

LED lighting for heavy industrial areas
Champ® Pro PLL LED Luminaires

CROUSE-HINDS
SERIES

Champ® Pro PLL

LED luminaires for heavy industrial areas



EATON

Powering Business Worldwide



Champ® Pro PLL LEDs

Safe. Reliable. Efficient.

Featuring the industry's broadest range of LED luminaires for harsh and hazardous environments, Eaton's Crouse-Hinds can deliver a lighting solution that performs reliably in even the worst operating conditions. All the while reducing your energy, maintenance and manpower costs.



Why LED?

Useful life

Rated life is up to 60,000 hours of maintenance-free and safe operation

Energy efficiency

LED average energy consumption is 65% less than T12, T8 and T5HO fluorescent fixtures

Start/restart time

Instant illumination vs. 10 minute restrike time for fluorescent

Light quality

Higher color rendering and color temperature compared to fluorescent

Environmental benefits

Mercury-free LED eliminates disposal costs and lower energy consumption for a smaller carbon footprint

Why Crouse-Hinds?

Industry-best reliability

Built to withstand extreme temperatures, vibration, water and dust

Thermal management

Effective heat sinking ensures longer life

Quality of light

Custom optics designed to maximize light distribution and intensity

Versatile mounting

Slim profile with seven mounting configurations for easy installation

Why Champ® Pro PLL LED?

Designed to last. Champ Pro PLL linear LED luminaires are engineered to handle demanding conditions. The PLL stands up to high vibration, hose down, shock and impact, while delivering long life and high lumen performance for up to 20 years.

Custom optics:

- Standard wide (120°) beam spread for control room and indoor application maximizes illumination on wall panels
- Narrow (80°) beam spread option for targeted illumination; avoids spillage and light loss

Quick & easy installation:

- Easy access to drivers and wiring
- No custom brackets or hardware needed
- Seven mounting options available
- Plug 'N Play LynxPOWER™ cordset and receptacle for daisy chaining multiple fixtures and ease of install (optional)
- Pre-wired cable with Type P cable and ADE 1F gland for quicker field installation (optional)

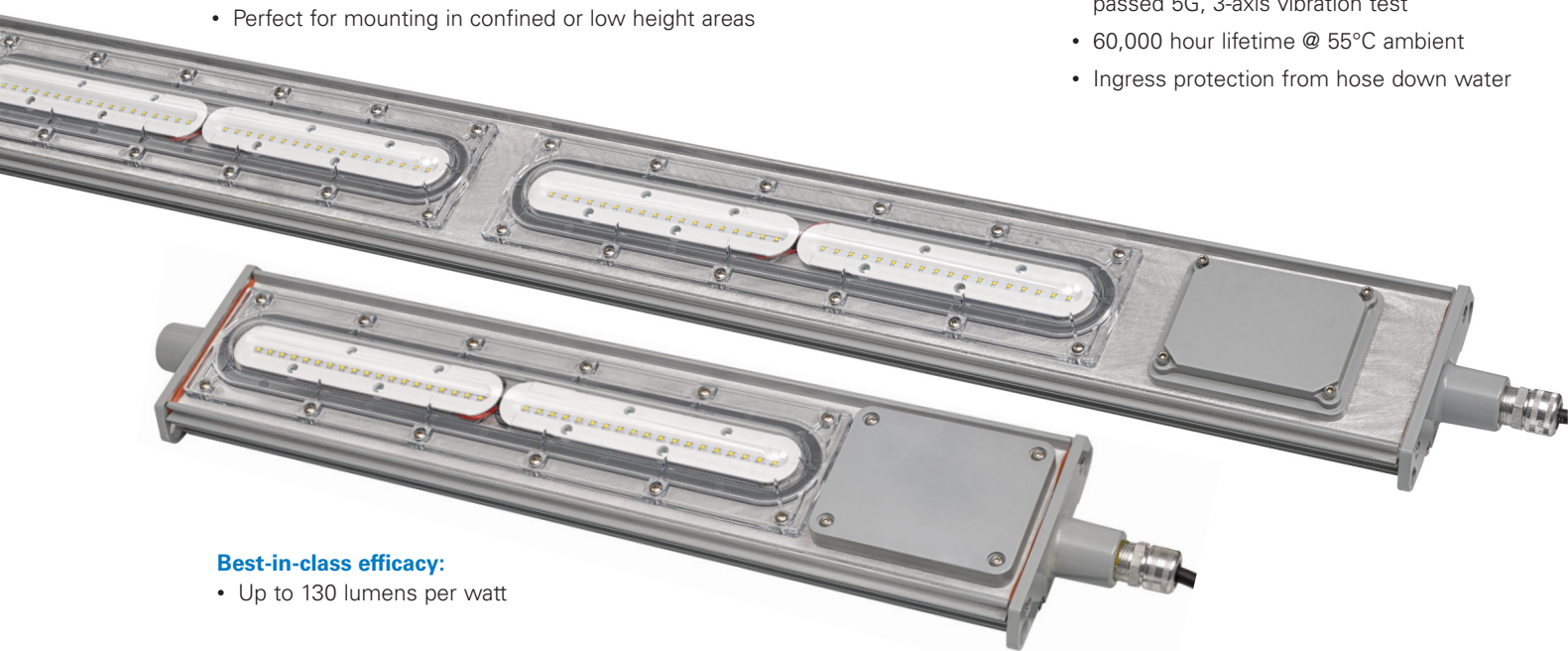


Slim profile:

- 2.7" fixture height (excluding mounting brackets)
- Perfect for mounting in confined or low height areas

Built to last:

- Vibration-, impact- and shock-resistant – passed 5G, 3-axis vibration test
- 60,000 hour lifetime @ 55°C ambient
- Ingress protection from hose down water



Best-in-class efficacy:

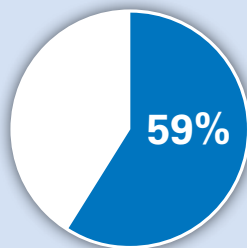
- Up to 130 lumens per watt

LED vs. fluorescent savings at a glance

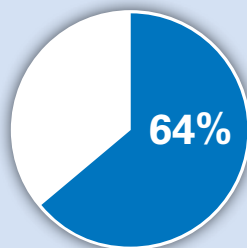
Why are so many facilities making the switch from fluorescent to LED?

The numbers say it all.

PLL4 vs. 2-lamp T5HO



59% REDUCTION IN ENERGY COSTS



64% LOWER TOTAL COST OF OWNERSHIP



100% MAINTENANCE REDUCTION

Assumptions: Calculations based on overall life of the LED system. Energy cost of \$.09 per kilowatt; 24 hour per day operation; labor rate of \$75 each for 2 workers; average time for fixture maintenance of 2 hours.

Champ® Pro PLL Series LED Luminaires

The Champ Pro Series PLL Linear LED by Eaton's Crouse-Hinds is specifically designed to replace fluorescent T12, T8 and T5HO lighting in heavy and harsh industrial applications. The rugged and durable design features the industry's most versatile and flexible mounting options. The PLL is the ideal solution for high vibration, impact and hose down applications.

Applications:

Ideal for a variety of non-hazardous applications such as mining, food processing, marine, wastewater treatment, heavy manufacturing and general wash down areas.

Key features & benefits:

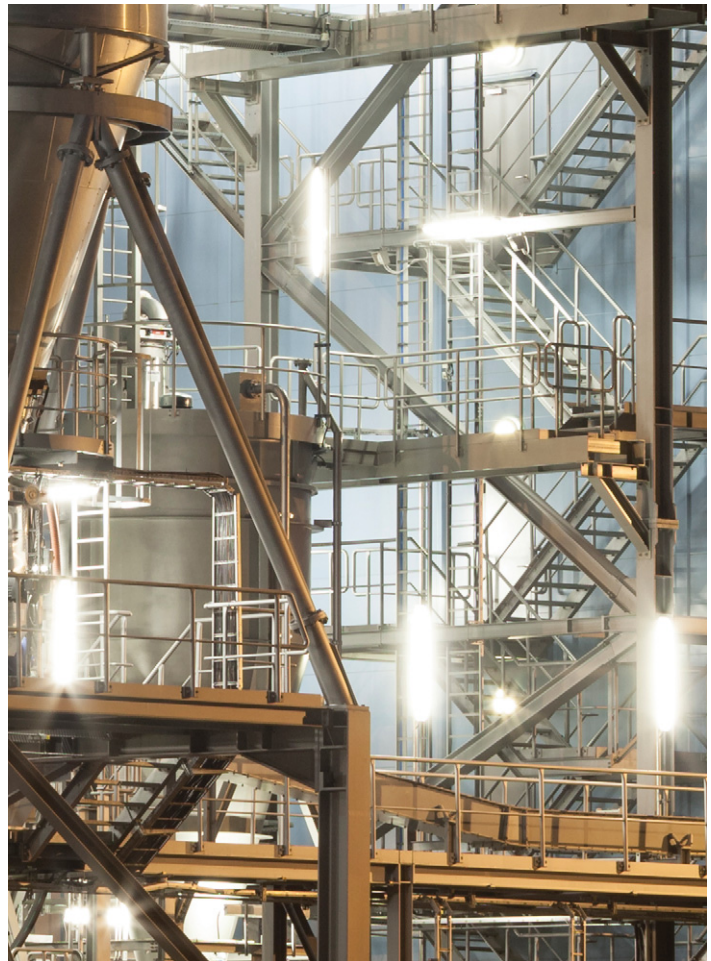
- Industry-leading efficacy: up to 130 LPW
- -40°C to +65°C ambient operating temperature
- Low profile (<3" height)
- Versatile ceiling/swivel, wall, flush, pole and pendant mounting options
- Wide and narrow optics for uniform illumination
- Four points of secondary retention
- 2,000 psi high pressure hose rated
- High vibration resistance (up to 5Gs)
- Surge protection options (up to 10kV)
- Emergency battery back-up (90 minutes) and surge protection options (up to 10kV)†
- DesignLights Consortium® Qualified (some models are not DLC qualified)*
- 5 year fixture warranty‡



