

ParagonLED Radiation Hardened Lighting

Advanced Shielded Lighting for Radiological Environments

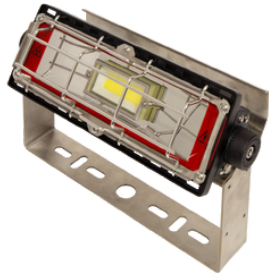


CERTIFIED
UL 1598

IP68



CB FC



- Radiation Hardened LED task light engineered for temperature extremes, wet environments, and long term reliability.
- Certified radiation hardened up to 1000kGy / 100Mrad(megarad)
- Features Radiation Hardened components and multiple shielding solutions to increase longevity in high radiation environments.
- LED module features several layers of radiation protection.
- Ambient temperature range of -80°C (-112°F) to 115°C (239°F).
- Proprietary Driver-on-board (driver-less) LED modules.
- Replaceable LED modules for low long term cost and long fixture life.
- 5 mm quartz glass: Completely resistant to radiation-induced darkening, ensuring longterm light transmission.
- Fully lead-free design: Avoids export, environmental, and waste management restrictions related to lead.
- Special stainless steel components: Low-cobalt or cobalt-free alloys reduce the risk of generating long-lived activation isotopes.
- Lower Decommissioning and Disposal Costs
- Long Lifespan × High Reliability, 55°C, L70 light output lifetime exceeds 15 years.
- >15kV surge protection.
- Available in single, double or triple configurations.
- High vibration resistance featuring Nord-Lock® washers.
- Optional chemical repellent PVDF coating for extra tough corrosion resistance.
- AWM style 4476 - 600V / 200°C rated power cord / stainless steel cable gland.
- Trade Agreement Act Compliant.
- Non-Safety-Related zones: Plug-and-play, no extra certification required.

Radiation Test	
GAMMA dose speed	6.0 kGy/h
Total GAMMA dose	1000kGy
fast-neutron fluence	~4.46 × 10 ¹⁴ n/cm ² , 1 MeV equivalent

Exposure to GAMMA radiation and fast-neutron fluence was tested in National Atomic Energy Research Institute (NARI).

Specification

Voltage	100VAC /120VAC /200VAC /208VAC /230VAC 250VDC /277VAC /347VAC /480VAC /600VAC
Frequency	50Hz/60Hz
Wattage	10W~140W
Color Temp	5000K
Housing	Die-cast aluminum
Color	Black
Coating	PVDF coating
Inrush Current	Zero inrush current (0 Amp)

Lens	Quartz Glass(5mm)
Cable Gland	Stainless steel
IP Protection	IP68
Surge Protection	>15kV
Power Factor	> 0.95
Ambient Temp.	-80°C (-112°F) to 115°C (239°F)
Weight	3.0KG(6.6lbs)
Lifetime	L70 15 years@55°C L50 30 years@55°C 1 years @115°C

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LUMENS

10W	20W	30W	35W	40W	60W
1,200 lm	2,400lm	3,600 lm	4,200lm	4,800 lm	7,200lm

70W	80W	105W	140W
8,400lm	9,600lm	12,600 lm	16,800lm

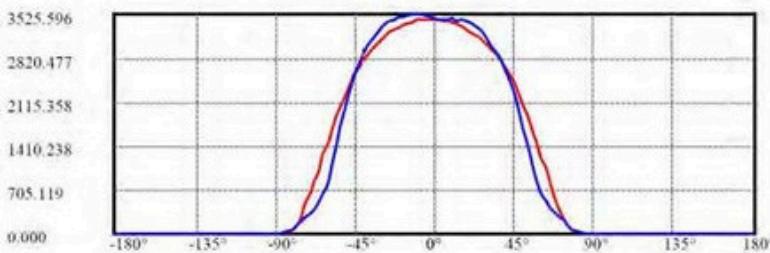
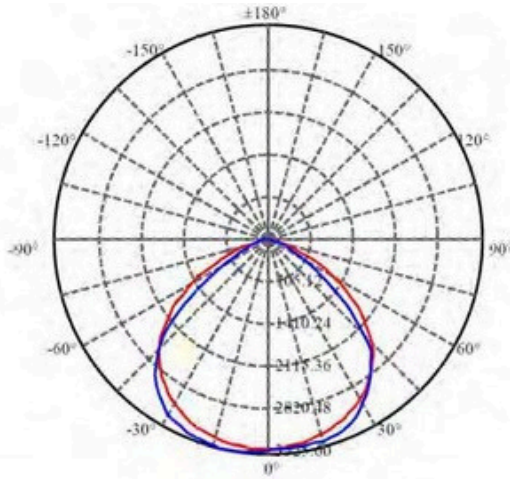
WARRANTY

