

TeraXion's offering for R&D Labs and manufacturing environments

Chromatic Dispersion Emulators for direct & coherent detection transponder assembly testing and R&D labs

TUNABLE EMULATOR FOR DIRECT DETECTION - 2,5; 10 and 40 Gb/s

The [ClearSpectrum™ - TDCMB](#) is a tunable, fully integrated benchtop module that provides accurate dynamic control of chromatic dispersion for any channel in high-speed communication networks. Perfectly suited for labs and manufacturing environments, it offers flexibility and precision in order to accurately emulate or compensate dispersion on any channel regardless of the channel plan. Available in a compact benchtop or rackmount version it can emulate and compensate dispersion for the equivalent of hundreds of kilometers of SMF with 5 ps/nm steps making it an ideal solution for 2,5; 10 and 40 Gb/s transponder assembly testing.

ClearSpectrum™-TDCMB main specifications

Dispersion Level	$\pm 1,600$ ps/nm	+ 2,400 - 0 ps/nm	$\pm 2,000$ ps/nm
Operation Bandwidth	> 45 GHz	> 45 GHz	> 35 GHz
Channel Spacing ¹	continuous	100 GHz ²	continuous
Insertion Loss	< 9 dB		

(1): C or L band

(2): 50 GHz option available with >25 GHz OBW



ClearSpectrum™-TDCMB

HIGH LEVEL PASSIVE EMULATOR FOR COHERENT DETECTION - 40 and 100 Gb/s

The [ClearSpectrum™-CDE](#) is a passive chromatic dispersion emulator designed to emulate tens of thousands of picoseconds per nanometer in a compact 1U half 19-inch unit while maintaining a very low insertion loss. Commonly used to emulate a long haul dispersion level of 45,000 ps/nm (~2700 km of SMF) for 40 & 100 Gb/s coherent detection applications, it can be cascaded several times to achieve dispersion levels as high as transpacific links (180,000 ps/nm) with a granularity of 3,333 ps/nm. Dealing with thousands of kilometers of fiber is not an easy task. Compared with SMF fiber spools, the CDE is compact (20x smaller) and offers ultra-low-loss (10x lower).

ClearSpectrum™-CDE main specifications

Dispersion Level	+ 15,000 ps/nm	+ 30,000 ps/nm	+ 45,000 ps/nm
Operation Bandwidth	> 50 GHz		
Channel Spacing ¹	100 GHz		
Insertion Loss ²	< 18 dB	< 36 dB	< 54 dB

(1): C or L band

(2): Multiple outputs available



ClearSpectrum™-CDE

You can get more info about this product by reading this [white paper](#).

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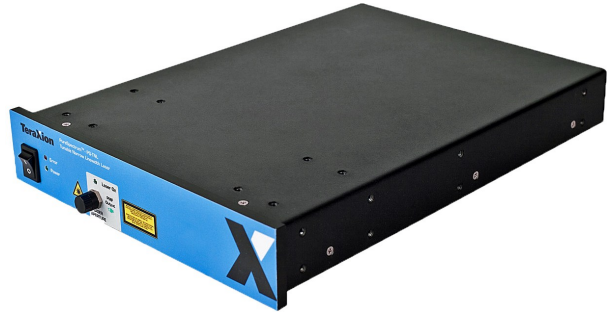
LOW-NOISE AND NARROW-LINEWIDTH TUNABLE LASER enhances phase-noise limited coherent systems

The **PureSpectrum™-TNL** is an ITLA-based tunable laser combined with a unique multi-channel FBG filter used to lower the laser high-frequency phase noise. This R&D lab instrument offers a frequency noise lower than $100 \text{ Hz}^2/\text{Hz}$ at frequencies above 200 MHz, which translates into a narrow linewidth below 1 kHz. It can deliver up to 10 dBm of optical power for any channel in the C-band and also comes with an optional VOA. The **PureSpectrum™-TNL** is the perfect instrument for coherent communication research activities when your coherent system is limited by phase-noise. Whether for 100 Gb/s, 400 Gb/s or 1 Tb/s using DP-QPSK or n-QAM modulation formats, our instrument used as a transmission laser or as a local oscillator will definitely enhance system performance.

PureSpectrum™-TNL main specifications

Linewidth	< 1 kHz
Frequency Noise (> 200 MHz)	< $100 \text{ Hz}^2/\text{Hz}$
Output Power	10 dBm

You can get more info about this product by reading this [white paper](#).



PureSpectrum™-TNL

NARROW TUNABLE FILTER for lab use requiring excellent optical isolation

The **TFC** is a narrowband optical filter offering wavelength tunability over the entire C-band. Based on TeraXion's FBG filter expertise and combined with our reliable wavelength tuning platform, this optical filter module offers a narrow and sharp transmission window which provides outstanding channel isolation. The **TFC** is a useful lab instrument for applications requiring precise wavelength filtering such as signal tracking or noise filtering. Even advanced high-speed communication research benefits from this filter module as it allows the user to precisely recover specific carriers or sub-carriers for signal data processing.

TFC main specifications

Wavelength Range	1530 to 1568 nm
Bandwidth	8 GHz
Isolation at 25 GHz	> 40 dB



TFC

Please visit TeraXion's web site at www.teraxion.com for more information, or contact us at info@teraxion.com

About TeraXion

TeraXion is a leading-edge photonic solutions provider for high-end applications of the optical communications, industrial lasers and optical sensing markets. Its line of OEM chromatic dispersion management solutions includes Telcordia-qualified low-loss static and tunable dispersion compensators for terrestrial and submarine networks. TeraXion offers customized filtering solutions based on advanced FBG technology and narrow linewidth semiconductor laser sources for RF photonic and coherent detection systems.

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