‡ One year warranty

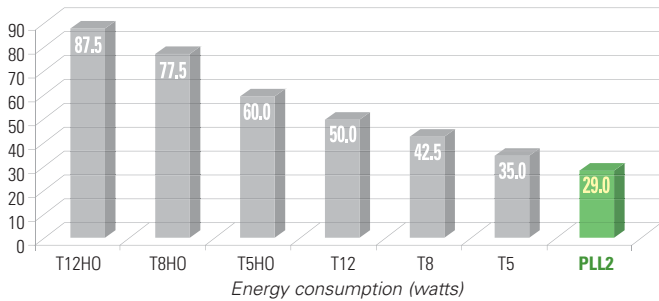
* Refer to www.designlights.org Qualified Products List under Family Models for full listing details. Not all models are approved for all application listing categories.

† Refer to page 2 of the D-0915 authorized distributor price book for Crouse-Hinds standard Terms and Conditions.



Energy consumption comparison

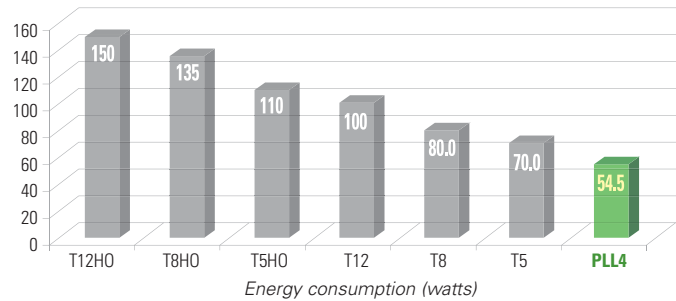
2 foot PLL linear LED vs. fluorescent



Model	Typical lumens	Wattage	Lumens per watt	Equivalent HID luminaire	Typical energy savings / lifetime
PLL2	3,600	29	124	T12HO	Up to 67%
				T8HO	Up to 63%
				T5HO	Up to 52%
				T12	Up to 42%
				T8	Up to 32%
				T5	Up to 17%

All luminaires in the comparison are 2 lamp, 2 foot

4 foot PLL linear LED vs. fluorescent



Model	Typical lumens	Wattage	Lumens per watt	Equivalent HID luminaire	Typical energy savings / lifetime
PLL4	7,100	54.5	130	T12HO	Up to 64%
				T8HO	Up to 60%
				T5HO	Up to 50%
				T12	Up to 46%
				T8	Up to 32%
				T5	Up to 22%

All luminaires in the comparison are 2 lamp, 4 foot

Specifications

Certifications:

NEC/CEC standards:

- Type 4X
- IP66
- Wet Locations

UL standards:

- UL1598 Luminaire
- UL1598A Luminaire for Installation on Marine Vessels

CSA standard:

- C22.2 No. 250

Additional standards:

- ABS design assessed

Materials:

Housing:

- Copper-free aluminum
- Optional Corro-free™ epoxy powder coat

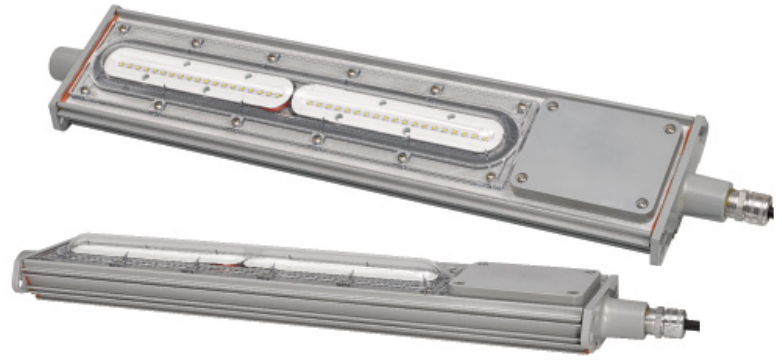
Lens:

- Glass or polycarbonate
- Diffused glass or polycarbonate

Mounting:

Versatile mounting options:

- Flush back mount
- Swivel/ceiling back mount
- Offset ceiling mount
- Offset wall mount
- Pole mount
- Pendant mount



Electrical ratings:

	PLL2	PLL4
Lumen output	3,600	7,100
Frequency	50/60 Hz	50/60 Hz
Voltage	100-277 VAC/108-250 VDC; 347-480 VAC	

