

# VIAVI

## ORL-85

### SmartClass™ Fiber Inspection-Ready Optical Return Loss Meters

The SmartClass Fiber ORL-85 combines fiber inspection, optical power meter (OPM), light source (OLS), and continuous wave return loss meter (OCWR) in one versatile test instrument. The compact instrument is ideal for measuring optical return loss and inspecting fiber connector end faces to verify optical connection quality.

Optical systems with high-speed lasers, analog transmission (CATV), or Raman amplifiers require high return loss for maximum performance. Furthermore, optical return loss measurements can be used to prove that an installation was completed carefully and accurately; for example, they can show that the optical connectors were inspected and are clean. The ultra-sensitive power meter combined with stabilized light sources enable up to a 70 dB measurement range. The angled single-mode test port (APC) guarantees highly accurate return loss measurements without requiring external termination for up to 50 dB return loss measurements.



The ORL-85 is compatible with the P5000i digital analysis microscope for checking fiber end-face quality and getting pass/fail acceptance results at the push of a button.

Threshold settings for pass/fail indications and the intuitive touch screen user interface transforms users into instant fiber experts without the need for special training. Automatic functions, such as Auto- $\lambda$  and real-time Multi- $\lambda$  functionalities avoid handling errors and speed up test time significantly. The ORL-85 is fully compatible with other members of the SmartClass Fiber family (OLS, OLP, and OLT) with these automatic functions.

Users can easily save test results (power, return loss, and fiber inspection) with real-time stamp to generate certification reports. Test results can be easily uploaded to a PC for post-processing with FiberChekPRO™ PC software.

The ORL-85 optical return loss meters can be used anywhere today's fiber technicians go, up poles or down holes. Technicians gain ultimate flexibility and performance from this powerful easy-to-use solution that can instantly transform any technician into a fiber expert.

### Benefits

- Complete jobs faster, correctly, and on time—the first time—with a uniquely integrated fiber inspection microscope, optical power meter, optical light source, and optical return loss meter
- Battery-operated, field-portable instrument provides a full day of autonomy
- Data transfer and remote control via USB, Ethernet or optional WiFi connection
- Shielded housing for extreme accuracy in RF environments
- Rugged, weather-proof design for outdoor use

### Features

- Real-time simultaneous return loss measurements at multiple wavelengths
- Automated pass/fail fiber inspection analysis with optional P5000i microscope
- Onboard fiber inspection and test results storage with time stamp
- 70 dB high precision return loss meter
- 3.5" color touch screen with integrated stylus
- In-service loss test option

## Specifications

|  | ORL-85 (2311/21)   | ORL-85 (2311/23)                 |
|--|--|----------------------------------|
| <b>Operating Modes</b>                       | Return Loss, Power Meter, Light Source                                     |                                  |
| <b>Return Loss Meter</b>                     |  |                                  |
| Nominal wavelengths <sup>1</sup>             | 1310, 1550 nm  | 1310, 1550, 1625 nm              |
| Resolution                                   | 0.01 dB  |                                  |
| Measurement range                            | 0 to 70 dB   |                                  |
| Measurement accuracy <sup>2</sup>            | ±0.7 dB (0 to 50 dB)   |                                  |
|  | ±0.9 dB (50 to 60 dB) <sup>3</sup>   |                                  |
| <b>Power Meter</b>                           |  |                                  |
| Detector type                                | InGaAs   |                                  |
| Power measurement range                      | -85 to +15 dBm   |                                  |
| Max. permitted input level                   | +15 dBm  |                                  |
| Measurement accuracy <sup>4</sup>            | ±0.5 dB  |                                  |
| Overall measurement uncertainty <sup>5</sup> | ±0.60 dB ±0.15 nW  |                                  |
| Automatic offset nulling                     | Yes  |                                  |
| Wavelength range/settings                    | 1260 to 1650 nm, in 1 nm steps   |                                  |
| Calibrated wavelengths                       | 1310, 1490, 1550, 1625 nm  |                                  |
| Display resolution                           | 0.01 dB/0.001 µW   |                                  |
| Measurement units                            | dB, dBm, W   |                                  |
| Power meter functions                        | Abs, rel, pass/fail  |                                  |
| Auto functions <sup>6</sup>                  | Auto-λ   | Auto single-wavelength detection |
|  | Multi-λ  | Auto multi-wavelength detection  |
| Tone detection                               | 270 Hz, 1 kHz, 2 kHz   |                                  |
| Warm up time                                 | None, instant On   |                                  |
| <b>Light Source</b>                          |  |                                  |
| Nominal wavelengths <sup>1</sup>             | 1310, 1550 nm  | 1310, 1550, 1625 nm              |
| Spectral width                               | <5 nm  |                                  |
| Output power (settable in 0.01 dB steps)     | -3 to -6 dBm   | -6 to -9 dBm                     |
| Stability <sup>7</sup> 15 min/8 hr           | 0.02/0.2 dB  |                                  |
| Source modes                                 | CW, tone, Auto-λ <sup>8</sup> , Multi-λ <sup>8</sup>                       |                                  |
| Tone generator                               | 270 Hz, 1 kHz, 2 kHz   |                                  |
| Optical interfaces                           | APC connector with interchangeable SC, FC, ST adapters                     |                                  |
| <b>General</b>                               |  |                                  |
| Laser Class                                  | Class 1 Laser Product (IEC 60825-1:2007)                                   |                                  |
| Display                                      | 3.5-in color LCD touch screen, 4:3 ratio                                   |                                  |
| Data readout                                 | Via USB interface  |                                  |
| Remote control capability                    | Via USB or Ethernet  |                                  |
| Inspection functions                         | Live, freeze, store end-face image, auto pass/fail                         |                                  |
| Data storage                                 | Up to 10,000 test results. Abs, rel. power with time stamp, inspection jpg |                                  |
| Electrical interfaces                        | USB 2.0 (2 x host, type A, 1 x device, Micro-B)                            |                                  |
| Power source                                 | AC adaptor, 8x AA alkaline, or rechargeable LiON battery pack (option)     |                                  |

