



## OP715

### Stabilized Light Source

*Instruction Manual*

(Also supports the OP750)

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MnOP715/OP750-RevA

OP715



online resources

OP750



online resources

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## Overview

The **OP715/OP750** offers a compact solution for multiple individual or switched sources in a single unit. This multichannel source is configured to specifications and supports the following source combinations in one unit:

- Single wavelength source (850nm, 980nm, 1310nm, 1550nm, 1625nm, etc.)
- Dual wavelength singlemode source (1310nm & 1550nm)
- Single wavelength multimode LED (850nm, 1300nm)
- Dual wavelength switched multimode LED (850nm & 1300nm)

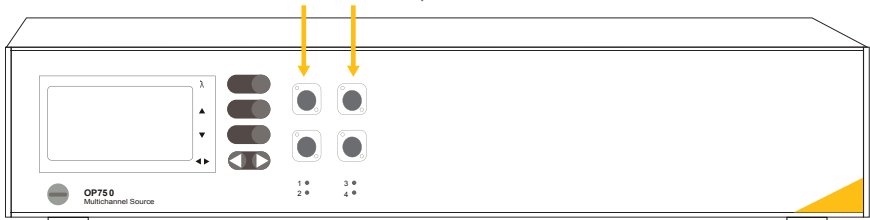
*For custom configurations, please contact OptoTest.*

The **OP715/OP750** is easily combined with **OP710/OP735** multichannel optical power meters and together with OptoTest software solutions for multichannel optical power measurements such as **OPL-MAX** or **OPL-LOG** can be captured over any length of time.

## Principle of Operation

### *Multichannel Source - Individual Sources*

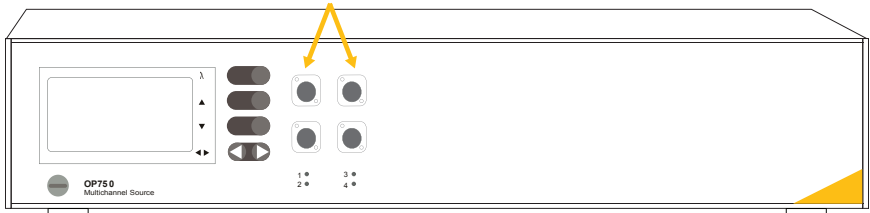
**Direct Output:**  
Up to 24 channels of  
individual source outputs.



Each channel can be active simultaneously

### *Multichannel Source - Switched Sources*

**Switched Output:**  
Up to 24 channels of  
switched source outputs.



One channel can be active at a time

## Initial Preparation

### *Unpacking and Inspection*

The unit was carefully inspected, mechanically, electrically, and optically before shipment. When received, the shipping carton should contain the items listed in Standard Contents. Account for and inspect each item. In the event of a damaged instrument, write or call OptoTest Corp, California.

*Please retain the shipping container in case re-shipment is required for any reason.*

### *Damaged In Shipment*

All instruments are shipped F.O.B. Camarillo when ordered from OptoTest. If you receive a damaged instrument you should:

1. Report the damage to your shipper immediately.
2. Inform OptoTest Corporation.
3. Save all shipping cartons.

Failure to follow this procedure may affect your claim for compensation.

### *Standard Contents*

1. Model OP715 Stabilized Light Source or OP750 Multichannel Source
2. Power Cord (U.S. Shipments only)
3. USB A-B cable
4. Certificate of Calibration and if requested the Metrology Report
5. Instruction Manual(s)
6. CD with applicable software and documentation (if ordered)
7. Rackmount Kit (optional)

## Definition of Specifications

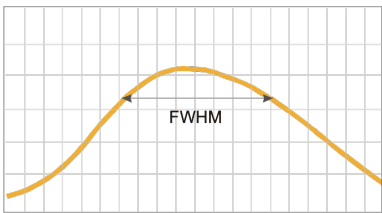
### Source Wavelength

The wavelength specifications of the source is a nominal specification, the exact center wavelength varies depending on the source type. Laser sources are typically within  $\pm 10\text{nm}$  of the nominal center wavelength. LED sources have a broad spectral width and usually within  $\pm 20\text{nm}$  of the nominal center wavelength.

### Source Type

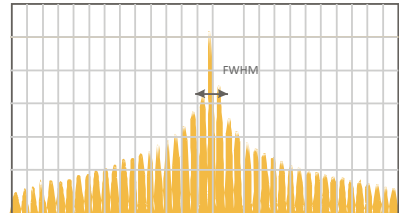
For singlemode measurements either a Fabry-Perot (FP) or Distribution Feedback (DFB) laser source is applied, for multimode measurements usually a LED source is used.

#### Light Emitting Diode (LED) Typical Spectrum



center wavelength

#### Fabry Perot Laser Typical Spectrum



center wavelength

### Output Power

The typical output power is the minimal power level that the source delivers at a 100% setting. Actual power levels are usually slightly higher and depend on the installed source component as well as the fiber size the absolute power reading is taken with.

### Launch Condition

For multimode sources the launch condition is qualification for to what degree the core of the fiber is filled (modal distribution). The CPR (coupling power ratio) is a measurement that indicates the fullness of the fill, a high CPR indicates a full-fill or over-fill whereas a low CPR indicates an under-fill.

