C86119EH

1060nm Pulsed Laser

Key Features

- 1064 nm operation
- Temperature Tunable
- 1 W peak output power from window
- Operation to 200 ns pulse duration and 5 kHz repetition rate

Applications

- Atmospheric LIDAR
- Nd:YAG laser simulation

The Excelitas C86119EH is a broad area high power pulsed laser operating at 1064nm for simulation of Nd:YAG emission.

The device employs MOCVD grown strained InGaAs/AlGaAs layers offering high efficiency, low threshold and continuous wavelength tuning at approximately 0.3 nm/^{o}C to ensure precise control at 1064 nm.

The C86119EH is a 10/32 threaded coaxial stud package which comes with a hermetically sealed window cap or optionally, on request, output coupled to 100/140 fiber or with a removable temporary window for ready access to the laser facet.

Table 1 – Mechanical and Optical Characteristics

Parameter	Typical	Unit
Beam Spread to 50% Peak Intensity Points In Plane Parallel to that of the Junction In Plane Normal to that of the Junction	 4.5 38	Degrees
Source Size	2 x 100 (0.08 x 3.94)	µm mils

Table 2 – Electro-Optical Characteristics

At 25°C. Typical characteristics measured at room ambient, i_F = 3A, 100ns pulse width and 10kHz repetition rate.

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Minimum Total Peak Radiant Flux at i_F max d_u = 0.10%, t_w = 100ns		1000			mW
Peak Forward Current	i_{FM}			4	A
Forward Voltage Drop at i_F max t_w = 100ns, prr = 10kHz	V_F		2.5	3	V
Threshold Current	i_{TH}		0.25		A
Rise Time of Emitted Pulse (10% to 90%)	t_r		< 1		ns
Wavelength of Peak Radiant Intensity	λ_m	1059	1064	1069	nm
Spectral Bandwidth at 50% intensity Points	$\Delta\lambda$		5	6	nm
Storage Temperature	T_{STG}	-55		+125	°C
Operating Temperature	T_O	-55		+125	°C

Table 3 – Maximum Ratings, Absolute Maximum Values

Parameter	Symbol	Maximum	Unit
Peak Forward Current	i_{FM}	4	A
Peak Reverse Voltage	V_{RM}	2	V
Pulse Duration	t_W	200	ns
Duty Factor	d_u	0.1	%

