DM LP Nd:YAG Series

DM Nanosecond Lasers

Multimode, Long Pulse, Q-Switched Lasers

Since 2002, Photonics Industries' DM Series Nd:YAG green nanosecond lasers have set the standard for high-energy, long pulse operation in a compact, industrial-grade platform. Now available in Long Pulsed (LP) versions with pulse widths extending up to 300ns, these lasers deliver exceptional energy per pulse (up to 20mJ) or high average powers (up to 200W) from a single resonator. For even higher output needs, Dual Head configurations can reach up to 40mJ of energy or 400W of power.

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

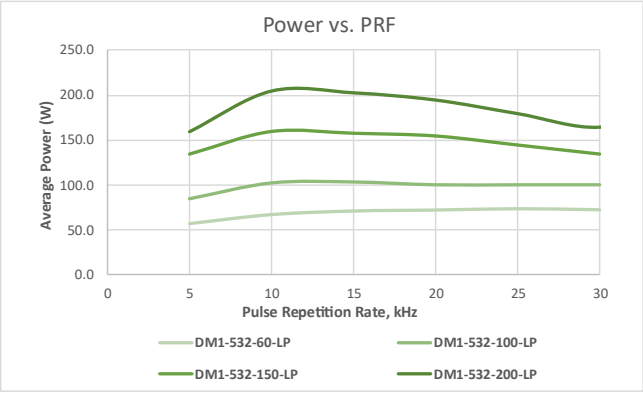
- Laser Shock Peening (LSP)
- Surface Heating & Modification
- Thermal Annealing of Thin Films
- Laser Thermal Processing (LTP)
- Semiconductor Lithography
- Polymer Welding & Surface Activation
- Water-Jet Assisted Laser cutting
- Laser Induced Plasma Channels
- Sintering of Nanoparticles

FEATURES

- Up to ~400W of Average Power at 10 kHz
- Up to 40mJ/P Multimode Output
- Standard short pulse and long pulse versions
- 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

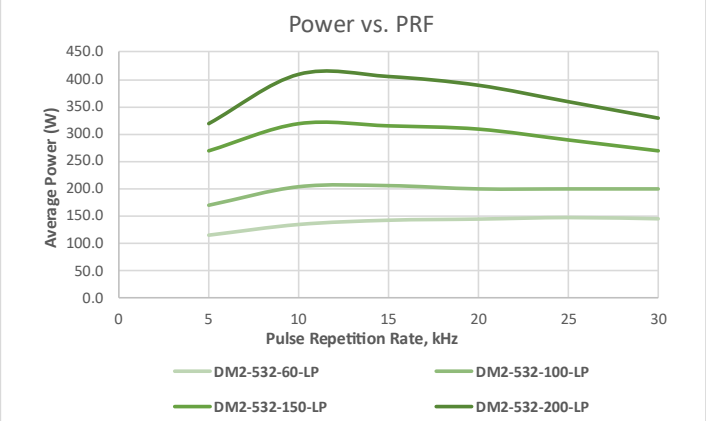
Specifications – **DM Nd:YAG Single Head Long Pulse Series**				
	DM1-532-60-LP	**DM1-532-100-LP**	**DM1-532-150-LP**	**DM1-532-200-LP**
Wavelength (nm)	532			
Average Power (W) @10kHz	60	100	150	200
Pulse Energy (mJ) @10kHz	6	10	15	20
Pulse Width (ns) @ 10kHz	~150	~150	~300	~200
Pulse repetition rate (kHz)[2]	1 to 50	1 to 30	1 to 30	1 to 30
Pulse-to-pulse stability (RMS %)[3]	<1.0		<1.5	
Long-term power stability (RMS %) [4]	<0.5			
Beam spatial mode[5]	Multimode M^2 ~15	Multimode M^2 <~ 18	Multimode M^2 <~18	Multimode M^2 <~18
Beam divergence (mrad)	< 4			
Beam diameter at exit (mm)	~ 4.0			
Beam roundness (%)	>90			
Beam pointing stability (µrad)	<25			
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 (Hz)	50-60			
Power consumption (kW)[6]	~1.1	~1.5	~2.1	~2.5
Laser Head Dimensions	26 x 6.5 x 4.25 in [660.4 x 165.1 x 107.95m]		26 x 8 x 4.25 in [660.4 x 203.2 x 107.95mm]	
Power Supply Dimensions[7]	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 [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. [NB] Specifications are subject to change. For customized or non-standard operational specifications, please contact us.



