

TeraXion

An Indie Semiconductor Company

ClearSpectrum™

CDE Chromatic Dispersion Emulator



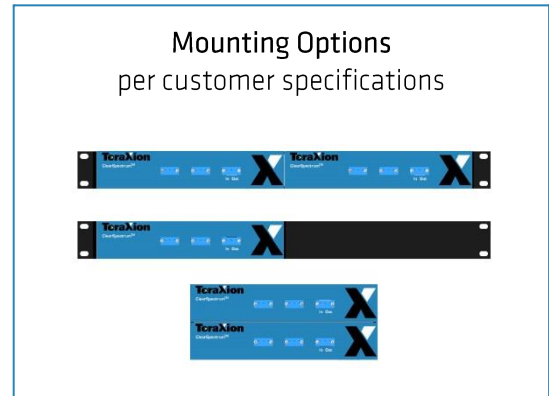
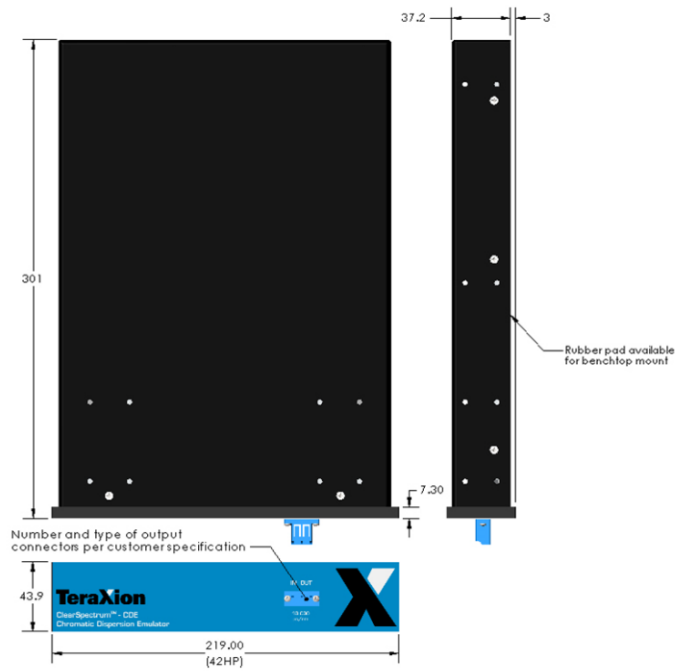
The ClearSpectrum™ CDE is an ultra-compact chromatic dispersion emulator that uses TeraXion's fiber Bragg grating (FBG) technology to emulate the chromatic dispersion of hundreds or thousands of kilometers of fiber within the volume of a single half 1U 19-inch rack module. The modules have ultra-low insertion loss and can be cascaded several times to emulate hundreds of thousands of picoseconds per nanometer of dispersion with no external power required.

TeraXion has developed the ClearSpectrum™ CDE as a space-saving and cost effective solution for researchers who need to emulate the chromatic dispersion of hundreds or even thousands of kilometers of fiber. The ultra-low insertion loss also reduces the number of amplifiers required for long-haul emulation, trimming expenses while saving laboratory space.

Top 5 Features

- **Low Insertion Loss:** The ClearSpectrum™ CDE significantly reduces the accumulated insertion loss caused by hundreds or thousands of kilometers of transport fiber, thus reducing the number of amplifiers needed when emulating very long fiber links.
- **Cost-Effective:** The ClearSpectrum™ CDE eliminates the cost of purchasing and storing large fiber spools and reduces the number of amplifiers needed for long-haul transmission emulation.
- **Wide bandwidth:** The CDE supports bandwidths as high as 350 GHz.
- **Massive Dispersion Levels:** Dispersion emulation as high as 45,000 ps/nm per module. The CDE modules can be cascaded to emulate submarine networks dispersion levels.
- **Ultra-Compact:** The ClearSpectrum™ CDE is available as either half 1U 19-inch rack-mountable or benchtop modules.

Module Dimensions



Single-Channel Wide-Bandwidth Chromatic Dispersion Emulator for DSP and Transponder Testing

General Specifications

Parameters		Units
Channel Wavelength ⁽¹⁾	Any wavelength on the C-band	
Operation Bandwidth	350	GHz

(1) L-Band available upon request

10 000 ps/nm Double-Output CDE

Parameters	Output A	Outputs A+B	Units
Dispersion Emulation Level	5 000	10 000	ps/nm
Dispersion Accuracy	≤ 3	≤ 2	%
Insertion Loss	≤ 4	≤ 7	dB

15 000 ps/nm Single-Output CDE

Parameters		Units
Dispersion Emulation Level	15 000	ps/nm
Dispersion Accuracy	≤ 2	%
Insertion Loss	≤ 10	dB

Multi-Channel Chromatic Dispersion Emulator for DSP and Transponder Testing

General Specifications

Parameters	Units
1 st Channel	196.3 THz
Last Channel	191.3 THz
Operation Bandwidth	50 GHz

100 GHz Channel Grid / 3-output CDE

Parameters	DCML-C0100+10000 10 000 ps/nm ⁽¹⁾			DCML-C0100+30000 30 000 ps/nm			DCML-C0100+45000 45 000 ps/nm			Units
	A	A+B	A+B+C	A	A+B	A+B+C	A	A+B	A+B+C	
Dispersion Emulation Level	3 333	6 666	10 000	10 000	20 000	30 000	15 000	30 000	45 000	ps/nm
Dispersion Accuracy	3	3	3	3	2	2	3	2	2	%
Insertion Loss	5	9	12	12	24	36	16	32	48	dB

(1) Single output at 10 000 ps/nm available on DCML-C0100+10000

200 GHz Channel Grid ⁽¹⁾ / 3-output CDE

Parameters	DCML-C2200+10000 10 000 ps/nm ⁽²⁾			DCML-C2200+30000 30 000 ps/nm			DCML-C2200+45000 45 000 ps/nm			Units
	A	A+B	A+B+C	A	A+B	A+B+C	A	A+B	A+B+C	
Dispersion Emulation Level	3 333	6 666	10 000	10 000	20 000	30 000	15 000	30 000	45 000	ps/nm
Dispersion Accuracy	3	3	3	3	2	2	3	2	2	%
Insertion Loss	5	9	12	12	24	36	16	32	48	dB

(1) Choice of odd or even channels

(2) Single output at 10 000 ps/nm available on DCML-C22000+10000

Environmental and Mechanical Specifications

Parameters		Units
Operating temperature ⁽¹⁾	10 to 40	°C
Storage temperature	-40 to 85	°C
Output connector ⁽²⁾	LC-UPC	GHz
Component dimensions	Standard 1U for half 19-inch rack	
Mounting options for single unit ⁽³⁾	Bench-top or rack-mount brackets	
Mounting options for multiple units ⁽³⁾	Bench-top stacking brackets or side-by-side 1U rack-mount brackets	
RoHS compliant	Yes	

(1) -5 °C to 70 °C

(2) Other connectors available upon request

(3) Mechanical drawing available upon request

Ordering information

For orders, questions, specific requirements or to learn more about TeraXion's products, contact us at info@teraxion.com

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