

POINT HELIDECK LIGHTS PRL-EX-LSM LED EXPLOSION-PROOF

Compliances: ETL Listed Class I, Division 2, Groups A B C D, T6
 ETL Listed Class I, Zone 2, Groups IIA, IIB+H2, IIC
 ETL Listed to UL 844 & UL 1598; Report No. 3110856CRT-009c
 ETL Listed to UL 1598A Marine Vessels
 ETL Listed to CSA C22.2 No. 137-M1981 & No. 250.0-04 Canada
 FAA AC 150/5390-2B Heliport Design Guide
 ICAO Annex 14, Volume II
 UK CAA CAP 437 & Transport Canada TP14371, AGA 7.17
 IMO 2009 MODU Code (2010) paragraph 13.5.20
 American Bureau of Shipping (ABS) Type Approved Product

The PRL-EX-LSM is an 8-inch diameter surface mounted light *less than 6-inches high* used for metal helidecks or existing pavement heliports on the FATO perimeter. The lens and optical assembly are sealed mechanically without the use of chemical sealants. Silicone-filled wire connectors are included. Standard with our marine treatment finish and ground lug.
 See specifications on page 3.

See file 0MOUNTINGS detail H14

Standard with 2 x 1-inch NPT entries at 0 & 180-degrees
 Note: 3/4-inch NPT entries available upon request

Point Type	Voltage	Array	Color	EX	Mounting & Options
PRL-97002	1: 120v	P: note 1	G: Green	EX: Class I	VB: Variable Brightness
	2: 220v	H: note 2	Y: Yellow	Div 2	LSM: Low Surface Mount
	3: 12v DC	F: note 3	C: White		M20: Metric M20
	4: 24v DC		B: Blue	R: Red	M25: Metric M25
			IR: Infrared NVG		NC: NVG compatibility*

Note 1: Array P is good for general use fixed brightness (no dimming) at approximately PHC brightness step 2.

Note 2: Array H exceeds ICAO Annex 14, Vol II and is suggested for use with the dimmable PHC controller (add option -VB).

Note 3: Array F is for offshore CAP 437 compliance.

* For use with visible (non-IR) arrays P or H; adds IR LEDs
 Option -NC2 is IR or visible mode switchable.

The Marine Treatment finish is used for all marine, high salt content air and other corrosive environments.

The fixture shall be treated for marine conditions by cleaning per US MIL method III of TT-C-490, chromate priming per US MIL-C-5541, epoxy powder base coat and glossy polyester powdercoat finish coat in color RAL 6003 (FED-STD-595 color #14097) green. Oven cured per US MIL-PRF-24712A.