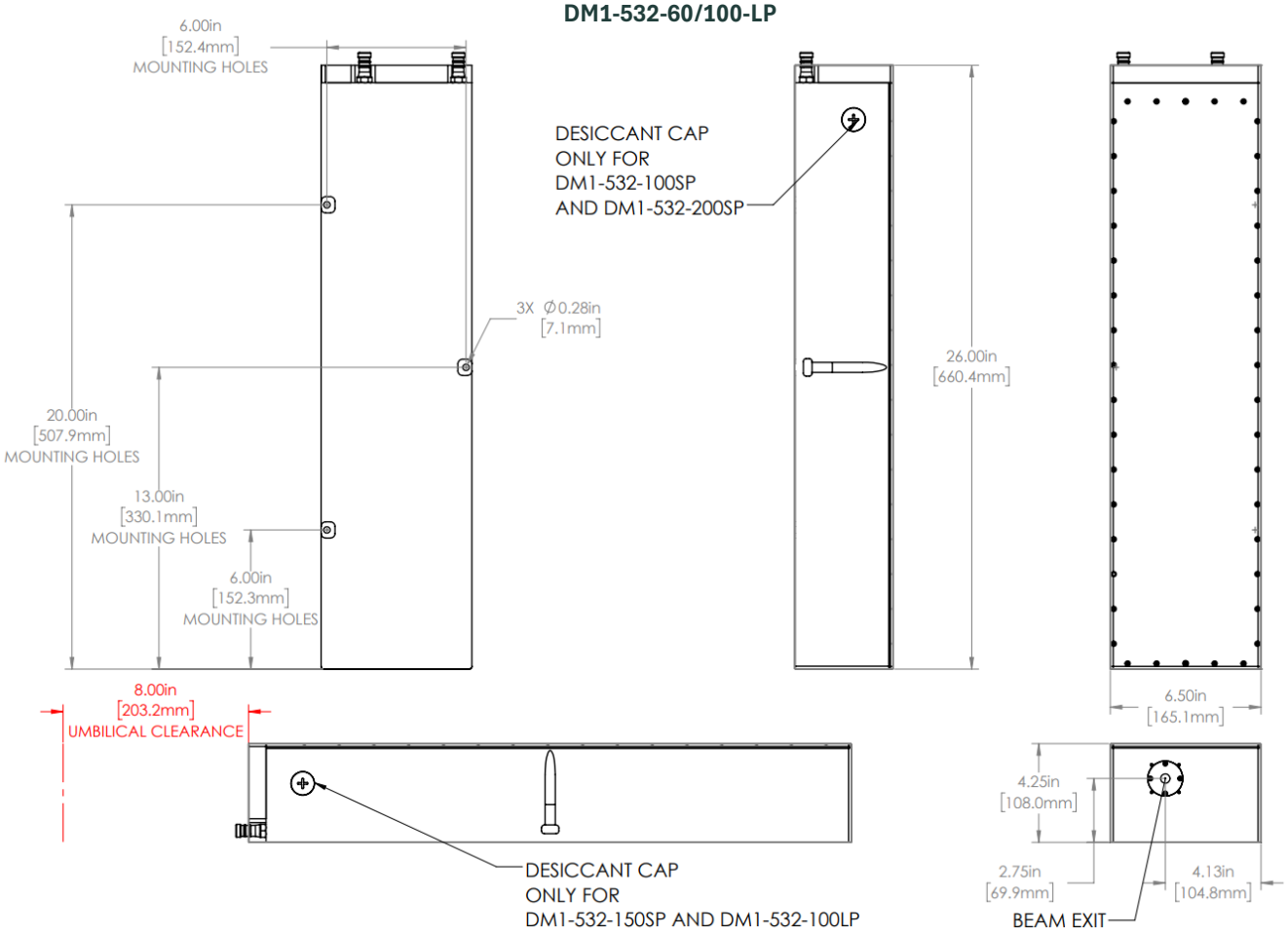
Specifications – **DM Nd:YAG Long Pulse Dual Head Series**				
	DM2-532-60-LP	**DM2-532-100-LP**	**DM2-532-150-LP**	**DM2-532-200-LP**
Wavelength (nm)	532			
Average Power (W) @10kHz	120	200	300	400
Pulse Energy (mJ) @10kHz	12	20	30	40
Pulse Width (ns) @ 10kHz	~150		~300	~200
Pulse repetition rate (kHz)[2]	1 to 50	1 to 30	1 to 50	
Pulse-to-pulse stability (RMS %)[3]	<1.0			
Long-term power stability (RMS %) [4]	<0.5			
Beam spatial mode[5]	Multimode M^2 ~15	Multimode M^2 ~ 18	Multimode M^2 ~ 18	
Beam divergence (mrad)	5			
Beam diameter at exit (mm)	~ 4		~4.5	
Beam roundness (%)	>90			
Beam pointing stability (µrad)	<25			
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 (Hz)	50-60			
Power consumption (kW)[6]	~3	~3.5	~4.5	~5
Laser Head Dimensions	26 x 11 x 4.25 in [660.4 x 279.4 x 107.95mm]		26x18.5x4.25 in [660.4 x 355.6x 107.95mm]	
Power Supply Dimensions[7]	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 [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			

