# **Ampheia**<sup>™</sup> **Series**

## Ultra-Low Noise | Single Frequency | Fiber Laser Systems

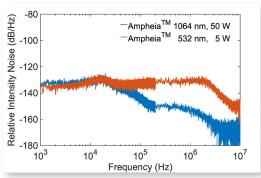


## **Applications**

Quantum Research
Optical Trapping and Tweezers
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

Typical Relative Intensity Noise (RIN)

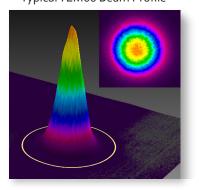


The Ampheia<sup>™</sup> Series is a family of high-power fiber laser systems, delivering ultra-low relative intensity noise (RIN) and single-frequency operation with up to 50 W of power at 1064 nm and 5 W at 532 nm in a perfect beam.

Ampheia<sup>™</sup> Series fiber laser systems (- LS) 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 TEMoo Beam Profile





# Ampheia<sup>™</sup> Series

# **Optical Specifications**

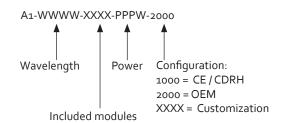
		Ampheia™ - LS 532 nm	mpheia™ - LS 532 nm Ampheia™ - LS 1064 nm		nm
Wavelength in air		532.1 ± 0.3 nm	1064.2 ± 0.6 nm		
Available Power Levels		5 W	20 W	40 W	50 W
Output power range		1 % to 100 %	5 % to 100 %	2.5 % to 100 %	2 % to 100 %
Spectral linewidth (FWHM, 1 ms)		< 100 kHz	< 50 kHz		
Optical signal to noise ratio (OSNR)		> 70 dB			
Wavelength stability (±2°C and 8hrs)		<1 pm			
Power stability (±2°C and 8hrs)		< 1.0 %	< 0.5 %		
Noise, 100 Hz - 10 MHz (rms)		< 0.1 %	< 0.05 %		
Relative intensity noise (RIN)	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 <sub>00)</sub>		TEM00 (M² < 1.05)			
Beam divergence (full angle)		< 0.9 mrad	< 1.7 mrad		
Polarization extinction ratio (linear, vertical)		>1000:1 [>30 dB]			
Delivery fiber cable length		1.0 M			
Warranty		12 months, unlimited hours			

 $<sup>\</sup>hbox{\tt *The beam diameter may vary with output power and can only be guaranteed at nominal power.}$ 

## Operational Environmental Specifications

Standard power supply	36 VDC, 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	o- 6o % RH non-condensing	
Intended use environment	Laboratory (indoor)	

## Model Number



## 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

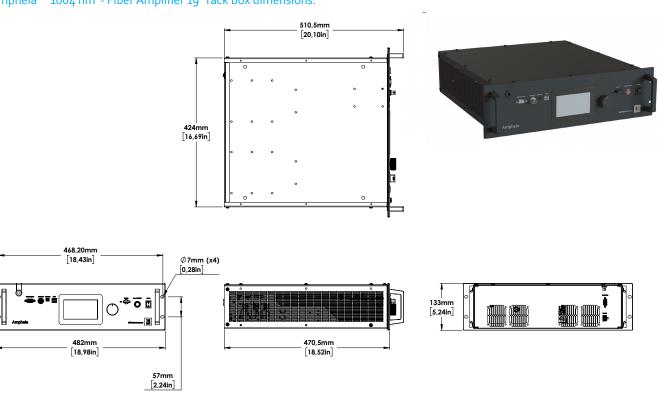


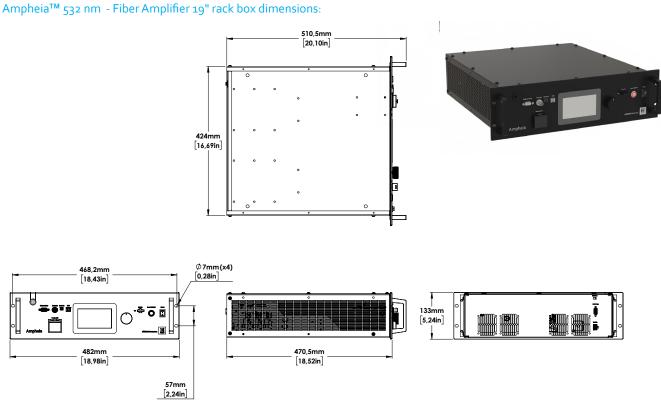
# Ampheia<sup>™</sup> Series

# **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	o.62 kg (1.37 lbs.)	0.76 kg (1.68 lbs.)	
Delivery head dimensions (LxWxH)	155 × 55 × 45 mm (6.10x2.17x0.87 in.)		

## Ampheia<sup>™</sup> 1064 nm - Fiber Amplifier 19" rack box dimensions:



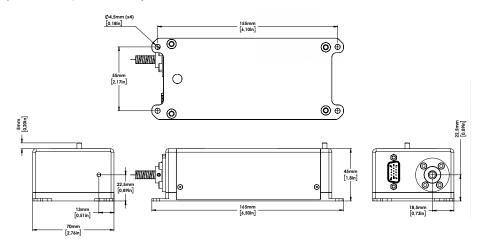


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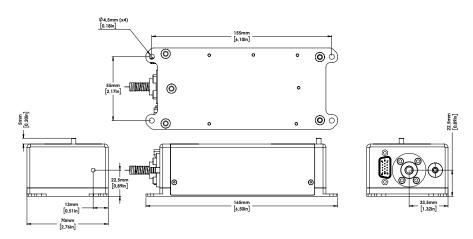
# Ampheia<sup>™</sup> Series

## **Mechanical Specifications**

Ampheia<sup>™</sup> 1064 nm : Delivery head dimensions



Ampheia<sup>™</sup> 532 nm : Delivery head dimensions



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