DM Nd:YAG Series

DM Nanosecond Lasers

DPSS, Multimode, Q-Switched Lasers

Since 2002, Photonics 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

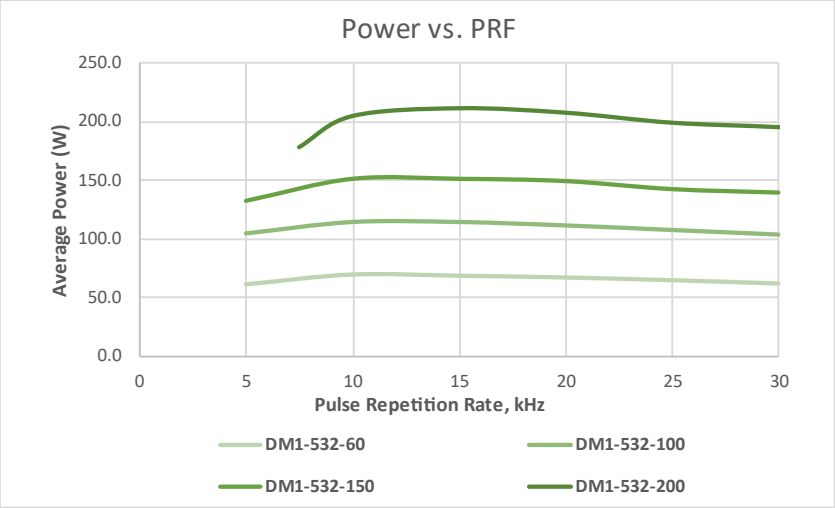
- Particle Image Velocimetry (PIV)
- Pumping Ti: Sapphire, Ultrafast Amplifier Systems
- High Power cutting, drilling, welding, marking, patterning
- Laser Thermal Processing (LTP)
- Semiconductor Lithography
- Surface Cleaning and Ablation
- Water-Jet Assisted Laser cutting
- Diamond Cutting
- Precision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

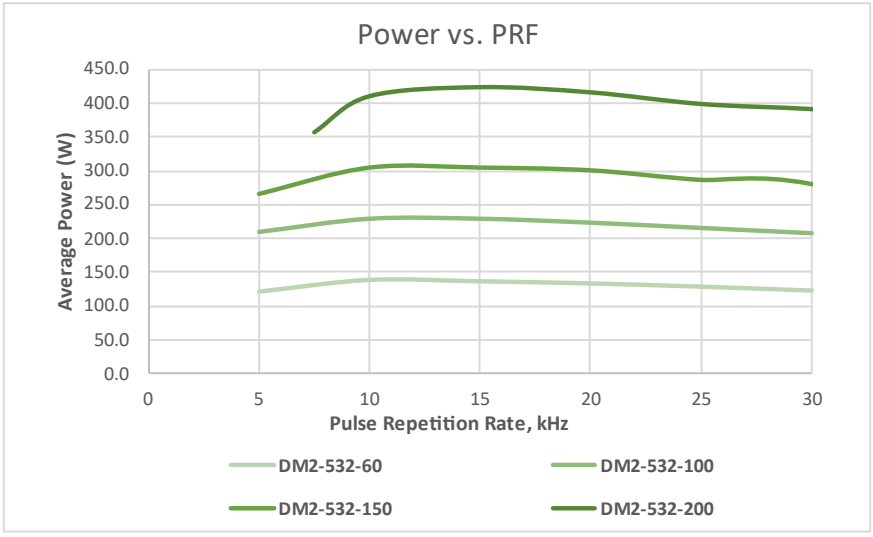
Specifications – **DM Nd:YAG Single Head Series**				
	DM1-532-60	**DM1-532-100**	**DM1-532-150**	**DM1-532-200**
Wavelength	532nm			
Average Power @10kHz	60W	100W	150W	200W
Pulse Energy @10kHz	6mJ	10mJ	15mJ	20mJ
Pulse Width @ 10kHz	~150ns	~190ns	~200ns	~150ns
Pulse repetition rate[2]	Single shot to 50 kHz	Single shot to 30 kHz	Single shot to 50 kHz	
Pulse-to-pulse stability[3]	<1.0% rms		<1.5% rms	
Long-term power stability [4]	<0.5% rms			
Beam spatial mode[5]	Multimode M^2 ~15	Multimode M^2 20-25	Multimode M^2 15-20	Multimode M^2 <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[6]	~1.1kW	~1.5kW	~2.1kW	~2.5kW
Laser Head Dimensions	26 x 6.5 x 4.25 in		26 x 11 x 4.25 in	
Power Supply Dimensions[7]	15 x 10.2 x 3.5 in			
Weight	~49lbs [22.2kg]		~84lbs [38.1kg]	
	Environmental Requirements			
Ambient temperature [2]	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 ± 2°C [4] Measured over 8 hours ± 1°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.



