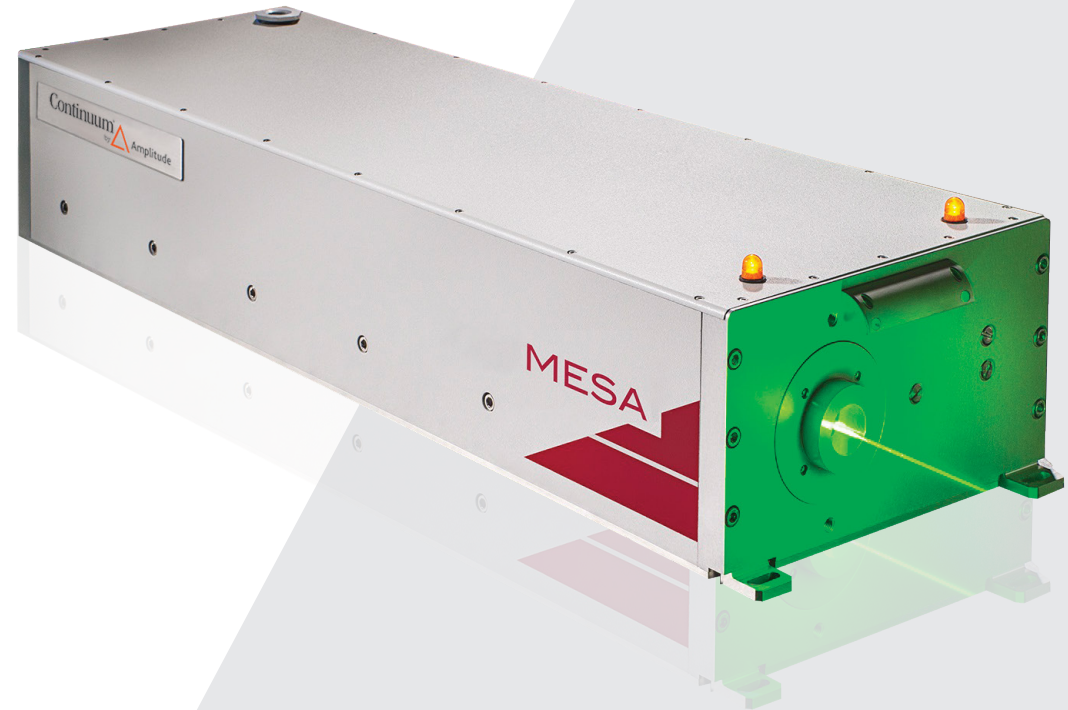


# Mesa™

## Diode pumped Nd:YAG laser

Our Mesa Series of lasers is ideally suited for a broad range of scientific and industrial applications, including micromachining, where small kerf width and excellent edge quality are the most important process requirements. This series of lasers is optimized with astigmatism-free circular beams and superior stability to ensure the highest process quality.

Our pumping technology and stable optical resonator design produce a laser beam with uniform energy distribution and high output power. The harmonic output at 532 nm is ideal for processing materials such as semiconductor wafers, solar cells, copper, polyamide, printed circuit boards, and plastics.



### Applications

#### Industry:

- > Stent/Glass/PCB/Fine Metal Cutting
- > LCD/Solar Edge Deletion
- > Marking
- > Wafer Trimming
- > Micro-hole Drilling
- > Ceramics Scribing
- > Fine Wire Stripping
- > Diamond/Gemstone Processing

#### Science:

- > Ti:Sapphire pumping
- > Particle Image Velocimetry (PIV)
- > Combustion Analysis
- > Laser Induced Fluorescence
- > LIDAR
- > Resonance Raman Spectroscopy
- > Chemical Analysis of Macromolecules
- > Laser Microprobe Analysis

### Key Features

- > 1064 and 532 nm operation
- > Smooth and symmetrical beam profile
- > Highly efficient wavelength conversion
- > Consistent output over wide power range
- > Compact & rugged package designed for 24/7 operation
- > Record 3 min. diode module replacement with no realignment necessary
- > Proprietary optical cavity design for optimal beam quality

