



Fiber Shaping-Cleaving

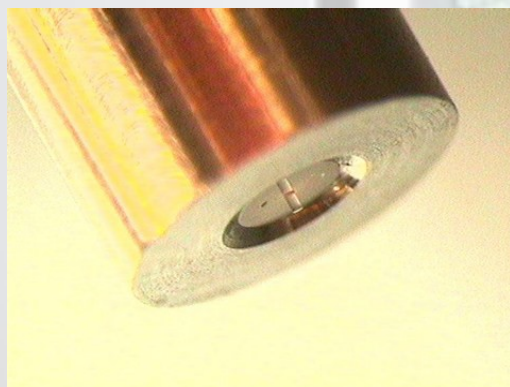
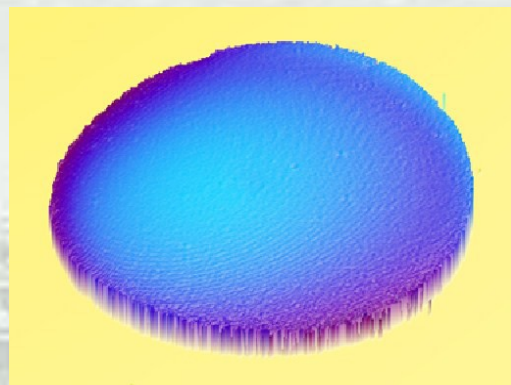
Cleaved Fiber Assemblies

OFP has pioneered high performance cleaving of fibers using computer controlled rapid CO2 laser ablation technologies to cut the angles with high accuracy to form miniature 'optical' interfaces at the end of optical fibers. These enable high efficiency coupling while limiting back reflections

OFP's technical expertise, leading packaging capabilities and quality control set the company apart from its competitors. OFP offers a complete packaging solution for cleaved fiber assemblies with the addition of AR coating, metallization, hermetic ferrules, and connectors.

Laser Ablated Cleave — attributes

- Cleave angles 0-50 degrees
- Angular tolerance ± 1 degree
- "Super smooth" ideal cleave surface
- Superior angle repeatability
- Very lower volume cost
- Single or multi-fiber assemblies
- Any type of SMF, MMF, PM fiber



- Suitable for multiple fiber diameters
- Engineered for low back reflection
- Can be optionally AR coated
- Can be cleaved in a array
- PM fiber cleaves with zero stress

Optical Fiber Packaging Ltd.

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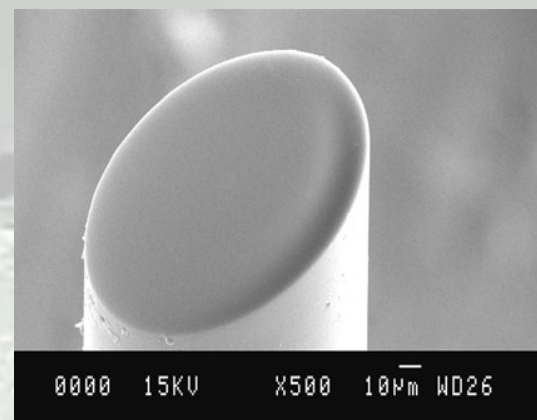
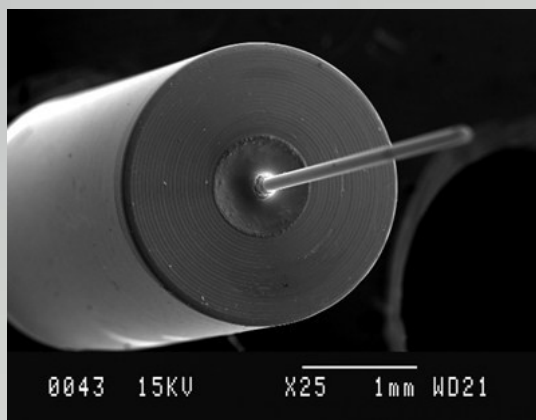
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Fiber Shaping-Cleaving

Laser Ablated Cleave — attributes



Properties	Specifications
Cleave Angle	0 >50 degrees
Angle Accuracy	+/- 1 degrees
Fiber Strip Length	1-500 mm +/- 0.2 mm
Fiber Core Diameter	3um > 200 µm
AR coating options including high power	Customized coatings to suit. Narrow band or wide-band, typical 600nm > 1,600nm , R's <0.1-0.5%
Surface Quality – scratch/dig	N/A
Fiber tip to Ferrule Distance	Application dependant, 0.3mm -200mm +/-0.2mm
PER for PMF	>30 dB

