

EYP-BAL-0653-01000-1510-CMT02-0000

Revision 0.93

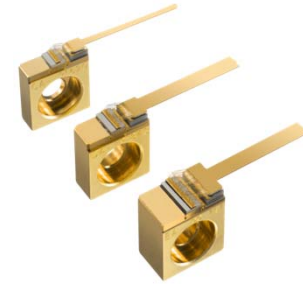
08.08.2017

MULTI MODE LASER DIODES

Broad Area Laser

General Product Information

| Product | Application |
|-------------------------|-------------|
| 653 nm Broad Area Laser | Sensing |
| mounted on C-Mount | Medical |
| | |
| | |



Absolute Maximum Ratings

| Parameter | Symbol | Unit | min | typ | max |
|---------------------------------|-----------|------|-----|-----|-----|
| Storage Temperature | T_S | °C | -40 | | 85 |
| Operational Temperature at Case | T_C | °C | -20 | | 30 |
| Forward Current | I_F | A | | | 1.8 |
| Reverse Voltage | V_R | V | | | 2 |
| Output Power | P_{opt} | W | | | 1.2 |

Measurement Conditions / Comments

| |
|--|
| non condensing |
| non condensing |
| Stress in excess of one of the absolute maximum ratings can cause permanent damage to the device. Do not exceed the max. output power or max. forward current, whichever occurs first. |

Recommended Operational Conditions

| Parameter | Symbol | Unit | min | typ | max |
|---------------------------------|-----------|------|-----|-----|-----|
| Operational Temperature at Case | T_C | °C | 10 | | 20 |
| Forward Current | I_F | A | | | 1.6 |
| Output Power | P_{opt} | W | | | 1.0 |

Measurement Conditions / Comments

non condensing

Characteristics at 20° C at Begin Of Life

| Parameter | Symbol | Unit | min | typ | max |
|---------------------------------------|-----------------|--------|-----|------|------|
| Center Wavelength | λ_c | nm | 648 | | 658 |
| Spectral Width (FWHM) | $\Delta\lambda$ | nm | | 2 | |
| Temperature Coefficient of Wavelength | $d\lambda / dT$ | nm / K | | 0.3 | |
| Slope Efficiency | η_d | W/A | | 0.7 | |
| Threshold Current | I_{th} | A | | 0.75 | 0.85 |
| Operating Current @ $P_{opt} = 1.0$ W | I_{op} | A | | | 1.6 |
| Operating Voltage @ $P_{opt} = 1.0$ W | V_{op} | V | | 2.5 | |

Measurement Conditions / Comments

see image on page 2

EYP-BAL-0653-01000-1510-CMT02-0000

Revision 0.93

08.08.2017

MULTI MODE LASER DIODES Broad Area Laser

Characteristics at 20° C at Begin Of Life cont'd

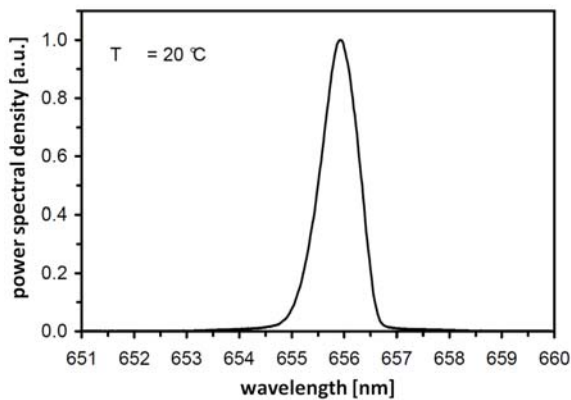
| Parameter | Symbol | Unit | min | typ | max |
|---------------------------------|------------------|---------------|-----|-----------|-----|
| Stripe Width | W_s | μm | | 100 | |
| Cavity Length | L | μm | | 1500 | |
| Divergence parallel (FWHM) | $\Theta_{ }$ | $^\circ$ | | 8 | |
| Divergence perpendicular (FWHM) | Θ_{\perp} | $^\circ$ | | 30 | |
| Spectral Mode (longitudinal) | | | | multimode | |
| Polarization | | | | TE | |

Measurement Conditions / Comments

beam divergence parallel to junction plane
 beam divergence perpendicular to junction plane
 polarization parallel to junction plane

Typical Measurement Results

Spectrum



Performance figures, data and any illustrative material provided in this specification are typical and must be specifically confirmed in writing by eagleyard Photonics before they become applicable to any particular order or contract. In accordance with the eagleyard Photonics policy of continuous improvement specifications may change without notice.

