



# OBIS

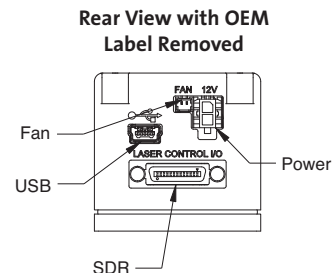
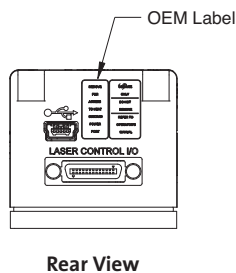
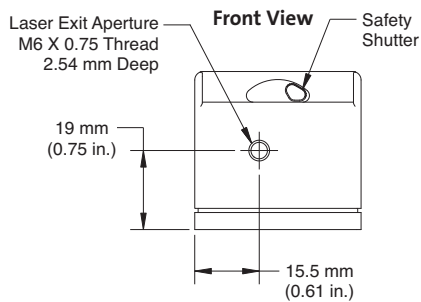
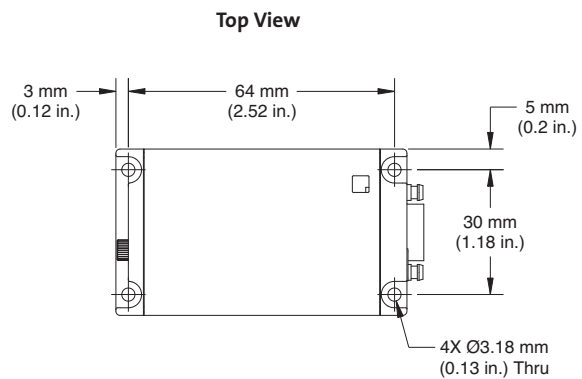
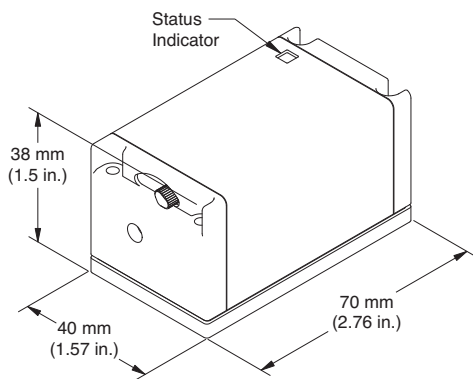
Lasers for Plug-and-Play Simplicity Across the Spectrum



### Features

- Compact and identical footprint across the spectrum
- Integrated control electronics
- OEM and end user versions
- Superior beam quality
- Analog and digital modulation
- USB with complete I/O and controls
- Superior reliability