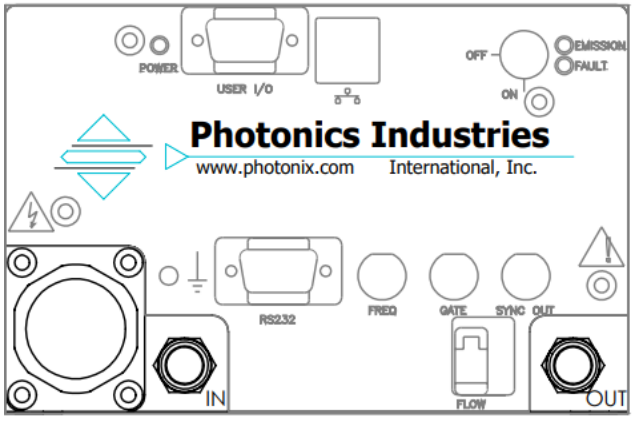
[2.] Lower pulse repetition rates (down to < 1 kHz) performance achieved by pulse energy capping [3] Measured at ambient temperature ± 2°C [4] Measured over 8 hours ± 1°C [5] TEM00 beam option available contact us) [6] Power consumption data does not include an external chiller's power consumption [7]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

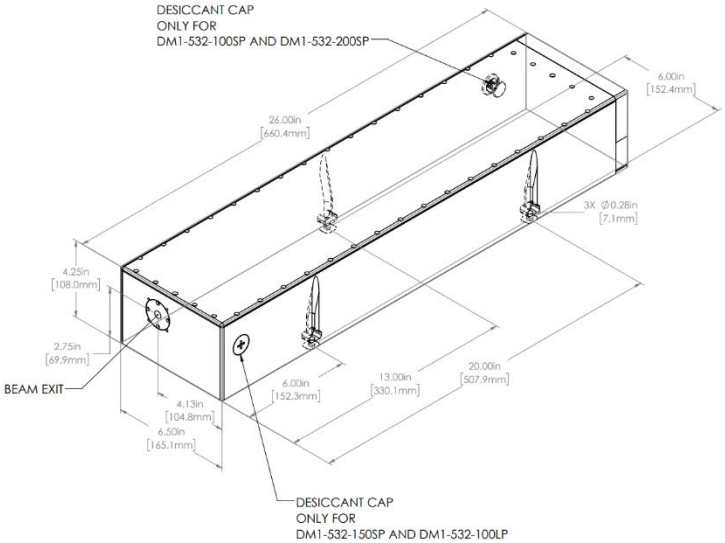


Dimensional Drawings

DM1-532-60/100-LP

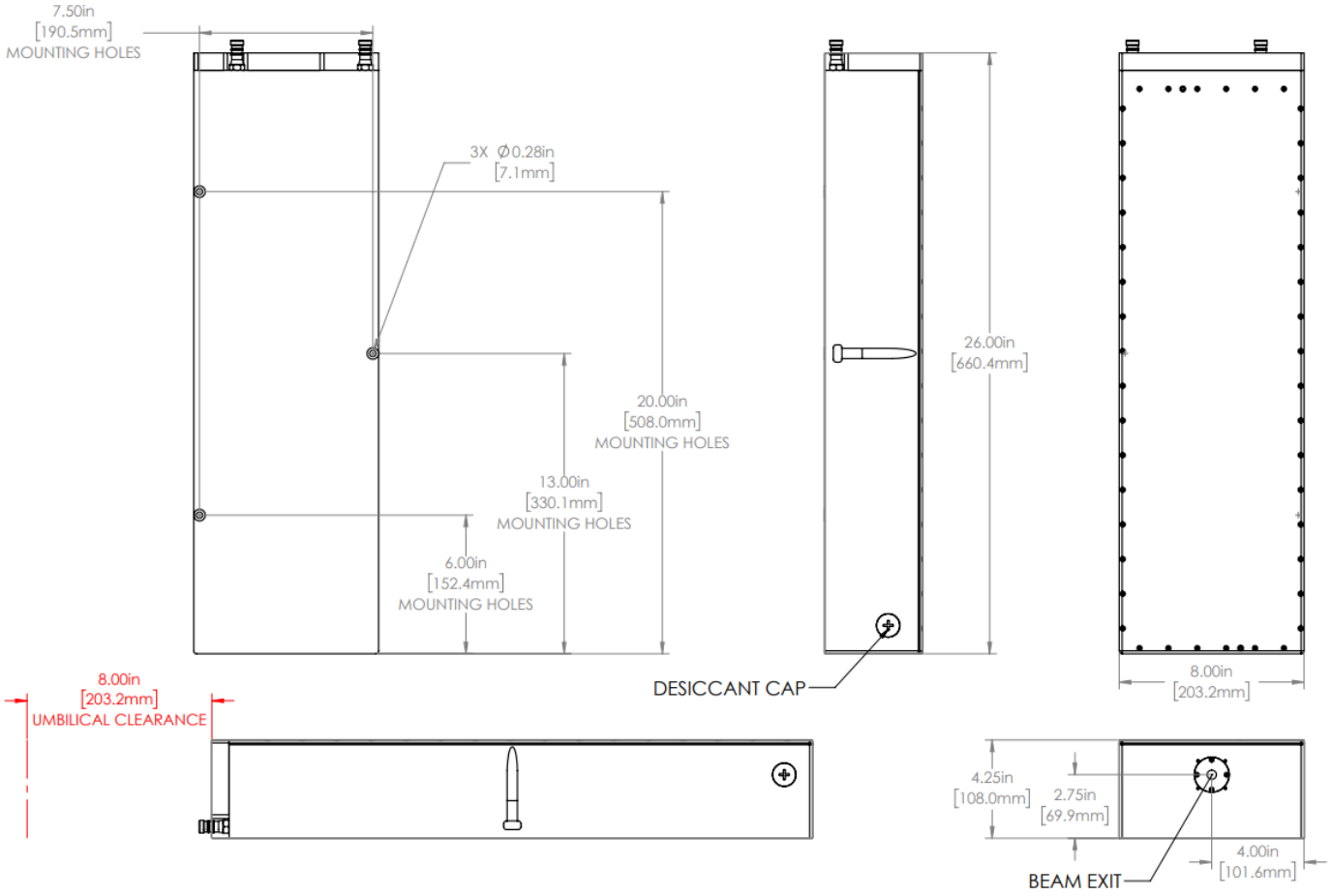


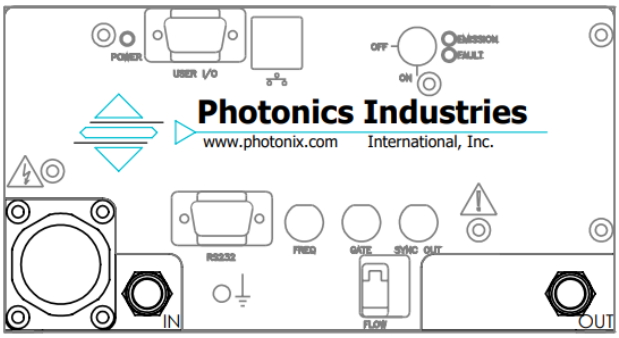


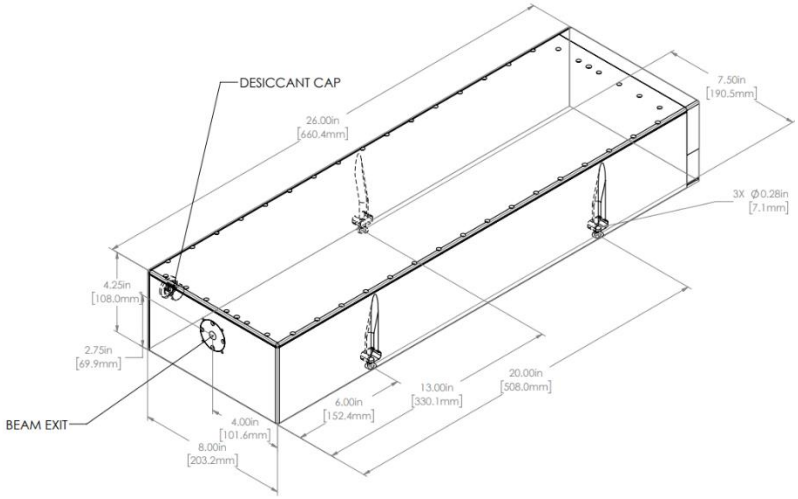