## Definition of Specifications

### *Stability*

The source power stability is measured over one hour of operation at ambient temperature unless specified otherwise. To measure the stability the fiber should not be excessively moved, ideally fibers are fixed in place. For singlemode measurements strong back reflections should be avoided as they can influence the stability of the measurement. The OP750 sources have a typical temperature dependence of better than 0.03dB/ °C.

### *Settling Time*

Switched multichannel sources require a switch settling time.

### *Warm-up Time*

The optical power meters in general do not need any warm-up time unless the instrument has to acclimate to a changing environment. In order to calibrate the instrument or to perform stable measurement the instrument should be acclimated for 15 minutes for each 5°C of temperature differential. For example if the instrument was stored at 18°C and brought into an environment of 28°C the instrument should be allowed to warm-up for 30 minutes.

### *Environmental*

**Operating Temperature:** This is the temperature range in which the instrument will conform to the specifications after the specified warm up time. **Storage Temperature:** This is the temperature range at which the instrument can be stored with the power off without any damage or any loss of specification to the instrument. It is required that the instrument be brought back to within the operating temperature range before it is turned on. **Humidity:** The relative non-condensing humidity levels allowed in the operating temperature range.



## LASER Safety

OptoTest source modules, depending on the model, may contain LASERs that are harmful to the human eye. The single mode (typically 1310nm or 1550nm) LASERs typically have an output of -2dBm. These are considered a Class I LASER and should not be viewed directly, pointed at anyone, or viewed through a telescopic device as this could cause eye damage. The multimode LEDs (typically 850nm and 1300nm) are Class II LEDs and should not be viewed directly for long periods of time or through a telescopic device ever as this could result in eye damage.

## External Source Input (Supported Units Only)

An optional optical source input is available on the back side of the **OP715/OP750** upon request. That port can be switched on through remote control via the USB port.

### *Selection of External Source*

By pressing both channel selectors at once for at least two seconds, the external source input is toggled on and off. The channel indicator in the display as well as all the channel LEDs will briefly go blank to indicate the switching.

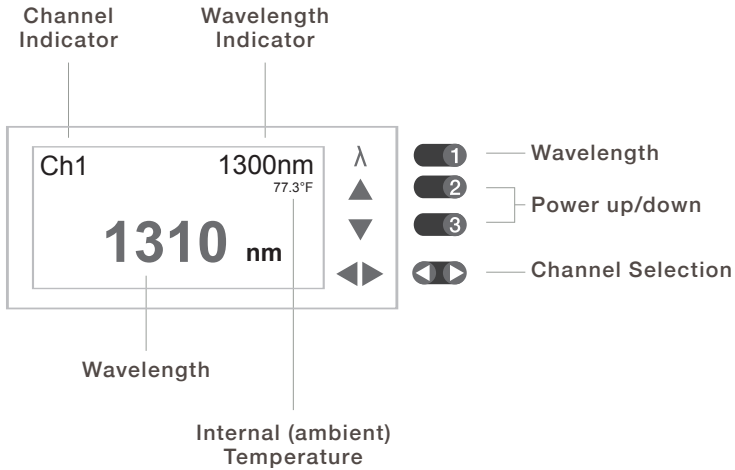
## Switch Mode (Supported Units Only)

An optional mode for units with individual source outputs forces the unit to behave as though it had a switch governing the discrete outputs.

### *Activating Switch Mode*

By pressing both channel selectors at once for at least two seconds, the source unit will operate such that only one channel is active at a time.

Front Panel Operation



**1** *Wavelength*

The nominal source output power is coarsely adjustable from 0% to 100%. The percentage does not correlate to the output power of the source, but rather to the current applied to the source component. As a result, the output power may not be vary linearly with the percentage on the front panel of the unit. Between 0% and 100%, the adjustment for LED sources is somewhat linear. The adjustment for laser sources depends on the particular laser source and the output power tends to not vary linearly with regard to the displayed percentage on the front panel.

**2** *Power Up, Power Down*

The nominal source output power is coarsely adjustable, for LED sources the adjustment range is somewhat linear between 0% and 100%. The adjustment for laser sources depends on the particular laser source and is limited to approximate 6dB range.

**NOTE: This power adjustment is not calibrated or linear.**

**NOTE: Pressing the Up and Down button at the same time will turn the source OFF.**

**3** *Channel Selection*

Advances the channel forwards or backwards. For the selected channel the applicable wavelength is displayed as well as the adjustable power level. If the OP715 contains a switched source the channel selection routes the internal source to the selected output port.

## USB Control of the OP715/OP750

The OP715 and OP750 can be controlled via the USB bus. Upon request, OptoTest can supply the appropriate DLLs along with sample programs to facilitate the software creation process. For these DLLs please contact [sales@optotest.com](mailto:sales@optotest.com).

## Warranty Information

OptoTest Corp. warrants this product to be free from defects in material and workmanship for a period of one year from date of shipment. During the warranty period we will, at our option, either repair or replace any product that proves to be defective. To exercise this warranty contact OptoTest Corp. headquarters. You will be given prompt assistance and return instructions. Repairs will be made and the instrument returned, transportation prepaid. Repaired products are warranted for the balance of the original warranty period, or at least 90 days.

**NOTE:** Do not send instruments for any reason without contacting OptoTest headquarters first.

For Application Notes, more detailed Testing Instructions, and the most up-to-date OptoTest News go to [www.optobuzz.com](http://www.optobuzz.com)





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