Cercis, Inc.

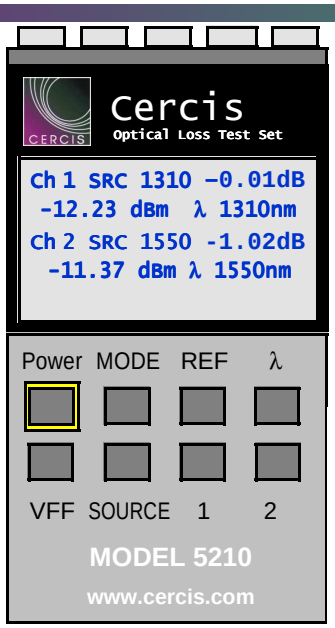
Model 5210 Optical Loss Test Set
1310 / 1550 nm LASER + Optical Power Meter
PRELIMINARY SPECIFICATION

Putting Light to the Test

Cercis Model 5210 Optical Loss Test Set includes 1310 and/or 1550 nm* LASER sources and optical power meters - plus a visible fault finder - in one handheld instrument. Standard versions are available for SAN (Storage Area Networks) duplex connector testing and single mode loss testing. Similar LED + OPM versions (refer Model 5310) are available.

All functions are accessed via 8 keys on the front of the unit. Parameters—Mode (dBm, n/m/mW), Calibrated Wavelength—are selected by the user, first for Channel 1, then for Channel 2. Combinations of industry-standard simplex and duplex (SC, LC) connectors are available to best suit the user.

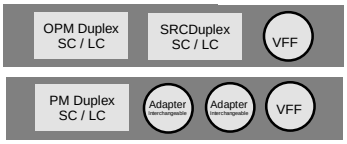
The Model 5210 Optical Loss Test Set is housed in a 7.2" X 3.7" X 1.3" box with protective rubber holster, including retractable pedestal. Each unit has a battery pack 4 - AA rechargeable NiMH batteries, plus external AC adapter/recharger. ABS case with OLTS and accessory items, can be provided.



Model 5210 Series

Sketch Not to Scale

Top View Options



Sources:

1310 / 1550 nm LASER (5210 Series)
1550 / 1625 nm LASER
850 / 1300 nm VCSEL / LED
850 / 1300 nm LED (5310 Series)
1300 / 1300 nm LED

Features (proposed)

- *3 Modes: dBm & dB with Relative Store + n/μ/mW (autoranging)*
- *Easy Readable Graphic Display (~2.75 X 1.5" W X H)*
- *Input Range: +5 to - 65 dBm (InGaAs detector)*
- *LASER 1310 or 1550 nm –10 dBm into 9/125 SMF*
- *InGaAs Detectors; Digital Calibration*
- *~15 hours 4 AA NiMH Rechargeable Battery Life*
- *Erognomic, Tactile Rubber Keys (membrane keypad optional)*
- *Simplex & Duplex Connector inputs available*
- *Protective Holster with Retractable Pedestal*

Key	Option	Description
POWER	On—Hold to select: Timed (default), Activity, or No Auto Shutoff	Timed: Auto off if no key for ~15 min. Activity: Auto off if no chg of 1 dB No Shutoff; VFF: activates fault finder
VFF		
MODE	Power Readout	dBm (absolute), dB (relative), n/μ/mW
REF	Set Reference (zero) dB	Stores Relative Power Level (Zero Out); relative power readout displays in lower left
λ	Wavelength	Selects Calibration Wavelength
SOURCE	LASER Source	Turns 1st or 2nd source on/off
1 or 2	Select Channel 1 or 2	Activates either Channel 1 or 2

