

14HHL/15HHL Diode Laser Components

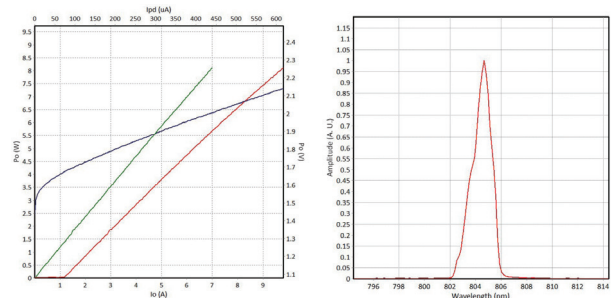
14HHL and 15HHL diode laser components are RealLight's AW series multi-function laser modules, available in fiber detachable or fiber coupled configurations. These lasers are equipped with aiming beam, fiber detector, photodiode and thermistor.

Key Features

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

Applications

- Medical application
- Laser processing
- Scientific research



808nm P-I-V Graph

808nm Spectrum

Technical Specifications (25°C)

| Package Type | | 14HHL | | | | | 15HHL | | | | |
|------------------------|---|-----------------------|-----|-------------|------|------|---------------|-------------|------|------|------|
| Center Wavelength (nm) | | 450 | 808 | 940/976/980 | 1064 | 450 | 808 | 940/976/980 | 1064 | | |
| Optical | CW Output Power / P _{op} (W) | 4 | 9 | 10 | 20 | 10 | 4 | 9 | 10 | 20 | 10 |
| | Wavelength Tolerance (nm) | ±3, ±10 | | | | | | | | | |
| | Spectral Width / Δλ (nm) | < 4 | | | | | | | | | |
| | Temperature Drift of Wavelength / Δλ/ΔT (nm/°C) | 0.3 | | | | | | | | | |
| Aiming Beam | Output Power / P _a (mW) | 2 | | | | | | | | | |
| | Wavelength / λ _a (nm) | 650±10 | | | | | | | | | |
| | Voltage / V _a (V) | 2.2, 5.0 | | | | | | | | | |
| Electrical | Threshold Current / I _{th} (A) | 0.4 | 1.2 | 0.55 | 1 | 1.1 | 0.4 | 1.2 | 0.55 | 1 | 1.1 |
| | Operating Current / I _{op} (A) | 3.5 | 10 | 11 | 23.5 | 10.5 | 3.5 | 9.5 | 11 | 23.5 | 10.5 |
| | Operating Voltage / V _{op} (V) | 4.4 | 2 | 1.8 | 2 | 1.7 | 4.4 | 2 | 1.8 | 2 | 1.7 |
| | Slope Efficiency / η _{es} (W/A) | 1.1 | 0.9 | 0.9 | 0.9 | 0.9 | 1.1 | 0.9 | 0.9 | 0.9 | 0.9 |
| | PD Parameter / I _{pd} (μA) | <3000 | | | | | <2000 | | | | |
| | Thermistor / Rt (kΩ/β (25°C)) | 10±1%/3450 | | | | | | | | | |
| | TEC Max Current I _{max} (A) | 6 | | | | | | | | | |
| | TEC Max Voltage V _{max} (V) | 9.8 | | | | | | | | | |
| Fiber | Fiber Core/Cladding Diameter D _{core} (μm) | 105/125, 200/220 | | | | | | | | | |
| | Fiber Length / L (cm) | 100±10 (customizable) | | | | | | | | | |
| | Numerical Aperture / NA | 0.22 | | | | | | | | | |
| | Connector | SMA905 | | | | | 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.