Model	Voltage	Current (A)	Wattage (W)	Power factor	THD
PLL2/UNV1	100	0.28	28.2	0.90	<20%
PLL2/UNV1	277	0.12	29.4	0.90	<20%
PLL2/UNV34	347	0.09	29.2	0.90	<20%
PLL2/UNV34	480	0.07	30.1	0.90	<20%
PLL4/UNV1	100	0.55	55.0	0.95	<20%
PLL4/UNV1	277	0.20	54.5	0.95	<20%
PLL4/UNV34	347	0.16	55.8	0.95	<20%
PLL4/UNV34	480	0.12	56.2	0.95	<20%

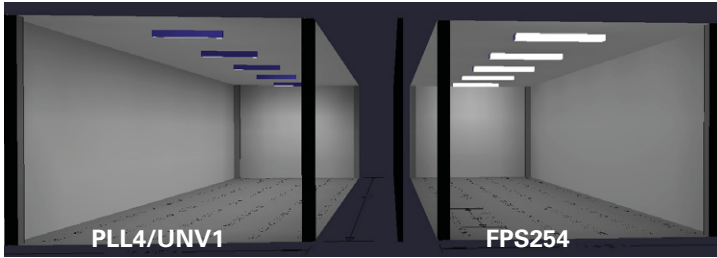
Weights:

Luminaire	lbs.	kg.
PLL2	12.5	5.7
PLL4	22.5	10.2

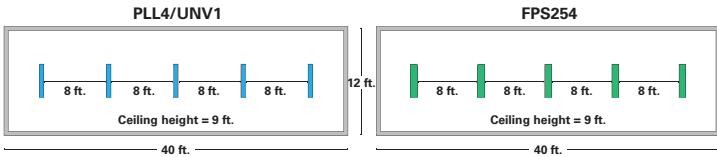


Photometrics: control room/pump shed

4 foot PLL LED with 120° optics vs. 4 foot 2 lamp T5HO FPS

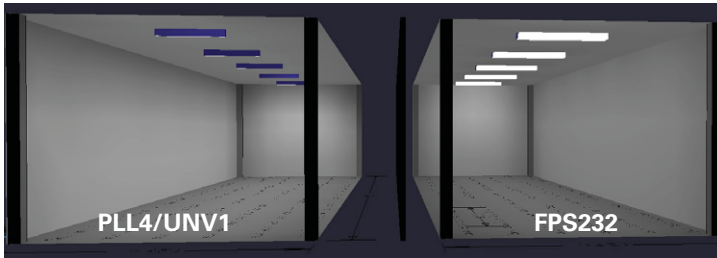


Illuminance (Fc)	PLL4/UNV1	FPS254
Average	44.87	33.38
Maximum	55.40	41.50
Minimum	25.20	19.50
Average/minimum	1.78	1.71
Maximum/minimum	2.20	2.13

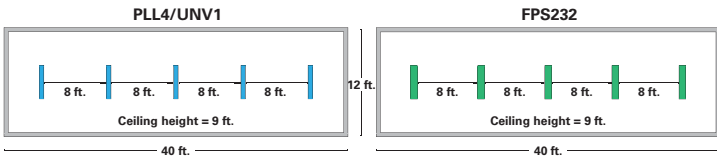


50% lower energy consumption and higher average illumination

4 foot PLL LED with 120° optics vs. 4 foot 2 lamp T8 FPS

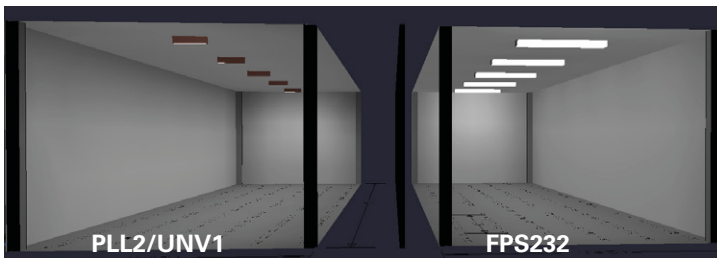


Illuminance (Fc)	PLL4/UNV1	FPS232
Average	44.85	21.20
Maximum	55.50	26.40
Minimum	25.10	12.20
Average/minimum	1.79	1.74
Maximum/minimum	2.21	2.16

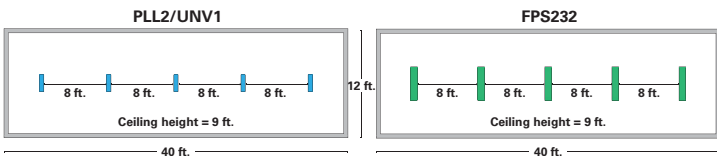


Equivalent energy consumption and double the average illumination

2 foot PLL LED with 120° optics vs. 4 foot 2 lamp T8 FPS



Illuminance (Fc)	PLL2/UNV1	FPS232
Average	22.56	20.40
Maximum	27.90	25.30
Minimum	12.70	12.10
Average/minimum	1.78	1.69
Maximum/minimum	2.20	2.09



50% lower energy consumption and equivalent illumination

Ordering information

Part number example

PLL4N/UNV1 S903 TF P EM

Champ Pro series linear LED, cool white, 4 foot, 3/4" hubs, 80° narrow light pattern, 100-277 VAC driver, polycarbonate lens, through feed hubs, painted, emergency battery backup

