

High-power TO-cans

633...1550 nm TO-canned high-power lasers for CW applications

Overview

Modulight's product families ChiliLase, LumiLase and RangerLase contain a variety of TO-canned high-power diode lasers. The TO-can products cover the wavelength range of 633...1550 nm. The package is a 9 mm TO-can (SOT-148) with a flat lens. Collimating optics are available as per customer request. These multimode lasers are well suited for CW operation, and easy to accommodate in various applications. Active cooling is recommended.



Applications

Defense	Industrial	Medical
Range-finding Illumination	Illumination Imaging Laser Projectors	Low-intensity laser therapy Aesthetic Treatments

Electro-optical Characteristics, Typical Values

Parameter	Symbol	ML1468 ¹	ML1803 ¹	ML1469 ¹	ML1834 ²	ML1771 ²	Unit
Peak Wavelength	λ	635 ± 2	635 ± 2	690 ± 3	808 ± 4	1560 ± 20	nm
Optical Output Power	P_{OPT}	220	400	350	1000	500	mW
Operating Current	I_{OP}	420	1060	500	1250	2500	mA
Operating Voltage	V_{OP}	2.3	2.3	2.3	2.0	1.8	V
Threshold Current	I_{TH}	170	590	160	350	700	mA
Slope Efficiency	η	0.9	0.85	1.00	1.1	0.28	W/A
Wavelength - Temp. Coefficient	$\Delta\lambda/\Delta T$	0.2	0.2	0.2	0.3	0.6	nm/K
Spectral Width (FWHM)	$\delta\lambda$	1	1	1	4	9	nm
Parallel Beam Divergence (FWHM)	$\theta_{ }$	5	3	4	7	7	°
Perpendicular Beam Divergence (FWHM)	θ_{\perp}	40	38	40	35	33	°
Emitting area width	W_E	50	150	50	100	100	μm

¹ Red lasers: Values are typical for CW operation @ 15°C.

² IR lasers: Values are typical for CW operation @ 20°C.

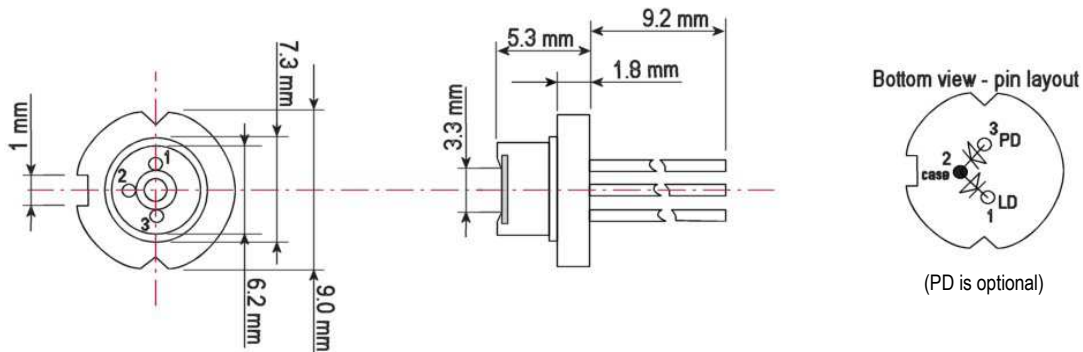
Absolute Maximum Ratings

Parameter	Symbol	ML1468	ML1803	ML1469	ML1834	ML1771	Unit
LD Reverse Voltage	V_{RLD}	0	0	0	0	2	V
LD Forward Current	I_{FLD}	500	1500	600	1500	4500	mA
Operating Temperature	T_{OP}	5...20 ¹	5...20 ¹	0...30 ¹	5...40 ¹	0...30 ¹	°C
Storage Temperature	T_{STG}	-40...85	-40...85	-40...85	-40...85	-40...85	°C

¹ A non-condensing environment should be ensured over the useful temperature range.

Package Information

The default package of the red lasers is a 9 mm TO-can package (SOT-148). The most important dimensions are shown in the drawing below. Monitor photodiode and collimation optics can be included in all the 9 mm TO-can packages per customer request - please contact Modulight sales team for more information.



Safety Information

- The laser light emitted from this laser device may be visible or invisible, depending on the laser selected. The laser light is harmful to the human eye. Avoid eye and skin exposure to the beam, both direct and reflected.
- Products are subject to the risks normally associated with sensitive electronic devices including static discharge, transients, and overload. Please ensure ESD protection prior to handling the products.
- These Modulight products are not intended for use in systems where product malfunction can reasonably be expected to result in personal injury.

Red TO-cans ML1468, ML1803, ML1469:

DANGER

VISIBLE LASER RADIATION
AVOID EXPOSURE TO THE BEAM

Peak power:	200...500 mW
Wavelength:	630...690 nm
Class 3B laser product	

Peak power and wavelength are for safety analysis only, not to present device performance.

IR TO-cans ML1834, ML1771:

DANGER

INVISIBLE LASER RADIATION
AVOID EYE OR SKIN EXPOSURE TO
DIRECT OR SCATTERED BEAM

Peak power:	600...2000 mW
Wavelength:	800...1550 nm
Class 4 laser product	

Peak power and wavelength are for safety analysis only, not to present device performance.

Liability note

This document is sole property of Modulight, Inc. No part of this document may be copied without written acceptance of Modulight, Inc. All statements related to the products herein are believed to be reliable and accurate. However, the accuracy is not guaranteed and no responsibility is assumed for any inaccuracies or omissions. Modulight, Inc. reserves the right to make changes in the specifications at any time without prior notice.