	Color Temperature 41 = 4100K 30 = 3000K 35 = 3500K 50 = 5000K		SubstiTUBE® IPS (Compatible LED T8 for use with instant start and select programmed rapid start T8 electronic ballasts)		Generation

Application Information

Application Notes

- Due to numerous ballast designs and topologies, this lamp should be tested on existing ballasts before mass quantities are installed.
- Not intended for use with older dedicated voltage (120V or 277V) ballasts. These ballasts have electronic components that degrade over time and may become unsuitable for the new LED T8 lamp.
- All installation, inspection, and maintenance of lighting fixtures should be done with the power to the fixture turned off. Lamps should be installed and operated in compliance with the National Electrical Code (NEC), Underwriters Laboratories Inc. (UL) requirements, and all applicable codes and regulations.
- Insert and align tubes properly in lamp holders. Partial insertion results in a poor or intermittent electrical contact that can result in short lamp life and arcing. Arcing at the lamp holder can result in localized overheating.
- For instant start ballasts, use lamp holders with an internal shunt or ensure that lamp holders are wired in a shunt configuration.
- For Programmed Rapid Start ballasts, use rapid-start lamp holders (non-shunted lamp holders).
- De-lamp is not allowed for ISH ballasts. For approved ISN and ISL ballasts, de-lamp is allowed for only 1 lamp so long as the ballast factor remains below 1.20 (for example, 4 lamp ballast can de-lamp to 3 lamps).

Application Notes (continued)

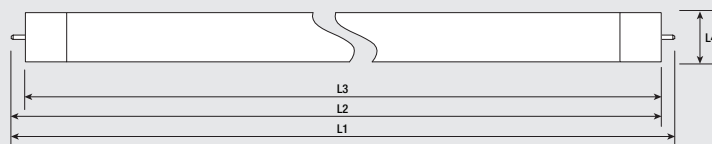
- Operating temperature range between -4°F and 122°F (-20°C and 50°C).
- Suitable for use in dry and damp environments.
- Maximum mounting distance between tube and ballast is 20 feet.
- Please read all installation instructions before attempting installation.
- For detailed warranty information, please see www.sylvania.com.

Specifications & Lighting Data

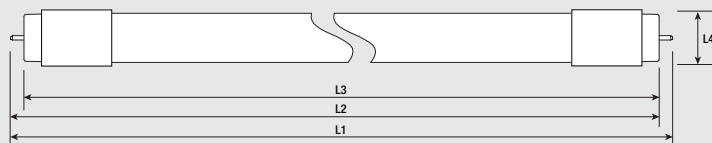
Lamp	Ballast	Current (AMPS)	System Power (W)	System Lumens (lm)	System Efficacy (lm/W)	No. of Lamps
LED15T8/L48	QHE2X32T8/UNV ISN	0.33 / 0.14	36.0	4400	122	2
LED12T8/L48	QHE2x32T8/UNV ISN	0.27 / 0.12	29.0	3300	114	2
LED12T8/L36	QHE2x32T8/UNV ISN	0.24/0.11	28.0	3300	117	2
LED8T8/L24	QHE2x32T8/UNV ISN	0.17/0.08	20.0	2200	110	2

Note: For complete system information refer to LED495 – SubstiTUBE System Information.

Assembly Diagram



Product Description	L1 End of Base Pin to End of Opposite Pin End	L2 Base Face to End of Opposite Base Pin	L3 Base Face to Base Face	L4 Bulb Outside Diameter
LED15T8/L48/DIM (4ft)	47.725" ± 0.055" (1212.2mm ± 1.4mm)	47.45" ± 0.05" (1205.25mm ± 1.25mm)	max 47.22" (1199.4mm)	1.02" ± 0.08" (25.9mm ± 2.0mm)
LED12T8L36 (3ft)	35.72" ± 0.055" (907.4mm ± 1.4mm)	35.45" ± 0.05" (900.45mm ± 1.25mm)	max 35.22" (894.6mm)	1.02" ± 0.08" (25.9mm ± 2.0mm)
LED08T8L24 (2ft)	23.72" ± 0.055" (602.6mm ± 1.4mm)	23.45" ± 0.05" (595.65mm ± 1.25mm)	max 23.22" (589.8mm)	1.02" ± 0.08" (25.9mm ± 2.0mm)