Figure 1 – Peak Wavelength vs Temperature

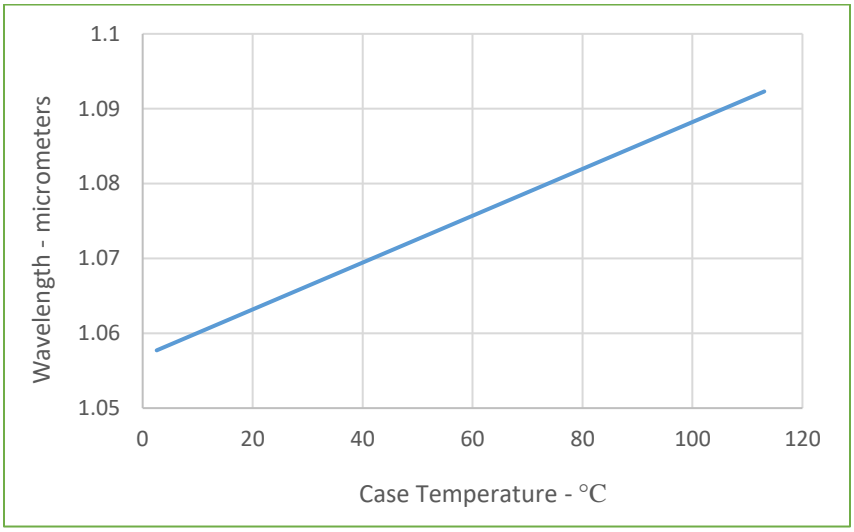


Figure 2 – Peak Monitor Diode Current vs Peak Radiant Output Power

