

# DC & DS Series

## 355nm Nd:YVO<sub>4</sub> UV Lasers



### Features

- 355nm UV Laser Radiation
- Compact, Rugged Design
- TEM00 Beam with  $M2 < 1.3$
- Pulse Rates from Single Shot to 300 kHz
- RS232 Computer Control
- External TTL Triggering
- Low Power Air-Cooled
- High Power Closed Loop Chiller

### Optional Features

- Pulse Energy Control to Vary Output from 10% to 98%
- Beam Expander from 2 mm up to 10 mm
- Output Power Monitor

### Applications

- Wafer Marking
- Lidar
- Solar Cell Scribing/ Production
- Stereo lithography–Rapid Prototyping
- Mass Spectrometer
- MALDI-TOF
- Semiconductor Processing
- Interferometry
- Non-Contact Inspection
- Fluorescence
- Holography Micro-Marking
- Laser Marking, Scribing
- Via Hole Drilling
- Laser Singulation
- OPO, Ti:Sapphire Pumping
- High Speed PIV
- Laser Micromachining
- Rapid Prototype-Stereo Lithography



# 355nm System Specifications

## DC Series - 500mW to 4W



Model	DCH-355-0.5	DCH-355-3	DCH-355-4*
Avg. Power @ 20 kHz	0.5W	3W <sup>+</sup>	4W <sup>+</sup>
Pulse Width @ 20 kHz (nominal)	25ns	20ns <sup>+</sup>	20ns <sup>+</sup>
Pulse Energy @ 20 kHz (uJ)	25uJ	100uJ <sup>+</sup>	133uJ <sup>+</sup>
Beam Mode	TEM00 - M2 < 1.3		
Beam Diameter @ exit (nominal)	0.4mm		
Divergence (nominal)	<2.5mRad		
Polarization Ratio	100:1 Horizontal		
Pulse-to-Pulse Instability	<3% rms		
Long-Term Instability (8h +/-3deg.C)	+/- 3%		
Temp Stability	3% / deg C		
Pointing Stability	< 25 μrad		
Pulse Repetition Rate	1 Hz to 150 kHz (300kHz /ext source)		
Laser Head (WxLxH)	102mm, 253mm, 114mm		
Controller Dimensions (WxLxH)	356mm, 311mm, 89mm		
Electrical Requirement	100 to 120V, 200 to 240 V @ 50/60 Hz		
Relative Humidity	Non condensing, 90% Max		
Ambient Temperature	15° to 35°C (59° to 95°F) Operating Range		
Umbilical Length	3 meter (10 feet)		

\* DCH-355-4 includes a cooling plate. Please contact factory for dimensions.