Product Description	L1 End of Base Pin to End of Opposite Pin End	L2 Base Face to End of Opposite Base Pin	L3 Base Face to Base Face	L4 Bulb Outside Diameter
LED15T8/L48 (4ft)	47.725" ± 0.055" (1212.2mm ± 1.4mm)	47.45" ± 0.05" (1205.25mm ± 1.25mm)	max 47.22" (1199.4mm)	1.08" ± 0.08" (27.5mm ± 2.0mm)
LED12T8/L48 (4ft)	47.725" ± 0.055" (1212.2mm ± 1.4mm)	47.45" ± 0.05" (1205.25mm ± 1.25mm)	max 47.22" (1199.4mm)	1.09" ± 0.08" (27.9mm ± 2.0mm)

Warranty

SubstiTUBE® IPS LED T8 lamps are covered by the LED T8 Lamp Limited Warranty and the QUICK 72SUB+ System Warranty, a comprehensive system warranty. For additional details, please visit www.sylvania.com/warranty.

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

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Specifications subject to change without notice.



QUICKTRONIC® QHE LED T8

Universal Voltage Systems

Low Power LED System



OSRAM QUICKTRONIC High Efficiency LED T8 (QHE LED) systems are covered up to 8 years by the SubstiTRONIC™ warranty, the most comprehensive LED system warranty in the industry.

LED T8 / Electronic Control Gear Guide

LED15T8 SubstiTUBE® LED T8 Lamps
 1-lamp QHE 1xLEDT8/UNV-ISL-SC
 2-lamp QHE 2xLEDT8/UNV-ISL-SC
 3-lamp QHE 3xLEDT8/UNV-ISL-SC
 4-lamp QHE 4xLEDT8/UNV-ISL-SC

Also operates
 LED12T8/L36, LED08T8/L24, LED15T8/U

Key System Features

- Up to 127 LPW (lumens/watt) with SubstiTUBE LED T8
- Lowest power LED T8 Systems
- Universal voltage (120-277)
- Small Can enclosure size
- Up to 58% energy savings compared to T12 magnetic systems
- Ambient Starting Temp: -4°F to 122°F (-20°C to 50°C)
- <20% THD
- RoHS compliant
- Lead-free solder and manufacturing process

Application Information

OSRAM QUICKTRONIC QHE LED T8 are ideally suited for:

- Any applications where the lowest power T8 systems are needed for maximum energy savings
- Commercial & Retail
- Energy Management
- Energy Retrofits
- Hospitality & Institutional
- New Construction

OSRAM QUICKTRONIC High Efficiency LED T8 (QHE LED) Electronic Control Gears (ECG) offer several advantages:

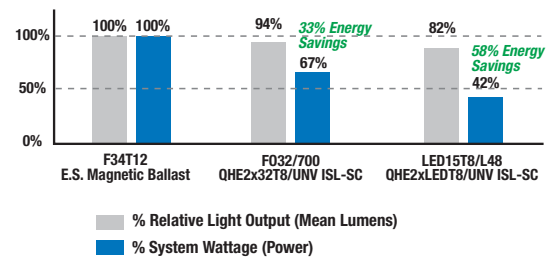
- 1. Optimized design for SubstiTUBE LED T8**
 - Up to 38% in energy savings compared to standard T8 Fluorescent systems
 - Maximum energy savings when compared to F34T12 magnetically ballasted systems
- 2. Parallel Circuitry:** keeps remaining LED T8 lit if one or more go out.
- 3. Banded Packaging**
 - Distributor-friendly for easy stocking and individual sales
 - ESCO friendly for fast installation
 - Reduced waste
 - Easy removable bands
 - No tangled wires

These ECGs are also RoHS compliant and feature lead-free solder and manufacturing process.

