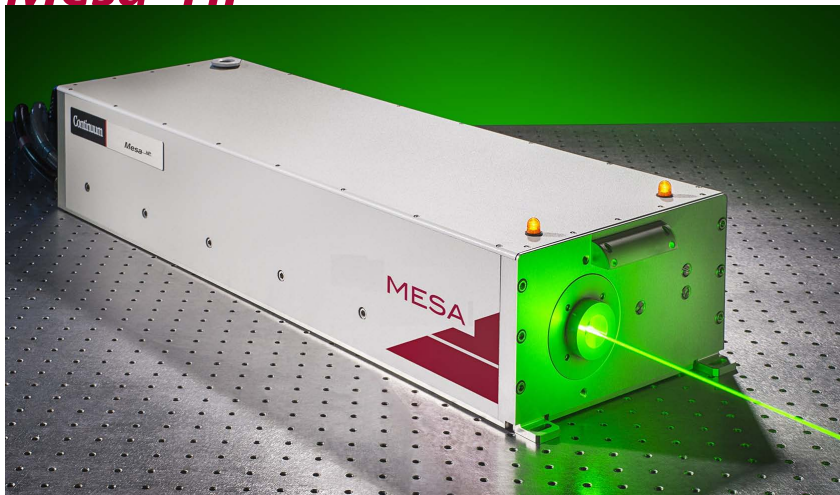


Diode Pumped Nd:YAG Diode Pumped Nd:YAG Diode Pumped Nd:YAG

Mesa™ HP



Mesa HP, the high power diode pumped Nd:YAG laser

The Mesa HP Nd:YAG laser is designed to accomplish demanding tasks for a broad range of industrial and OEM applications. Our pumping technology and stable optical resonator design produce a laser beam with uniform energy distribution and high output power. The high-quality profile, combined with high pulse energy and repetition rates, provide an ideal laser beam for micromachining applications.

Scientific Applications

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

Industrial Applications

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

1064, 532, 355 nm operation

Smooth and symmetrical beam profile

Highly efficient wavelength conversion

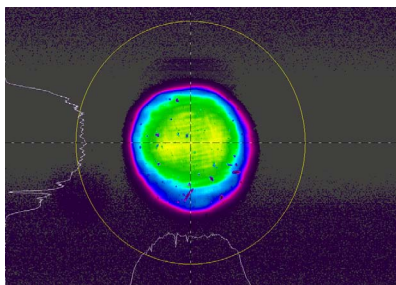
Fist-pulse supression for consistent material processing

Compact & rugged package designed for 24/7 operation

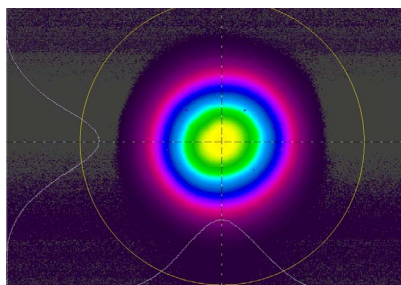
Record 3 min diode module replacement with no realignment necessary