<sup>+</sup> Specified at 30kHz

## DS Series - 8W to 30W

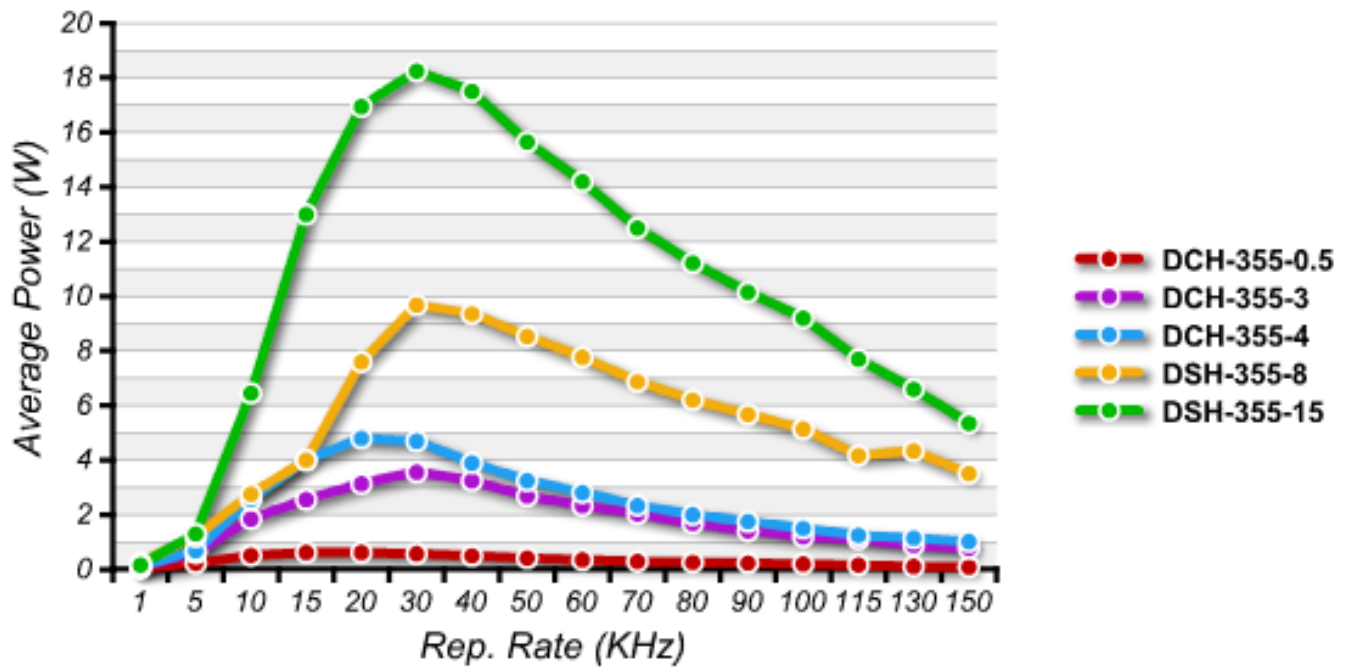


	DSH-355-8	DSH-355-15	DSH-355-24	DSH-355-30
Wavelength	355 nm	355 nm	355 nm	355 nm
Avg. Power @ 30 kHz	8 Watts	15 Watts <sup>+</sup>	24 Watts*	30 Watts*
Pulse Width @ 30 kHz (nominal)	20ns	15 ns <sup>+</sup>	40 ns*	40 ns*
Pulse Energy @ 30 kHz	0.26mJ	0.375mJ <sup>+</sup>	0.3mJ*	0.375mJ*
Beam Diameter @ exit (nominal)	0.8mm	0.5 mm	2 mm	2 mm
Beam Mode	TEM00 - M2 < 1.2		TEM00 - M2 < 1.3	
Pulse-to-Pulse Instability	<2% rms		<4% rms	
Beam Divergence	<1.3 mrad		<0.5 mrad	
Polarization Ratio	100:1 Horizontal		100:1 Horizontal	
Long-Term Instability (8h +/-3C)	<+/- 2%		<+/- 2%	
Pointing Stability	< 25 μrad		< 25 μrad	
Pulse Repetition Rate	Single shot to 150 kHz		50kHz to 300 kHz	
Laser Head (W,L,H)	190.5 mm, 558.8 mm, 95.25mm		304.8mm, 812.8mm, 95.25mm	
Controller Dimensions (WxLxH)	356mm x 311mm x 89mm	483mm x 343mm x 133 mm	483mm x 343mm x 133mm	
Electrical Requirement	100 to 120V, 200 to 240 V @ 50/60 Hz			
Relative Humidity	Non condensing, 90% Max			
Ambient Temperature	15° to 35°C (59° to 95°F) Operating Range			
Umbilical Length	3 meter (10 feet)			