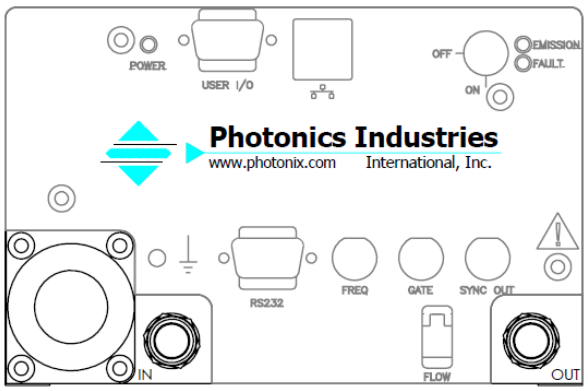
Specifications – **DM Nd:YAG Dual Head Series**				
	DM2-532-60	**DM2-532-100**	**DM2-532-150**	**DM2-532-200**
Wavelength	532nm			
Average Power @10kHz	120W	200W	300W	400W
Pulse Energy @10kHz	12mJ	20mJ	30mJ	40mJ
Pulse Width @ 10kHz	~150ns	~190ns	~200ns	~150ns
Pulse repetition rate[2]	Single shot to 50 kHz	Single Shot to 30kHz	Single Shot to 50kHx	
Pulse-to-pulse stability[3]	<1.0% rms		<1.5% rms	
Long-term power stability [4]	<0.5% rms			
Beam spatial mode[5]	Multimode M^2 ~15	Multimode M^2 20-25	Multimode M^2 15-20	Multimode M^2 <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[6]	~3kW	~3.5kW	~4.5kW	~5kW
Laser Head Dimensions	26 x 11 x 4.25 in		27x18.5x4.25 in	
Power Supply Dimensions[7]	16 x 16.2 x 3.5 in			
Weight	~84lbs [38.1kg]		~115lbs [52kg]	
	Environmental Requirements			
Ambient temperature [2]	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			

