

PPD-RH Series

Radiation Hardened

Industrial LED Lighting



5935 West 84th St. | Indianapolis, IN 46278 | 1-888-391-4822 | www.SolasRay.com

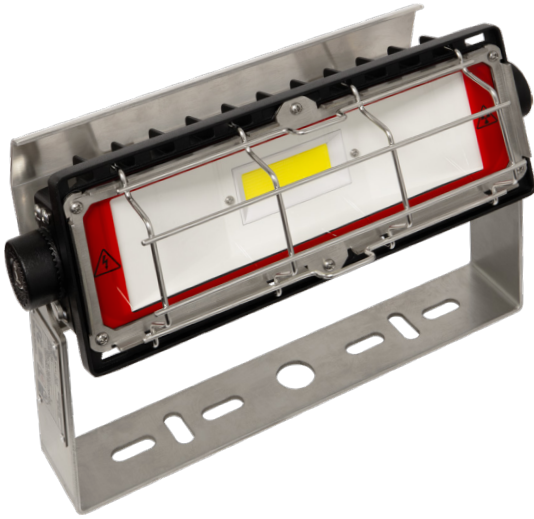
Cat. #	Type
Notes	

Nuclear READY
300kGy / 30Mrad Rated

CERTIFICATIONS / RATINGS



KEY FEATURES AND BENEFITS



115°C / 239°F
Max Ambient Temperature!



- Radiation hardened LED task light engineered for temperature extremes, wet environments, and long term reliability.
- Certified radiation resistance up to **300kGy / 30Mrad** (megarad)
- Features radiation-resistant 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 (-112F) to 115°C (239°F).
- Great solution for punishing environments.
- Proprietary Driver-on-board (driver-less) LED modules.
- Replaceable LED modules for low long term cost and long fixture life.
- >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.
- NOTE: Not rated for safety-related nuclear zones. See p3 for more information.

SPECIFICATIONS

Voltage	120VAC / 277VAC / 347VAC / 480VAC
Wattage	20W / 35W / 40W / 60W / 70W / 105W
Color Temp	5000Kelvin
Housing	Die-cast aluminum
Color	Black
Lens	5mm Quartz Glass
Ambient Temperature	-80°C (-112F) to 115°C (239°F)
Lifetime	~100,000 hrs L70 @ 65°C ~45,000 hrs L70 @ 105°C
CRI	>70

Beam Angle 110°

Protection IP68

LUMENS

PPD-20X1	PPD-35X1	PPD-20X2	PPD-20X3	PPD-35X2	PPD 35X3
2,500	4,375	5,000	7,500	8,750	13,125

WARRANTY

Ambient Temperature	Warranty Length
65° (149°F) Max Ambient Temp.	5 Year Limited Warranty
85° (185°F) Max Ambient Temp.	3 Year Limited Warranty
115°C (239°F) Max Ambient Temp.	2 Year Limited Warranty

PRODUCT ORDERING SELECTION

PPD-RH	50	AB
Series	Watts / Modules	Kelvin
<input checked="" type="checkbox"/> PPD-RH	<input type="checkbox"/> 20X1 - 20W single <input type="checkbox"/> 20X2 - 40W double <input type="checkbox"/> 20X3 - 60W triple <input type="checkbox"/> 35X1 - 35W single <input type="checkbox"/> 35X2 - 70W double <input type="checkbox"/> 35X3 - 105W triple	<input checked="" type="checkbox"/> 50 - 5000K
	Voltage	Mounting Options
	<input type="checkbox"/> 120 - 120VAC <input type="checkbox"/> 277 - 277VAC <input type="checkbox"/> 347 - 347VAC <input type="checkbox"/> 480 - 480VAC	<input checked="" type="checkbox"/> AB - 180° Adjustable Bracket (304 Stainless Steel)
		Other Options
		<input type="checkbox"/> PVDF - Chemical repellent coating <input type="checkbox"/> WG - Protective Wire guard

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EXTENSIVE RADIATION HARDENING

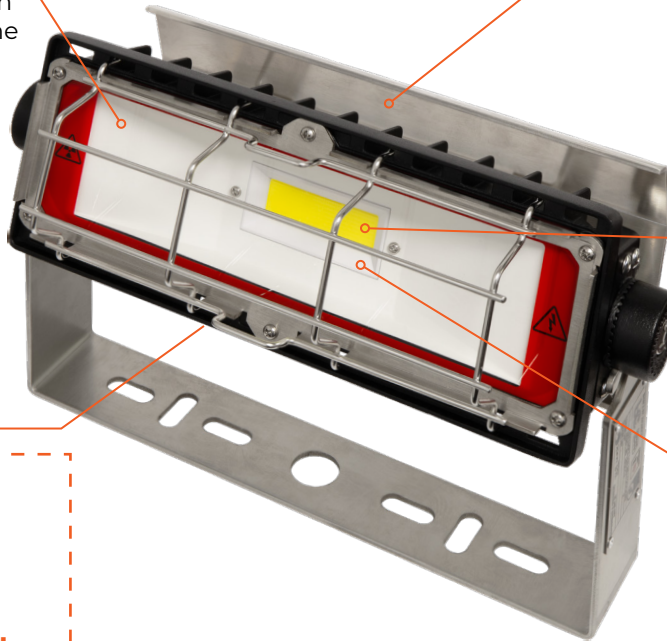
Engineered for extreme radiation environments up to 300kGy - the ideal solution for nuclear facilities, particle accelerators, and radiation-intensive medical centers. The PPD-RH series includes multiple anti-radiation measures to protect against high-energy, low-energy, alpha, beta, gamma, X-rays and neutron radiation.

