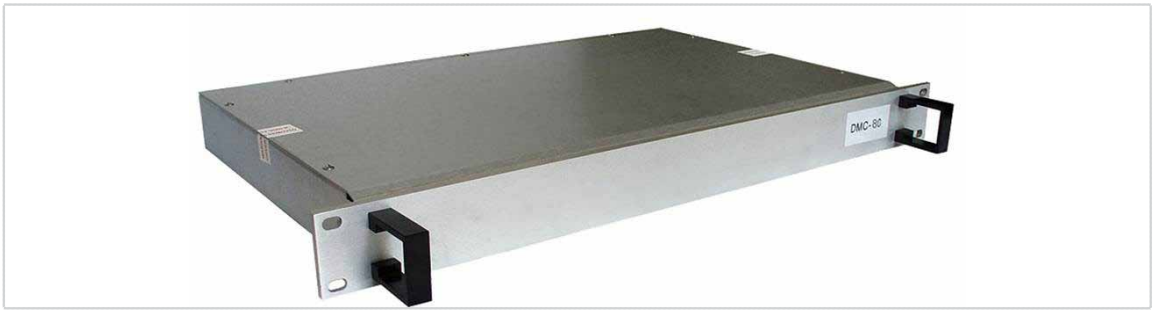
A-GEAR World Wide Manufacturing

Technical index

DMC-F series

Dispersion compensator



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1. Product Description

ITU G.652 standard single mode fiber (SMF-28). It has dispersion at 1550nm (C-Band). Dispersion typical data is 17ps/nm•Km. It limits 1550nm optical fiber system transmission distance and bandwidth. 2.5Gb/s optical fiber system, transmission distance>100Km, because of the dispersion influence, it will lead to the high error rate. CATV optical fiber system, transmission distance>100Km. It also lead to CSO deterioration, so that 550, 862MHz can not realize digital CATV transmission.
There are many ways of Optical fiber dispersion compensation. It has already proved that it is the simple, economic, effective method if you adopt dispersion compensation module (DCM, DCF). It is not only can compensate standard single mode optical fiber extra dispersion effectively, but also can 100% compensate standard single mode chromatic dispersion gradient.
DMC-FC dispersion compensation optical fiber module is based on negative dispersion compensation optical fiber technology. It can compensate standard single mode optical fiber of 1525~1565nm effectively 1525~1565nm to fit for its dispersion feature and slope characteristic.

2. Product Feature

- Adapt to standard single mode optical fiber SMF-28 (ITU G.652), 1525~1565nm transmission channel
- Excellent dispersion compensation feature can eliminate the influence to system's index, because of residual dispersion.
- 1525~1565nm transmission channel. 100% dispersion slope compensation.
- Dispersion compensation value range is 10~120Km optional.
- Low insert loss, low polarized mode dispersion.
- Excellent performance price ratio.

3. Main Application

- ITU G.652 standard single mode optical fiber (SMF-28), 1525~1565nm wavelength range dispersion and slope compensation.
- Long distance, over length optical fiber link.
- DWDM system
- 10Gb/s, 40Gb/s high-speed optical fiber communication system.
- CATV over length trunk line.
- Satellite, microwave long distance optical fiber link.

4. Technical Index

Feature		Units	Index Min.	Index Typ.	Index Max.	Supplement
Working wavelength		(nm)	1525		1565	
Through power		(dBm)	30			
Effectivity area		(μm2)		20		
Nonlinearity (n2/Aeff)		(W-1)		1.4×10-9		
SBS threshold		(dBm)	+6			
Optical fiber connector				SC/APC, FC/APC		SC/PC
Return loss		(dB)			-45	
Compensated optical fiber length		(Km)		10		DMC-FC10
				20		DMC-FC20
				40		DMC-FC40
				60		DMC-FC60
				80		DMC-FC80
				100		DMC-FC100
				110		DMC-FC110
				120		DMC-FC120
Dispersion value	1525 nm	(ps/nm)	-159		-145	DMC-FC10
			-315		-293	DMC-FC20
			-629		-588	DMC-FC40
			-942		-883	DMC-FC60
			-1251		-1183	DMC-FC80
			-1560		-1482	DMC-FC100
			-1868		-1782	DMC-FC120
	1545 nm	(ps/nm)	-170		-158	DMC-FC10
			-337		-319	DMC-FC20
			-673		-640	DMC-FC40
			-1009		-960	DMC-FC60
			-1340		-1280	DMC-FC80
			-1671		-1611	DMC-FC100
			-2001		-1937	DMC-FC120

