HFBR-RXXYYYZ Series (POF)
HFBR-EXXYYYZ Series (POF)

Plastic Optical Fiber Cable and Accessories for Versatile Link

Data Sheet

Cable Description

The HFBR-R/EXXYYYZ series of plastic fiber optic cables are constructed of a single step-index fiber sheathed in a black polyethylene jacket. The duplex fiber consists of two simplex fibers joined with a zipcord web.

Standard attenuation and extra low loss POF cables are identical except for attenuation specifications. Polyethylene jackets on all plastic fiber cables comply with UL VW-1 flame retardant specification (UL file # E89328).

Cables are available in unconnectored or connectored options. Refer to the Ordering Guide for part number information.

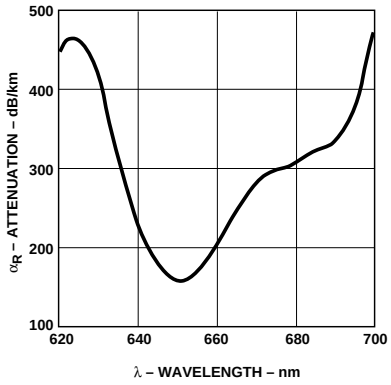


Figure 1. Typical POF attenuation vs. wavelength.

Features

- **Compatible with Avago Versatile Link family of connectors and fiber optic components**
- **1 mm diameter Plastic Optical Fiber (POF) in two grades: low cost standard POF with 0.22 dB / m typical attenuation, or high performance extra low loss POF with 0.19 dB / m typical attenuation**

Applications

- **Industrial data links for factory automation and plant control**
- **Intra-system links; board-to-board, rack-to-rack**
- **Telecommunications switching systems**
- **Computer-to-peripheral data links, PC bus extension**
- **Proprietary LANs**
- **Digitized video**
- **Medical instruments**
- **Reduction of lightning and voltage transient susceptibility**
- **High voltage isolation**

Plastic Optical Fiber Connector Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Note
Storage and Operating Temperature	$T_{S,O}$	-40	85	°C	1
Recommended Operating Temperature	T_O	-40	85	°C	1
Installation Temperature	T_I	0	70	°C	1
Nut Torque	T_N		0.7	N-m	2
HFBR-4505Z/4515Z Adapter			100	OzF-in.	

Notes:

1. Storage and Operating Temperatures refer to the ranges over which the connectors can be used when not subjected to mechanical stress. Installation Temperature refers to the ranges over which connectors may be installed onto the fiber and over which connectors can be connected and disconnected from transmitter and receiver modules.
2. Recommended nut torque is 0.57 N-m.

Plastic Optical Fiber Connector Mechanical/Optical Characteristics

T_A = -40 to +85°C, Unless Otherwise Specified.

Parameter	Part Number	Symbol	Min.	Typ.[1]	Max.	Units	Temp. °C	Note
Retention Force, Connector to Versatile Link Transmitters and Receivers	Simplex, HFBR-4501Z/4511Z	F_{R-C}	7 3	8		N	+25 -40 to +85	2
	Simplex Latching, HFBR-4503Z/4513Z		47 11	80			+25 -40 to +85	
	Duplex, HFBR-4506Z		7 4	12			+25 -40 to +85	
	Duplex Latching, HFBR-4516Z		50 15	80			+25 -40 to +85	
Tensile Force, Connector to Cable	Simplex, HFBR-4501Z/4511Z	F_T	8.5	22		N		3
	Simplex Latching, HFBR-4503Z/4513Z		8.5	22				
	Duplex, HFBR-4506Z		14	35				
	Duplex Latching, HFBR-4516Z		14	35				
Adapter Connector to Connector Loss	HFBR-4505Z/4515Z with HFBR-4501Z/4511Z	α_{CC}	0.7	1.5	2.8	dB	25	4, 5
Retention Force Connector to Adapter	HFBR-4505Z/4515Z with HFBR-4501Z/4511Z	F_{R-B}	7	8		N		
Insertion Force, Connector to Versatile Link Transmitters and Receivers	Simplex, HFBR-4501Z/4511Z	F_I		8	30	N		6
	Simplex Latching, HFBR-4503Z/4513Z			16	35			
	Duplex, HFBR-4506Z			13	46			
	Duplex Latching HFBR-4516Z			22	51			

Notes:

1. Typical data are at +25°C.
2. No perceivable reduction in retention force was observed after 2000 insertions. Retention force of non-latching connectors is lower at elevated temperatures. Latching connectors are recommended for applications where a high retention force at high temperatures is desired.
3. For applications where frequent temperature cycling over temperature extremes is expected, please contact Avago Technologies for alternate connectoring techniques.
4. Minimum and maximum limit for α_{CC} for 0°C to +70°C temperature range. Typical value of α_{CC} is at +25°C.
5. Factory polish or field polish per recommended procedure.
6. Destructive insertion force was typically at 178 N (40 lb.).

