

# OBIS Galaxy

## 8-Laser Beam Combiner

OBIS Galaxy is offering plug-and-play capabilities in laser combining.

The OBIS Galaxy is equipped with 8 FC fiber inputs, and can accept any Galaxy compatible laser using a plug-and-play integration. Each input is optimized to accept the fiber with a FC connection, and Coherent's patented beam combining technology integrates all 8 inputs.

The OBIS Galaxy provides a fiber output of the combined 8 lasers in a single-mode polarization-maintaining fiber, 2 meters in length, with a FC connector for any application.

The OBIS Galaxy matches Coherent's rigorous standards and advanced stress-testing benchmarks, offering the ease of integration, robustness, superior performance, and reliability.

### FEATURES & BENEFITS

- Plug-and-play 8-input, single-output beam combiner
- Compact and low profile
- High transmission beam combiner with typical 60% throughput per channel
- Fiber FC/APC output connector; FC/PC8 output connector available as an option

### APPLICATIONS

- Optogenetics
- Endoscopy
- Spinning Disk and TIRF Microscopy
- Cytometry
- Genomics



SPECIFICATIONS <sup>1</sup>		OBIS Galaxy Laser Combiner
8 Input Fiber Connections <sup>2</sup> (nm)		405 445 or 458 488 or 473 514 532 552 or 561 588 or 594 640
Power Throughput <sup>3</sup> (%) (when used with Coherent OBIS Galaxy Compatible Lasers) for 405 nm to 594 nm for 640 nm		>45, Typical >60 >55, Typical >70
Maximum Power Per Channel (mW)		120
Maximum Total Output Power (mW)		<500
RMS Noise (%) (20 Hz to 2 MHz)		<0.5
Peak-to-Peak Noise (%) (20 Hz to 20 kHz)		<2
Fiber Connector Type (Input Connectors)		FC form-factor, ultra-flat contact FC/UFC with extended-life interface, anti-reflection (AR) coated tip
Polarization Extinction Ratio Loss (%)		<50
Long-term Power Throughput (%) (8 hours, ±3°C)		>95
Long-term Power Throughput (%) (average)		≤2 over 1000 hours
OUTPUT FIBER		
Fiber Connector Type <sup>4</sup> (distal end) FC/APC Optional FC/PC8		8° angled, with extended-life interface 8° angled, with extended-life interface
Fiber Cable Type		3 mm mono-coil
Fiber Cable Length (m) (minimum)		2
Fiber Numerical Aperture (NA) (1/e <sup>2</sup> ) FC/APC Optional FC/PC8		0.055 0.065
Mode Field Diameter (µm) (typical)		3
Spatial Mode		TEM <sub>00</sub>
M <sup>2</sup> (Beam Quality) <sup>5</sup>		≤1.1
Fiber Minimum Bend Radius		51 mm (2.0 in.)
Fiber Tensile Load (maximum)		1 kg (2.2 lbs.)
Fiber Connector Type (internal to OBIS Galaxy)		FC form-factor, ultra-flat contact FC/UFC with extended-life interface
UTILITY AND ENVIRONMENTAL REQUIREMENTS		
Dimensions		229 x 170 x 29 mm (9.0 x 6.7 x 1.1 in.)
Weight		1.4 kg (3 lbs.)
Shock Tolerance <sup>6</sup> (g) (11 ms)		30
Vibration <sup>6</sup> (g-RMS) (20 Hz to 2 kHz)		7.7
Ambient Temperature Operating Temperature Storage Temperature		10 to 50°C (50 to 122°F) <sup>7</sup> -20 to 60°C (-4 to 140°F)
Laser Safety Classification <sup>8</sup>		Not Applicable

<sup>1</sup> System specifications measured at 25°C.

<sup>2</sup> All input channels require a ±1 nm center wavelength tolerance. Required wavelength tolerances specifically: 405 nm with 404 nm to 406 nm, 445 nm with 444 nm to 446 nm, 458 nm with 457 nm to 459 nm, 488 nm with 487 nm to 489 nm, 514 nm with 513 nm to 515 nm, 532 nm with 531 nm to 533 nm, 552 nm with 551.5 nm to 553.5 nm, 561 nm with 560.5 nm to 562.5 nm, 588 nm with 587 nm to 589 nm, 594 nm with 593 nm to 595 nm, 640 nm with 641 nm to 643 nm.

<sup>3</sup> The OBIS Galaxy Beam Combiner as tested and certified will be >60% power transmission per wavelength as measured with production tooling fixtures.

<sup>4</sup> Fiber connector output not compatible for patchcord-to-patchcord connection.

<sup>5</sup> M<sup>2</sup> measured with ModeMaster with 90/10 Clip Levels.

