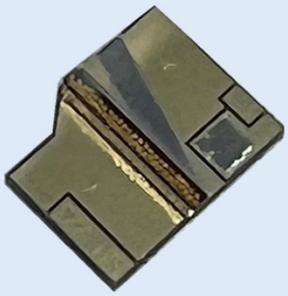
FP3215
aura™ 2.5 W Diffraction-Limited 1550 nm Laser

FREEDOM PHOTONICS
a Luminar company

Product Brief

FEATURES

- High power & high efficiency
- Diffraction-limited output
- Efficient coupling to SMF
- Operates both continuous wave and pulsed (ns to ms)



APPLICATIONS

- LIDAR systems for remote sensing
- Free-space optical communication
- Pump source for Er-doped solid-state and fiber laser amplifiers

NOTES

1. Class 4 high power laser output. Appropriate precautions should be taken by user.
2. Devices are sensitive to electrostatic discharge (ESD). Appropriate precautions should be taken by user.

OVERVIEW

The 1500 to 1600 nm *aura*™ diode laser offers extraordinarily high-power output in a nearly diffraction-limited single spatial mode. The device architecture is based on a single-mode tapered waveguide laser structure. Built-in wavelength stabilization is not included. The nearly diffraction-limited output enables efficient coupling to single-mode fiber and maximizes far-field irradiance when collimated in free space. Various packaging configurations are offered including: 1) hard-soldered junction-down on C-mount, 2) hard-soldered junction-down on ceramic submount, and 3) unsoldered bare chip.

The *aura*™ product line is intended to address applications such as free space optical communication, sensing, and LIDAR in consumer, industrial, and defense markets by enabling watt-level direct use output from a semiconductor chip source.

SPECIFICATIONS

General Parameter	Typical Value	Unit
Optical		
Center Wavelength	1500 to 1600	nm
Rated Output Power	2.5	W
Spectral Bandwidth, 3 dB	10	nm
Slope Efficiency	0.4	W/A
Slow Axis M^2 (ISO 11146-3)	1.3	-
Fraction of Power Diffraction-Limited	90%	%
Slow-Axis Divergence, 4Dσ	6	deg
Fast-Axis Divergence, 4Dσ	55	deg
Astigmatism	1.7	mm
Electrical		
Operating Current	12	A
Threshold Current	2.4	A
Operating Voltage	1.2	V
Electrical to Optical Efficiency	22%	%
Series Resistance	25	mΩ
Thermal		
Operating Temperature	20	°C
Wavelength-Temperature Coefficient	0.5	nm/°C
Thermal Resistance	3.2	W/A