

# AVIA LX

## Solid-State Q-Switched Ultraviolet Lasers

AVIA LX is a 20 W (at 355 nm) diode-pumped, solid-state, Q-switched nanosecond laser that offers an unmatched combination of high reliability, superior performance, and low cost of ownership. This is achieved, in part, through the use of the Coherent PureUV™ active laser-cleaning engine to deliver exceptional lifetime and hands-free operation. These characteristics make AVIA LX an ideal tool for high throughput, demanding, yet cost sensitive applications such as via drilling in PCB and flex materials, cutting of flex materials, 3D chip package manufacturing, IC package trimming, and wafer scribing. For the system builder, AVIA LX offers effortless ease of integration into laser-based tools through its small footprint and a simplified interface.

### FEATURES & BENEFITS

- Repetition rates single-shot to 100s of kHz
- High beam quality  $M^2 < 1.2$
- Industry leading compact footprint
- Simplified user interface at laser head
- High reliability between long maintenance cycles

### APPLICATIONS

- Via Hole Drilling
- Flex Materials Cutting
- 3D Package Manufacturing
- IC Package Trimming
- Wafer Scribing and Singulation
- Solar Cell Scribing



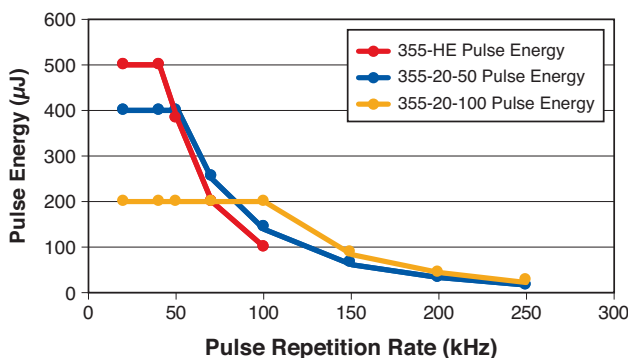
SPECIFICATIONS	AVIA LX 355-20-50		AVIA LX 355-20-100		AVIA LX 355-20-40 HE	
	1.5 mm	3.0 mm	1.5 mm	3.0 mm	1.5 mm	3.0 mm
Output Power (W) (specified)	>20 at 50 kHz		>20 at 100 kHz		>20 at 40 kHz	
Output Power (W) (typical)	>15 at 100 kHz >10 at 150 kHz >5 at 200 kHz		>13 at 150 kHz >9 at 200 kHz >7 at 250 kHz		>14 at 60 kHz >12 at 80 kHz >10 at 100 kHz	
Pulse Energy (μJ)	Up to 400		Up to 200		Up to 500	
Repetition Rate	Single-shot to 300 kHz		Single-shot to 300 kHz		Single-shot to 100 kHz	
Pulse Width (ns)	<25 at 50 kHz		<30 at 100 kHz		<25 at 40 kHz	
Spatial Mode <sup>1</sup>	TEM <sub>00</sub> , M <sup>2</sup> <1.2					
Beam Divergence (mrad)	<0.5	<0.3	<0.5	<0.3	<0.5	<0.3
Beam Waist Diameter (mm, 1/e <sup>2</sup> )	1.5 ±10%	3.0 ±10%	1.5 ±10%	3.0 ±10%	1.5 ±10%	3.0 ±10%
Beam Circularity (%)	>90					
Polarization Ratio	>100:1					
Polarization Direction	Vertical					
Pulse Energy Stability (%) (RMS)	<2					
Power Stability (%) (RMS, 2σ) (over 8 hours)	<2					
Warm-up Time (minutes)						
Cold Start	<20					
Warm Start	<5					
Head Weight	12.5 kg (27.5 lbs.)					
External Comms	RS-232, Ethernet, USB					
Power Consumption (W) (VAC)	<500					

**OPERATING SPECIFICATIONS**

Temperature (non-condensing)	
Laser Head	+15 to 40°C (59 to 104°F)
Non-Operation (storage)	-20 to +60°C (-4 to 140°F)
Shipping Specifications	
Temperature	-20 to +60°C (-4 to 140°F)
Relative Humidity (%)	5 to 80
Optional Accessory	
Beam Expander	>2x
Chiller	>110V and 230V

<sup>1</sup> Nominal M<sup>2</sup> at each fresh prequalified THG spot.

