HiRad-100HBS Gen III®

100 Watt Rad-Hard LED Luminaire

DBA and LOCA scenario compatible

Product flyer, Version 1.0, Rev A, May 2018

Generation III Rad-Hard LED Luminaire.

HiRad-100HBS 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.

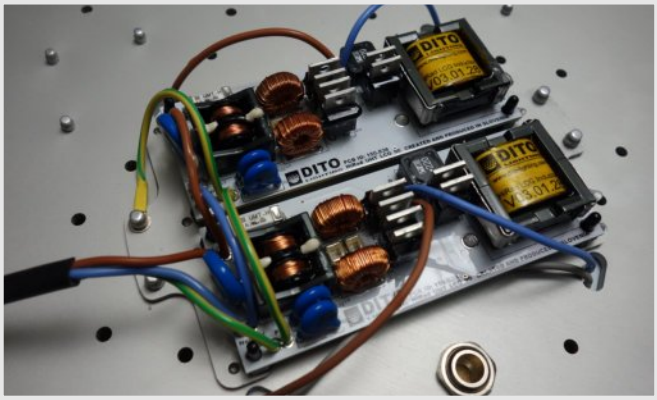
HiRad-100HBS Gen III® is a nuclear, military, medical and space grade High-Bay LED Luminaire, designed to be used in high radiation, high temperature areas. The Luminaire is available in Stainless Steel or Aluminium housing. The product is compatible with typical DBA and LOCA scenario. Typical application for the **HiRad-100HBS Gen III®** is High-Bay lighting inside the RB of the NPP.

HiRad-100HBS Gen III® is tested for TID of **500 kGy** gamma, combined with **5×10^{14} n/cm^2 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-100HBS Gen III® is small, light, extremely efficient 100 W LED Luminaire, designed for simple one-to-one replacement of the existing mature lighting technologies. 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 opto couplers. 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:

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HiRad-100HBS Gen III®

100 Watt Rad-Hard LED Luminaire

Specifications:

Nominal power:	100 W
Nominal voltage:	230 V AC or DC
Power factor:	> 0.95
Luminous flux:	> 16.000 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):	2.5 / 1.5 kg
Dimensions:	dia 320 × 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:	5×10^5 Gy
Neutrons 1MeV (Si):	5×10^{14} n/cm^2

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.

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