PRL-97002-1F-G-EX-LSM

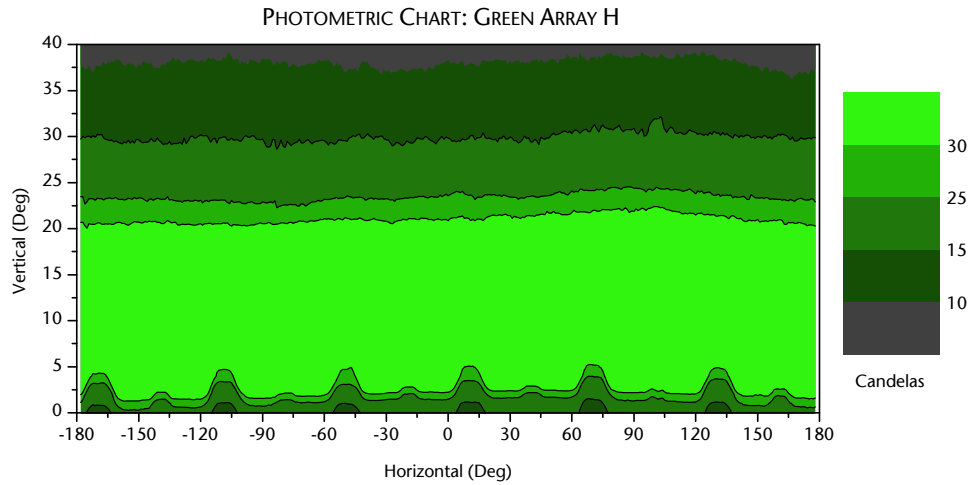


Intertek Control Number: 3030033



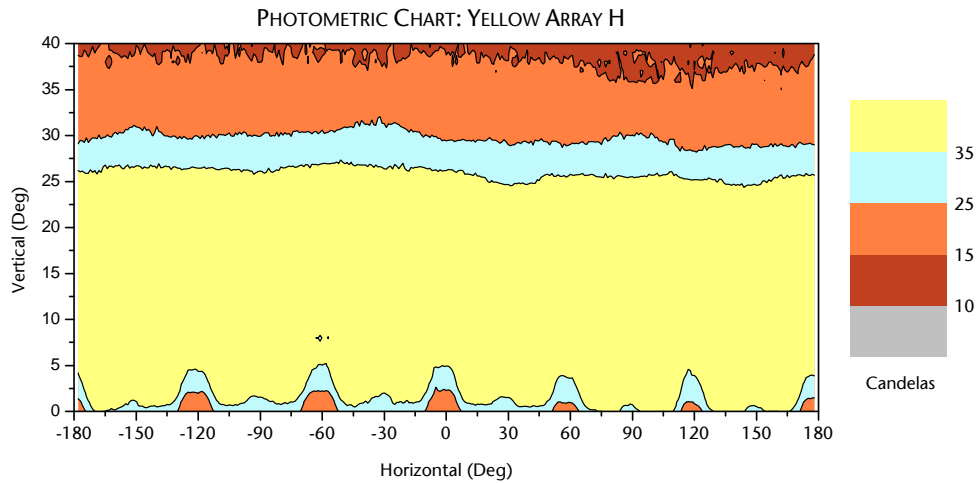


LED Array H in Green:
Average Peak Beam
50 cd at 12-deg V



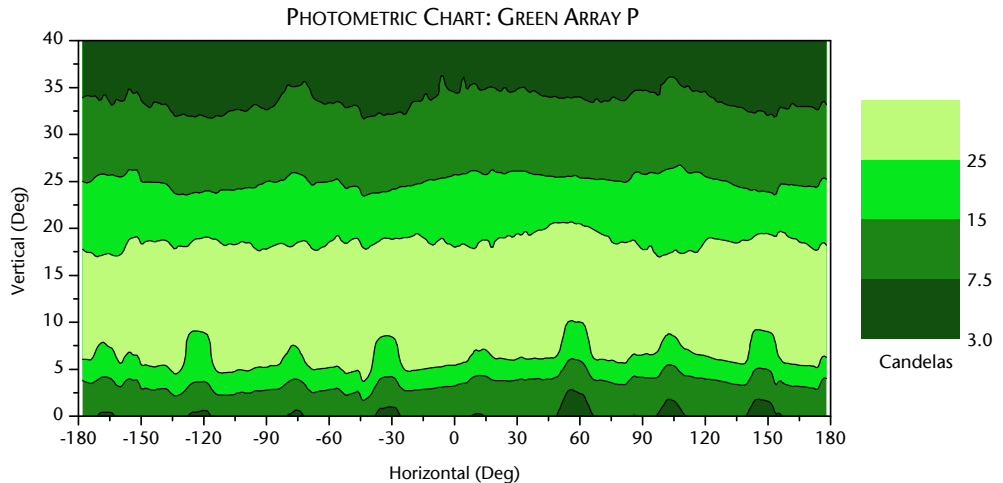
ICAO Annex 14
Volume II, Chapter 5:
Minimum 25 cd
at 10 & 20 deg V

LED Array H in Yellow:
Average Peak Beam
60 cd at 15-deg V

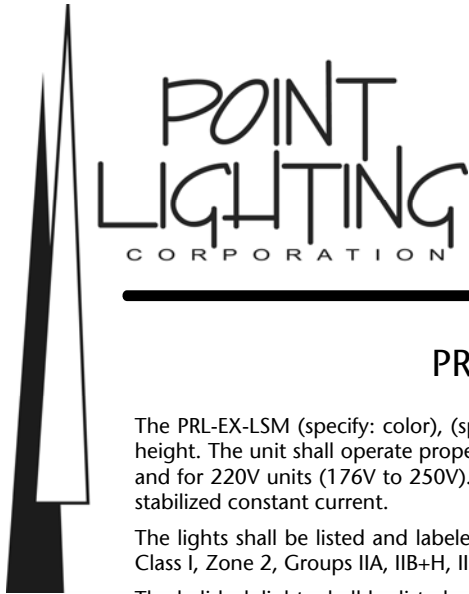


The lights are dimmable
by installing:
POINT LIGHTING CORP
PHC-61002
Heliport Controller

LED Array P in Green:
Average Peak Beam
30 cd at 12-deg V



"LED signals can be expected to provide an additional margin of conspicuity over incandescent light sources with the same luminous intensity."
--- Transport Canada 2003 Study TP14043E



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PRL-EX-LSM LED SPECIFICATIONS

The PRL-EX-LSM (specify: color), (specify: voltage) 50/60 Hz surface mounted LED light shall not exceed 150mm in height. The unit shall operate properly within an input voltage supply range of +/- 20% for 120V units (93V to 144V) and for 220V units (176V to 250V). Within the preceding ranges, the output to the LED board shall be a controlled, stabilized constant current.

