



Cercis, Inc.

Model 520 & 520 R CWDM Laser Light Source Single & Dual Wavelength

Putting Light to the Test

Cercis 520 & 520 R Series CWDM 1470—1610 nm Laser Light Sources are full-feature hand-held instruments. The 520S (single) or 520D (dual) contain uncooled coaxial-pigtailed DFB laser diodes with single stage 1550 nm optical isolator. The units provide Class IIIb output power 0-3 dBm (1-2mW) at 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Center wavelength tolerance is ± 3 nm at 25C; variation of center wavelength over temperature is $\sim 0.1\text{nm/C}$. The 520SR or 520DR includes RS232 port enabling PC control. Use in the field, production, quality control area or lab.

The 520 & 520 R combines a state-of-the-art microprocessor with indicator LEDs. Operation is simple with only 3 keypads: ON/OFF, SOURCE & MOD (modulation). Cercis Laser Light Sources incorporate industry-standard connector (FC, SC, ST-specify) interchangeable adapter or fixed FC (PC or APC). All models include a protective holster & tethered dustcap, plus 9V battery.

Model 520 & 520 R CWDM



Features

- CWDM L-Band Isolated, Coaxial-Pigtailed DFB LDs
- Optical Port: Interchangeable—FC, ST, SC—or FC
- Stabilized Calibrated Output 0.05 dB over 5 hrs.
- Output 0—3 dBm; adjustable ± 1 dB
- >30 hours 9 V Battery Life, AC (center neg.) Port (Adapters available)
- Tactile Rubber Keys & Protective Holster w/Pedestal
- Modulation Frequencies: 270, 1000, & 2000 Hz

BOLD TYPE are Available Wavelength Laser Sources *Opt. +/- 2 nm λ_c

| Key | Option | Description |
|--------|---|---|
| ON/OFF | Auto Shutoff (default) | Auto off if no key pressed for ~15 min.. |
| | No Shutoff | Operator must shutoff; push & hold key |
| Source | Single Source 3 dBm (default) 2 to 4 dBm (opt) | Calibrated output power Press & hold to cycle + / - 1 dB |
| | Dual Source 0 dBm -9 to 1 dBm (opt) | 1 - 1st wavelength source (i.e. 1470 nm) 2 - 2nd wavelength source (i.e. 1490 nm) Increment increase +1dB, decrease -1 dB |
| Mod | Modulation speed (LED action) | Press & Hold: (Single & Dual Source) 1X - 270 Hz, 2X - 1000 Hz, 3X - 2000 Hz (Slow blink) (Faster blink) (Very fast blink) Single Source Only: 4X—External (opt) |

| Model | Units | 520 Single Source | | | | | | | | 520 Dual Source (2 Port) | | | |
|--|-------|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------------|---------------------|---------------------|---------------------|
| Wavelength | nm | 1470 DFB | 1490 DFB | 1510 DFB | 1530 DFB | 1550 DFB | 1570 DFB | 1590 DFB | 1610 DFB | 1470 1490 | 1590 1610 | 1510 1610 | 1470 1570 |
| Wavelength Range | nm | +/- 3 | +/- 3 | +/- 3 | +/- 3 | +/- 3 | +/- 3 | +/- 3 | +/- 3 | +/- 3 | +/- 3 | +/- 3 | +/- 3 |
| Side Mode Suppression Ratio <small>min.</small> | dB | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Stability: 1 hr. max. deviation | dB | <0.05 | <0.05 | <0.05 | <0.05 | <0.15 | <0.05 | <0.05 | <0.03 | <0.05 | <0.05 | <0.05 | <0.05 |
| Power Output (Set Point Min.) 9/125 (SMF28) Fiber** 50/125 GI MMF 0.21 NA 62.5/125 GI MMF 0.23 NA 100/140 GI MMF 0.29 NA | dBm | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Modulation Frequencies | Hz | 270, 1000, 2000 (optional external modulation to 1 MHz digitized signal single source only) | | | | | | | | | | | |
| Functions | | MOD (CW DC or modulated output mode), SOURCE (selectable frequency) | | | | | | | | | | | |
| Auto Shutoff / Shutoff Disable | | Unit powers down 15 min. after last key has been depressed User-selectable disable function | | | | | | | | | | | |
| Power | V | Requires 1 9 Volt alkaline battery (>30 hrs. battery life) or optional AC adaptors (neg.) | | | | | | | | | | | |

**Use of same size or larger fibers (*italic*) will yield the same output power since the unit contains a fiber-pigtailed source.

***Typical

Specifications subject to change without notice.

MADE IN USA



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Adaptors: LS101 Universal 2.5 mm; LS102 FC; LS103 ST; LS104 SC

Left to Right:

ST, SC, FC,
2.5 mm Universal



Information

Calibration

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

LED Indicators

Green and red LEDs indicate Power On, Laser Enabled, Modulation Speed, and Low Battery.

Lasers

All lasers employ an extremely stable fiber coupling scheme, which yields reliable, long-life devices. Although these uncooled lasers do not offer the tight tolerances required for DWDM C-Band (1530-1565 nm) or L-Band (1570-1610 nm) transmission, they are useful in component manufacture or testing.

Dust Cap

When the OLLS is not in use, the permanently tethered dust cap simply snaps in place. The cap protects the interface against dirt and scratches. The dust cap fits over all adapter versions.

