

Optical Fibers

Liquid light guides, fibers, and fiber bundles

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|------------------------------|
| ELEMENTAL ANALYSIS |
| FLUORESCENCE |
| GRATINGS & OEM SPECTROMETERS |
| OPTICAL COMPONENTS |
| FORENSICS |
| PARTICLE CHARACTERIZATION |
| RAMAN |
| SPECTROSCOPIC ELLIPSOMETRY |
| SPR IMAGING |

Add flexibility to your experimental setup with a variety of fiber options

A wide variety of optical fibers, liquid light guides, and multi-fiber bundles are available from HORIBA Scientific. They can provide greater experimental flexibility over direct coupling options when interfacing with HORIBA's spectrometers. For samples inside chambers or reactors or live tissue samples, fibers provide a means of bringing the light from the sample to the spectrometer and detector.

Liquid light guides have become the flexible light guide of choice for non laser based light handling for wavelength ranges from UV to near-IR. Unlike silica fiber bundles, liquid light guides may have large core diameters without sacrificing any dead space as in silica fiber bundles. They are also very durable and have larger apertures for more efficient light collection.

Spot to line fiber bundles increase collection efficiency when used in conjunction with a spectrometer equipped with a CCD camera. Through matching of the vertical slit dimension with the stack of fibers and taking advantage of the vertical height of the CCD, significantly more light can be collected at the detector without sacrificing spectral resolution.

Multi-branch fiber bundles allow the user to collect multiple spectra from different areas simultaneously when coupled with HORIBA spectrometers and CCD cameras. Termed "multi-track spectroscopy", this method involves feeding the branches of the fiber to different portions of the sample under test and then interfacing with the spectrometer and CCD. The vertical height of the CCD allows for spectra to be recorded for each individual fiber simultaneously. This is particularly of interest for plasma analysis from different regions of plumes.

Features and Benefits

- Increased flexibility
- Increased collection efficiency with spot-to-line bundles
- Multi-track spectroscopy with multi-branch fiber bundles

Accessories

Various accessories are available for sample manipulation and coupling fibers, detectors, light sources, and monochromators to the SampleMax

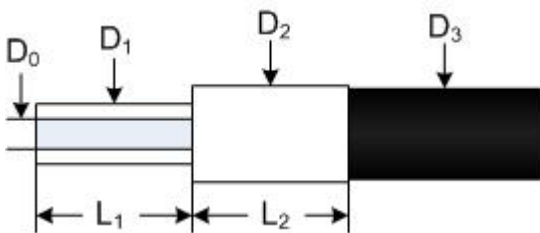
- Lens-based fiber adapter, 220F/1700F
- Mirror-based 1x imaging adapter, J2307XXXX
- Fixed direct fiber coupler, 100F/120F
- Adjustable direct fiber coupler, AFO-XY
- Fiber optic illuminator, 1427C/1427-SL
- Adjustable XY fiber adapter for illuminator, J357424
- 10 mm to 1/4" ferrule adapter, AFO-FER1-4IN



Specifications

Liquid Light Guides

| Wavelength Range | Core Diameter | Numerical Aperture | Length | Part Number |
|-------------------------------|---------------|--------------------|--------|-------------|
| UV-VIS (280 – 650 nm) | 2 mm | 0.59 | 2 m | OB-0218 |
| | 3 mm | | 2 m | OB-0224 |
| | 5 mm | | 1 m | OB-0248 |
| | | | 2 m | OB-0225 |
| UV-VIS-NIR (340 – 800 nm) | 2 mm | 0.59 | 1 m | OB-0222 |
| | 3 mm | | 2 m | OB-0226 |
| | 5 mm | | 2 m | OB-0227 |
| | | | 1 m | OB-0249 |
| UV-VIS-NIR (360 – 2000 nm) | 3 mm | 0.52 | 1 m | OB-0230 |
| | | | 2 m | OB-0231 |
| VIS-NIR (420 – 2000 nm) | 3 mm | 0.52 | 1 m | OB-0228 |
| | | | 2 m | OB-0223 |
| | 5 mm | | 1 m | OB-0229 |



| Core Diameter (D0) | Standard End Fittings | | | | Protective Sleeve (D3) | Minimum Bending Radius (mm) |
|-----------------------|-----------------------|--------|-------|-------|------------------------|-----------------------------|
| | D1 | L1 | D2 | L2 | | |
| 2 mm | 4 mm | 6.7 mm | 8 mm | 20 mm | 5.5 mm | 30 mm |
| 3 mm | 5 mm | 20 mm | 9 mm | 24 mm | 7 mm | 40 mm |
| 5 mm | 7 mm | 20 mm | 10 mm | 24 mm | 9.5 mm | 60 mm |

