LED LUMINAIRE SERIES™

LED Luminaire Series Improves Your Illumination Systems

- Sixteen (16) Standard Configurations

EPCO LED Luminaires provide unparalleled performance, improved efficacy, more lumens per watt, and is the reliable, sustainable solid–state illumination system solution.

The primary benefits of our "vapor-tight" LED Luminaires provide energy efficiency, significant energy savings, and improved thermal dissipation that translates into optimized lumen output suitable for operating in indoor, outdoor, and "wet" location environments.

Energy Saving Illumination Products – Configurable to Your Application Requirements to Upgrade Your Aging Lighting System

These luminaires are ready for immediate installation, and feature a single row of LEDs mounted directly to the gear tray for improved thermal dissipation.

Our LED Luminaires consume less than half the wattage output of a 4-foot luminaire using two (2) or three (3) 32-watt T8 fluorescent lamps with a life expectancy of 200,000 hours. Retrofit Upgrade Kits are available in 4-foot and 8-foot lengths to update older T5 or T8 fluorescent luminaires.

Industry Standard Illumination Solutions and Warranty

EPCO's solid-state LED Luminaires are ETL listed and meet UL 1598 Standards. Our economical, long life LED Luminaires is the smart, energy saving solution and the best illumination systems choice available for your application. We back our LED Luminaires with a 5-year warranty.

***DesignLights Consortium (DLC V4.0/V4.1) Approved** for all EPCO LED Luminaires.

The Qualified Products List (QPL) from DLC is a resource for Electric Utilities and Regional Electric Cooperatives (RECs) Program Administrators to help them select what solid-state illumination products will be included in their Energy Efficiency Programs.

FOR STANDARD ILLUMINATION APPLICATIONS

TYPICAL APPLICATIONS:

- Parking Garages and Parking Canopies (DLC Approved)*
- Food Processing Facilities
- Commercial Kitchens
- Refrigerators and Freezers
- Warehouses**
- Industrial Facilities**
- Commercial Buildings
- Elevator Shafts
- Outdoor Shopping Centers
- Storage Buildings
- Pedestrian and Road Tunnels
- Car Washes**
- Laundries
- Locker Rooms
- Saunas
- And more...

** Certain chemicals that may exist in end-user locations release airborne contaminants that can impact the integrity and safety of key luminaire components that contain acrylic or polycarbonate material.
The Chemical Resistance of Plastics Chart (posted on EPCO's website) provides an overview of those chemical compounds where this LED Luminaire should not be installed!

SPECIFICATIONS

Environmental	Suitable for indoor, outdoor, and wet locations
Ambient Operating Temperature	• -40°F to 122°F (-40°C to 50°C) Suitable for elevated ambient temperatures • 0ºF to 113ºF (-17ºC to 45ºC) Battery Backup Option
Operating Voltage	120V - 277 @ 60 Hz
Power Factor	.9 or Higher
Total Harmonic Distortion	Less than 20%
LED Driver Efficiency	89% (typical) @ 120VAC - Full Load
	90% (typical) @ 220VAC - Full Load
Ingress Protection Rating	IP65, IP66, IP67 / NEMA 4X
Dimming Control	10%-100%; Requires 0-10V Luminaire Control Switch/Device
Industry Certifications	ETL Listed (per UL 1598/8750); RoHS Compliant; LM-79**, LM-80, and LM-21 Reports

LIGHTING PRODUCTS

Specifications subject to change without prior notice.

www.engproducts.com
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ENGINEERED PRODUCTS CO.