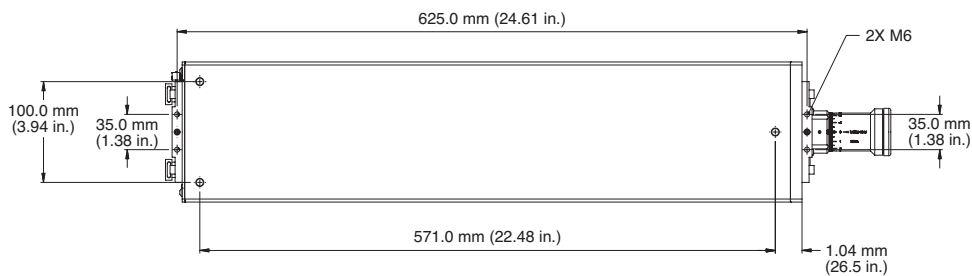
**AVIA LX 355-20 Spec UV Performance**



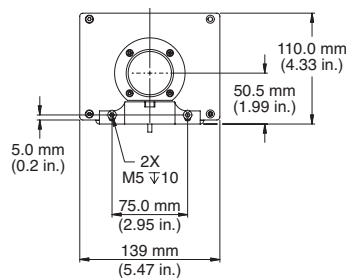
## MECHANICAL SPECIFICATIONS

### AVIA LX with External Beam Expander

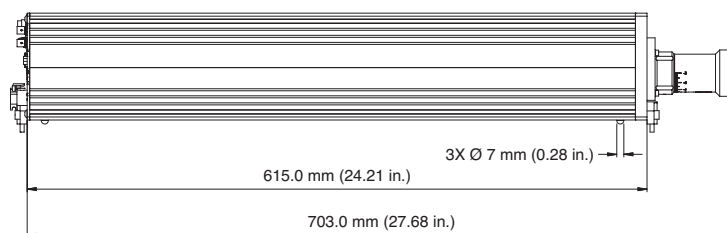
Bottom View



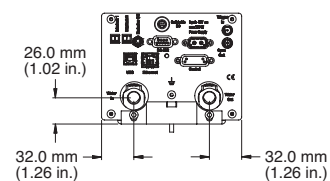
Front View



Side View



Rear View



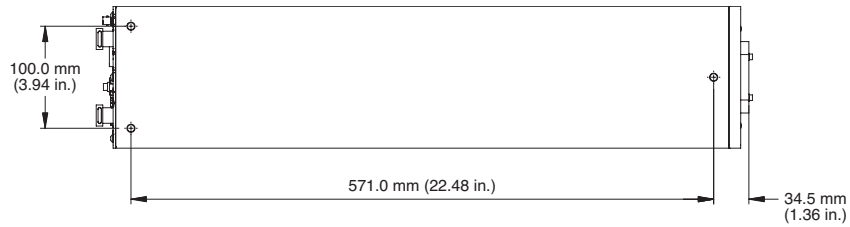
Top View



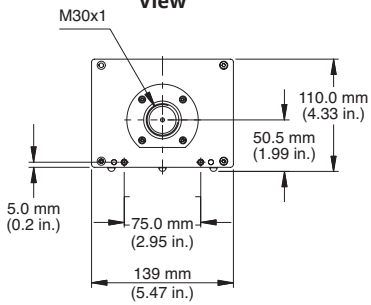
## MECHANICAL SPECIFICATIONS

### AVIA LX 1.5 mm Collimated Beam, without External Beam Expander

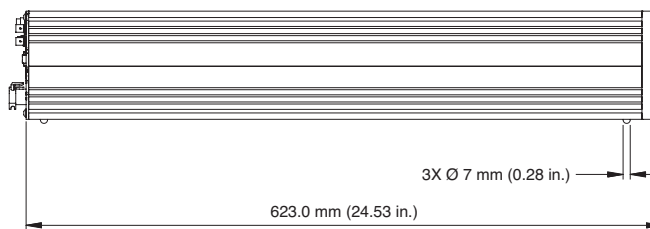
Bottom View



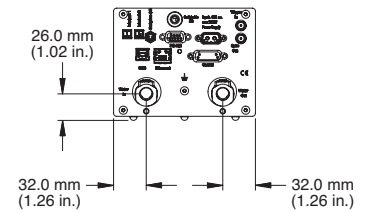
Front View



Side View



Rear View



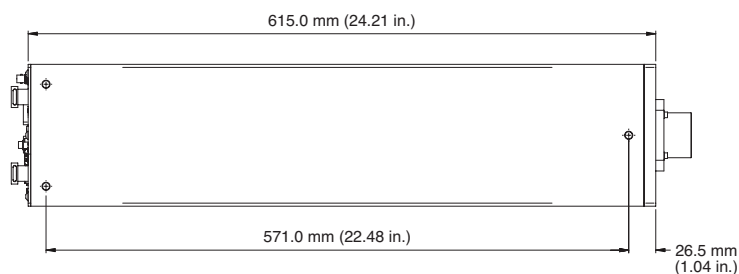
Top View



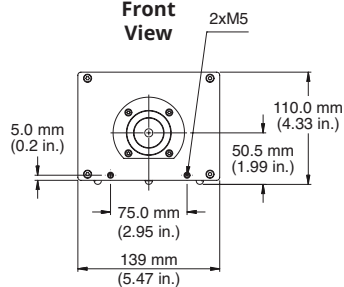
## MECHANICAL SPECIFICATIONS

### AVIA LX 3 mm Collimated Beam

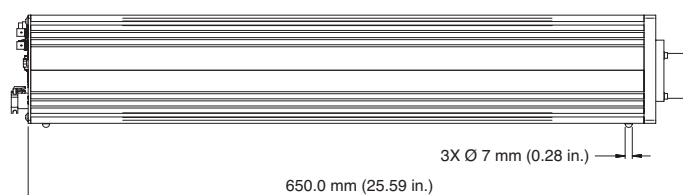
Bottom View



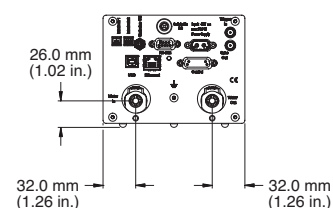
Front View



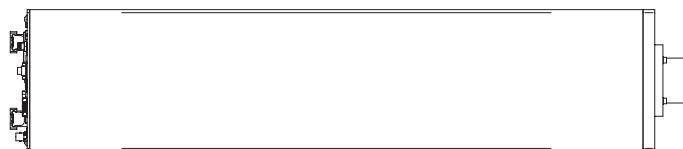
Side View



Rear View



Top View



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Coherent offers a limited warranty for all AVIA LX Lasers. For full details of this warranty coverage, please refer to the Service section at [www.coherent.com](http://www.coherent.com) or contact your local Sales or Service Representative. MC-009-17-0M0320Rev.C Copyright ©2020 Coherent, Inc.