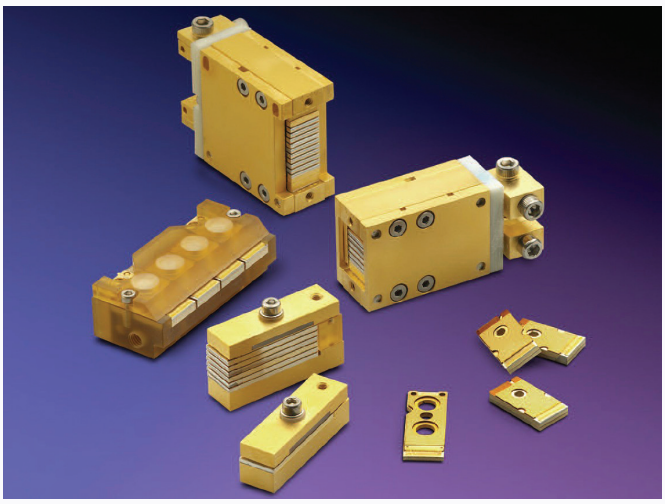
ProLite® Monsoon® Series

Multi-bar Modules



The ProLite Multi-bar Module Advantage

- Up to 100 W CW out of a 10 mm x 1 µm active area for high brightness
- Multiple wavelength ranges available from 780 nm to 980 nm for application flexibility
- Modular and compact for easy integration
- Scalable platforms with that meet advanced future power requirements
- Durable construction for use in rugged environments at elevated temperatures
- Expected lifetime of standard products>10,000 hours

Built on the highly reliable Monsoon® platform, the Oclaro™ ProLite® Multi-bar Modules give OEM product developers scalable power for >500 W pump use and direct material processing applications. The modular platform can be configured for specific needs such as enhancing brightness through stacking and optical design, or scaled linearly or vertically for optimizing new pump designs. In any use, ProLite Multi-bar Modules offer compact size, efficiency, and reliability.

ProLite Multi-bar Modules are built with high power diode laser bars to provide an extremely compact source of very high-intensity light. A unique linear array of multiple laser emitters fabricated on a single monolithic substrate offers power of >100 W. The stackable laser bars provide modular flexibility to match the application. They are also easy to integrate—even with custom lensing for high-value system development. In addition, this technology allows CW or QCW operation for direct materials processing.

A key feature of ProLite Multi-bar Modules is active water cooling that enables the low thermal resistance package needed to drive high power levels. Proprietary water-cooling technology controls device-operating temperature, and enables high power output without sacrificing operating lifetime—including water resistivity control to maximize operating lifetime. ProLite Multi-bar Module vertical arrays require as little as 350 kohm-cm for optimal performance. Horizontal arrays requires almost no de-ionized water, so the modules can be used with a range of water quality—and still last >10,000 hours in devices with 100 W of output. A rugged design ensures the best possible reliability and superior performance, even at elevated temperatures.

Designed and built to meet specific customer requirements, the scalable platform will accommodate the future power needs for aerospace and defense applications.

Applications

- Solid-state laser pumping
- Printing/Reprographics
- Material processing
- Medical/Life and health sciences
- Defense and security
- Illumination

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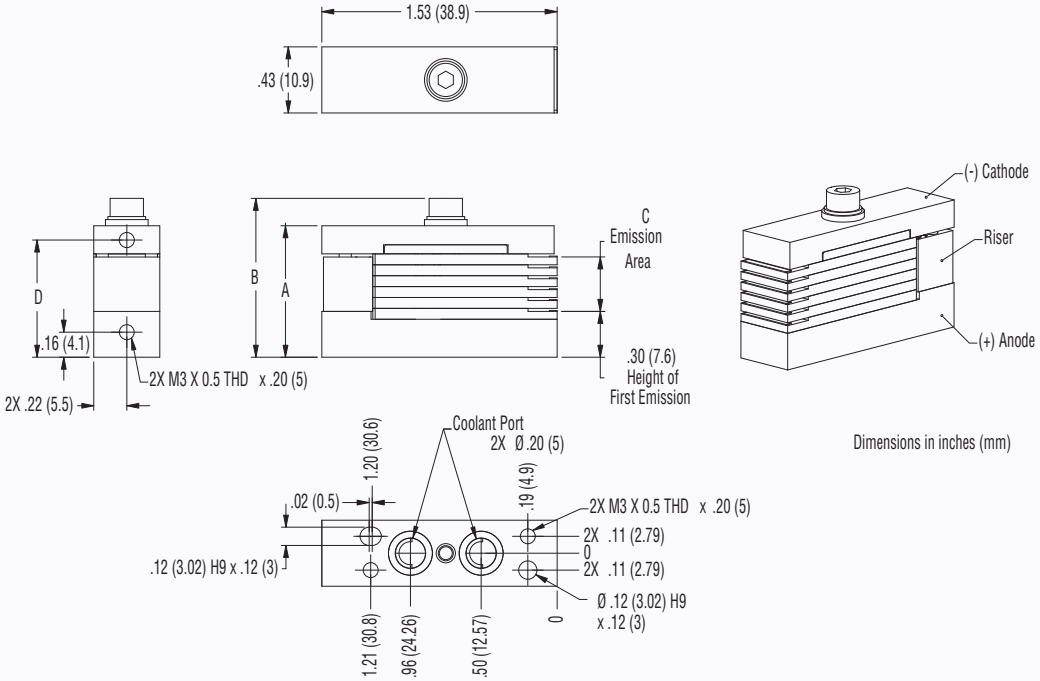
Frameless Vertical Stack