LED LUMINAIRE SERIES

STANDARD LED LUMINAIRES										
Lamp Equivalent	**Luminaire Model**	**Luminaire Length**	**Luminaire Type**	**Luminaire Designation** FX = New Fixture	**Luminaire Application** S = Standard	**Correlated Color Temperature** (CCT)*	**Color Rendering Index** (CRI)	**Total Luminaire Wattage**	**Lumens** (Brightness)	**Luminous Efficacy** (Energy Efficiency)
(2) F32T8	G4LED-FX-S3034	G4	LED	FX	S	3000K	84	35	3451	100.3
(2) F32T8	G4LED-FX-S3534	G4	LED	FX	S	3500K	84	35	3554	103.3
(2) F32T8	G4LED-FX-S4134	G4	LED	FX	S	4100K	84	35	3660	106.3
(2) F32T8	G4LED-FX-S5034	G4	LED	FX	S	5000K	84	35	3859	108.7
(3) F32T8	G4LED-FX-S3051	G4	LED	FX	S	3000K	84	58	5672	97.2
(3) F32T8	G4LED-FX-S3551	G4	LED	FX	S	3500K	84	58	5843	100.1
(3) F32T8	G4LED-FX-S4151	G4	LED	FX	S	4100K	84	58	6017	103.1
(3) F32T8	G4LED-FX-S5051	G4	LED	FX	S	5000K	84	58	6292	107.8
(4) F32T8	G8LED-FX-S3068	G8	LED	FX	S	3000K	84	70	6902	100.3
(4) F32T8	G8LED-FX-S3568	G8	LED	FX	S	3500K	84	70	7108	103.3
(4) F32T8	G8LED-FX-S4168	G8	LED	FX	S	4100K	84	70	7320	106.3
(4) F32T8	G8LED-FX-S5068	G8	LED	FX	S	5000K	84	70	7718	108.7
(6) F32T8	G8LED-FX-S30102	G8	LED	FX	S	3000K	84	116	11345	97.2
(6) F32T8	G8LED-FX-S35102	G8	LED	FX	S	3500K	84	116	11685	100.2
(6) F32T8	G8LED-FX-S41102	G8	LED	FX	S	4100K	84	116	12035	103.1
(6) F32T8	G8LED-FX-S50102	G8	LED	FX	S	5000K	84	116	12584	107.8

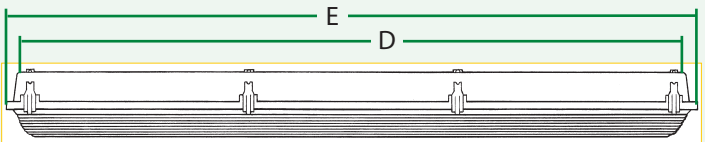
Note: Nominal color designation in units of Kelvin

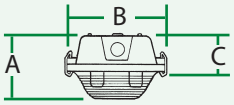
SHIP WEIGHT (APPROXIMATE):

- 4-Foot LED Luminaire: 13 lbs. (5.9kg)
- 8-Foot LED Luminaire: 21 lbs. (9.5kg)

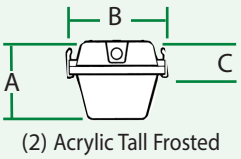
Note: *Bulk packaging is available for the Standard LED Luminaire Series - Select "Option Z" in the Ordering Information Example (25 or 50 luminaires per skid).*

A	B	C	D	E	F	G
4.25″ (1) / 5.75″ (2) (107.95mm/146.05mm)	6.812″ (173mm)	2.44″ (62mm)	49.7″ (1,262mm)	51.7″ (1,313mm)	100″ (2,540mm)	98.0″ (2,489mm)

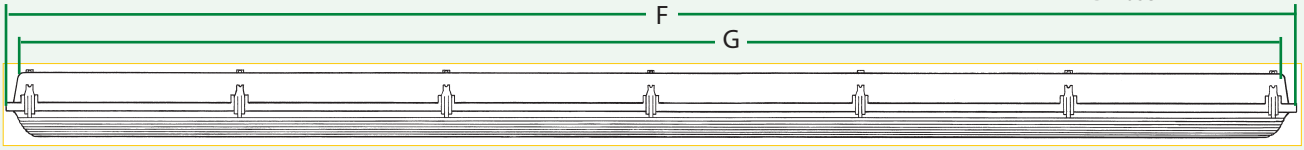




(1) Acrylic Frosted/Clear Ribbed Diffuser



(2) Acrylic Tall Frosted Diffuser



Note: *Dimensions "E" and "F" reference the 1/2" trade size knockouts on each end of the luminaire.*

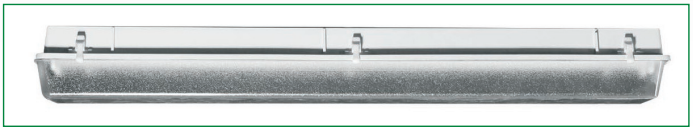
LED RETROFIT CONVERSION KITS FOR VAPOR TIGHT LUMINAIRES

LED RetroFit Conversion Kit for Vapor Tight Luminaires feature a single row of LEDs mounted to a "raised" heat sink for improved thermal dissipation.

