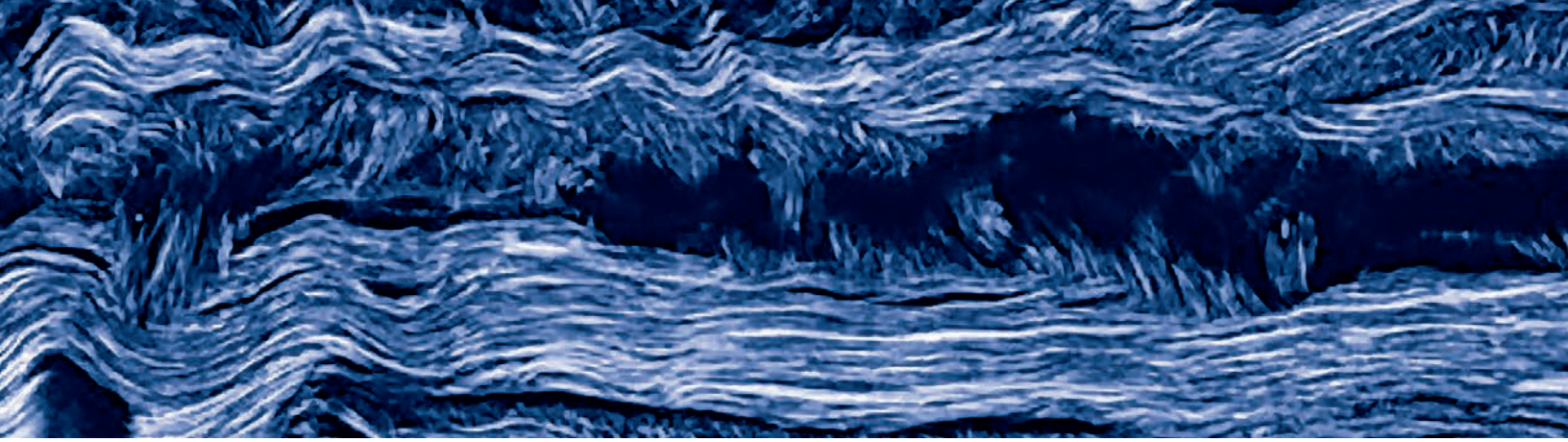


Fidelity HP

High Power Femtosecond Fiber Laser

Fidelity femtosecond laser systems deliver world leading performance in a compact turnkey, low maintenance package. With average output powers up to 18 W and short 140 fs pulses, Fidelity accesses high peak power regimes that truly enables a suite of applications in life sciences, applied physics, materials processing and microelectronics.

Utilizing Coherent's state-of-the-art fiber laser technology, Fidelity delivers minimal cost of ownership with minimal maintenance requirements. Exquisite beam quality provides optimum focus resolution and efficiency, coupled with extremely stable and low noise output, thanks to a precise light-loop control.

In Multiphoton imaging applications, Fidelity's high average and peak power enables optogenetic photoactivation of large populations of neurons, with precise spatial and temporal resolution. Short pulses are delivered directly to the sample plane by way of user adjustable group dispersion delay compensation (GDD).

Industrial and commercial applications, such as two photon polymerization, rapid prototyping and scribing, benefit from the finesse and speed of Fidelity's high peak power pulses delivered at 80 MHz.

FEATURES & BENEFITS

- Highest average power
- Short pulses for high peak intensity
- Adjustable GDD precompensation
- Turnkey operation, low maintenance
- Low cost of ownership
- HASS/HALT tested design and manufacture

APPLICATIONS

- Multiphoton Excitation (MPE) Microscopy
- Optogenetics (Photo Activation)
- OPO Pumping and Non-linear Optics
- Two-Photon Polymerization
- Scribing and Thin Film Processing
- Functional Surface Treatment

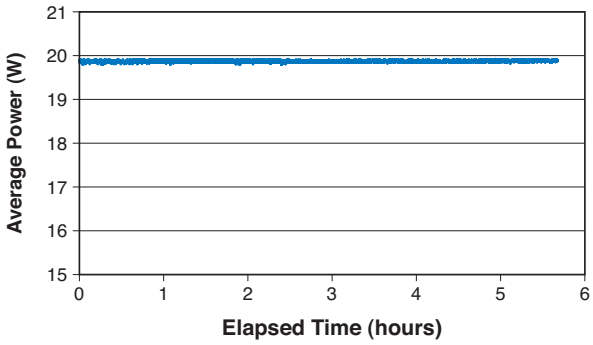
COHERENT®
Superior Reliability & Performance