Single Fibers

| Wavelength Range | Core Diameter | Numerical Aperture | Termination | Length | Part Number |
|----------------------------|---------------|--------------------|---------------------|---------------------|--------------------|
| UV-VIS (190 – 1200 nm) | 50 µm | 0.22 | SMA | 1 m | FIB-50UVVS-SMA-1 |
| | | | FC to SMA | 2 m | FIB-50UVVS-SMA-2 |
| | | | | 5 m | FIB-50UVVS-FCSM-5 |
| | 100 µm | 0.22 | SMA | 1 m | FIB-100UVVS-SMA-1 |
| | | | | 2 m | FIB-100UVVS-SMA-2 |
| | | | SMA to 1/4" ferrule | 2 m | FIB-100UVVS-FCSM-2 |
| | | | FC | 5 m | J650529 |
| | | | SMA | 5 m | FIB-100UVVS-SMA-5 |
| | | | FC to SMA | 5 m | FIB-100UVVS-FCSM-5 |
| | | | 200 µm | 0.22 | SMA |
| | 1/4" ferrule | 2 m | | | FIB-200UVVS-FER-2 |
| | SMA | 2 m | | | FIB-200UVVS-SMA-2 |
| | SMA | 3 m | | | FIB-200UVVS-SMA-3 |
| | 400 µm | 0.12 | 1/4" ferrule | 2 m | FIB-200F4UVVS-FER2 |
| | | | 0.22 | SMA | 3 m |
| | 1000 µm | 0.22 | SMA to 1/4" ferrule | 1 m | C3-500-002 |
| | | | | 3 m | C3-500-004 |
| 1500 µm | 0.22 | SMA | 2 m | FIB-1500UVVS-SMA-2 | |
| VIS-NIR (300 – 2400 nm) | 100 µm | 0.22 | SMA | 2 m | FIB-100NIR-SMA-2 |
| | | | FC to SMA | 1 m | FIB-100NIRFCSM-1 |
| | | | FC to SMA | 5 m | FIB-100NIR-FCSM-5 |
| | 400 µm | 0.22 | SMA | 3 m | FIB-400VSNR-SMA-3 |
| | | | 0.12 | SMA to 1/4" ferrule | 4 m |
| | 600 µm | 0.22 | SMA | 2 m | FIB-600NIR-SMA-2 |
| | 1000 µm | 0.22 | SMA to 1/4" ferrule | 3 m | FIB-1000NIR-FRSM-3 |

Spot to Line Fiber Bundles

| Wavelength | Bundle Type | Core Diameter | Numerical Aperture | Termination | Length | Part Number |
|----------------------------|--|---------------|--------------------|---------------------|--------|-----------------|
| UV-NIR (180 – 1100 nm) | 19 fiber spot to line, 240 µm center to center spacing | 100 µm | 0.22 | 10 mm ferrule | 6 m | 700FB-100U-10-6 |
| | | | | 1/4" ferrule | 1 m | 700FB |
| | | 2 m | 700FB-2 | | | |
| | | 3 m | 700FB-3 | | | |
| | | 200 µm | 0.22 | 10 mm ferrule | 1 m | 700FB-10 |
| | | | | | 2 m | 700FB-10-2 |
| | | | | 1/4" ferrule to SMA | 1 m | 700FB-1FER-SMA |
| | | | | | 2 m | 700FB-2FER-SMA |
| VIS-NIR (500 – 2000 nm) | 19 fiber spot to line, 240 µm center to center spacing | 200 µm | 0.22 | 1/4" ferrule | 1 m | 2000FB |
| | | | | | 2 m | 2000FB-2 |
| | | | | | 3 m | 2000FB-3 |
| | | | | 10 mm ferrule | 2 m | 2000FB-10-2 |

Muilt-Branch Fiber Bundles

| Wavelength | Bundle Type | Core Diameter | Numerical Aperture | Termination | Length | Part Number |
|---------------------------|--------------|---------------|--------------------|-------------------------|--------|--------------------|
| VIS (190 – 1200 nm) | 11-leg fiber | 200 µm | 0.12 | 10 mm ferrule | 5 m | FIB200U-11LGF4V-5 |
| | | | | | 16 m | FIB200U-11LGF4V-16 |
| UV-VIS (190 – 1200 nm) | 2-leg fiber | 300 µm | 0.12 | Two SMA to 1/4" ferrule | 3 m | J650631 |



OPTICAL BUILDING BLOCKS



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