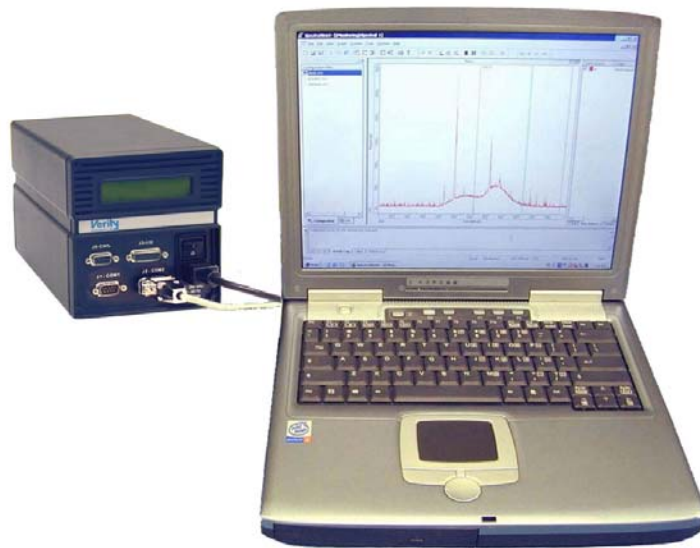
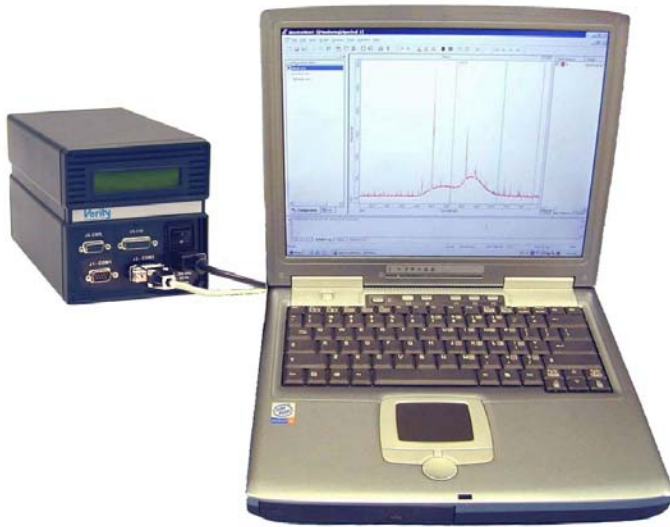


Portable Plasma Diagnostic System



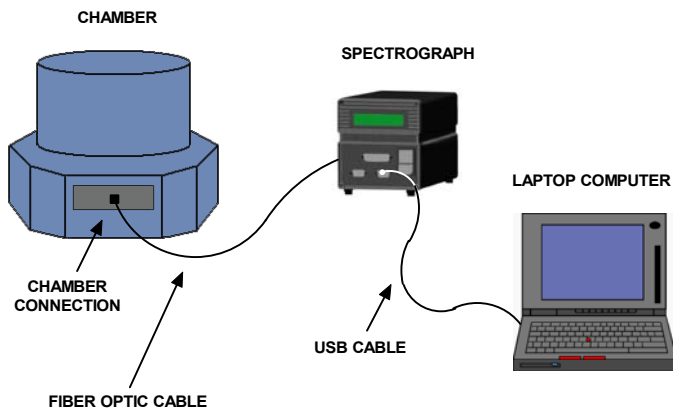
Verity
INSTRUMENTS, INC.



Features and Benefits

- Includes spectrograph, fiber optic cable, chamber connection, laptop computer and carry case
- Versatile; use for troubleshooting, finger printing, chamber matching, and to verify tool endpoint detection system
- Non-invasive, optical measuring technique does not break vacuum
- Fast set-up; system can collect data within a few minutes after set-up
- Configurable; select spectrograph type and accessories as required
- Portable; all items pack within 17.75" (451mm) x 14.5" (386mm) x 12" (305mm) carry case
- Easy-to-use; includes all items necessary for spectral data collection and analysis

System Set - Up



Description

The heart of Verity's Portable Plasma Diagnostic System is Verity's SD1024D Series spectrograph and SpectraView™ applications software. The carry case can be configured to include the specific items needed for your application. The choices for spectrograph include:

SD1024D

- For demanding applications
- Scientific grade CCD

SD1024DL

- For general purpose applications

SD2048DL

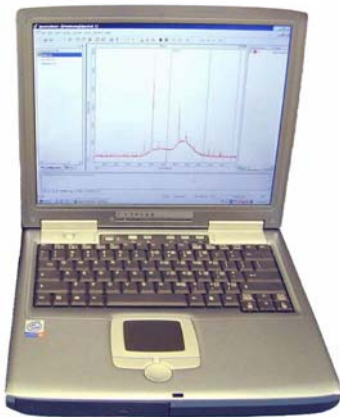
- For high resolution applications
- Bright plasma required

All items are enclosed within a compact carry case for portability and ease of use. Two different chamber connection types are included to provide a secure fiber optic connection to most chamber types.

