

# HiRad-50LBS Gen III®

50 Watt Rad-Hard LED Luminaire

DBA and LOCA scenario compatible

Product flyer, Version 1.3, Rev A, May 2018

## Generation III Rad-Hard LED Luminaire.

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

**HiRad-50LBS Gen III®** is a nuclear, military, medical and space grade low-bay LED Luminaire, designed to be used in high radiation, high temperature areas. The Luminaire is available in Stainless Steel or Aluminium housing. The product is compatible with typical DBA and LOCA scenario. Main application for the **HiRad-50LBS Gen III®** is lighting inside the RB of the NPP.

**HiRad-50LBS Gen III®** is tested for TID of 500 kGy gamma, combined with  $5 \times 10^{14}$  n/cm<sup>2</sup> 1MeV (Si) equivalent neutron fluence.

**Generation III** can operate at high ambient temperatures (Stainless Steel / Aluminium housing):

- 50/80 °C - normal operation
- 80/100 °C - operational for 350 hours
- 200 °C - both versions, non operational for 24 hours

**HiRad-50LBS Gen III®** is small, light, extremely efficient 50 W LED Luminaire, designed for simple one-to-one replacement of the existing tungsten or fluorescent based fixtures. LEDs are protected with soft, high temperature, 100 % shatter proof,



browning proof, silicone optics.

Proprietary 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.

The product is fully vented. Pressure equalization means no sensitivity to sudden ambient pressure changes. Internal electronics is soft mounted, protected against seismic shocks, vibrations, water, hot steam and most chemicals.

For latest, up to date information please visit:

[www.dito-lighting.com](http://www.dito-lighting.com)  
[info@dito-lighting.com](mailto:info@dito-lighting.com)



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# HiRad-50LBS Gen III<sup>®</sup>

## 50 Watt Rad-Hard LED Luminaire



### Specifications:

Nominal power:	50 W
Nominal voltage:	230 V AC or DC
Power factor:	> 0.95
Luminous flux:	> 8000 lm
CCT:	5000 K
CRI:	> 80
Overall Luminaire efficacy:	> 160 lm/W
Electronics efficiency:	> 90.0 %
Housing:	Stainless Steel / Al
Optics protection:	Silicone
Ingress protection:	IP 65
Impact protection:	IK 08
Ambient temperature, Al:	-20 °C to +80 °C
Ambient temperature, SS:	-20 °C to +50 °C
Weight (SS/Al):	1.8 / 0.8 kg
Dimensions:	dia 240 × 125 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  
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:

Gamma:	$5 \times 10^5$ Gy
Neutrons 1MeV (Si):	$5 \times 10^{14}$ n/cm <sup>2</sup>

### LOCA compatibility:

Ambient operational:	100 °C / 350 h
Ambient non operational:	200 °C / 24 h

### 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.