High Power Fiber Coupled Diode Laser System
FCL-H Series

Data Sheet

Overview

The FCL-H series is a line of fiber coupled diode lasers that can deliver high output power levels up to 200 W. The laser series is available in the wavelength range from 375nm to 980nm and features an integrated laser diode, fiber coupling optics, laser power supply, LD current and temperature control in one box. Its compact dimensions and convenient functions, including but not limited to power adjustment, temperature control, and LED display make the laser suitable for pumping, scientific research, industrial and medical applications.

Features

- Wavelength range from 375nm to 980nm
- CW operating mode
- High output power up to 200 W
- Compact dimension
- LED display
- Power adjustable

Applications

- Holographic, photography optogenetics
- Fluorescence excitation
- Raman spectrum measurement
- Interference measuring method
- Bioengineering
- Laser communication
- Photoelectric inspection
- Photodynamic therapy
- Material analysis
- Stage, landmark

375-462 nm Specifications

Parameter	FCL375H	FCL405H	FCL445H	FCL447H	FCL450H	FCL455H	FCL460H	FCL462H
Wavelength	375±5 nm	405±5 nm	445±5 nm	447±5 nm	450±5 nm	455±5 nm	460±5 nm	462±5 nm
Operating mode	CW							
Output power after fiber	~10 W, ~20 W	~30 W	~40 W, ~60 W, ~100 W, ~200 W	~50 W, ~100 W, ~200 W	~40 W, ~60 W, ~100 W, ~200 W	~50 W, ~80 W, ~100 W, ~200 W	~50 W, ~100 W, ~200 W	~50 W, ~100 W, ~200 W
Power stability (rms, over 4 hours)	<1%	<1%	<1%	<3%, <1%	<1%	<3%, <1%	<3%, <1%	<3%, <1%
Fiber core diameter	400um							
Fiber numerical aperture	0.22 NA							
Fiber connector	SMA905							
Output power control	0-100%, adjustable by knob							
LED display	Diode current, temperature, frequency, and pulse							
Temperature stability	±0.1°C							
Warm-up time	<5 min							
Operating temperature	25+/-3°C							
Red pilot light option	No							
Dimensions	518(L)×484(W) ×147.5(H) mm^3							
Weight	<15 kg							
Input power	200-240VAC, 50 to 60 Hz							
Power consumption	<0.5 KVA							
Cooling method	Water cooled							
Modulation option	TTL/Analog: 1Hz-30kHz							
Expected lifetime	10,000 hours							
Warranty period	10 months							

Remarks:

- The laser can be run from 0-30kHz. However, the laser will be adjusted such that the waveform and performance is good at the requested specified range.
- Specifications of the CW laser is based on the laser performance at full power output after the specified warmup period. The stability of output power may change when output power is adjusted at a different power level.

520-980 nm Specifications

Parameter	FCL520H	FCL793H	FCL808H	FCL880H	FCL915H	FCL976H	FCL980H
Wavelength	520±5 nm	793±10 nm	808±10 nm	880±10 nm	915±10 nm	976±10 nm	980±10 nm
Operating mode	CW	CW	CW	CW	CW	CW	CW
Output power after fiber	~20 W, ~30 W, ~40 W, ~50 W, ~60 W, ~70 W	~60 W, ~100 W	~60 W, ~100 W	~60 W, ~100 W	~60 W, ~100 W	~60 W, ~100 W	~60 W, ~100 W
Power stability (rms, over 4 hours)	<1%	<2%, <1%, <0.5%	<2%, <1%, <0.5%	<2%, <1%, <0.5%	<2%, <1%, <0.5%	<2%, <1%, <0.5%	<2%, <1%, <0.5%
Fiber core diameter	400um						
Fiber numerical aperture	0.22 NA						
Fiber connector	SMA905						
Fiber length	2 m						
Output power control	0-100%, adjustable by knob						
LED display	Diode current, temperature, frequency, and pulse						
Temperature stability	±0.1°C						
Warm-up time	<5 min						
Operating temperature	10-40°C						
Red pilot light option	No	Available					
Input power	200-240VAC, 50 to 60 Hz						
Power consumption	<0.5 KVA						
Cooling method	Water cooled	Air cooled					
Modulation option	TTL/Analog: 1Hz-30kHz	TTL/Analog: 1Hz-1kHz, 1kHz-10kHz, 10kHz-30kHz					
Expected lifetime	10,000 hours						
Warranty period	10 months						

