

# HiRad-150HB<sup>®</sup>

## Gen II Rad-Hard LED Luminaire

**Extremely Reliable**  
**Extremely Heavy Duty**  
**Extremely Efficient**

Product flyer, Version 2.1, Rev A, July 2017

## Generation II Rad-Hard LED Luminaire. A member of *Extreme<sup>3</sup> HD Series<sup>®</sup>* LED products.

**HiRad-150HB<sup>®</sup> Gen II** is a member of *Extreme<sup>3</sup> HD Series<sup>®</sup>* 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-150HB<sup>®</sup>** is a nuclear, military, medical and space grade high-bay LED Luminaire, designed to be used in high radiation areas.

**HiRad-150HB<sup>®</sup>** operates not only under constant steady state irradiation, but can survive also rare event of gamma and neutron burst, caused by unexpected nuclear reactor critical power excursion. It is designed with post-Fukushima requirements in mind and tested for design basis accidents and beyond.

**HiRad-150HB<sup>®</sup>** was tested for total dose of **500 kGy gamma** combined with  **$5 \times 10^{14}$  n/cm<sup>2</sup> 1MeV (Si)** equivalent neutron fluence.

**HiRad-150HB<sup>®</sup>** is a powerful LED Luminaire, yet very light, compact and easy to install, designed for simple one-to-one replacement of the existing 1 kW tungsten or 500 W HID lamps.

**HiRad-150HB<sup>®</sup>** is equipped with special seismic damper for improved seismic performance.



**HiRad-150HB<sup>®</sup>** was tested and remained operational under extreme dynamic loading with base excitation in excess of 20 g.

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

For latest, up to date information please visit:

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# HiRad-150HB<sup>®</sup>

## Gen II Rad-Hard LED Luminaire



### Specifications:

Nominal power:	150 W
Nominal voltage:	230 V AC or DC
Power factor:	> 0.94
Luminous flux:	> 17000 lm
CCT:	5000 K
CRI:	> 70
Overall Luminaire efficacy:	> 112 lm/W
Electronics efficiency:	> 90.0 %
Housing:	Copper
Optics protection:	Polymer
Ingress protection:	IP 65
Impact protection:	IK08
Ambient temperature:	-20 °C to +50 °C
Weight (with holder):	9.5 kg
Dimensions [mm]:	410 × 330 × 249

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 (steady state):

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

### Seismic capacity:

Frequency range:	1 to 40 Hz, random
Base excitation:	> 20 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 %

### Survivability - operational:

Over temperature:	100 °C / 350 h
Over pressure:	6 bar
Gamma:	$1 \times 10^6$ Gy
Neutrons 1MeV (Si):	$1 \times 10^{15}$ n/cm <sup>2</sup>

### Notes:

Irradiation tests performed in 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.