Dimensional Drawings

DM1-532-150/200-LP

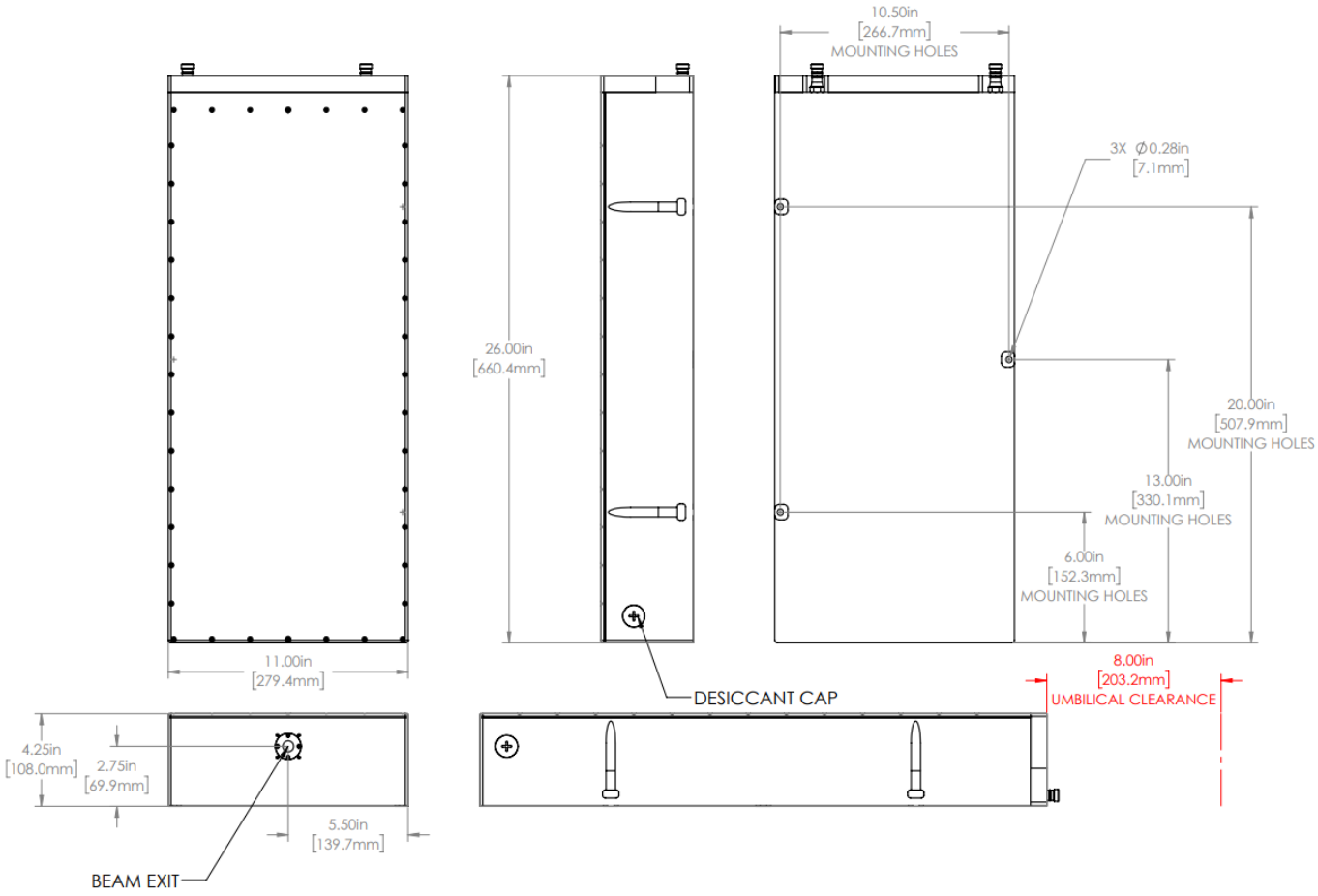


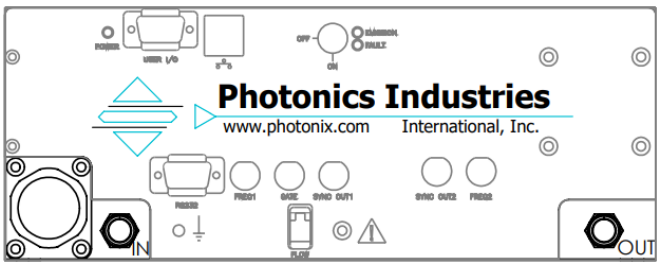


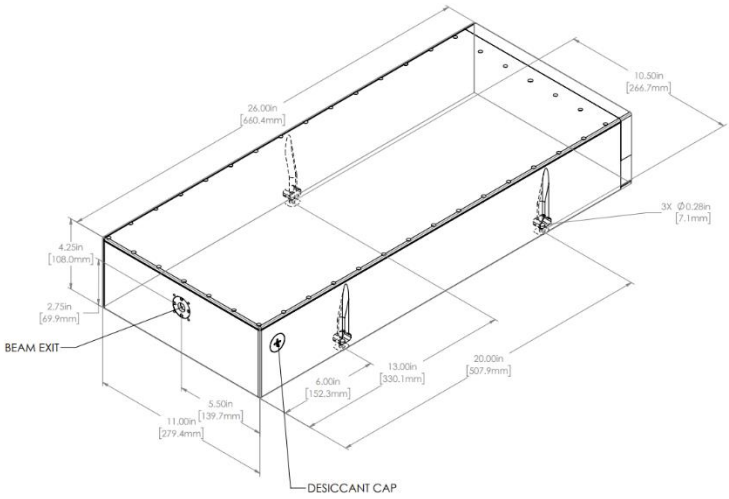


Dimensional Drawings

DM2-532-60/100-LP

