

# Sefram



**SEFRAM 7940  
Optical Power Meter**

## Content

<b>1. Overview.....</b>	<b>03</b>
<b>2. Specifications.....</b>	<b>03</b>
<b>3. Standard Packages.....</b>	<b>04</b>
<b>4. Components Guide.....</b>	<b>05</b>
<b>5. Operation and Notes.....</b>	<b>06</b>
<b>6. Maintenance.....</b>	<b>09</b>
<b>7. Troubleshooting.....</b>	<b>10</b>
<b>8. Changing battery.....</b>	<b>10</b>
<b>9. Warranty and Servicing.....</b>	<b>11</b>

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The information contained in this document is assumed to be correct and current. The manufacturer is not responsible for errors of omissions and reserves the right to change specifications at any time without notice.

## 1. Overview

SEFRAM has designed the SEFRAM 7940 series optical power meter to meet the high demand. It can be used for the absolute power measurement and relative measurement of the link loss in dB. Its compact size, friendly operation interface, broad power measurement range, high precision and brand-new user automatic calibration function and high performance in application makes it an ideal tool for optical fiber network.

### SEFRAM 7940 Specifications:

Wavelength: 850nm, 980nm, 1300nm, 1310 nm, 1490nm, 1550nm

Measurement Range: -50 to +26dBm

## 2. Specifications

Model	SEFRAM 7940
Wavelength Range (nm) *1	800~1600
Detector Type	InGaAs
MeasurementRange (dBm) *2	-50~+26
Uncertainty *3	±0.15dB
Accuracy	Linear 0.1% or Nonlinear 0.01dBm
Operating Temperature (°C)	-10 to +60°C
Storage Temperature (°C)	-25 to+70°C
Auto-off Time (min)	10
Operating Time (h)	≥130
Battery	3 AA1.5V
Weight (g)	200
Dimensions (mm)	152X74X26

**Notes:**

1. Wavelength Range: Specified standard operating wavelength range in which the Power Meter can work properly under certain technical specifications.
2. Power Measurement Range: The maximum and minimum range in which the Power Meter can work properly.
3. Uncertainty: Difference between two measurement results that were tested by Power Meter and another Standard Power Meter respectively.

**3. Standard packages**

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|--|---|
| 1. SEFRAM 7940 Handheld Power Meter..... | 1 |
| 2. Manual.....                           | 1 |
| 3. Protective Holster.....               | 1 |
| 4. 1.5V AA Battery.....                  | 3 |
| 5. Cotton Swabs.....                     | 1 |

#### 4. Components Guide



- (1) **LCD:** The LCD screen display the measurement tested in dB, dBm, mW, uW, nW unit; the selected wavelength; the current operating situation and so on.
- (2) **ON/OFF Key:** Press the key to turn the unit on/off.
- (3) **dB Key:** To test the power value under certain wavelength.
- (4) **ZERO Key:** Press the key for auto-zero.
- (5) **“λ” Key:** To switch the current operating wavelength between 850nm、980nm、1300nm、1310nm、1550nm.
- (6) **LIGHT Key:** To turn the background light on/off.

## **5. Operation and Notes**

### **5.1 ON/OFF**

- (1) Press the On/Off key for a few seconds to turn on the unit
- (2) Press the On/Off key for a few seconds to turn off the unit

### **5.2 Absolute power measurement**

- (1) Turn on the Power Meter
- (2) Press the  $\lambda$  key to switch between the wavelengths. The default wavelength is 1310nm.
- (3) Connect the light to be measured, and then reading will be displayed on the LCD screen, including Linear and nonlinear value.

### **5.3 Relative power measurement.**

- (1) Select the wavelength to be measured.
- (2) Under "Absolute power measurement mode", connect to the light to be tested.
- (3) Press dB key, then current power value is stored as a reference value in dB unit. At the same time it also display the current absolute power value and current relative value is 0dB.
- (4) Connect to another beam of light to be tested, display the current relative power value and absolute power value under tested.