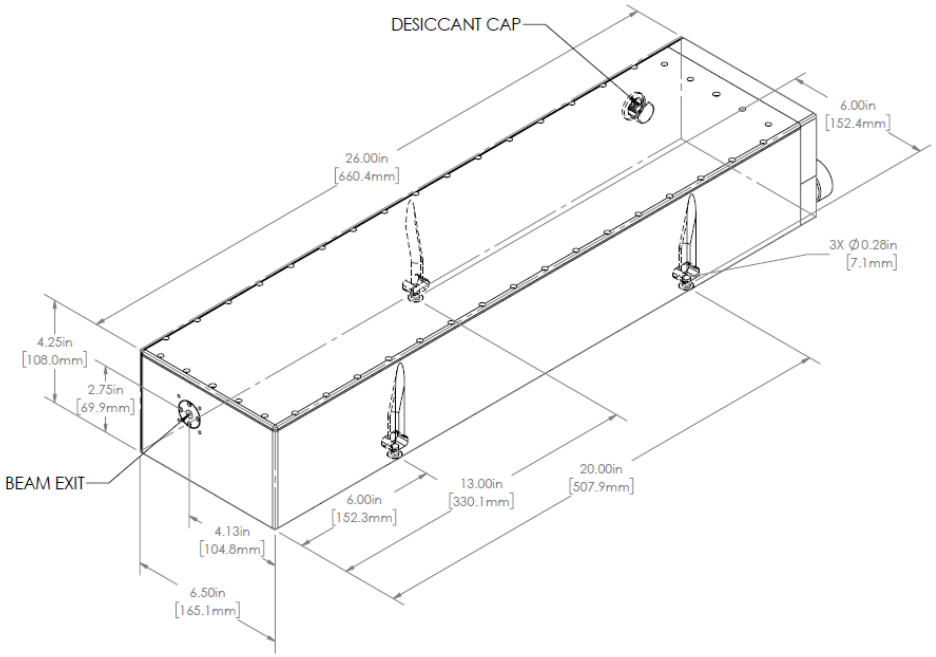
[2.] Lower pulse repetition rates (down to < 1 kHz) performance achieved by pulse energy capping [3] Measured at ambient temperature ± 2°C [4] Measured over 8 hours ± 1°C [5] TEM00 beam option available contact us) [6] Power consumption data does not include an external chiller's power consumption [7] Total width with rack mount option is 19 in. Please note the height in rack units is 2U.

