

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)

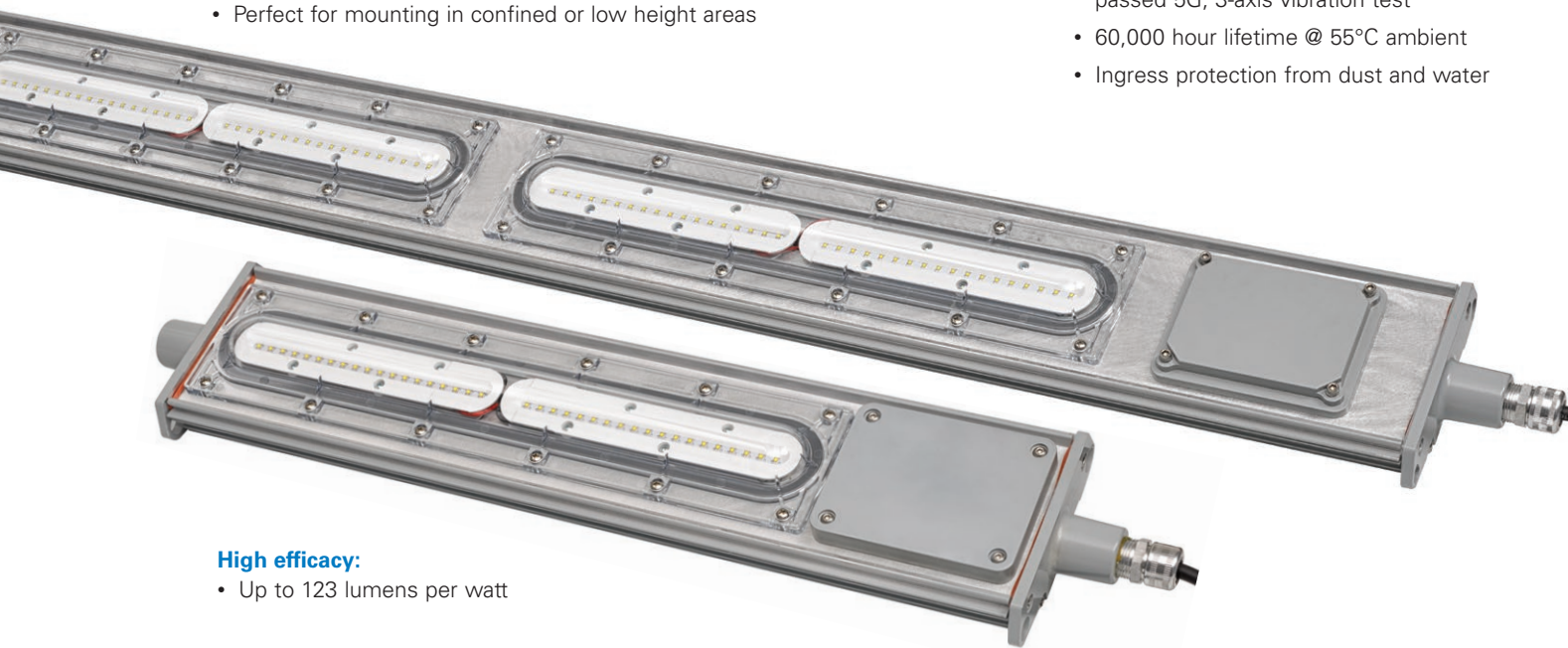


Slim profile:

- 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 dust and water



High efficacy:

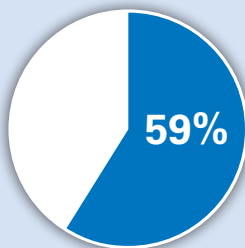
- Up to 123 lumens per watt

LED vs. fluorescent savings at a glance

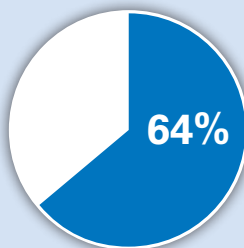
Why are so many facilities making the switch from fluorescent to LED?

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.

