

MPM-210H

Multi-Port Optical Power Meter



MPM-210H (Main Frame)

MPM-211

(4ch power meter)

MPM-213

(4ch current meter)

MPM-212

(2ch power meter with analog output)

MPM-215

(High dynamic range 4ch power meter)



MPM-211/-212/-213/-215 (Modules)

Product Overview

The MPM-210H is a new multi-port optical power meter that is perfect for measuring the optical characteristics of multi-port optical devices. The MPM-210H can simultaneously measure up to 20 ports (4 ports 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 @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 multi-port 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 multi-port 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 to 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

Specifications

Main frame, MPM-210H

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 x 350 x 133	

Power meter modules, MPM-211(4ch), MPM-212(2ch), MPM-215 (4ch)

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 2buffer per port			
Port number per module	-	4 Ports	2 Ports	4 Ports	
Analog output ^{*6}	-	None	With	None	
Connector type	-	FC			

Current meter module, MPM-213

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 port x2			
Port number per module	-	4 ports			
Connector type	-	BNC Connector			
Reverse Bias Voltage	V	-			

*1: This module is not compatible with other modules on a same Main Frame. *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.)

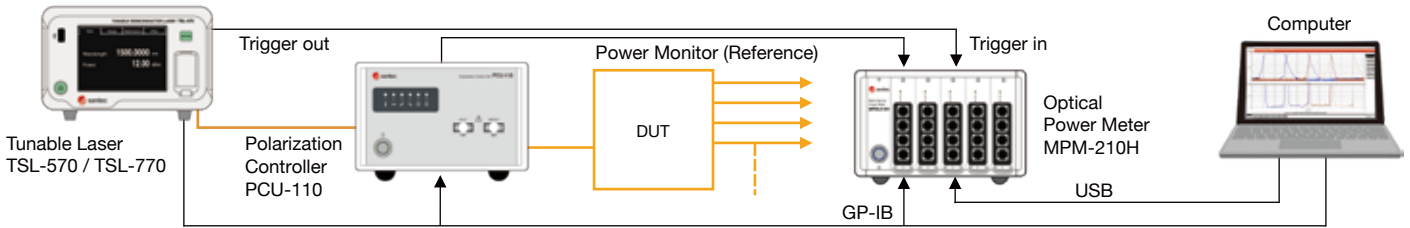
Specifications

Common information for module

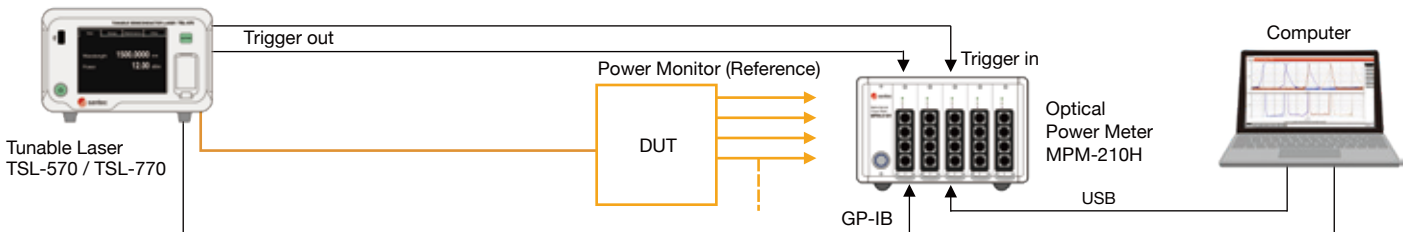
Parameter	Unit	Specifications	Notes
Operating temperature	°C	10 to 40	
Operating humidity	%	< 80	non condensing
Dimensions (W) x (D) x (H)	mm	30.3 x 183.5 x 114.8	Connectors are not included.

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 Code

Main frame

MPM-210H

Modules

- 4 port power meter **MPM-211** - -

A B

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Connector Type: **F**: FC
Port: 04
- 2 port power meter **MPM-212** - -

A B

└───┬───┘

Connector Type: **F**: FC
Port: 02
- 4 port current meter **MPM-213** - -

A B

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Connector Type: **B**: BNC
Port: 04
- 4 port power meter **MPM-215** - -

A B

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Connector Type: **F**: FC
Port: 04

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