

# DM Nd:YAG Series

DM Nanosecond Lasers

## DPSS, Multimode, Q-Switched Lasers

Since 2002, Photonic Industries' DM Series Nd:YAG green nanosecond lasers have been delivering exceptional performance with high pulse energies (up to 20mJ) or high average powers (up to 200 W) in a compact, rugged design from a single laser resonator. For even greater capability, Dual Head configurations can double these values, offering up to 40mJ of pulse energy or 400 W of power, making them versatile across a wide range of applications.

This proprietary single-resonator design meets the demands of both research and industrial applications. From PIV studies to laser thermal processing and annealing, it provides the high energy required in a durable, efficient, and space-saving form factor.



### APPLICATIONS

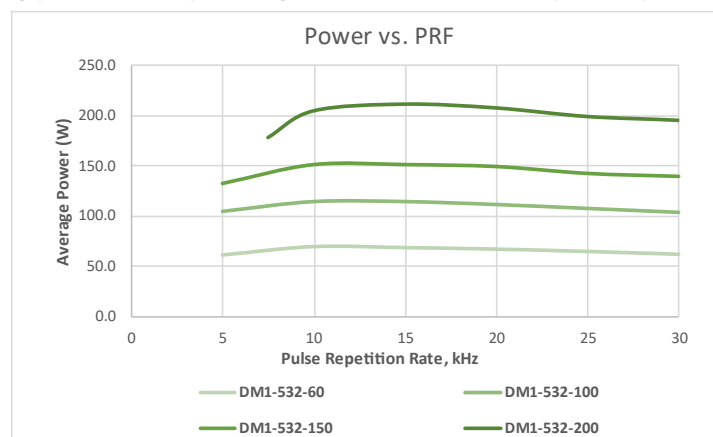
- Particle Image Velocimetry (PIV)
- Pumping Ti: Sapphire, Ultrafast Amplifier Systems
- High Power cutting, drilling, welding, marking, patterning
- Laser Thermal Processing (LTP)
- Semiconductor Lithography
- Surface Cleaning and Ablation
- Water-Jet Assisted Laser cutting
- Diamond Cutting
- Precision Layer Removal for Additive Manufacturing

### FEATURES

- Up to ~400W of Average Power at 10 kHz
- Multimode Output
- Proprietary Twin Pulse mode option
- Water Cooled
- Robust Form Factor
- Dynamic **P**ulse **E**nergy **C**ontrol - **PEC**
- Power Monitoring and Auto-attenuation
- Unmatched Reliability

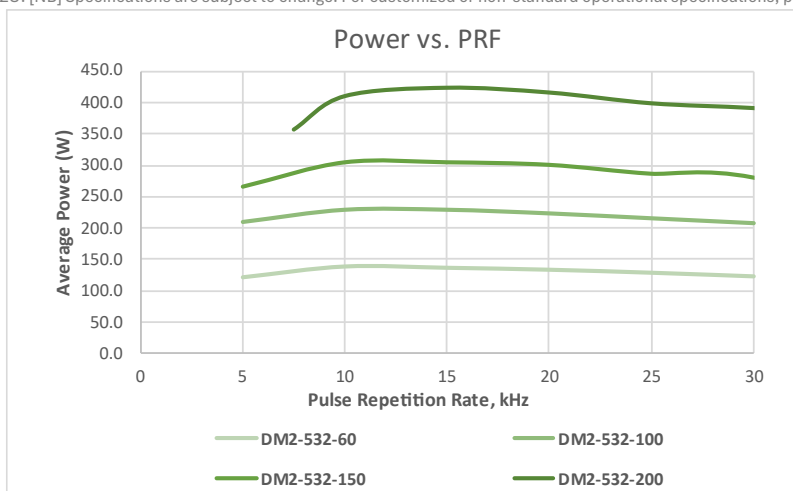
Specifications – DM Nd:YAG Single Head Series				
	DM1-532-60	DM1-532-100	DM1-532-150	DM1-532-200
Wavelength	532nm			
Average Power @10kHz	60W	100W	150W	200W
Pulse Energy @10kHz	6mJ	10mJ	15mJ	20mJ
Pulse Width @ 10kHz	~150ns	~190ns	~200ns	~150ns
Pulse repetition rate <sup>2</sup>	1kHz to 50 kHz	1kHz to 30 kHz	1kHz to 50 kHz	
Pulse-to-pulse stability <sup>3</sup>	<1.0% rms		<1.5% rms	
Long-term power stability <sup>4</sup>	<0.5% rms			
Beam spatial mode <sup>5</sup>	Multimode M <sup>2</sup> ~15	Multimode M <sup>2</sup> 20-25	Multimode M <sup>2</sup> 15-20	Multimode M <sup>2</sup> <22
Beam divergence (nominal)	< 10mrad			
Beam diameter at exit	~ 3.0 mm			
Beam roundness	>85%			
Beam pointing stability	<25 urad			
Polarization ratio	Horizontal; 100:1			
	Operational Specifications and Characteristics			
Interface	RS232, Ethernet, Software GUI, External TTL Triggering			
Warm-up time	< 5 minutes from standby, <10 minutes from cold start			
Electrical requirement	200-240 V AC			
Line frequency	50-60 Hz			
Power consumption <sup>6</sup>	~1.1kW	~1.5kW	~2.1kW	~2.5kW
Laser Head Dimensions	26 x 6.5 x 4.25 in [660.4 x 165.1 x 107.95m]		26 x 11 x 4.25 in [660.4 x 279.4 x 107.95mm]	
Power Supply Dimensions <sup>7</sup>	15 x 10.2 x 3.5 in [381 x 259.08 x 88.9mm]			
Weight	~49lbs [22.2kg]		~84lbs [38.1kg]	
	Environmental Requirements			
Ambient temperature <sup>2</sup>	Ambient 15°C to 30°C (59°F to 86°F) Operating Range			
	Relative humidity 0% to 80% max, non-condensing			
Storage conditions	-10°C to 40°C; sea level to 12000 m			
	0% to 80% relative Humidity, non-condensing			
Cooling system	Water-Cooled			

[2.] Lower pulse repetition rates (down to < 1 kHz) performance achieved by pulse energy capping [3] Measured at ambient temperature  $\pm 2^{\circ}\text{C}$  [4] Measured over 8 hours  $\pm 1^{\circ}\text{C}$  [5] TEM00 beam option available (contact us) [6] Power consumption data does not include an external chiller's power consumption [7] Total width with rack mount option is 19 in. Please note the height in rack units is 2U. [NB] Specifications are subject to change. For customized or non-standard operational specifications, please contact us.

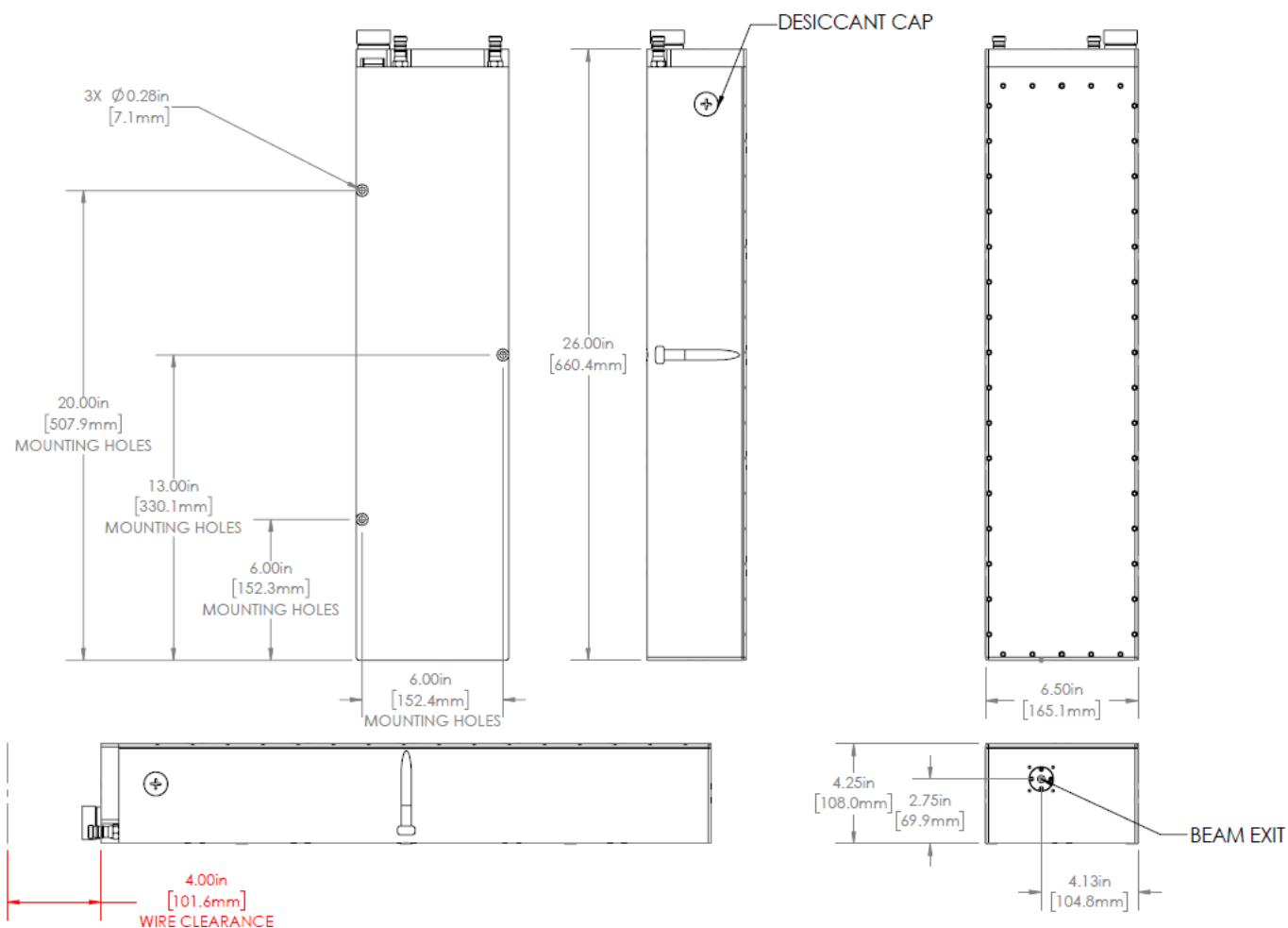
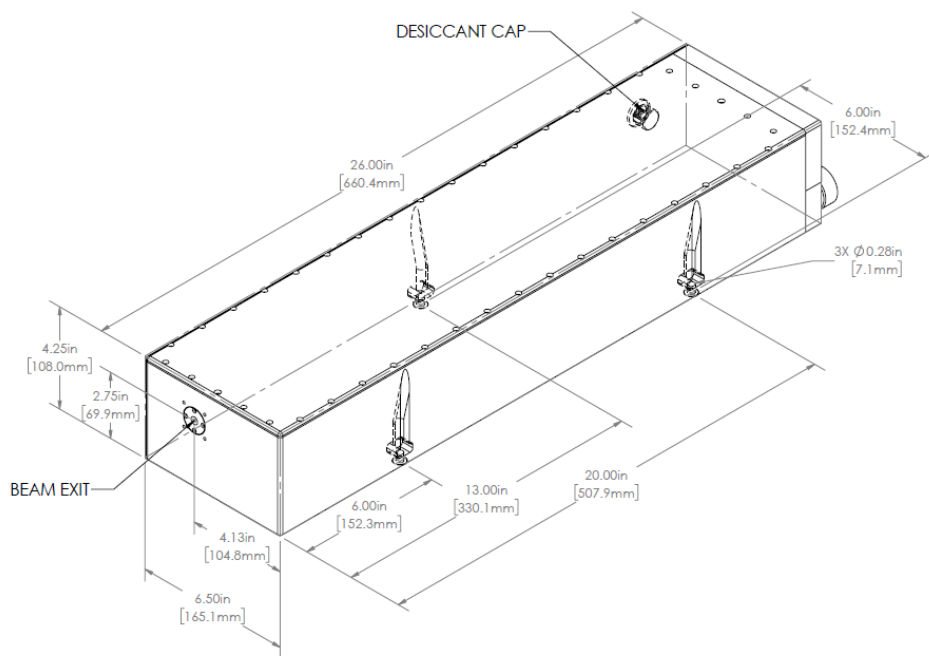


Specifications – DM Nd:YAG Dual Head Series				
	DM2-532-60	DM2-532-100	DM2-532-150	DM2-532-200
Wavelength	532nm			
Average Power @10kHz	120W	200W	300W	400W
Pulse Energy @10kHz	12mJ	20mJ	30mJ	40mJ
Pulse Width @ 10kHz	~150ns	~190ns	~200ns	~150ns
Pulse repetition rate <sup>2</sup>	1kHz to 50 kHz	1kHz to 30kHz	1kHz to 50kHz	
Pulse-to-pulse stability <sup>3</sup>	<1.0% rms		<1.5% rms	
Long-term power stability <sup>4</sup>	<0.5% rms			
Beam spatial mode <sup>5</sup>	Multimode M <sup>2</sup> ~15	Multimode M <sup>2</sup> 20-25	Multimode M <sup>2</sup> 15-20	Multimode M <sup>2</sup> <22
Beam divergence (nominal)	10mrad			
Beam diameter at exit	~ 3.7 mm		~4.5mm	
Beam roundness	>85%			
Beam pointing stability	<25 urad			
Polarization ratio	N/A			
	Operational Specifications and Characteristics			
Interface	RS232, Ethernet, Software GUI, External TTL Triggering			
Warm-up time	< 5 minutes from standby, <10 minutes from cold start			
Electrical requirement	200-240 V AC			
Line frequency	50-60 Hz			
Power consumption <sup>6</sup>	~3kW	~3.5kW	~4.5kW	~5kW
Laser Head Dimensions	26 x 11 x 4.25 in [660.4 x 279.4 x 107.95mm]		27x18.5x4.25 in [685.8 x 457.2 x 107.95mm]	
Power Supply Dimensions <sup>7</sup>	16 x 16.2 x 3.5 in [406.4 x 411.48 x 88.9mm]			
Weight	~84lbs [38.1kg]		~115lbs [52kg]	
	Environmental Requirements			
Ambient temperature <sup>2</sup>	Ambient 15°C to 30°C (59°F to 86°F) Operating Range			
	Relative humidity 0% to 80% max, non-condensing			
Storage conditions	-10°C to 40°C; sea level to 12000 m			
	0% to 80% relative Humidity, non-condensing			
Cooling system	Water-Cooled			

[2.] Lower pulse repetition rates (down to < 1 kHz) performance achieved by pulse energy capping [3] Measured at ambient temperature  $\pm 2^{\circ}\text{C}$  [4] Measured over 8 hours  $\pm 1^{\circ}\text{C}$  [5] TEM00 beam option available contact us [6] Power consumption data does not include an external chiller's power consumption [7] Total width with rack mount option is 19 in. Please note the height in rack units is 2U. [NB] Specifications are subject to change. For customized or non-standard operational specifications, please contact us.



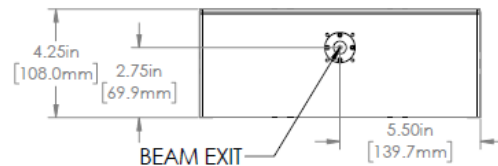
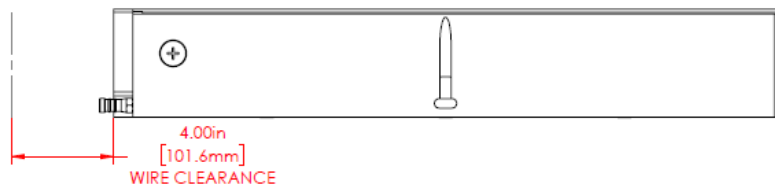
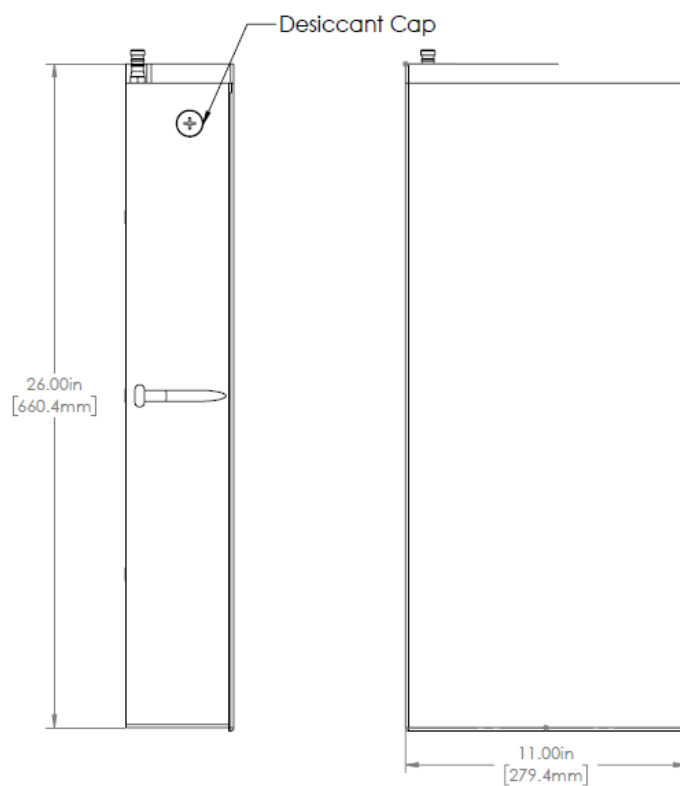
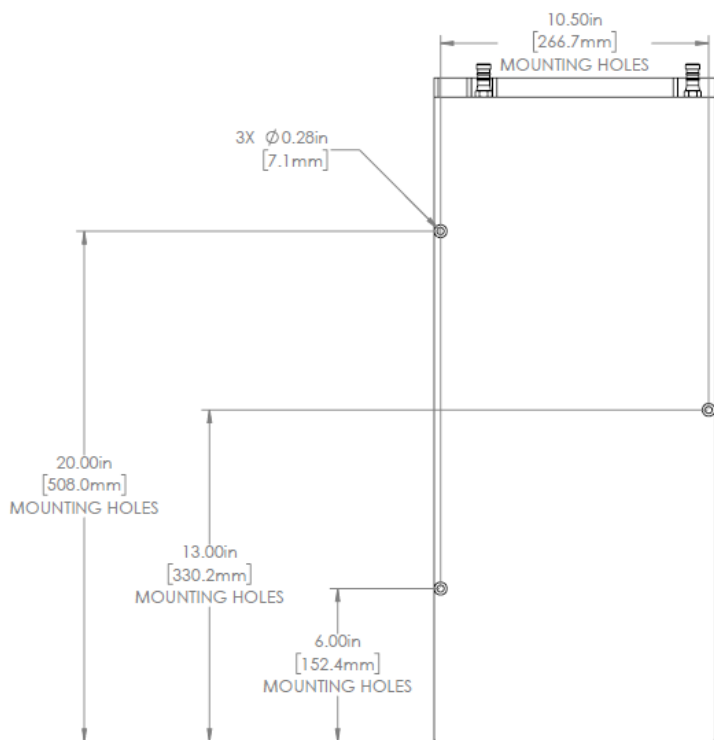
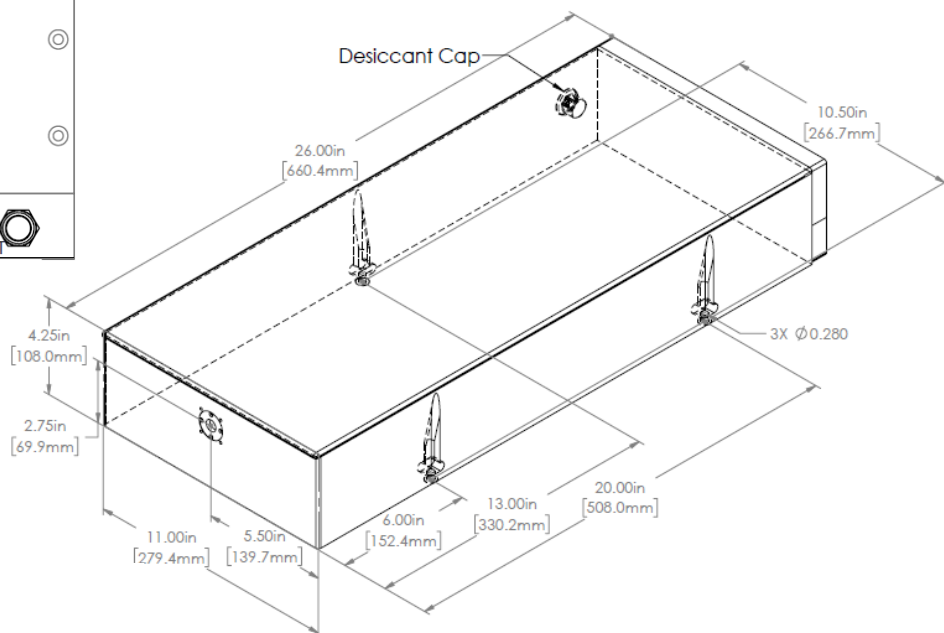
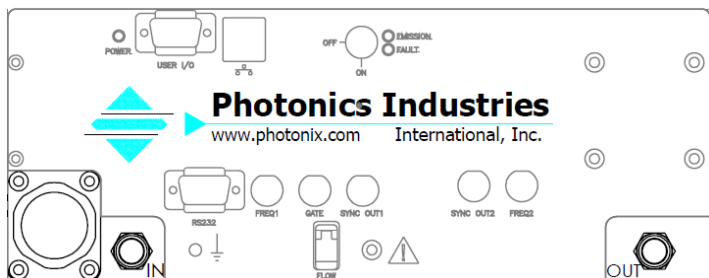
**DM1-532-60/100**



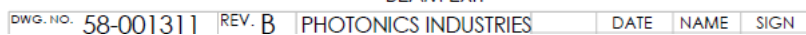
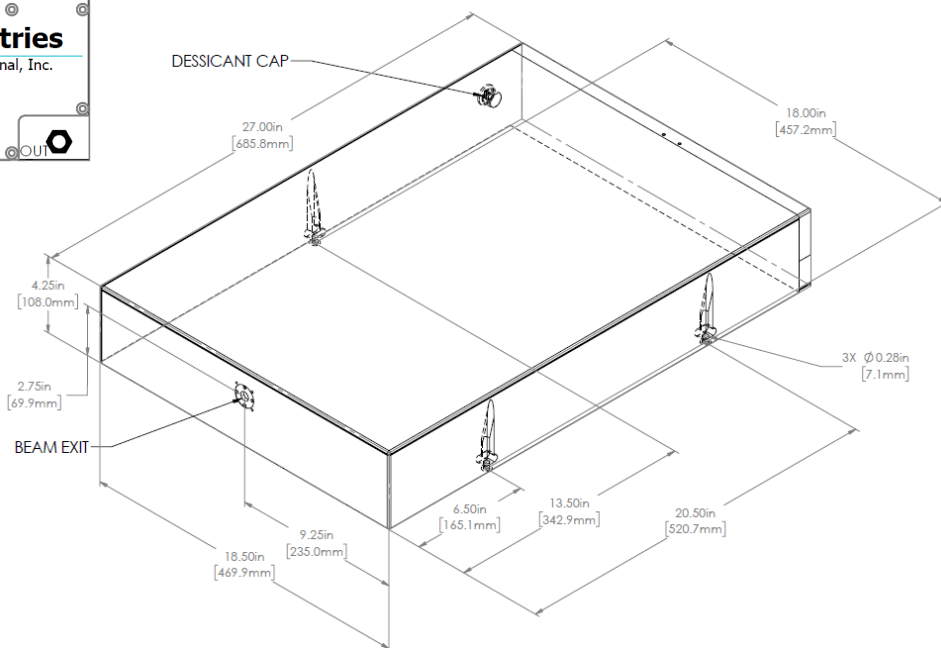
# Dimensional Drawings

**DM1-532-150/200**

**DM2-532-60/100**

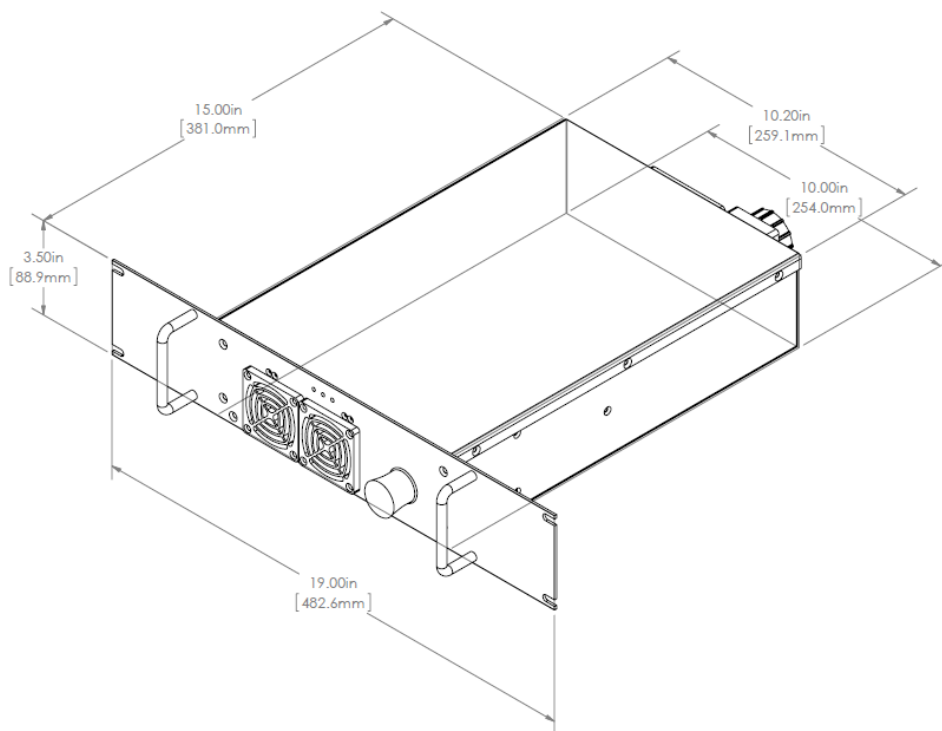


**DM2-532-150/200**

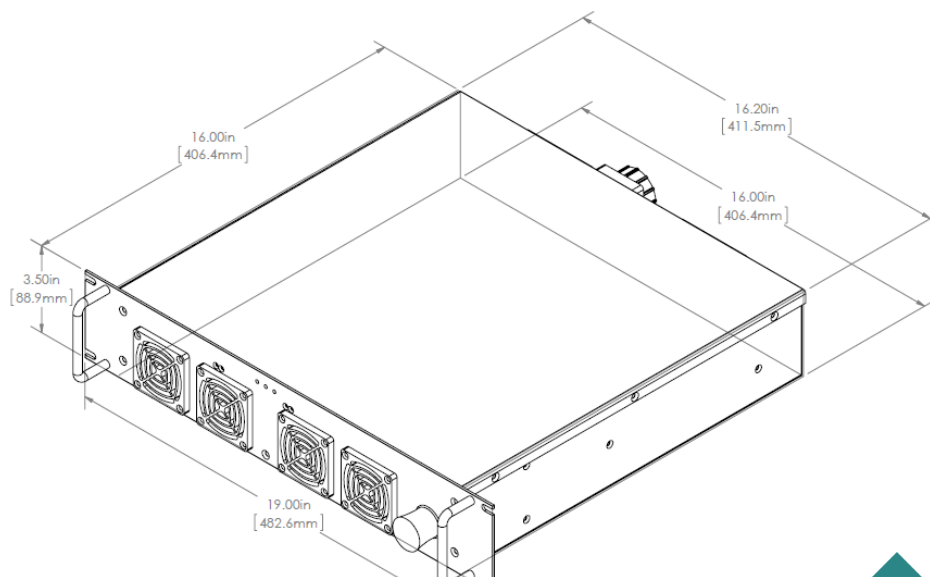


## Dimensional Drawings

### DM Single Head Driver



### DM Dual Head Driver



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Photonics Industries International Inc. is the pioneer of intracavity harmonic lasers and is at the forefront of developing, manufacturing, and marketing a wide range of nanosecond, sub-nanosecond, picosecond, and femtosecond lasers for the industrial, scientific, defense and medical industries.

For more information [www.photonix.com](http://www.photonix.com)



Our ongoing policy is to improve the design and specification of our products. The information provided is non-binding.



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