

# Light Source

# Specification & User Manual

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# Light Source

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## 1.1 Description

Light Source is a handy instrument to provide you several wavelengths for testing the fiber equipment in an optical network and FTTx construction. Light Source is ideal for field or laboratory testing of optical communication systems at 850 nm / 1300 nm for datacom testing, 1310 nm / 1550 nm / CWDM 1270 nm ~ 1610 nm ( 20 nm spans ) for all WDM testing , as well as 1490 nm for FTTx testing by changing the interchangeable SFP module. Light Source features zero warm up, superb productivity and is easy to use with its pocket-size and rugged handy design.



With a LC / SC patch cord, the Light Source can be used for most widespread fiber interfaces such as LC / ST / SC / FC connectors. It is suitable to test both Singlemode and Multimode cables.

Internally there is a specially designed power circuit called APC (Auto Power Control). The APC circuit provides continuous power which avoids unstable laser output when the battery is low.

The LD output signal can be switched between Continuous Wave (CW) or Pulse Mode 270 Hz / 2 KHz Modulated Mode to simulate signal transmission. There is a dust proof cap which will prevent dirt from getting into the LD connector. The cap also helps avoid accidental exposure to the laser beam into your eyes.

## 1.2 Features

- Pocket-size & rugged, handy design.
- No warm-up time required.
- Interchangeable SFP Module design with LC or SC connector.
- Flexible for changing wavelengths.
- High Output Power stability.
- Stable output wavelength.
- Excellent re-connection repeatability.

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- Low Voltage Battery LED warning signal.
- Compatible with LC Connectors.
- Economical and easy to use.
- Operates in CW (Continuous Wave) or Pulse Mode 270 Hz / 2 KHz
- The dust-proof design keeps fiber connectors clean
- Operates on two AAA-size alkaline batteries
- LED indicators for Power and Low Battery

## **1.3 Application**

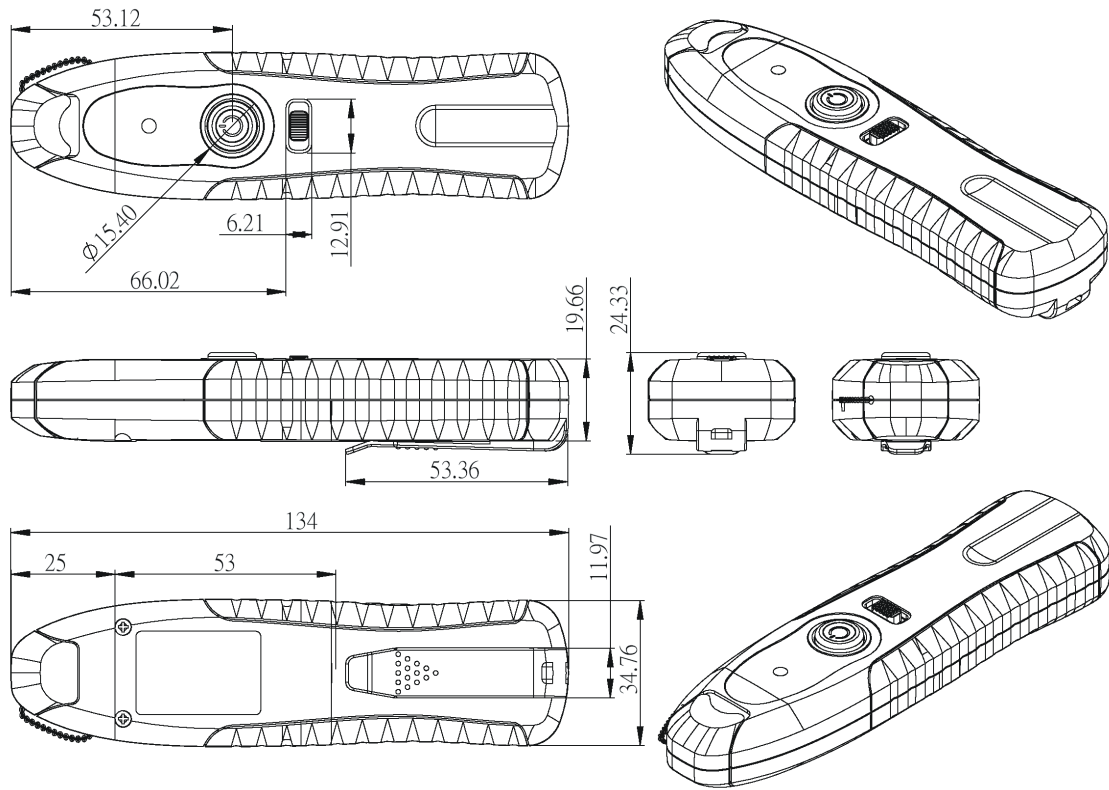
- Maintenance CATV / Telecom / FTTH in Singlemode or Multimode fiber optical fiber networks.
- Testing in standard laboratories.
- High throughput quality assurance.