Specification	Units	Power Meters	Specification	Units	Source(s)
Detector Type		InGaAs	LASER Wavelength	nm	1310 and/or 1550*
Number of Detectors		2	Number of LASERs		2
Power Range	dBm	+5 to - 65	Output Power (port variation +/-0.5 dB)	dBm	-10 (each LED port) (9/125 SMF or larger)
Calibrated Wavelengths	nm	850, 1310, 1550**	Wavelength Range	nm	+/- 20
Absolute Accuracy	dB	+/- 0.25 dB	Spectral Width (FWHM)	nm	5
Function	dBm dB	dBm (absolute power) dB (relative power)	Absolute Accuracy	dB	<0.1
LCD Graphic Display	-	View 70.7 X 38.8 mm; 128 X 64 pixel; black characters, background reflective gray no backlight. Readings display simultaneously or separately Readout: **dB** and **dBm**; plus, + **BAT** (Low Bat) and **LOW / OVL** (power too low/too high).			
Connector Interface		Duplex LC & SC; Simplex FC, ST, SC			
Power—Battery Power—AC / Recharger	V	Battery pack 4 AA 1.5 Volt Rechargeable NiMH (~15 hrs. battery life) 90—264 V AC, 47-63 Hz interchangeable adaptor / recharger (2.5mm positive center)			

Preliminary specifications subject to change with notice. All specs @ 25C

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Display
Display Readout similar to that included on the sample (at right), which includes: Connector/cable ID. Readings to display simultaneously as shown, or separately.

Duplex or Simplex Cable Interface
Fixed SC or LC duplex connector input may be selected. Simplex interfaces use Cercis standard interchangeable adapters—FC, SC, & ST for sources, and FC, SC, ST, LC, MU, SMA and 2.5 mm universal for power meter(s).

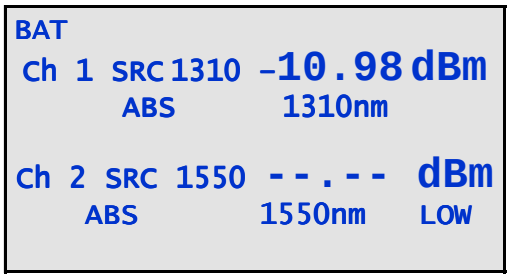
Calibration
Light sources and optical power meters are calibrated using procedures and equipment traceable to the US National Institute of Standards & Technology (NIST).

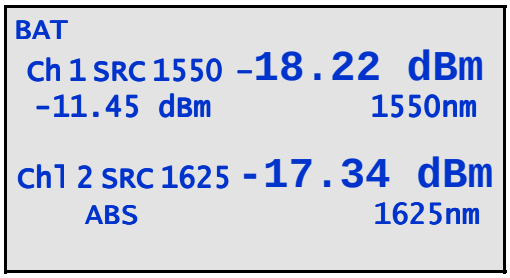
Holster with Pedestal
Included with every instrument is a removable protective housing. This molded silicone shell protects against shock in the field, and has a pivoting bale to hold the instrument upright when required. Also, there are holes for a wrist or neck strap.

Absolute & Relative Measurements
Absolute measurements are useful for verifying transmitted power or measuring the power of fiber optic sources. Depress dBm key to display all subsequent readings relative to the reference power level.

Kit Case (optional)
Black, high impact engineering grade ABS plastic alloy guards against jarring, vibration and crushing, and will not dent, corrode or conduct electricity. Silicone O-ring seals out water, salt air, dust, and some gasses; pressure equalization valve allows easy case opening after changes in altitude or temperature. Internal dimensions 13.4"(L) X 8.9" (W) X 5.6" (D); external dimensions 14.9" (L) X 10.6" X 6.5" (D); weight 4 lbs (empty). Pick and place foam inserts protect and organize instruments and accessories and allow addition or rearrangement of components.

Display Examples
Layout in graphic sample shows display with both channels with low battery power.

