Glass Fiber-Optic Cable/ Connector Assemblies

Technical Data

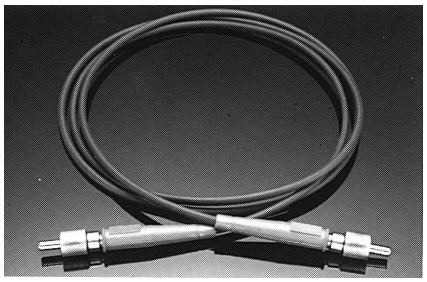
Features

- **Choice of ST or SMA Connectors**
- **Connectors Factory Installed and Tested**
- **Choice of 50/125 μm, 62.5/ 125 μm or 100/140 μm Fiber**
- **Tight Jacket Construction**
- **UL Recognized, Meets OFNR Listing (UL 1666)**
- **Parameters Optimized for Data Communication Applications**

Description

HP connectored cable assemblies are available in various industry standard sizes and styles. The designer may choose among 50/ 125 μm, 62.5/125 μm and 100/ 140 μm cable and ST and SMA connectors (50/125 μm is available with only ST connectors in one- and ten-metre lengths). These cable assemblies have been specified for use with HP's 820 nm and 1300 nm fiber-optic transmitters and receivers and are ideal for various data communication applications.

Each cable assembly has been factory assembled and 100% tested according to industry-standard procedures. Therefore, designers can be assured that they are receiving the highest possible quality cable assemblies for their prototyping, testing or production needs.



Ordering Information[1]

HFBR- □ □ □ □ □ □

Cable Code
A - 100/140 μm
B - 62.5/125 μm
C - 50/125 μm*

Connector Code
U - unconnectored
W - SMA connector
X - ST connector

Length Code
1-999 m, 1-m increments
e.g. 016 = 16 m
1-2 m, 100-m increments
e.g. 1K6 = 1.6 m

Channel Code
S - single channel
D - dual channel

*Available only in single channel one- and ten-metre lengths with ST connectors.

Order Examples

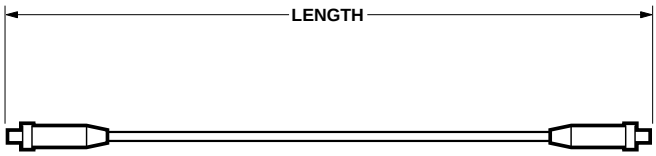
HFBR-AWS050, quantity 1: one 50 m simplex, 100/140 µm cable assembly with SMA connectors

HFBR-BXD2K0, quantity 2: two 2 km duplex, 62.5/125 µm cable assemblies with ST connectors

HFBR-BUS1K5, quantity 3: three 1.5 km simplex, 62.5/125 µm unconnectored cables

Cable Length Tolerances

Cable Length (metres)	Tolerance
1 - 10	+10/-0 %
11-100	+1/-0 metre
>100	+1/-0 %



Cable Information

Temperature Ratings

Parameter	Min.	Max.	Unit
Storage Temperature	-40	+70	°C
Operating Temperature	-20	+70	°C

Mechanical Specifications (25°C)

Parameter	Single Channel	Dual Channel	Unit	Conditions	Note
Maximum Tensile Load				EIA-455-33	
Short Term	500	1000	N		2
Long Term	300	500	N		
Minimum Bend Radius					
Short Term	5.0	5.0	cm	500 N Tensile Load	
Long Term	3.0	3.0	cm	300 N Tensile Load	
Crush Resistance	750	750	N/cm	EIA-455-41	
Impact Resistance	1000	1000	cycles	EIA-455-25 @ 1.6 N-m	
Flex Resistance	7500	7500	cycles	EIA-455-104	
Maximum Vertical Rise	1000	1000	m		

Mechanical Dimensions

	50/125 μm	62.5/125 μm	100/140 μm
Core Diameter (μm)	50	62.5	100
Cladding Diameter (μm)	125	125	140
Buffer Diameter (μm)	900	900	900
Cable Outside Diameter (mm)			
Single Channel	2.9	2.9	2.9
Dual Channel	2.9x5.8	2.9x5.8	2.9x5.8