| <b>General</b>                 |                                 |   |
|--------------------------------|---------------------------------|---|
| Power mode                     | Active, Auto-Off (programmable) |   |
| Battery life                   | >10 hr (LiON)/>8 hr (alkaline)  |   |
| Dimension (H x W x D) & Weight | ORL-85                          | 208 x 112 x 64 mm (8.2 x 4.4 x 2.5 in)<br>750 g (1.6 lb)  |
|                                | ORL-85P                         | 208 x 153 x 64 mm (8.2 x 6.0 x 2.5 in)<br>850 g (1.85 lb) |
| Operating temp. range          | -5 to +45°C (23 to 113°F)       |   |
| Storage temp. range            | -25 to +55°C (-13 to 131°F)     |   |

## Ordering Information

ORL-85 Optical Return Loss Meters include

- SmartClass Fiber instrument
- SC2 soft shoulder case
- Optical adapters: SC type (mounted) and FC type (interchangeable)
- Alkaline batteries (8x)
- Quick start manual and safety instructions

| Description  | Part Number |
|--|-------------|
| ORL-85 Return Loss Meter 1310, 1550 nm, APC                | 2311/21     |
| ORL-85 Return Loss Meter 1310, 1550, 1625 nm, APC          | 2311/23     |
| <b>Options and Accessories</b>                             |             |
| PS000i digital analysis microscope with 4 tips             | FBP-SD101   |
| RBP2 Rechargeable Lilon battery pack 3.7 V/20 W            | 2305/90.02  |
| PS4 power supply, 12 V, 2 A                                | 2305/90.01  |
| RBP2 Rechargeable Lilon battery pack with PS4 power supply | 2305/90.04  |
| SmartClass Fiber WiFi option including USB wifi-adaptor    | 2327/90.21  |
| UC4 hands-free carrier                                     | 2128/01     |
| SC2 soft shoulder case                                     | 2128/03     |
| FC-type optical adapter                                    | 2155/00.05  |
| LC-type optical adapter                                    | 2155/00.07  |
| SC-type optical adapter                                    | 2155/00.26  |
| ST-type optical adapter                                    | 2155/00.32  |
| USB cable USB-A to Micro-USB                               | K807        |

1. ±20 nm
2. Under reference conditions 23°C ±3K, 45% to 75% rel. humidity, 9 µm test fiber with SC/APC ceramic connector, Normalization after a warm-up time of 20 minutes
3. Normalization with single-mode mandrel wrap that has >70 dB return loss
4. At calibrated wavelengths at reference conditions at -22 dBm (CW), 23°C ±3K, 9µm test fiber with SC/APC ceramic connector
5. At calibrated wavelengths from -85 dBm to +15 dBm, -5°C to +45°C. Overall measurement uncertainty for 1260 to 1650 nm: ±0.80 dB ±0.15 nW
6. With VIAVI optical lighth sources OLS-3x, OLS-5x, OLS-8x, OLTS-8x from 800 nm to 1625 nm: level > -60 dBm
7. Between -10 to +55°C with ΔT = ±0.3 K after a 20-minute warm-up
8. Works in conjunction with OLP-3x, OLP-55, OLP-85, OLTS-85, and ORL-85

## VIAMI Care Support Plans

### Increase your productivity for up to 5 years with optional VIAMI Care Support Plans:

- Maximize your time with on-demand training, priority technical application support and rapid service.
- Maintain your equipment for peak performance at a low, predictable cost.

For more Information: go to [viavisolutions.com/viavicareplan](https://viavisolutions.com/viavicareplan)

### Features

\*5-year plans only

| Plan   | Objective                          | Technical Assistance | Factory Repair | Priority Service | Self-paced Training | 5 Year Battery and Bag Coverage | Factory Calibration |
|--|------------------------------------|----------------------|----------------|------------------|---------------------|---------------------------------|---------------------|
| <br><b>BronzeCare</b> | Technician Efficiency              | Premium              | ✓              | ✓                | ✓                   |                                 |                     |
| <br><b>SilverCare</b> | Maintenance & Measurement Accuracy | Premium              | ✓              | ✓                | ✓                   | ✓*                              | ✓                   |



Contact Us **+1 844 GO VIAMI**  
(+1 844 468 4284)

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visit [viavisolutions.com/contact](https://viavisolutions.com/contact)

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