

ISOCOM Provide LED Lighting for Radiation Harsh Environments in Accelerator Tunnels & Nuclear Power Stations



ISOCOM has successfully secured a contract with CERN to assist in the development of an innovative and cost-effective LED lighting solution for accelerator tunnels with high radioactive conditions.

The LED lighting is required to withstand high levels of radiation and replace the traditional fluorescent lamps with magnetic ballast.

Testing on the lighting showed, at a typical drive of 250mA, no degradation was present at 1 MeV new fluence in Si of 2.3×10^{19} n/cm and an absorbed dose of 11 KGy(Si).

These levels are equivalent to over 5 years of radiation exposure in active radiation areas of particle accelerator tunnels.

At input voltages of 110V up to 240V and a current of 250mA, the LEDs are generating a light output of 8,500 lumens per unit which can rise up to 10,000 lumens per unit at a current of 350mA. The lights can be customised to meet customers' lighting requirements.

The LED lighting is manufactured and tested at ISOCOM's advanced clean room facility, in Peterlee, County Durham, United Kingdom. ISOCOM's manufacturing facility produces hermetically sealed, radiation hard components certified to AS9100D and ISO9001 standards.

ISOCOM produced the first 1,000 units of radiation resistant LED lighting to be used in CERN's tunnels. The AC / DC power supply design with current control has proved successful and CERN have confirmed that these LEDs meet their radiation requirements.

ISOCOM Limited have provided niche hermetically sealed, high-reliability optoelectronic and microelectronic components to businesses in the defence, space and aerospace sectors worldwide for over 35 years.

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