System Information

OSRAM QUICKTRONIC QHE LED T8 System advantages:

- Operate from 120V through 277V
- Eliminates “wrong voltage” errors
- Highest System Efficacy



System Description	Input Power (W)	Initial System Lumens	System Efficacy LPW	Relative Initial Light Output	Energy Savings
F34T12 - E.S. Magnetic Ballast	72	4660	65	Baseline	Baseline
F032/700 - QHE2x32T8/UNV ISL-SC	48	4370	91	94%	33%
LED15T8/L48 - QHE2xLEDT8/UNV ISL-SC	30	3800	127	82%	58%

OSRAM

High Efficiency Universal Voltage (120-277V) Low Power LED Systems

Item Number	Electronic Control Gear (ECG)	Input Current (AMPS)	SubstiTUBE LED T8	No. of LED T8	System Lumens (lm)	Input Power (W)	System Efficacy (lm/W)
75307	QHE1XLEDT8/UNV ISL-SC	0.13 / 0.06	LED15T8/L48/DIM/G6	1	1850	15	123
		0.13 / 0.06	LED15T8/L48/G6	1	1900	15	127
		0.11 / 0.05	LED12T8/L36/G6	1	1350	12	113
		0.08 / 0.04	LED08T8/L24/G6	1	1050	10	111
75308	QHE2XLEDT8/UNV ISL-SC	0.25 / 0.11	LED15T8/L48/DIM/G6	2	3700	30	123
		0.26 / 0.12	LED15T8/L48/G6	2	3800	30	127
		0.22 / 0.10	LED12T8/L36/G6	2	2900	26	114
		0.16 / 0.08	LED08T8/L24/G6	2	2100	19	111
75309	QHE3XLEDT8/UNV ISL-SC	0.37 / 0.16	LED15T8/L48/DIM/G6	3	5400	44	123
		0.38 / 0.17	LED15T8/L48/G6	3	5700	45	127
		0.34 / 0.15	LED12T8/L36/G6	3	4500	40	114
		0.24 / 0.11	LED08T8/L24/G6	3	3150	29	111
75310	QHE4XLEDT8/UNV ISL-SC	0.51 / 0.23	LED15T8/L48/DIM/G6	4	7400	60	123
		0.51 / 0.23	LED15T8/L48/G6	4	7600	60	127
		0.44 / 0.20	LED12T8/L36/G6	4	5850	52	114
		0.32 / 0.14	LED08T8/L24/G6	4	4200	38	111

Use only with SubstiTUBE IPS LED T8.

Item No.	LED T8 Description	Length	Item No.	LED T8 Description	Length
75286	LED15T8/L48/DIM/830/SUB/G6	4ft	75128	LED12T8/L36/FG/830/SUB/G6	3ft
75287	LED15T8/L48/DIM/835/SUB/G6	4ft	75129	LED12T8/L36/FG/835/SUB/G6	3ft
75288	LED15T8/L48/DIM/841/SUB/G6	4ft	75130	LED12T8/L36/FG/841/SUB/G6	3ft
75297	LED15T8/L48/DIM/850/SUB/G6	4ft	75131	LED12T8/L36/FG/850/SUB/G6	3ft

Item No.	LED T8 Description	Length	Item No.	LED T8 Description	Shape
75064	LED8T8/L24/FG/830/SUB/G6	2ft	75492	LED15T8/U/FP/830/SUB/G6	U-bend
75065	LED8T8/L24/FG/835/SUB/G6	2ft	75493	LED15T8/U/FP/835/SUB/G6	U-bend
75066	LED8T8/L24/FG/841/SUB/G6	2ft	75494	LED15T8/U/FP/841/SUB/G6	U-bend
75070	LED8T8/L24/FG/850/SUB/G6	2ft	75495	LED15T8/U/FP/850/SUB/G6	U-bend

*For additional SubstiTUBE LED T8 details, please refer to LED465.
For additional SubstiTUBE CURVALUME IPS LED T8 details please refer to LED464.

Wiring Diagrams

QHE LED 1 x T8

QHE LED 2 x T8

QHE LED 3 x T8

QHE LED 4 x T8

Use lamp holders with an internal shunt or ensure that lamp holders are wired in a shunt configuration.