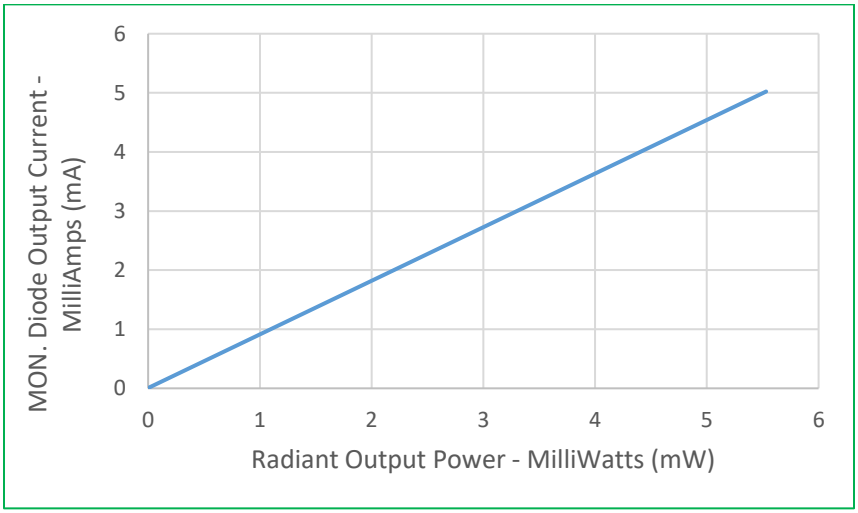


Figure 3 – Radiant Intensity vs Temperature

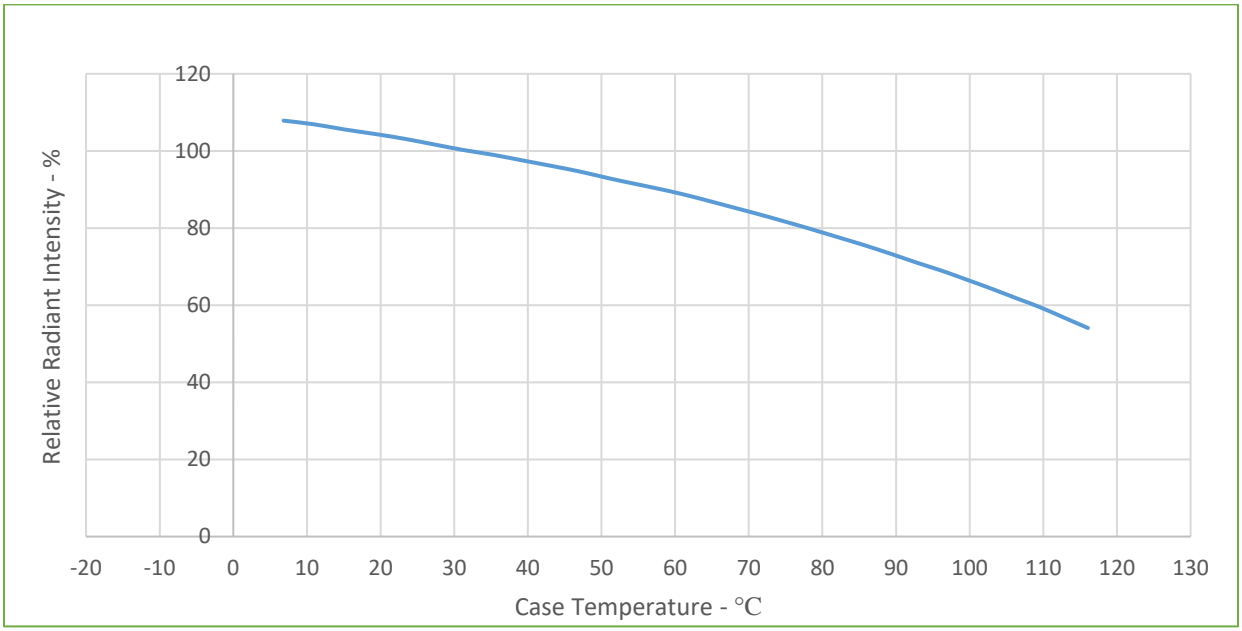


Figure 4 – Radiant Intensity vs Wavelength