### Mechanical Specifications



Superior Reliability & Performance

# OBIS

## Lasers for Plug-and-Play Simplicity Across the Spectrum

### System Specifications

OBIS	375LX	405LX	445LX	473LX
Wavelength <sup>1</sup> (nm)	375	405	445	473
Output Power <sup>2</sup> (mW)	16	50, 100, 200*	75	75*
Spatial Mode	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>
M <sup>2</sup> (Beam Quality) <sup>3</sup>	≤1.3	≤1.2 (50 and 100 mW) ≤1.3 (200 mW)	≤1.2	≤1.2
Beam Asymmetry	≤1:1.2	≤1:1.2	≤1:1.2	≤1:1.2
Beam Diameter at 1/e <sup>2</sup> (mm)	0.7 ±0.1	0.8 ±0.1	0.7 ±0.1	0.8 ±0.1
Beam Divergence (mrad, Full-Angle)	<1	<1.1	<1.1	<1.1
Pointing Stability (μrad) (over 2 hours after warm-up and ±3°C)	<30	<30	<30	<30
Pointing Stability Over Temp. (μrad/°C)	<5	<5	<5	<5
RMS Noise (%) (20 Hz to 20 MHz)	≤0.05	≤0.05	≤0.05	≤0.05
Peak-to-Peak Noise (%) (20 Hz to 20 MHz)	<0.5	<0.5	<0.5	<0.5
Long-Term Power Stability (%) (8 hrs., ±3°C)	<2	<2	<2	<2
Warm-Up Time <sup>4</sup> (minutes) (from Cold Start)	<5	<5	<5	<5
Polarization Ratio	Minimum 100:1, Vertical ±5°			
Laser Drive Modes	CW, Analog Modulation, Digital Modulation and Computer Control			
Digital Modulation				
Maximum Bandwidth (MHz)	100	150	150	150
Rise Time (10% to 90%) (nsec)	<4	<2	<2	<2
Fall Time (90% to 10%) (nsec)	<4	<2	<2	<2
Modulation Depth (extinction ratio)	>1,000,000:1 at 0 Hz, >250:1 at 150 MHz			
Analog Modulation				
Maximum Bandwidth (KHz)	450	500	500	500
Rise Time (10% to 90%) (nsec)	<800	<700	<700	<700
Fall Time (90% to 10%) (nsec)	<800	<700	<700	<700
Modulation Depth (extinction ratio)	>1,000,000:1	>1,000,000:1	>1,000,000:1	>1,000,000:1
Static Alignment Tolerances				
Beam Position from Reference (mm) <sup>5</sup>	<1	<1	<1	<1
Beam Angle <sup>5</sup> (mrad)	<5	<5	<5	<5
Beam Waist Position at Exit Window (mm)	n/a	n/a	n/a	n/a
Laser Safety Classification	3b	3b	3b	3b
ESD Protection <sup>6</sup>	Level 4	Level 4	Level 4	Level 4
Power Consumption (W)	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13
Laser Head Baseplate Temp. (Max., °C)	40	40	40	40
Heat Dissipation of Laser Head <sup>7</sup> (W)	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13
Ambient Temperature <sup>8</sup>				
Operating Condition <sup>9</sup> (°C)	10 to 40	10 to 40	10 to 40	10 to 40
Non-Operating Condition (°C)	-20 to 60	-20 to 60	-20 to 60	-20 to 60
Shock Tolerance (g) (6 ms)	30	30	30	30

\* Preliminary version.

<sup>1</sup> Laser-to-laser tolerance. All LS versions ±2 nm. All LX versions with ±5 nm except 640-40 with 635 to 642 nm range, 640-100 with 635 to 644 nm range, 660 with 652 to 665 nm range, and 785 nm with ±10 nm.

<sup>2</sup> Output power is variable in CW Mode from 1mW (1% for LX Models) to 110% of rated power. Specifications are valid for 100% power. For LS versions all residual laser emission at 808 nm pump light or fundamental <0.1 mW.

<sup>3</sup> For LX versions the M<sup>2</sup> and Beam Asymmetry measured with ModeMaster with 90/10 clip levels.

<sup>4</sup> For LS versions typical power-on delay 1 minute. For LX versions typical power-on delay 0.1 minutes.

<sup>5</sup> See mechanical drawing for exit beam location.

<sup>6</sup> Electro-Static Discharge Standard IEC 1000-4-2, 1995.

<sup>7</sup> Typically 85% of heat load through the base plate. See Users Manual for more detail.

<sup>8</sup> Non-Condensing. See User Manual for more detail.

<sup>9</sup> For LS versions laser head baseplate temperature needs to be maintained at ≤40°C.