Optical Specifications (850 nm/1300 nm)

	50/125 μm	62.5/125 μm	100/140 μm	Conditions
Maximum Attenuation (dB/km)	5.0/4.0	5.0/3.0	6.0/5.0	EIA-455-46
Typical Attenuation (dB/km)	4.0/2.0	4.5/2.0	5.5/3.5	
Minimum Modal Bandwidth (MHz-km)	400/400	160/200	100/100	EIA-455-30
Typical 3dB Optical Bandwidth- Length Product (MHz-km)[3]	41/250	40/180	38/95	
Numerical Aperture	0.20	0.275	0.29	EIA-455-47 method A,B,C

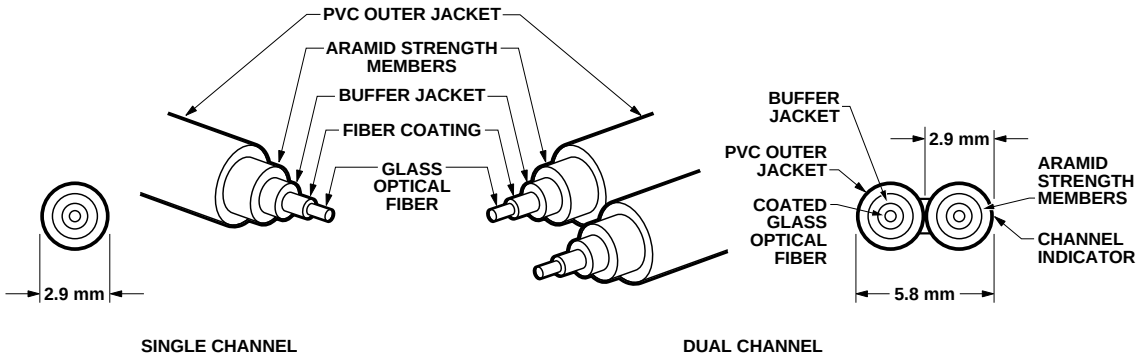


Figure 1. Cable Construction Diagram.

Connector/Mating Adapter Information

Ordering Information

Part Number	Description	Reference
HFBR-4001	100/140 µm SMA style piece part connector	Note 4, Fig. 2
HFBR-4002	62.5/125 µm SMA style piece part connector	Note 4, Fig. 2
HFBR-4003	100/140 µm ST style piece part connector	Note 4, Fig. 3
HFBR-4004	62.5/125 µm ST style piece part connector	Note 4, Fig. 3
HFBR-4409	SMA style mating adapter (nuts/washers incl.)	Fig. 4
HFBR-4419	ST style mating adapter (nut/washer incl.)	Fig. 5

Mating Adapter Mechanical/Optical Specifications

	Max.	Units	Conditions	Note
SMA Mating Adapter				
Fixed Loss (α_F)	2	dB	50/125 µm fiber	5
	2	dB	62.5/125 µm fiber	5
	2	dB	100/140 µm fiber	5
ST Mating Adapter				
Fixed Loss (α_F)	1	dB	50/125 µm fiber	5
	1	dB	62.5/125 µm fiber	5
	1	dB	100/140 µm fiber	5

Mechanical Dimensions[6]

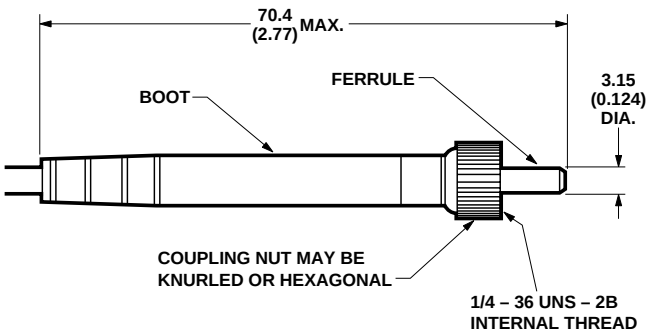


Figure 2. HFBR-4001 and HFBR-4002 SMA Style Connector.