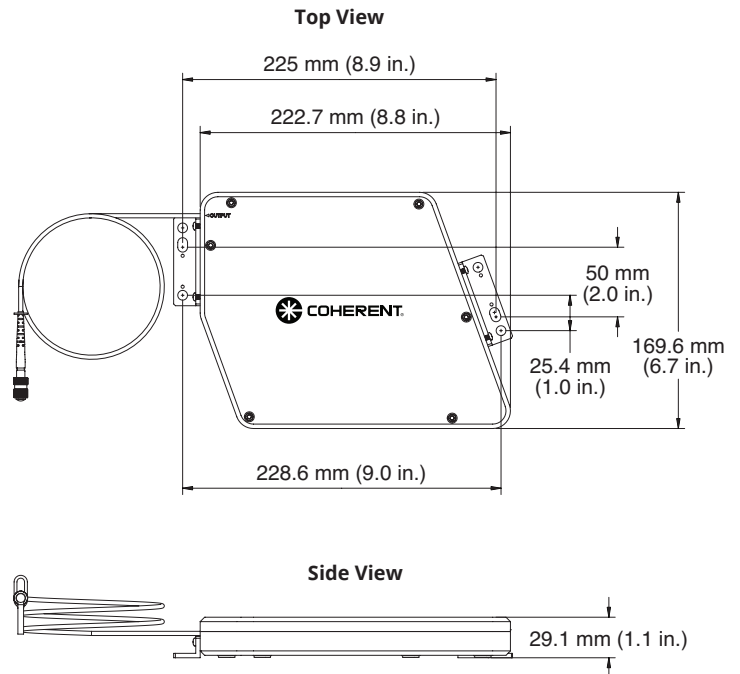
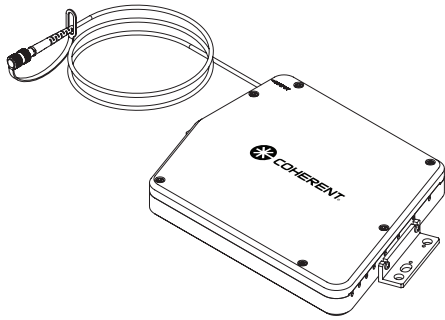
<sup>6</sup> Non-Operational with a before/after change of <10%.

<sup>7</sup> OBIS LS laser with Operating Temperature of 15 to 40°C (59 to 104°F).

<sup>8</sup> OBIS Galaxy is not a laser and therefore the Laser Safety Classification is determined by the end-user and application. Refer to CDRH 21 CFR 1040 subchapter J or IEC 60825-1.