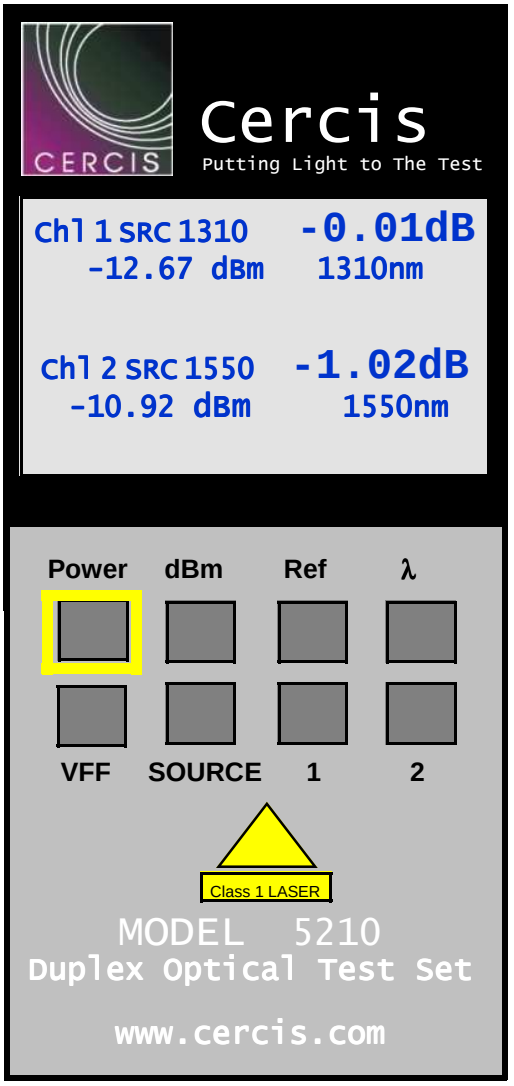




Above: No reference set & low power Chl 2. *Above*: Display with reference set.

Part Number	Ordering Information
5210D351i2P5A	2 LASERs 1310/1310 nm, 2 OPM, VFF 635 nm, 5 adapters (specify)
5210D332i2P3S	LASERs 1310/1310 nm, 2 OPM, VFF 635 nm (adapter), Duplex SC
5210D561i2P3L	LASERs 1550/.1625 nm, 2 OPM, VFF 635 nm (adapter), Duplex LC
LS102, 103, 104	Interchangeable Adapters (light source) FC(102), ST(103), SC(104)
PM101,102,103, 104,105,106,107	Interchangeable Adapters (power meter) 2.5 mm universal (101), FC(102), ST(103), SC(104), LC(105), SMA(106), MU(107)
A604P/ A605P	Adapters 110VAC 9V (A604P); 90-264VAC w/ US/UK/EU/AU (A605P)
Other Information	**Operational & Mechanical Data**
Dimensions	7.2" X 3.7" X 1.2" L X W X H (excluding holster & optical ports)
OTR / STR	-10 to +60C (Operating) / -20 to +60C (Storage)
Weight	1.25 lb (including NiMH battery pack & optical adapters)

*Other wavelength LASERs available: 780, 904, 1625 nm; also CWDM L-Band **Up to 8 calibrated wavelengths per power meter—specify.
Specifications subject to change without notice. MADE IN USA 10/03M5310Rev. 0



Sample front graphics & keyboard of Duplex Optical Test Set

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Power	Depress key & release at NO AUTO, TIMED, or ACTIVITY SHUTOFF LED & detectors activated at power on
MODE	Power Readout dBm (both LASER ports)
Ref	Set reference (readout in lower left) All main readings in dB when ref set
Source	Select Source
λ	Selected calibrated wavelength
1 or 2	Select channel 1 or 2
VFF	VFF On/Off; hold ~2 sec for no shutoff
	LOW / OVL Low / Overload Power "BAT" Low Battery Warning

Made in USA
Serial No: 223156
Part No: 5210-
NIST Traceable Cal: 10/30/03 Due: 10/30/05

Above: Example calibration label on back of Optical Test Set including basic operating instructions