Ordering Guide for POF Connectors and Accessories

Plastic Optical Fiber Connectors

HFBR-4501Z	Gray Simplex Connector/Crimp Ring
HFBR-4511Z	Blue Simplex Connector/Crimp Ring
HFBR-4503Z	Gray Simplex Latching Connector with Crimp Ring
HFBR-4513Z	Blue Simplex Latching Connector with Crimp Ring
HFBR-4506Z	Parchment Duplex Connector with Crimp Ring
HFBR-4516Z	Gray Duplex Latching Connector with Crimp Ring
HFBR-4505Z	Gray Adapter (Bulkhead/Feedthrough)
HFBR-4515Z	Blue Adapter (Bulkhead/Feedthrough)

Plastic Optical Fiber Accessories

HFBR-4522Z	500 HFBR-0500Z Products Port Plugs
HFBR-4525Z	1000 Simplex Crimp Rings
HFBR-4526Z	500 Duplex Crimp Rings
HFBR-4593Z	Polishing Kit (one polishing tool, two pieces 600 grit abrasive paper, and two pieces 3 μm pink lapping film)
HFBR-4597Z	Plastic Fiber Crimping Tool

Ordering Guide for POF Cable

For Example:

HFBR-RUD500Z is a Standard Attenuation, Unconnectored, Duplex, 500 meter cable.

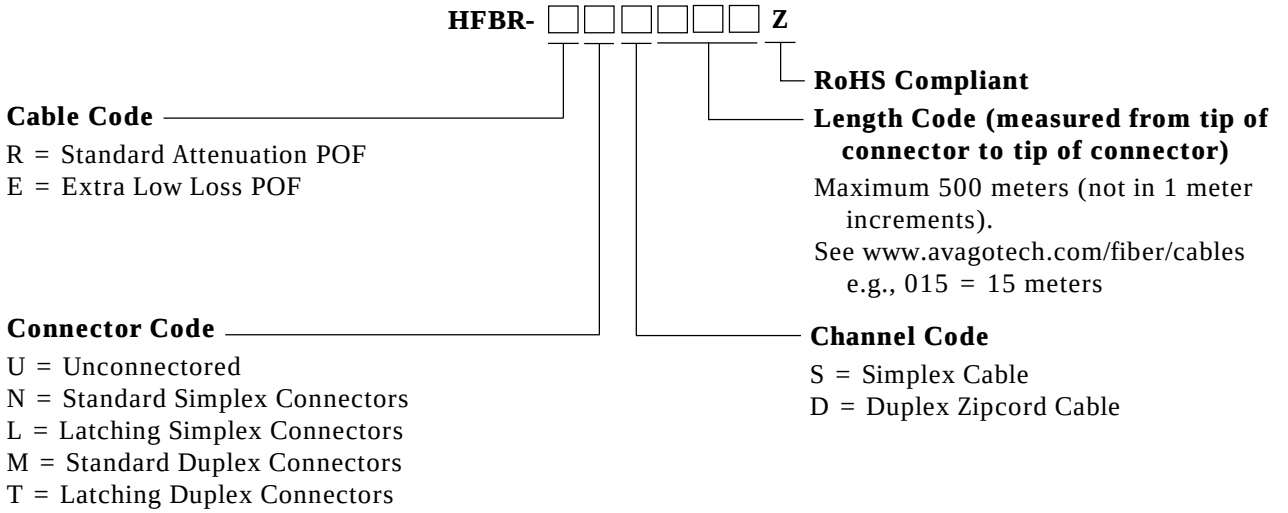
HFBR-RLS001Z is a Standard Attenuation, Latching Simplex Connectored, Simplex, 1 meter cable.

HFBR-RMD010Z is a Standard Attenuation, Standard Duplex Connectored, Duplex, 10 meter cable.

HFBR-RMD100Z is a Standard Attenuation, Standard Duplex Connectored, Duplex, 100 meter cable.

Cable Length Tolerances:
The plastic cable length tolerances are: +10%/-0%.

NOTE: By convention, pre-connectored simplex POF cables have gray and blue colored connectors on the opposite ends of the same fiber; although oppositely colored, the connectors are mechanically identical. Duplex POF cables with duplex connectors use color-coded markings on the duplex fiber cable to differentiate between the channel.



Note: Not all possible combinations reflect available part numbers. Please contact your local Avago representative for a list of current available cable part numbers.