The lights shall be listed and labeled for use in hazardous locations: Class I, Division 2, Groups A, B, C, D & T6 and Class I, Zone 2, Groups IIA, IIB+H, IIC with a temperature rating of T6 per UL844 & CSA C22.2 No. 137-M1981.

The helideck lights shall be listed and labeled *Suitable for Use in Wet Locations* to UL1598A Marine Vessels, UL1598 2nd Edition Luminaries; CSA C22.2 No. 250.0-04, 2nd Edition; UL50 11th Edition Standard for Enclosures for Electrical Equipment and CSA C22.2 No. 94-M91 Special Purpose Enclosures. Sealed to IP66 ingress protection.

The light shall be cast aluminum and assembled with all stainless steel hardware. The lens and lamp housing (optical assembly) shall be sealed mechanically without the use of chemical sealants. Entry to the light housing shall be by means of conduit or cable gland(s) (by others). The manufacturer shall include silicone-filled wire connectors for use by the installer for watertight connections.

The LED lighting circuits shall be remotely dimmable by means of a heliport controller designed and produced by the lighting manufacturer. Option -VB: For use with the PHC-61002 or PHC-61003 adjustable brightness heliport controller, this option is required. The PHC Heliport Lighting Controller shall incorporate an IEC approved surge suppressor and current limiting circuit breakers on each load output.

The photometric performance shall exceed 25 candelas over a range defined by ICAO Annex 14, Volume II, Figure 5-9. The LED light shall have a tested and verified power consumption not exceed (see chart next page).

The fixture shall be treated for marine conditions by cleaning per US MIL method III of TT-C-490, chromate priming per US MIL-C-5541, epoxy powder base coat and glossy polyester powdercoat finish coat in color RAL 6003 (FED-STD-595 color #14097) dark green. Oven cured per US MIL-PRF-24712A. The manufacturer shall certify compliance with the US Military Standard Salt Fog Test conducted per MIL-STD-810E, Method 509.3, Procedure I. All hardware shall be stainless steel.

The colored outer glass lens shall be smooth and rounded to reduce the adhesion of dirt, ice and snow. The glass color shall be matched to the LED wavelength to maximize light transmissivity.

The color emitting LEDs shall meet the chromaticity requirements of US MIL-C-25050. The high output LED's shall not exceed six (6) in number and shall be the latest technology providing uniform light output over the range three (3) to twenty (20) degrees vertical and in 360 degrees horizontal. The LED average life shall exceed 100,000 hours. The LEDs shall be soldered in a factory set position to insure consistent light output. Wire mounted raised LEDs that can be bent out of position shall be unacceptable and cause for rejection. The LED board shall be treated with a protective dielectric conformal coating for protection from moisture and corrosion.

The power supply board shall include short circuit and open circuit protection and the unit shall be protected from line surges by metal oxide varistors (MOVs). There shall be a clear design element for the dissipation of LED heat to insure the LEDs do not fail prematurely.

PRL shall be secured to the LSM mounting base by three (3) socket head stainless steel screws supplied by the manufacturer. A ground lug is included as standard.

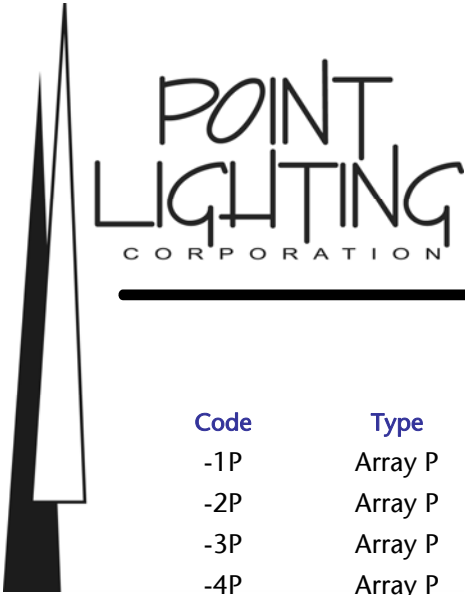
The LED helideck light shall be POINTSPEC Series PRL-97002-EX-LSM manufactured by Point Lighting Corporation.

