



A Furukawa Company



Optical Fiber Solutions for
MEDICAL DEVICES

OPTICAL FIBER, CABLE, ASSEMBLIES

ISO 9001 and 13485 Certified

FDA Good Manufacturing Practices

USP Class VI and ISO10993 for
Biocompatibility

Low Bioburden Assembly Room

Engineering Support for Fiber, Cable, and
Assembly

www.ofsoptics.com/medical

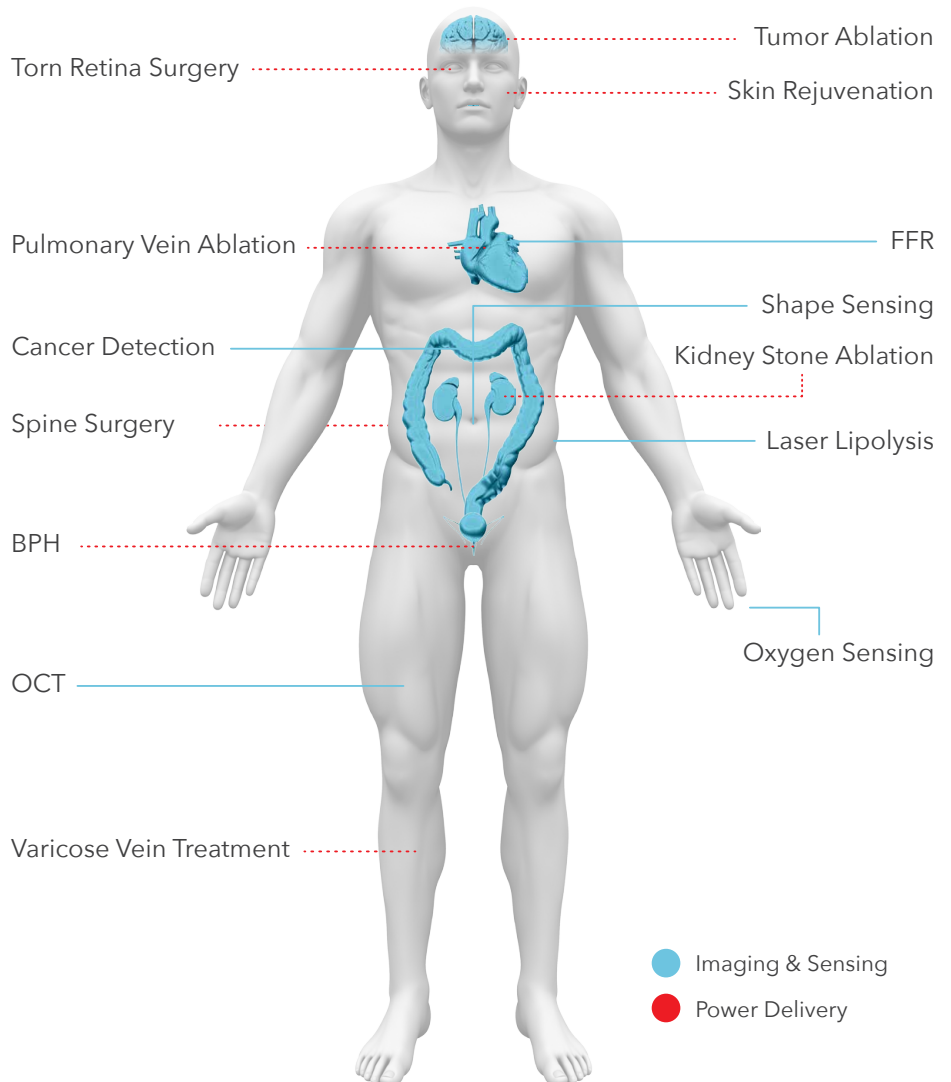
Optical Fiber Solutions for Medical Devices

PREFACE

OFS is **ISO13485 certified**, follows **FDA Good Manufacturing Practices**, and tests fibers to **USP Class VI** standards and **ISO10993** for biocompatibility.

