

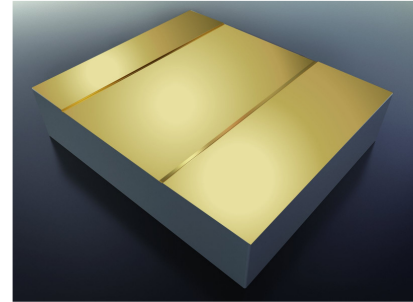
ChiliLase Chips

632...690 nm high-power laser unmounted chips for CW applications

Overview

Red laser chips, a part of Modulight's ChiliLase product family, are available within the wavelength range 632...690 nm. Bare die chips are well suited for customers targeting high production volumes, or customized mounting and wire bonding options.

These multimode high-power laser diodes are designed for CW operation, offering high power conversion efficiency. Due to the inherent thermal sensitivity of the red lasers, proper cooling must be ensured during operation.



Applications

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

Electro-optical Characteristics, Typical Values

Parameter	Symbol	ML1837 ¹	ML1389 ²	ML1524 ²	ML1887 ¹	ML1892 ^{1,3}	ML1465 ¹	Unit
Peak Wavelength	λ	632 ± 3	633 ± 3	633 ± 3	650 ± 5	680 ± 5	690 ± 3	nm
Optical Output Power	P_{OPT}	200	220	500	500	500	350	mW
Operating Current	I_{OP}	525	420	1200	1150	1200	500	mA
Operating Voltage	V_{OP}	2.2	2.2	2.2	2.1	2.0	2.0	V
Threshold Current	I_{TH}	275	200	600	600	500	150	mA
Slope Efficiency	η	0.8	1.0	0.9	0.9	0.75	1.0	W/A
Wavelength- Temp. Coefficient	$\Delta\lambda/\Delta T$	0.2	0.2	0.2	0.2	0.2	0.2	nm/K
Spectral Width	$\delta\lambda$	1.2	1.2	1.5	1.5	1.5	1	nm
Parallel Beam Divergence (FWHM)	$\theta_{ }$	5	5	4	4	5	4	°
Perpendicular Beam Divergence (FWHM)	θ_{\perp}	40	40	40	35	32	32	°

¹ Values of ML1837, ML1887 and ML1892 are typical for CW operation @ 20°C.

² Values of ML1389, ML1524 and ML1465 are typical for CW operation @ 15°C.

³ Product ML1892 is preliminary.

Absolute Maximum Ratings

Parameter	Symbol	ML1837	ML1389	ML1524	ML1887	ML1892	ML1465	Unit
LD Reverse Voltage	V_{RLD}	0	0	0	0	0	0	V
LD Forward Current	I_{FLD}	600	500	1500	1500	1600	600	mA
Optical Output Power	P_{OPT}	250	270	600	600	600	400	mW
Operating Temperature	T_{OP}	0...20 ¹	0...20 ¹	0...20 ¹	0...25 ¹	0...25 ¹	0...25 ¹	°C
Storage Temperature	T_{STG}	-40...85	-40...85	-40...85	-40...85	-40...85	-40...85	°C

¹ A non-condensing environment is required for operation temperatures below the dew point.

Mechanical Specifications

Parameter	Symbol	ML1837	ML1389	ML1524	ML1887	ML1892	ML1465	Unit
Cavity Length	L	1000	1000	1000	1000	1000	1000	µm
Chip Width	W	500	500	500	500	500	500	µm
Emitter Width	W_E	50	50	150	150	150	50	µm
Chip Thickness	H	130	130	130	130	130	130	µm

Safety Information

- The laser light emitted from this laser diode, although visible, 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.



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

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