These LED RetroFit Kits for linear luminaires can easily be field installed by a qualified electrician and include:

- High efficacy, long-life LED circuit board mounted directly to integral heat sink on the gear tray for maximum thermal dissipation.
- Modular wiring to simplify and expedite supply line connections to the existing lighting system.
- LED Driver includes:
  - Auto-compensate feature to ensure "fail safe" operation.
  - Inputs for dimmable lighting control.
- Frosted Ribbed Acrylic Diffuser mitigates glare and provides color-rendering index of 81 and above.

LED RETROFIT KIT FOR VAPOR TIGHT LUMINAIRES



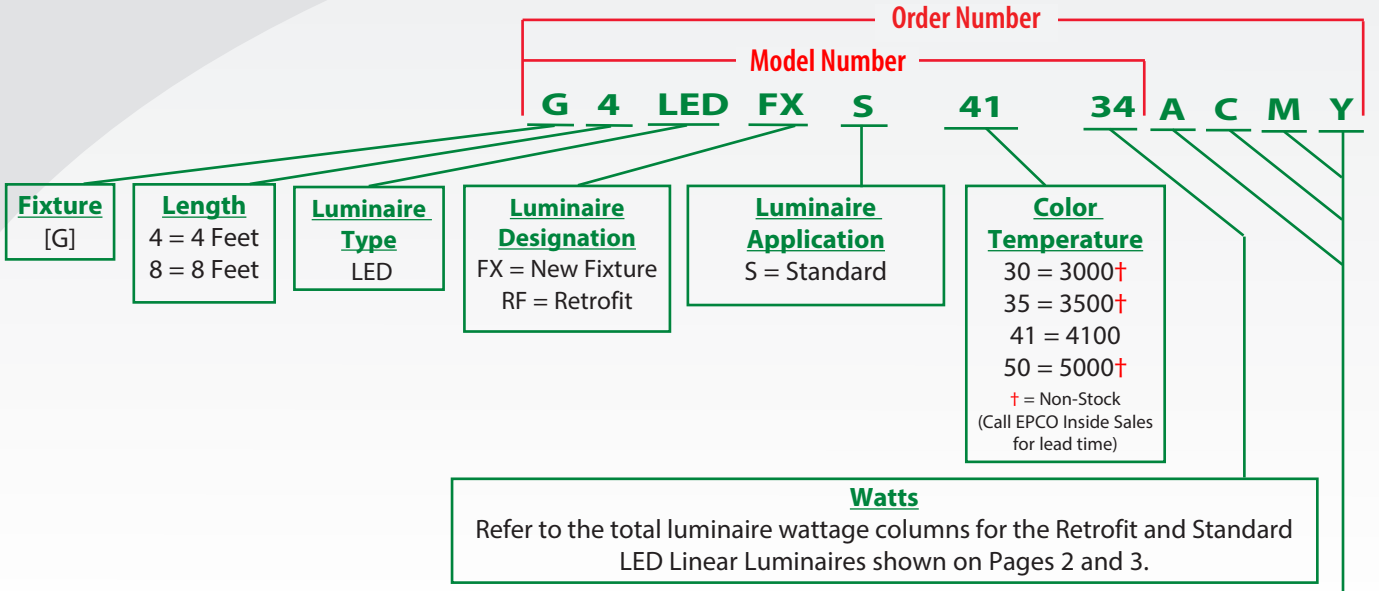
6 Latches

8 Latches

Note: If the luminaire housing you want to retrofit has six (6) latches (4-foot) or twelve (12) latches (8-foot) total, EPCO's LED RetroFit Kit will not fit! Contact EPCO Inside Sales (800.336.1976 or sales@engproducts.com) for more information.

