Plastic Fiber Optics

Overmolded Flex Relief Plastic Fibers

- Provide additional resistance to fiber damage or breakage at the sensing tip
- Stainless steel threaded ferrule and stainless steel mounting hardware
- PVC overmolded flex relief reduces stress at the fiber to ferrule transition
- Higher tensile pull resistance than non-overmolded design to reduce accidental damage to the fibers during installation and maintenance
- Works with plastic fiber brackets SMBFFP6, SMBFP4, SMBFP4N, and SMPFP3

Models

Model	Mode	Description
PBT46UMFR	Diffuse Birurcated	Heavy duty PVC overmolded fiber, 1.0 mm core bifurcated, M6 SS threaded ferrule
PBCT46UMFR	Diffuse Coaxial	Heavy duty PVC overmolded fiber, 1.0 mm core coaxial, M6 SS threaded ferrule
PBT26UMFR	Diffuse Bifurcated	Heavy duty PVC overmolded fiber, 0.5 mm core bifurcated, M3 SS threaded ferrule
PBCT26UMFR	Diffuse Coaxial	Heavy duty PVC overmolded fiber, 0.5 mm core coaxial, M3 SS threaded ferrule
PIT46UMFR	Opposed	Heavy duty PVC overmolded fiber, 1.0 mm core, opposed mode, M4 mm SS threaded ferrule with M2.5 threaded tip
PIT26UMFR	Opposed	Heavy duty PVC overmolded fiber, 0.5 mm core, opposed mode, M4 mm SS threaded ferrule with M2.5 threaded tip

Specifications

Construction

Optical Fiber: Acrylic (PMMA)

Protective Jacket: Black Polyethylene

Overmolded Strain Relief: PVC

Ferrule and Hardware: Stainless Steel

Minimum Bend Radius

12 mm for 0.5 mm diameter fibers; 25 mm for 1.0 mm diameter fibers

Repeat Bending/Flexing

Life expectancy of plastic fiber optic cable is in excess of one million cycles at bend radii of no less than the minimum and a bend of 90° or less. Avoid stress at the point where the cable enters the sensor (“control end”) and at the sensing end tip. Coiled plastic fiber optic assemblies are recommended for any application requiring reciprocating fiber motion.

Chemical Resistance

The acrylic core of the monofilament optical fiber will be damaged by contact with acids, strong bases (alkalis) and solvents. The polyethylene jacket will protect the fiber from most chemical environments. However, materials may migrate through the jacket with long term exposure. Samples of fiber optic material are available from Banner for testing and evaluation.

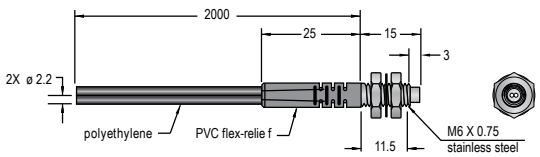
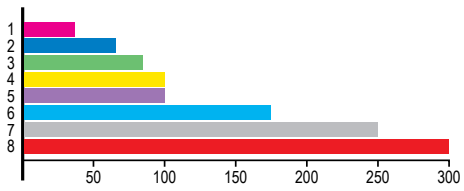
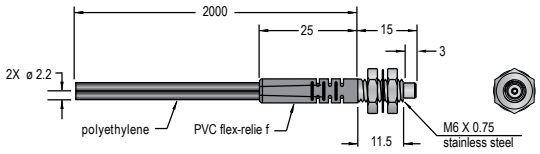
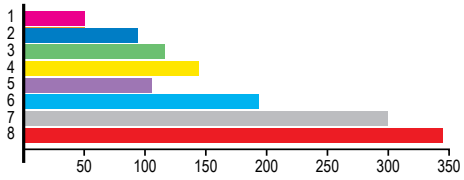
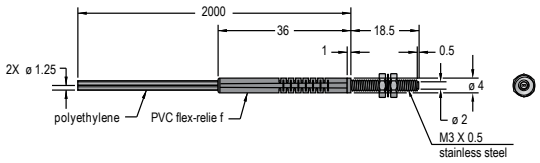
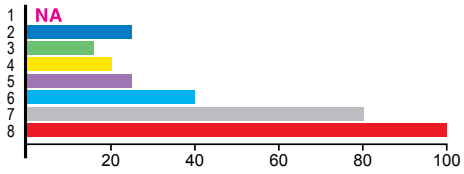
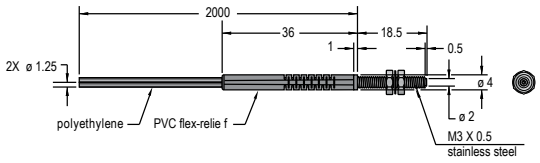
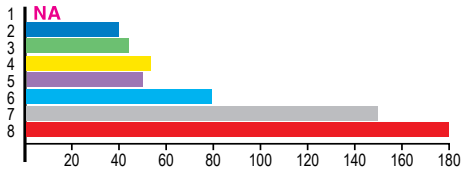
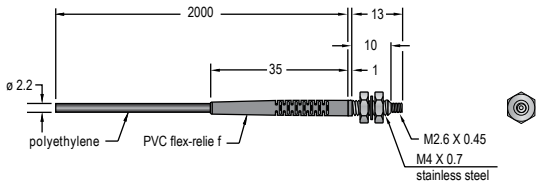
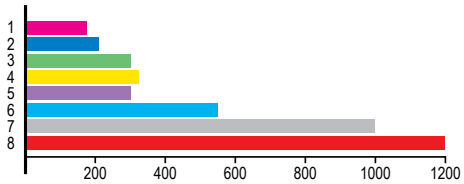
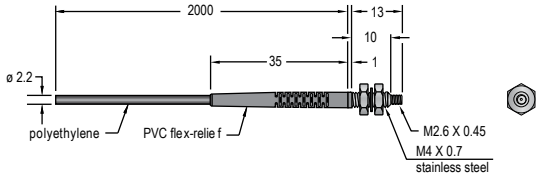
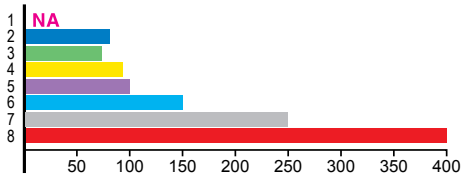
Temperature Extremes

Temperatures below -30° C (-22° F) will cause embrittlement of the plastic materials but will not cause transmission loss. Temperatures above +70° C (+158° F) will cause both transmission loss and fiber shrinkage.

Operating Temperature

-30° to +70° C (-22° to +158° F), unless otherwise specified

Fiber Dimensions and Typical Ranges

Model	Dimensions	Typical Range (mm)*
PBT46UMFR		
PBCT46UMFR		
PBT26UMFR		
PBCT26UMFR		
PIT46UMFR		
PIT26UMFR		

* Key

1. QS18
2. Mini-Beam Expert
3. D10A
4. D10B
5. D10D - Super High Speed
6. D10D - High Speed
7. D10D - High Power
8. D10D - Super High Power

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