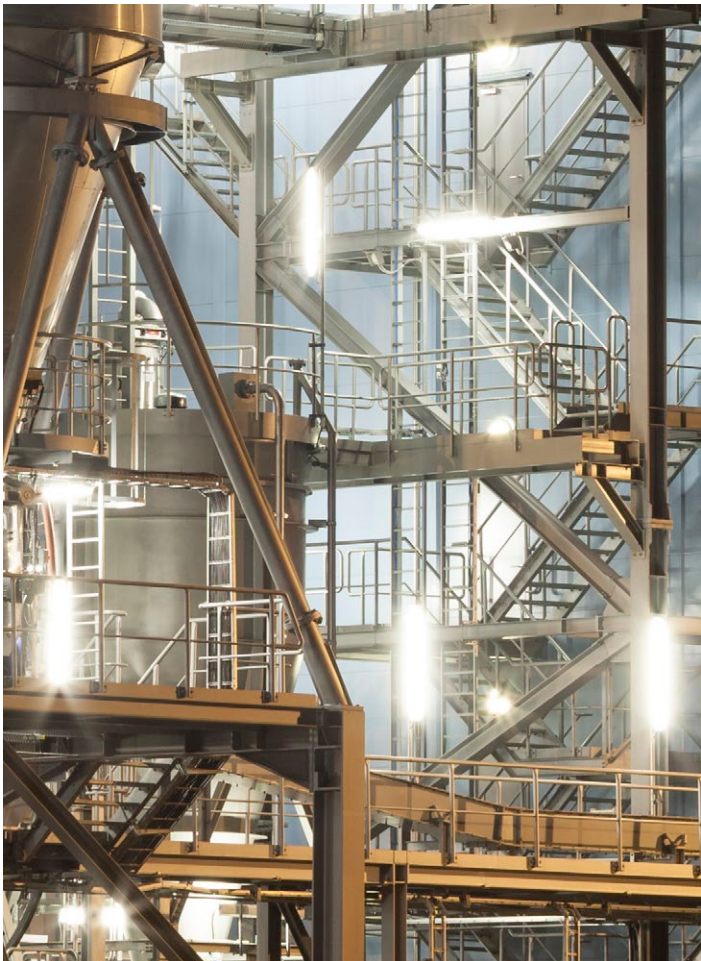
Key features & benefits:

- High efficacy: up to 120 LPW
- -40°C to +65°C ambient operating temperature (standard model)
- 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
- 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

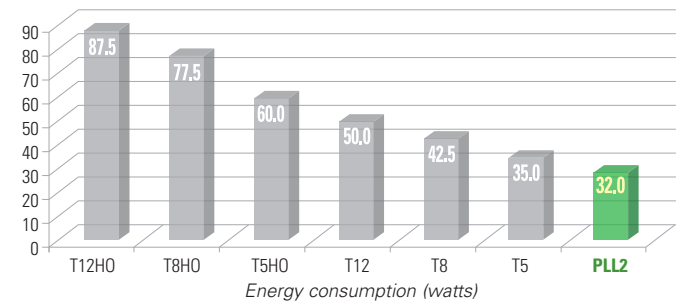
* Refer to www.designlights.org Qualified Products List under Family Models for full listing details. Not all models are approved for all application categories.

† Refer to page 2 of the D-0716 authorized distributor price book for Crouse-Hinds standard Terms and Conditions.



Energy consumption comparison

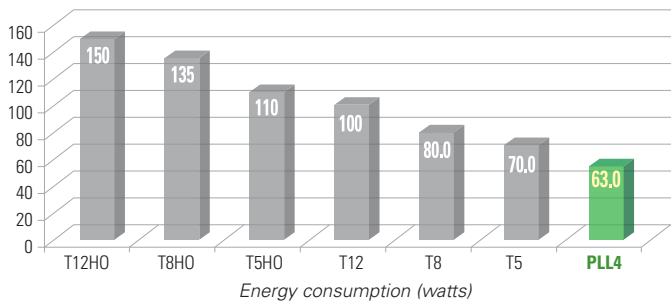
2 foot PLL linear LED vs. fluorescent



Model	Typical lumens	Wattage	Lumens per watt	Equivalent HID luminaire	Typical energy savings / lifetime
PLL2	3,958	32	124	T12HO	Up to 63%
				T8HO	Up to 59%
				T5HO	Up to 47%
				T12	Up to 36%
				T8	Up to 25%
				T5	Up to 9%

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	7,900	63	130	T12HO	Up to 58%
				T8HO	Up to 54%
				T5HO	Up to 43%
				T12	Up to 37%
				T8	Up to 22%
				T5	Up to 10%

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
- UL924 Emergency Luminaires

CSA standard:

- C22.2 No. 250

Additional standards:

- ABS design assessed

Materials:

Housing:

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

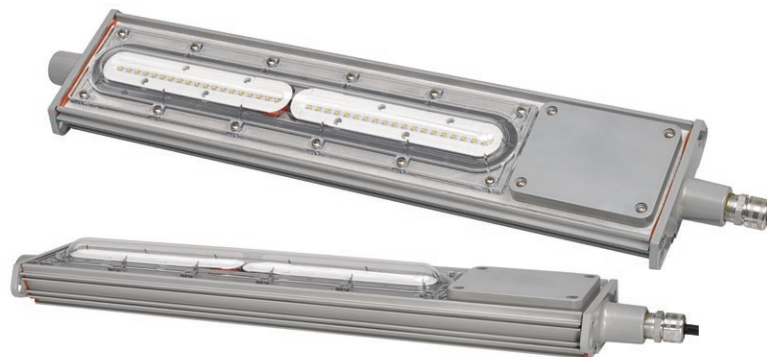
Lens:

- Clear polycarbonate
- Diffused 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	3,958	7,900
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	0.33	32.5	0.92	<20%
PLL2/UNV1	277	0.13	34.3	0.92	<20%
PLL2/UNV34	347	0.10	32.2	0.92	<20%
PLL2/UNV34	480	0.07	34.5	0.92	<20%
PLL4/UNV1	100	0.63	63.4	0.92	<20%
PLL4/UNV1	277	0.23	62.5	0.92	<20%
PLL4/UNV34	347	0.18	61.4	0.92	<20%
PLL4/UNV34	480	0.13	63.9	0.92	<20%

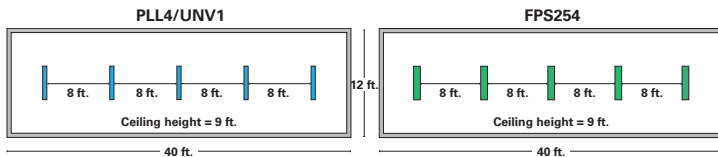
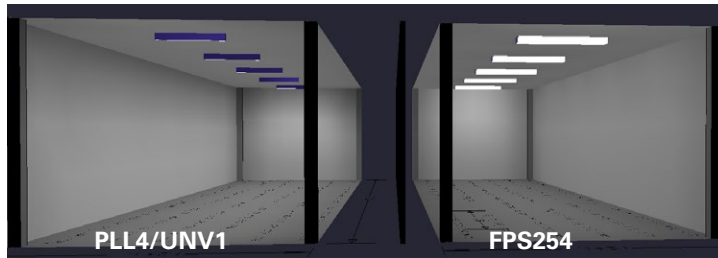
Weights:

Luminaire	lbs.	kg.
PLL2	12.5	5.7
PLL4	22.5	10.2



Photometrics: control room/pump shed

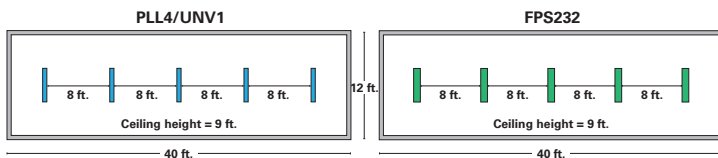
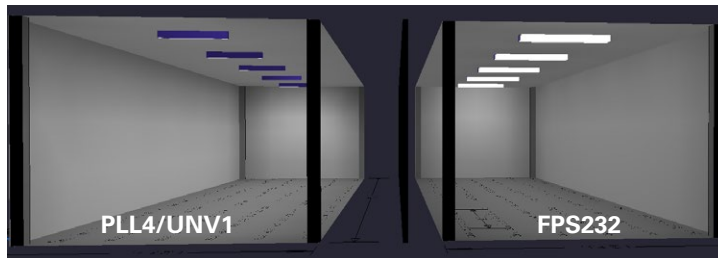
4 foot PLL LED with 120° optics vs. 4 foot 2 lamp T5HO FPS



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

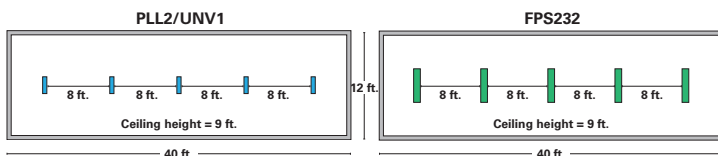
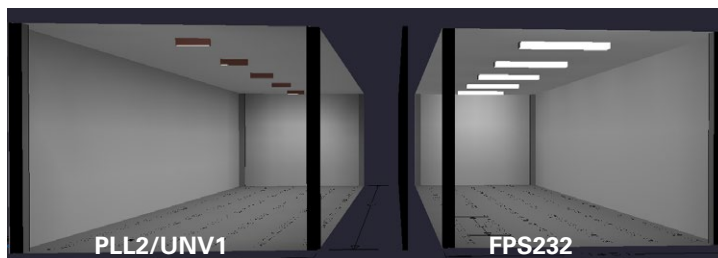
4 foot PLL LED with 120° optics vs. 4 foot 2 lamp T8 FPS



