FREEDOM PHOTONICS
a QCi company

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

DANGER
CLASS 4 LASER PRODUCT
AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED LASER LIGHT

FREEDOM PHOTONICS EM4 Optogration

# Product Brief — FP3215 *aura*™ 2.0 W Diffraction-Limited 1550nm Laser

## 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

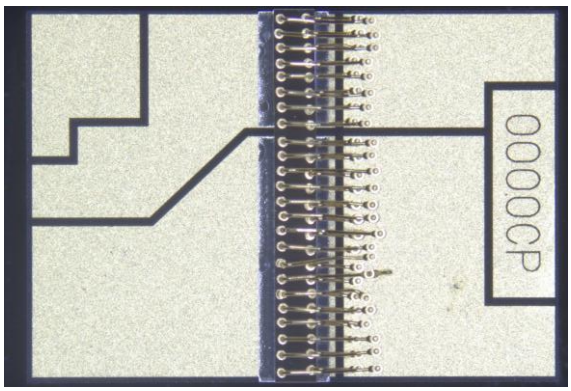
1. Power depends on coupling, operating temperature and location on gain curve.
2. Slow-axis divergence depends on drive current.
3. Voltage limit should be reached before current exceeds the maximum value.
4. Power dissipation linearly decreases in the range 25ºC to zero power at 100ºC.

## OVERVIEW

The aura™ diode laser offers extraordinarily high-power output in a nearly diffraction-limited single spatial mode which enables efficient coupling to a single-mode fiber and maximizes far-field irradiance when collimated in free space. The device architecture is based on a single-mode tapered waveguide laser structure. Built-in wavelength stabilization is not included. 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 auraTM 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 | Value | Unit |
|---|---|---|
| **Optical** | | |
| Center Wavelength | 1500 – 1600 | nm |
| Rated Output Power[1] | ≥2.0 | W |
| Spectral Bandwidth, 3dB | 10 | nm |
| Slow Axis $M^2$ @ 1W (ISO 11146-3) | 1.3 | - |
| Fraction of Power Diffraction-Limited @ 1W | 90% | - |
| Output Slow-Axis Divergence[2], 4Dσ | 6 | deg |
| Output Fast-Axis Divergence, 4Dσ | 55 | deg |
| Output Astigmatism[2] | 1.7 | mm |
| **Electrical** | | |
| Maximum Operating Current | 12 | A |
| Maximum Operating Voltage[3] | 1.2 | V |
| Series Resistance | 25 | mΩ |
| NTC Current | -0.5 – +0.5 | mA |
| Maximum NTC Dissipation Power[4] | 15 | mW |
| **Thermal** | | |
| Operating Temperature | 20 – 40 | ºC |
| Thermal Resistance | <5 | K/W |




As part of our policy of continuous product improvement, we reserve the right to change specifications at any time.