PLL	4	N	/UNV1	S903	TF	P	EM
Series				Lens			
PLL	Champ Pro series linear LED luminaire			BLANK	Glass		
Length/lumens				S891	Diffused glass		
4	4 ft. length, 7,100 lumens			S903	Polycarbonate		
2	2 ft. length, 3,600 lumens			S903D	Diffused polycarbonate		
Optics				Cord options			
BLANK	Wide (120°)			LP*†	LynxPOWER receptacles, factory pre-wired		
N	Narrow (80°)			CD†	Type P cable, 10 ft. (non-armored), ADE 1F series gland pre-wired to fixture		
Voltage				TF	Pull wire included in the fixture		
/UNV1	100-277 VAC; 108-250 VDC			*All ML3C4WC series Mini-Line LynxPOWER cordsets can be utilized. Refer to accessories section below for part number.			
/UNV34	347-480 VAC			†Cannot be combined with "TF" suffix.			
				Emergency backup			
				EM*		Emergency battery back-up kit	
				* One year warranty			
				Finish			
				BLANK		Natural aluminum	
				P		Painted (gray, epoxy)	
				WH		Painted (white, epoxy)	

Accessories (ordered separately)

DP1057MTK	Flush/back mount back plate	VMVL/UNV1 80W 1A KIT	1 amp driver replacement kit 90-277 VAC for 4 ft. linear
DP1050MTK	Ceiling/swivel mount	VMVL/UNV34 80W 1A KIT	1 amp driver replacement kit 347-480 VAC for 4 ft. linear
DP1053MTK	Ceiling/wall mount offset	VMVL/UNV1 80W 0.5A KIT	0.5 amp driver replacement kit 90-277 VAC for 2 ft. linear
DP1054MTK KIT	Ceiling mount bracket and adapter kit	VMVL/UNV34 80W 0.5A KIT	0.5 Amp driver replacement kit 347-480 VAC for 2 ft. linear
DP1052MTK	Offset wall mount	*ML3C4WC060F	6 ft. Mini-Line LynxPOWER cordset
PM KIT 1.25	Pole mount kit, 1.25" conduit	*ML3C4WC120F	12 ft. Mini-Line LynxPOWER cordset
PM KIT 1.5	Pole mount kit, 1.50" conduit	*Additional lengths available. Contact Eaton's Crouse-Hinds customer service for additional options.	
PM KIT 2.0	Pole mount kit, 2.00" conduit		
PEND ORD KIT	Pendant mount kit		
SS KIT	Safety chain kit		

Mounting options and dimensions:

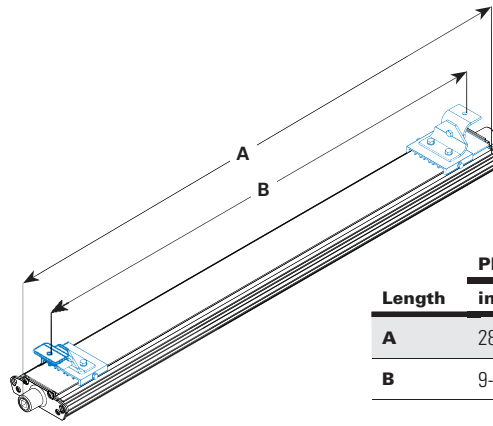
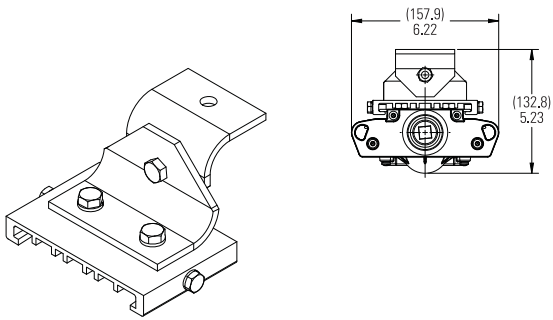
PLL4 (1329.1 mm / 52.33" length, 68.58 mm / 2.70" height)

PLL2 (719.6 mm / 28.33" length, 68.58 mm / 2.70" height)

Offset wall DP1052MTK	Flush ceiling DP1057MTK	Offset ceiling DP1053MTK	Ceiling/swivel DP1050MTK	Ceiling and adapter DP1054MTK KIT	Pole mount PM KIT 1.25/1.5/2.0	Pendant mount PEND ORD KIT
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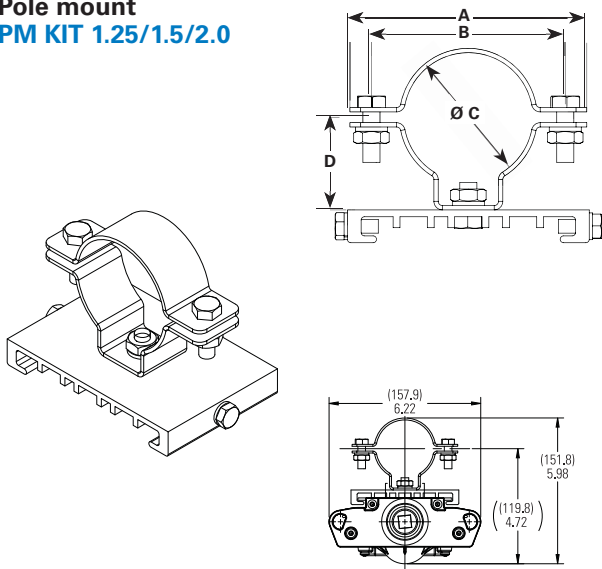
Mounting options