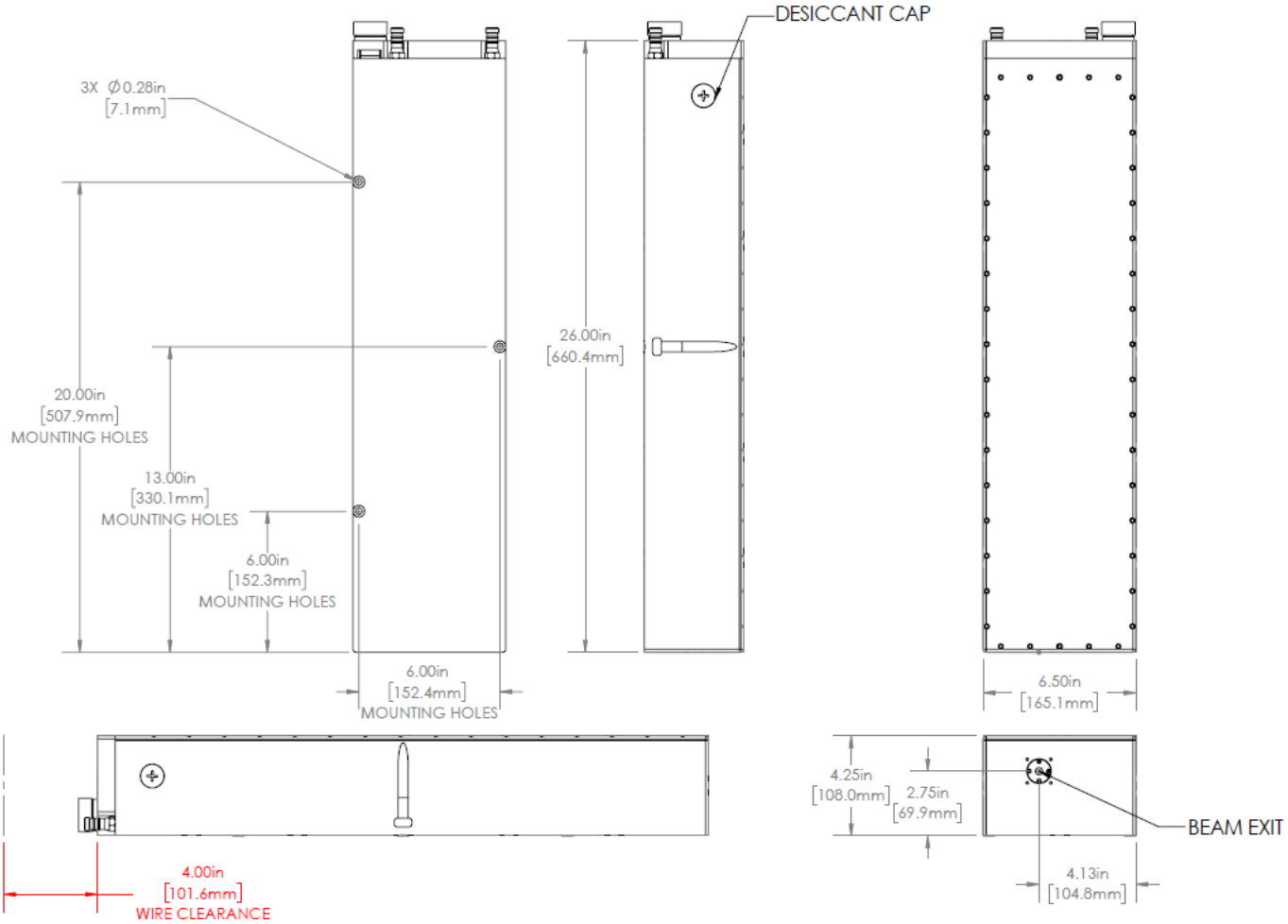


Dimensional Drawings

DM1-532-60/100



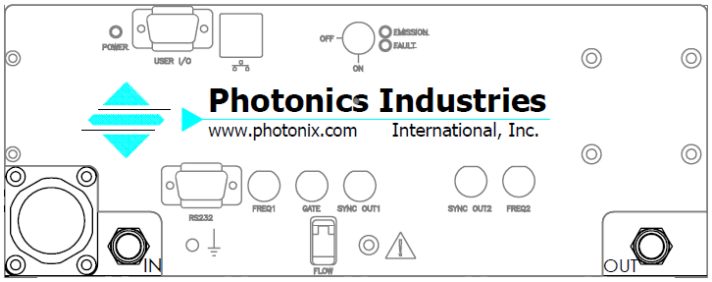


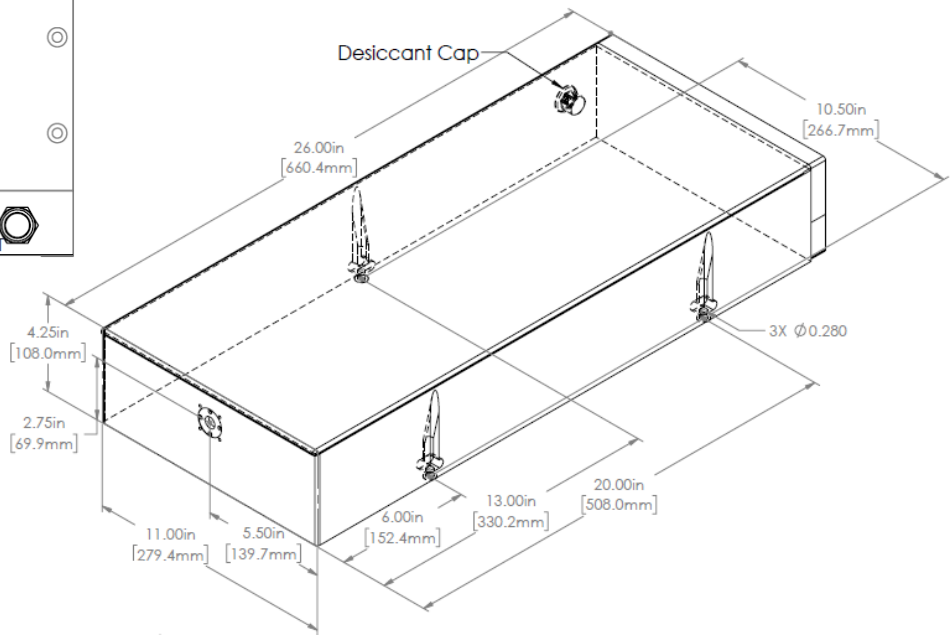


