

ProLite® BW Series

Fiber Coupled Diode Laser Bars



The ProLite BW Series Advantage

- Up to 40 W from an 800 μm diameter fiber aperture
- Multiple wavelength ranges available from 780 nm to 980 nm for flexible usage
- Rugged construction for easy operation in industrial environments
- Expected lifetime of standard products >10,000 hours
- Watertight housing for increased reliability in high-humidity environments
- Passive cooling for low maintenance and cost-effective end products
- Neutral casing, bundle lengths, and jacket materials tailored to customer needs

The Oclaro™ ProLite® BW series products consist of a diode laser bar packaged in a watertight housing, efficiently coupled to a small-diameter fiber bundle. This diode laser bar is a linear array of many individual emitters, fabricated on a single monolithic substrate for low power degradation and high reliability.

ProLite BW diode lasers are coupled into a low-numericalaperture fiber bundle using proprietary lensing technology. The “bundle” construction—comprised of many single fibers—confines more power in a smaller cone angle to deliver a highintensity, high-brightness light source with very flexible delivery capabilities.

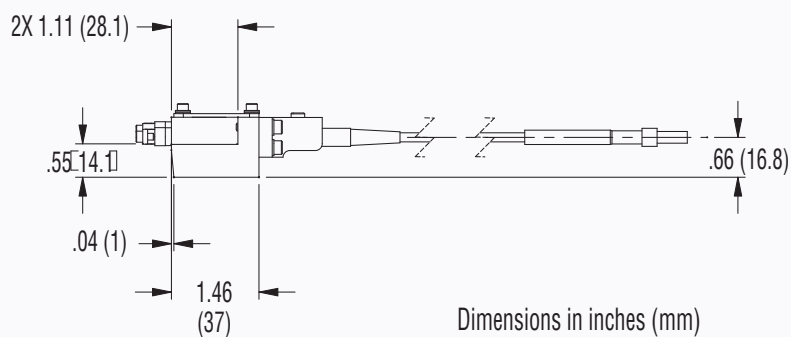
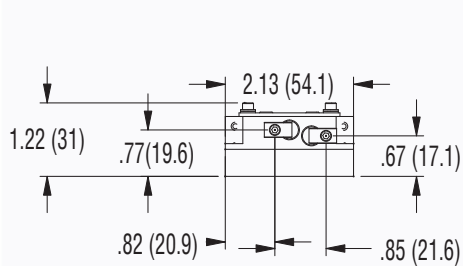
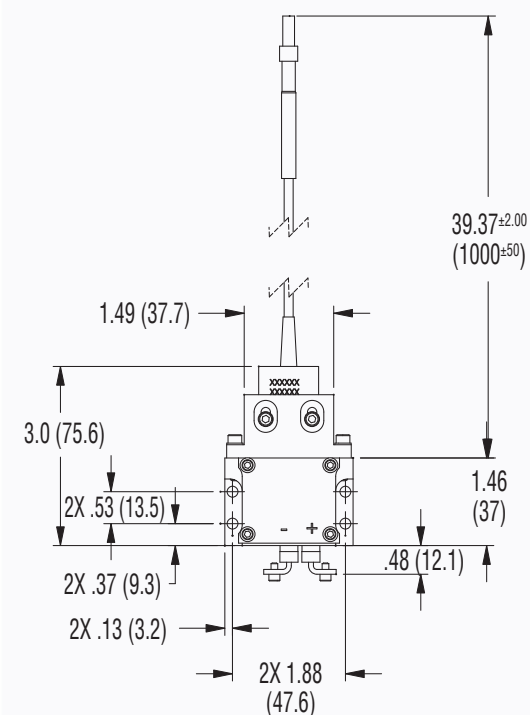
With a simple, compact, and rugged design, the ProLite BW series products require no user maintenance or special handling, lowering the cost of ownership. The ProLite BW series also offers a wide variety of packaging options with different bundle lengths, jacket materials, connector types, aiming fiber options, and photodiode options for maximum end-user flexibility.

The watertight package also enables customers to run the laser in high-humidity environments with high reliability and long lifetimes. Designed and built to meet specific customer requirements, ProLite BW diode lasers are built on the field-proven DCS heatsink platform that has demonstrated high reliability in thousands of hours of customer use.