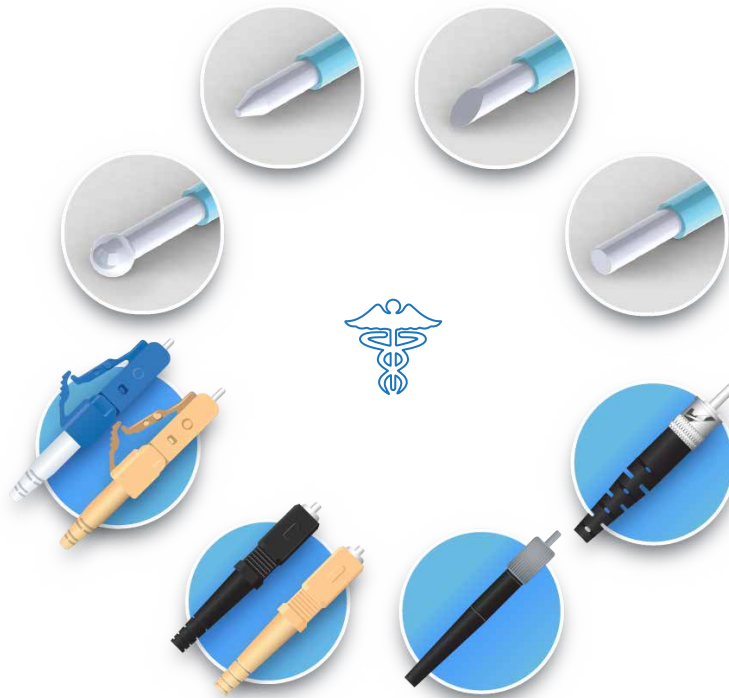
OFS is a vertically integrated optical fiber manufacturer from the glass preform to probe assembly with more than 30 years' experience in the design and production of specialty optical fibers.

TYPICAL APPLICATIONS



Customizable Fiber Tip Assemblies and Terminations

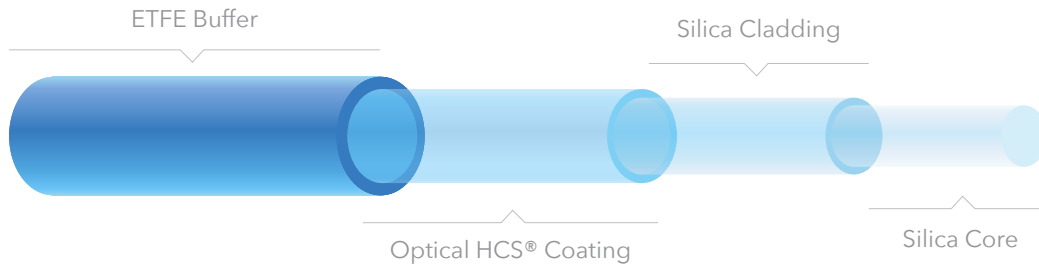
Our support for your medical applications goes beyond fiber, cable, and assembly.



- Single-use disposable products
- Multiple-use serializable products
- Sub-assemblies
- Final-assemblies
- Various connectors available

From simple flat cleaving to complex-shape, OFS offers highly customizable fiber tip assemblies for your needs. Your products are made and packaged in environmentally controlled room, ready for sterilization.

Biocompatible Multimode Step-Index Optical Fibers for High Power Delivery Medical Applications



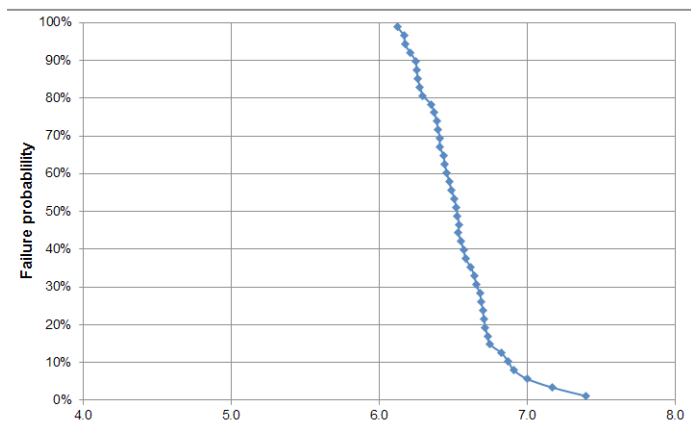
Item Name	Diameters in μm				NA	Part Number
	Core	Clad	Coating	Buffer		
200-22 HCL Fiber	200	240	260	375	0.22	BF06856-01
272-22 HCX Fiber	272	299	330	400	0.22	F24748
365-22 HCL Fiber	365	400	430	550	0.22	BF05147
365-22 HCL Fiber	365	400	430	730	0.22	BF06341
550-22 HCL Fiber	550	600	630	750	0.22	CF01493-53
940-22 HCL Fiber	940	1000	1035	1400	0.22	CF01493-54