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 EM1

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	EM1
Series		Length/lumens		Lens		Emergency backup	
PLL		4		S903		BLANK	
Champ Pro series linear LED luminaire		4 ft. length, 7,900 lumens		Clear polycarbonate		Standard model (no battery back-up)	
		2		S903D		EM1*	
		2 ft. length, 3,900 lumens		Diffused polycarbonate		Integrated emergency battery back-up	
Optics		Cord options					
BLANK		LP*†‡		Type P cable, 10 ft. (non-armored), ADE 1F series gland pre-wired to fixture		* One year warranty. Remote EM Kit also available, 120-277 VAC only. Contact factory for more information.	
N		CD†‡		Pull wire included in the fixture			
Wide (120°)							
Narrow (80°)							
Voltage						Finish	
/UNV1						BLANK	
100-277 VAC; 108-250 VDC						Natural aluminum	
/UNV34						P	
347-480 VAC						Painted (gray, epoxy)	
						WH	
						Painted (white, epoxy)	

*All ML3C4WC series Mini-Line LynxPOWER cordsets can be utilized. Refer to accessories section below for part number.

†Cannot be combined with "TF" suffix.

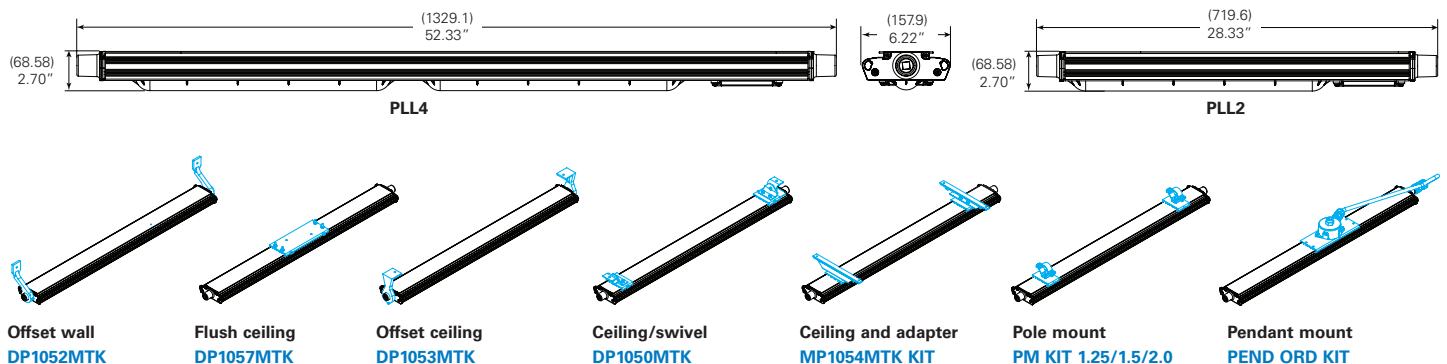
‡Standard models only

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
MP1054MTK 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	*ML3A4WC060F	6 ft. Mini-Line LynxPOWER cordset
PM KIT 1.25	Pole mount kit, 1.25" conduit	*ML3A4WC120F	12 ft. Mini-Line LynxPOWER cordset
PM KIT 1.5	Pole mount kit, 1.50" conduit		
PM KIT 2.0	Pole mount kit, 2.00" conduit		
PEND ORD KIT	Pendant mount kit		
SS KIT	Safety chain kit		

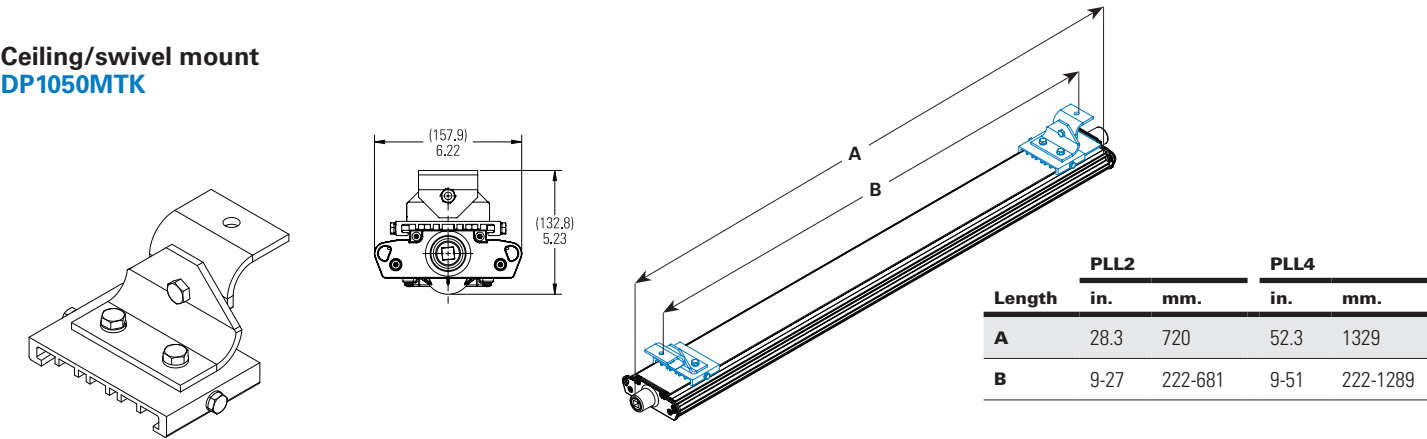
*Additional lengths available. Contact Eaton's Crouse-Hinds customer service for additional options.

