

Ampheia™ Series

Ultra-Low Noise | Single Frequency | Fiber Laser Systems

Applications

Quantum Research
Optical Trapping
Laser pumping
Particle Analysis
Optical Metrology
Semiconductor Inspection
Holography



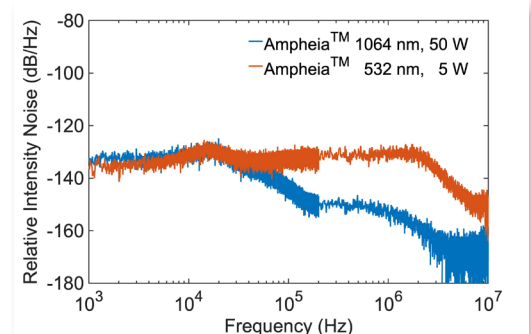
- Up to 50 W at 1064 nm and up to 5 W at 532 nm
- Continuous wave, single-frequency emission
- Ultra-low relative intensity noise and perfect beam quality
- Single-stage fiber amplifier with integrated seed laser
- Optical signal to noise ratio (OSNR > 70 dB)
- Robust and maintenance free

The Ampheia™ Series is a family of high-power fiber laser systems, delivering ultra-low relative intensity noise (RIN) and single-frequency operation with up to 50 W of power at 1064 nm and 5 W at 532 nm in a perfect beam.

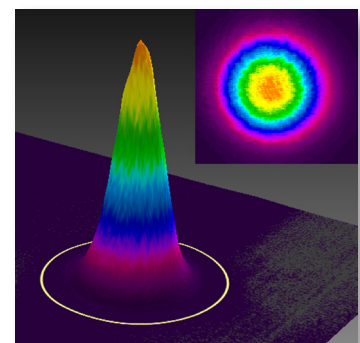
Ampheia™ Series fiber laser systems are fiber amplifiers delivered with an integrated seed laser and beam delivery head. A complete laser system that is affordable, with outstanding laser performance.

Based on established manufacturing processes, the Ampheia™ Series of fiber amplifiers and laser systems guarantee a high level of reliability, ideal for stand-alone use in research labs or integration into a commercial system. The Ampheia™ Series addresses applications ranging from atom trapping in quantum applications to laser pumping, particle analysis, and semiconductor inspection.

Typical Relative Intensity Noise (RIN)



Typical TEM₀₀ Beam Profile



HÜBNER Photonics



Ampheia™ Series

Optical Specifications

		Ampheia - LS 532 nm	Ampheia - LS 1064 nm		
Wavelength in air		532.0 ± 0.3 nm	1064.0 ± 0.6 nm		
Available Power Levels		5 W	20 W	40 W	50 W
Output power range*		1 % to 100 %	5 % to 100 %	2.5 % to 100 %	2 % to 100 %
Spectral linewidth (FWHM, 1 ms)		< 100 kHz	< 50 kHz		
Optical signal to noise ratio (OSNR)		> 70 dB			
Wavelength stability (±2°C and 8hrs)		< 1 pm			
Power stability (±2°C and 8hrs)		< 0.5 %			
Noise, 100 Hz - 10 MHz (rms)		< 0.05 %			
Relative intensity noise (RIN)	10 Hz - 1 kHz	< -110 dB/Hz	< - 110 dB/Hz		
	1 kHz - 100 kHz	< -125 dB/Hz	< - 130 dB/Hz		
	100 kHz - 1 MHz	< -130 dB/Hz	< - 140 dB/Hz		
Beam diameter at aperture		1.0 ± 0.2 mm			
Beam symmetry at aperture		> 0.90:1			
Spatial mode (TEM ₀₀)		TEM ₀₀ (M² < 1.05)			
Beam divergence (full angle)		< 1.7 mrad			
Beam pointing stability		< 5 µrad/°C			
Polarization extinction ratio (linear, vertical)		> 1000:1 [> 30 dB]			
Delivery fiber cable length		1.5 m	1.5 m	1.2 m	1.0 m

* The beam parameters may vary with output power and can only be guaranteed at nominal power.