Reliable laser delivery up to a 5 mm bend*

HCXtreme Optical Fiber technology addresses the problem of fiber failure due to tight bending of optical fiber under power. This optimized fiber design reduces bend loss and offers superior performance in high power laser delivery application that requires bending.

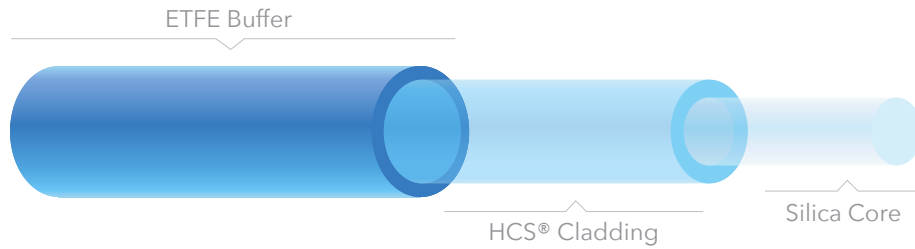
* For further details and testing methodology, request a copy of our white paper, entitled "Study of Optical Fiber Damage Under Tight Bend with High Optical Power at 2140 nm."

FIBER FAILURE PROBABILITY VS. BEND DIAMETER UNDER LASER POWER



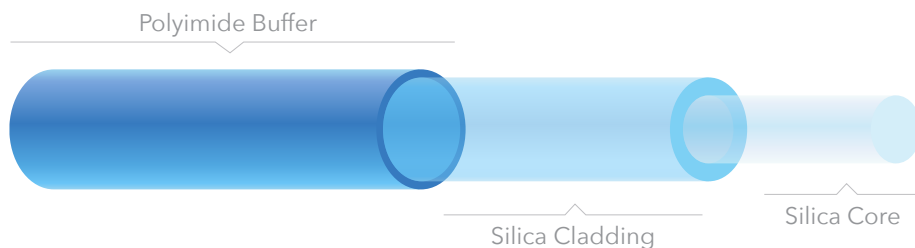
FIBER TESTED: 365 μm core; 400 μm clad; 0.22 NA

Biocompatible Multimode Step-Index Optical Fibers for Power Delivery Medical Applications



Diameters in μm

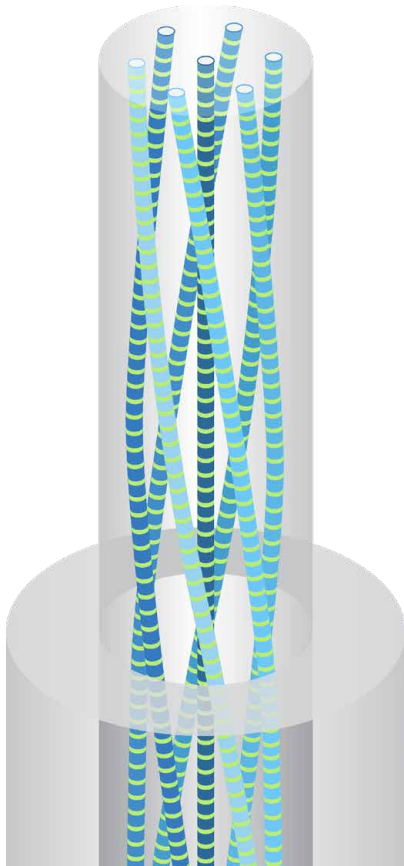
Item Name	Buffer	Cladding	Core	NA	Part Number
200 μm HCS Low OH Fiber	500	230	200	0.37	CF01493-10
300 μm HCS Low OH Fiber	650	330	300	0.37	CF01493-11
400 μm HCS Low OH Fiber	730	430	400	0.37	CF01493-12
600 μm HCS Low OH Fiber	1040	630	600	0.37	CF01493-14
800 μm HCS Low OH Fiber	1040	830	800	0.37	CF01493-65
1000 μm HCS Low OH Fiber	1400	1035	1000	0.37	CF01493-15
1500 μm HCS Low OH Fiber	2000	1535	1500	0.37	CF01493-62
200 μm HCS Low OH Fiber	500	230	200	0.43	CF05578-01
400 μm HCS Low OH Fiber	730	430	400	0.43	CF05578-03