Mounting options and dimensions:

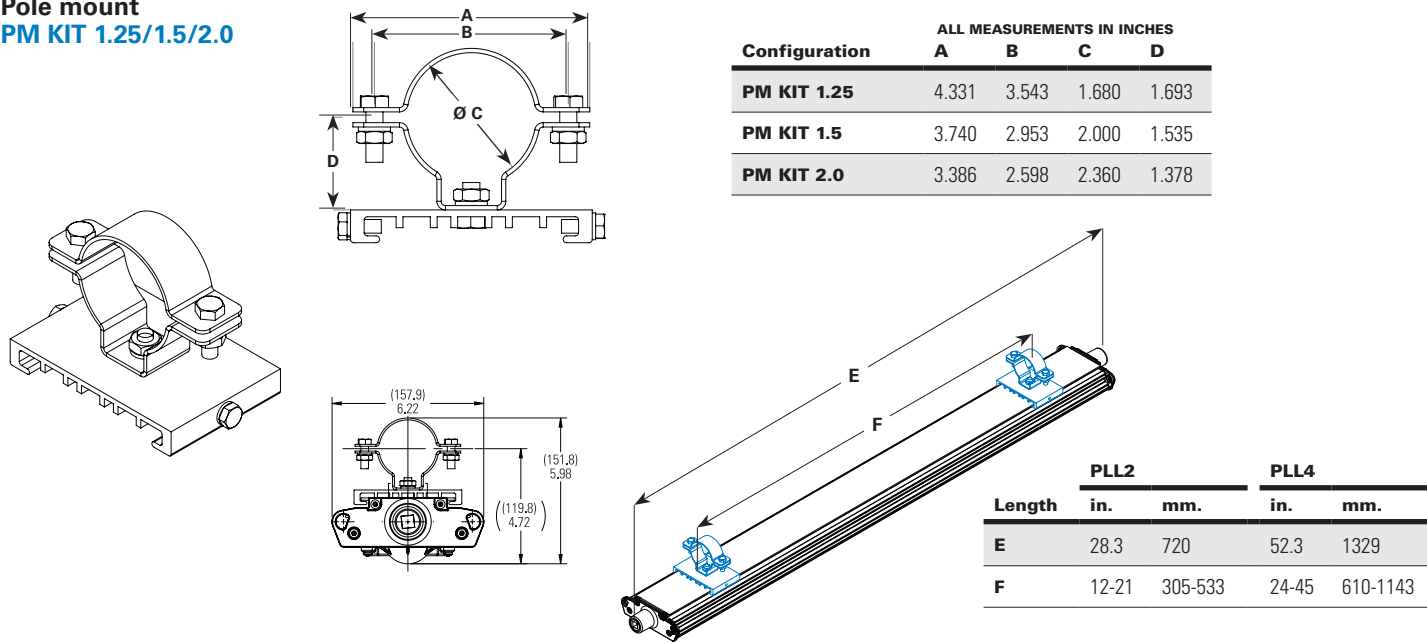


Mounting options

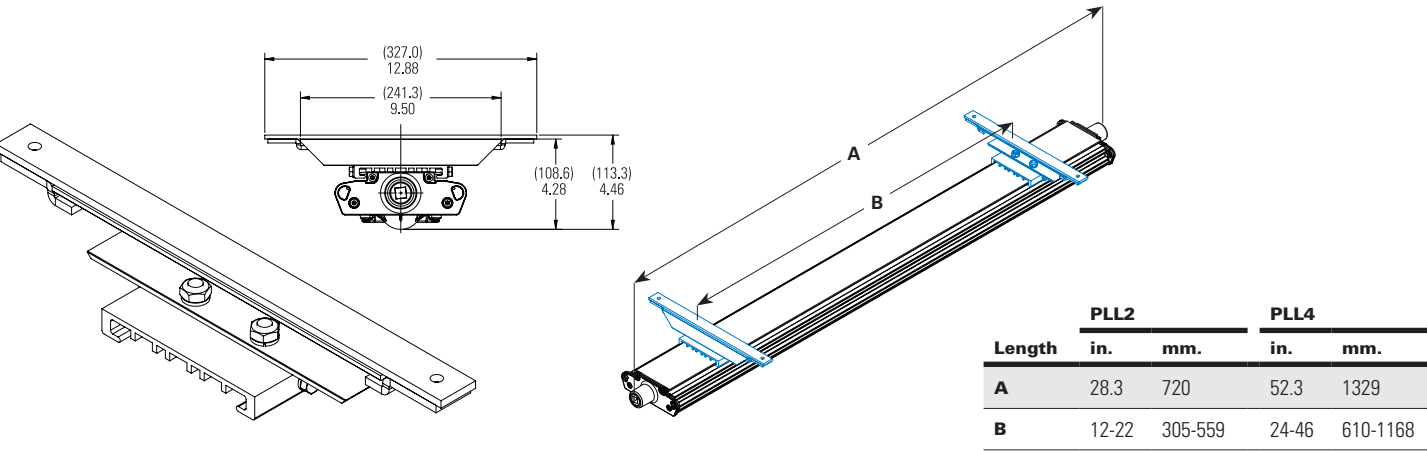
Ceiling/swivel mount DP1050MTK



Pole mount PM KIT 1.25/1.5/2.0

