# Fiber Coupled Semiconductor Laser Bars

## BF Series

The BF Series products consist of a high power semiconductor laser bar, efficiently coupled into a low numerical aperture, small diameter fiber bundle using proprietary lensing technology. (Each laser bar is a linear array of many individual laser emitters, fabricated on a single, monolithic substrate.) This efficient coupling results in a high intensity, high brightness light source, with very flexible delivery capabilities, that is ideal for a number of industrial processing and medical tasks.

In addition to superior performance, our products are also designed and manufactured for maximum reliability. We are able to achieve high quality on a volume basis because of our total vertical integration within a single manufacturing facility. This gives us complete control over every aspect of our production process – from wafer processing through final packaging.

The standard products listed here are representative of our capabilities, however, the majority of our products are designed and built to meet specific customer requirements. We utilize a variety of materials, including phosphorous-based materials (more recently referred to as "Aluminum Free"), to provide the optimum combination of performance and price for each customer.

### Features:

- High brightness
- High reliability
- Available in volume

### Applications:

- Solid state laser pumping
- Graphic arts
- Illuminations
- Materials processing
- Medical

Spectra-Physics
SEMICONDUCTOR LASERS

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| $P_o$[1](W) | $I_{th}$[2] (A) | $I_{op}$[3] (A) | Bundle Dia. (mm) | $\lambda_o$[4] (nm) | Part Number |
|---|---|---|---|---|---|
| 15 | < 12 | ≤ 30 | 0.825 | 808 | BFx0825-808-15-01 |
| | | | | 830 | BFx0825-830-15-01 |
| | | | | 915 | BFx0825-915-15-01 |
| | | | | 975 | BFx0825-975-15-01 |
| | | | 1.160 | 808 | BFx1160-808-15-01 |
| | | | | 830 | BFx1160-830-15-01 |
| | | | | 915 | BFx1160-915-15-01 |
| | | | | 975 | BFx1160-975-15-01 |
| 30 | < 15 | ≤ 60 | 0.825 | 808 | BFx0825-808-30-01 |
| | | | | 915 | BFx0825-915-30-01 |
| | | | 1.160 | 808 | BFx1160-808-30-01 |
| | | | | 915 | BFx1160-915-30-01 |

**Notes:**

(1).... $P_o$ typical output power in cw regime

(2).... $I_{th}$ typical current threshold

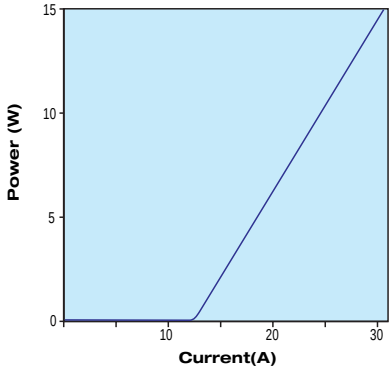
(3).... $I_{op}$ typical operating current

(4).... $\lambda_o$ center wavelength @ 25°C case temperature, +/- 5nm tolerance.
Typical wavelength temperature coefficient : 0.2-0.3 nm/°C

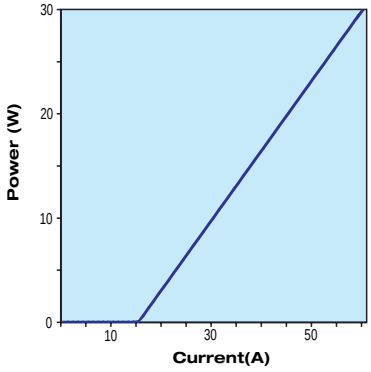
**Common Specifications:**

| | |
|---|---|
| **Optical** | |
| Spectral Width (FWHM) | <4nm |
| Typical Conversion Efficiency | < 25% |
| Polarization | TE |
| Beam Divergence | 86% of power within 12° cone angle, 0.11 NA |
| Center Wavelength Tolerance | ± 5 nm standard |
| **Electrical** | |
| Operating Voltage | < 2 Volts |
| Reverse Voltage | < 3 Volts |
| Negative Current Transient | < 25µA |
| **Mechanical** | |
| Delivery Optical Fiber Length | 1 meter, typical |
| Optical fiber termination | SMA-905 standard, other terminations avail. upon request |
| Storage Temp Range | -30°C to 80°C |
| Dimensions | see figure |
| **Environmental** | |
| Recommended Case Temp. | 25°C |