Diameters in μm

Item Name	Buffer	Cladding	Core	NA	Part Number
100 μm TCL Low OH Fiber	140	120	100	0.22	CF04406-11
200 μm TCL Low OH Fiber	250	220	200	0.22	CF04406-13
200 μm TCL Low OH Fiber	270	240	200	0.22	CF04406-14
320 μm TCL Low OH Fiber	415	385	320	0.22	CF04406-15
400 μm TCL Low OH Fiber	470	440	400	0.22	CF04406-16
600 μm TCL Low OH Fiber	690	660	600	0.22	CF04406-17

Twisted Multicore Fiber with Continuous Grating for Shape Sensor Applications



KEY FEATURES

- Multicore fiber with continuous FBGs
- Designed for shape sensing applications
- Multicore connectorization and fan-outs
- Low back reflection termination

High quality continuous gratings without stripping and recoating preserve the fiber's mechanical integrity. This manufacturing platform enables us to customize and optimize the product to meet various customers' demands more economically.*

** For further details and applications, request a copy of our white paper, entitled "Multicore Optical Fiber Grating Arrays for Sensing Applications."*

PRODUCT SPECIFICATIONS

Fiber Dimensions/Geometric Properties

Fiber Core Geometry	6 around 1
Cladding Diameter	125 μm
Coating Type	Acrylate
Coating Diameter	200 μm
Coating Concentricity	< 8 μm
Core-to-Core Spacing	35 μm
Center Core Concentricity in Glass	0.5 μm
Twist Rate	50 twists/m
Numerical Aperture	0.21
Mode Field Diameter at 1550 nm	6 μm
Fiber Proof Strength	100 kpsi

Gratings Characteristics

Grating Length	35 mm
Typical Spacing Between Gratings	0.2 mm
Grating Center Wavelength	1540 nm
Typical Integrated Grating Reflectivity in each Core for 1cm of Grating	-70 dB
Typical Array Length	25 m

NOTE: Custom fibers/gratings are available to achieve specific requirements.



Optical Fiber Solutions for Imaging and Sensing Applications

OFS plays an important role in the expanding adoption of optical imaging, (OCT), spectroscopy using miniature optical fiber probes in such applications as cardiology, oncology, and gastroenterology.

Single-Mode						
Part Number	Operating Wavelength	NA	MFD	Clad	Coating	Coating Material
BF05717-01	1310 nm	0.12	9.3 ± 0.5 μm	125 ± 1 μm	155 ± 5	PYROCOAT®
BF05717-06	1270 - 1340 nm	0.12	9.3 ± 0.5 μm	125 ± 1 μm	155 ± 5 μm	PYROCOAT
BF04441-06	1310 nm	0.12	9.3 ± 0.5 μm	80 ± 2 μm	100 ± 4 μm	PYROCOAT
BF04701	850 nm	0.12	6.0 ± 0.5 μm	125 ± 1 μm	155 ± 5 μm	PYROCOAT

Multimode Graded-Index						
Part Number	NA	Core	Clad	Coating	Coating Material	
BF04433	0.20	50 ± 3 μm	125 ± 2 μm	155 ± 5 μm	PYROCOAT	
F19230-01	0.275	62.5 ± 3 μm	125 ± 1 μm	155 ± 5 μm	PYROCOAT	

PYROCOAT is a registered trademark of OFS FITELE, LLC. for polyimide coating.

OFS and FEC Manufacturing Locations



For additional information please contact your sales representative.

You can also visit our website at www.ofsoptics.com
or call 1-888-FIBER-HELP (1-888-342-3743) from inside the USA
or +1-770-798-5555 from outside the USA.

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OFS Marketing Communications

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