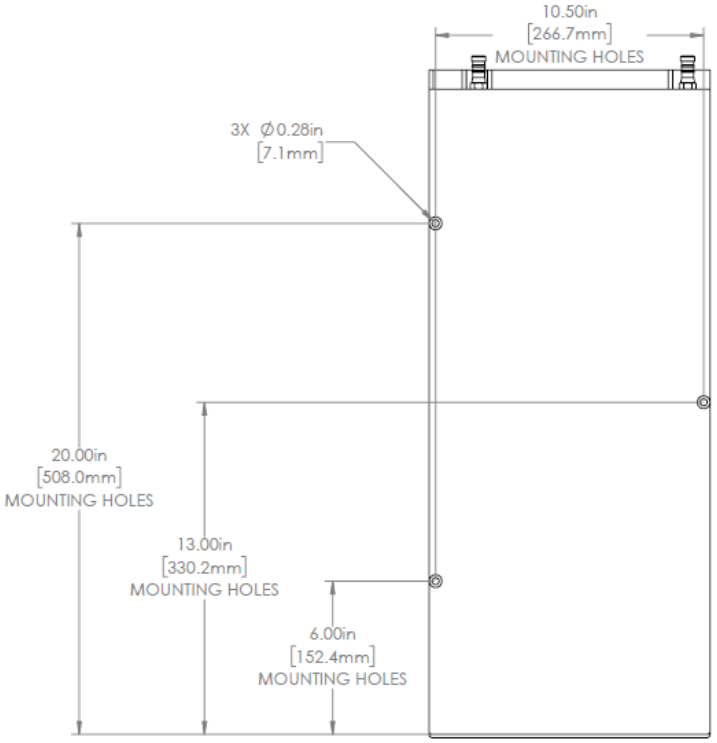
Dimensional Drawings

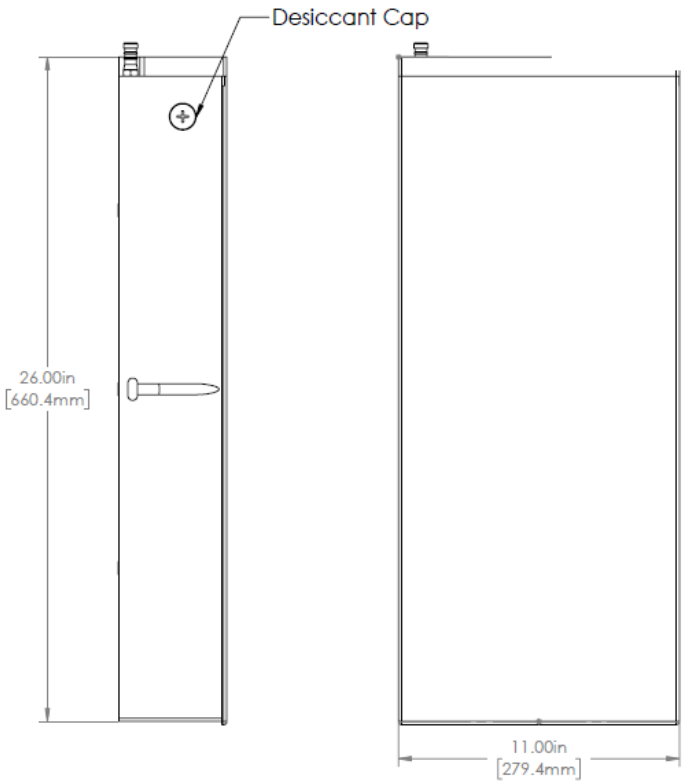
DM1-532-150/200

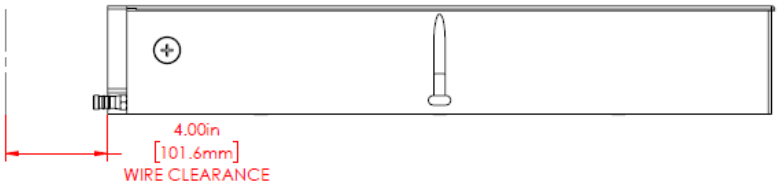
DM2-532-60/100

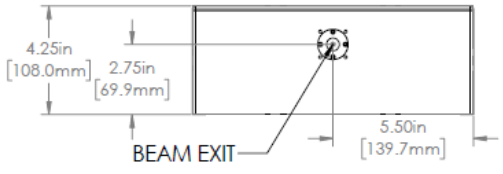