RETROFIT LED LUMINAIRES									
Lamp Equivalent	**Luminaire Length**	**Luminaire Type**	**Luminaire Designation** RF = Retrofit	**Luminaire Application** S = Standard	**Correlated Color Temperature** (CCT)*	**Color Rendering Index** (CRI)	**Total Luminaire Wattage**	**Lumens** (Brightness)	**Luminous Efficacy** (Energy Efficiency)
(2) F32T8	G4	LED	RF	S	3000K	84	35	3451	100.3
(2) F32T8	G4	LED	RF	S	3500K	84	35	3554	103.3
(2) F32T8	G4	LED	RF	S	4100K	84	35	3660	106.3
(2) F32T8	G4	LED	RF	S	5000K	84	35	3859	108.7
(3) F32T8	G4	LED	RF	S	3000K	84	58	5672	97.2
(3) F32T8	G4	LED	RF	S	3500K	84	58	5843	100.1
(3) F32T8	G4	LED	RF	S	4100K	84	58	6017	103.1
(3) F32T8	G4	LED	RF	S	5000K	84	58	6292	107.8
(4) F32T8	G8	LED	RF	S	3000K	84	70	6902	100.3
(4) F32T8	G8	LED	RF	S	3500K	84	70	7108	103.3
(4) F32T8	G8	LED	RF	S	4100K	84	70	7320	106.3
(4) F32T8	G8	LED	RF	S	5000K	84	70	7718	108.7
(6) F32T8	G8	LED	RF	S	3000K	84	116	11345	97.2
(6) F32T8	G8	LED	RF	S	3500K	84	116	11685	100.1
(6) F32T8	G8	LED	RF	S	4100K	84	116	12035	103.1
(6) F32T8	G8	LED	RF	S	5000K	84	116	12584	107.8

LED LUMINAIRE SERIES - ORDERING INFORMATION EXAMPLE



The Standard LED Luminaire can be built to your specifications by adding options as "part" of your part number.

Note:

1. When entering Bulk Packaging orders, do not include Mounting Hardware or Tamper Resistant Screws in your part number.
2. When specifying Acetal Latches note that certain chemicals that may exist in end-user locations release airborne contaminants that can impact the integrity and safety of key luminaire components that contain acrylic or polycarbonate material.

   The Chemical Resistance of Plastics Chart (posted on EPCO's website) provides an overview of chemical compounds where our LED Luminaires should not be installed! For example, Acetal Latches are not recommended for the following applications:

   - Swimming Pools because of the chlorine.
   - Food Processing because of the cleaning chemicals.
   - Car Washes because of the chemicals used.
   - Agriculture because of the ammonia.
3. When adding the Surface Mounting Bracket (SMB Option Y) to your part number, EPCO will pre-drill a hole in the luminaire housing at the designated "number" location to facilitate pulling the supply conductors from the junction box and into the luminaire. Contact EPCO Inside Sales for more information.
4. When adding the Water Resistant Hubs, the ETL Listing changes from a "wet" location to a "damp" location luminaire.
5. The "Frosted Ribbed Diffuser" is standard on all LED Luminaires unless the "P" Option is specified for the Clear Ribbed Diffuser, or P1 is specified for the Tall Frosted Diffuser.
   a. Diffuser options for DLC Approved Luminaires other than the Frosted Ribbed Diffuser will "negate" DLC Approval.
6. Two Occupancy Sensors are available:
   a. **High/Medium Bay Passive Infrared (PIR) Occupancy Sensors:** Recommended for ceiling heights 15-feet or higher. PIR sensors work as an automatic lighting control in high and medium bay location applications.
   b. **Microwave Sensors:** Recommended for ceiling heights 15-feet or lower. This microwave sensor type covers a wide range and detects the slightest movement in its occupancy zone. Detection is sensed through doors, glass, or thin walls.

LED Luminaire Series Options

- **A.** 6-Foot Power Cord (PSS6)
- **C.** Acetal (Plastic) Latches *(See Note 2)*
- **E.** Emergency LED Backup Driver *(Non-Stock - Call EPCO Inside Sales for lead time)*
- **F.** One (1) 1/2" Water Resistant Hub *(required for Pendant Mounting the 4-foot luminaire)*
- **G.** Two (2) 1/2" Water Resistant Hubs *(required for Pendant Mounting the 8-foot luminaire)*
- **H.** One (1) 3/4" Water Resistant Hub *(required for Pendant Mounting the 4-foot luminaire)*
- **M.** Luminaire Mounting Hardware *(includes two (2) Mounting Brackets for horizontal or vertical applications)*
- **P.** Clear Ribbed Diffuser
- **P1.** Tall Frosted Diffuser
- **R1.** PIR Occupancy Sensor *(for dry locations) (See Note 6)*
- **R2.** PIR Occupancy Sensor *(See Note 6) (for dry locations/cold locations)*
- **R3.** PIR Occupancy Sensor *(for wet locations)*
- **R4.** Microwave Occupancy Sensor *(See Note 6) (On/Off Only)*
- **R5.** Microwave Occupancy Sensor *(See Note 6) (0-10V Dimming 30%)*
- **R6.** Microwave Occupancy Sensor *(See Note 6) (0-10V Dimming 50%)*
- **S.** Stainless Steel Latches
- **Y.** Surface Mount Bracket *(See Note 3)*
- **Z.** Bulk Packaging *(25 or 50 luminaires per skid)*

