

HiRad-50LB[®]

Gen II Rad-Hard LED Luminaire

Extremely Reliable
Extremely Heavy Duty
Extremely Efficient

Product flyer, Version 2.0, Rev A, May 2017

Generation II Rad-Hard LED Luminaire. A member of *Extreme³ HD Series[®]* LED products.

HiRad-15LB[®] Gen II is a member of *Extreme³ HD Series[®]* LED products, designed and made from ground up by DITO Lighting, Slovenia, EU. **Gen II** is improved version of our first generation, with better radiation tolerance.

HiRad-50LB[®] is scaled-down version of our flagship product **HiRad-150HB[®]**, sharing the same, proven technology with his older brother. It's a nuclear, military, medical and space grade low-bay LED Luminaire, designed to be used in moderate to high radiation areas.

HiRad-50LB[®] was tested for total dose of **500 kGy** gamma irradiation combined with **5×10^{14} n/cm²** **1MeV (Si)** equivalent neutron fluence.

HiRad-50LB[®] is small, light, but powerful 50 W LED Luminaire, designed for simple one-to-one replacement of the existing tungsten or fluorescent based Luminaires. Recommended mounting height is between 3 and 6 m.

LED control gear is developed and produced in-house. Electronics is based on full discrete design without integrated circuits, electrolytic capacitors and optocouplers. Predicted lifetime is more than 20 years. Mission profile 24/7 at 50 °C ambient temperature.



HiRad-50LB[®] is equipped with special seismic damper for improved seismic performance. The product was tested and remained operational under extreme dynamic loading with base excitation in excess of **10 g**.

LoRad-50LB[®] is affordable, but lower grade Luminaire designed for less demanding nuclear applications. Gamma tolerance of **LoRad-50LB[®]** is **20 kGy** and a neutron tolerance is **1×10^{13} n/cm²**.

For latest, up to date information please visit:

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HiRad-50LB[®]

Gen II Rad-Hard LED Luminaire



Specifications:

Nominal power:	50 W
Nominal voltage:	230 V AC or DC
Power factor:	> 0.95
Luminous flux:	> 5200 lm
CCT:	5000 K
CRI:	> 70
Overall Luminaire efficacy:	> 105 lm/W
Electronics efficiency:	> 90.0 %
Housing:	Copper
Optics protection:	Polymer Diffuser
Ingress protection:	IP 65
Ambient temperature:	-20 °C to +50 °C
Weight (with holder):	3.5 kg
Dimensions [mm]:	280 × 280 × 200

Warranty: 5 years

In compliance with (partial list):

MIL-STD-833, Method 1017 neutrons
MIL-STD-833, Method 1019 gamma
ESA ESCC No. 2290 gamma
IEEE 344 -2013
IEC 60980
EN 55015, EN 61547
IEC/EN 60598-1, IEC/EN 60598-2-1
IEC/EN 61347-1, IEC/EN 61347-2-13

Radiation tolerance (HiRad-50LB):

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

Radiation tolerance (LoRad-50LB):

Gamma:	20 kGy
Neutrons 1MeV (Si):	1×10^{13} n/cm ²

Seismic capacity:

Frequency range:	1 to 35 Hz, random
Base excitation:	> 10 g @ any axis

Reliability (environment: GB @ 50 °C):

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

Notes:

Irradiation tests performed inside the core of the TRIGA MkII 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.