

Prisma® Dispersion Compensation Module

In digital transport systems, dispersion is a fiber property that causes light pulses to spread. Dispersion limits both the link's bit-rate and the maximum transmission distance that can be achieved through fiber. The Prisma® Dispersion Compensation Module (DCM) contains custom-designed passive fiber optics designed to reverse the effects of dispersion in order to correct the transmitted pulse shape.

An analogous effect occurs in analog transport systems. Here, dispersion also limits the maximum transmission distance by increasing the magnitude of second order impairments (CSO) to the signal. The Prisma Dispersion Compensation Module is designed to reverse the effects of dispersion, reduce the magnitude of the CSO impairment, and restore the ability to transmit over greater distances.

Prisma Dispersion Compensation Modules are designed for single 19-inch 1RU rack mount configurations and are available in a variety of set-ups to accommodate different system needs.

Figure 1. Dispersion Compensation Module



Features

- Provides optimized dispersion compensation across the 1530 nm to 1565 nm wavelength range
- Designed for Analog and Digital transport systems including DWDM, long-haul, and high bit-rate applications
- Fully passive
- Multiple connector options
- 19-inch 1RU rack mountable design

Product Specifications

Table 1. Optical Specifications

Module Type ¹	Dispersion @ 1550 nm [ps/nm]	Max. loss ² @1550 nm [dB]	RDS ³ [nm ⁻¹]	Max. PMD ⁴ [ps]
DCM 20	-340 ± 2%	1.9	0.0015 - 0.0055	0.54
DCM 30	-510 ± 2%	2.4	0.0015 - 0.0056	0.66
DCM 40	-680 ± 2%	2.8	0.0015 - 0.0057	0.76
DCM 50	-850 ± 2%	3.3	0.0015 - 0.0058	0.85
DCM 60	-1020± 2%	3.7	0.0015 - 0.0059	0.93
DCM 70	-1190 ± 2%	4.2	0.0015 - 0.0060	1.01
DCM 80	-1360 ± 2%	4.6	0.0015 - 0.0061	1.08

Table 2. Mechanical Specifications

Description	Units	Value
Physical Dimensions:		
Depth	in.	10.0
	cm	25.4
Width	in.	20.5
	cm	52.1
Height	in.	1.70 (1RU)
	cm	4.32
Weight	lbs.	5.0
	kg	2.3

Notes:

- Each DCM is designed to compensate for a specific amount of dispersion. For example, the DCM 20 is designed to compensate for 20 km of dispersion, and the DCM 30 is designed to compensate for 30 km of dispersion.
- Inclusive fiber loss, splice loss and one connector-connector interface loss.
- RDS = Relative Dispersion Slope, dispersion slope divided by dispersion.
- Average Polarization Mode Dispersion (PMD) measured using the interferometric method.

This module is designed to operate up to 24 wavelengths. Applications beyond this will require a unique fiber design to compensate the dispersion over a broad number of wavelengths. Please contact your Applications Engineer for this request.

Ordering Information

Dispersion Compensation Module

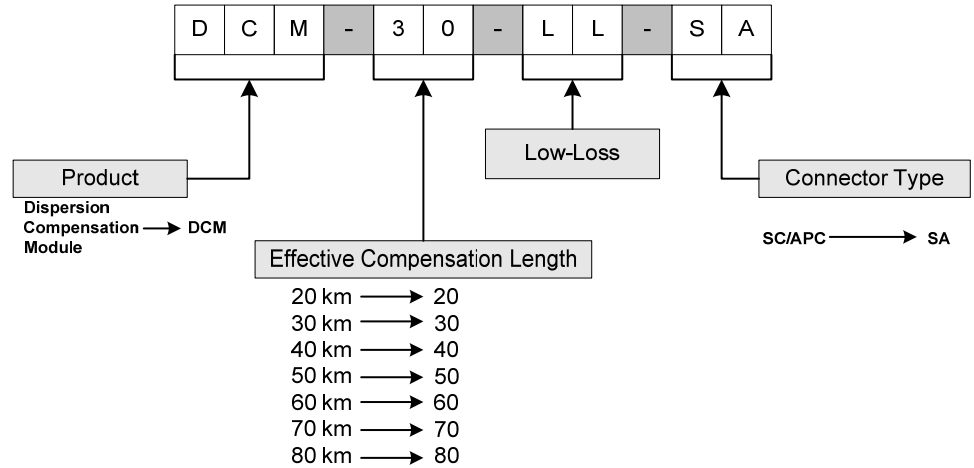


Table 3. Ordering Information

Description	Part Number
DCM-20-LL-SA	4004497
DCM-30-LL-SA	4004498
DCM-40-LL-SA	4004499
DCM-50-LL-SA	4004500
DCM-60-LL-SA	4004669
DCM-70-LL-SA	4004670
DCM-80-LL-SA	4004671



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