Ceiling/swivel mount DP1050MTK

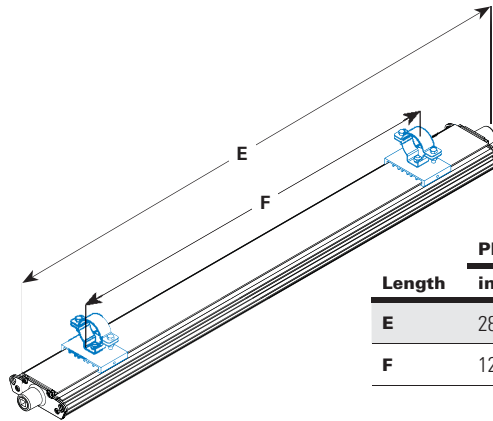


Length	PLL2		PLL4	
	in.	mm.	in.	mm.
A	28.3	720	52.3	1329
B	9-27	222-681	9-51	222-1289

Pole mount PM KIT 1.25/1.5/2.0

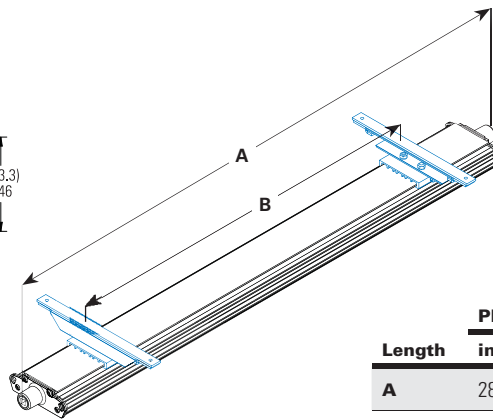
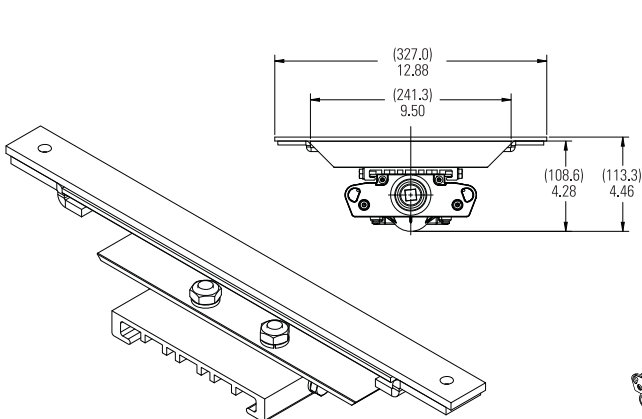


Configuration	ALL MEASUREMENTS IN INCHES			
	A	B	C	D
PM KIT 1.25	4.331	3.543	1.680	1.693
PM KIT 1.5	3.740	2.953	2.000	1.535
PM KIT 2.0	3.386	2.598	2.360	1.378



Length	PLL2		PLL4	
	in.	mm.	in.	mm.
E	28.3	720	52.3	1329
F	12-21	305-533	24-45	610-1143

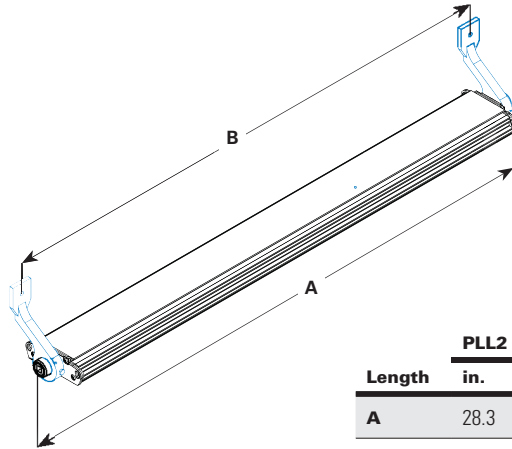
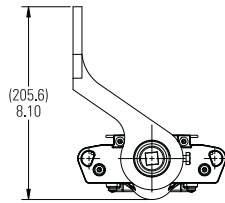
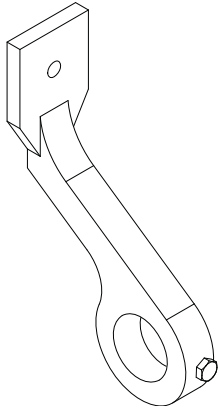
MagnaPro mount DP1054MTK KIT