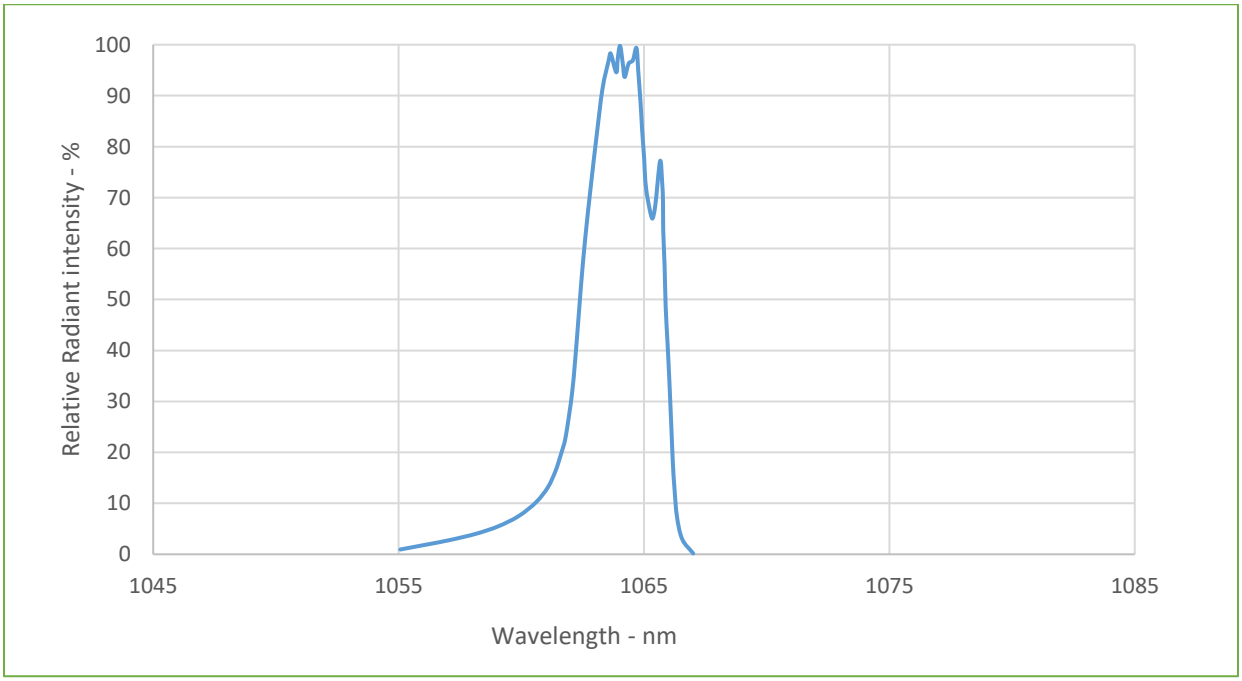


Figure 5 – Forward Voltage vs Drive Current

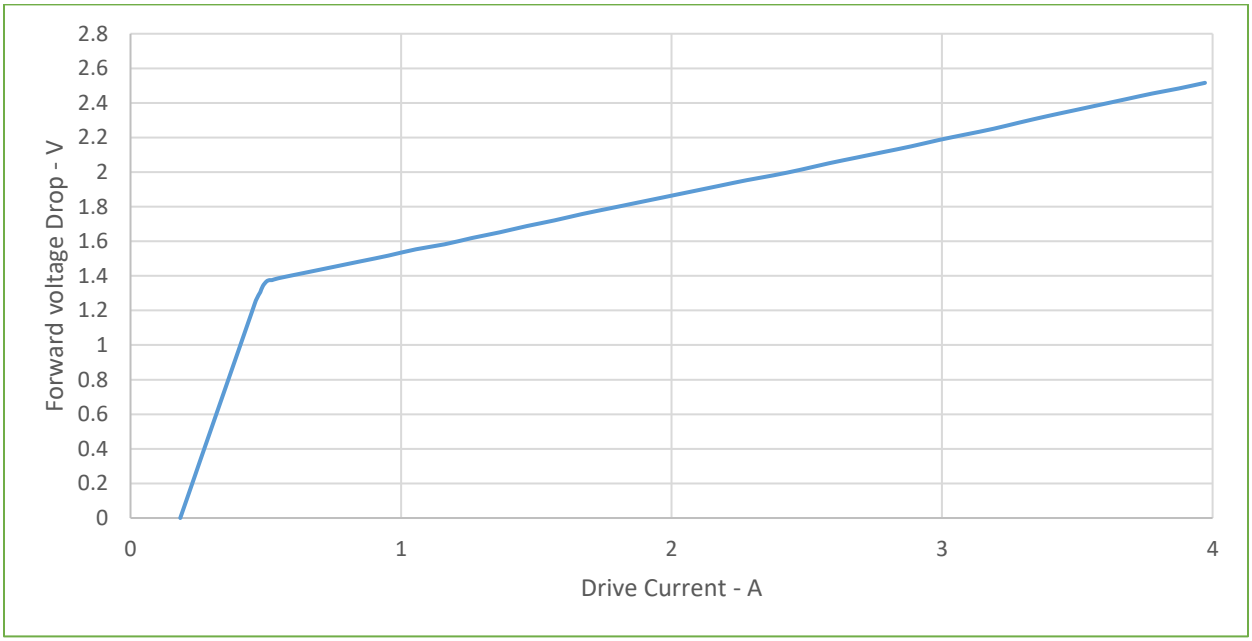


Figure 6 – Peak Power vs Peak Current