# Specifications

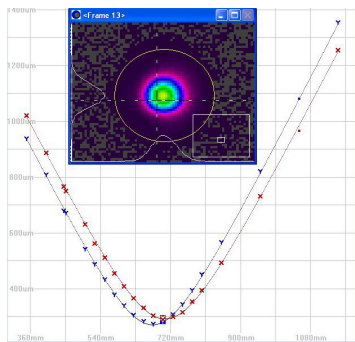
	1064-100-M	1064-50-M	1064-25-M	1064-25-0	1064-20-0-P	532-60-M	532-40-L	532-40-M	532-20-0	532-16-0	532-10-0
Wavelength	1064					532					
Power CW (W)	100	50	25		20	n/a					
Power at 10 kHz (W)	75	37	18	20	14	60	40	20	16	10	
Power at 6 kHz (W)	60	30	14	17	10	55	40	18	16	9	
Repetition Rate (kHz)	1-40					1-30					
Pulse-to-Pulse Stability (% RMS) <sup>1</sup>	< 2		< 3	< 2		< 3	< 2	< 3			
Pulsewidth (ns)	< 160	< 200	< 220	< 140		< 150		< 170	< 110		< 130
Beam Pointing Stability (μrad RMS)	< 20	< 30		< 15		< 20		< 15			
Beam Diameter (mm) <sup>2, 3</sup>	6		1.1	1.0	3.5	2.2	4.0	0.9	0.8		
Beam Divergence (mrad) <sup>2</sup>	9.5	7	3	7	5	7	2.3	1.7			
Beam Quality (M <sup>2</sup> )	< 20	< 12		< 1.2		< 25	< 12	< 25	< 1.2		
Polarization <sup>4</sup>	Random				V 100:1						

<sup>1</sup> All specifications at 6 kHz unless otherwise noted

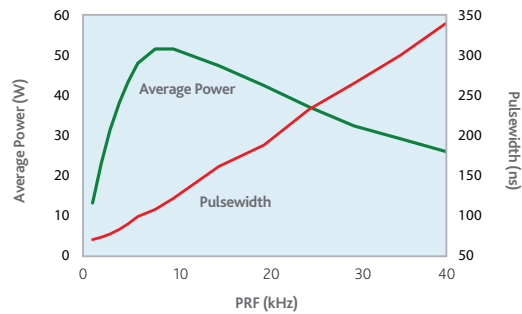
<sup>2</sup> Typical measurement (±10%)

<sup>3</sup> Measured at 13.5% level at output window

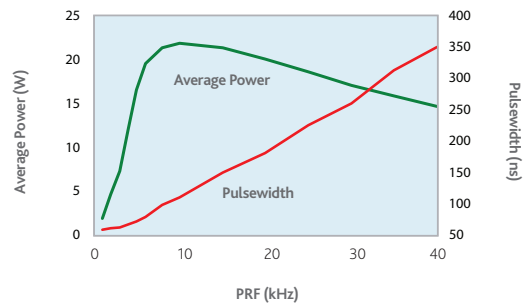
<sup>4</sup> V=Vertical. Factory default (can be changed upon request)



Mesa Output Profile: M<sup>2</sup> < 1.2 at 6kHz



Laser System Output Characteristics: Mesa 532-40-M



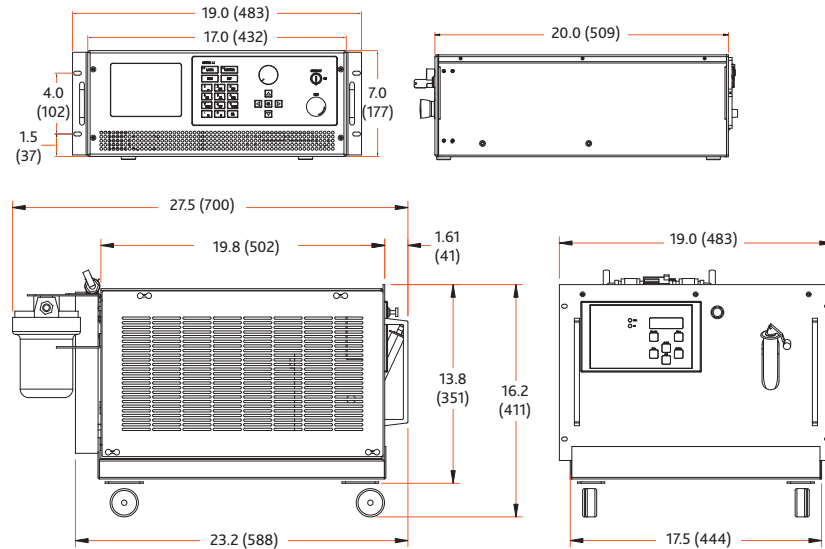
Laser System Output Characteristics: Mesa 532-20-0

# Mesa Physical Layout

All dimensions are in inches (mm).