Dimensions:
Overall: 9.5" L x 1.68" W x 1.18" H
Mounting: 8.90"

Product Weight:
14 oz each (approx.)

Wiring:
Leads only
(no connectors provided)

Specification Data

Type	
Catalog #	
Project	
Comments	
Prepared by	

Performance Guide

Data based upon SubstiTUBE® LED T8 shown.
QHE LED T8 Electronic Control Gear will operate LED15T8/L48, LED12T8/L36, LED08T8/L24 and LED15T8/U.

Specifications

- System Output: Low Power
- Circuit Type: Parallel
- Ambient Operating Temperature: -4°F to 122°F (-20°C to 50°C)
- Input Frequency: 50/60 Hz
- Low THD: <20%
- Power Factor: >90%
- Voltage Range: ±10% of 120-277V rated line (108-305V)
- cETLus Listed Class P, Type 1 Outdoor
- 70°C Max Case Temperature
- FCC 47CFR Part 18 Non-Consumer
- Class A Sound Rating
- RoHS Compliant¹
- ANSI C62.41 Cat. A Transient Protection
- Remote Mounting (Max. wire length from case to lampholder): 20 ft

¹ Complies with European Union Restriction of Hazardous Substances (Directive EC 2002/95)

Ordering Guide

Item Number	75307	QHE	1 x LEDT8	/ UNV ISL - SC	Case Size
QUICKTRONIC High Efficiency					Low Power System
Number of LED T8					Line Voltage
					SubstiTUBE LEDT8

System Life / Warranty

QUICKTRONIC High Efficiency QHE LED products are covered up to 8 years by the SubstiTRONIC™ warranty, the most comprehensive LED system warranty in the industry. For additional warranty details, please refer to LED285.
For additional information refer to the warranty section of www.sylvania.com

OSRAM SYLVANIA Inc.
200 Ballardvale Street
Wilmington, MA 01887 USA
Phone 1-877-636-5267
www.osram-america.com

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Specifications subject to change without notice.



QHE LED T8 ISL



Part Number = Style + Size + Light Engine + Color Temperature + Options

(Example: ?????????)

SIZE	LAMP TYPE	# OF LAMPS	REFLECTOR STYLE	REFLECTOR MATERIAL
KT-22 - 2' X 2'	0 - T8	1	NA - NO REFLECTOR	
KT-24- 2' X 4'	1 - T5	2	P2 - STANDARD	EA - ENHANCED ALUMINUM
	2 - T5HO	4	P3 - PARABOLIC	WR - WHITE ENAMEL
			D3 - PRISMATIC	WS - WHITE STEEL

BALLAST FACTOR	OPTIONS
UNVH - HIGH BALLAST FACTOR	U - UNSHUNTED LAMP HOLDERS
UNVN - NORMAL BALLAST FACTOR	PA - PRE ASSEMBLED / WIRED
UNVL - LOW BALLAST FACTOR	A - INDIVIDUAL HARDWARE PACK
NA - NO BALLAST	PS - PROGRAM START

CONTROLS CAPABILITIES

☐

Occupancy Sensor plus Daylight
Harvesting On/Off

☐

Occupancy and Daylight with
Hi/Lo/Off

☐

Occupancy and Daylight with
Grouping (Alt: Occupancy Sharing)