Length	PLL2		PLL4	
	in.	mm.	in.	mm.
A	28.3	720	52.3	1329
B	12-22	305-559	24-46	610-1168

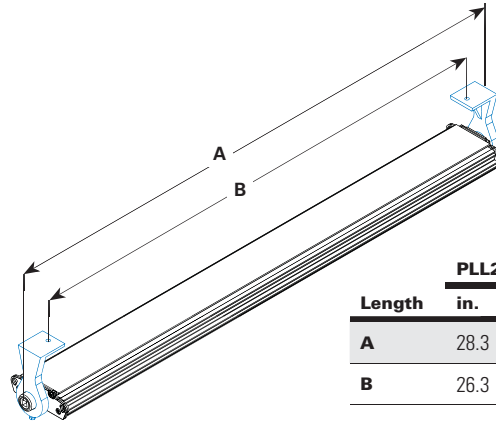
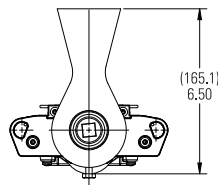
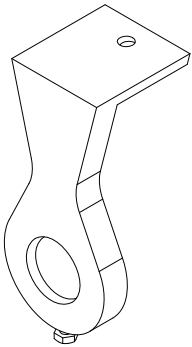
Mounting options

Offset wall DP1052MTK



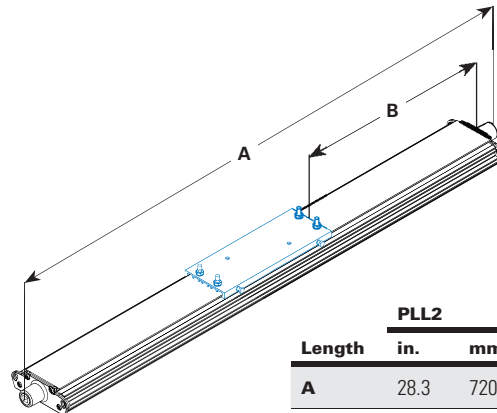
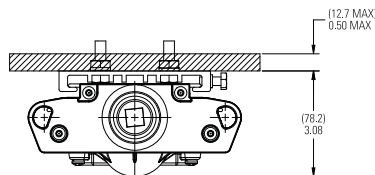
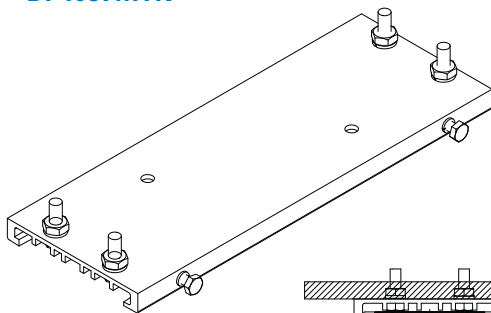
Length	PLL2		PLL4	
	in.	mm.	in.	mm.
A	28.3	720	52.3	1329
B	26.3	669	50.3	1278

Offset ceiling/wall mount DP1053MTK



Length	PLL2		PLL4	
	in.	mm.	in.	mm.
A	28.3	720	52.3	1329
B	26.3	584	47.0	1194

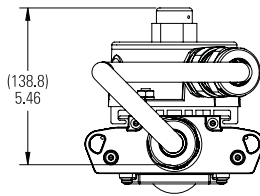
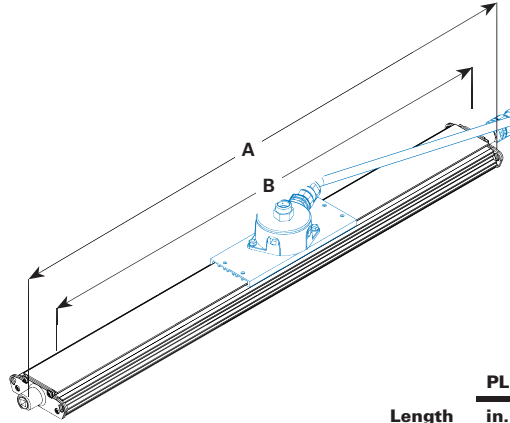
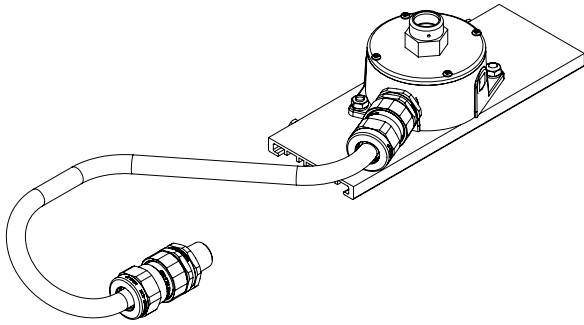
Flush ceiling DP1057MTK



