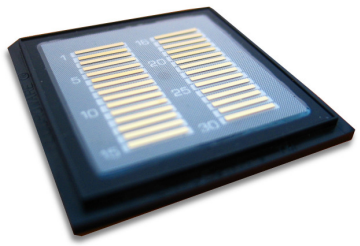
ML1275

808 nm high fill factor laser bar for QCW operation

Overview

ML1275 is an unmounted laser bar (laser array) with a high fill factor. This laser bar is designed for quasi-continuous wave operation, with high power conversion efficiency, the peak power being up to 100 W at 808 nm. The 8xx nm range laser bars are also available with different wavelength criteria and tolerance, per customer request, between wavelengths 785…810 nm. Please state the desired wavelength when ordering.



Applications

Defense	Industrial	Medical
Pumping	Pumping	Pumping

Electro-optical Characteristics

Parameter	Symbol	Typical value	Unit
Threshold Current	I_{TH}	<27	A
Optical Output Power	P_{OPT}	100	W
Operating Current	I_{OP}	125	A
Operating Voltage	V_{OP}	<2.0	V
Slope Efficiency	η	>1.0	W/A
Peak Wavelength	λ	801 ± 2	nm
Wavelength Temperature Coefficient	$\Delta\lambda/\Delta T$	0.3	nm/K
Spectral Width	$\delta\lambda$	4	nm
Parallel Beam Divergence (FWHM)	$\theta\parallel$	5…10	°
Perpendicular Beam Divergence (FWHM)	$\theta\perp$	30…35	°

All above values are typical for QCW operation @ 20°C.

Absolute Maximum Ratings

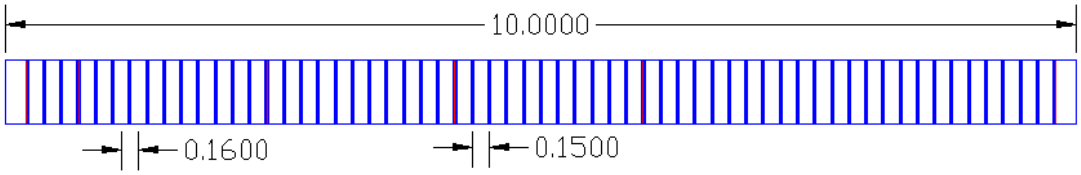
Parameter	Symbol	Rating	Unit
LD Forward Current	I_{FLD}	140	A
Operating Temperature Range	T_{OP}	-10…+40[1]	°C
Storage Temperature Range	T_{OP}	-40…+85	°C

[1]A non-condensing environment is required for operation temperatures below 10 °C.

Mechanical Specification

Parameter	Symbol	Value	Unit
Cavity Length	L	600	µm
Bar Width	W	10	mm
Emitter Pitch	P_e	160	µm
Emitter Width	W_e	150	µm
Fill Factor	FF	90	%
Bar Thickness	H	130	µm
Emitters in a Bar		60	
Thickness of p- and n-metals		300…400	nm
Coating Overspray		< 25	µm

Bar Layout



Safety Information

- The laser light emitted from this laser diode is invisible and potentially 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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