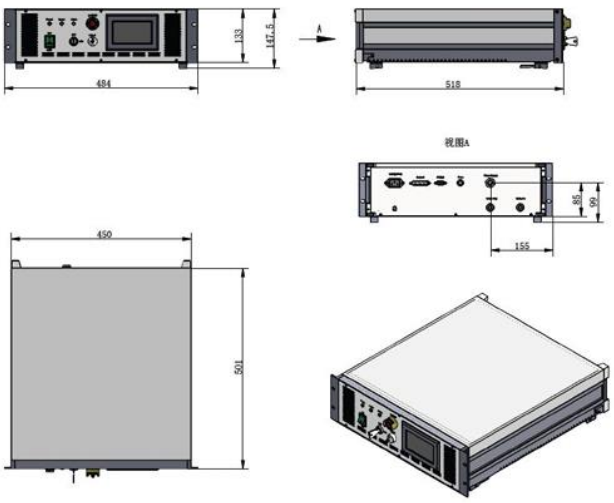
Remarks:

- The laser can be run from 0-30kHz. However, the laser will be adjusted such that the waveform and performance is good at the requested specified range.
- Specifications of the CW laser is based on the laser performance at full power output after the specified warmup period. The stability of output power may change when output power is adjusted at a different power level.

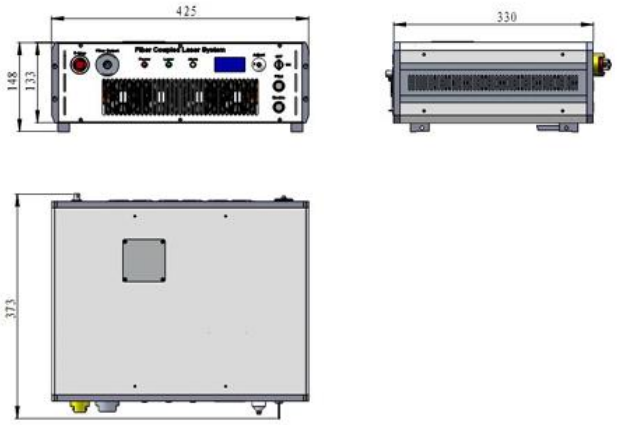
FCL-H Series Laser Dimensions

Unit: mm

375-520 nm



793-980 nm



Parameter	375-520 nm	793-980 nm
Dimensions	518(L)×484(W) ×147.5(H) mm^3	425(L)×373(W) ×148(H) mm^3
Weight	<15 kg	14.4 kg

Ordering Information

For more information, please contact Lasermate directly at sales@lasermate.com.

Part Number Configuration FCL[1]H[2][3][4][5][6][7]								
FCL = Laser Model Series	**[1] = Wavelength**	**H = Version**	**[2] = Output Power**	**[3] = Power Stability**	**[4] = Modulation**	**[5] = Red Pilot Light**	**[6] = Fiber**	**[7] = Cooling method**
	375= 375nm 405= 405nm 445= 445nm 447= 447nm 450= 450nm 455= 455nm 460= 460nm 462= 462nm 520= 520nm 793= 793nm 808= 808nm 880= 880nm 915= 915nm 940= 940nm 976= 976nm 980= 980nm		10W= ~10W 20W= ~20W 30W= ~30W 40W= ~40W 50W= ~50W 60W= ~60W 80W= ~80W 100W= ~100W 200W= ~200W	E= <3% D= <1%	0=None T1=TTL 1Hz-1kHz T2=TTL 1kHz-10kHz T3=TTL 10kHz-30kHz A1=Analog 1Hz-1kHz A2=Analog 1kHz-10kHz A3=Analog 10kHz-30kHz	R= Yes N= No	A= 400um MM fiber, SMA905	C= Water cooled Blank= Air cooled

Note: The above specifications are subject to change without notice.