Operational Environmental Specifications

Standard power supply	36 V / 10 A
Voltage acceptance range	30 - 40 V
System power consumption	300 W
Maximum heat dissipation of laser head	5 W
Ambient temperature, operation	18 - 30 °C
Laser head heat sink thermal impedance (at max ambient temperature)	< 2 K/W
Ambient temperature, storage	-10 -> +60 °C
Humidity	0- 60 % RH non-condensing
Intended use environment	Laboratory (indoor)

Model Number

A1-WWWW-XXXX-PPPW-2000	
↑	↑
Wavelength	Power
↑	
Included modules	Configuration:
	1000 = CE / CDRH
	2000 = OEM
	XXXX = Customization

Communication Interface

Communication	USB and RS-232
Standard Baudrate	115200



WARNING VISIBLE AND INVISIBLE LASER RADIATION!

Avoid eye or skin exposure to direct or scattered radiation.
Class 4 Laser Product
Classified per IEC 60825-1:2014



Wvl (nm)	Max.Pwr (W)
532	20
1064	200

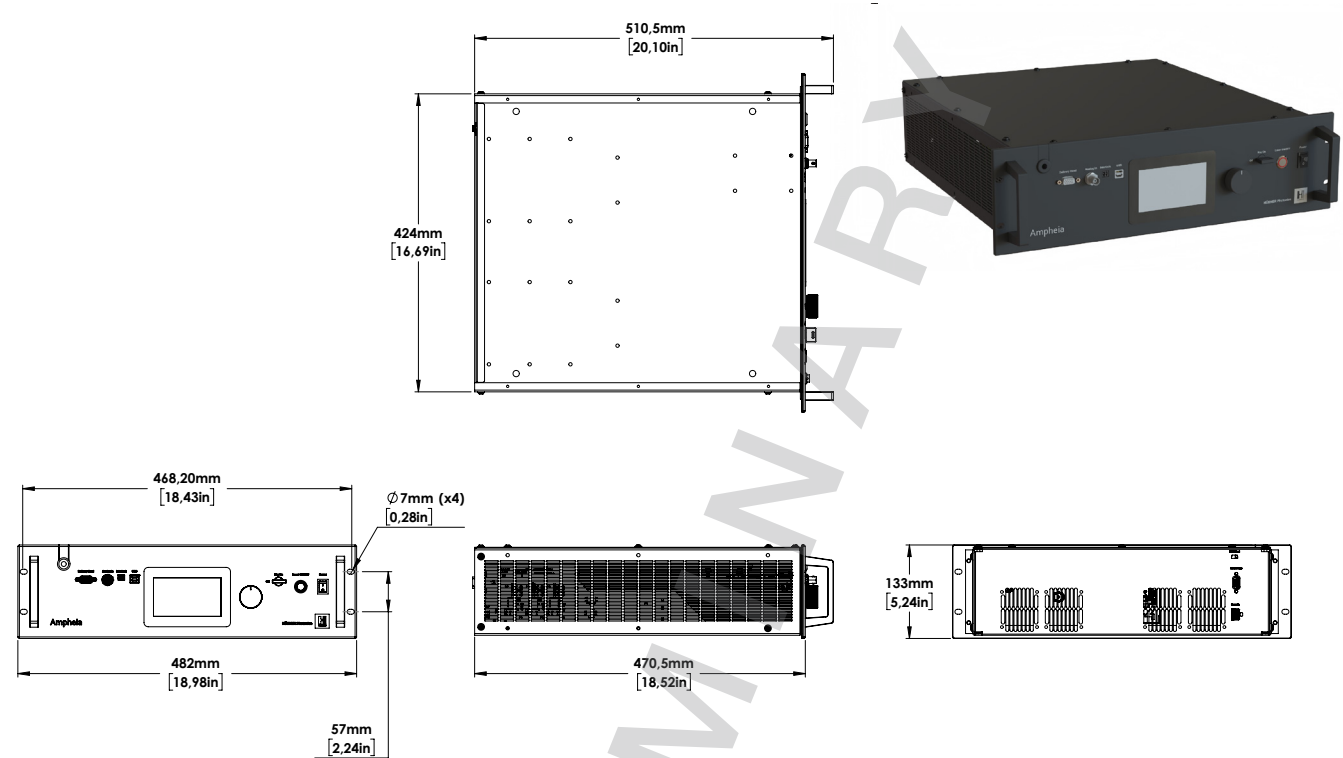


Ampheia™ Series

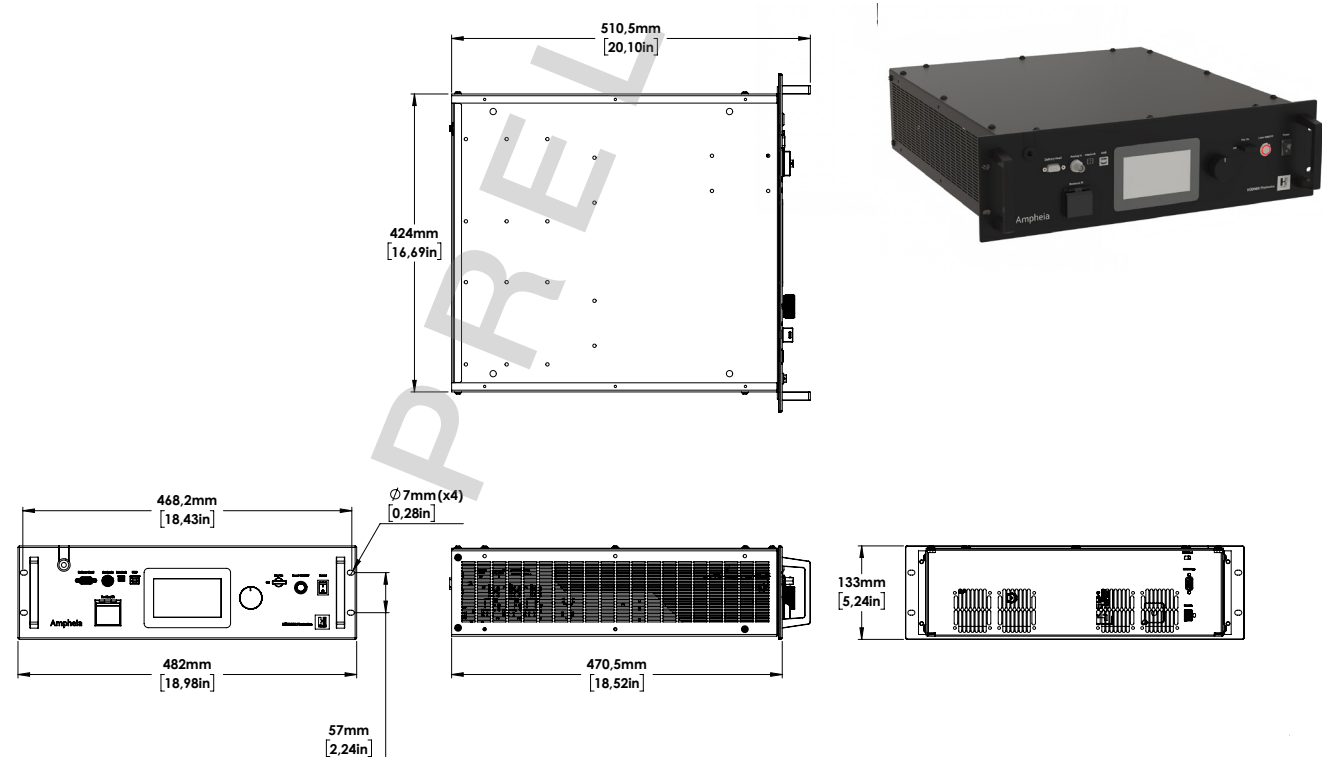
Mechanical Specifications

	532 nm	1064 nm
Fiber amplifier 19" rack box weight	19 kg (41 lbs.)	18 kg (39 lbs.)
Fiber amplifier 19" rack box dimensions (LxWxH)	470.5 x 423 x 133 mm (18.52 x 16.65 x 5.24 in.)	
Delivery head weight	0.62 kg (1.37 lbs.)	0.76 kg (1.68 lbs.)
Delivery head dimensions (LxWxH)	155 x 55 x 45 mm (6.10x2.17x0.87 in.)	

