INOMETRIX INC.

Dispersive Virtual Reference™ Analyzer

Characterize your short length optical devices with fast and accurate dispersion measurements

The Dispersive Virtual Reference™ Analyzer is a fast, accurate and economical system for measuring chromatic dispersion in short length optical components and devices. Based on Dispersive Virtual Reference™ Interferometer technology, this new system can be used with Agilent/Keysight Technologies 81600 Series tunable lasers to make a fast and accurate dispersion measurement in a single sweep.

Agilent Technologies
Solutions Partner

Applications:

- Optical component test
- Fiber characterization
- Waveguide measurement
- Nonlinear device test
- Quality Assurance
- Research & Development

Features

- Fast single sweep operation
- Highest accuracy measurements
  - Calibration free
  - Immune to thermal and vibrational effects
- Simple user interface
- Fast set-up and installation

Measurement Capabilities

- Group Delay
- Group Velocity Dispersion
- Dispersion Parameter

Interferometry

For characterizing the dispersion properties of short length optical components, interferometers are traditionally used. Interferometers separate light from a source by splitting it into two paths; a well characterized reference path and a test path with unknown characteristics. When the light beams are brought back together they generate an interference pattern. From this pattern, information can be obtained about the differences between the two paths and used to determine the dispersion in the test path.

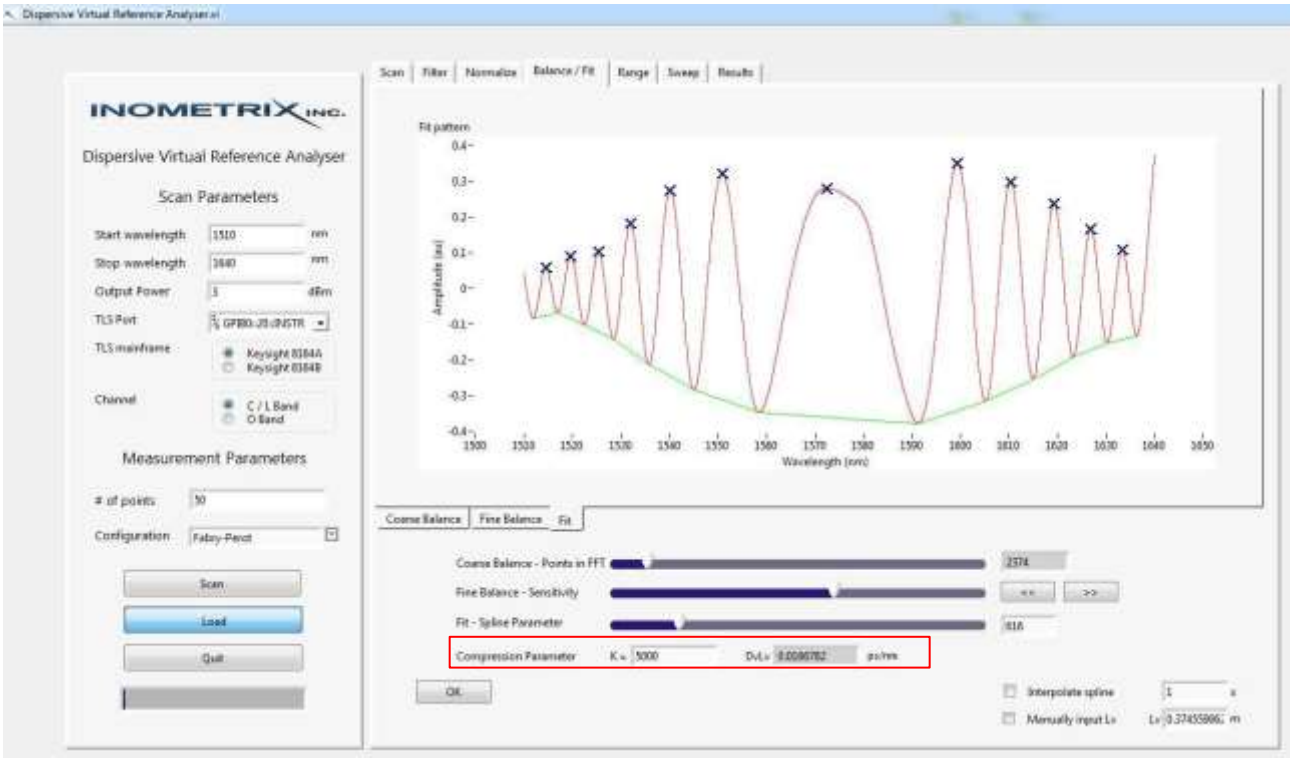
Traditional interferometers are expensive to construct since they require a physical reference path that must be constructed from highly accurate components. The use of a physical reference path also makes them prone to calibration errors and susceptible to thermal and vibrational instabilities. In addition, the approach requires multiple wavelength scans of either the source or the receiver in order to fully characterize a component leading to excessive test times.

