CD500 Chromatic Dispersion & PMD measurement system

NEW

Continued innovation and investment at ***PE.fiberoptics*** has yielded yet another major improvement in the series of CD and PMD measurement systems that began with the CD3 and happily continues with the CD500-PMD.

New from-the-ground-up DSP and detection technology reduces measurement noise and greatly improves measurement speed.

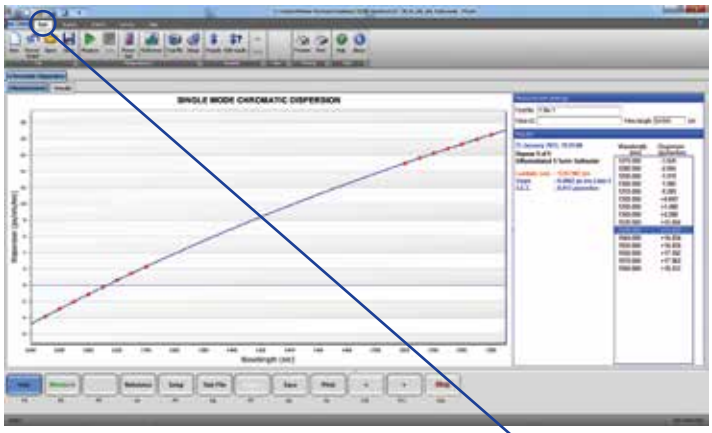
All internal modular subassemblies employ TWI/I²C and RS485 technology, enabling comprehensive control over every aspect of system operation including temperatures, resulting in greatly enhanced stability.

Considerable investment has been made in the programming to control the system. ***PE.fiberoptics***' latest controller package 'PECON' has been built on the Microsoft® .Net Framework which has resulted in an all-new software package that maintains our philosophy of simplicity, stability and user friendliness, whilst adding powerful features such as an all-new Report Designer.

- Chromatic Dispersion by Direct Differential Phase Shift and Phase Shift methods.
- NEW Fastest PMD by Interferometer.
- HIGH SPEED PMD by Fixed Analyzer & FFT
- Fully IEC, TIA and ITU compliant
- Can be configured to measure all fiber types including G652, G655, G657, DCF, doped, PM and multimode.
- Dispersion in as little as 10 seconds
- PMD in as little as 4 seconds
- OTDR Pass through option
- Windows 7 & 10 compatible
- Tunable Laser version measures through amplifiers and ROADMs
- Additional measurement options including Skew, Bend Loss, Spectral Attenuation and others.

PE.fiberoptics

PECON Instrument control software.



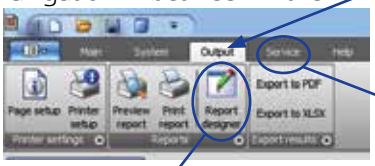
PECON is the name given to a suite of software, designed to support a complete new range of measurement instruments starting with the CD500.

From the beginning, our philosophy has been to keep our product up-to-date with the latest technology whilst still maintaining the ease of use and reliability for which we have come to be known. We believe that with PECON, we have succeeded.

The structure has remained simple, with most common functions being available either from the 12 function keys at the bottom of the screen, or the Ribbon tabs at the top of the screen.

Where possible, menus have been limited to 1 level deep.

Each tabbed Ribbon is configured logically with functions relative to that context being included. Inactive Ribbon tab headers remain visible allowing quick navigation between the different sections.