Digital Signal Processing

Proprietary micro control circuitry features digital calibration, and microprocessor control of all OLLS functions.

CW & Modulated Output Modes

The Model 520 Optical Laser Light Sources (OLLS) feature both CW and modulated output modes. In CW mode, the Model 520 Series features stabilized and calibrated output power; this is adjustable within a +/- 1 dB range with easy key function. In modulated mode, the tone frequency for use with fiber identifiers may be set to 270 Hz, 1 KHz or 2 KHz by the user pushing the MOD key. Single laser sources can allow external modulation to 1 MHz of a digitized signal.

Holster for Additional Protection and Convenience

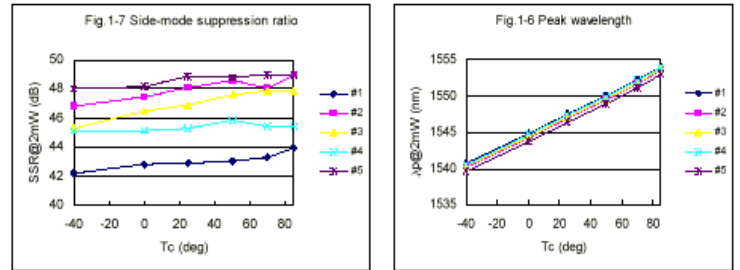
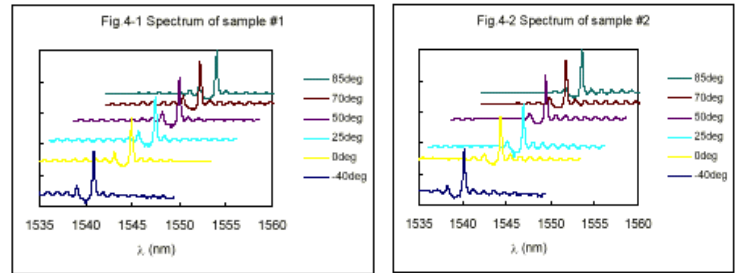
Included with every instrument is a removable protective housing. This molded silicon shell protects against shock in the field, and has a pivoting bale to hold the instrument upright when required. Also, there are holes for a wrist or neck strap.

RS232 Data Port

The optional RS232 data port allows the user to control the functions of the 520 R light source from a PC. Windows[®] DLL drivers can be downloaded from Cercis website.

| Part Number | Ordering Information |
|-------------|---|
| 520S-5S11NA | 1470nm LS, Interchangeable Adapter |
| 520S-5U11NE | 1510nm LS, Fixed FC/APC Optical Port |
| 520SR5Y11NF | 1590nm LS, Fixed FC/PC Port, RS232 |
| Part Number | Accessory Ordering Information |
| LS102 | FC Adapter |
| LS103 | ST Adapter |
| LS104 | SC Adapter |
| A604 | Adaptor 120V AC, 9V, 500mA (neg.) |
| A605 | Adaptor 90-264 V AC, 47-63 Hz (neg.) US, Europe, UK & Australia plugs included (A,E,K,S) |

Laser Characteristics (typical) Source: Mfr. Technical Note



| Model No. (Single) | Wavelength nm (center) | Model No. (Dual 2 Port) |
|--------------------|------------------------|---------------------------|
| 520S-5S11NA (E/F) | 1470 | 520D-ST12NA (1470 + 1490) |
| 520S-5T-11NA(E/F) | 1490 | |
| 520S-5U11NA (E/F) | 1510 | 520D-UV12NA (1510 + 1530) |
| 520S-5V11NA (E/F) | 1530 | |
| 520S-5W11NA(E/F) | 1550 | 520D-WX12NA (1550 + 1570) |
| 520S-5X11NA (E/F) | 1570 | |
| 520S-5Y11NA (E/F) | 1590 | 520D-YZ12NA (1590 + 1610) |
| 520S-5Z11NA (E/F) | 1610 | |

Notes: Dual laser combinations for example only; any two wavelengths can be combined in one instrument. Single port dual wavelength light source uses 1550 nm coupler decreasing power output to 0 dBm (1 mW) due to typical 3 dB coupler loss.

| Part No. | Description | Character No. | Description |
|------------------------------------|-------------|---------------|---|
| 520SR5V11NA 1-4 5 6 7 8 9 10 11 | | 1-3, 4, 5 | 520 LASER Src; Single (S),Dual (D), Tri (3), Quad (Q); RS232. |
| | | 6-7, 8, 10 | Src(s) λ's; fiber (1=SMF28, 2=50, 3=62.5); N (1.3mm neg ctr APC) |
| | | 9, 11 | Optical: No.Pt (1 single, 2 dual, etc); A interchgbt adptr (1/port) |

Operational & Mechanical Data

| | | |
|--|-------|---|
| Temperature Range Operating | C | 0 C to +50 C |
| | (F) | (30 to 50 F) |
| Storage | C | -35C to +70 C |
| | (F) | (20 to 50 F) |
| Dimensions Instrument (with battery) | mm | Width X Length X Height 70 X 125 X 25 mm |
| | (in.) | (2.75 X 5 X 1 in.) |
| Shipping | | 75 X 130 X 40 mm (3 X 5 X 1.5 in.) |
| Weight Instrument (with battery) | g | 300 g (10.6 oz.) |
| | (oz.) | 350 g (12.4 oz.) |