DCH UV Series

Features

- 355 nm wavelength
- Power: 0.5W to 5W*
- Air-cooled design, water cooled option
- All-in-one (AIO) single box design for 0.5 & 1W model
- Patented intracavity UV generation
- Compact, rugged, monolithic laser head
- Total pulse control
- TEM00 beam with typical $M^2 < 1.2$
- Pulse rates from Single shot to 300kHz
- RS232 computer control
- Field replaceable pump diodes

Applications

- Laser Trimming of Embedded Passives
- Glass Marking
- Laser Direct ITO/TCO Patterning
- LED and Medical Package Marking
- Solar P1 to P3 processing
- Thin-film Scribing
- Rapid Prototyping/Stereolithography
- PCB drilling and structuring
- Marking of Plastic
- Cutting metals
- Thin Film Annealing

As the first company to pioneer intracavity harmonic generation technologies and introduce the very first intracavity UV lasers in 1996, Photonics Industries remains an industry leader in producing efficient, simple, low cost of ownership (COO) lasers. Its DCH series offers UV power from 0.5W to 5W with the best mode quality in the market.

Owing to key patented technologies, intracavity harmonic generation is inherently a more efficient harmonic conversion that provides better pulse to pulse stability and mode quality as well as a much simpler, more compact laser configuration. In addition to its patented intracavity UV generation, the end-pumped geometry of Photonics Industries' DCH UV Series lasers results in even better mode quality and field replaceable pump diodes, for the lowest COO possible.

*For higher power UV models please see the DSH UV Series.

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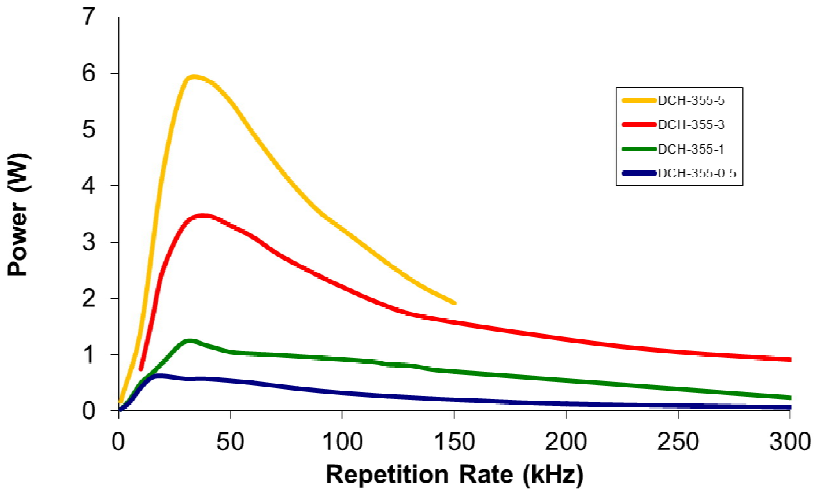
System Specifications

Model	DCH-355-0.5	DCH-355-1	DCH-355-3	DCH-355-5
Technology	Air-Cooled			
Wavelength	355 nm			
Average Power @ 40 kHz	500 mW	1 W	3 W	5 W
Recommended Power Range	50% - 100%			
Pulse Energy (µJ) @ 40 kHz	~12.5	~25	~75	~125
Pulse Width (ns) @ 40 kHz	~15			
Repetition Rate	Single Shot to 200 kHz (Option to 300kHz)			
Pulse to Pulse Stability	< 3% rms			
Polarization Ratio	Horizontal; 100:1			
4σ Beam Diameter @ exit	~0.3 mm	~0.3 mm	~0.4 mm	~0.45 mm
Beam Divergence (Full Angle Far Field)	< 3 mrad	< 3 mrad	< 2.5 mrad	
Beam Circularity at exit	>85%			
Spatial Mode	TEM_{00} M^2<1.2			
Beam Pointing Stability	< 25 µrad			
Beam Position Accuracy	< 2.5 mm and < 1° from nominal			
Long Term Stability (8 hr ± 1° C)	<3% rms			
Interface	Ethernet / RS 232 / GUI / External TTL Triggering			
Maximum Heat Load (laser head)	~50 W		~100 W	
Warm Up Time	< 5 min from standby or cold start			
Electrical Requirement	100 to 240V AC			
Line Frequency	50 to 60 Hz			
Relative Humidity	Non-condensing, 90% Max			
Dimensions* Laser Head	4 in x 2.75 in x 8.1 in		4 in x 2.5 in x 7.78 in	
(W x H x L) Controller	None		12 in x 3.5 in x 8.5 in	
Weight Laser Head	~6 lbs		~6.5 lbs	
Controller	None		10 lbs	
Umbilical Length	None		1.5 m	
Ambient Temperature	15°C to 35°C (59° to 95°F) Operating Range			

