XenOpt

X86-DCM FBG

Fiber Bragg Grating Dispersion Compensation Module

Features

- Wide band channelized Dispersion Compensation for DWDM System

- Optimized for G.652 fiber C-Band Slope Compensation

- Low Insertion Loss

- Low Polarization Mode Dispersion

- Performance indicators have passed Telcordia GR-1209-CORE standard authentication

- Reliability exceeds Telcordia GR-1221-CORE standard specification

- Various package styles, connector types and span lengths available

Applications

- G.652 Standard Single-Mode Fiber Long Distance and Metropolitan Area Communication System

- DWDM Transmission System

- CATV System

Description

Fiber Bragg grating dispersion compensation modules (FBG DCM) are used for compensating the chromatic dispersion of a long span of transmission fiber in channelized systems.

Dispersion compensation modules are devices with negative dispersion coefficient. Xenopt DCM modules are optimized to provide dispersion slope compatible with G.652 cable but can still be used with other types of optical cables. Fiber Bragg grating DCM modules are tolerant to high signal levels and can operate with up to 23 dBm of optical power without exhibiting nonlinear effects. These modules provide extremely low latency compared to fiber based DCM modules.

XenOpt provides also a range of fiber based DCM modules and tunable DCM modules that are described in separate data-sheets and provide wide operating bandwidth and precision tuning.

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Environmental Features

Parameter	Min	Max
Operating Temperature Range	-5℃	70℃
Storage Temperature Range	-40℃	85℃
Environment/Reliability Test	Compliance with Telcordia GR-1209 and GR-1221 CORE	

Optical Performance Specifications

Parameter	Description						
Compensation fiber length (km)	10	20	40	60	80	100	120
Wavelength (nm)	C-band: 1530.33 to 1567.13 (C13~C59)						
Central wavelength	ITU-T grid						
Channel spacing (GHz)	100						
Operating bandwidth (GHz)	>35					>30	
First channel dispersion (ps/nm)[2,3]	-157	-313	-626	-940	-1253	-1566	-1879
Last channel dispersion (ps/nm)[2,3]	-178	-356	-712	-1067	-1423	-1779	-2135
Group delay ripple (ps)[2,4]	< 15					< 25	
Dispersion tolerance	< ±10%	< ±5.5%					
Dispersion slope	Matching with G652 fiber						
PMD (ps)	< 1.5						
PDL (dB)	< 0.35						
Insertion loss (dB)[5]	< 3.5						
Insertion loss ripple (dB)	< 0.8 BOL typical value: 0.4						

Notes

1. Insertion loss, Insertion loss ripple, Group delay ripple, PMD and PDL are defined as the average value of operation wavelength range (λITU+/-17.5GHz) centered on ITU-T grid , and these specification are guaranteed within operating temperature range;
2. Modulation frequency: 200 MHz, Laser scan step: 3pm;
3. Obtained from linear fit of the group delay spectrum over operating band;
4. Obtained from the group delay spectrum smoothed over eight points moving window;
5. Insertion loss excludes connectors;

Ordering information

PN	Description
X86-DCM-ddtwgc	DCM FBG, -5℃～+70℃, dd =10, 20, 40, 60, 80, A0 (100 km), C0 (120 km); t = I (circular), O (coupler); w = C (C band), L (L band); g = 1 (100 GHz), 2 (50 GHz); c = L (LC/UPC)

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