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AVIA Solid State Q-Switched UV Laser - 355nm
Coherent Avia 355-23, Avia 355-23-250, Avia 355-28

Laser Innovations offers sales, service and support for your Coherent AVIA Laser System. We service all of the 355nm AVIA Laser Systems as well as the 532nm and 266nm AVIA Laser systems.



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Specifications:

AVIA LASER

	355-23¹	355-23-250²	355-28³	355-X
Wavelength		354.7 nm		355 nm
Output Power	23W @ 90 kHz	8.4W @ 250 kHz	26W @ 90 kHz 28W @ 110 kHz 23W @ 150 kHz 18W @ 180 kHz	>10W @ 60 kHz
Output Power Stability	< ±2% 1σ (average over 8 hours)			
Motorized Crystal Shifter		75 spots @ 300 hr/ea (22,500 hr)		

Pulse

Repetition Rate Range Nominal Optimized	Single shot to 300 kHz 90 to 110 kHz	Single shot to 400 kHz 250 kHz	Single shot to 300 kHz 110 kHz	Single shot to 100 kHz
Pulse Width	< 40 ns up to 90 kHz	< 75 ns up to 250 kHz < 85 ns up to 300 kHz	< 40 ns up to 110 kHz	< 30 ns up to 60 kHz
Pulse-to-Pulse Energy Stability	< 5% RMS 1σ (up to 120 kHz)	< 8% RMS 1σ (up to 250 kHz)	< 5% RMS 1σ (up to 140 kHz)	< 5% RMS 1σ (up to 60 kHz)

Beam

Divergence, Full Angle ⁵	< 0.3 mrad			
Spatial Mode ⁵	TEM ₀₀ ($M^2 < 1.3$)			
Pointing Stability/Drift ⁴	< 25 μ rad/°C			
Polarization Ratio ⁵	> 100:1 Horizontal			
1/e ² Beam Diameter ⁵	3.5 mm \pm 10%	3.6 mm \pm 10%	3.5 mm \pm 0.35	3.5 mm
Circularity	> 85%			
Bore-sight Accuracy (ref. mounting features on head)	\pm 0.5 mm & \pm 5 mrad			
Beam Exit Location (XY ref. bottom/left baseplate)	4.0 x 5.0 in (101.6 x 127.0 mm)			

Operating Conditions

Warm-up time (typical)				
Stand-By	< 15 min.		< 10 min.	
Cold Start	< 40 min.			
Ambient Temperature				
During operation	+10°C to +30°C		+10°C to +30°C	
Power off, short term	-25°C to +65°C			
Relative Humidity (non-condensing)	10 to 80%			
Cooling - Power Supply	Air-Cooled			
Cooling - Laser Head				
Flow Rate, recommended	Water-cooled 1.5 to 2.0 gal/min (5.7 to 7.6 l/min)			
Temperature, recommended	18°C to 22°C			
Heat Load (max)				
Power Supply	650W		800W	
Laser Head	300W		900W	

Electrical

Voltage (auto-ranging) Single-Phase, 3-Wire	100 to 240 VAC		90 to 260 VAC	
Frequency (auto-ranging)	50 to 60 Hz		47 to 63 Hz	
Power Consumption	800 to 1300 W		900 to 1700 W	
			800 to 1200 W	

Mechanical

Weight				
Laser Head	110 lb (50 kg)		110 lb (50 kg)	56 lb (26 kg)
Power Supply	55 lb (25 kg)		55 lb (25 kg)	85 lb (39 kg)
Umbilical				
Length	15 ft (5 m)		10 ft (3 m)	
Diameter				
Bend Radius, min.			5 in (127 mm)	
Dimensions, (LxWxH)				
Laser Head (w/umbilical)	(Approximate for shipping) 40 x 11 x 12 in (101 x 28 x 31 cm)		(Approximate for shipping) 40 x 8 x 8 in (101 x 21 x 21 cm)	
Power Supply	21 x 20 x 10 in (61 x 51 x 25 cm)		25 x 19 x 10 in (64 x 49 x 25 cm)	

¹ Measurements taken at maximum output power and 90 kHz, unless stated otherwise.

² Measurements taken at maximum output power and 250 kHz, unless stated otherwise.

³ Measurements taken at maximum output power and 110 kHz, unless stated otherwise.

⁴ Reference to base plate temperature.

⁵ Applies over Repetition Rate Range 90 to 110 kHz for Avia 355-23.

Specifications are for reference only and do not constitute warranty specifications on serviced lasers by Laser Innovations.

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