By replacing the physical reference with a virtual reference these disadvantages can be overcome, a significant advantage for the characterization of short length optical components.

Inometrix Inc.
Grimsby, ON
Canada

Tel: 647-226-3715 **Email: sales@inometrix.com**

Dispersive Virtual Reference™ Analyzer



Advantages

Traditional interferometers are often used to characterize short length optical components. Because they use a physical reference path, however, they are expensive, error prone and slow. The Virtual Reference Analyzer from Inometrix Inc. uses Dispersive Virtual Reference™ Interferometer technology to replace the physical reference path with a software based 'dispersive virtual' path. This improves the accuracy by eliminating calibration error and making it immune to thermal and vibrational noise. It also allows for single sweep characterization, which significantly reduces test time. In addition, the removal of the physical reference path reduces the overall cost of the test equipment required. The Inometrix Dispersive Virtual Reference™ Analyzer is used in conjunction with the Agilent/Keysight 816XX A/B series tunable lasers which have operating ranges between 1260nm and 1640nm (Contact us for details). The system measures group delay, group velocity dispersion and the dispersion parameter with an accuracy that meets or exceeds the performance of traditional interferometers.

About Us.

Inometrix Inc. manufactures innovative optical solutions for sensing, testing and imaging applications.

More information including users manual and demo videos please visit our website at:

www.inometrix.com

Product specifications and descriptions in this document subject to change without notice.

Ordering Information

For more information on Inometrix products, applications or services please contact sales@inometrix.com or your local distributor.

Inometrix Inc.
Grimsby, ON
Canada

Tel: 647-226-3715 **Email: sales@inometrix.com**

Dispersive Virtual Reference™ Analyzer

Detailed Specifications		
Operating Range		
Wavelength	1260 – 1640 (1)	nm
Operating Modes	Reflection/Transmission	
Measurement Parameters		
Chromatic Dispersion (CD)	< +/- 0.001	ps/nm
Group Delay (GD)	< +/- 0.01	ps
Group Delay Range (FP configuration)	10^{-3} to 4	ns
Group Velocity Dispersion (GVD)	< +/- 0.001	ps^2
Dispersion Parameter (D)	N/A (2)	
Group Velocity (V_G)	N/A (2)	
Group Index (N_G)	N/A (2)	
Measurement Timing		
Typical Measurement Time	< 1	min
Calibration Time	0	min
Measurement Requirements		
Maximum Device Length [typical]	[x + 0.8] (3)	m
Minimum Device Length [typical]	~0.1 mm (4)	m
Hardware Required: Tunable Laser(5)		
Tunable Laser Coherence Length	>30	m
Tunable Laser Resolution	< 1	pm
Tunable Laser Data Point Storage	>=100,000	points
Physical Specifications		
Weight	~15	kg
Size (W x D x H)	17 x 16.5 x 6.5	inches
Power and Frequency		
CPU	>2.93	GHz
DAQ	~40	MHz
Power supply (input)	>700, 110-240, 5-11, 50-60	W, V, A, Hz
Financial Information		
Warranty	12	months
Extended Warranty Option	Available	
Financing Option	Available	

(1) Compatible Laser Sources available in this range from Keysight Technologies
(2) Measurement accuracy is dominated by length measurement accuracy
(3) Where x is an optional reference path length that can be used to extend the maximum measurable device length
(4) Depends on laser source bandwidth and dispersion of the virtual reference
(5) Compatible models: Agilent/Keysight 816XX A/B series Tunable lasers

Inometrix Inc.
Grimsby, ON
Canada

Tel: 647-226-3715 **Email: sales@inometrix.com**