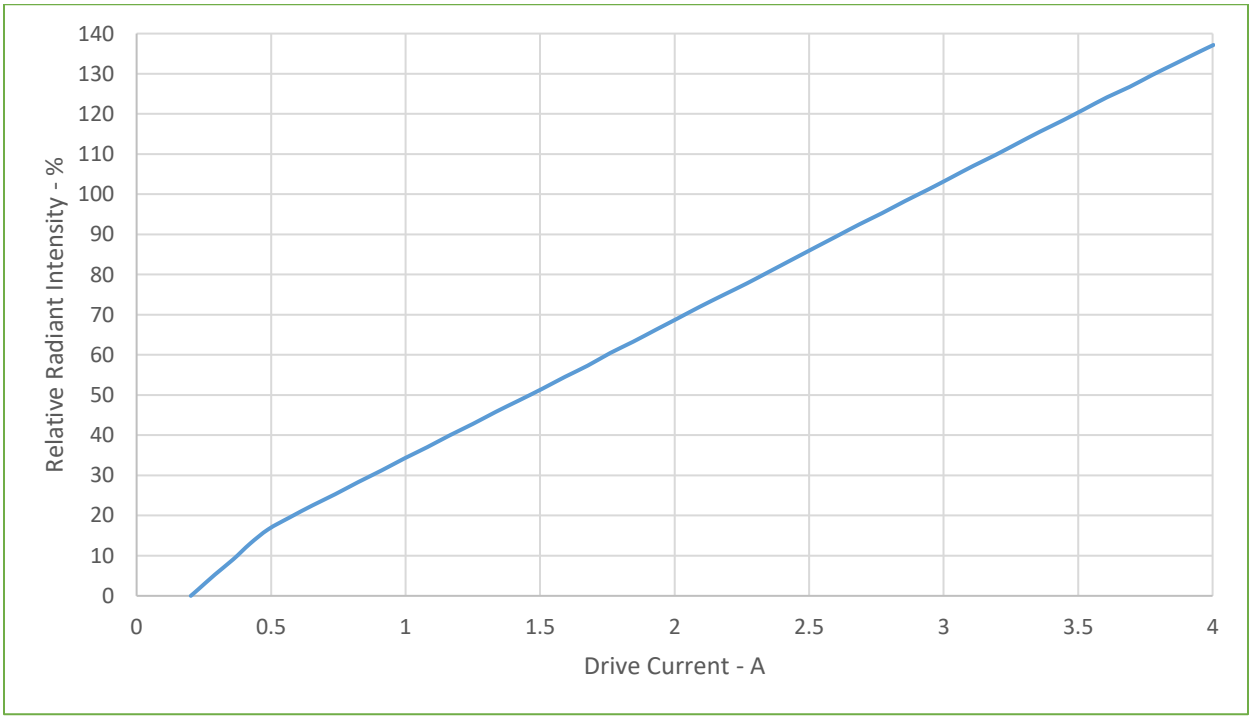


Figure 7 – Far Field Emission Pattern Parallel to the Plane of the Junction

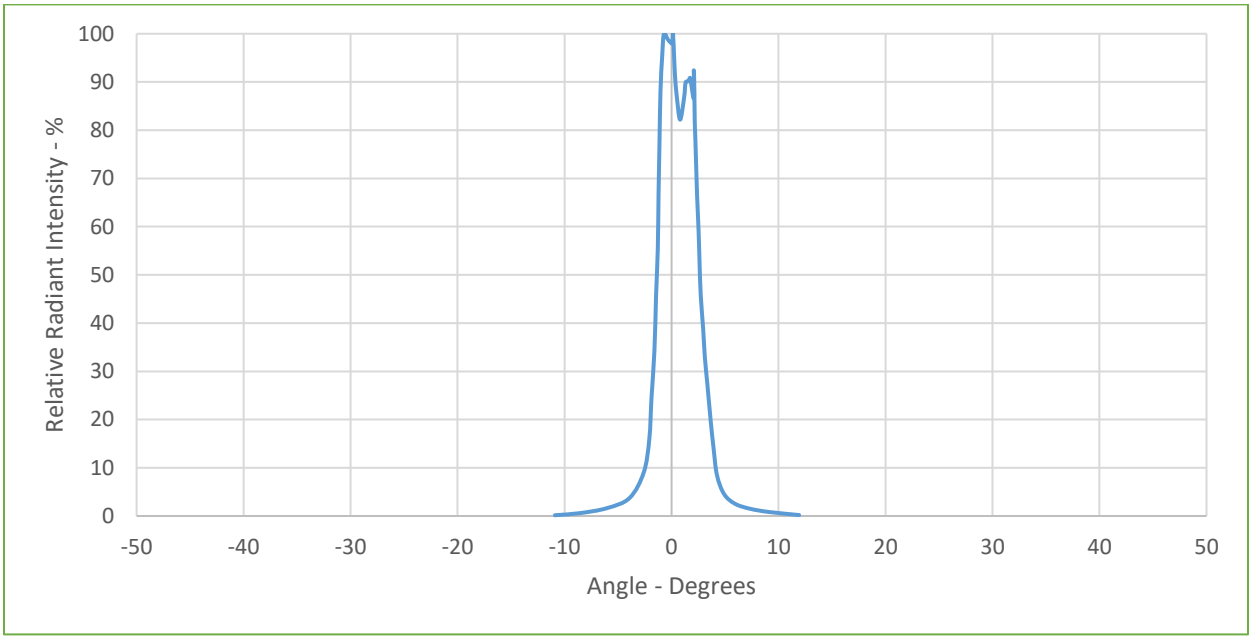