EYP-BAL-0653-01000-1510-CMT02-0000

Revision 0.93

08.08.2017

MULTI MODE LASER DIODES Broad Area Laser

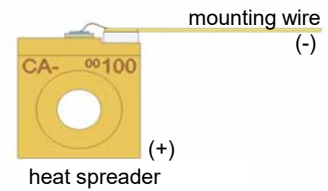
Package Dimensions

| Parameter | Symbol | Unit | min | typ | max |
|---------------------------------|----------|------|------|------|------|
| Height of Emission Plane | h_{EP} | mm | 7.05 | 7.20 | 7.35 |
| Excentricity of Emission Center | R | mm | | 2.18 | |

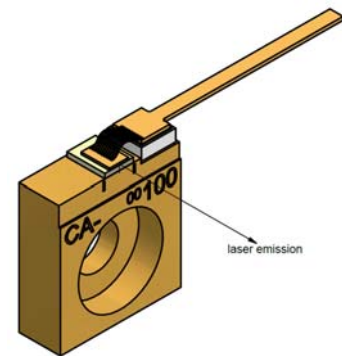
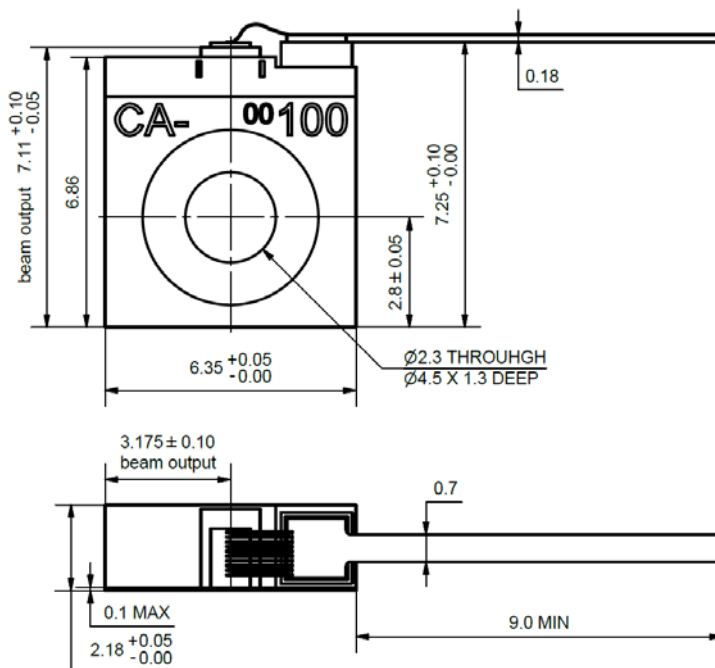
Measurement Conditions / Comments

Package Pinout

| | |
|---------------|-------------|
| Mounting Wire | Cathode (-) |
| Housing | Anode (+) |



Package Drawings



AIZ-16-0414-1638

EYP-BAL-0653-01000-1510-CMT02-0000

Revision 0.93

08.08.2017

MULTI MODE LASER DIODES Broad Area Laser

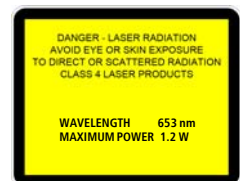
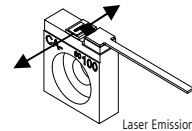
Unpacking, Installation and Laser Safety

Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.

The BAL diode type is known to be sensitive against thermal stress. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode.

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.

Each laser diode will come with an individual test protocol verifying the parameters given in this document.



IEC 80825-1



Complies with 21 CFR 1040.10 and 1040.40