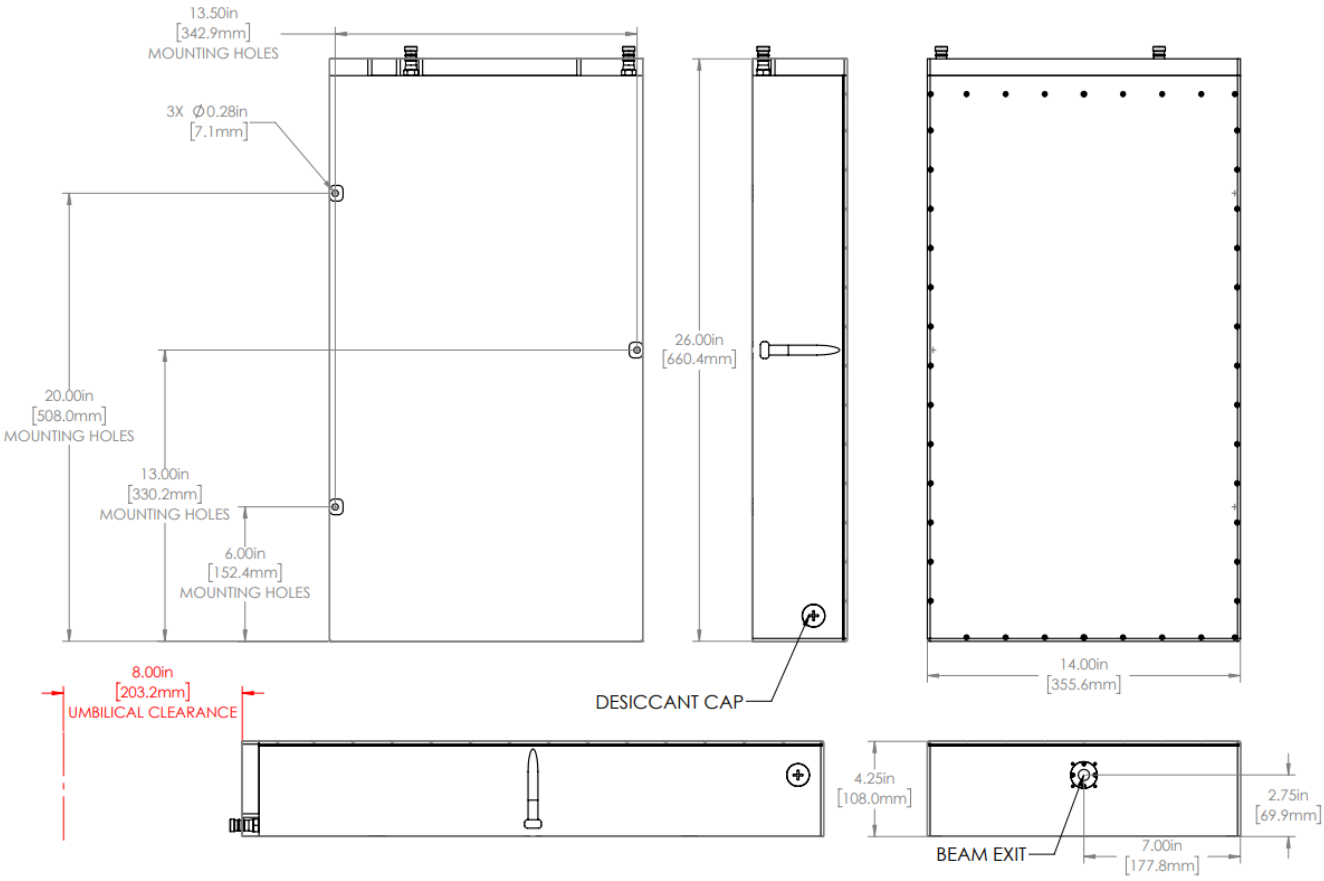


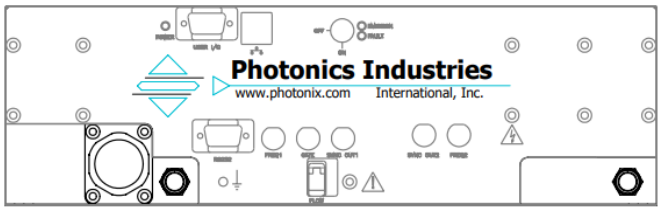


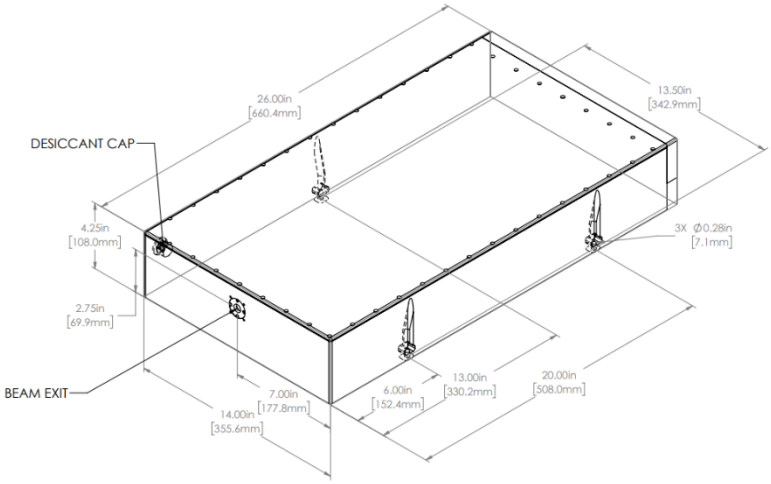


Dimensional Drawings

DM2-532-150-200-LP

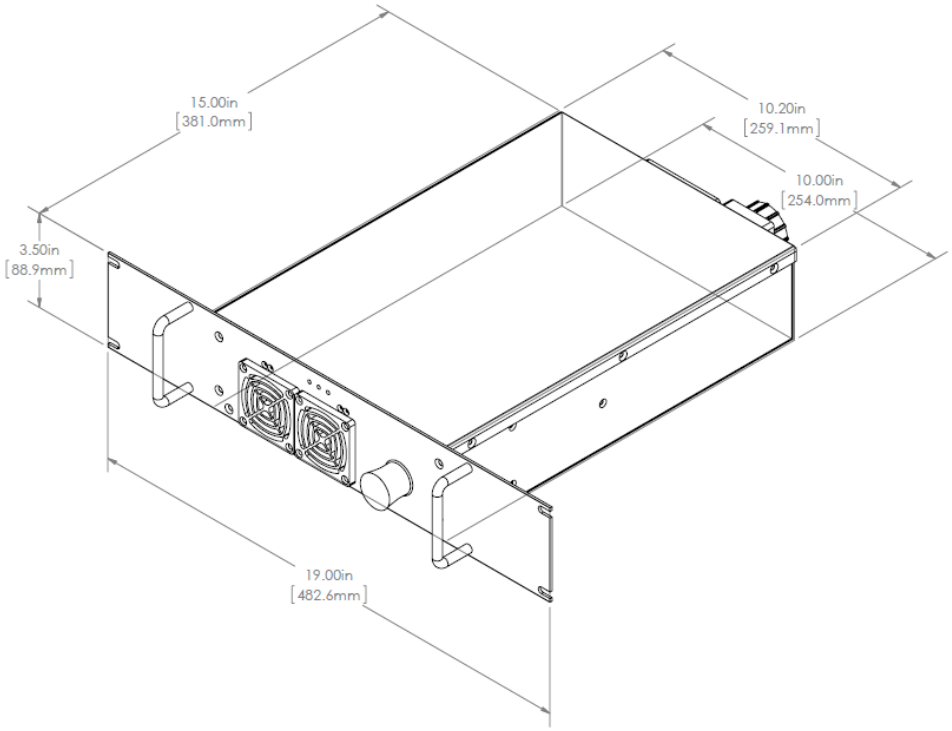




