

**Fibre Optics - Plastic Systems**

**Polymer Fibre Optic Cable**

**FIBRE DATA**



Single: Dia=1.0 core, 2.2 overall  
Twin: 2 x single cable, welded in figure 8 format.

Acrylic optical cable sheathed with special fluorine containing polymer. Being inexpensive it is ideal for the design and development of short distance transmission links and for the demonstration of fibre optic systems.

The cable is matched for visible red light in the region of 400 - 700nm. The cable has a minimum bend radius of 50mm and may be cut with a hot blade.

Attenuation	150dB/km @ 600nm	Single	FDPF 4001 EH
Operating temperature	-30°C to +80°C	Twin	FDPF 4002 EH

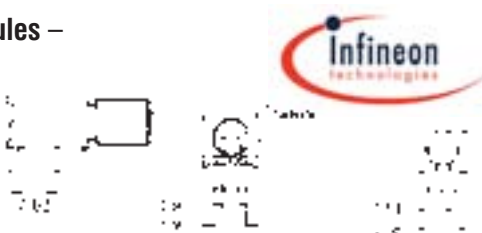
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	Order Code	1+	5+	10+
<b>20m Coils</b>				
Single	120-8838	2,492.00	2,205.00	2,006.00
Twin	120-8837	4,357.00	2,615.00	2,499.00
<b>100m Coils</b>				
Single	120-8842	8,636.00	7,760.00	7,382.00
Twin	120-8843	16,908.00	15,608.00	14,784.00

**Emitter and Detector Modules – Plastic 1mm Fibre**



H=9.0, W=9.2, D=24.2



Connections	1	2	3
SFH250V	B	C	
SFH350V	B	C	E
SFH551-1-1V	V <sub>cc</sub>	GND	Data

A range of fibre optic emitters and detectors for use in short distance data transmission using 1mm polymer fibre optic cable. The devices are housed in a plastic connector with a mounting screw permanently attached to the thread. This allows easy direct connection to the fibre without stripping the outer sheath. A moulded microlens in each device improves light coupling efficiency to the fibre.

Emitters	SFH450V	SFH765V	Link Performance of Emitters/Detector Pairs
Wavelength	950nm (IR)	660nm (IR)	SFH450V + SFH250V 10m @ 200kBit/sec
Output launch power into 1mm plastic fibre @10mA	90µW	200µW	SFH450V + SFH350V 3m @ 15kBit/sec
Switching time tr, tf	1µs	0.1µs	

**Detectors**

**SFH250V:** PIN photodiode, photocurrent 3µA @ VR=5V (typ), λ =950nm.

**SFH350V:** Phototransistor, photocurrent 0.8mA @ VCE=5V (typ).

**SFH 551/1-1V** Bipolar IC with open-collector, Digital, TTL compatible output. I<sub>o</sub> = 50mA. V<sub>cc</sub> up to 15V

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Mfrs. List No.	Order Code	1+	25+	100+	250+	+
<b>Emitters</b>						
SFH450V	212-787	452.00	361.00	298.00	--	--
SFH756V	881-983	641.00	545.00	513.00	423.00	--
<b>Detectors</b>						
SFH350V	121-9693	418.00	334.00	276.00	--	--
SFH551-1-1V	881-995	600.00	480.00	444.00	396.00	--
SFH250V	121-9692	597.00	478.00	394.00	--	--

**'Versatile Link' Modules – Plastic 1mm fibre**



HFBR4501, HFBR4503, HFBR4506

**Modules**

H=7.7, W=10.2, D=19.6.  
Pin spacing=2.5. Row spacing=7.6.

**Connectors**

Simplex: L=25.4, O/D (plug)=3.8.  
Simplex latching:  
L=33.0, W=8.9, H=8.9, O/D (plug)=3.8  
Duplex: L=38.1, H=5.8  
O/D (plugs)=3.8, spaced 10.2  
Bulkhead feedthrough: L=30, Mtng hole=7.9 dia.

Body colour coding:  
**Transmitters Grey, Receivers Blue.**

**CONNECTIONS: Transmitters:**

1-Anode, 2-Cathode, 3, 4, 5, 8-N.C.

Receivers: (excl. HFBR2523)

1-Vo, 2-Gnd, 3-Vcc, 4-RL, 5, 8-N.C.

HFBR2523 Receiver:

1-Vo, 2-Gnd, 4-Vcc, 3,5,8-N.C.

PIN VIEW



The 'Versatile Link' fibre optic system represents a package improvement over the 'Snap-in' modules detailed below, and are compatible with 'Snap-in' connectors. The 'Versatile Link' system features smaller package size, and includes latching connectors. The module housings interlock for use with two-way 'duplex' connector.