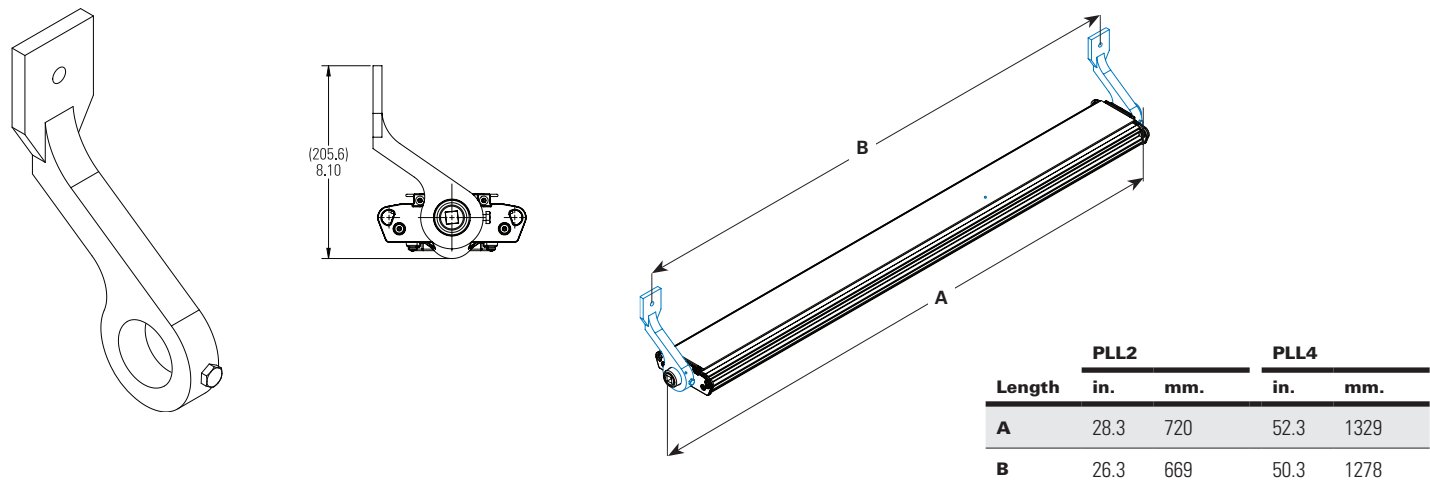


MagnaPro mount MP1054MTK KIT

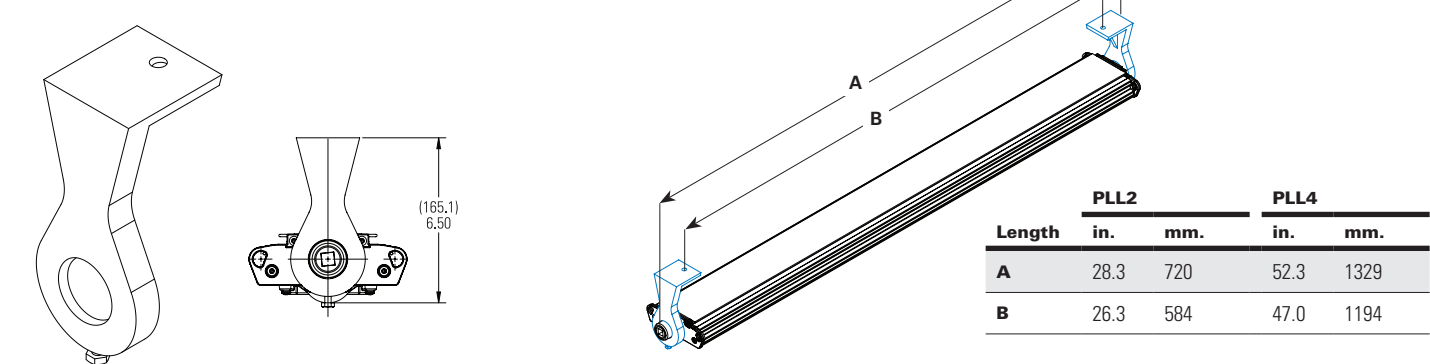


Mounting options

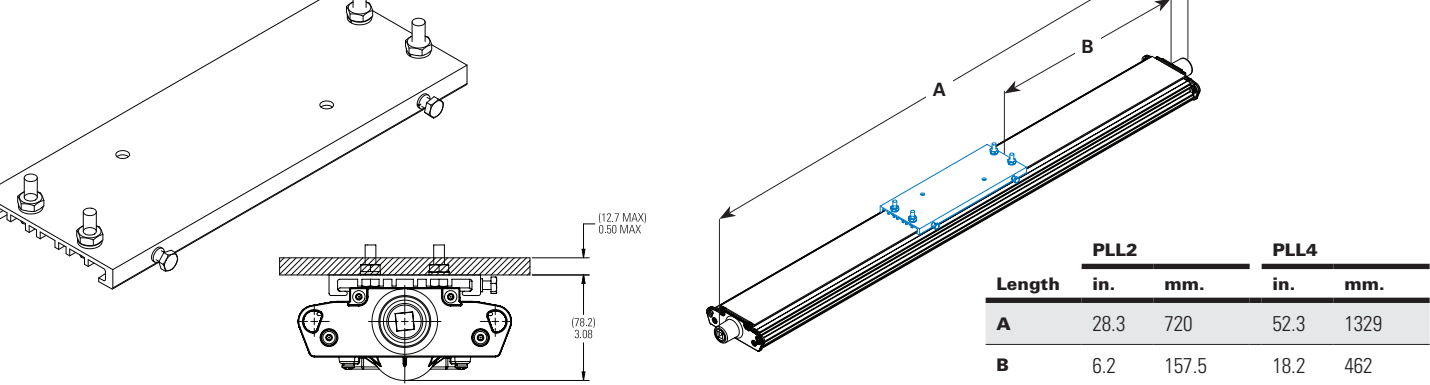