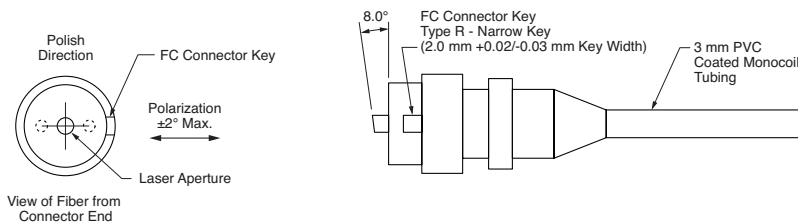
## MECHANICAL SPECIFICATIONS

### OBIS Galaxy

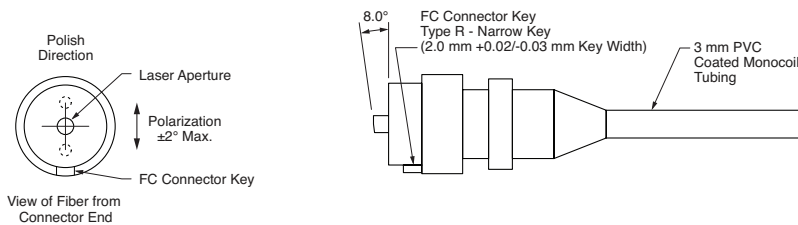


## MECHANICAL SPECIFICATIONS

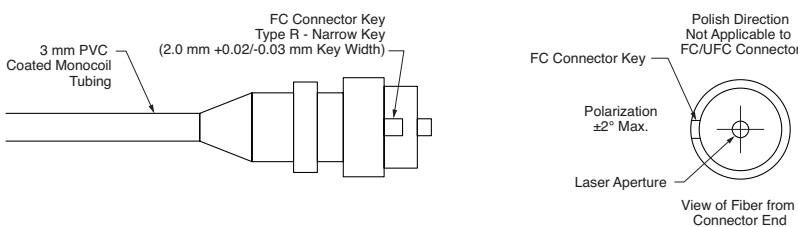
### FC/APC Distal End - Output



### Optional FC/PC8 Angled Flat Connector Distal End - Output



### FC/UFC Launch End - Input



OBIS Galaxy Laser Combiner	Part Number
8 Input FC/UFC, Single Output FC/APC, 405 nm, 445 nm, 488 nm, 514 nm, 532 nm, 552 nm, 588 nm, 640 nm	1253553
8 Input FC/UFC, Single Output FC/APC, 405 nm, 458 nm, 488 nm, 514 nm, 532 nm, 552 nm, 588 nm, 640 nm	1253554
8 Input FC/UFC, Single Output FC/APC, 405 nm, 445 nm, 488 nm, 514 nm, 532 nm, 561 nm, 588 nm, 640 nm	1253555
8 Input FC/UFC, Single Output FC/APC, 405 nm, 458 nm, 488 nm, 514 nm, 532 nm, 561 nm, 588 nm, 640 nm	1253556
8 input FC/UFC, Single Output FC/PC8, 405 nm, 445 nm, 488 nm, 514 nm, 532 nm, 561 nm, 588 nm, 640 nm	1343303
8 input FC/UFC, Single Output FC/APC, 405 nm, 445 nm, 488 nm, 514 nm, 532 nm, 561 nm, 594 nm, 640 nm	1363484
8 input FC/UFC, Single Output FC/APC, 405 nm, 445 nm, 473 nm, 514 nm, 532 nm, 561 nm, 594 nm, 640 nm	1399474

OBIS FP LX Lasers <sup>1</sup> for OBIS Galaxy	Part Number
OBIS 405 nm LX 50 mW Laser: Fiber Pigtail: UFC, Galaxy, 404 nm to 406 nm	1236438
OBIS 405 nm LX 100 mW Laser: Fiber Pigtail: UFC, Galaxy, 404 nm to 406 nm	1236439
OBIS 445 nm LX 45 mW Laser: Fiber Pigtail: UFC, Galaxy, 444 nm to 446 nm	1236441
OBIS 458 nm LX 45 mW Laser: Fiber Pigtail: UFC, Galaxy, 457 nm to 459 nm	1236442
OBIS 473 nm LX 50 mW Laser: Fiber Pigtail: UFC, Galaxy, 472 nm to 474 nm	1399476
OBIS 488 nm LX 30 mW Laser: Fiber Pigtail: UFC, Galaxy, 487 nm to 489 nm	1236443
OBIS 488 nm LX 100 mW Laser: Fiber Pigtail: UFC, Galaxy, 487 nm to 489 nm	1236444
OBIS 514 nm LX 50 mW Laser: Fiber Pigtail: UFC, Galaxy, 513 nm to 515 nm	1311150
OBIS 640 nm LX 75 mW Laser: Fiber Pigtail: UFC, Galaxy, 641 nm to 643 nm	1236445

OBIS FP LS Lasers <sup>1</sup> for OBIS Galaxy	Part Number
OBIS 532 nm LS 80 mW Laser: Fiber Pigtail: UFC, Galaxy, 531 nm to 533 nm	1276599
OBIS 552 nm LS 80 mW Laser: Fiber Pigtail: UFC, Galaxy, 551.5 nm to 553.5 nm	1275619
OBIS 561 nm LS 80 mW Laser: Fiber Pigtail: UFC, Galaxy, 560.5 nm to 562.5 nm	1275608
OBIS 594 nm LS 60 mW Laser: Fiber Pigtailed: UFC, Galaxy, 592 nm to 594 nm	1363485

Sapphire FP Lasers <sup>1</sup> for OBIS Galaxy	Part Number
Sapphire 514-FP UFC OEM Laser System, 120 mW, Galaxy, 513 nm to 515 nm	1276125
Sapphire 532-FP UFC OEM Laser System, 120 mW, Galaxy, 531 nm to 533 nm	1276167
Sapphire 552-FP UFC OEM Laser System, 120 mW, Galaxy, 551.5 nm to 553.5 nm	1276186
Sapphire 561-FP UFC OEM Laser System, 120 mW, Galaxy, 560.5 nm to 562.5 nm	1276187
Sapphire 588-FP UFC OEM Laser System, 40 mW, Galaxy, 587 nm to 589 nm	1276188

<sup>1</sup> All lasers same as standard product except FC connector changed to UFC type.

**NOTE:** OBIS Laser includes: laser and mounting hardware. The following needs to be ordered separately: OBIS LaserBox (part numbers 1228877 or 1343229), OBIS Remote (part number 1214875), and OBIS Heat Sink (part number 1193289). See individual OBIS accessory data sheets for details.

**NOTE:** Sapphire Lasers include: Laser, OEM USB Controller, 2 meter head cable and connector kit. The following needs to be ordered separately: Sapphire laser power supply (part number 1105375), Sapphire laser heat sink and mounting hardware (part number 1110061)



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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 Galaxy Laser Combiners. 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-008-12-0M0519Rev.L Copyright ©2019 Coherent, Inc.

