



# Cercis, Inc.

## Model 6120 Series Fiber Optic Tester

### Putting Light to the Test

Cercis 6120 Series Fiber Optic Tester is a 1/4-rack mount/benchtop instrument containing up to four sources (LASER, VCSEL, or LED) with an optical power meter and visual fault finder. Data transfer to printer or PC is possible via an RS-232 port. This instrument is versatile and cost-effective for use in quality control, manufacturing or prototyping of active and passive fiber optic components. Customization is available to incorporate additional functions or PASS/FAIL criteria.

The 6120 combines up to four individually-addressable sources along with an optical power meter and visual fault finder. Graphic display readout: auto-ranging nW,  $\mu$ W, mW, + dBm and dB, with reference value store. An interface adapter is supplied for each source port and the power meter input; other adapters are available separately. This quick-connect fiber optic connector interface is incorporated into both Cercis bench top and handheld instruments.



### Features

- $\leq 4$  Sources: LASER, VCSEL, or LED (uncooled coaxial)
- Selectable Source Type, Fiber, and Power
- RS-232 Bus Port allows Full PC Remote Control
- 3 Modes: nW,  $\mu$ W, mW, dBm & dB with Relative Store
- Input Range: +5 to - 70 dBm (varies by detector type)
- Digital Calibration (up to 8 calibration points )
- Easy Readable Graphic Display
- Interchangeable Fiberoptic Connector Adapters

Examples— most sources (1310,1550,1625,850VCSEL) are stocked and standard.

Key	Option	Description
Mode	Autoranging Relative Power Logrithmic Power	nW, $\mu$ W, mW dB dBm
$\lambda$	Model 6120X-i Model 6120X-iH Model 6120X-g Model 6120X-s	InGaAs 850, 1310,1550,1625 nm InGaAs (Hi Pwr) 980,1310,1480,1550 nm Germanium 850, 1310, 1550 nm Silicon 650, 780, 850, 980 nm
Reference	Set Reference	Store relative power reading & zero meter for next reading

Model	Units	6120Q-A-i4A	6120T-A-i3A	6120D-EiH4A	6120Q-A-i8A
No. Sources		4	3	2	4
Source Types	nm	850 VCSEL, 1310, 1550, 1625 F-P LDs	850 VCSEL, 1310, 1550 F-P LDs	1310, 1550 F-P LDs	CWDM 1470, 1490, 1510, 1530 DFB LDs
Detector Type		InGaAs(2 mm)	InGaAs (2 mm)	InGaAs (2 mm)	InGaAs (2 mm)
Power Range	dBm	+5 to - 70	+5 to - 70	+23 to - 45	+5 to - 70
Calibrated Wavelengths	nm	850/1310/1550/1625	850/1310/1550	980/1310/1480/1550	1470/1490/1510/1530/1550/1570/1590/1610
RS-232 Bus Port	-	Allows full PC remote control of all sources and power readings via LabView <sup>R</sup> , Visual C <sup>R</sup> , or Visual Basic <sup>R</sup>			
Absolutes	dB	Accuracy +/- 0.25 dB		Resolution 0.01 dB	
Function	W dBm dB	nW, $\mu$ W, mW (autoranging) dBm (absolute power) dB (relative power)			
Connector Interface		See list reverse side; interchangeable bayonet click-on/off mate/remate			

Specifications subject to change without notice. MADE IN USA



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Part Number	Adapter Type Description
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PM / LS101	Universal 2.5 mm Adapter <small>(default supplied w/ meter)</small>
PM / LS 102	FC Adapter (Power Meter & Light Source)
PM / LS 103	ST Adapter (Power Meter & Light Source)
PM / LS 104	SC Adapter (Power Meter & Light Source)
PM 105	LC Adapter (Power Meter & Light Source)
PM 106	SMA 905/906 Adaptor
PM 110	Universal 1.0 mm Adapter



Although interchangeable adapters for light sources and power meters are similar, they cannot be switched. The light source adapters have a large drilled hole to accommodate a split sleeve—simulating a connector mating sleeve. For 1.25 mm or other ferrules, a hybrid jumper or adapter can be used. The power meter adapters have a small drilled hole which stops the connector ferrule at a set distance from the detector—preventing damage to or scratching of the window.

