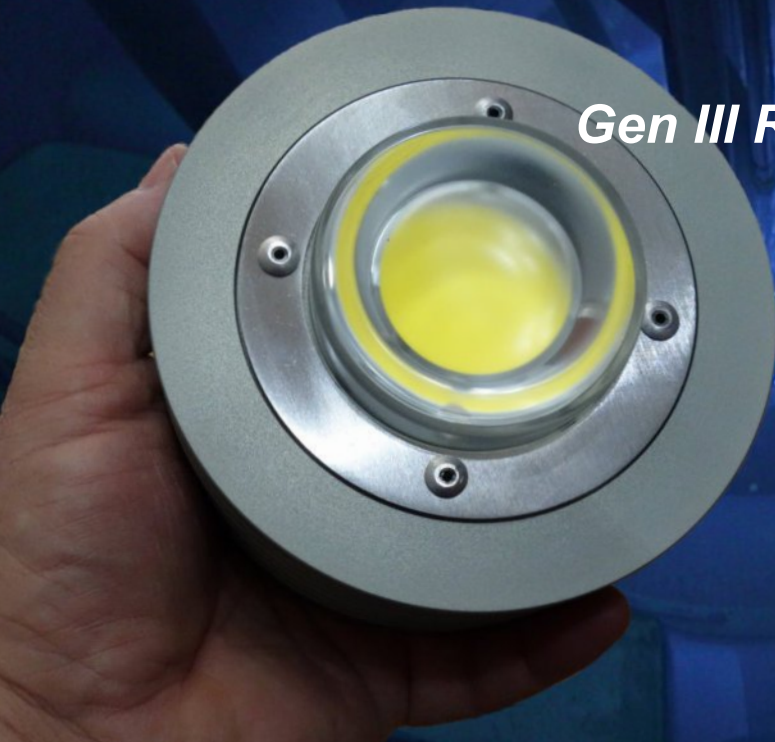


HiRad-50PLS[®]

Gen III Rad-Hard Pool LED Luminaire



Product flyer, Version 1.1, Rev A, June 2018

Generation III Rad-Hard underwater LED Luminaire.

HiRad-50PLS Gen III[®] is a member of extremely high radiation resistant, underwater series of LED products, proudly created and made by DITO Lighting, Slovenia, EU.

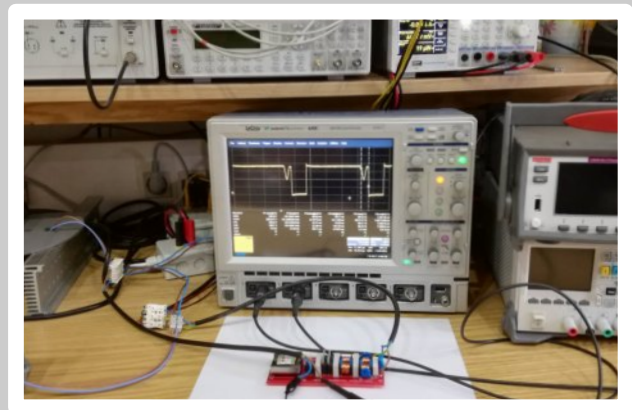
HiRad-50PLS Gen III[®] is a high performance, modular, underwater LED Luminaire designed to be used in the nuclear reactor pool, spent fuel storage pool, cobalt source storage pool etc. The Luminaire can be submerged continuously. Available with the stainless steel holder, or as a mobile working pendant Luminaire.

HiRad-50PLS Gen III[®] is tested for TID of **500 kGy** gamma, combined with **5×10^{14} n/cm² 1MeV (Si)** equivalent neutron fluence.

The housing of the Luminaire is made out of aluminium.

Any number of 50 Watt units can be used inside the pool, achieving required luminous flux and illumination pattern. The Luminaire holder is typically custom made according to customer illumination specs. LED is protected with the high performance, shatter proof, high temperature, browning resistant silicone optics.

LED driver is mounted inside the Luminaire. There are no external boxes required. The Luminaire is



plugged directly into the mains outlet.

Proprietary electronics is completely developed in-house by DITO Lighting. It is mounted inside the Luminaire and is fully potted with high performance silicone based compound, therefore protected against the water.

LED control gear is based on full discrete design without integrated circuits, electrolytic capacitors, opto couplers. Predicted lifetime is more than 20 years. Mission profile 24/7 at 50 °C water temperature.

For latest, up to date information please visit:

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HiRad-50PLS[®]

Gen III Rad-Hard Pool LED Luminaire

IJS nuclear research facility in Ljubljana, using DITO Lighting HiRad-50PLS LED Luminaires.

Specifications:

Nominal power:	50 W
Nominal voltage:	230 V AC or DC
Power factor:	> 0.95
Luminous flux:	7000 lm
CCT:	6000 K
CRI:	> 70
Overall luminaire efficacy:	> 140 lm/W
Electronics efficiency:	> 90.0 %
Housing:	Aluminium
Optics protection:	Silicone
Ingress protection:	IP 68, continuous
Submersion depth:	< 15 m
Water temperature:	4 °C to +50 °C
Weight without holder:	2 kg
Dimensions:	dia 125 × 85 mm

Warranty: 5 years

In compliance with (partial list):

MIL-STD-883, Method 1017 neutrons
MIL-STD-883, Method 1019 gamma
ESA ESCC No. 22900 gamma
EN 55015, EN 61547
EN 60598-1, EN 60598-2-1
EN 61347-1, EN 61347-2-13

Radiation tolerance (steady state):

Gamma:	5×10^5 Gy
Neutrons 1MeV (Si):	5×10^{14} n/cm ²

Reliability (environment: GB @ 50 °C):

Calculation method:	MIL-217F N2
MTBF:	3.758.857 h
Predicted lifetime:	> 22 years
Confidence level:	95 %

Survivability - operating:

Gamma:	1×10^6 Gy
Neutrons 1MeV (Si):	1×10^{15} n/cm ²

Notes:

All irradiation tests performed in the core of the TRIGA Mk II nuclear research reactor with the representative NPP spectrum.

The product is also available with US input voltage 120 V AC 60 Hz or 120 V DC.