☐

Occupancy and Daylight with
Optional Networked Lighting Controls

☐

Networked Lighting Controls Only

☐

Dusk To Dawn On/Off

Project:		Parking Garages															
Line #	Facility	Space	Room # / DWG #	Comment	Pre Fixture Qty	Pre Code	Pre Description	Post Fixture Qty	Post Code	Post Description	Luminaire Part #	Lamp Part #	Driver Part#	Misc. Parts			
1	Spring Street Garage	Office	F-F32T8-2	Wrap-4 foot-Prismatic-Surface	4	S-W4-F42ILL-PR	4' Wraparound Surface Mounted Fluorescent, (2) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	4	LEDT8 LEDT8/4'/12W/2	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC			0
2	Spring Street Garage	Bathroom	F-F32T8-2	Strip-4 foot-No Lens-Surface	4	S-S4-F42ILL-NL	4' Strip Surface Mounted Fluorescent, (2) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) (No Diffuser)	4	LEDT8 LEDT8/4'/12W/2	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC			0
3	Spring Street Garage	Bathroom	F-F32T8-2	Vapor Tight-4 foot-Prismatic-Surface	3	S-VP4-F42ILL-PR	4' Vapor Proof Surface Mounted Fluorescent, (2) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	3	LEDT8 LEDT8/4'/12W/2	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC			0
4	Spring Street Garage	Stair Tower 1	HPS-HP550-1	Wallpack-Meduum-Prismatic-Wall	11	WM-WP-HP550/1-PR	Wall-Pack Wall Mounted High Pressure Sodium, (1) 50W lamp Prismatic Acrylic Diffuser	11	WP LED12W	Wall Mounted Wall-Pack LED Light Fixture. (1) 12W	Sylvania SLMWPK1A/013UNV740/CO/BZ/P		0			0	0
5	Spring Street Garage	Elevator Lobby	HPS-HP550-1	Wallpack-Meduum-Prismatic-Wall	8	WM-WP-HP550/1-PR	Wall-Pack Wall Mounted High Pressure Sodium, (1) 50W lamp Prismatic Acrylic Diffuser	8	WP LED12W	Wall Mounted Wall-Pack LED Light Fixture. (1) 12W	Sylvania SLMWPK1A/013UNV740/CO/BZ/P		0			0	0
6	Spring Street Garage	Stair Tower 2	HPS-HP550-1	Wallpack-Meduum-Prismatic-Wall	9	WM-WP-HP550/1-PR	Wall-Pack Wall Mounted High Pressure Sodium, (1) 50W lamp Prismatic Acrylic Diffuser	9	WP LED12W	Wall Mounted Wall-Pack LED Light Fixture. (1) 12W	Sylvania SLMWPK1A/013UNV740/CO/BZ/P		0			0	0
7	Spring Street Garage	Exterior Stair Tower 2	HPS-HP550-1	Wallpack-Meduum-Prismatic-Wall	2	WM-WP-HP550/1-PR	Wall-Pack Wall Mounted High Pressure Sodium, (1) 50W lamp Prismatic Acrylic Diffuser	2	WP LED12W	Wall Mounted Wall-Pack LED Light Fixture. (1) 12W	Sylvania SLMWPK1A/013UNV740/CO/BZ/P		0			0	0
8	Spring Street Garage	Rooftop	LED-L100-1	Cobra Head-NL-Pole	8	PO-COBRA -LED100W-PR	Cobra Head Pole Mounted LED Light Fixture. (1) 100W Prismatic Acrylic Diffuser	8	N/R NONE	Existing luminaire to remain as is No Retrofit. To remain as is.		0			0		0
9	Spring Street Garage	Stair Tower 3	HPS-HP550-1	Wallpack-Meduum-Prismatic-Wall	9	WM-WP-HP550/1-PR	Wall-Pack Wall Mounted High Pressure Sodium, (1) 50W lamp Prismatic Acrylic Diffuser	9	WP LED12W	Wall Mounted Wall-Pack LED Light Fixture. (1) 12W	Sylvania SLMWPK1A/013UNV740/CO/BZ/P		0			0	0
10	Spring Street Garage	Exterior Stair Tower 3	HPS-HP550-1	Wallpack-Meduum-Prismatic-Wall	4	WM-WP-HP550/1-PR	Wall-Pack Wall Mounted High Pressure Sodium, (1) 50W lamp Prismatic Acrylic Diffuser	4	WP LED12W	Wall Mounted Wall-Pack LED Light Fixture. (1) 12W	Sylvania SLMWPK1A/013UNV740/CO/BZ/P		0			0	0