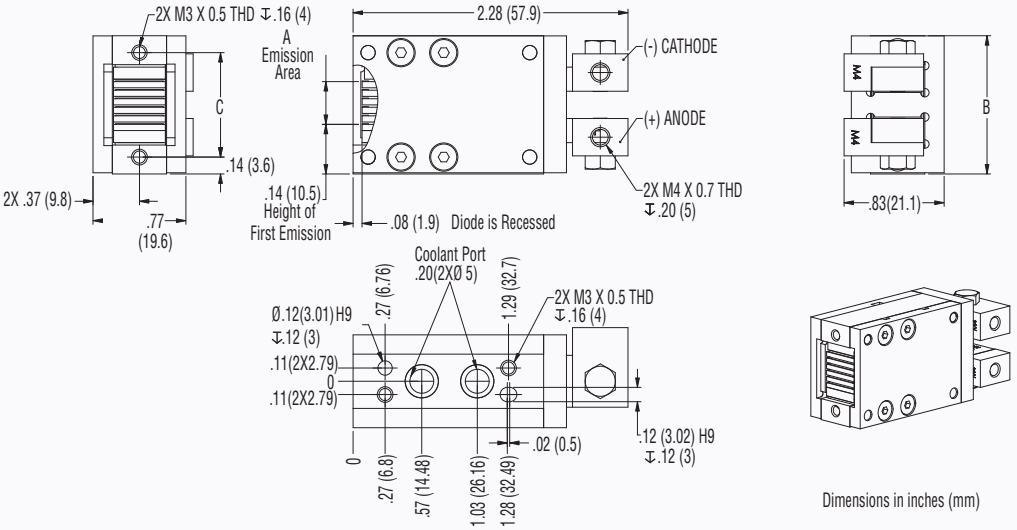


Dimensions in inches (mm)

DIMENSION CHART

	1 X 1		6 X 1	
	inch	(mm)	inch	(mm)
A	0.50	(12.7)	0.86	(21.7)
B	0.69	(17.6)	1.05	(26.6)
C	-	-	0.36	(9.0)
D	0.41	(10.4)	0.76	(19.4)

Framed Vertical Stack



Dimensions in inches (mm)

DIMENSION CHART

	6 X 1		12 X 1	
	inch	(mm)	inch	(mm)
A	0.354 ±0.02	(9.0 ±0.5)	0.783 ±0.02	(19.9 ±0.5)
B	1.15	(29.1)	1.57	(39.9)
C	0.87	(22.0)	1.29	(32.8)
AVAILABLE UP TO 25 X 1				