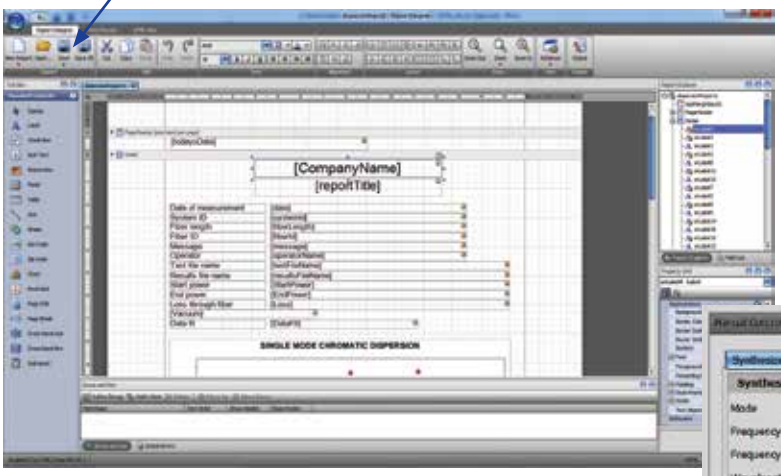


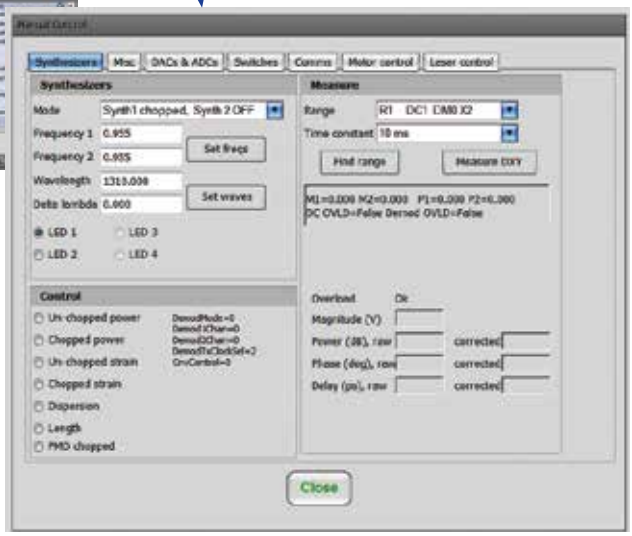
Easily the most significant addition to our control software is the Report Editor.

Located in the 'Output' Ribbon tab, the report designer enables for the first time, user definition of what is reported, how it is reported and the layout of that report.

Once defined, the report can be used for printing, converting to PDF, exporting to Excel or HTML, or saving as text/csv files.

Any number of reports can be stored for use as and when required.



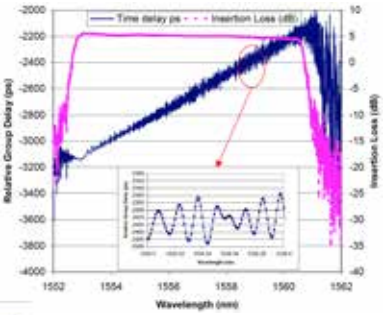


Not to be forgotten is the role of support, and in this regard, the software delivers; access to valuable diagnostic tools in the service menu is available for authorised engineers by means of a password.

Measurement options, add-Ins and system variations

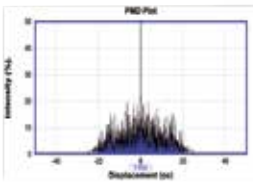
CD500L Tuneable Laser based CD and PMD. *(External Laser)*

The CD500L option brings the ultra-high power and narrow spectral output of tuneable Lasers to the CD500, enabling measurement of fibers and components that require such characteristics. The CD500L measures both passive and active fiber links, with measurement through multiple amplifiers being a standard feature.

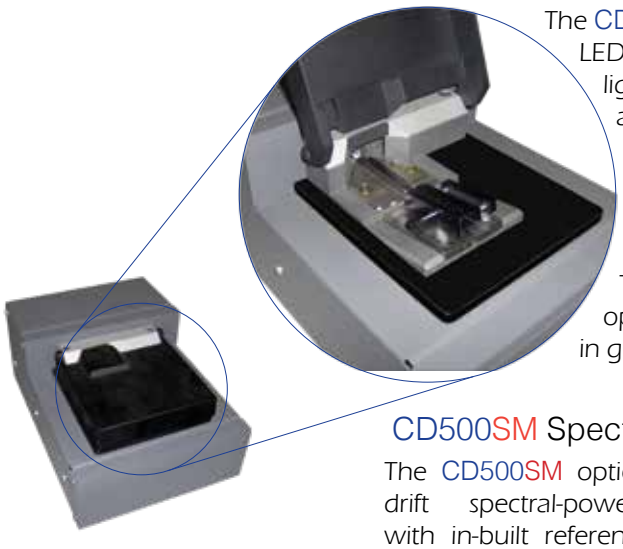


PMD500HS Ultimate PMD system.

The PMD500HS is available as a stand alone PMD system or fully integrated with the CD500 offering both a high speed interferometer combined with the fast fixed analyzer as fitted to the CD500. This combination allows measurement of almost any range of PMD from 0.005ps right up to and beyond 100ps with scans of DGD beyond 300ps available.



CD500SA & CD500LC Spectral Attenuation and Cutoff Wavelength. *(External detector & White Light)*

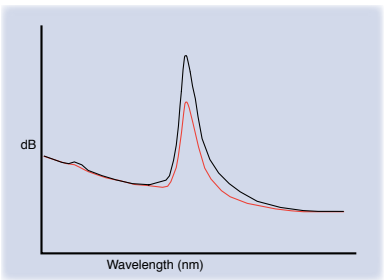


The CD500SA/LC options utilize the ultra-stable and programmable LED sources for Attenuation and an external programmable white light source for Cutoff. The state-of-the-art DSP technology allows very accurate and repeatable attenuation and cutoff measurements on all fiber types, solving some difficult issues that previously existed when measuring very long fibers in addition to solving specific problems with G654 and G657 fibers. Something that alternative systems were unable to do.

The ultra high High NA optics with no adjustment or optimization required allows fast and easy connection, resulting in guaranteed accuracy independent of fiber type.

