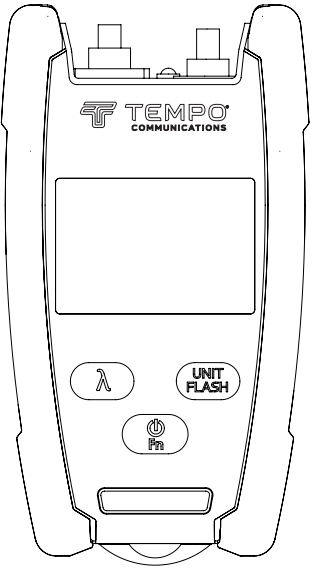
INSTRUCTION MANUAL

TEMPO®
COMMUNICATIONS



OPM210 • OPM220
Fiber Optic Power Meter

Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

Register this product at www.TempoCom.com

55500197 REV11 © 2020 Tempo Communications Inc. 09/20

Table of Contents

Description 3
Safety 3
Purpose of This Manual 3
Important Safety Information 4-6
Introduction 7
    Model Designations 7
    Unpacking and Inspection 7
Specifications 8
General Information 9-12
    Battery 9
    Auto Power Off 9
    Battery Installation or Replacement 10
    Connector Interface 10
    Cleaning the OPM and VFL Interfaces 10
        Fn—Function Change 11
        OPM Mode 12
        VFL Mode 12
        LED Mode 12
Warranty 13

KEEP THIS MANUAL

Description

- The OPM210 power meter measures optical power at 850 nm, 1300 nm, 1310 nm, 1490nm, 1550nm and 1625 nm between a power range of +6 to -70dBm. The OPM210 is supplied standard with a universal 2.5mm bulkhead. The OPM210 is supplied with a 1mW Visual Fault Locator that is used to measure fiber breaks, discontinuities and Macrobends. The VFL has a universal 2.5mm interface with an optional 1.25mm adapter available.
- The OPM220 power meter measures optical power at 850 nm, 1300 nm, 1310 nm, 1490nm, 1550nm and 1625 nm between a power range of +26 to -40dBm. The OPM210 is supplied standard with a universal 2.5mm bulkhead. The OPM220 is supplied with a 1mW Visual Fault Locator that is used to measure fiber breaks, discontinuities and Macrobends. The VFL has a universal 2.5mm interface with an optional 1.25mm adapter available.

Safety

Safety is essential in the use and maintenance of Tempo Communications tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

Purpose of This Manual

This instruction manual is intended to familiarize all personnel with the safe operation and maintenance procedures for the Tempo Communications OPM210 and OPM220 instruments. Keep this manual available to all personnel. Replacement manuals are available upon request at www.TempoCom.com.

Important Safety Information

SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

⚠DANGER

Immediate hazards which, if not avoided, WILL result in severe injury or death.

⚠WARNING

Hazards which, if not avoided, COULD result in severe injury or death.

⚠CAUTION

Hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.



⚠WARNING

Read and **understand** this material before operating or servicing this equipment. Failure to understand how to safely operate this tool could result in an accident causing serious injury or death.

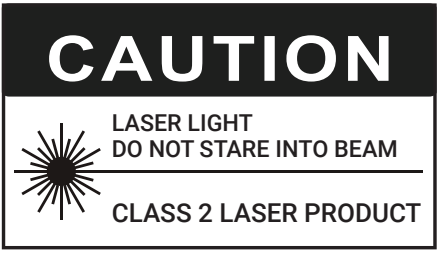


⚠WARNING

Electric shock hazard:

Contact with live circuits could result in severe injury or death.

Important Safety Information



The OPM210 and OPM220 instrument has a laser device, a Visual Fault Locator (VFL) conforming to the requirements of CDRH, CFR 1040, Subchapter J. While there is no potential for eye damage due to unaided direct exposure, users should always avoid looking directly into the output port. The use of optical viewing instruments, such as micro- scopes, magnifiers, etc., should always be avoided. The use of such devices around active fibers can focus an intense beam of light energy onto the retina of the eye, which can result in permanent damage.

