

Hermetic Optical Penetrators and Seals

Advanced Fiber Products Ltd. (AFP) founded in 2007 is a leading designer, developer and manufacturer of optical and optoelectronic products for telecom/datacom, oil-and-gas, industrial, military and broadcast markets. AFP offers a wide range of components and modules in addition to specialized fiber assemblies for integration into complete packaging solutions. The company is headquartered at Haverhill, near Cambridge, in the United Kingdom with additional facilities in Chicago, USA.

AFP's highly miniaturized and robust multi-fiber penetrators, feedthroughs and seals, 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 extreme reliability and significant lifecycle cost savings compared to legacy single fiber solutions.

The AFP product line was developed to withstand prolonged exposure to aggressive media such as oil, mud, chemicals and salt water. The feedthroughs are qualified to perform reliably under prolonged exposure to temperatures up to 177 C° and pressures up to 20,000 psi, making them an ideal solution for down-hole or subsea environments. The products are easily mounted to wellheads, manifolds, pipes, tanks, or in ROV/UUV for both shallow and deep-water applications. Feedthroughs are available in 1, 4, 8, 12, 16 and 24- fiber configurations. Custom configurations are available upon request.

Applications

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

Features

- Extreme pressures up to 20 kpsi
- Wide $T_{op} = -40, +177$ C
- Harsh environment resistant
- Swagelok, O/C-ring, flange mounts
- SM fiber, MM fiber and SM+MM
- Primary and secondary seals



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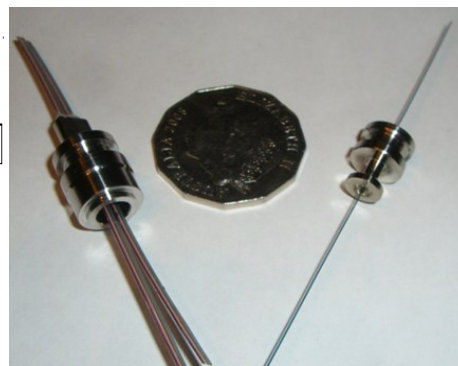
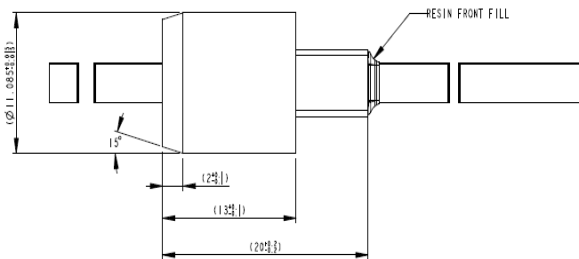
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Advanced
Fiber
Products

Harsh Environment Hermetic Optical Penetrators

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	20 kpsi
Fiber Type	SMF-28, MMF, SMF+MMF acrylate or polyamide ribbon
Fiber count (in ribbon)	1-24
Operating Temperature	-40C, +177C
Insertion Loss	0.1-0.2 dB, application specific
Leak Rates	$<10^{-9}$ cc/s
Design Life time	20 years
Environment	Oil, gas, mud, salt water, etc.
Connectorization	Any type single or multi-fiber
Pull & Bend Strength	Per O&G, Telcordia or MIL standards



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