Figure 8 – Far Field Emission Pattern Perpendicular to the Plane of the Junction

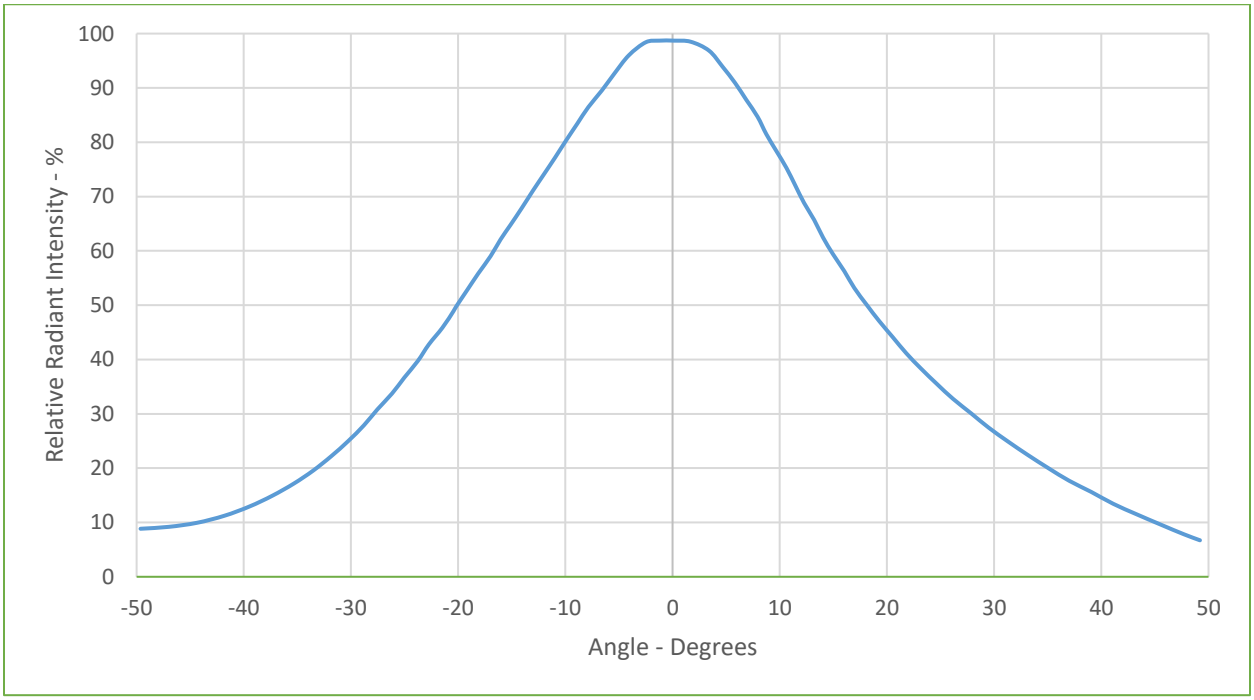
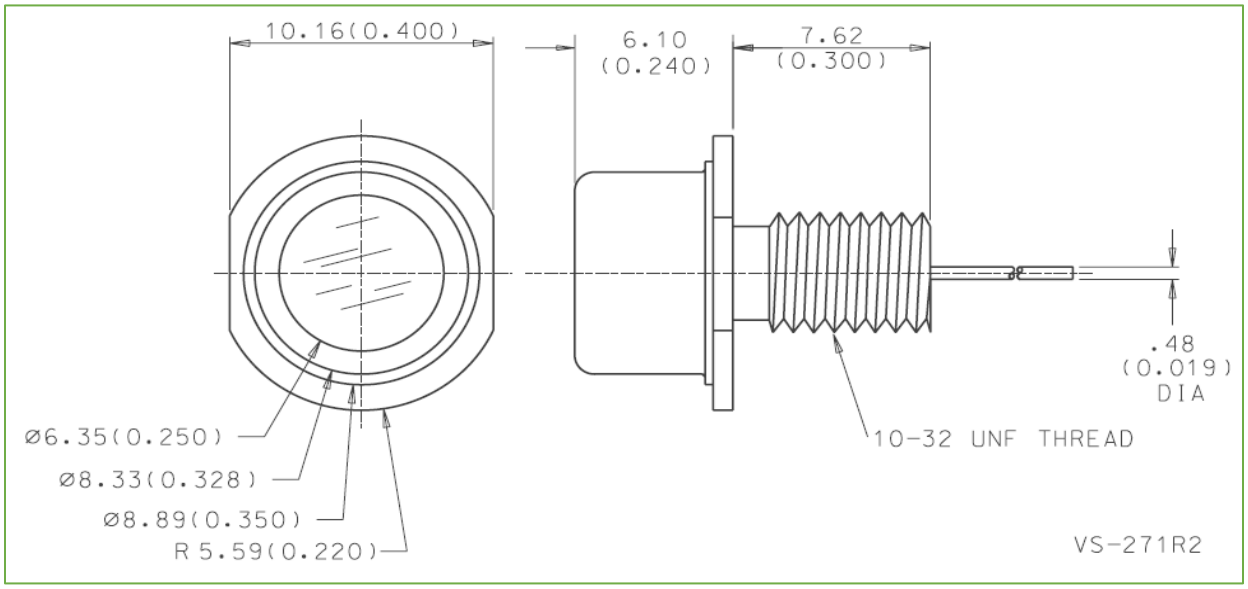