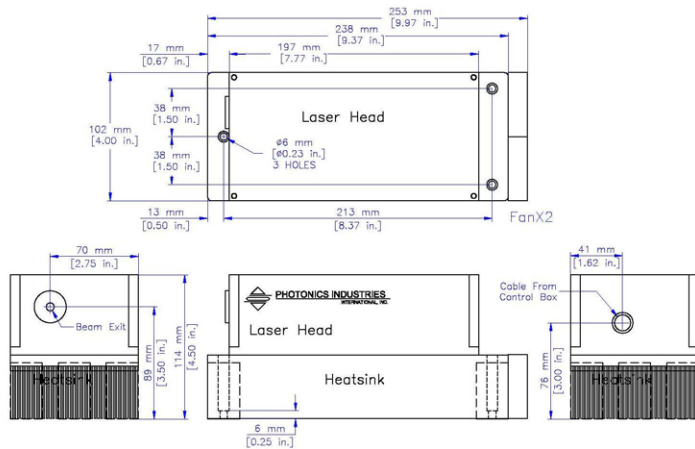
\* Specified at 80kHz

<sup>+</sup> Specified at 40kHz

# Performance Curve

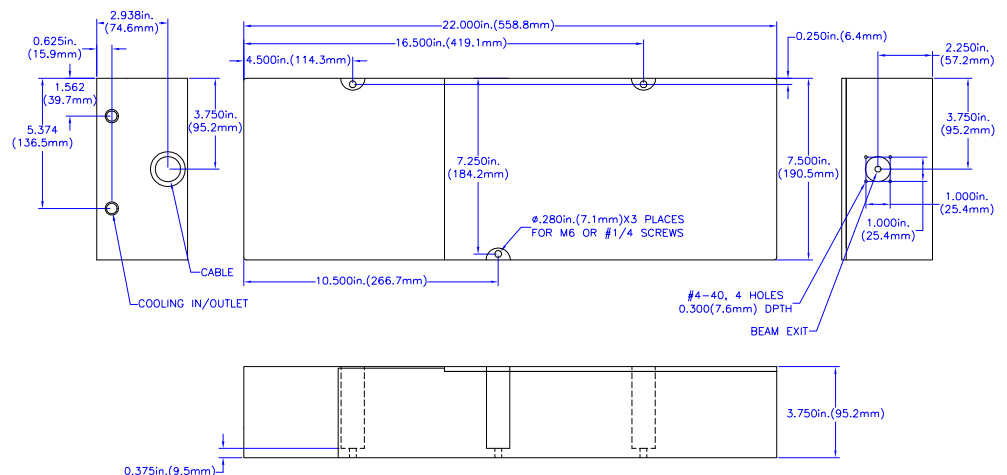


# Dimensional Drawings



DC Laser Head\*

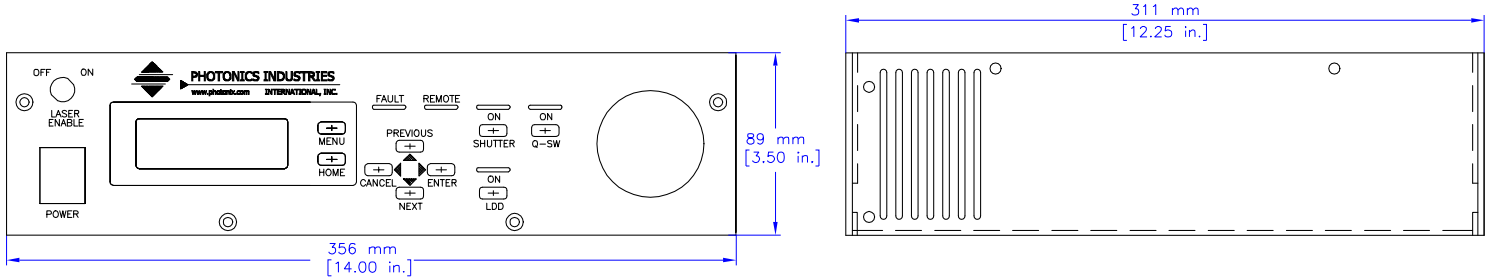
DS Laser Head



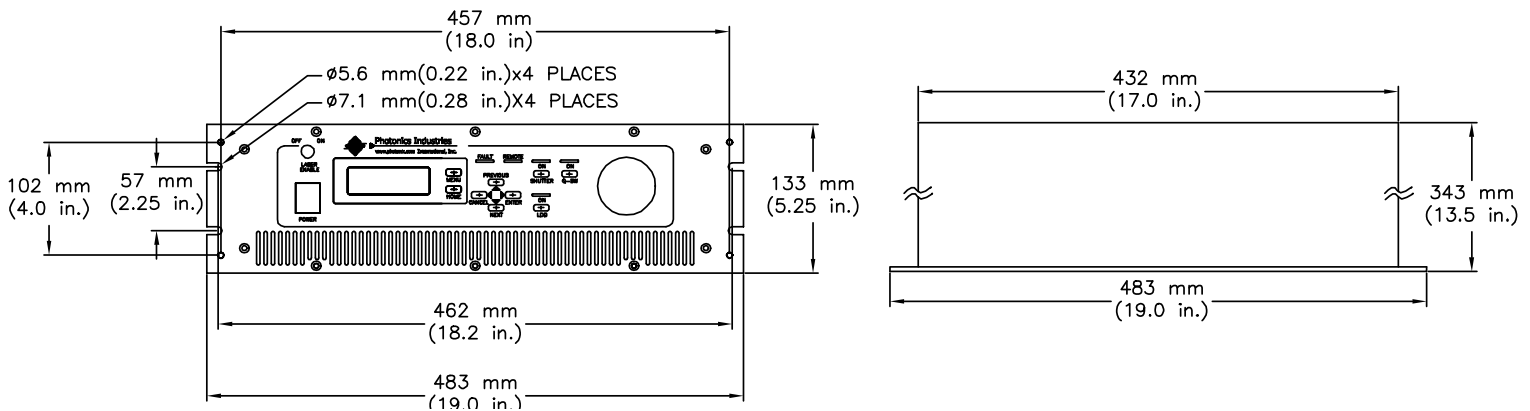
\* Dimensional drawings for DCH-355-4, DSH-355-24 and DSH-355-30 are available upon request.

# Dimensional Drawings

## DC/DS Controller



## High Power DS Controller



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7,346,092; 7,082,149; 7,079,557; 6,999,483; 6,980,574; 6,961,355; 6,842,293; 6,762,405; 6,690,692; 6,587,487; 6,584,487; 6,366,596;  
6,327,281; 6,356,578; 6,246,707; 6,229,839; 6,108,356; 6,061,370; 6,028,620; 5,936,938; 5,898,717 and Pending Patents

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