## Information

### Calibration

All Cercis Light Sources and Optical Power Meters are calibrated using procedures and equipment traceable to the US National Institute of Standards & Technology (NIST).

### Graphic Display

LCD graphic display has full character readout. Annunciators for nW, μW, mW, dB / dBm, BAT (low battery), OVL / LOW (power too high or low), plus wavelength (nm), and numerical value of relative power. All features rival functions otherwise found only in laboratory instruments.

### Connector Interface

The precise quick-connect adapter interface allows the user to quickly change to any industry standard fiberoptic connector. These click-on/click-off adapters are also used with other Cercis instruments.

### Digital Signal Processing

Proprietary micro control circuitry features digital calibration, and microprocessor control of all OPM and Light Source functions.

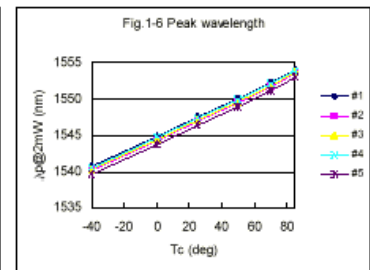
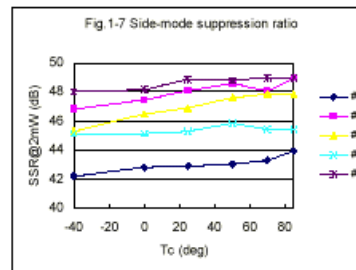
### Absolute & Relative Measurements

Absolute measurements are useful for verifying transmitted power or measuring the power of fiber optic sources. To measure relative losses, the Optical Power Meter provides a dB function. The user simply depresses MODE and all subsequent readings are displayed relative to the reference power level.

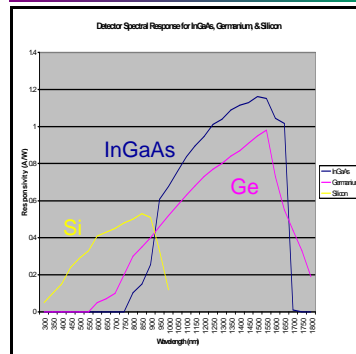
### LED Indicators

Green LED lights when power is on. Red LEDs indicate Laser Enable.

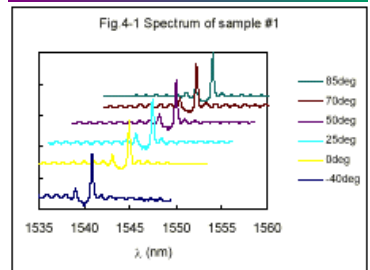
Source Type	Wavelength (nm)	Fiber Mode Core Min. (μm)	Power (dBm)	
			Min.	Max.
VCSEL	850	MM 50	-5	-3
SLED	850	MM 50	-17	-10
SLED	1300	MM 50	-17	-15
SLED	660	MM 1 mm	-9	-4
LASER F-P	1310	SM 9	-10	2
LASER F-P	1550	SM 9	-10	2
LASER F-P	1625	SM 9	-10	2
LASER DFB	1310	SM 9	-10	3
LASER DFB	1550	SM 9	-10	3
LASER DFB	1470-1610	SM 9	-10	3
LASER	635	SM 9	0	2



## Responsivity vs. Wavelength



## CWDM Laser Characteristics



CWDM Laser Uncooled, Coaxial Side-mode Suppression Peak λ / Spectrum vs. Temperature

## Operational & Mechanical Data

Temperature Range Operating	C	-10 C to +50 C
	(F)	(20 to 50 F)
Storage	C	-35C to +70 C
	(F)	(20 to 50 F)
Dimensions Instrument	mm (in.)	Width X Length X Height 216 X 203 X 89 mm (8.5 X 8 X 3.5 in.)
Weight Instrument	g	1542 g (48 oz.)
Shipping Weight	(oz.)	1928 g (60 oz.)

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