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MPM-210H

Multichannel Optical Power Meter



Product Overview

The MPM-210H is a new multichannel optical power meter that is perfect for measuring the optical characteristics of multichannel optical devices. The MPM-210H can simultaneously measure up to 20 channels (4 channels per MPM-211 module) very fast with high resolution. It features high accuracy, high linearity, and extremely low polarization-dependent sensitivity with power levels from -80 to +10 dBm (-70 to +5 dBm for MPM-215) over a wavelength range of 1250-1680 nm. GPIB, TCP/IP and RS-232C interfaces provide a convenient automated measurement solution.

The MPM-210H is ideal for IL and PDL measurement of multichannel optical components including Dense Wavelength Division Multiplexing (DWDM), AWG, Wavelength Selective Switches (WSS) and more. When combined with a Santec TSL-Series laser equipped with a power monitor output, the MPM-210H allows the user to complete high precision IL measurements while referencing in real-time. In particular, the MPM-215 is suitable for high-speed measurement of optical components with a dynamic range of 50 dB or more.

Seeing as the new MPM-210H multichannel optical power meter is command compatible with the previous MPM-210 model, switching to the new MPM-210H is as simple as swapping out your devices.

Features

- Wavelength range
  1250 - 1680 nm
- Dynamic power range
  - Power meter module:
    - MPM-211/212:
      -80 to +10 dBm
    - MPM-215:
      -70 to +5 dBm
  - Current meter module
    - MPM-213:
      -70 to +10 dBmA
- Up to 20 channels measurement
- Analog output (MPM-212)

Applications

- Optical power measurements
- IL and PDL measurements



MPM-211
(4-channel power meter)

MPM-212
(2-channel power meter with analog output)

MPM-213
(4-channel current meter)

MPM-215
(High dynamic range 4-channel power meter)

High-speed Measurement

- Up to 1 million logging sampling points per channel
- 2 memory buffers per channel
- Fast measurement (100 kHz) with high resolution
- Fast data transfer

High Dynamic Range (Logging Mode)

- Typically 50 dB per scan /MPM-211, 212, 213
- Typically 70 dB per scan /MPM-215

Mainframe, MPM-210H Specifications

Parameter		Unit	Specifications	Notes
Module Number		-	Up to 5	
Interface	For Power Meter	-	GP-IB, Ethernet, RS-232C	
	For System	-	USB	
Trigger Input		-	TTL(3.3 V)	BNC
Trigger Output		-	TTL(3.3 V)	BNC
Power Monitor		V	0 to 3	BNC
Supply Voltage		V	AC 100 to 240, 50/60 Hz	
Maximum Power Consumption		VA	50	
Operating Temperature		°C	10 to 40	
Operating Humidity		%	< 80	non-condensing
Weight		kg	6	
Dimensions (W) x (D) x (H)		mm	210 × 350 × 133	

Power Meter Modules, MPM-211(4ch), MPM-212(2ch), MPM-215 (4ch) Specifications

Parameter	Unit	Specifications			Notes
		MPM-211	MPM-212	MPM-215 [1]	
Sensor Element	-	InGaAs			
Wavelength Range	nm	1250 to 1680			
Specification Wavelength Range	nm	1250 to 1630			
Power Dynamic Range	dBm	-80 to +10		-70 to +5	
Dynamic Range @Fixed Gain (typ.) [2,3]	dB	45		70	Logging mode
Number of Gain Range	-	5		1	
Maximum Safe Power	dBm	+16			
Total Uncertainty	%	±5 @ -60 to 9 dBm		±5 @> -55 dBm	
Power Resolution	dB	0.001			
Linearity [2,4]	dB	±0.03 @ -55 to 9 dBm		±0.02 @ > -40 dBm ±0.05 @ > -50 dBm	
Polarization Dependent Responsivity (typ.) [2,5]	dB	< 0.025			@1525 - 1585 nm
		< 0.03			@1270 - 1630 nm
Averaging Time	sec	10 µ to 10			
Data Logging Capability	-	1,000,000 x 2 buffer per channel			
Channel Number per Module	-	4	2	4	
Analog Output [6]	-	None	With	None	
Connector Type	-	FC			