# OBIS

## Lasers for Plug-and-Play Simplicity Across the Spectrum

### System Specifications

OBIS	488LX	488LS	514LS	552LS
Wavelength <sup>1</sup> (nm)	488	488	514	552
Output Power <sup>2</sup> (mW)	50, 120*	20	20	20
Spatial Mode	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>
M <sup>2</sup> (Beam Quality) <sup>3</sup>	≤1.2	≤1.1	≤1.1	≤1.1
Beam Asymmetry	≤1:1.2	≤1:1.1	≤1:1.1	≤1:1.1
Beam Diameter at 1/e <sup>2</sup> (mm)	0.8 ±0.1	0.7 ±0.05	0.7 ±0.05	0.7 ±0.05
Beam Divergence (mrad, Full-Angle)	<1.2	<1.2	<1.2	<1.2
Pointing Stability (μrad) (over 2 hours after warm-up and ±3°C)	<30	<30	<30	<30
Pointing Stability Over Temp. (μrad/°C)	<5	<5	<5	<5
RMS Noise (%) (20 Hz to 20 MHz)	≤0.05	≤0.25	≤0.25	≤0.25
Peak-to-Peak Noise (%) (20 Hz to 20 MHz)	<0.5	<1	<1	<1
Long-Term Power Stability (%) (8 hrs., ±3°C)	<2	<2	<2	<2
Warm-Up Time <sup>4</sup> (minutes) (from Cold Start)	<5	<5	<5	<5
Polarization Ratio	Minimum 100:1, Vertical ±5°			
Laser Drive Modes	CW, Analog Modulation, Digital Modulation and Computer Control			
Digital Modulation				
Maximum Bandwidth (MHz)	150	0.05	0.05	0.05
Rise Time (10% to 90%) (nsec)	<2	<18,000	<18,000	<18,000
Fall Time (90% to 10%) (nsec)	<2	<2000	<2000	<2000
Modulation Depth (extinction ratio)	>1,000,000:1 at 0 Hz, >250:1 at 150 MHz	>1,000,000:1 at 0 Hz to 50 KHz		
Analog Modulation				
Maximum Bandwidth (KHz)	500	100	100	100
Rise Time (10% to 90%) (nsec)	<700	<3000	<3000	<3000
Fall Time (90% to 10%) (nsec)	<700	<3000	<3000	<3000
Modulation Depth (extinction ratio)	>1,000,000:1	>50:1	>50:1	>50:1
Static Alignment Tolerances				
Beam Position from Reference (mm) <sup>5</sup>	<1	<0.5	<0.5	<0.5
Beam Angle <sup>5</sup> (mrad)	<5	<2.5	<2.5	<2.5
Beam Waist Position at Exit Window (mm)	n/a	±200	±200	±200
Laser Safety Classification	3b	3b	3b	3b
ESD Protection <sup>6</sup>	Level 4	Level 4	Level 4	Level 4
Power Consumption (W)	Typical 5, Max. 13	Typical 8, Max. 12	Typical 8, Max. 12	Typical 8, Max. 12
Laser Head Baseplate Temp. (Max., °C)	40	40	40	40
Heat Dissipation of Laser Head <sup>7</sup> (W)	Typical 5, Max. 13	Typical 8, Max. 12	Typical 8, Max. 12	Typical 8, Max. 12
Ambient Temperature <sup>8</sup>				
Operating Condition <sup>9</sup> (°C)	10 to 40	15 to 40	15 to 40	15 to 40
Non-Operating Condition (°C)	-20 to 60	-20 to 60	-20 to 60	-20 to 60
Shock Tolerance (g) (6 ms)	30	25	25	25

\* Preliminary version.

<sup>1</sup> Laser-to-laser tolerance. All LS versions ±2 nm. All LX versions with ±5 nm except 640-40 with 635 to 642 nm range, 640-100 with 635 to 644 nm range, 660 with 652 to 665 nm range, and 785 nm with ±10 nm.

<sup>2</sup> Output power is variable in CW Mode from 1mW (1% for LX Models) to 110% of rated power. Specifications are valid for 100% power. For LS versions all residual laser emission at 808 nm pump light or fundamental <0.1 mW.

<sup>3</sup> For LX versions the M<sup>2</sup> and Beam Asymmetry measured with ModeMaster with 90/10 clip levels.

<sup>4</sup> For LS versions typical power-on delay 1 minute. For LX versions typical power-on delay 0.1 minutes.

<sup>5</sup> See mechanical drawing for exit beam location.

<sup>6</sup> Electro-Static Discharge Standard IEC 1000-4-2, 1995.

<sup>7</sup> Typically 85% of heat load through the base plate. See Users Manual for more detail.

<sup>8</sup> Non-Condensing. See User Manual for more detail.

<sup>9</sup> For LS versions laser head baseplate temperature needs to be maintained at ≤40°C.