Link performance is guaranteed over ambient temperature range 0°C to 70°C. The receivers have logic compatible output levels and have high noise immunity.

The connectors are for terminating 1mm plastic optical cable. A suitable crimp tool is available.

Transmitter Drive Current	60mA	Receiver Supply Voltage	+5V
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Guaranteed link length for transmitter/receiver pairs:

HFBR-1521/2521	12m @ 5MBd
HFBR-1522/2522	24m @ 1MBd
HFBR1523/2523	8m @ 40kD (for low current I <sub>FPK(T+R)</sub> = 6mA)
	60m @ 40kD (for extended distance I <sub>FPK(T)</sub> = 60mA)
HFBR-1524/2524	5m @ 1MBd

The polishing kit consists of a polishing fixture (which can be used to polish fibres in a 'duplex' connector or two 'simplex' connectors simultaneously), 600 grit abrasive paper and 3µm lapping film.

Mfrs. List No. 249-476=HFBR-4597 (Hewlett Packard), 264-982=HTX-LWL (Weidmuller Klippon)

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	Mfrs. List No.	Order Code	1+	10+	100+
<b>Transmitters</b>	HFBR-1521Z	117-3128	763.00	676.00	462.00
<b>Transmitters</b>	HFBR-1522Z	117-3129	763.00	676.00	462.00
<b>Transmitters</b>	HFBR-1523Z	117-3126	787.00	678.00	476.00
<b>Transmitters</b>	HFBR-1524Z	117-3130	763.00	676.00	462.00
<b>Transmitters</b>	HFBR-2521Z	117-3131	763.00	676.00	462.00
<b>Transmitters</b>	HFBR-2522Z	117-3132	763.00	676.00	462.00
<b>Transmitters</b>	HFBR-2523Z	117-3127	800.00	689.00	484.00
<b>Transmitters</b>	HFBR-2524Z	117-3134	763.00	676.00	462.00
<b>Connectors</b>					
Simplex (grey)	HFBR-4501Z	117-3135	70.00	59.00	41.00
Simplex (blue)	HFBR-4511Z	117-3136	70.00	59.00	41.00
Simplex, latching (grey)	HFBR-4503Z	117-3137	61.00	52.00	35.00
Simplex, latching (blue)	HFBR-4513Z	117-3138	61.00	52.00	35.00
Duplex (white)	HFBR-4506Z	117-3139	120.00	102.00	70.00
Bulkhead Feedthrough (grey)	HFBR-4505Z	117-3140	105.00	89.00	61.00
Bulkhead Feedthrough (blue)	HFBR-4515Z	117-3141	105.00	89.00	61.00
Polishing Kit	HFBR-4593Z	117-3142	414.00	350.00	240.00
Crimp Tool	HFBR4597	249-476	18,812.00	--	--

**Fibre Optics - Glass Systems**

**High Speed ST® Modules**



ST Port Bottom View

Body: H=10.2, W=12.7, D=12.7

Pin/row spacing=2.5

Port colour coding:

Transmitter Light Grey

Receiver Dark Grey

Connections:

HFBR1412/4: Pins 2, 6, 7 - Anode, 3 - Cathode

HFBR2412: Pins 3, 7 - Common, 2 - Vcc, 6 Data

HFBR2414: Pins 3, 7 - Common, 2 - Signal, 6 - Vcc

Other pins - no connection

Miniature bayonet coupled transmitter and receiver modules for high performance links up to 4Km, and data rates up to 30 MBd. Auto-insertable and wave-solderable.

Transmitter	HFBR-1412	HFBR-1412	HFBR14-14	HFBR14-14
Coupled Optical Power (dBm)	-6.5	-12.0	-12.0	-16.5
Cable Size (µm)	200 PCS	100/140	62.5/125	50/125

Receiver		Sensitivity (dBm)			
HFBR2412	Logic IC	-24.5	5MBd/3.5Km	5MBd/4.1Km	5MBd/4.7Km
HFBR2412	PIN	-36	5MBd/5.6Km	5MBd/7.3Km	5MBd/8.6Km
HFBR2412	PIN	-33	30MBd/600m	30MBd/3.0Km	30MBd/4.0Km

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	Mfrs. List No.	Order Code	1+	10+	100+
Standard transmitter	HFBR-1412Z	117-3153	1,493.00	1,287.00	887.00
High power transmitter	HFBR-1414Z	117-3164	1,493.00	1,287.00	887.00
5MBd TTL receiver	HFBR-2412Z	117-3168	1,493.00	1,287.00	887.00
25MHz analogue receiver	HFBR-2414Z	117-3171	1,493.00	1,287.00	887.00
125MHz analogue receiver	HFBR-2416Z	117-3150	1,493.00	1,287.00	887.00