Offset wall DP1052MTK



Offset ceiling/wall mount DP1053MTK

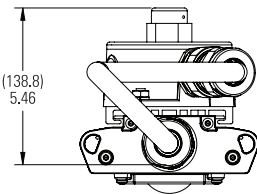
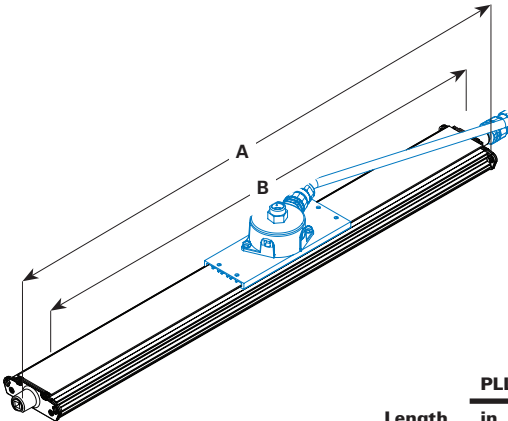
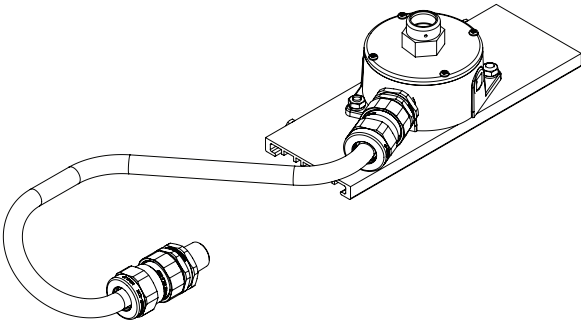