Feature		Units	Index			Supplement
			Min.	Typ.	Max.	
Dispersion value	1565 nm	(ps/nm)	-184		-168	DMC-FC10
			-364		-340	DMC-FC20
			-727		-682	DMC-FC40
			-1090		-1024	DMC-FC60
			-1448		-1371	DMC-FC80
			-1805		-1718	DMC-FC100
			-2162		-2066	DMC-FC120
1525~1565nm optical fiber insert loss (no including two connectors' loss		(dB)		1.2	2.1	DMC-FC10
				1.8	2.7	DMC-FC20
				3.2	4.1	DMC-FC40
				4.5	5.5	DMC-FC60
				6.0	6.9	DMC-FC80
				7.4	8.4	DMC-FC100
				8.8	9.8	DMC-FC120
Residual dispersion slope		(nm-1)	0.00299	0.00360	0.00421	
Polarization dependence loss (PDL)		(dB)		0.1		
1530nm~1565nm wavelength dependence loss (WDL)		(dB)			0.5	DMC-FC10
					0.6	DMC-FC20
					0.6	DMC-FC40
					0.7	DMC-FC60
					0.8	DMC-FC80
					0.8	DMC-FC100
					0.9	DMC-FC120
Polarized mode dispersion (PMD)		(ps)		0.1	0.3	DMC-FC10
				0.2	0.4	DMC-FC20
				0.2	0.5	DMC-FC40
				0.2	0.6	DMC-FC60
				0.3	0.7	DMC-FC80
				0.3	0.8	DMC-FC100
				0.3	0.8	DMC-FC120

Feature	Units	Index			Supplement
		Min.	Typ.	Max.	
Dispersion optical fiber length	(Km)	0.85	1.0	1.2	DMC-FC10
		1.7	2.0	2.4	DMC-FC20
		3.5	4.1	4.8	DMC-FC40
		5.2	6.1	7.2	DMC-FC60
		7.0	8.1	9.6	DMC-FC80
		8.5	10.2	11.5	DMC-FC100
		10.2	12.3	13.8	DMC-FC120
Work Temp.	(℃)	-5		+70	
Store Temp.	(℃)	-40		+85	
Work humidity	(%)	0		85	
Store humidity	(%)	0		85	
Size	(mm)	483 × 279 × 44			(W) × (D) × (H)

5. Product Series

Name	Model number	Compensate optical fiber length (Km)	Dispersion value 1545nm (ps/nm)	Polarize mode dispersion(ps)	Insert loss (dB)
Dispersion compensator	DMC-FC10	10	-170	0.1	1.2
	DMC-FC20	20	-337	0.2	1.8
	DMC-FC40	40	-673	0.2	3.2
	DMC-FC60	60	-1009	0.2	4.5
	DMC-FC80	80	-1340	0.3	6.0
	DMC-FC100	100	-1671	0.3	7.4
	DMC-FC120	120	-2001	0.3	8.8

6. Model explanation

DMC – F C □□ – 1U – F / SA

Product series	Fiber		Wavelength		Compensating fiber length		Exterior		Optical port position		Connector	
Dispersion compensator module	F	G6.52 standard single mode fiber	C	C-Band 1525~1565nm	10	10Km	1U	19" 1RU	F	Front panel	FA	FC/APC
					20	20Km	2U	19" 2RU	B	Back panel	FP	FC/UPC
					40	40Km	3D	Desk-type 12.4 x 15.4 x 5.8			SA	SC/APC
					60	60Km					SP	SC/UPC
					80	80Km	ML	Modulator			LA	LC/APC
					100	100Km	OEM	Appearance user customized			LP	LC/UPC
					120	120Km						