Vitesse 800

Diode-Pumped Solid-State Ultrafast Laser

Features

• Compact femtosecond Ti:S oscillator
• Ultra-long-life Aluminum-free Active Area (AAA™) laser diode material
• PowerTrack™ active optimization
• Integrated Verdi™ pump source
• PermAlign™ solder-bonded optics technology
• Rugged, turnkey, hands-off operation
• Ideal for scientific or OEM environments
• Dual output beams (532 nm and 800 nm) version available – Vitesse-Duo

Mechanical Specifications

Laser Head

Front View

12.07 cm (4.75 in.)
16.51 cm (6.5 in.)
33.02 cm (13.0 in.)

Side View

17.46 cm (6.87 in.)
56.65 cm (22.3 in.)

Power Supply

Front View

17.78 cm (7.0 in.)
43.5 cm (17.13 in.)

Side View

45.09 cm (17.75 in.)

Superior Reliability & Performance
**Vitesse™ 800**  
Diode-Pumped Solid-State Ultrafast Laser

### System Specifications

<table>
<thead>
<tr>
<th></th>
<th>Vitesse 800-2</th>
<th>Vitesse 800-5</th>
<th>Vitesse Duo-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Power (mW)</td>
<td>&gt;200</td>
<td>&gt;750</td>
<td>&gt;1000</td>
</tr>
<tr>
<td>Wavelength1 (nm)</td>
<td>800</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>Bandwidth2 (nm)</td>
<td>&gt;10</td>
<td>&gt;10</td>
<td>&gt;10</td>
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<tr>
<td>Pulselength3 (fs)</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
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<tr>
<td>Repetition Rate4 (MHz)</td>
<td>80</td>
<td>80</td>
<td>80</td>
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<tr>
<td>Power Stability5 (%)</td>
<td>±1</td>
<td>±1</td>
<td>±1</td>
</tr>
<tr>
<td>Noise6 (%)(RMS)</td>
<td>&lt;0.1</td>
<td>&lt;0.1</td>
<td>&lt;0.1</td>
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<tr>
<td>Beam Diameter7 (mm)</td>
<td>1.25</td>
<td>1.45</td>
<td>1.25</td>
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<tr>
<td>Beam Divergence8 (mrad)</td>
<td>&lt;1.2</td>
<td>&lt;1.1</td>
<td>&lt;1.4</td>
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<tr>
<td>M2</td>
<td>&lt;1.2</td>
<td>&lt;1.2</td>
<td>&lt;1.2</td>
</tr>
<tr>
<td>Polarization</td>
<td>&gt;100:1, horizontal</td>
<td>&gt;100:1, horizontal</td>
<td>&gt;100:1, horizontal</td>
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</tbody>
</table>

### Power Supply

| Voltage (V)           | 90 to 250    |
| Current Max. (A)      | 15.5 @ 85VAC |
| Frequency (Hz)        | 47 to 63     |
| Cooling9              | Conductively-cooled to a heat sink with a closed-cycle chiller |

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1 Nominal center wavelength ±1 nm  
2 Full width at half maximum  
3 Based on sech2 deconvolution of 0.65 times autocorrelation width  
4 Nominal repetition rate ±0.8 MHz  
5 Measured over 2 hours after 15-minute warm-up  
6 Measured from 10 Hz to 100 MHz  
7 1/e2 at exit port, nominal beam diameter ±0.5 mm  
8 Full angle (1/e2)  
9 Dependent on operational environment  
10 The Vitesse-Duo is a special configuration of the Vitesse that serves as an integrated seed and pump source for Coherent’s RegA 9000/9050 regenerative amplifier. It has dual output beams at 532 nm and 800 nm.

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**Laser Cavity Schematic**

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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent’s scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all Vitesse systems. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative.