

TUNABLE OPTICAL DISPERSION COMPENSATOR MODULES

Enablence's Tunable Optical Dispersion Compensator ("TODC") provides a single planar lightwave circuit (PLC) chip solution for multiple-channel or single channel tunable dispersion compensation for 10 Gb/s AND 40 Gb/s systems. The device is based on PLC Mach-Zehnder interferometry. The device automatically compensates chromatic dispersion for all channels in a multiplex up to ± 2100 ps/nm. .



BENEFITS

- Custom dispersion and bandwidth designs
- RS-232, I²C, or DPRAM interface

FEATURES

- Multi-channel colorless ITU grid operation
- C-, L-, and S-Band
- Colorless single channel
- ± 2100 ps/nm dispersion tuning
- "Turn off" Functionality
- Flat Transmissivity
- Zero Group Delay
- Low Insertion loss, tuning power, and polarization dependence
- T_{ed} packaging techniques

APPLICATIONS

- Dynamic compensation for 10G/40G Systems
- Multi- or single channel compensation for:
 - Long Haul/Ultra Long Haul DWDM
 - Metro DWDM
 - Submarine DWDM

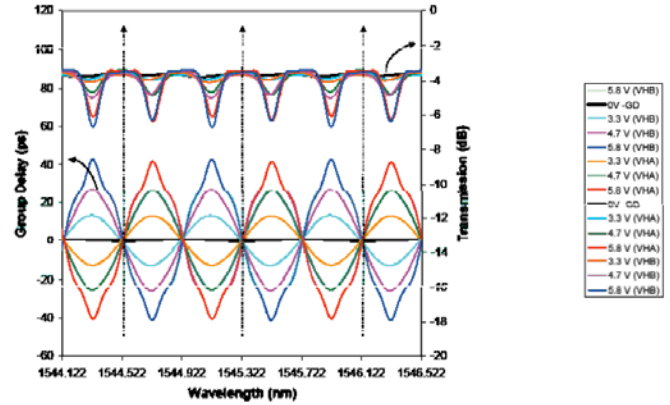
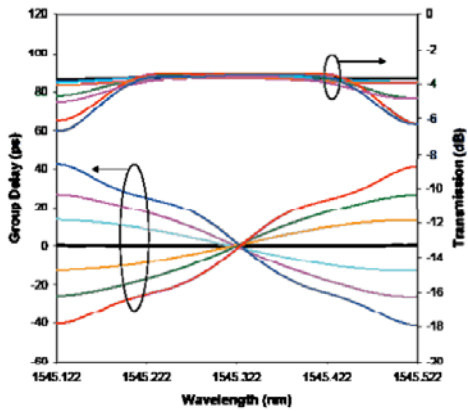
[DATA SHEET](#)

Models are available for 10G and 40G DWDM transmission. Compensation is equal for all channels in the transmission band and offers colorless operation across the C, S and L bands. Packaging is highly compact, rugged, requires no moving parts and is non-hermetic. An optical electronic control board is integrated inside the package.

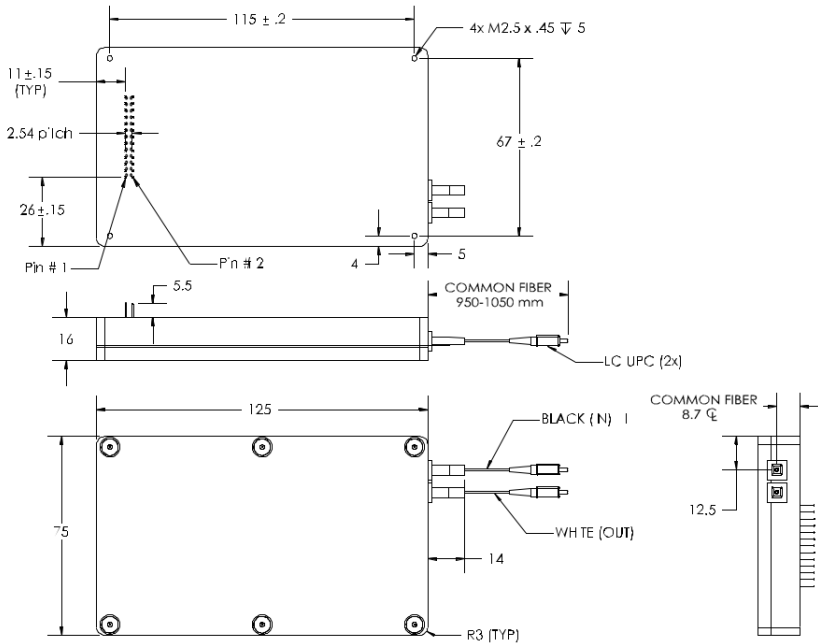
SPECIFICATIONS

Parameters	Symbol	10 Gb/s AP-TODC-10G-T	40 Gb/s AP-TODC-40G-T	Unit	Conditions
Conditions					
Center Wavelength	λ_0 N	C-, L-, S-bands, or custom		nm	Multi-channel WDM ITU grid, or colorless single-channel
Channel Spacing ⁽¹⁾	CS	100	100	GHz	
Number of Channels	N	Up to 80			
Insertion Loss	IL			dB	per
Insertion Loss Variation				dB	Across the entire band
Transmission bandwidth (1 dB below peak) ⁽²⁾	$f_{1\text{dB}}$	11		GHz	At max dispersion setting (the worst case)
		nite	nite	GHz	At 50% or less percentage of the max dispersion setting
Transmission bandwidth (3 dB below peak) ⁽²⁾	$f_{3\text{dB}}$	nite ⁽³⁾	nite		At max dispersion setting (the worst case)
Dispersion Bandwidth for GDR	f			GHz	At max dispersion setting (the worst case)
Dispersion Tuning Range	CD	-2100 TO 2100	-220 TO 220	ps/nm	
Tuning Resolution	Res	20	10	ps/nm	
Polarization Dependent Loss	PDL			dB	
Polarization Mode Dispersion	PMD			ps	
Max. Input Power	P	27		dBm	
Return Loss	RL	45		dB	
Conditions					
Package Dimensions		125 x 75 x 16		mm	
Pigtail Fiber Numbers		2	2		
Conditions					
Tuning control		RS-232, or analog voltage drive			Electrical board integrated inside the module
Tuning Voltage	H_V	+7		V	
Total Power Consumption	P_C	< 10		W	Worst-case (@ -5C ambient)
Tuning Speed	T	10		msec	Very fast tuning

MEASURED TRANSMISSION SPECTRA AND GROUP DELAY CHARACTERISTICS



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