Figure 9 – Dimensional Outline



Handling Precautions

- All devices must be adequately heat sunk
- Devices are static sensitive
- Protect from current transients
- Protect from reverse voltages

Warning – Personal Safety Hazards

Laser Radiation – These devices in operation produce invisible electromagnetic radiation which may be harmful to the human eye.

Maximum Peak Accessible Emission Levels (Power Output)

The maximum peak power output level, to which human access is possible, when these devices are operated at their maximum forward current rating of 4A is shown below. This radiant flux level should not be considered as a characteristic range limit, it is based on product design and includes possible changes in device characteristics during life. Appropriate precautions should be taken to avoid harmful exposure.

Type	Maximum Forward Current (Amperes)	Maximum Accessible Radiant Flux Output (Watts)
C86119EH	4	5

In order to insure that these laser components meet the requirements of Class III b laser products, these devices must not be operated outside of their maximum ratings. Power supplies (laser energy sources) used with these components must be such that the maximum peak forward current cannot be exceeded.

RoHS Compliance

This series of laser diodes are designed and built to be fully compliant with the European Union Directive 2011/65/EU – Restriction of the use of certain Hazardous Substances (RoHS) in Electrical and Electronic equipment.

Warranty

A standard 12-month warranty following shipment applies. Any warranty is null and void if the package window has been opened.

About Excelitas Technologies

Excelitas Technologies is a global technology leader focused on delivering innovative, customized solutions to meet the lighting, detection and other high-performance technology needs of OEM customers.

Excelitas has a long and rich history of serving our OEM customer base with optoelectronic sensors and modules for more than 45 years beginning with PerkinElmer, EG&G, and RCA. The constant throughout has been our innovation and commitment to delivering the highest quality solutions to our customers worldwide.

From aerospace and defense to analytical instrumentation, clinical diagnostics, medical, industrial, and safety and security applications, Excelitas Technologies is committed to enabling our customers' success in their specialty end-markets. Excelitas Technologies has approximately 5,000 employees in North America, Europe and Asia, serving customers across the world.

Excelitas Technologies
22001 Dumberry Road
Vaudreuil-Dorion, Quebec
Canada J7V 8P7
Telephone: (+1) 450 424 3300
Toll-free: (+1) 800 775 6786
Fax: (+1) 450 424 3345
detection@excelitas.com

Excelitas Technologies GmbH & Co. KG
Wenzel-Jaksch-Str. 31
D-65199 Wiesbaden
Germany
Telephone: (+49) 611 492 430
Fax: (+49) 611 492 165
detection.europe@excelitas.com

Excelitas Technologies Singapore, Pte. Ltd.
8 Tractor Road
Singapore 627969
Telephone: (+65) 6775 2022 (Main number)
Telephone: (+65) 6770 4366 (Customer Service)
Fax: (+65) 6778-1752
detection.asia@excelitas.com

For a complete listing of our global offices, visit www.excelitas.com/locations