

# OBIS XT

## Powerful Compact CW DPSS Laser Platform

The new and powerful OBIS XT DPSS laser both extends and complements the wavelength range of the successful OBIS LS/LX and Sapphire lasers into the UV.

The lasers' compact size, integrated controller, and low heat dissipation simplify integration, saving time and costs. OEM and end-user configuration, as well as versatile interfacing with RS-232, RS-485, and USB provide exceptional flexibility and control in users' instruments and experimental set-ups.

With UV wavelengths of 360 nm and 349 nm, laser power of up to 150 mW, and industry-leading reliability, OBIS XT enables more applications in the field of life sciences.

Shorter UV of 320 nm with power levels of 20 mW and 40 mW enable more applications in life sciences and beyond.

High power visible red wavelengths with 640 nm and power level of 300 mW, 400 mW, 500 mW and 1000 mW boosts applications in life science and other demanding application fields.



### FEATURES

- Integrated control electronics for a reduced footprint in instruments
- Low heat dissipation simplifies the integration into compact set-ups
- Perfect TEM<sub>00</sub> beam quality and low noise helps deliver more precise data
- 320 nm, 349 nm, 360 nm, and 640 nm and all their power levels in the same compact package support powerful applications without redesigning the instrument
- Versatile interfacing with RS-232, RS-485, and USB provides easy and flexible configuration

### APPLICATIONS

- Flow Cytometry
- Confocal Microscopy
- Genomics and Proteomics
- Semiconductor Inspection
- Metrology
- Super-Resolution Microscopy

Specifications	OBIS 320 XT	OBIS 349 XT	OBIS 360 XT	OBIS 640 XT
Wavelength <sup>1</sup> (nm)	319.8	348.8	360.4	639.5
Output Power <sup>2</sup> (mW)	20, 40	20, 60, 100, 150		300, 400, 500, 1000
Spatial Mode	TEM <sub>00</sub>			
Beam Quality (M <sup>2</sup> )	≤1.1			
Beam Asymmetry	≤1:1.1			
Beam Diameter (mm) (1/e <sup>2</sup> )	0.7 ±0.05			
Beam Divergence (mrad) (full-angle)	<0.7	<0.8		<1.4
Beam Pointing Stability (over 2 hours after warm-up and ±3°C) (μrad)	<30			
Beam Pointing Stability Over Temperature (μrad/°C)	<5			
Noise (% RMS) (20 Hz to 20 MHz)	≤0.25			
Peak-to-Peak Noise (%) (20 Hz to 20 kHz)	<1			
Long-Term Power Stability (%) (8 hours, ±3°C)	<2			
Warm-Up Time <sup>3</sup> (minutes) (from cold start)	<5			
Polarization Ratio	Minimum 100:1, Vertical ±5°			
Laser Drive Modes	CW, Computer Control, Coherent Connection Compatible			
Static Alignment Tolerances				
Beam Position from Reference <sup>4</sup> (mm)	<0.5	<0.5		<0.5
Beam Angle (mrad)	<2.5	<2.5		<2.5
Beam Waist Position at Exit Window (mm)	±300	±250		±150
Laser Safety Classification <sup>5</sup>	3B / 4			4
Power Consumption (W)		Typical 18, Max. 42		Typical 24, Max. 48
Laser Head Baseplate Temperature (Maximum, °C)	45 at 35 ambient on OBIS XT Heat Sink			
Heat Dissipation of Laser Head <sup>6</sup> (W)		Typical 18, Max. 42		Typical 24, Max. 48
Ambient Temperature				
Operating Condition <sup>7</sup>	10 to 35 °C (50 to 95 °F)			
Non-Operating Condition <sup>8</sup>	-20 to +60 °C (-4 to 140 °F)			
Shock Tolerance (6 ms)	7 g laterally, 15 g vertically			
<b>Utility and Environmental Requirements</b>				
Operating Voltage <sup>9</sup> (VDC)	12 ±2			
Dimensions (L x W x H)				
Laser Head	125.0 x 70.0 x 36.5 mm (4.92 x 2.76 x 1.44 in.)			
Weights				
Laser Head	450 g (0.99 lbs)			

**Notes:**

- Laser-to-Laser tolerance, wavelengths in air, OBIS XT 320, 349, 360 ±0.1 nm, OBIS XT 640 ±0.2 nm.
- Specifications are valid for 100% power. Residual fundamental and pump emission at 100 mm distance less than 0.1 mW.
- For XT versions typical power-on delay 1 minute.
- See mechanical drawing for exit beam location.
- Laser Class 4 for 349/360 nm 150mW lasers and for 640nm lasers.
- Max. 42 W for 349/360 nm 150 mW OBIS XT laser and max. 48 W for OBIS 640 XT.
- Non-condensing; with OBIS XT Heat Sink or equivalent heat sink. Note: The laser baseplate temperature must be maintained at: ≤45 °C (113 °F).
- Non-condensing.
- DC power supply has to meet the following requirements: power >50 W; ripple <5% peak-to-peak; line regulation <0.5%.

**Mechanical Specifications**

OBIS XT