# OBIS

## Lasers for Plug-and-Play Simplicity Across the Spectrum

### System Specifications

OBIS	637LX	640LX	647LX	660LX
Wavelength <sup>1</sup> (nm)	637	640	647	660
Output Power <sup>2</sup> (mW)	140	40, 100	120	100
Spatial Mode	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>
M <sup>2</sup> (Beam Quality) <sup>3</sup>	≤1.2	≤1.2	≤1.2	≤1.2
Beam Asymmetry	≤1:1.2	≤1:1.2	≤1:1.2	≤1:1.2
Beam Diameter at 1/e <sup>2</sup> (mm)	0.7 ±0.1	0.8 ±0.1	0.8 ±0.1	0.9 ±0.1
Beam Divergence (mrad, Full-Angle)	<1.1	<1.5	<1.1	<1.5
Pointing Stability (μrad) (over 2 hours after warm-up and ±3°C)	<30	<30	<30	<30
Pointing Stability Over Temp. (μrad/°C)	<5	<5	<5	<5
RMS Noise (%) (20 Hz to 20 MHz)	≤0.05	≤0.05	≤0.05	≤0.05
Peak-to-Peak Noise (%) (20 Hz to 20 MHz)	<0.5	<0.5	<0.5	<0.5
Long-Term Power Stability (%) (8 hrs., ±3°C)	<2	<2	<2	<2
Warm-Up Time <sup>4</sup> (minutes) (from Cold Start)	<5	<5	<5	<5
Polarization Ratio	Minimum 100:1, Vertical ±5°			
Laser Drive Modes	CW, Analog Modulation, Digital Modulation and Computer Control			
Digital Modulation				
Maximum Bandwidth (MHz)	150	150	150	150
Rise Time (10% to 90%) (nsec)	<2	<2	<2	<2
Fall Time (90% to 10%) (nsec)	<2	<2	<2	<2
Modulation Depth (extinction ratio)	>1,000,000:1 at 0 Hz, >250:1 at 150 MHz			
Analog Modulation				
Maximum Bandwidth (KHz)	500	500	500	500
Rise Time (10% to 90%) (nsec)	<700	<700	<700	<700
Fall Time (90% to 10%) (nsec)	<700	<700	<700	<700
Modulation Depth (extinction ratio)	>1,000,000:1	>1,000,000:1	>1,000,000:1	>1,000,000:1
Static Alignment Tolerances				
Beam Position from Reference <sup>5</sup> (mm)	<1	<1	<1	<1
Beam Angle <sup>5</sup> (mrad)	<5	<5	<5	<5
Beam Waist Position at Exit Window (mm)	n/a	n/a	n/a	n/a
Laser Safety Classification	3b	3b	3b	3b
ESD Protection <sup>6</sup>	Level 4	Level 4	Level 4	Level 4
Power Consumption (W)	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13
Laser Head Baseplate Temp. (Max., °C)	40	40	40	40
Heat Dissipation of Laser Head <sup>7</sup> (W)	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13
Ambient Temperature <sup>8</sup>				
Operating Condition <sup>9</sup> (°C)	10 to 40	10 to 40	10 to 40	10 to 40
Non-Operating Condition (°C)	-20 to 60	-20 to 60	-20 to 60	-20 to 60
Shock Tolerance (g)(6 ms)	30	30	30	30

<sup>1</sup> Laser-to-laser tolerance. All LS versions ±2 nm. All LX versions with ±5 nm except 640-40 with 635 to 642 nm range, 640-100 with 635 to 644 nm range, 647-120 with 646 to 650 nm range, 660 with 652 to 665 nm range, and 785 nm with ±10 nm.

<sup>2</sup> Output power is variable in CW Mode from 1mW (1% for LX Models) to 110% of rated power. Specifications are valid for 100% power. For LS versions all residual laser emission at 808 nm pump light or fundamental <0.1 mW.

<sup>3</sup> For LX versions the M<sup>2</sup> and Beam Asymmetry measured with ModeMaster with 90/10 clip levels.

<sup>4</sup> For LS versions typical power-on delay 1 minute. For LX versions typical power-on delay 0.1 minutes.

<sup>5</sup> See mechanical drawing for exit beam location.

<sup>6</sup> Electro-Static Discharge Standard IEC 1000-4-2, 1995.

<sup>7</sup> Typically 85% of heat load through the base plate. See Users Manual for more detail.

<sup>8</sup> Non-Condensing. See User Manual for more detail.

<sup>9</sup> For LS versions laser head baseplate temperature needs to be maintained at ≤40°C.

