



Modulight, Inc.

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ML1009 TECHNICAL SPECIFICATION				
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TECHNICAL SPECIFICATION

ML1009

1 OVERVIEW

Modulight's ML1009 is a high-performance single-mode 1625 nm laser chip. The laser emits >150 mW pulsed power (10 μ s PW, 1% DC) at 1625 nm wavelength. ML1009 is designed to be used as light source in fiber optic test and measurement equipment.

2 ORDERING INFORMATION

ML1009

3 ELECTRO-OPTICAL CHARACTERISTICS¹

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Optical power	P _o	150	180	-	mW	I _r = 750 mA, PW = 10 μ s, DC = 1%
Threshold current ²	I _{th}	-	45	-	mA	PW = 10 μ s, DC = 1%
Forward voltage	V _{op}	-	1.0	2	V	cw, P _{op} = 40 mW
Slope efficiency	η	-	0.23	-	W/A	cw, P _{op} = 40 mW
Central wavelength	λ_c	1590	1625	1650	nm	I _r = 750 mA, PW = 10 μ s, DC = 1%
Spectral width ³	$\Delta\lambda$	-	4.5	7	nm	I _r = 750 mA, PW = 10 μ s, DC = 1%
Perpendicular beam divergence angle (FWHM) ⁴	θ_{\perp}	-	44	-	deg	cw, P _{op} = 40 mW
Parallel beam divergence angle (FWHM) ⁴	θ_{\parallel}	-	26	-	deg	cw, P _{op} = 40 mW

4 ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Rating	Unit
LD reverse voltage	V _{RLD}	2	V
LD forward current	I _{FLD}	1000 ⁵	mA
Operating temperature	T _c	-0-70 °C	°C
Storage temperature	T _{STG}	-40-85 °C	°C

¹ All temperatures refer to case temperature, T_c = 25 °C

² 1st derivative method

³ RMS, -20 dB

⁴ Full Width at Half Maximum

⁵ DC \leq 1%, PW \leq 10 μ s



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5 TYPICAL PERFORMANCE

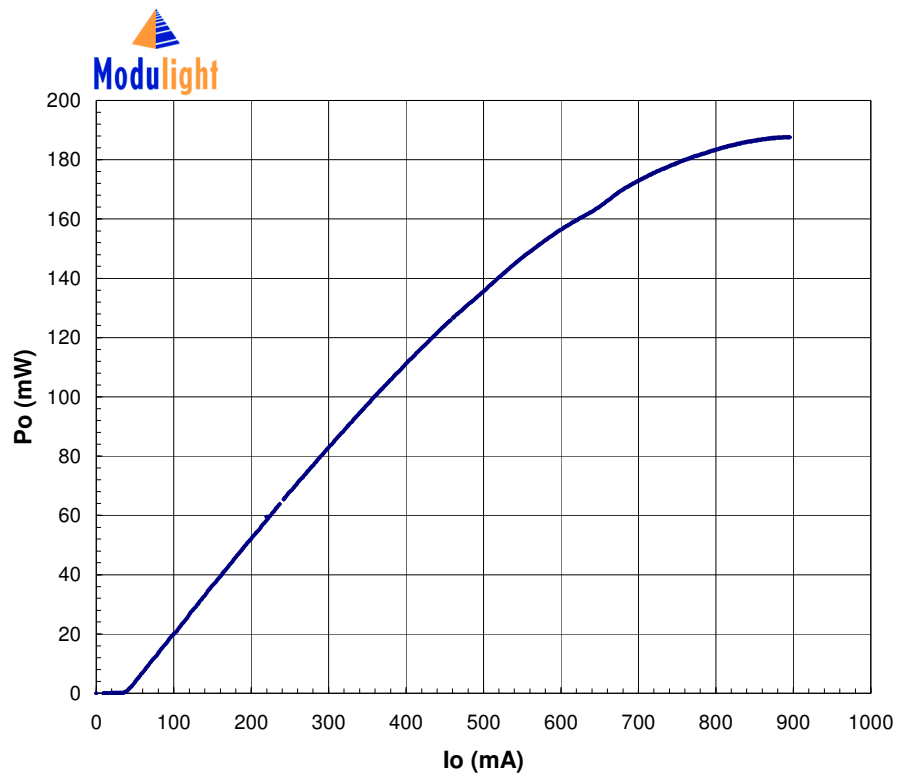


Figure 1. Example LI curve in pulsed (10 μ s PW, 1% DC) mode, 25°C fixture temperature



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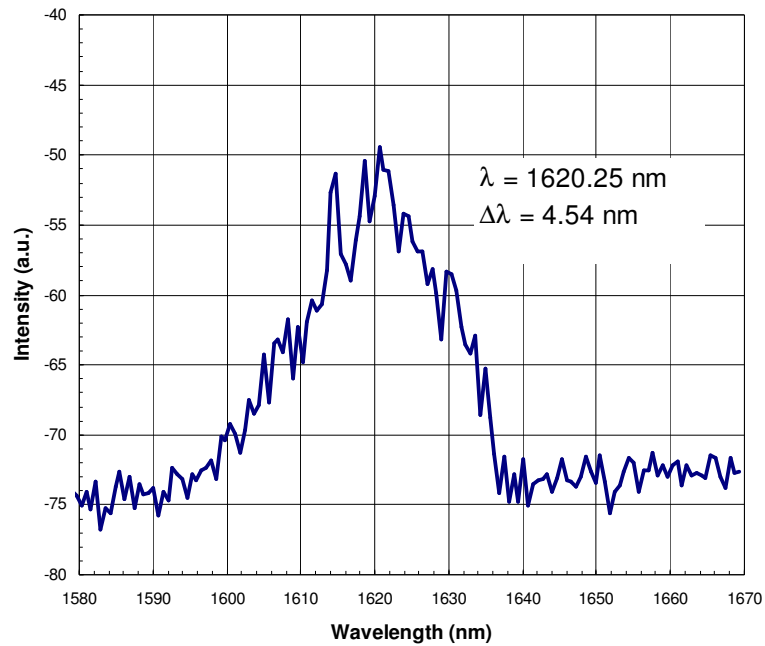


Figure 2. Example Spectrum, pulsed (10 μ s PW, 1% DC) mode, 25°C fixture temperature.

6 SAFETY INFORMATION

- The laser light emitted from this laser diode is invisible and may be harmful to the human eye. Avoid eye 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 take care of proper 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.



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