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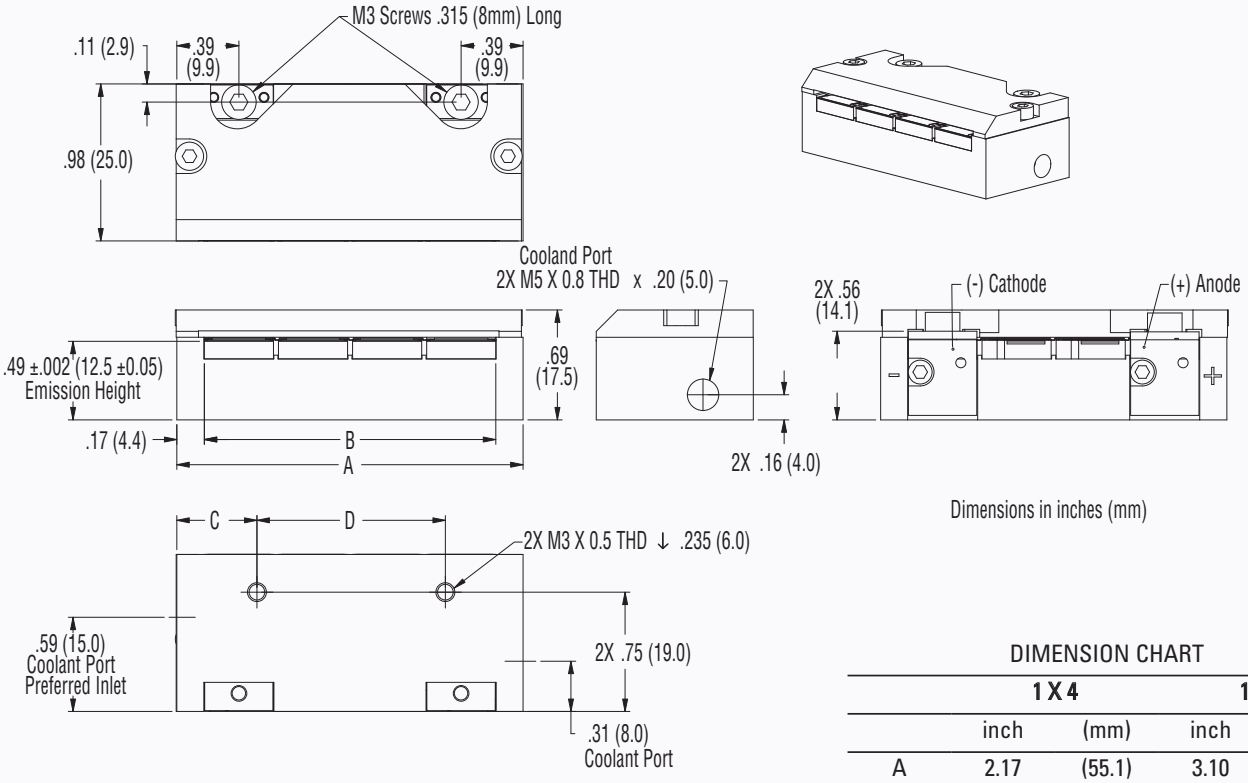
Horizontal Stack



Dimensions in inches (mm)

DIMENSION CHART

	1X4		1X6	
	inch	(mm)	inch	(mm)
A	2.17	(55.1)	3.10	(78.7)
B	1.83	(46.4)	2.75	(69.9)
C	0.50	(12.8)	0.50	(12.8)
D	1.17	(29.6)	2.09	(53.2)

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Specifications

	Frameless Vertical Stacks		Framed Vertical Stacks		Horizontal Stacks	
Output Characteristics	**MMO-808-050-01**	**MMO-808-300FL-01**	**MMO-808-300-01**	**MMO-808-600-01**	**MMO-808-200S-01**	**MMO-808-300S-01**
Wavelength	808 ±3 nm	808 ±3 nm	808 ±3 nm	808 ±3 nm	808 ±3 nm	808 ±3 nm
Typical Spectral Width (FWHM)	2.5 nm	2.5 nm	2.5 nm	2.5 nm	2.5 nm	2.5 nm
Maximum Spectral Width (FWHM)	4 nm	4 nm	4 nm	4 nm	4 nm	4 nm
Output Power	50 W	300 W	300 W	600 W	200 W	300 W
Operating Current	55 A	55 A	55 A	55 A	55 A	55 A
Maximum Operating Current	60 A	60 A	60 A	60 A	60 A	60 A
Threshold Current	10 A	10 A	10 A	10 A	10 A	10 A
Maximum Threshold Current	15 A	15 A	15 A	15 A	15 A	15 A
Number of Bars	1	6	6	12	4	6
General Specifications						
Optical						
Typical Conversion Efficiency	>50% @ I_{op}					
Typical Slope Efficiency	1.1 W/A per bar					
Typical Beam Divergence	<38° FWHM vertical; <7° FWHM horizontal					
Electrical						
Maximum Operating Voltage	2 V					
Maximum Reverse Voltage	3 V					
Maximum Negative Current Transient	25 µA					
Mechanical						
Bar-to-bar Spacing	1.8 mm				11.8 mm	
Housing Dimensions	See Frameless Vertical Stack Drawing		See Framed Vertical Stack Drawing		See Horizontal Stack Drawing	
Environmental						
Operating Temperature Range	20°C to 35°C, 25°C recommended					
Operating Humidity	<60%, Non-condensing					
Storage Temperature	-40°C to 60°C					
Water Requirements						
Water Sensitivity	200–500 kOhm-cm				20 - 150 kOhm-cm	
pH Level	6.5–7.5					
Particle Filter	<30 µm					
Typical Flow Rate	0.08 Gal/min/bar @ 20 dpsi				0.08 Gal/min/bar @ 10 dpsi	
Maximum Water Pressure	90 psi					

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