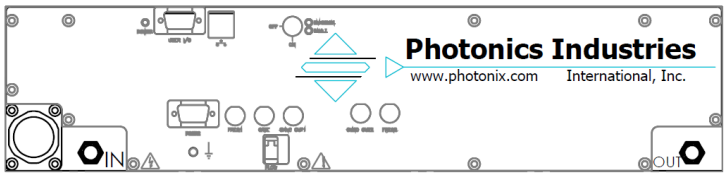


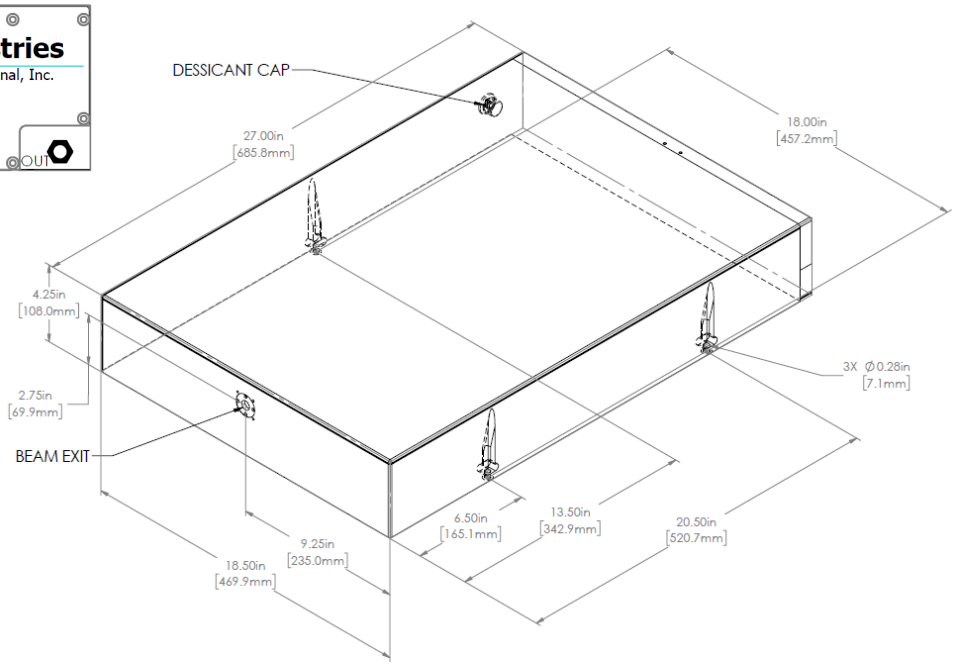


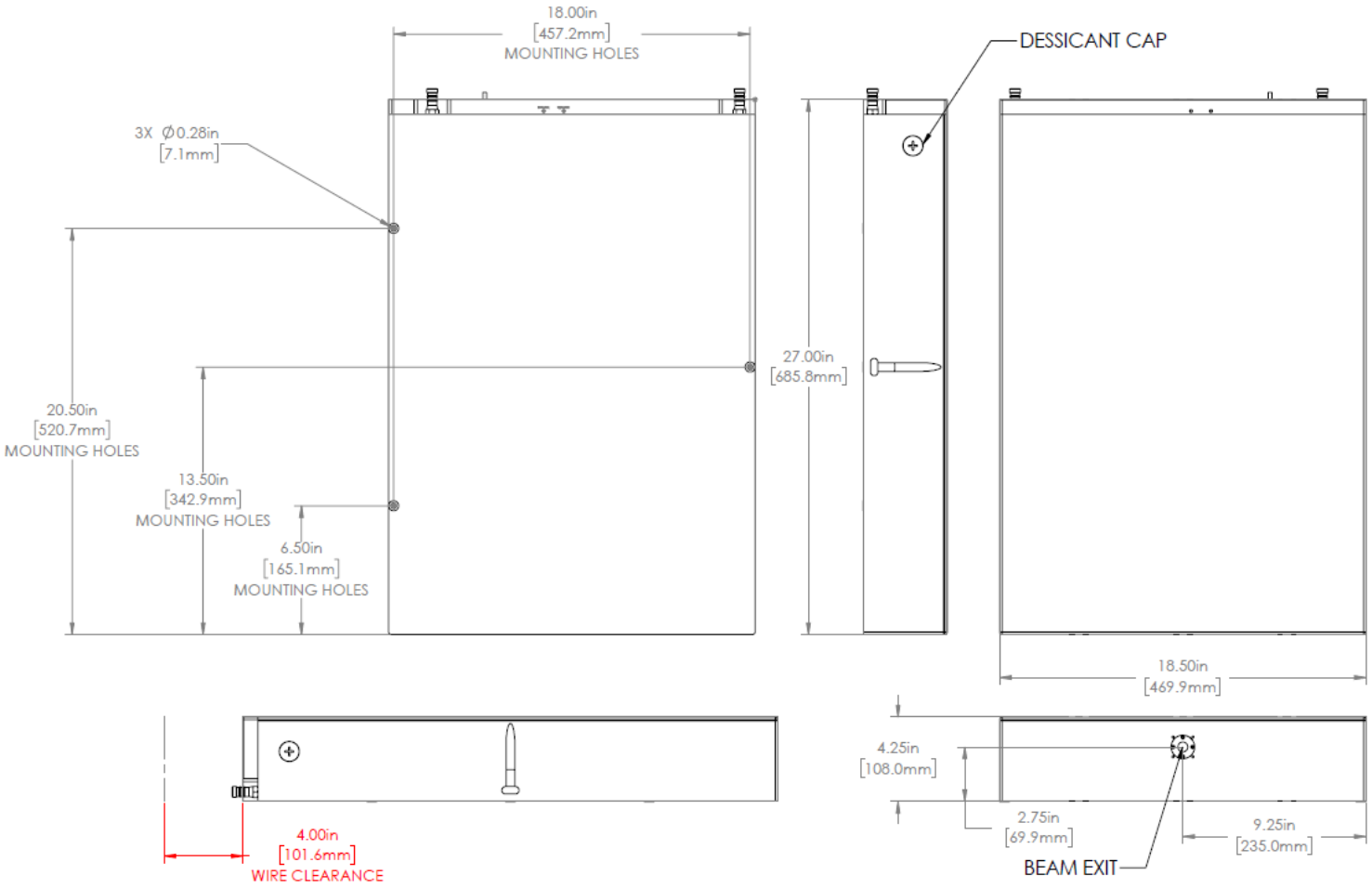


Dimensional Drawings

DM2-532-150/200