PHOTOMETRICS FOR LED LUMINAIRES

Standard LED Luminaire - P/N: G4LED-FX-S4134

CANDELA DISTRIBUTION

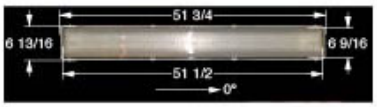
	0.0	22.5	45.0	67.5	90.0	FLUX
0	1350	1350	1350	1350	1350	
5	1345	1335	1322	1314	1312	126
15	1298	1262	1314	1302	1276	362
25	1195	1195	1146	1158	1148	537
35	1037	1033	1009	1019	1040	640
45	841	828	869	852	842	653
55	609	623	636	652	663	571
65	370	408	443	504	519	446
75	176	223	295	345	355	299
85	47	100	161	199	210	164
90	19	61	114	150	159	
95	16	45	93	124	132	93
105	12	21	64	91	98	61
115	6	4	34	59	67	34
125	2	1	7	29	37	13
135	0	0	0	2	10	2
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	

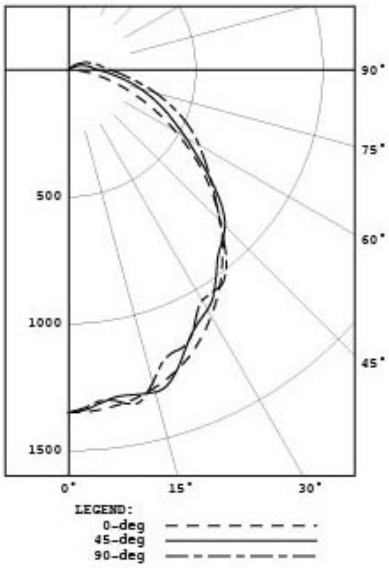
ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	1025	25.6
0- 40	1665	41.6
0- 60	2889	72.2
0- 90	3798	94.9
90-120	188	4.7
90-130	201	5.0
90-150	203	5.1
90-180	203	5.1
0-180	4001	100.0

EFFICACY = 112.4 lm/W
CIE TYPE - DIRECT

PLANE	0-DEG	90-DEG
SPACING CRITERIA	1.23	1.17





Luminaire Quality Metrics LM-79 Report

EPCO's LM-79 Report captures the Standard and Parking Garage LED Luminaire's overall electrical characteristics and photometric measurements (lumen output) performance. This report is a snapshot of spatial distribution of light and color attributes under specified operating conditions. This report does not address lifetime ratings for these LED Luminaires, or changing performance over time (e.g., lumen maintenance), or the LED Luminaire housing internal temperature.

Most important, EPCO's LM-79 data is intended to provide you with objective luminaire product evaluation comparisons relative to the Standard and Parking Garage LED Luminaire's performance requirements, and is required by voluntary labeling programs such as LED Lighting Facts and the DesignLights Consortium (DLC).

CRITERIA TO CONSIDER WHEN UPDATING YOUR ILLUMINATION SYSTEM WITH LED LUMINAIRES

Lumens are the New Watts

The best way to shop for a LED luminaires is to look for brightness or lumens, instead of watts. Lumens tell you how bright the luminaire will be, and more lumens mean brighter illumination. When replacing a two (2) lamp, T8 32-watt fluorescent luminaire, lumen output is approximately 3800 lumens. Replace it with an LED luminaire that provides a comparable lumen output of at least 3600 lumens.

Heat Buildup - The Number 1 Contributor to Luminaire System Failure

Solid-state LED circuits generate heat inside the vapor tight luminaire and when combined with a high wattage LED driver "intended" to produce more lumens, this thermal combination reduces the overall longevity of the LED luminaire by 40% or more. Every 10°C/50°F of operating temperature reduction improves the luminaire's longevity and doubles its operating life. The "thermally managed" operating temperature inside EPCO's vapor tight luminaire increases it's operating life and provides brighter LED circuits.

Note: EPCO's operating temperature inside its vapor tight luminaire is less than 122°F/50°C.

