G&G Industrial Lighting
10 Hermes Rd
Malta, NY 12020
800.285.6780

G&G INDUSTRIAL LIGHTING

RRX
RADIATION RESISTANT LINEAR

Trial Installation Data

August 2025

G&G's RRX Radiation Resistant LED Linear luminaire is designed to withstand >500 kGy beta TID, making the RRX fixture a perfect solution for particle accelerator facilities in which there is not currently an alternate LED product capable of contending in the US. It's the first American-made radiation resistant LED lighting solution on the market. Engineered only with materials with a high threshold displacement energy, the RRX does not contain any traditional silicon semiconductor devices that are easily damaged by radiation. Radiation-resistant technologies leveraging Gallium Nitride (GaN) avoid the use of traditional silicon semiconductor devices like MOSFETs, which are vulnerable to radiation damage. Instead, RRX utilizes advanced materials with high threshold displacement energy, such as GaN and Silicon Carbide (SiC), ensuring superior durability and performance in high-radiation environments.

Since its initial inception, G&G has partnered with several customers who have installed RRX in their facilities to trial in areas where radiation exposure has been notoriously detrimental to alternative light sources. Details of these trials and results are as follows:

- **NextBeam** - Electron Beam Sterilization
  - Radiation Level: 0.350 Avg kGy/hr
  - Estimated Hours: 4,320
  - Total Exposure Beta TID: 1,511 kGy
  - Fixture Condition - Functional, no signs of degradation

- **SLAC** - Particle Accelerator
  - Installed in various locations throughout the tunnel
  - Dose Rate: Up to 12 kGy/yr
  - Total Dose: Not Measured
  - Results: Fully functional with no degradation after almost 2 full years.