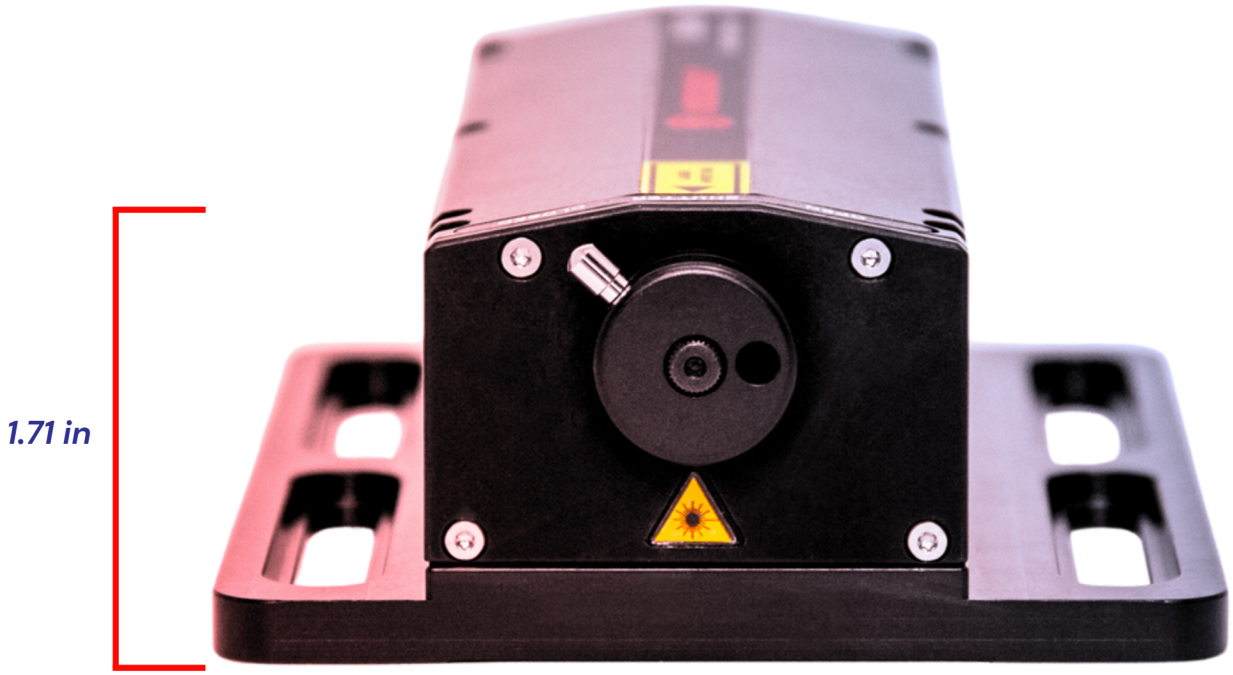
D2-200 DBR Laser Module

The D2-200 laser module is a complete redesign of our robust Distributed Bragg Reflector (DBR) diode laser, featuring a new Virtual Point Source (VPS) DBR laser. Its proprietary lensing system minimizes astigmatism, aligning fast-axis divergence with the slow axis for near-Gaussian output and exceptional beam quality ($M^2 < 1.15$).



D2-200 Front View

DBR laser diodes feature feedback gratings etched next to the gain region. This compact, moving part-free cavity makes the D2-200 highly resistant to vibrations and acoustic disturbances. The short cavity allows mode hop-free current tuning over more than 25 GHz. The system also supports agile current tuning, offering MHz-level servo bandwidth and GHz-level direct frequency modulation for easy locking to atomic and molecular transitions or a reference laser.

For long-term stability, the D2-200 employs dual-stage temperature control and optical isolation, ensuring reliable mode hop-free operation. A refined design-for-manufacturability process further enhances alignment stability, making it even more dependable than its widely adopted predecessor.

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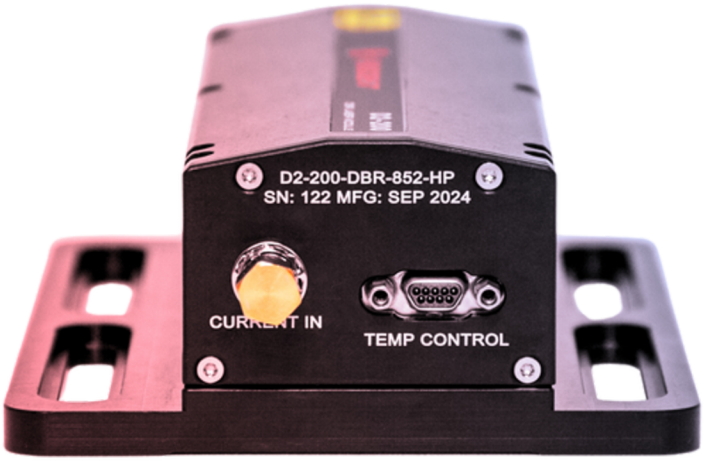

D2-200 Back View

D2-200 Side View

Features

- Potassium, Rubidium, and Cesium wavelengths
- Vibration immune: no moving parts or piezos
- 25 GHz mode hop-free tuning via high-bandwidth injection current
- Optically isolated for spectral purity
- Fiber coupling accessories
- High-speed modulation

Up to:

- 100 mW at 780, 795, and 828 nm
- 130 mW at 852 nm
- 150 mW at 895 nm

Also offering:

- 767, 770, 778, 785 nm

D2-200 Specifications Continued...

Center Wavelength	Standard Power Option	High Power Option
Power Options		
λ < 780 nm	>25 mW	-
λ ≥780 nm	> 40 mW	> 100 mW
Laser Classification	3B	

Parameter	Min.	Typical	Max
Optics			
Linewidth[1]		500 kHz	
Beam Diameter (1/e2)		0.9 mm	
Beam Divergence			1.3 mrad
Beam Polarization		Horizontal	
Polarization Extinction Ratio	18 dB		
Optical Isolation (standard power models)	38 dB	40 dB	
Optical Isolation (high power models)	60 dB	63 dB	
Tuning Range			
Temperature[2]		1.5 nm	
Current, mode hop free range	25 GHz		

[1] This linewidth is using a D2-105 or SLICE-DLC only.
[2] 0.06 nm/°C

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D2-200 Specifications Continued...

Parameter	Min.	Typical	Max
Temperature			
Diode Thermistor - Resistance at 25 °C		10 kΩ	
Diode Thermistor - Beta		3892 K	
Housing Thermistor - Resistance at 25 °C		10 kΩ	
Housing Thermistor - Beta		3380 K	
Operating Temperature - Diode TEC[2]	15 °C	20 °C	40 °C
Operating Temperature - Housing TEC	15 °C	20 °C	40 °C
Dimensions			
Beam Height		0.95 in 24.1 mm	
Package Dimensions (L x W x H)		5.87 x 3.75 x 1.71 (in) 149 x 95.3 x 43.5 (mm)	

[2] Minimum to not go below the dew point

Parameter	Value
Environmental	
Operating Temperature	>15 °C and <30 °C
Humidity	<60%
Dew Point	<15 °C

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