11	Spring Street Garage	Stair Tower 4	HPS-HP550-1	Wallpack-Meduum-Prismatic-Wall	9	WM-WP-HP550/1-PR	Wall-Pack Wall Mounted High Pressure Sodium, (1) 50W lamp Prismatic Acrylic Diffuser	9	WP LED12W	Wall Mounted Wall-Pack LED Light Fixture. (1) 12W	Sylvania SLMWPK1A/013UNV740/CO/BZ/P		0			0	0
12	Spring Street Garage	Exterior Stair Tower 4	HPS-HP550-1	Wallpack-Meduum-Prismatic-Wall	4	WM-WP-HP550/1-PR	Wall-Pack Wall Mounted High Pressure Sodium, (1) 50W lamp Prismatic Acrylic Diffuser	4	WP LED12W	Wall Mounted Wall-Pack LED Light Fixture. (1) 12W	Sylvania SLMWPK1A/013UNV740/CO/BZ/P		0			0	0
13	Spring Street Garage	Parking Garage Lobby	F-F32T8-4	Troffer-2X4-Prismatic-Surface	11	S-2X4-F44ILL-PR	2'x4' Troffer Surface Mounted Fluorescent, (4) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	11	CK2x4 LEDT8/4'/12W/2	Surface Mounted Install 2x4 2-Lamp Centering Kit LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC	CK2x4		
14	Spring Street Garage	Levels A-E	F-F32T8-3	Vapor Tight-4 foot-Prismatic-Surface	221	PE-VP4-F43ILL-VP	4' Vapor Proof Pendant Mounted Fluorescent, (3) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Vapor Proof Gasketed Diffuser	221	LEDT8 LEDT8/4'/12W/3	Pendant Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (3) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE3xLEDT8/UNV ISL-SC			0
15	Spring Street Garage	Parking Office	F-F32T8-4	Troffer-2X4-Prismatic-Recessed	6	R-2X4-F44ILL-PR	2'x4' Troffer Recessed Fluorescent, (4) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	6	CK2x4 LEDT8/4'/12W/2	Recessed Install 2x4 2-Lamp Centering Kit LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC	CK2x4		
16	Spring Street Garage	PDD	F-F32T8-4	Industrial Strip-4 foot-No Lens-Surface	20	S-IND4-F44ILL-NL	4' Industrial Surface Mounted Fluorescent, (4) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) (No Diffuser)	20	LEDT8 LEDT8/4'/12W/4	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (4) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE4xLEDT8/UNV ISL-SC			0
17	Spring Street Garage	PDD	F-F32T8-2	Vapor Tight-4 foot-Prismatic-Surface	2	S-VP4-F42ILL-PR	4' Vapor Proof Surface Mounted Fluorescent, (2) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	2	LEDT8 LEDT8/4'/12W/2	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC			0
18	Spring Street Garage	Restroom 1	F-F32T8-4	Troffer-2X4-Prismatic-Recessed	2	R-2X4-F44ILL-PR	2'x4' Troffer Recessed Fluorescent, (4) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	2	CK2x4 LEDT8/4'/12W/2	Recessed Install 2x4 2-Lamp Centering Kit LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC	CK2x4		
19	Spring Street Garage	Restroom 2	F-F32T8-4	Troffer-2X4-Prismatic-Recessed	2	R-2X4-F44ILL-PR	2'x4' Troffer Recessed Fluorescent, (4) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	2	CK2x4 LEDT8/4'/12W/2	Recessed Install 2x4 2-Lamp Centering Kit LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC	CK2x4		
20	Spring Street Garage	JC	CFL-CF13W-1	Keyless-Medium-NL-Surface	1	S-KLS-CFC13/1-NL	Bare-Lamp Keyless Socket Surface Mounted Compact Fluorescent, Screw-in, (1) 13W lamp (No Diffuser)	1	N/R NONE	Existing luminaire to remain as is No Retrofit. To remain as is.		0			0		0
21	Spring Street Garage	Toll Booth 1	F-F17T8-2	Wrap-2 foot-Prismatic-Surface	2	S-W2-F22ILL-PR	2' Wraparound Surface Mounted Fluorescent, (2) 24", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	2	LEDT8 LEDT8/2'/8W/2	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 2' T8 Lamp (2) 8W Lamps		0	Sylvania LED8T8/L24/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC			0
22	Spring Street Garage	Toll Booth 2	F-F17T8-2	Wrap-2 foot-Prismatic-Surface	2	S-W2-F22ILL-PR	2' Wraparound Surface Mounted Fluorescent, (2) 24", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	2	LEDT8 LEDT8/2'/8W/2	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 2' T8 Lamp (2) 8W Lamps		0	Sylvania LED8T8/L24/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC			0
23	Spring Street Garage	Restroom 1	F-F32T8-4	Troffer-2X4-Prismatic-Recessed	2	R-2X4-F44ILL-PR	2'x4' Troffer Recessed Fluorescent, (4) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	2	CK2x4 LEDT8/4'/12W/2	Recessed Install 2x4 2-Lamp Centering Kit LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC	CK2x4		
24	Spring Street Garage	Restroom 2	F-F32T8-4	Troffer-2X4-Prismatic-Recessed	2	R-2X4-F44ILL-PR	2'x4' Troffer Recessed Fluorescent, (4) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	2	CK2x4 LEDT8/4'/12W/2	Recessed Install 2x4 2-Lamp Centering Kit LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC	CK2x4		
25	Spring Street Garage	Elevator Room	F-F96T12-8	Industrial Strip-8 foot-No Lens-Surface	2	S-IND8-F82EE-NL	8' Industrial Surface Mounted Fluorescent, (2) 96", ES lamp (No Diffuser)	2	CKS842 LEDT8/4'/12W/2	Surface Mounted Install 8' Strip, 2-Lamp Centering Kit LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC			0
26	Spring Street Garage	Elevator Room	CFL-CF13W-1	Keyless-Medium-NL-Surface	4	S-KLS-CFC13/1-NL	Bare-Lamp Keyless Socket Surface Mounted Compact Fluorescent, Screw-in, (1) 13W lamp (No Diffuser)	4	N/R NONE	Existing luminaire to remain as is No Retrofit. To remain as is.		0			0		0
27	Elm Street Garage	Rooftop	LED-L70-1	Cobra Head-NL-Pole	8	PO-COBRA -LED70W-PR	Cobra Head Pole Mounted LED Light Fixture. (1) 70W Prismatic Acrylic Diffuser	8	N/R NONE	Existing luminaire to remain as is No Retrofit. To remain as is.		0			0		0
28	Elm Street Garage	Stair Tower 1	F-F32T8-1	Wrap-4 foot-Prismatic-Surface	13	S-W4-F41ILL-PR	4' Wraparound Surface Mounted Fluorescent, (1) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	13	LEDT8 LEDT8/4'/12W/1	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (1) 12W Lamp		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE1xLEDT8/UNV ISL-SC			0
29	Elm Street Garage	Stair Tower 2	F-F32T8-1	Wrap-4 foot-Prismatic-Surface	9	S-W4-F41ILL-PR	4' Wraparound Surface Mounted Fluorescent, (1) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	9	LEDT8 LEDT8/4'/12W/1	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (1) 12W Lamp		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE1xLEDT8/UNV ISL-SC			0
30	Elm Street Garage	Maintenance Shop	F-F32T8-2	Strip-4 foot-No Lens-Surface	4	S-S4-F42ILL-NL	4' Strip Surface Mounted Fluorescent, (2) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) (No Diffuser)	4	LEDT8 LEDT8/4'/12W/2	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC			0