⚠CAUTION

Laser hazard:

- When performing measurements on fiber optic systems, avoid eye exposure to any open-ended fibers, optical connectors, optical interfaces, or other sources because they may be connected to active laser transmitters.
- Do not look into the optical port when a source is turned on.
- Avoid looking at the free end of a test fiber, i.e., the end not connected to the instrument. If possible, direct the free end toward a non-reflective surface.

Failure to observe these precautions may result in injury.

Important Safety Information

⚠CAUTION

Electric shock hazard:

- Do not insert batteries with the polarity reversed.
- Do not open the case of the unit for any reason. It contains no user-serviceable parts.
- Use this unit for the manufacturer's intended purpose only, as described in this manual. Any other use can impair the protection provided by the unit.

Failure to observe these precautions may result in injury and may damage the unit.

⚠CAUTION

Instrument damage hazard:

- Do not leave the unit in direct sunlight or near direct sources of heat.
- Protect the unit from strong impacts or shock.
- Do not immerse the unit in water or store in areas with high humidity.
- When necessary, clean the case, front panel, and rubber cover with a damp cloth. Do not use abrasives, harsh chemicals, or solvents.
- Replace the interface dust cap(s) when the unit is not in use.
- Store the unit and interface adapters in a cool, dry, and clean place.

Failure to observe these precautions may result in injury and may damage the unit.

Introduction

Micro OPM Models

OPM210	InGaAs Optical Power Meter with 1mW VFL
OPM220	InGaAs Optical Power Meter with high power measurement range with 1mW VFL

Tempo Communications Accessories

1.25mm Adapter	1.25mm Adapter for LC and MU connectors
08325	Case with belt loop

Unpacking and Inspection

The Micro OPM has been carefully inspected before shipment. When received, the shipping carton should contain the items listed below:

- 1 Micro OPM
- 1 Lanyard
- 1 Quick Reference Card

Please account for and inspect each item while unpacking and preparing the instrument for use.
If the instrument received is damaged, contact Tempo Communications. Refer to the instructions under “Warranty. Keep the shipping carton in case re-shipment is required for any reason.



Do not discard this product or throw away!
For recycling information, go to www.TempoCom.com.

All specifications are nominal and may change as design improvements occur. Tempo Communications Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

Specifications

Model	OPM210	OPM220
Measurement Range	+6dBm to -70dBm (1310/1490/1550/1625) +6dBm to -60dBm (850/1300)	-50dBm (1310/1490/1550/1625) +26 to -40dBm (850/1300)
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550, 1625nm	
Display Resolution	0.01dB	
Accuracy*	+/-0.25dB	
Linearity*	+/-0.5dB (+10 to -3dBm) +/-0.1dB (-3 to -50dBm) +/-0.5dB (-50 to -70dBm)	+/-0.5dB +26 to -3dBm +/-0.1dB -3 to -50dBm
Tone Detect	270Hz, 1kHz, 2kHz	
Connector	Universal 2.5mm	
Wavelength Response	700 - 1700nm	
Detector	InGaAs	
Power Supply	AAA x 2 Alkaline	
Battery Lifetime	> 60 Hours (OPM Mode)	
Operating Temperature	-10 to +50°C (< 90% Relative Humidity)	
Storage Temperature	-20 to +60°C (< 90% Relative Humidity)	
VFL Wavelength	650nm +/-20nm	
VFL Output	≤ 1mW/2Hz Modulation	
VFL Class	Class 2	
VFL Range	~4km	
Size	105 x 52 x 24mm (4.25 x 2.0 x 0.9")	
Weight	100g (0.22lbs)	
Auto Power Off	10 minutes of no activity	
Certifications	CE, RoHS, CDRH, EAC	

* at -10dBm with FC Connector at 20C
Specifications subject to change without notice.

General Information

This section provides general instructions on how to use the instruments.