Higher Lumen Output Reduces Luminaire Count

An LED luminaire that has higher wattage LED circuits and a LED Driver does not necessarily mean using fewer luminaires in your overall luminaire system. It only means that the "targeted" area receives a higher lumen output but may not compensate for shadows between one luminaire and the next.

Why is the IP Rating Important?

Will the LED luminaire you choose stand-up to a pressure washer's 3,500 psi output or the dust and dirt in your building environment? When water or dust is present in any application, building owners and facility managers should understand the Ingress Protection (IP) ratings determines how their lighting system will perform in specific conditions.

IP ratings are a universal standard of measuring a luminaire's resistance to dust and water. IP is defined with two digits such as IP65. The first digit is related to the luminaire's ability to resist dust, with "6" being the best. The second digit is the luminaire's ability to resist water, with "8" being the best.

The Cost of LED vs. Fluorescent Luminaires

The initial cost of an LED luminaire will always be slightly higher compared to the initial cost of a fluorescent luminaire. However, the energy savings for the LED luminaires is recovered over time, primarily because the LED luminaire will last longer and consume less energy compared to fluorescent luminaires. LED luminaires can last up to 60 times longer than traditional fluorescent light sources, which means higher lumen output, improved lumen maintenance, and virturally no labor to maintain the LED illumination system.

Reputation

Installing a new or retrofitting an existing illumination system is a substantial investment. When selecting an illumination system make sure the manufacturer you select has been in business longer than their stated warranty. 2016 marks Engineered Products Company's 40th year in the electrical industry and during this time we have remained fully committed to providing our Distribution Channel Partners and our end-customer, the Electrical Contractors, with the highest quality illumination system solutions with our Standard LED Luminaires.

LED Luminaire Series Warranty

Engineered Products Company (herein known as EPCO) warrants at its sole option, after a failure is confirmed as a true defect in materials or workmanship, EPCO will replace or refund, any LED Luminaire for a period of five (5) years from the original purchase date. This warranty statement applies to the original purchaser and is not transferable.

Note: The Original Purchaser is identified as the "first" initial installation completed by the Building Owner.

To obtain a replacement LED Luminaire, or to obtain a credit under this warranty, the Purchaser must contact Engineered Products Company within the specified warranty period to obtain a Return Materials Authorization (RMA) form and return shipping instructions for the defective LED Luminaire. Engineered Products Company shall have no responsibility for any LED Luminaire deemed "out of warranty". Under no circumstances shall Engineered Products Company be liable for any loss or damage, whether direct or indirect, incidental, consequential, special or otherwise, arising out of or relating to the use of, or the inability to use the LED Luminaire(s) in excess of the cost for replacement of any LED Luminaire proven to be defective during the warranty period.

THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR ANY CLAIM, WHETHER IN CONTRACT, TORT, OR OTHERWISE, AND IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY OF NONINFRINGEMENT OF THE INTELLECTUAL PROPERTY RIGHT OF THIRD PARTIES. ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED.

The Warranty Does Not Apply To Any Of The Following Conditions:

- Any LED Luminaire that has been incorrectly installed by drilling holes, puncturing, piercing or any other means that will alter the integrity of the fixture housing.
- Damage caused by the use of parts, components, and/or other equipment(s) that is not compatible, suitable, and/or authorized by EPCO for use with its LED Luminaire.
- Damage resulting from use of the LED Luminaire in what EPCO, at its sole discretion, considers extreme applications or inappropriate for the product as stated in product data sheet and installation instructions.
- Product damage as determined by EPCO to be caused by a crash, impact, or obvious signs of abuse to the LED Luminaire.
- There are "no" Charge-backs for any type of *labor allowance* required to remove, re-install, or re-power the LED Luminaire; or for the removal of the defective LED Luminaire and/or replacement with a new LED Luminaire.

This Warranty is Considered Invalid When One or More of the Following Conditions Occur:

- Disassembly of LED Driver or LED Strip by the end-user.
- Severe damage or deformation of the LED Driver or LED Strip's appearance.
- Damage to the LED Driver or LED Strip input (+) or output (-) conductors.
- LED Driver's identification codes and other serial numbers that have been erased, altered, modified, or damaged.
- Damage to the LED Driver or LED Strip caused by natural disasters.
- Must be installed per installation instructions and building code.

Distributed by:

Specifications subject to change without prior notice.

E02-070-006 E1 (5/17-SP)