Myth: All LED's have a useful life of 100,000 hours

The amount of useable light—about 70% of original light output—from some LED's has been shown to be very short depending on the color and manufacturer of the LED. That is why the quality of the LED array and power supply is very important and they should be of the latest technology as used by Point Lighting Corporation.

Myth: LED's do not create heat

LED's do create heat, but the heat generated is retained within the LED array and needs to be dissipated. Without a proper design, the LED will fail very early in life. The PRL LED array design incorporates an aluminum heat sink to dissipate the heat. Some competitors' lights—by design—cannot handle the heat.



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POWER CONSUMPTION

Code	Type	Voltage	Frequency	Watts*	mA	VA*
-1P	Array P	120 AC	50/60 Hz	5.7	58	7.0
-2P	Array P	220 AC	50/60 Hz	5.6	33	7.2
-3P	Array P	12 DC	---	5.6	470	---
-4P	Array P	24 DC	---	5.5	230	---
-1H	Array H	120 AC	50/60 Hz	7.7	80	9.6
-2H	Array H	220 AC	50/60 Hz	7.6	43	9.5
-3H	Array H	12 DC	---	8.4	700	---
-4H	Array H	24 DC	---	8.3	340	---
-1F	Array F	120 AC	50/60 Hz	9.7	91	10.8
-2F	Array F	220 AC	50/60 Hz	9.7	49	10.8
-3F	Array F	12 DC	---	13.0	960	13.0
-4F	Array F	24 DC	---	13.0	540	13.0

*Power consumption for AC units includes the effect of the unit's power factor which accounts for the difference between watts and volt-amperes. Measurements were made at the nominal AC voltages. The operating range for 120v units is 93 - 144v. The operating range for 220v units is 176 - 250v.

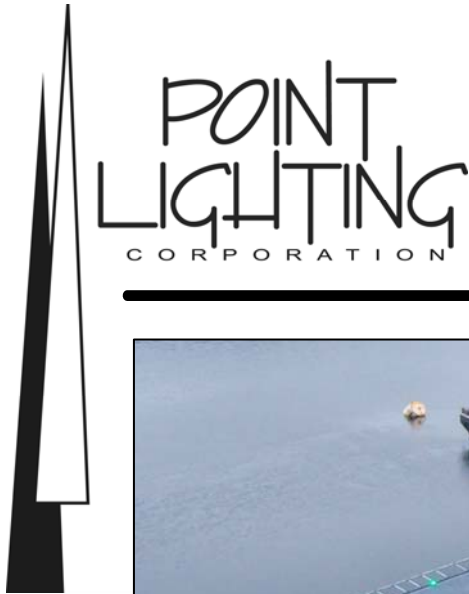
RECOMMENDED TOOLS

Point Lighting Corporation recommends return for factory repair and refurbishment of LED PRL lights. In the event of field service, the PL10839 preset torque wrench kit use with the instruction manual is recommended to assure proper resealing of the fixture.



PL10860
Tool, T-handle Wrench
For the three socket head screws fixing the PRL optical subassembly to the LSM mounting base.

PL10839
Tool, Preset Torque Wrench Kit
For the socket head screws fixing the PRL lens clamp ring and for fixing the power supply subassembly.
Consult the factory and the manual before attempting field repair.



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Night Vision Goggles (NVG)

Point Lighting Corporation offers several options for combining infrared and color LEDs to render our lights visible with and without NVG. Please contact us with your specific application requirements.

Instruction Sheet: IS97002-EX-LSM
 LED Life (hours): 100,000
 Housing Dia: 8.0 (203)
 Height: 5.75 (146)
 Bolt Circle (4): 9.75 (248)
 Bolt Hole diam: 0.406-inch
 10.3 mm
 Weight: 12.0 lbs 5.5 kg



Replacement Parts

PL10523-G	Lens, Green
PL10523-Y	Lens, Yellow
PL10630-F-8G	LED Array F, Green
PL10630-H-6G	LED Array H, Green
PL10630-P-4G	LED Array P, Green
PL10630-P-4Y	LED Array P, Yellow
PL10530	Gasket, Lens Upper
PL10531	Gasket, Lens Lower
PL10532	Gasket, Lamp Housing
PL10049-4	Gasket, Base
PL10524-118	Screw, Socket Head
PL10839	Tool, preset torque wrench kit
PL10860	Tool, T-handle wrench

POINT LIGHTING CORPORATION

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