Quartz Glass

Provides effective neutron shielding to the face of the fixture.

3mm Stainless Steel Shield

Provides complete shielding against alpha radiation and partial shielding against low-energy beta radiation.



Driver-less LED Module

Silicone Encapsulation

Radiation resistant material effective against gamma rays, neutrons and charged particles.

Internal Components

5mm Aluminum Plate

Effectively shields alpha radiation and most beta radiation.

Graphite Neutron Shield

Acts as a neutron moderator to slow fast neutrons.

Boron Nitride Thermal Pad

Adds additional neutron shielding for the LED module and dissipates heat.

PBT + TiO2 Electronics Cover

(Polybutylene Terephthalate with Titanium Dioxide) Adds 20%-30% radiation absorption properties to the electronic components plastic cover. Effective against medium and low-energy radiation.

GAMMA Radiation Test

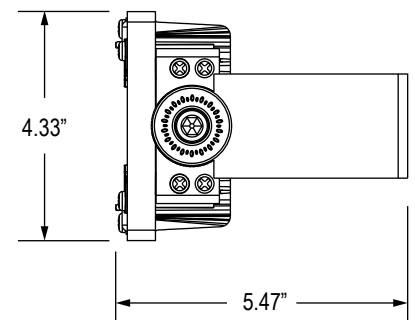
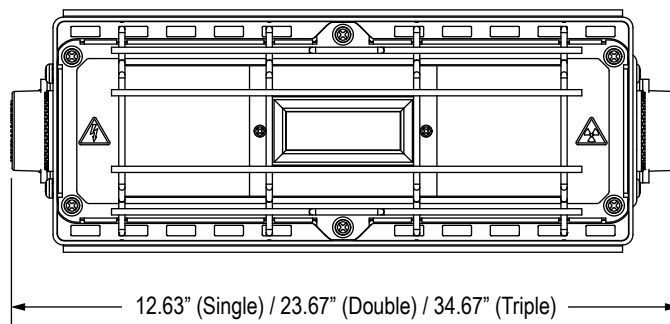
GAMMA dose speed	3.3 kGy/h
Total GAMMA dose	300 kGy

GAMMA radiation exposure was tested in ENEA - National Atomic Energy Research Institute (NARI).

WEIGHTS AND DIMENSIONS

WEIGHTS

No. Of Modules	Weight
Single Units	6.6 lb
Double Units	12.9 lb
Triple Units	18.7 lb

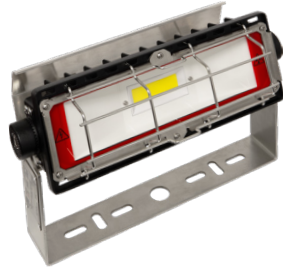


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MOUNTING OPTIONS

#AB - 180° Adjustable Bracket



Adjustable bracket may be used for ceiling or wall mounting.

Made from 304 Stainless Steel

180° angle adjustment.

APPLICATIONS

Nuclear Power Plants

- (Non-Safety-Related-Zones)
- SMR - Small Modular Reactors
- Peripheries & maintenance corridors
- Waste processing & auxiliary buildings
- Dry cask storage facilities
- Fusion reactors
- Containment buildings

Nuclear Fuel Reprocessing & Storage

- Fuel pool lighting
- Gamma/Neutron shielded areas
- WMB (waste management buildings)
- SFDS (spent fuel dry storage areas)
- LILRW (low and intermediate level radioactive waste buildings)

Medical Radiation Facilities

- Gamma knife & particle therapy rooms
- Radiation-shielded labs

Other

- Industrial radiography detection areas

Defense & Military Installations

- Nuclear warhead assembly facilities
- Underground command bunkers
- Nuclear testing facilities

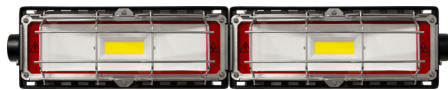
Research Institutes & Particle Accelerators

- Collider tunnels
- Synchrotron radiation stations

CONFIGURATIONS



Single



Double



Triple

SAFETY-RELATED NUCLEAR ZONES

The PPD-RH Series of nuclear ready LED lights are not rated for safety-related nuclear zones. These special zones require additional testing and certification beyond just their ability to survive in high radiation environments and may require hazardous location rated fixtures. In a nuclear power plant, safety-related zones are areas containing systems, structures, and components whose proper functioning is crucial for preventing or mitigating the release of radioactive materials that could harm the public or the environment. These zones are defined by their critical role in maintaining reactor safety, ensuring safe shutdown, and preventing uncontrolled releases during design-basis events.