

**Photon Kinetics** Production and Laboratory Products

**Reducing the cost of  
measurements**

[www.pkinetics.com](http://www.pkinetics.com)



## Reducing the Cost of Measurements

For over 20 years, Photon Kinetics has provided the world's leading optical fiber, cable and passive component manufacturers with automated test solutions for virtually every stage of the production process. From optical fiber preform analysis to final quality assurance of fiber cables, these solutions not only address the measurement process, but also many of the time-consuming processes such as test sample handling and data networking. Comprehensive test solutions enable our customers to obtain the highest quality measurement results in the shortest amount of time. Reductions in overall measurement time reduce manufacturing costs and enable our customer's products to compete more effectively in the highly competitive optical fiber, cable and component markets.



Photon Kinetics headquarters in Beaverton, Oregon, USA

## Refractive Index Profiling

The first measurement performed in optical fiber manufacturing is the characterization of the fiber preform's refractive index profile. Preform index profile information is used to predict the light transmission characteristics of the fiber that is ultimately drawn from the preform and to provide dimensional information that is necessary to guide the final preform manufacturing processes. Refractive index profiling is also periodically used on drawn fibers to ensure that the drawing process did not significantly alter the light-guiding properties predicted from the preform analysis. Over 95% of the world's optical fiber manufacturers depend on Photon Kinetics' preform analyzers and fiber index profilers for fast and repeatable measurements that help maximize both preform and fiber yields.



2600 Preform Analyzer

P104 Preform Analyzer

### Fiber Index Profiling

S14 Fiber Refractive Index Profiler

### Preform Index Profiling

2600 Optical Fiber Preform Analyzer

2600-HP High Performance Preform Analyzer

P104 Optical Fiber Preform Analyzer

## Transmission Parameter Measurements

Our line of transmission measurement products consists of a range of test instruments from OTDRs to multi-parameter optical test systems. These instruments are used by optical fiber, cable and component manufacturers to accurately characterize transmission properties that are critical to the function of both single-mode and multimode optical communications networks. Key properties measured by these systems include: spectral attenuation, chromatic dispersion, cut-off wavelength, mode field diameter, multimode bandwidth and differential mode delay, as well as component spectral loss characteristics. In addition to offering these comprehensive measurement capabilities, Photon Kinetics' transmission measurement systems also feature high-speed fiber handling and data acquisition, which provide manufacturers with rapid process feedback and reduction of testing costs.



8000 Production and Laboratory OTDR

### Dispersion and Strain

2800 Dispersion Measurement System

2850 Tunable Laser-based CD System

### Reflectometry

8000 Production and Laboratory OTDR

8000i In-Process Test OTDR

### Attenuation, Cut-off, Mode Field Diameter

2200 Series Optical Fiber Analysis Systems

2500 Optical Fiber Analysis System

### Multimode Bandwidth, Attenuation, DMD

2500 Optical Fiber Analysis System

## Geometry Measurements

Precise control of optical fiber geometry is essential to ensure that both fibers and fiber ribbons can be connected with low optical power loss when they are installed in an optical communications link. The world's fiber manufacturers depend almost exclusively on Photon Kinetics' geometry measurement systems to provide this important data. Fiber geometry parameters that are characterized by these systems include the diameter and circularity of the fiber core, cladding and coating layers, as well as the concentricity of these structures. Accurate measurement of these dimensional attributes not only provides essential feedback to the fiber manufacturing process, but also guarantees finished product quality.



