

Features

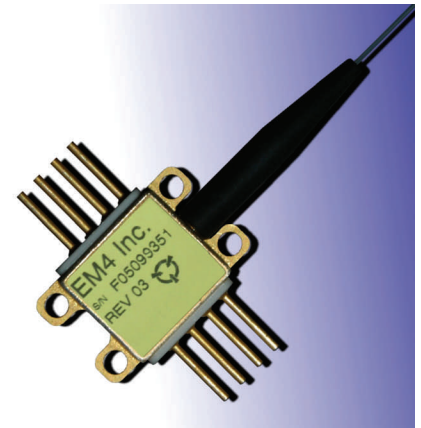
- 915, 940 or 960nm center wavelength
- 0.15 or 0.22NA 105µm core multimode fiber pigtail
- Uncooled
- Laser welded and epoxy free
- Hermetically sealed
- Built in thermistor
- Telcordia GR-468 Core / MIL-Std 883 compliant
- RoHS compliant

Applications

- Fiber lasers
- Yb laser pumping
- Marking
- Defense

General Description

The EM4 high power laser has a fiber coupled output power of typical 7W. The module is ideal for use in a variety of applications where brightness is essential with a reliable and robust packaging. The module is hermetically sealed into an 8 pin butterfly metal ceramic package and contains a thermistor for temperature monitoring. The module is pigtailed using a step index fiber with a 0.15 or 0.22 numerical aperture, 105 micron core diameter.



Ordering Information

| Part | λ_c [nm] | Fiber NA |
|-------|------------------|----------|
| EM314 | 915 | 0.15 |
| EM315 | 915 | 0.22 |
| EM316 | 940 | 0.15 |
| EM317 | 940 | 0.22 |
| EM318 | 960 | 0.15 |
| EM319 | 960 | 0.22 |

Absolute Maximum Ratings

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and operation of the device at these or conditions beyond these are not implied. Exposure to absolute maximum ratings for extended periods of time may affect device reliability.

| Parameter | Sym | Condition | Min | Max | Unit |
|----------------------------|-----------|-----------|-----|-----|------|
| Storage Temperature | T_{STG} | | -40 | 85 | °C |
| Operating Case Temperature | T_{OP} | | -20 | 70 | °C |
| Laser Forward Current | I_F | | | 11 | A |
| Laser Reverse Voltage | V_R | | | 2 | V |
| Thermistor Current | | | | 2 | mA |
| Thermistor Voltage | | | | 5 | V |
| Fiber Pull Force | | | | 5 | N |
| Fiber Bend Radius | | | 35 | | mm |
| Lead Soldering Time | | | | 10 | s |
| Lead Soldering temperature | | | | 250 | °C |
| ESD | | HBM | | 500 | V |

For pricing and delivery information, please contact EM4 inc. direct at +1 781 275 75 01, sales@em4inc.com or any of the representatives listed at www.em4inc.com.

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7W 8 Pin Multimode Pump Laser

Optical And Electrical Characteristics

T_C=25°C unless otherwise specified, good thermal contact

| Parameter | Sym | Condition | Min | Typ. | Max | Unit |
|-------------------------------------|----------------------------|------------------------------------|------|-------|-------|-------|
| Center Wavelength | λ_C | EM314, EM315, I=I _{OP} -1 | 905 | 915 | 925 | nm |
| | | EM316, EM317, I=I _{OP} -1 | 930 | 940 | 950 | |
| | | EM318, EM319, I=I _{OP} -1 | 950 | 960 | 970 | |
| Operating Current | I _{OP} | P=P _{OP} | | | 9 | A |
| Operating Voltage | V _{OP} | I=I _{OP} | | | 2.2 | V |
| Output Power | P _{OP} | | 7 | | | W |
| Threshold Current | I _{TH} | | | 0.4 | 0.6 | A |
| Wavelength Drift vs. T _C | $\delta\lambda/\delta T_C$ | | | 0.3 | | nm/°C |
| Spectral Width | $\Delta\lambda$ | 17dB down from peak | | 6 | | nm |
| Operating Case Temperature | T _C | | 0 | | 35 | °C |
| Thermistor Resistance | R _{TH} | T=25°C | 9500 | 10000 | 10500 | Ω |
| Thermistor β coefficient | β | 0 / 50°C | | 3892 | | |