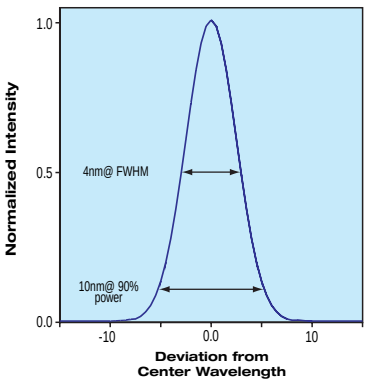
*15W BF series*
*Power vs. Current(Typical)*

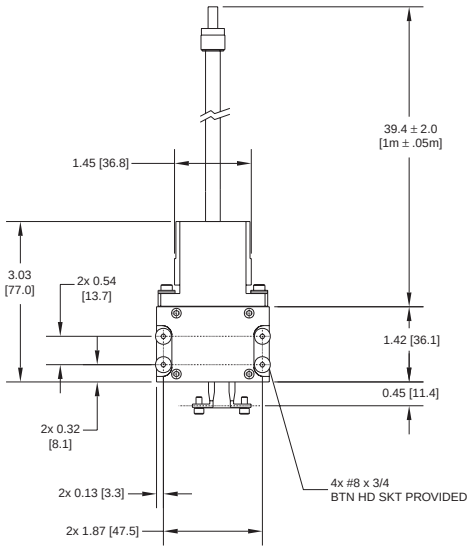


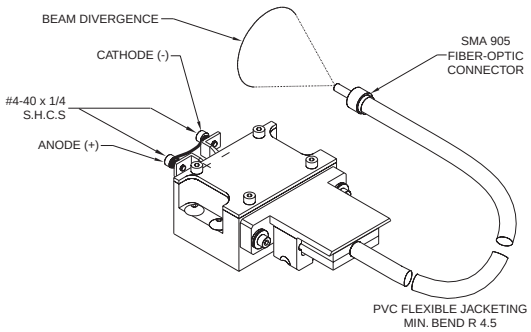

*30W BF series*
*Power vs. Current(Typical)*

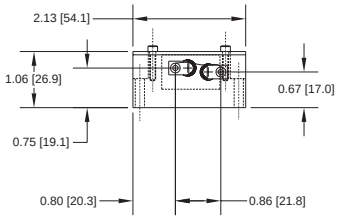


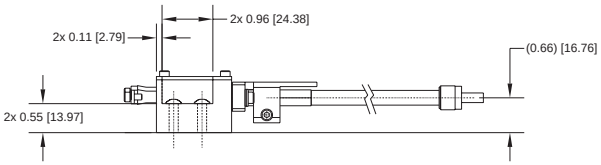

*Spectral Profile*
*(Typical)*






Not shown actual size - Dimensions in inches[mm]

Laser energy emitted from these products is invisible and harmful to the human eye. Avoid eye or skin exposure to direct or scattered radiation. Proper laser safety eyewear must be worn during operation. Use of controls, or adjustments or performance of procedures other than those specified may result in hazardous radiation exposure. Use of collimating optics may increase the radiation hazard of these products. Pursuant to the Health and Safety Act of 1968, Radiation Control sections 21 CFR 1040.10 & 1040.11, laser safety warning labels, compliant as of date of manufacture, are provided on shipping containers.

Information and specifications contained herein are deemed to be reliable and accurate. SPSL reserves the right to change, alter or modify the design and specifications of these products at any time without notice

Spectra-Physics

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Model No. _____

Serial No. _____

Manufactured: _____

P.O. # _____

This product conforms to 21 CFR 1040.10 & 1040.11 at the date of manufacture.