## **2. Specification**

|                                 |  |
|---------------------------------|--|
| Laser Class                     | Class 1  |
| Wavelength (nm)                 | 850, 1300, 1310, 1550<br>1270, 1290, 1310, 1330, 1350, 1370, 1390,<br>1410, 1430, 1450, 1470, 1490, 1510, 1530,<br>1550, 1570, 1590, 1610,1625 |
| Mode                            | CW / Pulse Mode 270 Hz / 2 KHz   |
| Battery Type                    | AAA [1.5 V x 2]  |
| LED Indicator                   | Power On ( GREEN ) / Battery Low ( RED)  |
| Output Power Accuracy           | +/- 0.2 dB   |
| Output Power Stability ( 1 HR ) | +/- 0.05 dB  |
| Operating Temp.                 | 0°C ~ 50°C   |
| Storage Temp.                   | 0°C ~ 70°C   |
| Weight                          | 0.06 Kg  |
| Dimension                       | 134 * 35 * 24 mm   |

# Light Source

(Unit : mm)



| S200126X0850          | Min. | Typ. | Max. | Unit | Note                       |
|-----------------------|------|------|------|------|----------------------------|
| VCSEL Output Power    | -5   |      |      | dBm  | @ 25°C 62.5 / 125 μm fiber |
| Center Wavelength λ C | 830  | 850  | 860  | nm   | @ 25°C 62.5 / 125 μm fiber |
| Spectral Width Δ λ    |      |      | 0.85 | nm   | @ 25°C 62.5 / 125 μm fiber |

| S200122X1300              | Min. | Typ. | Max. | Unit | Note                       |
|---------------------------|------|------|------|------|----------------------------|
| LED Output Power          | -22  |      |      | dBm  | @ 25°C 62.5 / 125 μm fiber |
| Center Wavelength λ C     | 1270 | 1300 | 1370 | nm   | @ 25°C 62.5 / 125 μm fiber |
| Spectral Width Δ λ (FWHM) |      | 130  | 180  | nm   | @ 25°C 62.5 / 125 μm fiber |

| S200123X1310          | Min. | Typ. | Max. | Unit | Note                    |
|-----------------------|------|------|------|------|-------------------------|
| FP LD Output Power    | -5   |      |      | dBm  | @ 25°C 9 / 125 μm fiber |
| Center Wavelength λ C | 1290 | 1310 | 1330 | nm   | @ 25°C 9 / 125 μm fiber |
| Spectral Width Δ λ    |      |      | <4   | nm   | @ 25°C 9 / 125 μm fiber |