Packaging Options

Metalized fiber, single and dual zone	Ni/Au electroless or PVD
Glass sealed ferrule, single or dual	0.7-10 mm diameter, Au/Ni plated
Operating temperature	-55 - 100° C
Fiber Types	SM, MM, PM, doped, specialty
Max welding/solder temperature	200° C
Connectors on pigtailed devices	Any type

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Fiber Shaping - Lensing

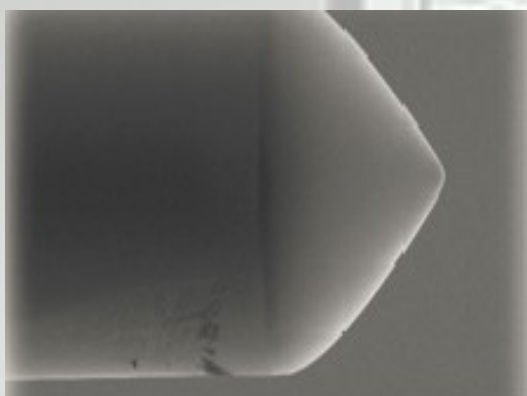
Directly Lensed Fiber Assemblies

OFP has pioneered high performance lensing of fibers using computer controlled rapid CO2 laser ablation technologies to cut Conical and Wedge lenses to multiple geometries directly on the fiber core. These enable customizable high efficiency coupling to many emitter and detector types

OFP's also offers traditional 'polished' lenses for specific application types. OFP offers a complete packaging solution for all lensed assemblies with the addition of AR coating, metallization, hermetic ferrules, and connectors.

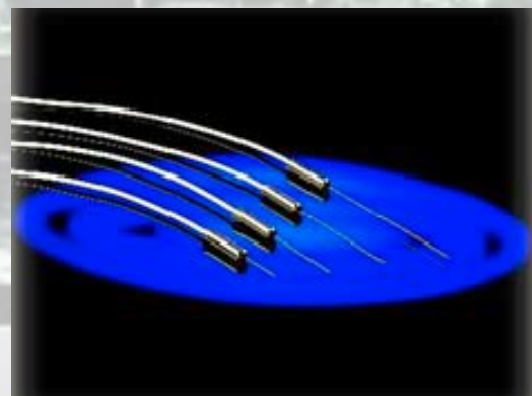
Laser Ablated Lens Attributes

- Coupling efficiencies 80>95%
- Conical or wedge (CLF) shapes
- Automatic lens process control
- Fast production for large volumes
- High repeatability, lower cost



Polished Lens Attributes

- Coupling efficiencies 80>95%
- Custom shapes and dimensions
- Ideal for high power single emitters
- Multiple tapered angles (50-140°)
- Wide lens radius range (5-35 um)



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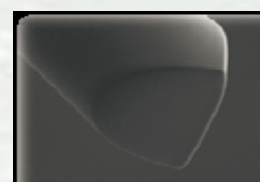
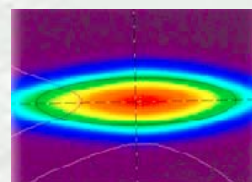
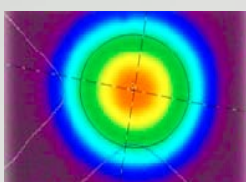
Fiber Shaping - Lensing

Conical Lens Attributes

- 5um > 30 um lens radius
- Any type of SMF, MMF, PM
- SOA, Detector, SLED applications
- Length matched pigtailed for >40G

Wedge Lens Attributes

- SM, MM, PM, doped, coated fibers
- Efficient laser coupling
- High power applications
- Excellent fiber centricity



Properties	Specification Range
Lens Radius	6um > 18um +/- 1 um laser, 5um > 30 um polished
Tapered angle	108° laser, 50° > 140° polished
Fiber Strip Length	1mm > 500 mm +/- 0.2 mm
Fiber Core Diameter	5um > 200 um laser, 5um > 600 um polished
AR coating including high power	Customized coatings to suit. Narrow band or wide-band, typical 600nm > 1,600nm, R's < 0.1-0.5%
Fiber centricity to the core center	0.5um > 5 um
Fiber tip to Ferrule Distance	0.7mm > 200mm +/- 0.2mm
Lens PER for PMF	>30 dB

Packaging Options

Metalized fiber, single and dual zone	Ni/Au electroless or PVD
Glass sealed ferrule, single or dual	0.7mm > 10 mm diameter, Ni/Au plated
Operating temperature	-55° C > 100° C
Fiber Types	SM, MM, PM, doped, specialty
Max welding/solder temperature	200° C
Pull & Bend Strength (with boot)	Per Telcordia or MIL
Hermeticity, typical	2x10 ⁻¹⁰ Pa.m ³ /sec' 2x10 ⁻⁹ atm. cc/sec
Connectors for pigtailed assemblies	Any type

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