Current Meter Module, MPM-213 Specifications

Parameter	Unit	Specifications	Notes
		MPM-213	
Current Dynamic Range	dBmA	-70 to + 10 @ 100 pA to 10 mA	
Dynamic Range @Fixed Gain (typ.) [2,3]	dB	45 dB	Logging mode
Number of Gain Range	-	4	
Maximum Safe Power	dBmA	16	
Total Uncertainty	%	±5 @ -45 to 9 dBmA	Averaging time > 10 ms
		±1 @ > -35 dBm (typ.)	Averaging time > 10 ms
Power Resolution	dB	0.001	
Linearity	dB	±0.03 @ -45 to 9 dBmA	Averaging time > 10 ms
Averaging Time	sec	10 µ to 10	
Data Logging Capability	-	1,000,000 per channel x2	
Channel Number per Module	-	4	
Connector Type	-	BNC Connector	
Reverse Bias Voltage	V	-	

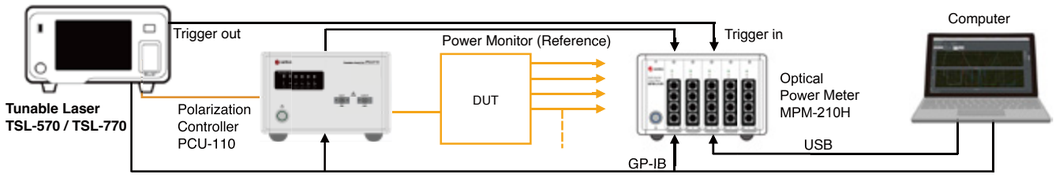
Notes:
[1] *This module is not compatible with other modules on a same mainframe*
[2] *Temperature: 23±5 °C*
[3] *Averaging time > 50 µs, Within ±1 °C after zeroing, At gain 1, 2 or 3 for MPM-211 / 212*
[4] *For MPM-211 / 212, Averaging time > 100 ms, Auto range mode, For MPM-215, Averaging time > 30 µs*
[5] *SMF, Straight connector*
[6] *Output voltage 0 to 2 V, Measurement dynamic range > 30 dB (typ.)*

Common Information for Module

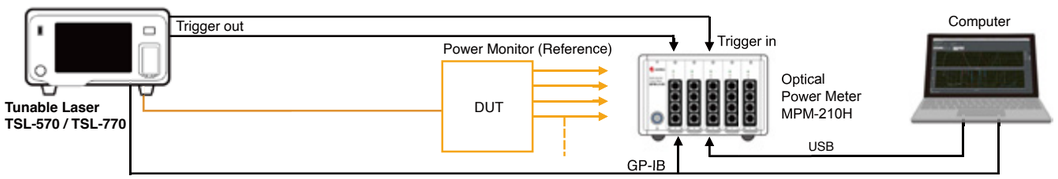
Parameter	Unit	Specifications	Notes
Operating Temperature	°C	10 to 40	
Operating Humidity	%	< 80	Non-condensing
Dimensions (W) x (D) x (H)	mm	30.3 × 183.5 × 114.8	Connectors are not included

MPM-210H Typical Swept Test System Configuration

IL / PDL measurement setup with the polarization controller (PCU-110) and the power meter (MPM-210H)



IL measurement setup with the power meter (MPM-210H)



Ordering Scheme & Instructions

1. Configure MPH-210H Multichannel Optical Power Meter

Main Frame

MPH-210H



Modules

4-channel power meter

MPM-211- [4] - [F]

CHANNEL	
4	04

CONNECTOR TYPE	
F	FC

2-channel power meter

MPM-212- [2] - [F]

CHANNEL	
2	02

CONNECTOR TYPE	
F	FC

4-channel current meter

MPM-213- [4] - [B]

CHANNEL	
4	04

CONNECTOR TYPE	
B	BNC

4-channel power meter

MPM-215- [4] - [F]

CHANNEL	
4	04

CONNECTOR TYPE	
F	FC

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