Flush ceiling DP1057MTK

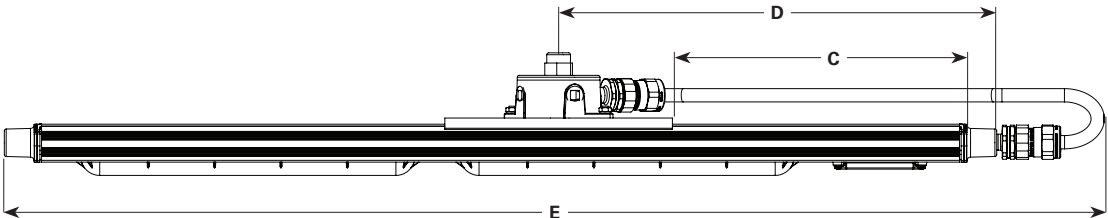


Mounting options

Pendant mount PEND ORD KIT

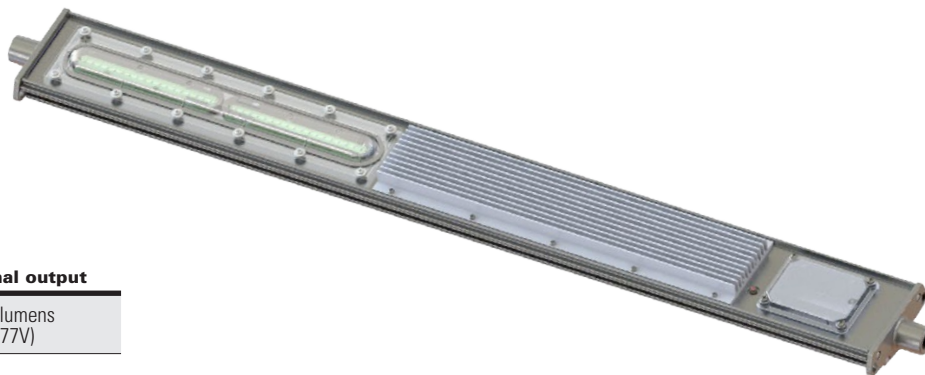


Length	PLL2		PLL4	
	in.	mm.	in.	mm.
A	31.7	805	55.8	1418
B	28.3	720	52.3	1329
C	4.2	108	16.0	406
D	12.2	310	24.0	610
E	34.9	886	58.9	1495



Battery back-up

Champ PLL linear LED luminaires are now available with an integral battery back-up module. Virtually the same size as the standard 4 foot model and up to 90 minutes of emergency lighting to keep your facility and people safe.



Model	EM output	Normal output
PLL4/UNV1 EM1	1,400 lumens (100-277V)	6,720 lumens (100-277V)

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:

- Operating ambient: 0°C to +40°C
- 90 minute runtime in emergency mode
- 6,720 lumen output for normal operation
- 1,400 lumen in emergency mode
- 50,000 hours rated life @ 40°C
- IP66 rated enclosure
- LED indicator to check battery operation
- Nickel-cadmium battery
- Gray epoxy powder coat standard
- 1 year warranty

Certifications and compliances:

NEC/CEC

- Wet Location, IP66, Type 4X

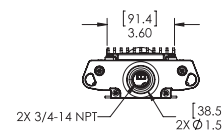
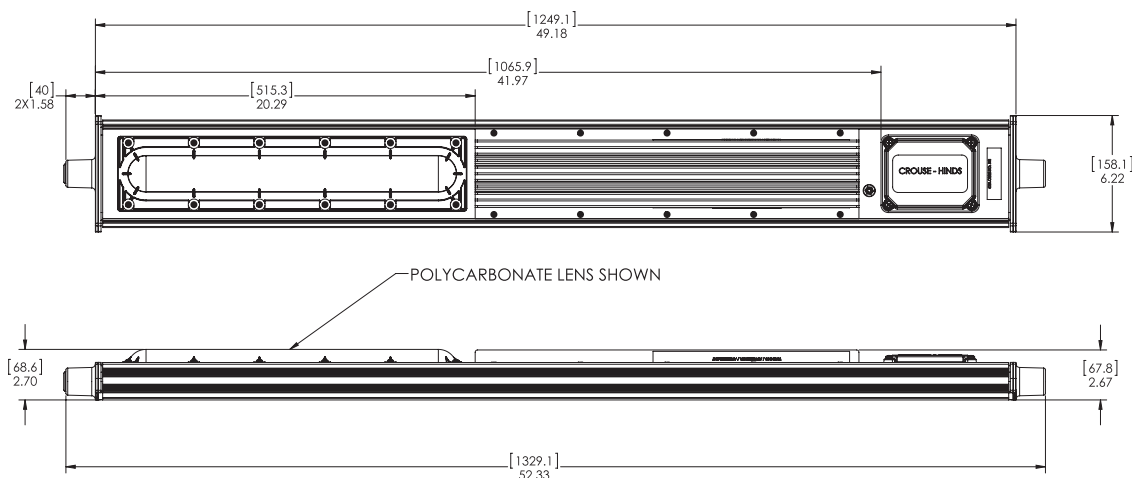
UL Standards

- UL1598 Luminaires, UL1598A Marine
- UL924 Emergency Lighting

Electrical ratings:

Voltage	120	277
Amperage @ 120VAC	.48	.212
Wattage @ 120VAC	57.8	57.7
Lumen output	6,720	6,720
Frequency	50/60Hz	50/60Hz
Power factor @ 100 VAC	> .90	> .90
THD	6.58	11.70

Dimensions:



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