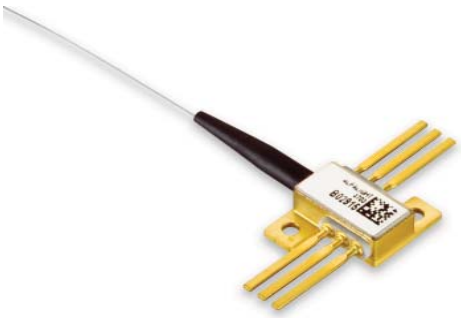
808 nm Wavelength-Stabilized Lasers



Alfalight's "generation B" 808 nm pump lasers offer low threshold, high slope efficiency, and excellent stability over temperature. The fiber-coupled devices offer either 2 W in a 105 µm, 0.15 NA fiber or 5.0 watts in a 200 µm, 0.22 NA fiber. Both devices are housed in high-reliability uncooled GR-468 compliant packages.

Alfalight's Wavelength Stabilization Technology (WST) enables narrow spectral width and minimizes wavelength shift over temperature. These lasers do not require temperature control to maintain wavelength, reducing their energy consumption by up to three times over a thermally controlled pump laser. Pump absorption in a microlaser configuration is enhanced by more than 80%.

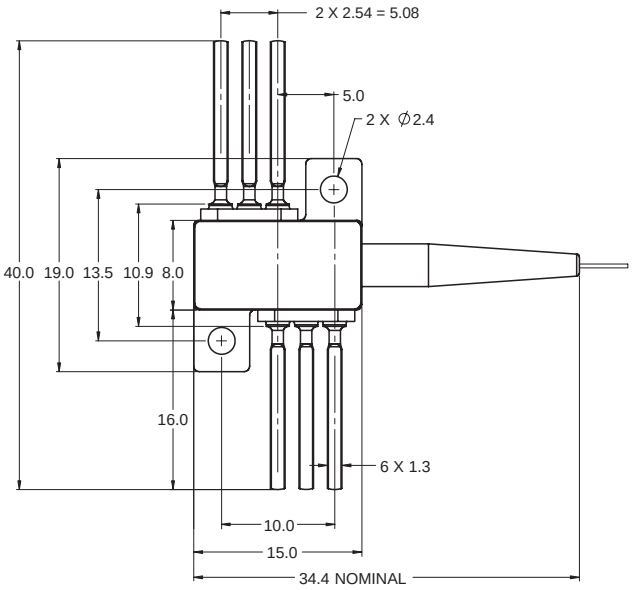
- On-chip integrated semiconductor grating
- Narrow linewidth (0.5 nm)
- Wide locking range
- Fully hermetic 6-pin uncooled package
- Nd:YAG and Nd:YVO_4 microlasers
- Alkali pumping

Device Characteristics*

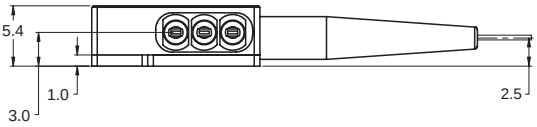
		2-W 6-pin device AM6-808BW-10-201			*5-W 6-pin device* AM6-808BW-30-501			
Electro-Optical	**Symbol**	**Min**	**Typ**	**Max**	**Min**	**Typ**	**Max**	**Units**
Center wavelength	λ_c		808 ± 1.5			808 ± 1.5		nm
Output power, CW	P_o	2.0			5.0			W
Operating current	I_o		2.7			6.5		A
Forward voltage	V_f		1.74	1.9		1.73	1.80	V
Threshold current	I_{th}		0.55			1.35		A
Spectral width (FWHM)	$\Delta\lambda$		0.5	0.9		0.5	0.9	nm
Power conversion efficiency	PCE		43%			45%		
Spectral shift over temperature	$d\lambda/dT$		0.07			0.07		nm/°C
Spectral shift over power	$d\lambda/dP$		0.4			0.2		nm/W
Locking range over temperature**	T_c	15		45	15		45	°C
Locking range over power	P_o	0.2		2.0	0.9		5.0	W
Mechanical								
Case operating temperature	T_c	0		50	0		50	°C
Case storage temperature	T_c	–40		85	–40		85	°C
Fiber core diameter			105			200		µm
Fiber NA	NA		0.15			0.22		
Fiber length			1.5			1.5		m

** All conditions are at 25°C case temperature unless otherwise noted.*
*** Power outside of 804-812 nm range is less than 10% of the total power.*

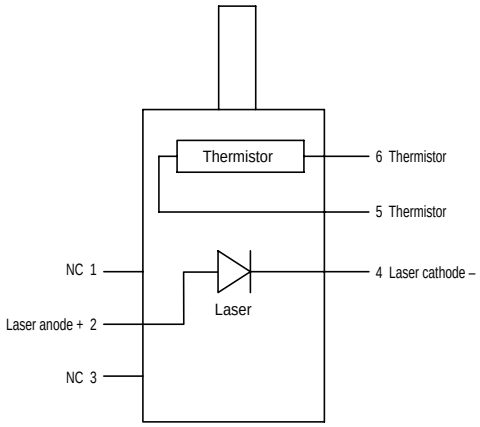
6-pin Package Dimensions



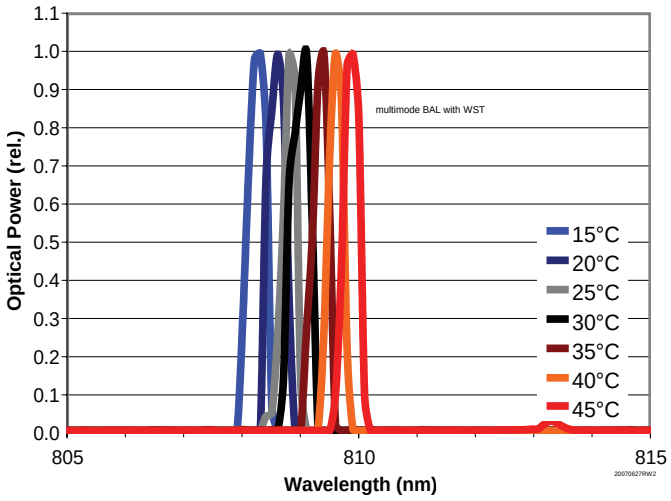
All units in mm



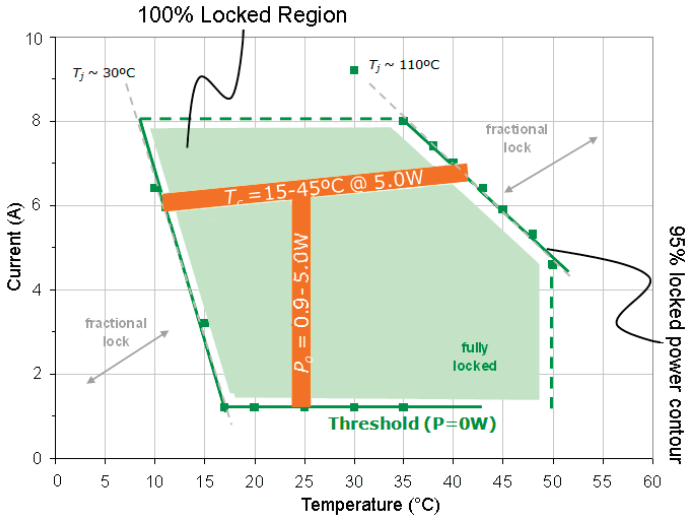
Package Pinout



Spectrum (typical)



Locking Range (5 W)



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