31	Elm Street Garage	Restroom	F-F32T8-2	Strip-4 foot-No Lens-Surface	2	S-S4-F42ILL-NL	4' Strip Surface Mounted Fluorescent, (2) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) (No Diffuser)	2	LEDT8 LEDT8/4'/12W/2	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC			0
32	Elm Street Garage	All Parking Levels	F-F32T8-3	Vapor Tight-4 foot-Prismatic-Surface	158	PE-VP4-F43ILL-VP	4' Vapor Proof Pendant Mounted Fluorescent, (3) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Vapor Proof Gasketed Diffuser	158	LEDT8 LEDT8/4'/12W/3	Pendant Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (3) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE3xLEDT8/UNV ISL-SC			0
33	Elm Street Garage	All Parking Levels	F-F32T8-2	Vapor Tight-4 foot-Prismatic-Surface	12	S-VP4-F42ILL-PR	4' Vapor Proof Surface Mounted Fluorescent, (2) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	12	LEDT8 LEDT8/4'/12W/2	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (2) 12W Lamps		0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC			0
34	Elm Street Garage	Perimeter Lighting a	HPS-HP5250-1	Wallpack-Mogul-Prismatic-Wall	3	WM-WP-HP5250/1-PR	Wall-Pack Wall Mounted High Pressure Sodium, (1) 250W lamp Prismatic Acrylic Diffuser	3	WP LED52W	Wall Mounted Wall-Pack LED Light Fixture. (1) 52W	Sylvania SLMWPK1A/060UNV740/CO/BZ/P		0			0	0
35	Elm Street Garage	Perimeter Lighting a	HPS-HP570-1	Canopy-Meduum-Prismatic-Surface	10	S-CANOPY-HP570/1-PR	Canopy Fixture Surface Mounted High Pressure Sodium, (1) 70W lamp Prismatic Acrylic Diffuser	10	LED5I/A LEDS21/1	Surface Mounted Install LED Screw-in A-Style Lamp Light Emitting Diode Lamp, Screw-in, (1) 21W lamp		0	Sylvania			0	0
36	Elm Street Garage	Perimeter Lighting a	LED-L20-1	Wallpack-Clear-Wall	7	WM-WP-LED20W-PR	Wall-Pack Wall Mounted LED Light Fixture. (1) 20W Prismatic Acrylic Diffuser	7	N/R NONE	Existing luminaire to remain as is No Retrofit. To remain as is.		0			0		0
37	Elm Street Garage	Bus Depot Waiting Area	MH-MH250-1	Highbay-Mogul-Prismatic-Pendant	8	PE-HB-MH250/1-PR	High-Bay Pendant Mounted Metal Halide, (1) 250W lamp Prismatic Acrylic Diffuser	8	HB LED100W	Pendant Mounted High-Bay LED Light Fixture. (1) 100W	Sylvania HIBAY1A/100UNVD840/GR		0			0	0
38	Elm Street Garage	Bus Depot Waiting Area	CFL-CF26W-1	Deco Sconce-Plug-in 4 Pin-Indirect-Wall	3	WM-SCONCE -CFQ26/1-PR	Wall Sconce Wall Mounted Compact Fluorescent, quad, (1) 26W lamp Prismatic Acrylic Diffuser	3	LED/SCONCE/KIT LED11W	Wall Mounted Retrofit Wall conce with Half Sphere LED Kit LED Light Fixture. (1) 11W	Keystone KT-RKIT-HCP-8-1150-840-FDIM		0			0	0

39	Elm Street Garage	Restoom	F-F32T8-2	Vanity-4 foot-Prismatic-Wall	1	S-VAN4-F42ILL-PR	4' Vanity Surface Mounted Fluorescent, (2) 48", T-8 lamp, Instant Start Ballast, NLO (BF: .85-.95) Prismatic Acrylic Diffuser	1	LEDT8 LEDT8/4'/12W/2	Surface Mounted T8 LED Retrofit Lamp with External Driver LED 4' T8 Lamp (2) 12W Lamps	0	Sylvania LED12T8/L48/DIM/841/SUB/G6	Sylvania QHE2xLEDT8/UNV ISL-SC	0	
40	Elm Street Garage	Entry	CFL-CFT36W-1	Canopy-Plug-in 4 Pin-Prismatic-Surface	1	S-CANOPY-CFT36/1-PR	Canopy Fixture Surface Mounted Compact Fluorescent, long twin, (1) 36W lamp Prismatic Acrylic Diffuser	1	LED/DRUM/KIT/8" LED11W	Surface Mounted Retrofit Existing Drum with 8" LED Kit LED Light Fixture. (1) 11W		Keystone KT-RKIT-CP-8-1600-840-FDIM	0	0	0