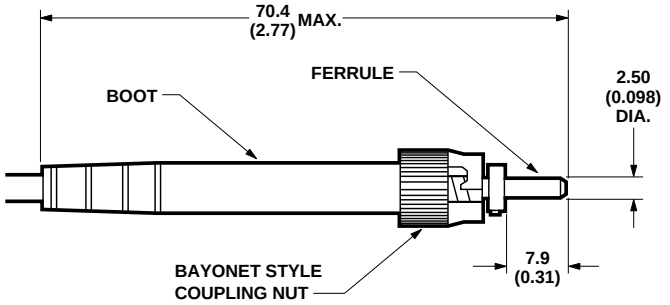


Figure 3. HFBR-4003 and HFBR-4004 ST Style Connector.

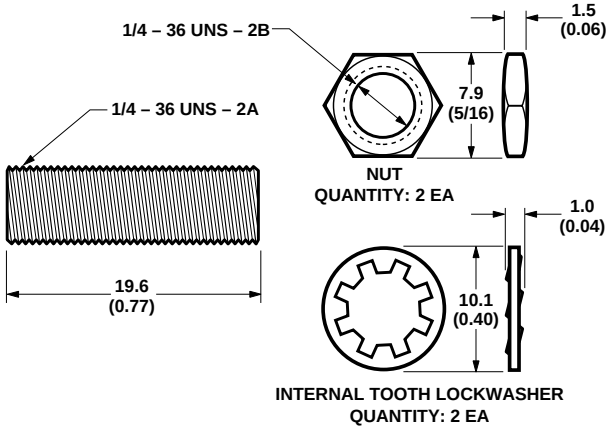


Figure 4. HFBR-4409 SMA Style Mating Adapter.

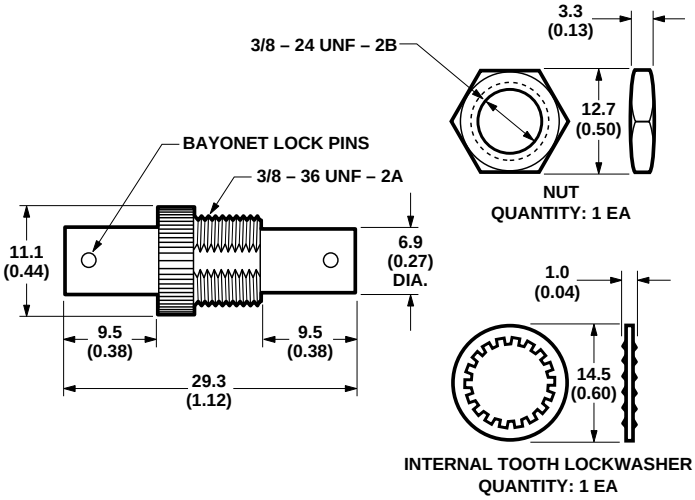


Figure 5. HFBR-4419 ST Style Mating Adapter.

Notes:

1. HP is in the process of obsoleting the following part numbers and does not recommend their use for new designs: HFBR-AHDxxx and HFBR-AHSxxx cable assemblies, the HFBR-4000 connector, the HFBR-3099 mating adapter, and HFBR-0100/0101/0102 connectoring kits. Please contact your local HP components representative for more information.
2. Short term is ≤ 6 hours.
3. Calculations are based on worst case parameters of HP 820 nm and 1300 nm optical components.
4. Recommended connectoring kit: OFTI 400 Series Field Installation Kit.
5. Fixed losses (length independent) apply only to the use of mating adapters in link design calculations. Fixed losses at transmitter/receiver interfaces are included in HP transmitter/receiver optical specifications.
6. Dimensions in millimetres (inches).