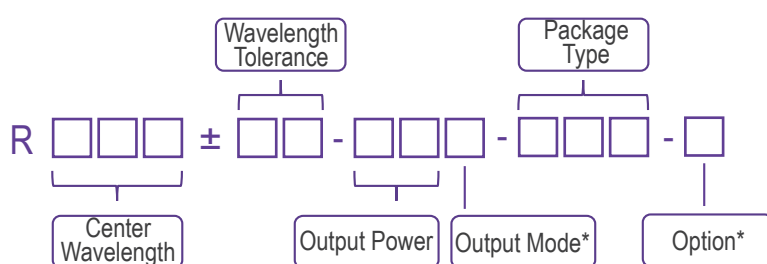
Other Parameters

| 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 (W) | Part Number |
|---------|----------------------|------------------|--------------------------|
| 14HHL | 450 | 4 | R450±10-4WD-14HHL-PTFS |
| | 808 | 9 | R808±10-9WD-14HHL-PTFS |
| | 9xx (940/976/980) | 10 | R9xx±10-10WD-14HHL-PTFS |
| | | 20 | R9xx±10-20WD-14HHL-PTFS |
| | 1064 | 10 | R1064±10-10WD-14HHL-PTFS |
| 15HHL | 450 | 4 | R450±10-4WF-15HHL-PT |
| | 808 | 9 | R808±10-9WF-15HHL-PT |
| | 9xx (940/976/980) | 10 | R9xx±10-10WF-15HHL-PT |
| | | 20 | R9xx±10-20WF-15HHL-PT |
| | 1064 | 10 | R1064±10-10WF-15HHL-PT |

Part Numbering Schema



*Output Mode: D - Fiber Detachable

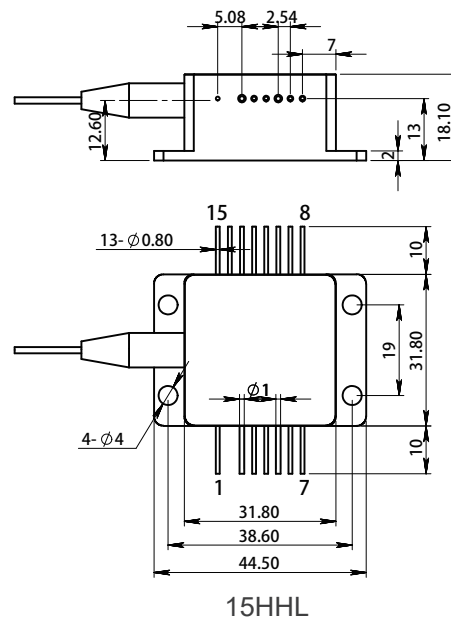
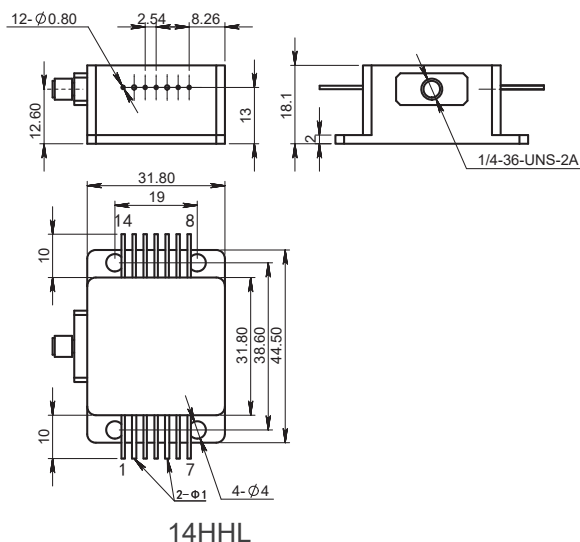
F - Fiber Pigtailed

*Option: T - TEC

P - Pilot Light

FS - Fiber Detector

Mechanical Drawings (in mm)



| 14HHL | | | |
|-------|------------|-----|-------------------------------|
| Pin | Function | Pin | Function |
| 1 | Case | 8 | TEC (-) |
| 2 | Laser (+) | 9 | FCD PD(P) |
| 3 | Thermistor | 10 | FCD LED(-) |
| 4 | Thermistor | 11 | FCD LED(+), FCD PD(N) |
| 5 | Laser (-) | 12 | Aiming Beam LD(+); [DC 5V] |
| 6 | PD(P) | 13 | Aiming Beam LD(-); [GND] |
| 7 | PD(N) | 14 | TEC (+) |

| 15HHL | | | |
|-------|------------|-----|-------------------|
| Pin | Function | Pin | Function |
| 1 | Case | 9 | - |
| 2 | Laser (+) | 10 | - |
| 3 | Thermistor | 11 | - |
| 4 | Thermistor | 12 | - |
| 5 | Laser (-) | 13 | Aiming Beam LD(+) |
| 6 | PD(P) | 14 | Aiming Beam LD(-) |
| 7 | PD(N) | 15 | TEC (+) |
| 8 | TEC (-) | | |