## Light Source

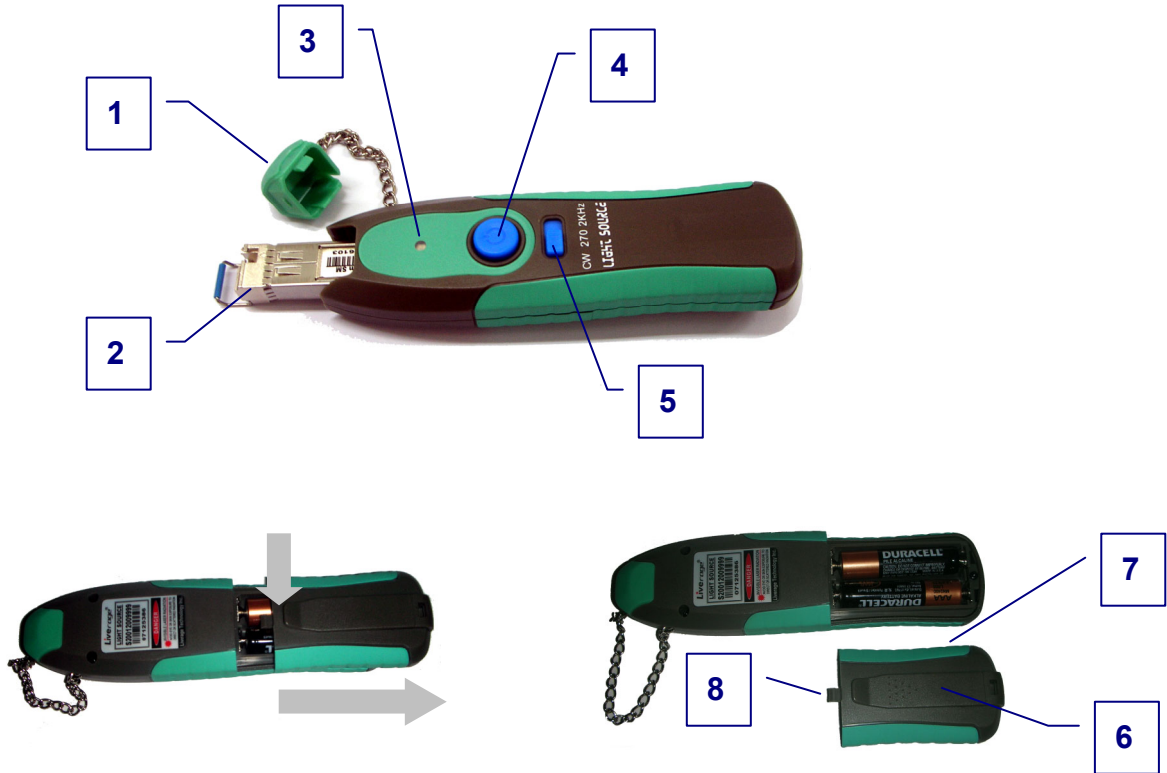
| 12-11xx               | Min. | Typ. | Max. | Unit | Note                    |
|-----------------------|------|------|------|------|-------------------------|
| FP LD Output Power    | -5   |      |      | dBm  | @ 25°C 9 / 125 μm fiber |
| Center Wavelength λ C | 1520 | 1550 | 1570 | nm   | @ 25°C 9 / 125 μm fiber |
| Spectral Width Δ λ    |      |      | <4   | nm   | @ 25°C 9 / 125 μm fiber |

| 12-11xx               | Min. | Typ. | Max. | Unit | Note                    |
|-----------------------|------|------|------|------|-------------------------|
| DFB LD Output Power   | -3   |      |      | dBm  | @ 25°C 9 / 125 μm fiber |
| Center Wavelength λ C | 1290 | 1310 | 1330 | nm   | @ 25°C 9 / 125 μm fiber |
| Spectral Width Δ λ    |      |      | <1   | nm   | @ 25°C 9 / 125 μm fiber |

| 12-11xx               | Min. | Typ. | Max. | Unit | Note                    |
|-----------------------|------|------|------|------|-------------------------|
| DFB LD Output Power   | -3   |      |      | dBm  | @ 25°C 9 / 125 μm fiber |
| Center Wavelength λ C | 1530 | 1550 | 1570 | nm   | @ 25°C 9 / 125 μm fiber |
| Spectral Width Δ λ    |      |      | <1   | nm   | @ 25°C 9 / 125 μm fiber |

| 12-11xx               | Min.     | Typ.  | Max.    | Unit | Note                    |
|-----------------------|----------|-------|---------|------|-------------------------|
| CWDM LD Output Power  | -3       |       |         | dBm  | @ 25°C 9 / 125 μm fiber |
| Center Wavelength λ C | λ C *- 3 | λ C * | λ C *+3 | nm   | @ 25°C 9 / 125 μm fiber |
| Spectral Width Δ λ    |          |       | <1      | nm   | @ 25°C 9 / 125 μm fiber |
| S200125Xxxxx-S        | Min.     | Typ.  | Max.    | Unit | Note                    |
| CWDM LD Output Power  | 3        |       |         | dBm  | @ 25°C 9 / 125 μm fiber |
| Center Wavelength λ C | λ C *- 3 | λ C * | λ C *+3 | nm   | @ 25°C 9 / 125 μm fiber |
| Spectral Width Δ λ    |          |       | <1      | nm   | @ 25°C 9 / 125 μm fiber |

### 3. Operating Instructions



To press to release Linchpin then to push battery lid backward.