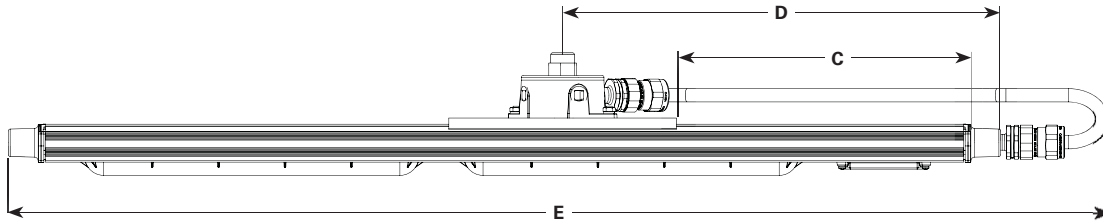
Length	PLL2		PLL4	
	in.	mm.	in.	mm.
A	28.3	720	52.3	1329
B	6.2	157.5	18.2	462

Mounting options

Pendant mount PEND ORD KIT



Length	PLL2		PLL4	
	in.	mm.	in.	mm.
A	31.7	805	55.8	1418
B	28.3	720	52.3	1329
C	4.2	108	16.0	406
D	12.2	310	24.0	610
E	34.9	886	58.9	1495



Battery back-up



Applications:

- Egress and emergency lighting for areas requiring uninterrupted lighting during power failure
- Non-hazardous indoor and outdoor emergency lighting in manufacturing plants, heavy industrial, chemical and petrochemical facilities, platforms, loading docks and parking areas

Key features:

- Wall or ceiling remote mount options up to a cable distance of 50 feet from the LED luminaire
- Operating ambient: -20°C to +55°C
- 90-minute run time in emergency mode
- 1,000 lumen output
- 50,000 hours rated life @ 55°C
- IP66 rated enclosure
- Provision of LED indicator and manual test switch to check battery operation
- Nickel-cadmium battery

Certifications and compliances:

NEC/CEC

- Wet locations, Type 4X, IP66

UL Standards

- UL1598 Luminaires, UL1598A Marine
- UL924 Emergency Lighting

Electrical ratings:

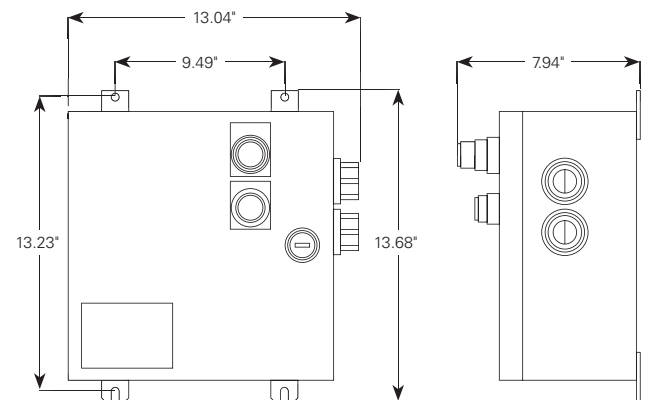
Model	2 ft.	4 ft.
Voltage	100-277 VAC/108-250 VDC; 347-480 VAC	
Amperage @ 120VAC	0.34	0.58
Wattage @ 120VAC	37	68
Lumen output	1,000	1,000
Frequency	50/60 Hz	50/60 Hz
Power factor @ 100 VAC	0.90	0.95
THD	<20%	<20%

Model	EM output	Normal output
PLL2/UNV1 EM	1,000 lumens	3,600 (100-277V)
PLL2/UNV34 EM	1,000 lumens	3,600 (347-480V)
PLL4/UNV1 EM	1,000 lumens	7,100 (100-277V)
PLL4/UNV34 EM	1,000 lumens	7,100 (347-480V)

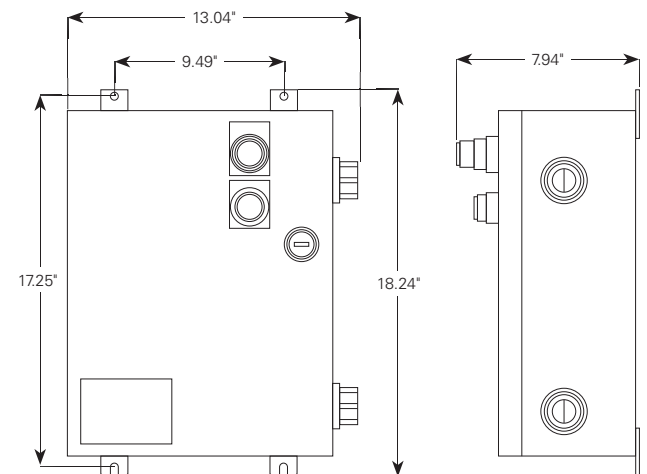
* 2 ft. LED fixture wired to 0.5A driver/charger remote battery module

** 4 ft. LED fixture wired to 1A driver/charger remote battery module

Dimensions:



PLL EM UNV1



PLL EM UNV34

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