

# High Power R5M Diode Laser Components

High power R5M diode laser components are RealLight's AW series multi-function laser modules, providing multi-wavelength output with 3 different wavelength emitters integrated. These fiber detachable lasers are equipped with fiber detector, photodiode, thermistor and replaceable window.

## Key Features

- ◆ Superior power stability
- ◆ Excellent beam quality
- ◆ Efficient heat dissipation
- ◆ High reliability
- ◆ Different-wavelength combinations available

## Applications

Aesthetic medicine  
Laser surgery  
Laser therapy

## Technical Specifications (25°C)

| Package Type           |                                                                    | R5M              |     |     |              |     |      |
|------------------------|--------------------------------------------------------------------|------------------|-----|-----|--------------|-----|------|
|                        |                                                                    | 3-wavelength     |     |     | 3-wavelength |     |      |
| Center Wavelength (nm) |                                                                    | 650              | 808 | 980 | 650          | 808 | 1064 |
| Optical                | CW Output Power / $P_{op}$ (W)                                     | 0.5              | 15  | 15  | 0.5          | 15  | 15   |
|                        | Wavelength Tolerance (nm)                                          | $\pm 10$         |     |     |              |     |      |
|                        | Spectral Width / $\Delta\lambda$ (nm)                              | <6               |     |     |              |     |      |
|                        | Temperature Drift of Wavelength / $\Delta\lambda/\Delta T$ (nm/°C) | 0.3              |     |     |              |     |      |
| Electrical             | Threshold Current / $I_{th}$ (A)                                   | 0.5              | 1.2 | 1.1 | 0.5          | 1.5 | 1    |
|                        | Operating Current / $I_{op}$ (A)                                   | 1.2              | 10  | 18  | 1.2          | 10  | 10   |
|                        | Operating Voltage / $V_{op}$ (V)                                   | 2.2              | 4   | 1.8 | 2.2          | 4   | 3.6  |
|                        | Slope Efficiency / $\eta_{es}$ (W/A)                               | 0.7              | 1.7 | 0.9 | 0.7          | 1.7 | 1.7  |
|                        | PD Parameter / $I_{pd}$ ( $\mu A$ )                                | <3000            |     |     |              |     |      |
|                        | Thermistor / $R_t$ ( $k\Omega/\beta$ (25°C) )                      | 10 $\pm$ 1%/3930 |     |     |              |     |      |
| Fiber                  | Fiber Core Diameter / $D_{core}$ ( $\mu m$ )                       | 400              |     |     |              |     |      |
|                        | Fiber Cladding Diameter / $D_{clad}$ ( $\mu m$ )                   | 440              |     |     |              |     |      |
|                        | Fiber Coating Diameter / $D_{buffer}$ ( $\mu m$ )                  | 720              |     |     |              |     |      |
|                        | Numerical Aperture / NA                                            | 0.22             |     |     |              |     |      |
|                        | Connector                                                          | 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.

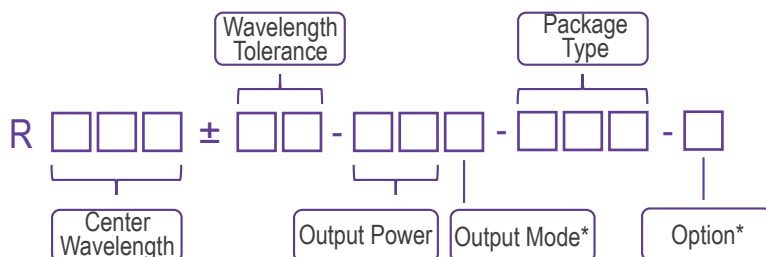
## Other Parameters

| 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 (W) | Part Number                          |
|---------|-----------------|------------------|--------------------------------------|
| R5M     | 650/808/980     | 0.5/15/15        | R650/808/980±10-0.5/15/15WD-R5M-PFS  |
|         | 650/808/1064    | 0.5/15/15        | R650/808/1064±10-0.5/15/15WD-R5M-PFS |