# OBIS

## Lasers for Plug-and-Play Simplicity Across the Spectrum

### System Specifications

OBIS	685LX	730LX	785LX
Wavelength <sup>1</sup> (nm)	685	730	785
Output Power <sup>2</sup> (mW)	40	30	50
Spatial Mode	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>
M <sup>2</sup> (Beam Quality) <sup>3</sup>	≤1.2	≤1.2	≤1.2
Beam Asymmetry	≤1:1.2	≤1:1.2	≤1:1.2
Beam Diameter at 1/e <sup>2</sup> (mm)	0.8 ±0.1	0.8 ±0.1	0.7 ±0.1
Beam Divergence (mrad, Full-Angle)	<1.5	<1.1	<1.8
Pointing Stability (μrad) (over 2 hours after warm-up and ±3°C)	<30	<30	<30
Pointing Stability Over Temp. (μrad/°C)	<5	<5	<5
RMS Noise (%) (20 Hz to 20 MHz)	≤0.05	≤0.05	≤0.05
Peak-to-Peak Noise (%) (20 Hz to 20 MHz)	<0.5	<0.5	<0.5
Long-Term Power Stability (%) (8 hrs., ±3°C)	<2	<2	<2
Warm-Up Time <sup>4</sup> (minutes) (from Cold Start)	<5	<5	<5
Polarization Ratio	Minimum 100:1, Vertical ±5°	Minimum 100:1, Vertical ±5°	Minimum 25:1, Vertical ±15°
Laser Drive Modes	CW, Analog Modulation, Digital Modulation and Computer Control		
Digital Modulation			
Maximum Bandwidth (MHz)	150	150	100
Rise Time (10% to 90%) (nsec)	<2	<2	<4
Fall Time (90% to 10%) (nsec)	<2	<2	<4
Modulation Depth (extinction ratio)	>1,000,000:1 at 0 Hz, >250:1 at 150 MHz		
Analog Modulation			
Maximum Bandwidth (KHz)	500	500	450
Rise Time (10% to 90%) (nsec)	<700	<700	<800
Fall Time (90% to 10%) (nsec)	<700	<700	<800
Modulation Depth (extinction ratio)	>1,000,000:1	>1,000,000:1	>1,000,000:1
Static Alignment Tolerances			
Beam Position from Reference <sup>5</sup> (mm)	<1	<1	<1
Beam Angle <sup>5</sup> (mrad)	<5	<5	<5
Beam Waist Position at Exit Window (mm)	n/a	n/a	n/a
Laser Safety Classification	3b	3b	3b
ESD Protection <sup>6</sup>	Level 4	Level 4	Level 4
Power Consumption (W)	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13
Laser Head Baseplate Temp. (Max., °C)	40	40	40
Heat Dissipation of Laser Head <sup>7</sup> (W)	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13
Ambient Temperature <sup>8</sup>			
Operating Condition <sup>9</sup> (°C)	10 to 40	10 to 40	10 to 40
Non-Operating Condition (°C)	-20 to 60	-20 to 60	-20 to 60
Shock Tolerance (g)(6 ms)	30	30	30

<sup>1</sup> Laser-to-laser tolerance. All LS versions ±2 nm. All LX versions with ±5 nm except 640-40 with 635 to 642 nm range, 640-100 with 635 to 644 nm range, 660 with 652 to 665 nm range, and 785 nm with ±10 nm.

<sup>2</sup> Output power is variable in CW Mode from 1mW (1% for LX Models) to 110% of rated power. Specifications are valid for 100% power.

For LS versions all residual laser emission at 808 nm pumplight or fundamental <0.1 mW.

<sup>3</sup> For LX versions the M<sup>2</sup> and Beam Asymmetry measured with ModeMaster with 90/10 clip levels.

<sup>4</sup> For LS versions typical power-on delay 1 minute. For LX versions typical power-on delay 0.1 minutes.

<sup>5</sup> See mechanical drawing for exit beam location.

<sup>6</sup> Electro-Static Discharge Standard IEC 1000-4-2, 1995.

<sup>7</sup> Typically 85% of heat load through the base plate. See Users Manual for more detail.

<sup>8</sup> Non-Condensing. See User Manual for more detail.

<sup>9</sup> For LS versions laser head baseplate temperature needs to be maintained at ≤40°C.

# OBIS

## Lasers for Plug-and-Play Simplicity Across the Spectrum

### Utility and Environmental Requirements

Operating Voltage <sup>1</sup> (VDC)	12 ±2
Dimensions (L x W x H)	
Laser	70 x 40 x 38 mm (2.75 x 1.57 x 1.5 in.)
OBIS Remote (optional)	105 x 68 x 36 mm (4.13 x 2.68 x 1.42 in.)
DC Power Supply (optional)	105 x 42 x 33 mm (4.13 x 1.65 x 1.3 in.)
Cable, laser to controller <sup>2</sup> (optional)	1 m (3.28 ft.)(3 meter and 0.3 meter sold separately)
Weights	
Laser	0.16 kg (0.35 lbs.)
OBIS Remote (optional)	0.24 kg (0.53 lbs.)
DC Power Supply (optional)	0.36 kg (0.79 lbs.)
Cable, laser to controller (optional)	0.1 kg (0.22 lbs.) for 1 meter

<sup>1</sup> If user supplied, the DC power supply has to meet the following requirements: power >20W; ripple <5% peak-to-peak; line regulation <0.5%.