*Dimensions given are without heatsinks. Air cooled or water cooled heatsink options are available (see dimensional drawings)

Performance Curves



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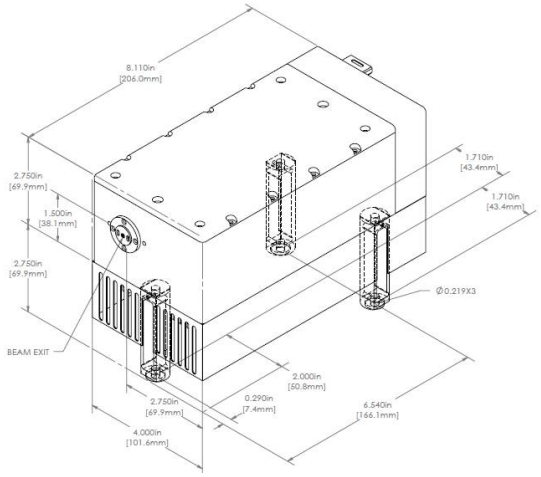
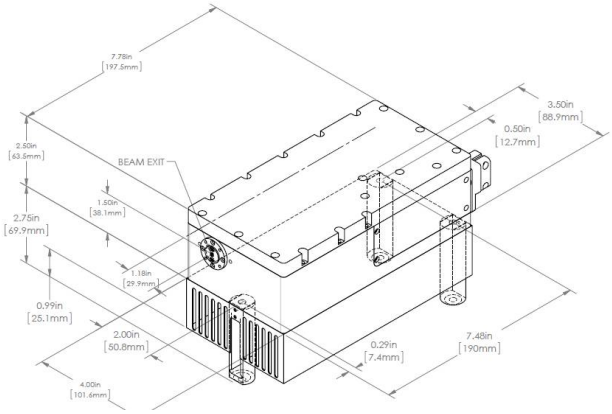
Dimensional Drawings

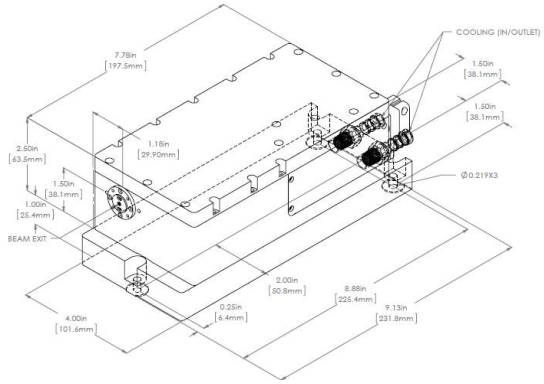
DCH-355-0.5 & 1 AIO Laser with air cooled heatsink



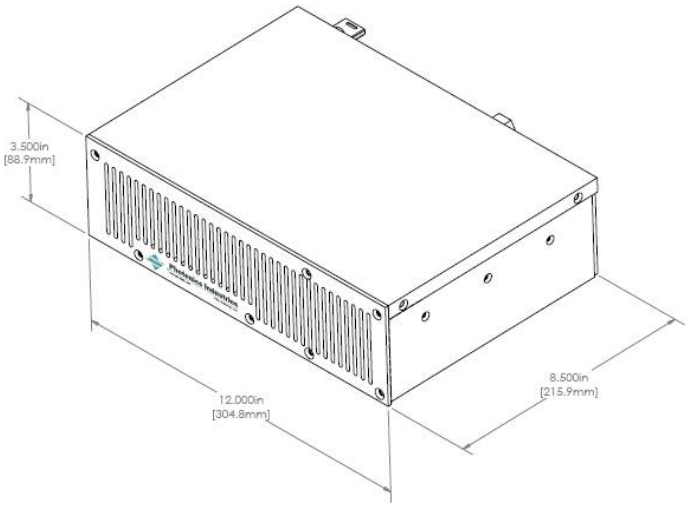
DCH-355-3 & 5 Laser with air cooled heatsink



DCH-355-3 & 5 Laser with water cooled heatsink



DCH-355-3 & 5 Controller



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Due to Photonics Industries' commitment to continuous product improvement, specifications and drawings are subject to change without notice.

Photonics Industries conforms to provisions of US 21 CFR 1040.10 & 1040.11 and is made under one or more US patents listed below: 9,531,147, 8,817,831, 7,869,471, 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, 6,584,134, 6,366,596, 6,356,578, 6,327,281, 6,246,707, 6,229,829, 6,108,356, 6,061,370, 6,028,620, 5,936,983, 5,898,717 and Pending Patents