2420 High Precision Fiber Geometry System

### Glass Geometry

2400 Optical Fiber Geometry System

2420 High Precision Fiber Geometry System

### Coating Geometry

2401 Ray-Traced Side View

2402 Dark Field Side View

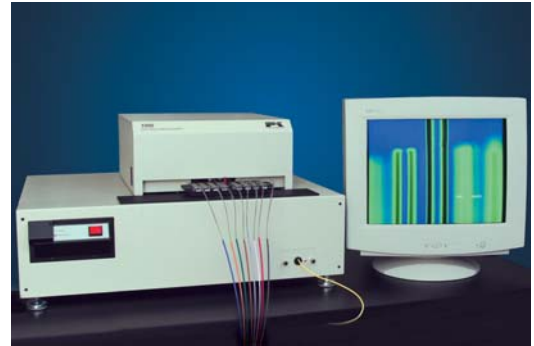
### Coating Geometry

2411 Fiber Curl Measurement System

## Fiber Preparation, Fiber Handling and Test Productivity

Photon Kinetics is the leader in high productivity testing solutions for the fiber and cable manufacturing industry, but our high performance test systems are only part of the reason. Our fiber preparation tools, fiber handling products (both manual and automated) and our test automation software leverage the performance of our instruments and boost overall test productivity by speeding several of the time-consuming processes associated with production fiber measurements.

Photon Kinetics fiber preparation products include the industry standard FK11 and FK12 fiber cleavers, whose "tension first" designs produce defect-free flat and angle fiber end faces respectively. For fast, temporary alignment of single fibers we offer the 1100 and 1120 fiber aligners, and for automated alignment of fiber ribbons or tubes, the 1001 Multiple Fiber Handler. Finally, our 1200 Automated Fiber Handler not only automatically aligns single fiber, but completely prepares the fibers prior to alignment, enabling virtually unattended fiber testing.



1001 Multiple Fiber Handler

Besides time saving fiber cleavers and fiber handling systems Photon Kinetics also provides OTDR test automation software to help maximize testing productivity. When used with either the 8000 or 8000i OTDR and either the 1120 Bare Fiber or 1001 Multiple Fiber Aligners, our OASYS.net software simplifies and automates the OTDR testing process from beginning to end making it possible to test over 1000 fiber in 8 hours.



FK11 and FK12 Cleavers

### Fiber Cleaving

FK11 and FK12 Fiber Cleavers

### Single and Multiple Fiber Alignment

1000 OTDR Automation System (OASYS)

1001 Multiple Fiber Handler

1100 Single Fiber Aligner

1120 Bare Fiber Aligner

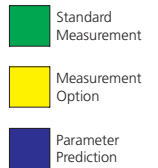
### Automated Fiber Handling

1200 Automated Fiber Handler

### Test Automation Software

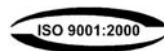
OASYS.net Software

	1000	1100	1120	1200	2200	2210	2220	2400	2401	2402	2411	2420	2500	2600	2800	2850	8000	8000i	FK11	FK12	P104	S14
<b>Geometry Measurements</b>																						
Core & Clad Diameter								■				■										■
Core & Clad Noncircularity								■				■										■
Core/Clad Concentricity								■				■										■
Curl								■			■	■										
Coating Diameter								■	■	■		■										
Coating Noncircularity								■	■	■		■										
Clad/Coating Concentricity								■	■	■		■										
<b>Transmission Parameter Measurements</b>																						
Event Loss and Reflectance	■																■	■				
Attenuation	■																■	■				
Attenuation Non-uniformity	■																■	■				
Spectral Attenuation				■	■	■						■					■					
Cut-off Wavelength				■	■	■						■	■									
Mode Field Diameter				■	■	■						■	■	■			■					
Multimode Bandwidth												■	■				■					
Differential Mode Delay												■	■									
Numerical Aperture						■						■	■									
Core Diameter (Near Field)												■	■									
Component Coupling Ratio				■	■	■						■	■									
Insertion and Excess Loss				■	■	■						■	■									
Chromatic Dispersion															■	■						
Zero Dispersion Wavelength															■	■						
Dispersion Slope															■	■						
Polarization Mode Dispersion															■	■						
Fiber Strain															■	■						
<b>Refractive Index Profiling</b>																						
Preform Index Profile														■								■
Fiber Index Profile																						■
<b>Fiber Preparation and Alignment</b>																						
Flat Fiber Cleaving				■																■	■	
Angled Fiber Cleaving																				■	■	
High Stability Single Fiber Alignment		■		■																	■	■
High Speed Single Fiber Alignment			■																			
Multiple Fiber Alignment	■																					
Automated Preparation and Alignment				■																		



Photon Kinetics includes products formerly branded as York Technology, PK Technology, GN Nettest and NetTest.

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