To open battery lid to change batteries.

1. **Dust Cap**: prevent dirt contaminating the LD connector.
2. **SFP Module**: Interchangeable single LC or SC connector; hot swap SFP module for identical wavelength.
3. **LED Indicator**: Power On and In Operation indicator (GREEN) and Battery Low Warning indicator (RED).
4. **Button**: pressing to Turn On / Turn Off LD emitting.
5. **Mode Switch**: to select (CW) Continuous Wave Mode / Pulse Mode 270 Hz / 2 KHz Switch.
6. **Pen Clip**: to fasten the tool while inside your pocket.
7. **Battery Lid**: open to change batteries.
8. **Linchpin**: a mechanical design to lock the battery lid.

1. The Light Source is powered by two 1.5 V AAA batteries.
2. Insert Plug-In Module into the Light Source Main Frame, press Button and check if the LED is GREEN.

3. Press button to turn off Light Source.
4. Lift the front of the dust cap and insert on the end of the fiber connector to the LC connector or directly insert onto a connector of the fiber or LC / SC / FC patch cord.
5. Switch to select to Continuous Wave (CW) Mode or Pulse Mode 270 Hz/ 2 KHz.
6. Press the button to turn on the Light Source. The LED Indicator now is GREEN while the Light Source is in operation.
7. Press the button a second time to turn off the Light Source. The LED Indicator will be turned off.
8. When the LED Indicator is RED, this means the batteries are almost depleted and in low voltage status. You must replace the batteries immediately for proper operation.
9. Do not touch the Light Source connector to avoid placing dirt into the connector.
10. Keep the dust cap on while the Light Source is not in use.
11. Use the proper cleaning tools to clean the Light Source SFP connector before testing in order to obtain best results and to keep the Light Source in service longer.

## **4. Maintenance**

This tool requires no maintenance other than periodic battery changes. Like any electronic equipment, this tool should be kept away from water, high dampness, dust, electricity, and environments of extreme temperature. Do not drop this tool on a hard surface. Modifying any of this tool's internal components can cause a malfunction and will invalidate the manufacturer's warranty.

## **5. Warranty**

The manufacturer warrants this product to be free of defects in workmanship and materials for a period of 1 year after purchase. This warranty (excluding batteries) is solely limited to the repair and replacement of original parts, which are defective in workmanship of materials. All other costs are the sole responsibility of the owner. This warranty does not cover any defects,



damage, and deterioration due to misuse, alteration, or negligence.

**6. Ordering Information:**

| Part Number  | Description                                 |
|--|---|
| S20012009999   | Light Source Main Frame                     |
| S200126X0850   | VCSEL 850 nm plug-in module                 |
| S200122X1300   | LED 1300 nm plug-in module                  |
| S200123X1310   | FP LD 1310 nm plug-in module                |
| S200123X1550   | FP LD 1550 nm plug-in module                |
| S200124X1310   | DFB LD 1310 nm plug-in module               |
| S200124X1550   | DFB LD 1550 nm plug-in module               |
| S200125Xxxxx   | CWDM LD $\lambda$ C plug-in module          |
| S200125Xxxxx-S   | CWDM LD $\lambda$ C plug-in module ( 2 mW ) |
| <p>X=0 , LC Connector<br/> X=1 , SC Connector</p> <p>*CWDM LD <math>\lambda</math>C: xxxx<br/> 1270 nm / 1290 nm / 1310 nm / 1330 nm / 1350 nm / 1370 nm / 1390 nm / 1410 nm /<br/> 1430 nm / 1450 nm / 1470 nm / 1490 nm / 1510 nm / 1530 nm / 1550 nm / 1570 nm /<br/> 1590 nm / 1610 nm / 1625 nm</p> |   |

## **7. Service Contacts**

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| Record of Revisions |            |                                   |
|---------------------|------------|-----------------------------------|
| Rev.                | Date       | Description of Change             |
| VER A               | 2007.01.10 | Original Specification issued.    |
| VER B               | 2008.01.21 | LS Part Number added              |
| VER C               | 2013-06-17 | Page 9 830 nm 850 nm 860 nm added |