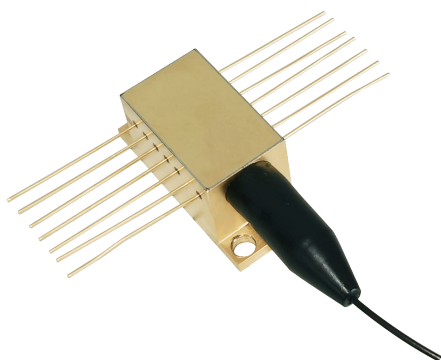


# 14BTF Diode Laser Components



14BTF diode laser components are Reallight's AW series laser modules, available in fiber-coupled configuration with single emitter. Equipped with photodiode and thermistor, these lasers feature compact size, superior power stability, high reliability and more.

## Key Features

- ◆ Compact size
- ◆ High reliability
- ◆ Superior power stability
- ◆ Excellent beam quality
- ◆ Various wavelengths

## Applications

Pumping source  
Fluorescence detection  
Laser processing  
Scientific research

## Technical Specifications (25°C)

| Package Type           |                                              | 14BTF (Single Mode)   |     |     |     |     | 14BTF (Multi Mode) |     |     |     |     |
|------------------------|----------------------------------------------|-----------------------|-----|-----|-----|-----|--------------------|-----|-----|-----|-----|
| Center Wavelength （nm） |                                              | 405                   | 450 | 520 | 638 | 650 | 405                | 450 | 520 | 638 | 650 |
| Optical                | CW Output Power / P <sub>op</sub> (mW)       | 50                    | 50  | 50  | 60  | 60  | 100                | 100 | 100 | 130 | 130 |
|                        | Wavelength Tolerance (nm)                    | ±10                   |     |     |     |     |                    |     |     |     |     |
|                        | Spectral Width / Δλ (nm)                     | <3                    |     |     |     |     |                    |     |     |     |     |
| Electrical             | Threshold Current / I <sub>th</sub> （mA）     | 40                    | 22  | 60  | 50  | 60  | 40                 | 22  | 60  | 60  | 60  |
|                        | Operating Current / I <sub>op</sub> （mA）     | 180                   | 150 | 240 | 260 | 260 | 180                | 150 | 240 | 240 | 260 |
|                        | Operating Voltage / V <sub>op</sub> （V）      | 5                     | 5   | 7   | 2.5 | 2.5 | 5                  | 5   | 7   | 2.3 | 2.3 |
|                        | Slope Efficiency / η <sub>es</sub> （W/A）     | 0.4                   | 0.4 | 0.3 | 0.3 | 0.3 | 0.4                | 0.4 | 0.3 | 0.7 | 0.7 |
|                        | Thermistor / Rt (kΩ/β (25℃))                 | 10±1%/3450            |     |     |     |     |                    |     |     |     |     |
|                        | TEC Max Current I <sub>max</sub> (A)         | 2.2                   |     |     |     |     |                    |     |     |     |     |
|                        | TEC Max Voltage V <sub>max</sub> (V)         | 8.7                   |     |     |     |     |                    |     |     |     |     |
| Fiber                  | Fiber Core Diameter / Cladding Diameter (μm) | 4/125, 6/125, 9/125   |     |     |     |     | 105/125            |     |     |     |     |
|                        | Fiber Coating Diameter / Dbuffer (μm)        | 250                   |     |     |     |     |                    |     |     |     |     |
|                        | Fiber Length / L (cm)                        | 100±10 (Customizable) |     |     |     |     |                    |     |     |     |     |
|                        | Numerical Aperture / NA                      | 0.14                  |     |     |     |     | 0.22               |     |     |     |     |
|                        | Connector                                    | FC/PC, SMA905         |     |     |     |     |                    |     |     |     |     |

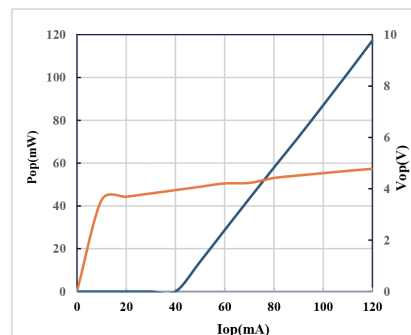
1. All the data in the above table are the typical values obtained from the tests at room temperature of 25°C, and the final data is subject to the final test report.