## Part Numbering Schema

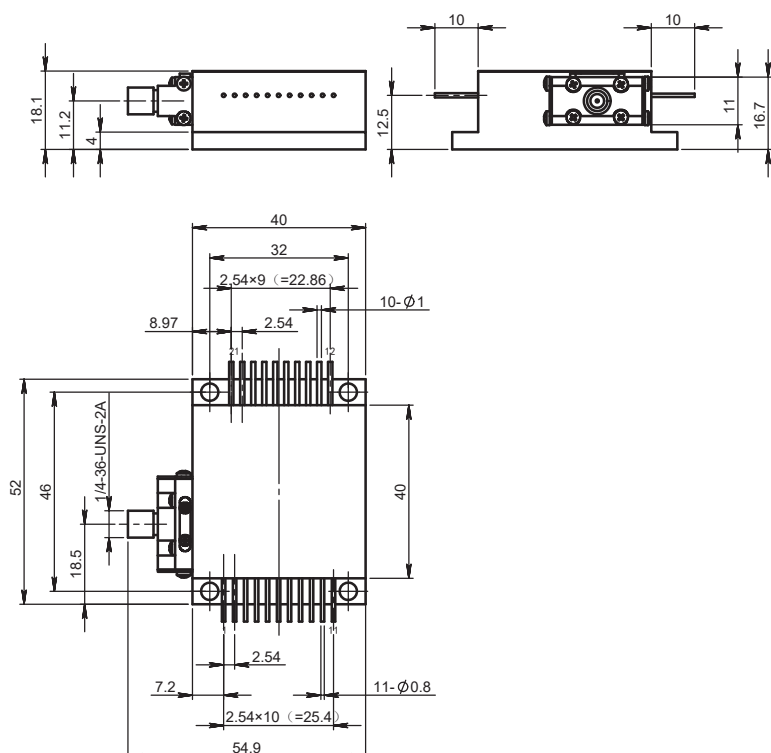


\*Output Mode: D - Fiber Detachable

\*Option: P - Pilot Light

FS - Fiber Detector

## Mechanical Drawings (in mm)



| 650/808/980nm |                                                  |     |                   |
|---------------|--------------------------------------------------|-----|-------------------|
| Pin           | Function                                         | Pin | Function          |
| 1             | Fiber Detector PD (P)                            | 12  | -                 |
| 2             | Fiber Detector LED (+);<br>Fiber Detector PD (N) | 13  | -                 |
| 3             | Fiber Detector LED (-)                           | 14  | LD1( + )          |
| 4             | PD(P)                                            | 15  | LD1( - )          |
| 5             | PD(N)                                            | 16  | LD2( + )          |
| 6             | -                                                | 17  | -                 |
| 7             | -                                                | 18  | -                 |
| 8             | -                                                | 19  | LD2( - )          |
| 9             | -                                                | 20  | Red laser LD( + ) |
| 10            | Thermistor                                       | 21  | Red laser LD( - ) |
| 11            | Thermistor                                       |     |                   |

| 650/808/1064nm |                                                  |     |                   |
|----------------|--------------------------------------------------|-----|-------------------|
| Pin            | Function                                         | Pin | Function          |
| 1              | Fiber Detector PD (P)                            | 12  | LD1( + )          |
| 2              | Fiber Detector LED (+);<br>Fiber Detector PD (N) | 13  | -                 |
| 3              | Fiber Detector LED (-)                           | 14  | -                 |
| 4              | PD(P)                                            | 15  | LD1( - )          |
| 5              | PD(N)                                            | 16  | LD2( + )          |
| 6              | -                                                | 17  | -                 |
| 7              | -                                                | 18  | -                 |
| 8              | -                                                | 19  | LD2( - )          |
| 9              | -                                                | 20  | Red laser LD( + ) |
| 10             | Thermistor                                       | 21  | Red laser LD( - ) |
| 11             | Thermistor                                       |     |                   |