Specifications: Computer and Carry Case

Computer (1004488)

- Windows 2000
- Pentium IV 1.7 GHz
- 256MB RAM
- CDRW
- 56K Modem
- Floppy Drive
- Office 2000 Professional
- Kensington Combo Security Lock



Carry Case (1004492ASY)

- Includes custom die cut foam
- External dimensions: 17.75" (451mm) x 14.5" (386mm) x 12" (305mm)
- Weight, empty: 20lbs (9kg), full: 37lbs (17kg)
- Telescoping Handle, stores flush inside case
- Recessed military ¼ turn latches
- Full length piano hinge
- Cut out for laptop is: 11.25" (286mm) x 8.75" (222mm)



Carry case external view



Handle extended for pulling

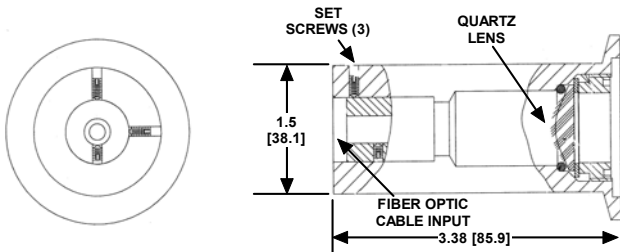


Carry case with cover open and laptop section removed.

Specifications: Chamber Connections and Attenuator Kit

KF 40 Flange

1002561



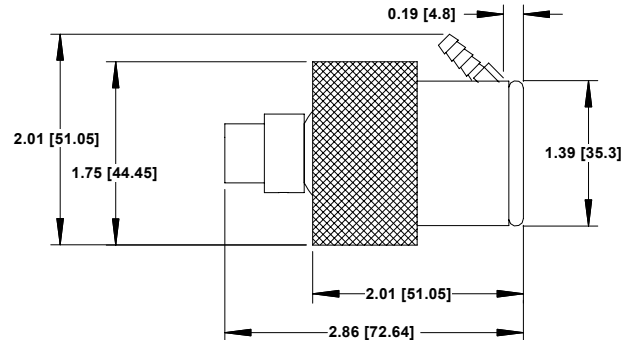
- 0.187" (4.7mm) diameter fiber optic cable to KF40 vacuum flange
- 1" (25.4mm) quartz lens
- Transmits UV, VIS, NIR
- Focuses collimated and near collimated light to the fiber optic cable

Vacuum Optical Coupling Package

All items,	115VAC	1005628
All items,	220VAC	1005629

Includes:

Vacuum Held FO Coupler		1003670
Vacuum Pump –	120VAC	1003668
	240VAC	1003669
Tygon Tubing	8' (2.4m)	1003699



- The vacuum pump and O-ring sealed lens secures the coupler to a viewport
- Use as a temporary connection

Optional, Attenuator Kit

All Items	1004556
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Includes:

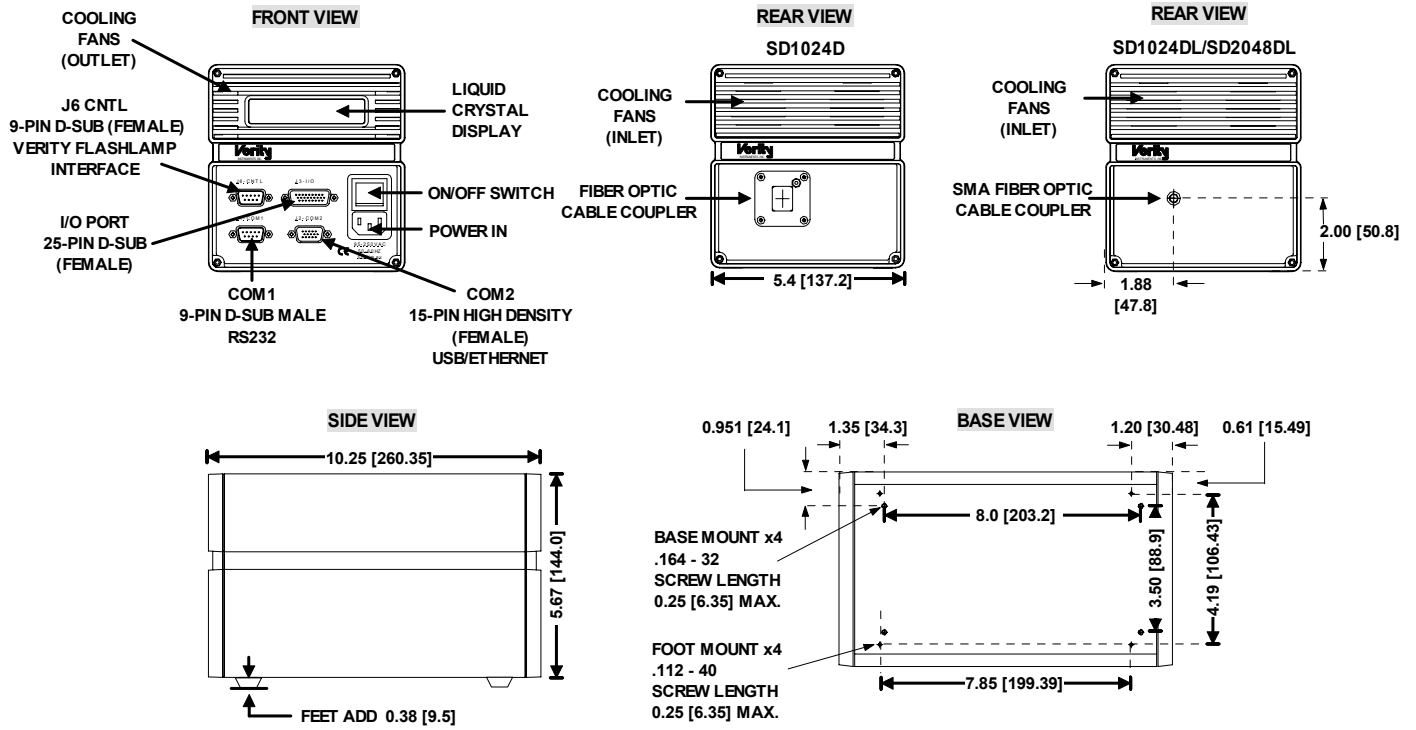
12" Spot to Spot Fiber Optic Cable	1003643
Neutral Density Filter Holder	1003698
Neutral Density Filter	1003696

For "Bright" Applications



- Provides 10X attenuation
- Designed for termination of spot-type F.O. cables
- Additional attenuation possible using back-to-back neutral density filters

Spectrograph Outline Drawing



Specifications:		Spectrograph		
Model Number	SD1024D	SD1024DL	SD2048DL	
Type	High Performance	General Purpose	High Resolution	
Performance/Optics				
Range	200–800nm	200–800nm	200–800nm	
Resolution ¹	<2.0nm	<2.0nm	<1.0nm	
CCD	1024 x 128 pixels, TE cooled, Backthinned (for enhanced UV)	2048 pixels Phosphor coated for UV sensitivity	2048 pixels Phosphor coated for UV sensitivity	
Mechanical				
Slit Width	25 microns	25 microns	5 microns	
Dimensions - inches (mm)	10.25 (260.0) x 5.4 (137.2) x 6.05 (153.5)	10.25 (260.0) x 5.4 (137.2) x 6.05 (153.5)	10.25 (260.0) x 5.4 (137.2) x 6.05 (153.5)	
Weight	7 lbs (3.2 kg)	6 lbs (2.7 kg)	6 lbs (2.7 kg)	
Integration				
Fiber Optic Connection	Custom Design	SMA905	SMA905	
Power	95–250VAC, 50/60Hz, 35W typical – 50W max	95–250VAC, 50/60Hz, 35W typical – 50W max	95–250VAC, 50/60Hz, 35W typical – 50W max	
Standards				
Compliance	CE	CE	CE	
Environmental				
Operating Temperature	32 (0°C) — 104 (40°C)			
Storage Temperature	-4 (-20°C) — 140 (60°C)			
Max. Humidity	85% Non condensing (operating and storage)			

¹ Resolution — full width at half of maximum peak height, the maximum average of several measurements taken across the spectrum.

Application Computer Software			
Algorithms	Algebraic, trigonometric, Boolean logic functions Threshold-based Multi-Wavelength Algorithm (Neural PCA) Neural Network Pattern Recognition		
Application Software	SpectraView™		
Application Software Platform	Windows 2000®		
Communication from Application-Spectrograph	USB (preferred in carry case applications for ease of set up) or Ethernet		
Communication from Tool to Application Software	RS232 and/or DI/O, Ethernet and/or DI/O	RS232 and/or DI/O, Ethernet and/or DI/O	RS232 and/or DI/O, Ethernet and/or DI/O

Recommended Application Computer Requirements	
Attribute	Specification
Platform	Windows 2000®
Processor	Pentium 4 class CPU, 700Mhz or faster (minimum, some advanced algorithms may require more processing power)
Memory	256MB or greater, 133Mhz BUS or faster (minimum, some advanced algorithms may require more memory)
Hard Drive	20GB minimum
Graphics	XGA (1024x768, 256Colors)
COM Port(s) to SD1024	USB or 10/100Ethernet
COM Port(s) to Tool	RS232, Digital I/O or 10/100Ethernet



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