Battery

The OPM210 and OPM220 are powered with two AAA alkaline batteries.

Do not use rechargeable batteries.

When the battery power is low the low battery indicator will be displayed on the LCD.

Auto Power Off

The OPM210/220 will automatically turn off if there are no keypad pushes for approximately 10 minutes with auto power off enabled.

Press the “Fn” key to turn on the device with auto power off.

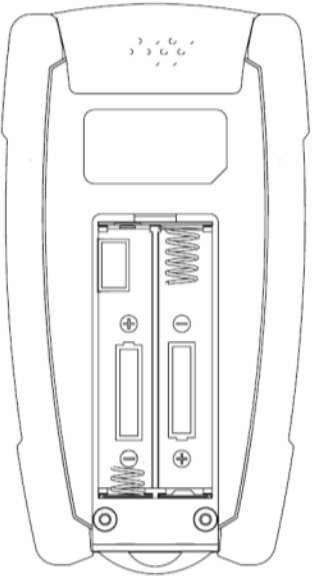
Press “Fn” key for two seconds when turning on device, auto power off will be canceled, LCD displays “PERM”.

Press “Fn” key for two seconds to shut the device off.

Battery

To replace the batteries, follow these steps:

1. Turn instrument off.
2. Remove battery cover.
3. Install the new batteries observing correct polarity as below.



Connector Interface

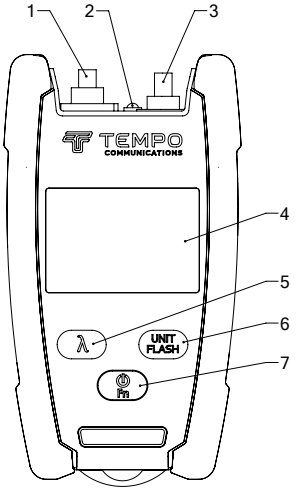
Both the OPM and VFL ports are universal 2.5mm. A 1.25mm adapter is available as an optional accessory.

Cleaning the OPM and VFL Interfaces

Make sure that the instrument is powered off.

Do not look into the output of any fiber port.

Use a new 2.5mm cleaning swab each time to clean each bulkhead port.



1. OPM Connector
2. LED Light
3. VFL Connector
4. LCD
5. Set/Ref Set
6. OPM Unit Set / Ref Set
7. Power on/off and Function

Fn—Function Change

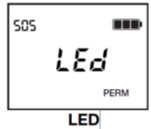
Press the “Fn” key to select OPM or VFL or LED function:



OPM



VFL



LED

OPM Mode

Press “λ” to select the wavelength. Press “Unit Flash” to change the unit dBm or dB.

Press “Unit Flash” for two seconds for REF setting.

Press “Unit Flash” and “λ” keys to reference 0dBm.

VFL Mode

Press “Unit Flash” to change output mode, 2Hz modulation or continuous.

LED Mode

Press “Unit Flash” to change from continuous to flash.

Limited Warranty

Tempo Communications Inc. warrants to the original purchaser of these goods for use that these products will be free from defects in workmanship and material for one year, excepting normal wear and abuse.

For all Test instrument repairs, you must first request a Return Authorization Number by contacting our Customer Service department at:

toll free in the US and Canada 800-642-2155

Telephone +1 760 510-0558.

Facsimile +1 760 598-9263.

This number must be clearly marked on the shipping label. Ship units Freight Prepaid to: Tempo Repair Center, 1390 Aspen Way, Vista, CA 92081 USA.

Mark all packages: Attention: TEST INSTRUMENT REPAIR.

For items not covered under warranty (such as dropped, abused, etc.) repair cost quote available upon request.

Note: Prior to returning any test instrument, please check to make sure batteries are fully charged.

Tempo Communications

1390 Aspen Way • Vista, CA 92081 • USA

800-642-2155

Tempo Europe Ltd. • Brecon House, William Brown Close Cwmbran, NP44 3AB, UK • Tel: +44 1633 927 050

www.TempoCom.com