# OBIS FP

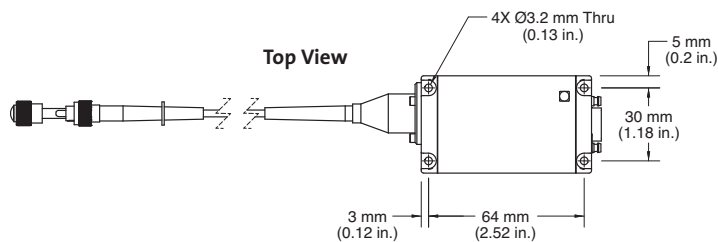
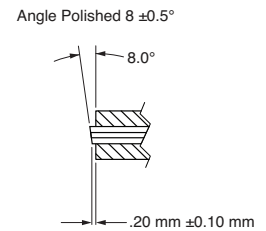
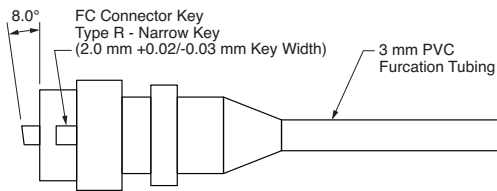
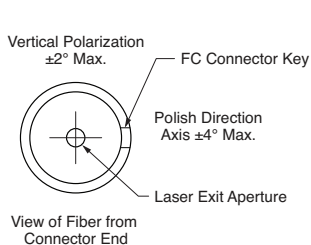
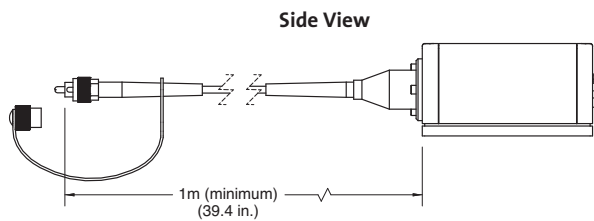
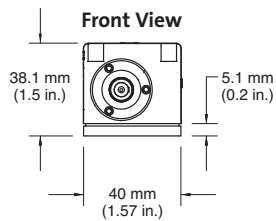
Fiber Pigtailed Lasers for Plug-and-Play Simplicity Across the Spectrum



### Features

- Compact and identical footprint across the spectrum
- Integrated control electronics
- OEM and end user versions
- Superior beam quality from single mode polarization maintaining fiber
- Analog and digital modulation
- USB with complete I/O and controls
- Superior reliability
- FC/APC connector