### **5.4 Special function**

SEFRAM 7940 has 3 kinds of working mode: (1) **Factory Mode**

(2) **User Mode**

(3) **Working Mode**

**5.4.1 Factory Mode:** The factory is responsible for the test and calibration

**5.4.2 User Mode:** Press the  $\lambda$  + **Light key** synchronously, and then enter the User mode. A sign "T" will be displayed at the left side of the display. Press the  $\lambda$  + **Light key** synchronously once again, it exit from the User mode and enter the Working mode. (the T sign will disappear).

Function	Button	-----
Plus 0.05	Light	-----
Minus 0.05	dB	-----
Store	Zero	-----
Switch Wavelength	$\lambda$	-----
Return to the Factory Setting	$\lambda$ + Zero	-----

**Notes:** If any errors or mistakes caused by the user self-calibration operation, please press the  $\lambda$ + Zero synchronously under the user mode to go back to the factory setting.

- (1) **Auto-off** : Press **LIGHT + dB key** to turn on the auto-off function. The auto-off symbol will be displayed on the top right. The unit will be turn off automatically after 10 minutes idle time.
- (2) **Background light On/Off:** Under the Working Mode, press LIGHT to turn the background light On/Off. A little sun symbol will be displayed on the top right.

## **Appendix:**

### **Optical fiber loss measurement**

#### **Step 1- Optical Reference Level**

- Turn on optical power meter and press the  $\lambda$  key to select the wavelength.
- Turn on optical light source (emitting source) and select the wavelength. Wait for 1-2 minutes until it stabilize.
- Select a piece of patch cords, which is used to connect with the light source, we call it emitting patch cords. Cleaning connector of the patch cords. The fiber of the emitting source patch cords must be the same fiber type as the fiber under test.
- Connect the light source (emitting source) with the 7940 through the emitting source patch cords
- SEFRAM 7940 get the power measurement value. This value should be close to the one that light source (emitting source) set. If it has wide disparity, please make sure the fiber connection is clean properly else replace another jumpers.
- Press the dB key; the reading 0.00dB will be displayed on the screen. The tested power values will be set to the reference value.

#### **Step 2-Optical Loss Measurement**

- Keep the emitting source patch cords connection with the light source (emitting source).
- Connect the 7940 and light source (emitting source) to the optical fiber link respectively.

**Notes:** cleaning all the connectors surface including all the necessary optical adaptors. The reading in dB unit displayed on the screen is the tested optical fiber link loss.(also display the current absolute optical power value in dBm unit).



## **6. Maintenance**

1. It is important to keep all optical connectors and surfaces free from oil, dirt or other contamination to ensure proper operation.
2. Keep using one type of adapter to avoid excess loss from different connectors.
3. Please use dust proof cap for protection to avoid begin scratched or contaminated when SEFRAM 7940 not in operation.
4. Light interface is sensitive, please carefully plug in and pull out the connectors.
5. Please use clean cotton to clean the sensor surface, clean it in clockwise direction carefully.
6. If does not need to use for a long time, please take out the battery.

## 7. Trouble shooting

<b>Description</b>	<b>Problem</b>	<b>Method</b>
Faint LCD display	Battery is weak	Change battery
No display after turning on the unit	Battery is weak/Others	Turn on the unit again/Change battery
Insensitive display in LCD	Light interface is polluted/ broken/Display locked	Check connector carefully and clean sensor's interface

## 8. Change Battery

- 8.1 If you find battery is weak while operating it, please immediately turn the unit off and change a new battery.

## **9. Warranty and Servicing**

In case of failure or problem, please contact SEFRAM after sales department to send back your instrument.

### **9.1 2 years Warranty for SEFRAM 7940 Handheld Power Meter**

SEFRAM warrants that every Handheld Power Meter 7940 will be free from defects in material and workmanship for a period of 24 months. This warranty covers the original user only and is not transferable. Should the device fail at any time during this warranty period, We will, at its sole discretion, replace, repair or refund the purchase price of the product.

This warranty is limited to defects in workmanship and materials and does not cover damage from accident, acts of God, neglect, contamination, misuse or abnormal conditions of operation or handling.

To establish if the product is covered by the warranty please provides date of purchase and delivery note to SEFRAM with the defect power meter. This warranty will not go into effect until we have received the delivery note as a proof of warranty with the power meter returned to our after sales department.

Failure to properly protect the product during shipping may avoid this warranty.

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