

Harsh Environment Hermetic Optical Penetrators

Advanced Fiber Products Ltd. (AFP) is a leading designer, developer and manufacturer of optical and optoelectronic products for telecom, industrial, military and medical markets. AFP offers a wide range of ancillary components in addition to specialized fiber assemblies for integration into complete packaging solutions. The company is headquartered at Haverhill, near Cambridge in the United Kingdom.

AFP's highly miniaturized and robust multi-fiber penetrators, also known as feedthroughs, feature hermetic glass sealing technology for superior in-service performance over industry-standard epoxy-based optical feedthroughs. These multi-fiber designs offer end-users and integrators significant lifecycle cost savings compared to legacy single fiber solutions.

The AFP product line was developed to withstand prolonged exposure to corrosive media such as oil, mud, chemicals and salt water. The feedthroughs are qualified to perform reliably under prolonged exposure to temperatures up to 100 C° and pressures up to 15,000psi, making them an ideal solution for down-hole or subsea environments. The products are easily mounted to walls of wells, pipes, tanks, or in remotely operated vehicles for both shallow and deep-water applications. Feedthroughs are available in 1, 4, 8, 12 and 16- fiber configurations. Custom configurations are available upon request.

Applications

- Oil-and-Gas Industry
- Sub-Sea Exploration
- Avionics and Automotive
- Industrial Process Control
- Defence Communication and Sensing
- Energy Applications

Features

- Extreme pressures 15 kpsi+
- T_{op}= +100 C and above
- Corrosion resistant
- Miniature size
- Singlemode, Multimode and Specialty fiber types available



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Advanced Fiber Products Ltd.

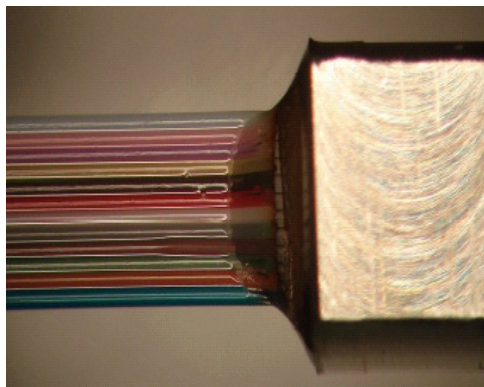
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Properties	Specifications
Dimensions	Diameter 1.5– 20 mm, custom
Materials feedthrough	Austenitic SuperAlloys
Materials sealing	Glass solder
Metal plating	No plating or Au/Ni
Maximum Pressure	15 kpsi, (20+ kpsi under development)
Fiber Type	SMF-28, 50/125 um, other multimode, acrylic or polyamide ribbon
Fiber count (in ribbon)	1,4,8,12 and 16
Maximum Temperature	+100C, (+250 C under development)
Insertion Loss	0.2-1 dB, application specific
Leak Rates	$<10^{-8}$ cc/s
Life time	10^4 — 10^5 hrs
Environment	Oil, gas, mud, salt water, etc.
Connectorization	Any type single or multi-fiber
Pull & Bend Strength	Per Telcordia or MIL standards



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