### Mechanical Specifications



### Superior Reliability & Performance

## OBIS FP

### Fiber Pigtailed Lasers for Plug-and-Play Simplicity Across the Spectrum

#### System Specifications

OBIS	405LX	445LX	488LX
Wavelength <sup>1</sup> (nm)	405	445	488
Output Power <sup>2</sup> (mW)	50	45	30
Output from Fiber	FC/APC; 8° angled <sup>8</sup>	FC/APC; 8° angled <sup>8</sup>	FC/APC; 8° angled <sup>8</sup>
Fiber Cable Type	3 mm Mono-Coil	3 mm Mono-Coil	3 mm Mono-Coil
Fiber Cable Length (m)(minimum)	1	1	1
Fiber Numerical Aperture (NA)(1/e <sup>2</sup> )	0.045	0.045	0.045
Fiber Core Diameter (μm)(typical)	3.5	3.5	3.5
Spatial Mode	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>
M <sup>2</sup> (Beam Quality) <sup>3</sup>	<1.1	<1.1	<1.1
Beam Asymmetry	<1:1.1	<1:1.1	<1:1.1
RMS Noise (%)(20 Hz to 20 MHz)	<0.2	<0.2	<0.2
Peak-to-Peak Noise (%)(20 Hz to 20 MHz)	<2	<2	<2
Power Stability (%)(Peak-to-Peak over 10 minutes)	<0.5	<0.5	<0.5
Long-Term Power Stability (%)(8 hrs., ±3°C)	<2	<2	<2
Long-Term Output Power Average (%)	≤5/1000 hrs.	≤5/1000 hrs.	≤4/1000 hrs.
Warm-Up Time (minutes)(from Cold Start) <sup>4</sup>	<5	<5	<5
Polarization Ratio	Minimum 100:1	Minimum 100:1	Minimum 100:1
Laser Drive Modes			
Digital Modulation			
Maximum Bandwidth (MHz)	150	150	150
Rise Time (10% to 90%)(nsec)	<2	<2	<2
Fall Time (90% to 10%)(nsec)	<2	<2	<2
Modulation Depth (extinction ratio)	>1,000,000:1 at 0 Hz, >250:1 at 150 MHz		
Analog Modulation			
Maximum Bandwidth (KHz)	500	500	500
Rise Time (10% to 90%)(nsec)	<700	<700	<700
Fall Time (10% to 90%)(nsec)	<700	<700	<700
Modulation Depth (extinction ratio)	>1,000,000:1	>1,000,000:1	>1,000,000:1
Laser Safety Classification	3b	3b	3b
ESD Protection <sup>5</sup>	Level 4	Level 4	Level 4
Power Consumption (W)	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13
Laser Head Baseplate Temperature (Max., °C)	40	40	40
Heat Dissipation of Laser Head <sup>6</sup> (W)	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13
Ambient Temperature <sup>7</sup>			
Operating Condition (°C)	10 to 40	10 to 40	10 to 40
Non-Operating Condition (°C)	-20 to +60	-20 to +60	-20 to +60
Shock Tolerance (g)(6 ms)	30	30	30

<sup>1</sup> Laser-to-laser tolerance. All versions with ±5 nm except 640-40 with 635 to 642 nm range, 640-100 with 635 to 644 nm range and 660 with 652 to 665 nm range.

<sup>2</sup> Output power is variable in CW Mode from 1 mW (1% for LX Models) to 100% of rated power. Specifications are valid for 100% power.

<sup>3</sup> M<sup>2</sup> and Beam Asymmetry measured with ModeMaster with 90/10 clip levels.

<sup>4</sup> Typical power-on delay 0.1 minutes.

<sup>5</sup> Electro-Static Discharge Standard IEC 1000-4-2, 1995.

<sup>6</sup> Typically 85% of heat load through the base plate. See Users Manual for more detail.

<sup>7</sup> Non-Condensing. See User Manual for more detail.

<sup>8</sup> Fiber FC/APC connector output not compatible for patchcord-to-patchcord connection.