Ambient Temperature	Warranty Length
65°C (149°F) Max Ambient Temp.	7 Year Limited Warranty
85°C (185°F) Max Ambient Temp.	3 Year Limited Warranty
100°C (212°F) Max Ambient Temp.	1 Year Limited Warranty

MIL-STD-810G (-80 °C) + MIL-STD-810H (+115 °C)

TTL Getter System (optional) — extends lifetime to 3 years @105 °C. It continuously absorbs residual oxygen, moisture, and gases released from internal materials under high temperature, preventing oxidation and degradation.

Photometrics



C0/C180: —
C90/C270: —

Ordering Information

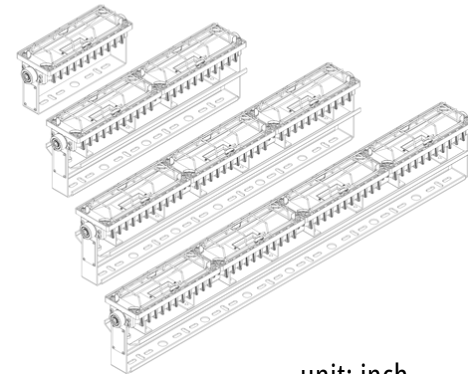
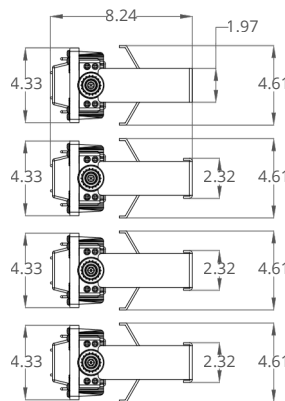
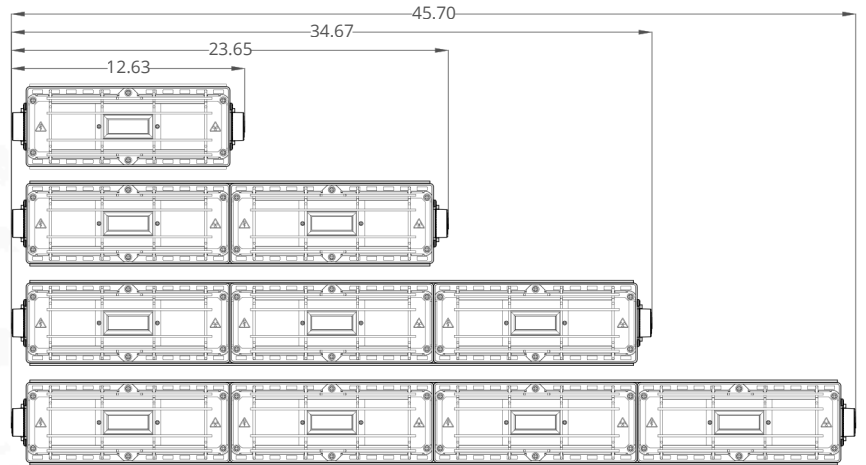
Example: PPD-RH-040-50-120V-2

Series	Wattage	Color Temperature	Voltage	Unit
TTL-RH	010 10W	50 5000K	100V 100VAC	1 one unit
	020 20W		120V 120VAC	2 two units
	030 30W		200V 200VAC	3 three units
	035 35W		208V 208VAC	4 four units
	040 40W		230V 230VAC	
	070 70W		277V 277VAC	
	060 60W		347V 347VAC	
	105 105W		480V 480VAC	
	80 80W		600V 600VAC	
	140 140W		250V 250VDC	

TTL-RH has successfully completed fast-neutron irradiation at NARI Taiwan's TR-30/15 facility, receiving a $\sim 4.46 \times 10^{14}$ n/cm² fast-neutron fluence (1 MeV equivalent) under a 1–14 MeV spectrum during a 5-hour exposure.

The lighting unit remained fully functional after testing, confirming TTL-RH as the world's only commercial lighting platform with 1000 kGy gamma hardness and true survivability under 1–14 MeV fast-neutron irradiation.

Dimensions



unit: inch

one	1.95Kg(4.30lbs)
Two	3.79Kg(8.36lbs)
Three	5.37Kg(11.84lbs)
Four	7.5Kg(16.5lbs)