

In-Line Fixed Fiber Attenuator

from 0dB to 20 dB at intervals of 0.5 dB attenuation level, up to 30W

Bidirectional



DATASHEET

[Return to the Webpage](#)



Features

- Low Insertion Loss
- High PER
- High Return Loss
- High Stability & Reliability

Applications

- Optical Power Control
- Optical Power Equalization
- Telecommunication Systems
- WDM Systems
- Fiber Optic Instruments

The ILFA In-Line Fixed Attenuators provide precise, repeatable optical power setpoints using a fused pass-through fiber design for high reliability, suitable for airborne and space use. Standard attenuation values span 0–20 dB in 0.5 dB steps. For high-power applications, a three-port variant routes rejected power into a dedicated dump fiber for safe dissipation. Custom configurations are available, including connector and end-face options and polarization-maintaining Panda fibers (PM780-HP, PM980, PM1550, PM1950).

Specifications

Parameter		Min	Typical	Max	Unit
Center Wavelength		780, 830, 980, 1064, 1310~2000			nm
Operating Wavelength	780, 830, 980, 1064 nm		±10		nm
	1310~2000 nm		±20		
Return loss		50			dB
Power Handling				500	mW
Tensile Load				5	N
Operating temperature		-40		80	°C
Operating temperature		-40		85	°C
Dimensions		3.0x54(for bare fiber/0.9mm tube) 90x20x10(for 2.0mm/3.0mm tube)			mm

Attenuate Value and Its Tolerance & PDL

Attenuate Value (dB)	IL Tolerance (dB)		Min. PER (dB)			
	Premium	A grade	780nm, 830nm, 980nm, 1064nm		1310-2000nm	
			Premium	A grade	Premium	A grade
1	± 0.1	± 0.2	20	18	20	18
2	± 0.2	± 0.3	20	18	20	18
3	± 0.3	± 0.4	20	18	20	18
5	± 0.7	± 0.8	20	18	20	18
10	± 1.0	± 1.2	20	18	20	18
15	± 1.8	± 2.2	20	18	20	18
20	± 2.5	± 3.0	18	15	18	15

Notes:

[1]. Above specifications are for device without connector.

[2]. For devices with connectors, IL will be 0.3dB higher, RL will be 5dB lower. The default connector key is aligned to slow axis. Power transmits through the connector less than 2W.

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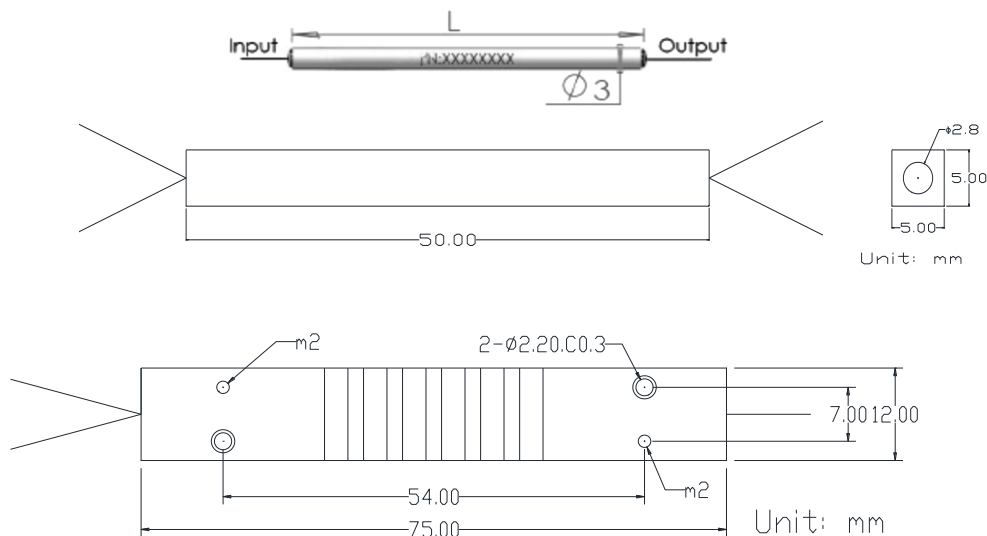
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Mechanical Dimension (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information (Part Number)

Prefix	Wavelength	Attenuation	Optical Power	Fiber Type	Package	Fiber Buffer	Fiber Length	Connector ^[1]	Space Application *
ILFA-	780nm = 7 830nm = 8 980nm = 9 1060nm = 1 1310nm = 3 1410nm = 4 1550nm = 5 1990nm = 9 2000nm = 2 Special = 0	1dB = 1 2dB = 2 3dB = 3 5dB = 5 10dB = A 15dB = B 20dB = C Special = 0	0.5W = 1 1W = 2 5W = 3 10W = 4 20W = 5 30W = 6 Special = 0	Select below Special = 00	3x54 Tube = 1 Special = 0	0.9mm Tube = 3 Bare Fiber = 1 Special = 0	1.0 m = 1 0.5 m = 2 Special = 0	FC/APC = 3 FC/PC = 2 Special = 0	Non = 1 Yes = S

* No rubber boot, hydel loose tube at the exits, vacuum tested

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

Fiber Type Selection Table:

01	SMF-28	34	PM1550	71	MM 50/125µm
02	SMF-28e	35	PM1950	72	MM 62.5µm
03	Corning XB	36	PM1310	73	105/125µm
04	SM450	37	PM400	74	FG105LCA
05	SM1950	38	PM480	75	FG50LGA
06	SM600	39	PM630	76	STP 50/125
07	780HP	40	PM850	77	IRZS23
08	SM800	41	PM980	78	IRZS32
09	SM980	42	PM780	79	PLMA 10/125
10	Hi1060	43			
11	SM400	44	PM405		
12		45	PM460		
13		46			