## OBIS FP

### Fiber Pigtailed Lasers for Plug-and-Play Simplicity Across the Spectrum

#### System Specifications

OBIS	637LX	640LX	647LX	660LX
Wavelength <sup>1</sup> (nm)	637	640	647	660
Output Power <sup>2</sup> (mW)	100	75	100	75
Output from Fiber	FC/APC; 8° angled	FC/APC; 8° angled	FC/APC; 8° angled	FC/APC; 8° angled
Fiber Cable Type	3 mm Mono-Coil	3 mm Mono-Coil	3 mm Mono-Coil	3 mm Mono-Coil
Fiber Cable Length (m)(minimum)	1	1	1	1
Fiber Numerical Aperture (NA)(1/e <sup>2</sup> )	0.09	0.09	0.09	0.09
Fiber Core Diameter (μm)(typical)	4.5	4.5	4.5	4.5
Spatial Mode	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>
M <sup>2</sup> (Beam Quality) <sup>3</sup>	<1.1	<1.1	<1.1	<1.1
Beam Asymmetry	<1:1.1	<1:1.1	<1:1.1	<1:1.1
RMS Noise (%)(20 Hz to 20 MHz)	<0.2	<0.2	<0.2	<0.2
Peak-to-Peak Noise (%)(20 Hz to 20 MHz)	<2	<2	<2	<2
Power Stability (%)(Peak-to-Peak over 10 minutes)	<0.5	<0.5	<0.5	<0.5
Long-Term Power Stability (%)(8 hrs., ±3°C)	<2	<2	<2	<2
Long-Term Output Power Average (%)	≤3/1000 hrs.	≤3/1000 hrs.	≤3/1000 hrs.	≤3/1000 hrs.
Warm-Up Time (minutes)(from Cold Start) <sup>4</sup>	<5	<5	<5	<5
Polarization Ratio	Minimum 100:1	Minimum 100:1	Minimum 100:1	Minimum 100:1
Laser Drive Modes				
Digital Modulation				
Maximum Bandwidth (MHz)	150	150	150	150
Rise Time (10% to 90%)(nsec)	<2	<2	<2	<2
Fall Time (90% to 10%)(nsec)	<2	<2	<2	<2
Modulation Depth (extinction ratio)	>1,000,000:1 at 0 Hz, >250:1 at 150 MHz			
Analog Modulation				
Maximum Bandwidth (KHz)	500	500	500	500
Rise Time (10% to 90%)(nsec)	<700	<700	<700	<700
Fall Time (10% to 90%)(nsec)	<700	<700	<700	<700
Modulation Depth (extinction ratio)	>1,000,000:1	>1,000,000:1	>1,000,000:1	>1,000,000:1
Laser Safety Classification	3b	3b	3b	3b
ESD Protection <sup>5</sup>	Level 4	Level 4	Level 4	Level 4
Power Consumption (W)	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13
Laser Head Baseplate Temperature (Max., °C)	40	40	40	40
Heat Dissipation of Laser Head <sup>6</sup> (W)	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13	Typical 5, Max. 13
Ambient Temperature <sup>7</sup>				
Operating Condition (°C)	10 to 40	10 to 40	10 to 40	10 to 40
Non-Operating Condition (°C)	-20 to +60	-20 to +60	-20 to +60	-20 to +60
Shock Tolerance (g)(6 ms)	30	30	30	30

<sup>1</sup> Laser-to-laser tolerance. All versions with ±5 nm except 640-40 with 635 to 642 nm range, 640-100 with 635 to 644 nm range and 660 with 652 to 665 nm range.

<sup>2</sup> Output power is variable in CW Mode from 1 mW (1% for LX Models) to 100% of rated power. Specifications are valid for 100% power.

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<sup>6</sup> Typically 85% of heat load through the base plate. See Users Manual for more detail.

<sup>7</sup> Non-Condensing. See User Manual for more detail.

## OBIS FP

### Fiber Pigtailed Lasers for Plug-and-Play Simplicity Across the Spectrum

#### Utility and Environmental Requirements

Operating Voltage <sup>1</sup> (VDC)	12 ±2
Dimensions (L x W x H)	
Laser	70 x 40 x 38 mm (2.75 x 1.57 x 1.5 in.)
OBIS Remote (optional)	105 x 68 x 36 mm (4.13 x 2.68 x 1.42 in.)
DC Power Supply (optional)	105 x 42 x 33 mm (4.13 x 1.65 x 1.3 in.)
Cable, laser to OBIS Remote (optional)	1 m (3.28 ft.)(3 meter and 0.3 meter sold separately)
Weights	
Laser	0.23 kg (0.51 lbs.)
OBIS Remote (optional)	0.24 kg (0.53 lbs.)
DC Power Supply (optional)	0.36 kg (0.79 lbs.)
Cable, laser to controller (optional)	0.1 kg (0.22 lbs.) for 1 meter

<sup>1</sup> If user supplied, the DC power supply has to meet the following requirements: power >20W; ripple <5% peak-to-peak; line regulation <0.5%.



Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

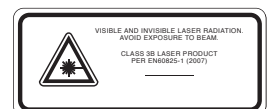
Coherent offers a limited warranty for all OBIS lasers. For full details of this warranty coverage, please refer to the Service section at [www.Coherent.com](http://www.Coherent.com) or contact your local Sales or Service Representative.



[www.Coherent.com](http://www.Coherent.com)

**Coherent, Inc.**  
 5100 Patrick Henry Drive  
 Santa Clara, CA 95054  
 phone (800) 527-3786  
 (408) 764-4983  
 fax (408) 764-4646  
 e-mail [tech.sales@Coherent.com](mailto:tech.sales@Coherent.com)

Benelux +31 (30) 280 6060  
 China +86 (10) 8215 3600  
 France +33 (0)1 8038 1000  
 Germany +49 (6071) 968 333  
 Italy +39 (02) 31 03 951  
 Japan +81 (3) 5635 8700  
 Korea +82 (2) 460 7900  
 UK +44 (1353) 658 833



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