Proprietary optical cavity design for optimal beam quality

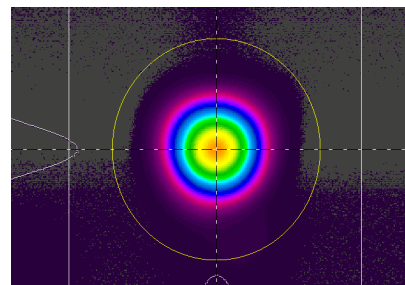
Laser System Output Characteristics



Mesa HP, 1064-220-M



Mesa HP, 532-150-M



Mesa HP, 355-40-M

Mesa HP Specifications

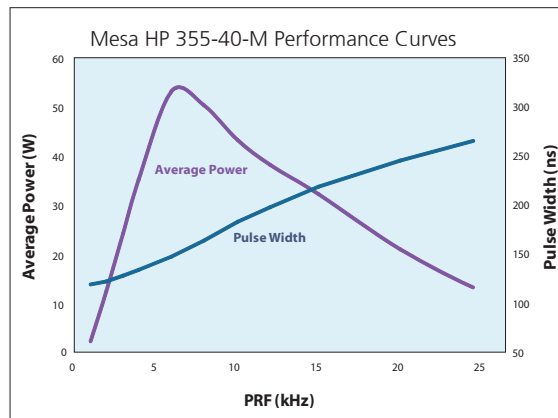
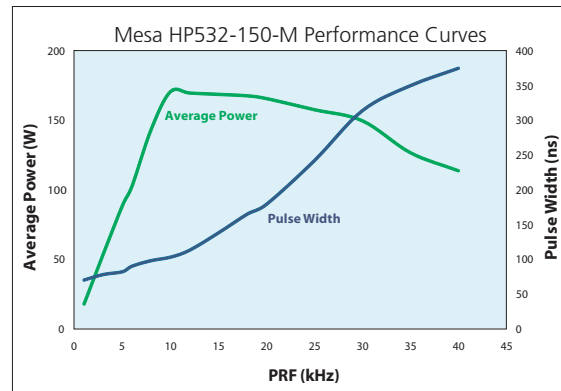
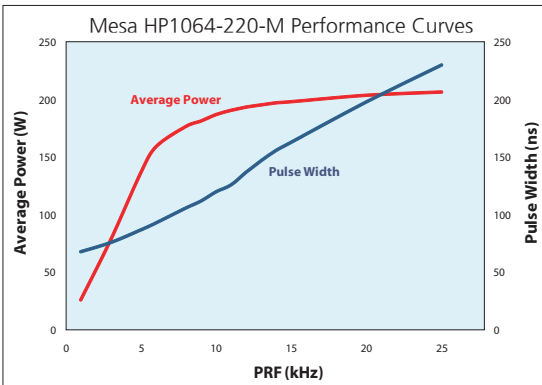
Description ¹	1064-220-M	1064-180-L	1064-150-M	532-150-M	532-120-L	532-100-M	355-40-M
Wavelength	1064	1064	1064	532	532	532	355
Power CW (W)	220	180	150	n/a	n/a	n/a	n/a
Power at 10 kHz (W)	180	150	120	150	120	100	32
Power at 6 kHz (W)	150	120	100	120	100	80	40
Repetition Rate (kHz)	1-40	1-40	1-40	1-40	1-40	1-40	1-40
Pulse-to-Pulse Stability (% RMS) ¹	<2	<3	<2	<2	<3	<2	<2
Pulsewidth (ns)	<130	<150	<170	<120	<130	<130	<170
Beam Pointing Stability (μrad RMS)	<25	<25	<25	<25	<25	<25	<25
Beam Diameter (mm) ^{2,3}	2.5	2.5	2.5	2.6	2.6	2.6	2.6
Beam Divergence (mrad) ²	11	9	11	9	8	9	6
Beam Quality (M ²)	<25	<12	<25	<30	<15	<30	<35
Polarization ⁴	random	random	random	V 100:1	V 100:1	V 100:1	V 100:1

Notes

1. All specifications at 6 kHz unless otherwise noted
2. Typical measurement (±10%)
3. Measured at 1/e² points of Gaussian fit to beam profile
4. V=Vertical. Factory default (can be changed upon request)

As a part of our continuous improvement program, all specifications are subject to change without notice.