SPECIFICATIONS[1]	Fidelity 10	Fidelity 18
Average Power (W)	10	18
Wavelength (nm) (nominal)	1040	
Pulse Repetition Rate (MHz)	80	
Pulse Duration[2] (fs)	140	
Noise[3] (%)	<0.25	
Power Stability[4] (%)	±0.5	
M^2	<1.25	
Beam Diameter[5] (mm)	1.2 (±0.2)	
Ellipticity[6]	0.8 to 1.2	
Polarization	100:1 Vertical	
Negative GDD Range (fs^2)	0 to 120,000	
UTILITY REQUIREMENTS		
Power Supply	19" rack mount	
Electrical Requirements (VAC)	100 to 250, 50 to 60 Hz	
Cooling Requirements	Air-cooled closed-loop chiller (included)	
Exyernal Interfaces	RS-232, USB, Sync Out	
ENVIRONMENTAL SPECIFICATIONS		
Operating Temperature (°C)	15 to 35	
Non-Operating Temperature (°C)	0 to 40	
Relative Humidity (%) (non-condensing)	<95	
Altitude (m)	<1000	

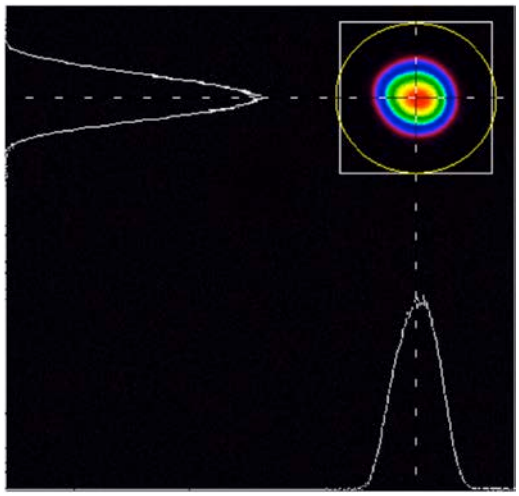
1 Specifications subject to change.
2 Based on pulse measurements made using FC Spider (APE GmbH).
3 Measured from 10 Hz to 10 MHz.
4 Measured over 2 hrs. after 30 min. warm-up at constant environmental temperature.
5 Average $1/e^2$ diameter measured at output.
6 Ratio of major to minor $1/e^2$ beam diameter at exit port.

TYPICAL PERFORMANCE DATA

Fidelity 18 Power Stability



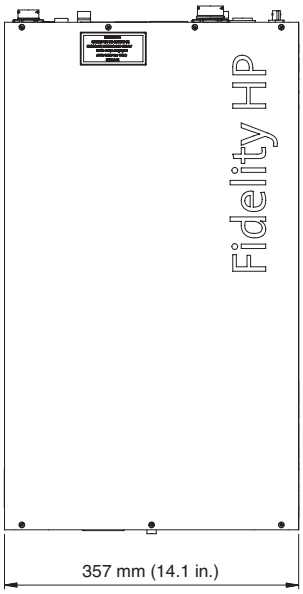
Fidelity HP Beam Quality



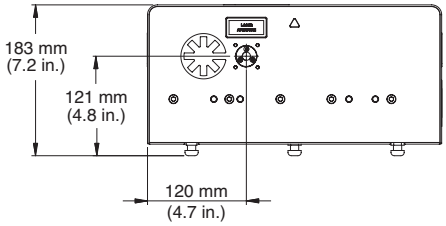
MECHANICAL SPECIFICATIONS

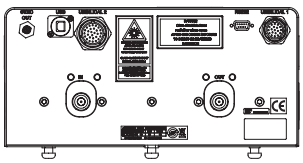
Fidelity HP

Top View

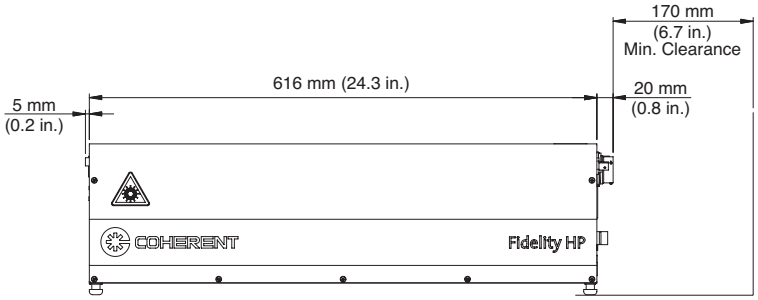


Front View





Rear View



Side View

Coherent, Inc.,
5100 Patrick Henry Drive Santa Clara, CA 95054
p. (800) 527-3786 | (408) 764-4983
f. (408) 764-4646

tech.sales@Coherent.com **www.coherent.com**