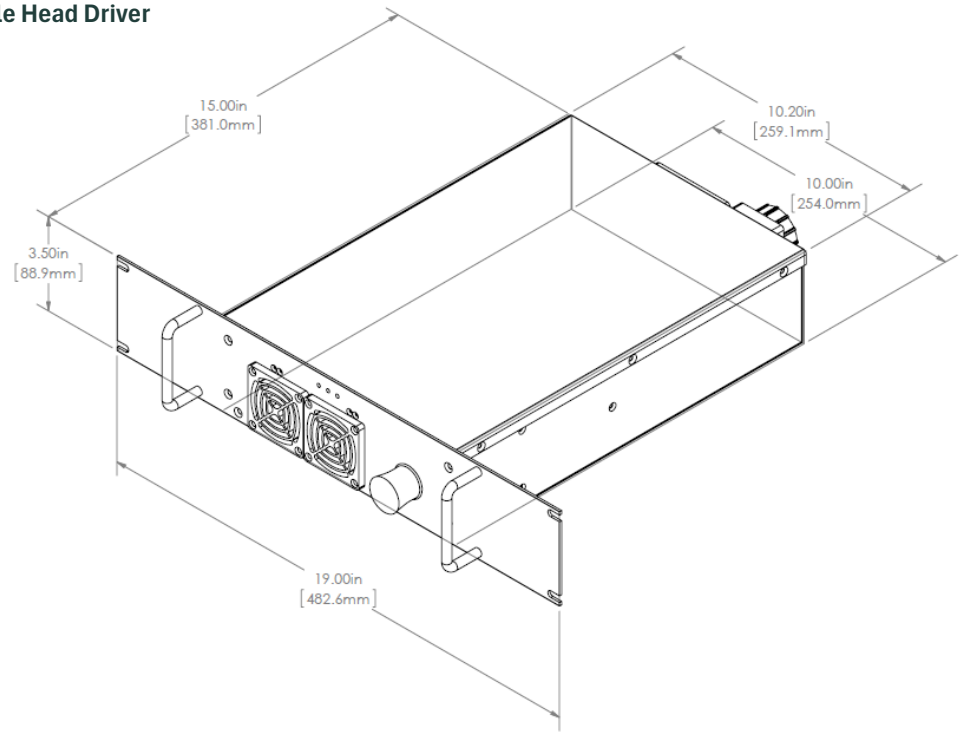




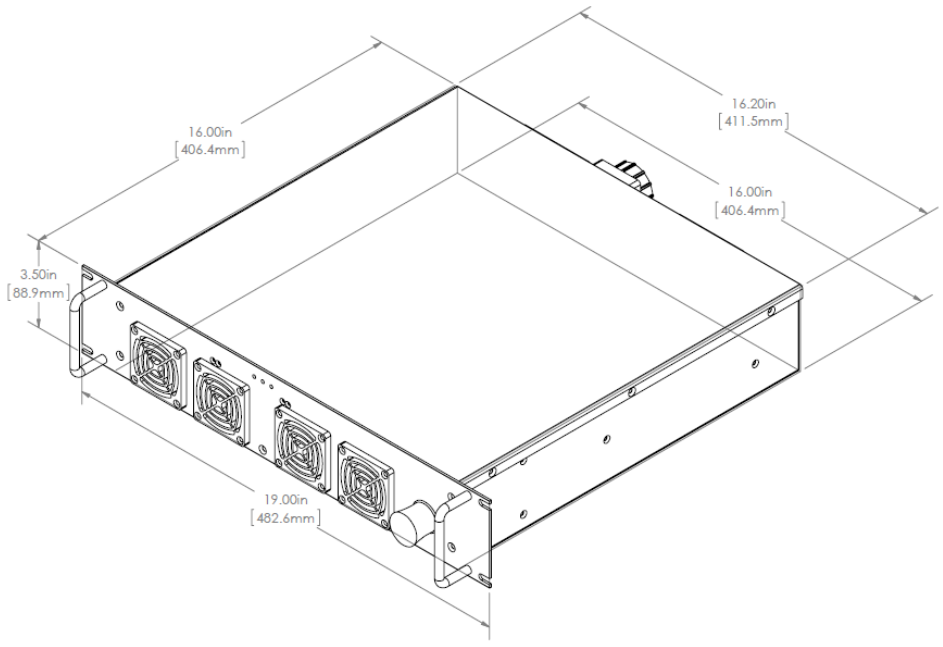


Dimensional Drawings

DM Single Head Driver



DM Dual Head Driver



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

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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

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