

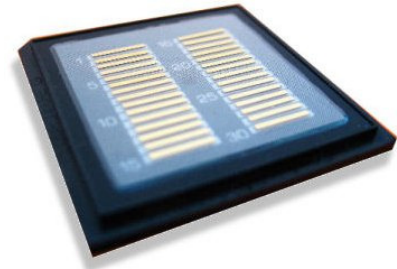
# ChiliLase bars

632...680 nm unmounted high-power laser bars

## Overview

Modulight's ChiliLase product family includes high-power laser bars providing visible red laser light. The bars are available unmounted or mounted – please see a separate datasheet for heat sink characteristics.

These multimode laser bars provide efficient and bright laser light output in CW operation. Adequate cooling should be ensured during operation.



## Applications

Industrial	Medical
Illumination Laser Projectors Imaging	Photodynamic Therapy Aesthetic Treatments

## Electro-optical Characteristics, Typical Values

Parameter	Symbol	ML1819 <sup>1</sup>	ML1388 <sup>2</sup>	ML1515 <sup>2</sup>	ML1886 <sup>1</sup>	ML1893 <sup>1, 3</sup>	Unit
Peak Wavelength	$\lambda$	632 ± 3	633 ± 3	633 ± 3	650 ± 5	680 ± 5	nm
Optical Output Power	$P_{OPT}$	4	4	7	10	10	W
Operating Current	$I_{OP}$	10	8.5	18	25	23	A
Operating Voltage	$V_{OP}$	2.2	2.2	2.2	2.1	2.0	V
Threshold Current	$I_{TH}$	5	4.5	9	12	9	A
Slope Efficiency	$\eta$	0.8	1.0	0.78	0.9	0.75	W/A
Wavelength - Temp. Coefficient	$\Delta\lambda/\Delta T$	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	nm
Parallel Beam Divergence (FWHM)	$\theta_{  }$	5	5	4	4	5	°
Perpendicular Beam Divergence (FWHM)	$\theta_{\perp}$	40	40	40	35	32	°
Fill Factor	$W_E$	10	10	20	30	30	%

<sup>1</sup> Values of ML1819, ML1886 and ML1893 are typical for CW operation @ 20°C.

<sup>2</sup> Values of ML1388 and ML1515 are typical for CW operation @ 15°C.

<sup>3</sup> Product ML1893 is preliminary.

## Absolute Maximum Ratings

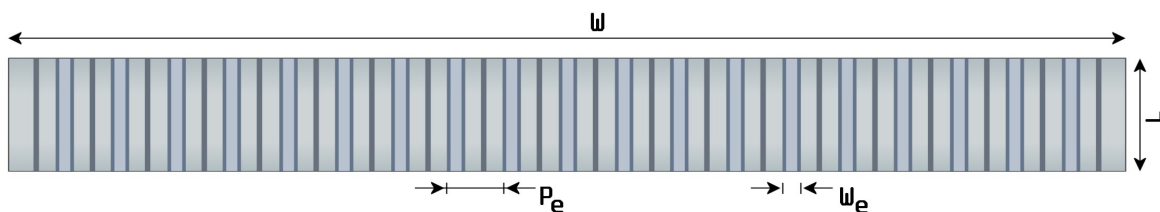
Parameter	Symbol	ML1819	ML1388	ML1515	ML1886	ML1893	Unit
LD Reverse Voltage	$V_{RLD}$	0	0	0	0	0	V
LD Forward Current	$I_{FLD}$	12	10	20	30	30	A
Optical Output Power	$P_{OPT}$	5	5	8	12	12	W
Operating Temperature	$T_{OP}$	0...20 <sup>1</sup>	0...20 <sup>1</sup>	0...20 <sup>1</sup>	0...25 <sup>1</sup>	0...25 <sup>1</sup>	°C
Storage Temperature	$T_{STG}$	-40...85	-40...85	-40...85	-40...85	-40...85	°C

<sup>1</sup> A non-condensing environment should be ensured over the useful temperature range.

## Mechanical Specifications

Parameter	Symbol	ML1819	ML1388	ML1515	ML1886	ML1893	Unit
Cavity Length	L	1000	1000	1000	1500	1000	μm
Bar Width	W	10	10	10	10	10	mm
Emitter Pitch	$P_e$	500	500	500	500	500	μm
Emitter Width	$W_e$	50	50	100	150	150	μm
Fill Factor	FF	10	10	20	30	30	%
Bar Thickness	H	130	130	130	130	130	μm
Emitters in a Bar		19	19	19	19	19	pcs

## Bar Layout



The picture above shows the definition points for bar width, cavity length, emitter width and emitter pitch. The proportions in the picture may not reflect the reality – please refer to the “Mechanical Specifications” table above.

## 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.

## Liability note

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