## Other Parameters

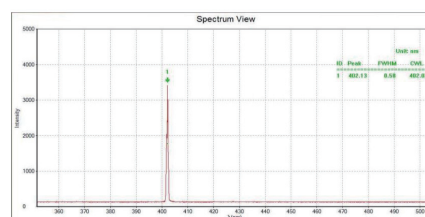
| Parameter | Operating Temperature /°C | Operating Relative Humidity /% | Storage Temperature /°C | Storage Relative Humidity /% | Lead Soldering Temperature (max/°C) |
|-----------|---------------------------|--------------------------------|-------------------------|------------------------------|-------------------------------------|
| Min       | 10                        | -                              | -20                     | -                            | -                                   |
| Max       | 30                        | 75                             | 70                      | 90                           | 250(10Sec.)                         |

## Order Information

| Package | Wavelength (nm) | Output Power (mW) | Part Number              |
|---------|-----------------|-------------------|--------------------------|
| 14BTF   | 405             | 50                | R405±10-50mWF-14BTF-T-S  |
|         | 450             | 50                | R450±10-50mWF-14BTF-T-S  |
|         | 520             | 50                | R520±10-50mWF-14BTF-T-S  |
|         | 638             | 60                | R638±10-60mWF-14BTF-T-S  |
|         | 650             | 60                | R650±10-60mWF-14BTF-T-S  |
|         | 405             | 100               | R405±10-100mWF-14BTF-T-M |
|         | 450             | 100               | R450±10-100mWF-14BTF-T-M |
|         | 520             | 100               | R520±10-100mWF-14BTF-T-M |
|         | 638             | 130               | R638±10-130mWF-14BTF-T-M |
|         | 650             | 130               | R650±10-130mWF-14BTF-T-M |

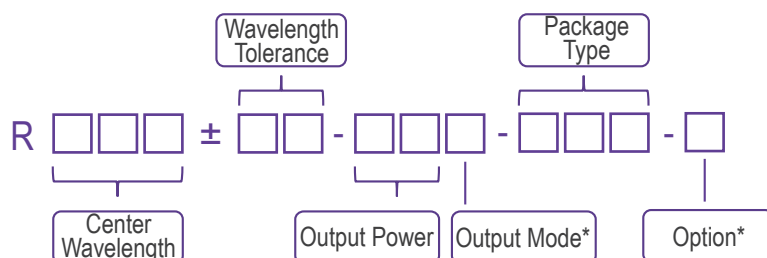


405nm P-I-V Graph



405nm Spectrum

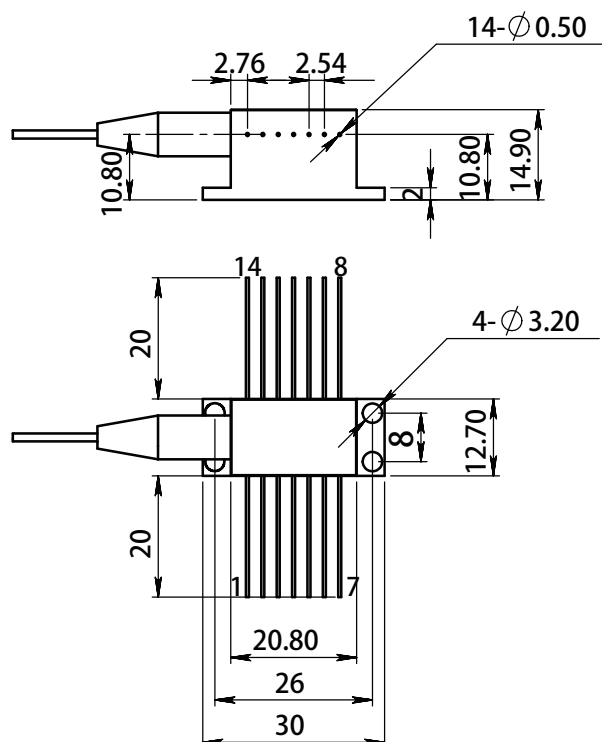
## Part Numbering Schema



\*Output Mode: F - Fiber Pigtailed

\*Option: T - TEC S - Single Mode Fiber M - Multi Mode Fiber

## Mechanical Drawings (in mm)



405nm/450nm Pin description

| Pin | Function   | Pin | Function  |
|-----|------------|-----|-----------|
| 1   | TEC (+)    | 8   | Laser (-) |
| 2   | -          | 9   | -         |
| 3   | Thermistor | 10  | -         |
| 4   | Thermistor | 11  | -         |
| 5   | *          | 12  | -         |
| 6   | *          | 13  | -         |
| 7   | Laser (+)  | 14  | TEC (-)   |

520nm/638nm/650nm Pin description

| Pin | Function   | Pin | Function  |
|-----|------------|-----|-----------|
| 1   | TEC (+)    | 8   | Laser (-) |
| 2   | -          | 9   | -         |
| 3   | Thermistor | 10  | -         |
| 4   | Thermistor | 11  | -         |
| 5   | PD (P)     | 12  | -         |
| 6   | PD (N)     | 13  | -         |
| 7   | Laser (+)  | 14  | TEC (-)   |

