

SUNDCM

1.0 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.

DCM-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.

2.0 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.

3.0 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.

4.0 Technical index

Feature			Index			Supplement
			Min.	Typ.	Max.	
Working wavelength	(nm)		1525		1565	
Through power	(dBm)		30			
Effectivity area	(μm^2)			20		
Nonlinearity (n_2/A_{eff})	(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		DCM-FC10
				20		DCM-FC20
				40		DCM-FC40
				60		DCM-FC60
				80		DCM-FC80
				100		DCM-FC100
				110		DCM-FC110
				120		DCM-FC120
Dispersion value	1525nm	(ps/nm)	-159		-145	DCM-FC10
			-315		-293	DCM-FC20
			-629		-588	DCM-FC40
			-942		-883	DCM-FC60
			-1251		-1183	DCM-FC80
			-1560		-1482	DCM-FC100
			-1868		-1782	DCM-FC120
	1545nm	(ps/nm)	-170		-158	DCM-FC10
			-337		-319	DCM-FC20
			-673		-640	DCM-FC40
			-1009		-960	DCM-FC60
			-1340		-1280	DCM-FC80
			-1671		-1611	DCM-FC100
			-2001		-1937	DCM-FC120
	1565nm	(ps/nm)	-184		-168	DCM-FC10
			-364		-340	DCM-FC20
			-727		-682	DCM-FC40
			-1090		-1024	DCM-FC60
			-1448		-1371	DCM-FC80
			-1805		-1718	DCM-FC100
			-2162		-2066	DCM-FC120
1525~1565nm optical fiber insert loss (no including two connectors' loss)	(dB)			1.2	2.1	DCM-FC10
				1.8	2.7	DCM-FC20
				3.2	4.1	DCM-FC40
				4.5	5.5	DCM-FC60
				6.0	6.9	DCM-FC80
				7.4	8.4	DCM-FC100
				8.8	9.8	DCM-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	DCM-FC10
					0.6	DCM-FC20
					0.6	DCM-FC40
					0.7	DCM-FC60
					0.8	DCM-FC80
					0.8	DCM-FC100
					0.9	DCM-FC120
Polarized mode dispersion (PMD)		(ps)		0.1	0.3	DCM-FC10
				0.2	0.4	DCM-FC20
				0.2	0.5	DCM-FC40
				0.2	0.6	DCM-FC60
				0.3	0.7	DCM-FC80
				0.3	0.8	DCM-FC100
				0.3	0.8	DCM-FC120
Dispersion optical fiber length		(Km)	0.85	1.0	1.2	DCM-FC10
			1.7	2.0	2.4	DCM-FC20
			3.5	4.1	4.8	DCM-FC40
			5.2	6.1	7.2	DCM-FC60
			7.0	8.1	9.6	DCM-FC80
			8.5	10.2	11.5	DCM-FC100
			10.2	12.3	13.8	DCM-FC120
Work Temp.		(°C)	-5		+70	
Store Temp.		(°C)	-40		+85	
Work humidity		(%)	0		85	
Store humidity		(%)	0		85	
Size		(mm)	483×279×44			(W)×(D)×(H)

5.0 Product series

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

6.0 Model explanation

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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						