Laser System Output Characteristics

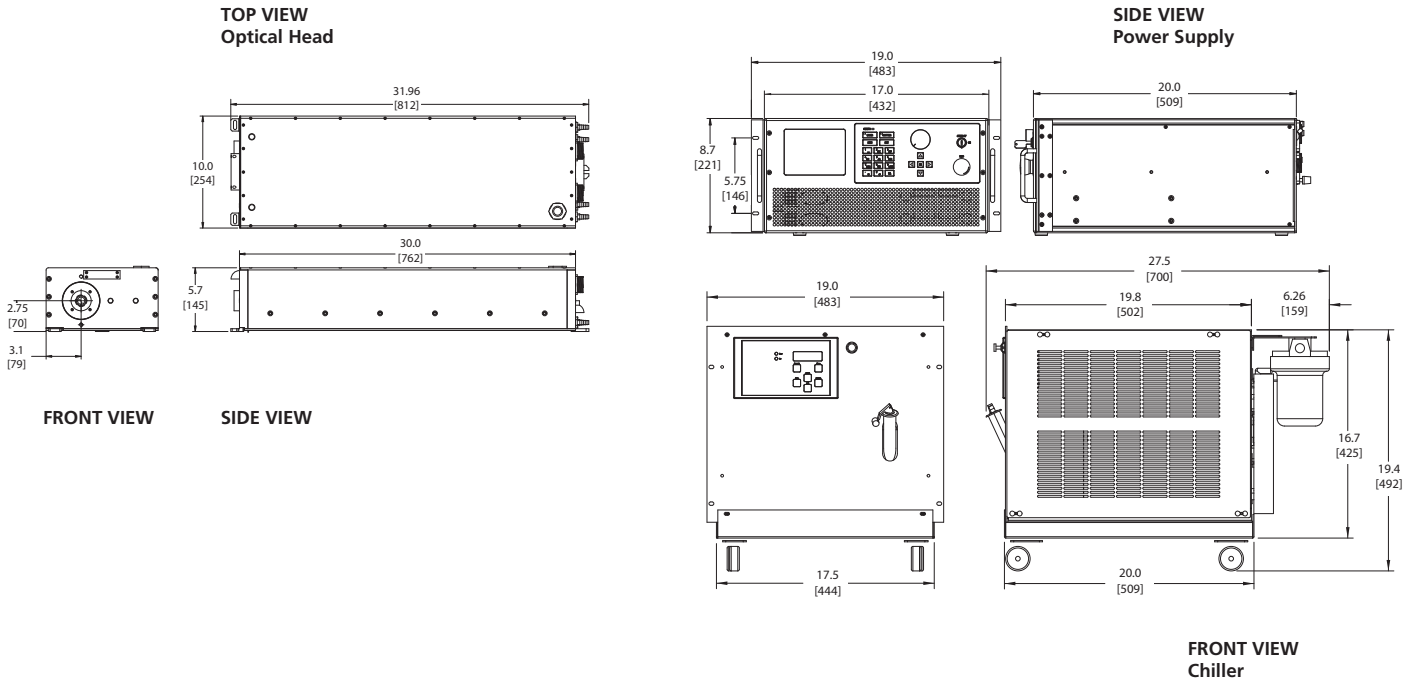


Mesa HP System Requirements

Size	Optical Head (LxWxH)	812 x 254 x 145 mm (31.9 x 10.0 x 5.6 in)
	Power Supply (LxWxH)	509 x 483 x 221 mm (20.0 x 19.0 x 8.7 in)
	Chiller (LxWxH)	699 x 483 x 492 mm (27.5 x 19.0 x 19.4 in)
Weight	Optical Head	31.5 kg (70 lbs)
	Power Supply	27 kg (60 lbs)
	Chiller	65 kg (144 lbs)
Cooling		Air-Water; Water-Water cooling option available
Electrical Service	Power Supply	Single-phase: 208-240 VAC, 50/60 Hz Operating current: 10A, Max current: 20A
	Chiller	Single-phase: 230 ±10% VAC, 50/60 Hz Operating current: 12A, Max current: 20A
Temperature & Humidity	Operating Temperature Storage Temperature Relative Humidity	15 to 35° C -20 to 50° C 8-80%, non-condensing
Umbilical Length		3.65 m (12.0 ft); longer available upon request
Control Interface	User Interface	Full featured front panel control
	Serial Interface	RS-232, Ethernet
	Rear Connections	External beam enable, External trigger, Analog current control, Analog RF attenuation control, Digital alert output
	Control Software	MS Windows-based Laser Commander™

Mesa HP Physical Layout

All dimensions are in inches [mm]



MAXIMUM OUTPUT: 220 W
PULSE DURATION: 100-300 ns
WAVELENGTH: 355/532/1064 nm
IEC 60825-1:2007-03

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