Fiber Specification

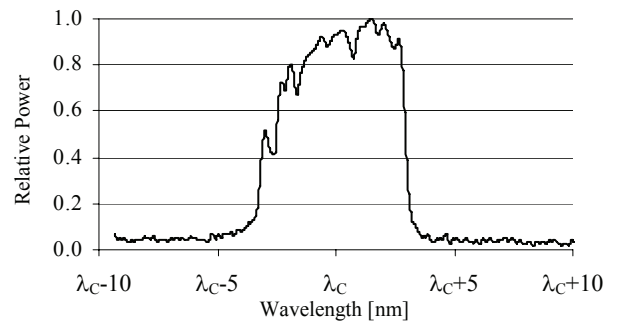
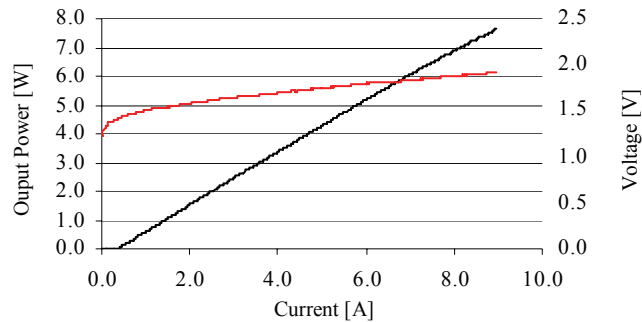
| Parameter | Sym | Condition | Min | Typ. | Max | Unit |
|--------------------------------|-----|---------------------|------------|------|------|------|
| Fiber Type | | | Step Index | | | |
| Jacket Material | | | PVDF | | | |
| Numerical Aperture | | EM314, EM316, EM318 | | 0.15 | 0.17 | |
| | | EM315, EM317, EM319 | | 0.22 | 0.24 | |
| Core Diameter | | | 102 | 105 | 108 | μm |
| Cladding Diameter | | | 123 | 125 | 128 | μm |
| Buffer Diameter | | | 235 | 250 | 265 | μm |
| Jacket Diameter | | | | 900 | | μm |
| Jacket Length From End Of Boot | | | 75 | | 95 | mm |
| Pigtail Length | | | 1 | | | m |

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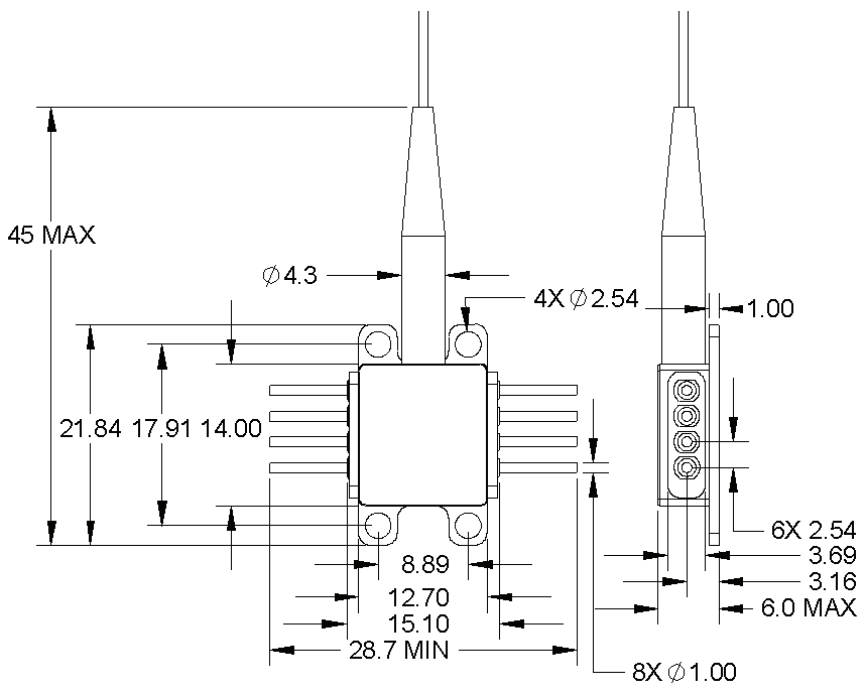
Typical Operating Characteristics

$T_c=25^\circ\text{C}$



Mechanical Drawing

All units in mm



Pinning

| Pin | Description |
|-----|-------------------|
| 1 | Thermistor |
| 2 | NC |
| 3 | Thermistor |
| 4 | NC |
| 5 | Laser anode (+) |
| 6 | Laser cathode (-) |
| 7 | NC |
| 8 | NC |



OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DEVICES

DANGER



INVISIBLE LASER RADIATION
AVOID DIRECT EXPOSURE TO BEAM

**MAXIMUM POWER 15W
WAVELENGTH 760-1070nm**

CLASS IV LASER COMPONENT

The component complies with all applicable portions of 21 CFR 1040.10, 21 CFR 1010.2 and 21 CFR 1010.3. Since this is a component, it does not comply with all of the requirements contained in 21 CFR 1040.10 and 21 CFR 1040.11 for complete laser products.

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