## Side View

### Power Supply

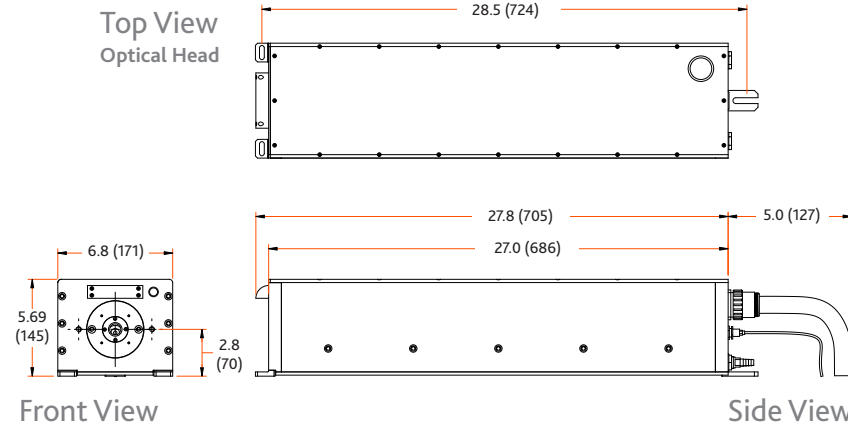


## Side View

### Chiller

## Front View

### Chiller



## Front View

## Side View



## Dimensions

Optical Head (LxWxH)	686 x 171 x 145 mm (27.0 x 6.8 x 5.7 in)
Power Supply (LxWxH)	509 x 483 x 177 mm (20.0 x 19.0 x 7 in)
Chiller (LxWxH)	699 x 483 x 411 mm (27.5 x 19.0 x 16.2 in)

## Weight

Optical Head	20.4 kg (45 lbs)
Power Supply	17.7 kg (39 lbs)
Chiller	55 kg (122 lbs)

## Electrical Service

Power Supply	Single-phase: 200-240 VAC, 50/60 Hz operating current: 5A, max current: 10A
Chiller	Single-phase: 230 ±10% VAC, 50/60 Hz operating current: 10A, max current: 15A

## Temperature & Humidity

Operating Temperature	15 to 35° C
Storage Temperature	-20C to 50° C
Relative Humidity	8-80%, non-condensing

## Control Interface

User Interface	Full featured front panel control
Serial Interface	RS-232
Rear Connections	External beam enable, external trigger
Control Software	MS Windows-based Laser Commander™

## Umbilical Length

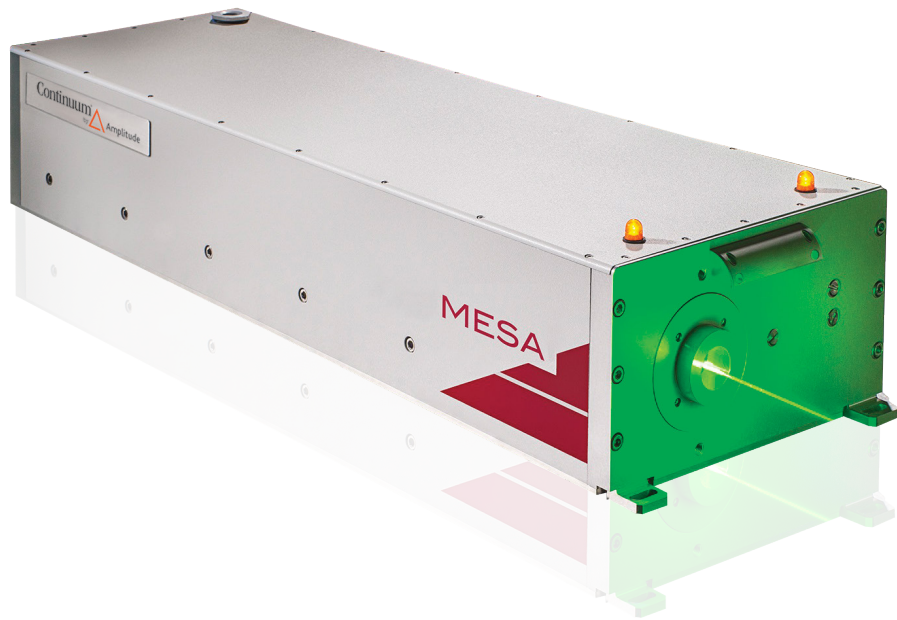
Umbilical Length	3.65 m (12.0 ft)
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## Cooling

Cooling	Air-water; water-water cooling option available
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# Mesa

*Diode pumped Nd:YAG laser*



Continuum<sup>®</sup>  
by  Amplitude