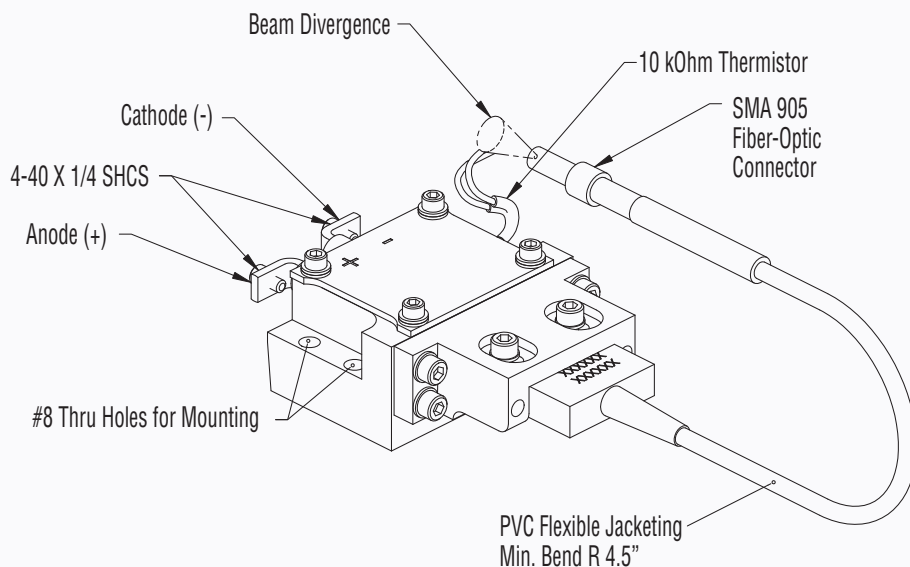
Applications

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

BW Fiber Coupled Diode Laser Bar



Dimensions in inches (mm)



Specifications

Output Characteristics	BWA0500-808-10-01	BWA0500-980-10-01	BWA0800-808-15-01	BWA0800-880-20-01	BWA0800-808-40-01	BWA0800-940-40-01	BWA0800-980-40-01
Wavelength ²	808 ±3 nm	980 ± 10 nm	808 ±3 nm	880 ±3 nm	808 ±3 nm	940 ±10 nm	980 ±10 nm
Typical Spectral Width (FWHM)	<3 nm	<3 nm	<3 nm	<3 nm	<3 nm	<4 nm	<4 nm
Maximum Spectral Width (FWHM)	5 nm	5 nm	5 nm	5 nm	5 nm	7 nm	7 nm
Output Power P _o ³	10 W	10 W	15 W	20 W	40 W	40 W	40 W
Operating Current I _{op} ⁴	13 A	13 A	22 A	30 A	54 A	60 A	58 A
Maximum Operating Current I _{op}	15 A	15 A	26 A	34 A	60 A	67 A	64 A
Threshold Current I _{th} ⁵	2.5 A	1.9 A	5 A	7.9 A	9.9 A	6.3 A	7.6 A
Maximum Threshold Current I _{th}	3 A	2.5 A	6 A	9 A	12 A	8 A	9 A
Fiber Aperture Diameter	500 μm	500 μm	800 μm	800 μm	800 μm	800 μm	800 μm
Number of Fibers in Bundle	7	7	19	19	19	19	19

General Specifications

Optical

Typical Conversion Efficiency	35% @ I _{op}
Typical Beam Divergence	90% of rated power within 14° cone angle (0.12 NA)

Electrical

Maximum Operating Voltage	2 V
Maximum Reverse Voltage	3 V
Maximum Negative Current Transient	25 μA

Mechanical

Housing Dimensions	See Drawing
Fiber Cable Length	1 m, PVC ¹
Fiber Connector Type	SMA 905

Environmental

Operating Temperature Range	20°C to 35°C
Operating Humidity	Non-condensing
Storage Temperature Range	-20°C to 50°C

- Other fiber types available
- Centroid wavelength @ 25°C thermistor temperature
- Guaranteed minimum optical output power
- Typical operating current required to achieve P_o
- Typical threshold current
Typical wavelength temperature coefficient: 0.20–0.30 nm/°C
Other wavelengths available between 780–980 nm upon request

Mounting

Torque Specifications

	#4-40	6 in lbs (0.7 N.m)
Heatsink housing to cooling platform with a thermal compound	#8-32	15 in lbs (1.75 N.m)