Ampheia™ 1064 nm - Fiber Amplifier 19" rack box dimensions:



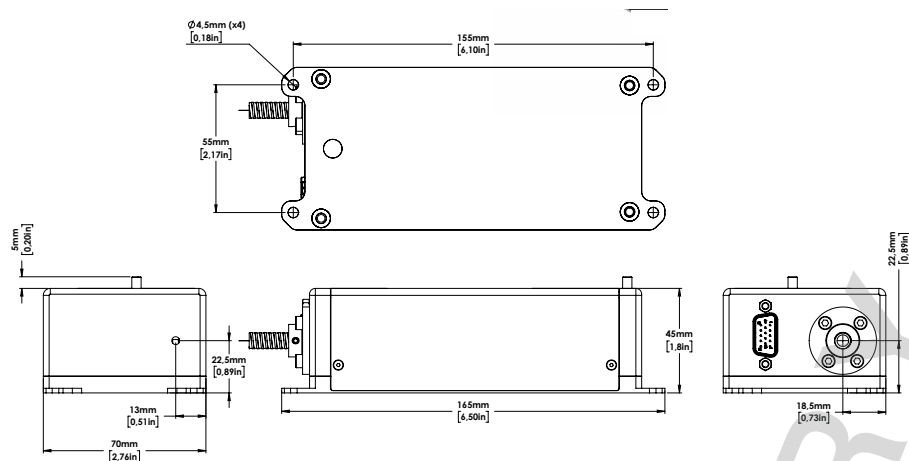
Ampheia™ 532 nm - Fiber Amplifier rack box dimensions:



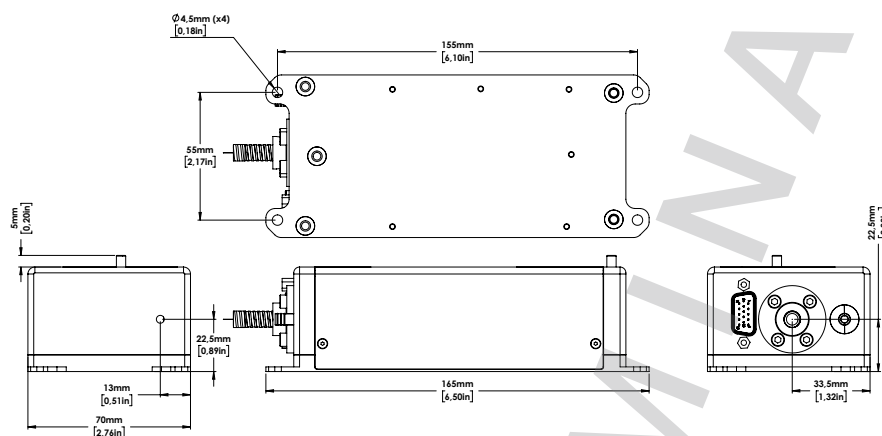
Ampheia™ Series

Mechanical Specifications

Ampheia™ - LS 1064 nm : Delivery head dimensions



Ampheia™ - LS 532 nm : Delivery head dimensions



Our Locations

Cobolt AB, a part of HÜBNER Photonics
(Sales in Norway, Sweden, Finland and Denmark)
Solna, Sweden
Phone: +46 8 545 912 30
Fax: +46 8 545 912 31
E-mail: info@hubner-photonics.com

HÜBNER Photonics GmbH
(Sales in Germany, Switzerland and Austria)
Kassel, Germany
Phone: +49 561 994 060-0
Fax: +49 6561 994 060-13
E-mail: info.de@hubner-photonics.com

HÜBNER Photonics Inc.
(Sales in USA, Canada and Mexico)
San Jose, California, USA
Phone: +1 (408) 708 4351
Fax: +1 (408) 490 2774
E-mail: info.usa@hubner-photonics.com

HA Photonics Pty Ltd
(Sales in UK and Ireland)
London
United Kingdom
Phone: +44 7359 440 871
E-mail: info.uk@hubner-photonics.com

VALO Innovations, a part of HÜBNER Photonics
(VALO Sales and Service)
Hannover, Germany
Phone: +49 511 260 390 70
E-mail: info.valo@hubner-photonics.com

Find local sales representatives at hubner-photonics.com