CD500SM Spectral Loss Monitoring.

The CD500SM option offers a low noise low drift spectral-power measurement facility with in-built referencing to enable long term spectral attenuation change measurements for applications such as Hydrogen aging. This option



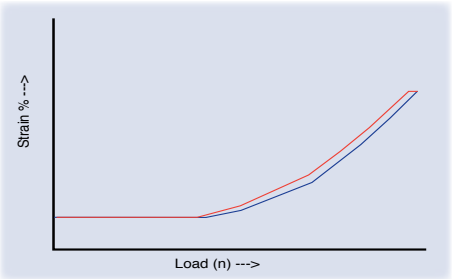
CD516 Multiplexer.

The CD516 options adds a level of automation to everyday testing, allowing measurements to be made on multiple fibers with a single button press.

Measurements that can be automated include Chromatic Dispersion and PMD (CD500), Cable Strain (SPL500), and Spectral Loss Monitoring(CD500SM), Skew(CD509SKW)

CD509 Cable Strain measurement option.

The CD509 option adds a high stability Strain Power and Length measurement facility with in-built referencing to enable real-time monitoring of the physical and optical conditions of the fiber during mechanical and environmental stressing of the cable. The CD509 is also available as a stand alone system SPL500. In addition, Fiber Bend Loss v Wavelength can be performed at any wavelength supported by the purchased system option(CD500BL).



Specifications (Measurement according to applicable TIA/IEC/ITU recommendations.)

Chromatic Dispersion

Spectral Characteristics*	1310 LED	1550 LED	15/16 LED	*Other LEDs available*
Chromatic Dispersion	1250 - 1340	1500 - 1600	1520 to 1630	
Source Spectral width (LED Version)		<4nm		
Source Spectral width (Tuneable Laser Version)		<0.1nm		
Wavelength Step (min) (LED version)		0.001nm		*User definable*
Wavelength Step (min) (Tuneable Laser Version)		0.001nm		*User definable*

Measurement speeds**			
CD (LED version)	10 seconds		*Typical multipoint scan*
CD (Tuneable Laser Version)	30 seconds		*Typical multipoint scan*

Measurement performance***	Repeatability	Accuracy	Measurement Range
Chromatic Dispersion (LED Version)	<0.0075ps/nm.km or <0.08%	<0.05 or 1.5% +/-0.02	*40dB 200km 0 to 3,500ps/nm*
Chromatic Dispersion (Tuneable Laser Version)	0.002ps/nm.km or <0.03%	<0.1 or <1% +/- 0.01	*60dB 300km 0 to 3,500,000ps/nm(250ps/nm.km 120km fiber 10pm steps)*
Lambda Zero (nm)	<0.008	<0.2	
Wavelength (LED Version)	<0.005nm	<0.1nm	
Wavelength (Tuneable Laser Version)	<0.005nm	<0.02nm	
Slope at Lambda zero (ps/nm.km^2)	<0.1%	<1.5%	

Mechanical & Environment	Dimensions	Weight	Operating	Storage
System main unit	43cmx49cmx15cm	15kg	10°c to 35°c 90%RH	-20°c to 55°c 90%RH
PMD interferometer module	Fixed inside main unit	1kg	10°c to 35°c 90%RH	10°c to 35°c 90%RH
optional Tuneable Laser	45cmx37cmx13cm	12.5kg	15°c to 30°c 80%RH	-20°c to 55°c 90%RH

Polarisation Mode Dispersion

Measurement Method	Fixed Analyser	Interferometry	
Measurement range (ps)	0.03 to 1.6 0.005 to 1.6	0.06 to 200	min to max DGD range min range extended when ultralow option icluded.
Wavelengths covered (nm)	1250 to 1650	1310 & 1550	wavelengths available to user specification.
Measurement speeds**	15 seconds	4 seconds	Typical scan times
Repeatability	<0.005ps	<0.01ps	Based on 20 scans of PMD546 0.3ps weak mode coupling artefact calibration artefact
Accuracy/Uncertainty	<0.01 +/- 1% DGD	<0.01 +/- 1% DGD	
	<.02 +/- 2% PMD	<.02 +/- 2% PMD	typical Based on 20 scans of 50km spool G652 fiber on shipping spool.

All specifications are subject to improvement or modification without notice or obligation.

* *The wavelengths ranges mentioned are nominal and measurement outside these ranges is available however the performance specifications may vary.*

** *Measurement speeds quoted represent typical configurations and will vary with test setup.*

*** *Specifications vary dependant on fiber length and type. The values given are for specific tet setups. Please contact your sales agent for more information.*

For specific option specs, please contact your local sales agent.
Please refer to any formal offers for confirmation of specification.

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CD500 series product data sheet issue 1.2.3

This product complies with 21 CFR 1040.10 Class 1 LED product

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