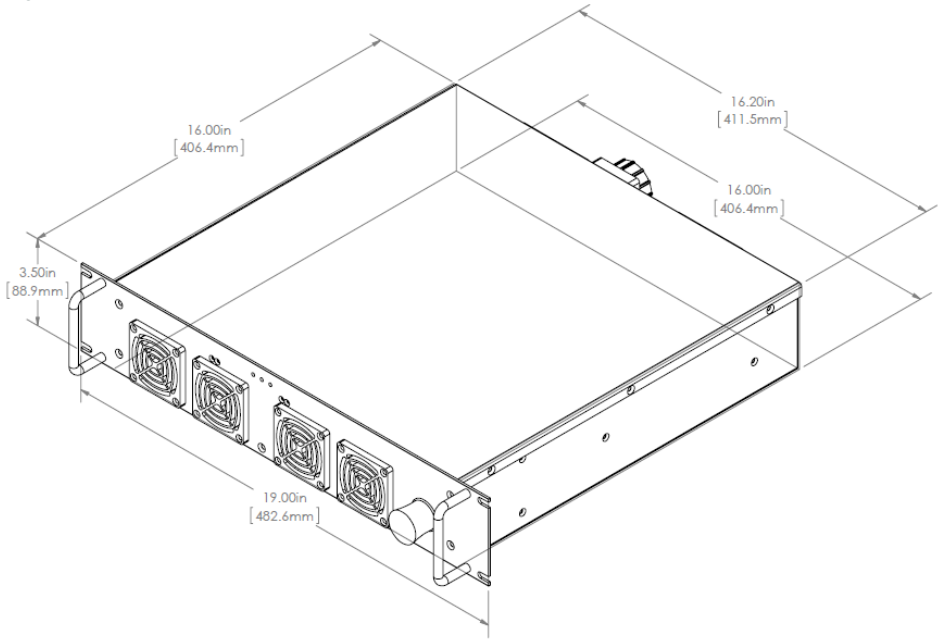


Dimensional Drawings

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

RoHS Compliant

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