Handheld Optical Power Meter

YOKOGAWA

Light Source

AQ2170
AQ2170H



AQ2180
AQ2180H



AQ4280A
AQ4280B
AQ4280C



Two versions of power meters to suit test applications

Standard version (AQ2170, AQ2180): +10 dBm max.
High power version (AQ2170H, AQ2180H): +26 dBm max.

Compact and lightweight

Fits in the palm of your hand or pocket... even with the standard protector installed.



Versatile data storage and transfer

Large memory capacity stores up to 999 measurement results,
USB port offers convenient data transfer to a PC in CSV format using the standard software supplied.

Three versions of light sources based on wavelengths.

Three wavelengths to address telecom service, plus additional wavelength for maintenance channel.

AQ4280A: 1310/1550 nm
AQ4280B: 1310/1490/1550 nm
AQ4280C: 1310/1550, 1490/1625 nm (2 ports)

Auto wavelength matching

When the AQ4280 and AQ2180 are paired together, the measurement wavelength on the AQ2180 can be set automatically according to the wavelength setting on the AQ4280. This feature can eliminate the extra steps to set the wavelength on the power meter and avoid improper measurements due to the mismatch of test wavelength.

Battery operation

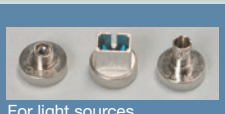
Dry cell batteries or rechargeable batteries (AQ2170: AAA-size, AQ2180/AQ4280: AA-size)
Auto power-saving feature to extend the battery life.

Useful standard accessories

- Various optical connector adapters (Removable adapters for easy cleaning)
  AQ2170/2180: FC, SC, LC, Ferrule 2.5 mm dia., Ferrule 1.25 mm dia.
  AQ4280 A/B/C: FC/PC, SC/PC, ST/PC
- Rubber protector for preventing damage by a drop impact
- Carrying case for storing a unit and optical connector adapters.







For light sources



For optical power meters

Specifications

	Model	AQ2170 Optical Power Meter	AQ2170H Optical Power Meter	AQ2180 Optical Power Meter	AQ2180H Optical Power Meter
Sensor	Wavelength setting	850/1300/1310/1490/1550/1625/1650 nm	1310/1490/1550/1625/1650 nm	850/1300/1310/1490/1550/1625/1650 nm	1310/1490/1550/1625/1650 nm
	Detector	InGaAs			
	Applicable optical fiber	SM (ITU-T G.652), GI (50/125 µm), GI (62.5/125 µm)	SM (ITU-T G.652)	SM (ITU-T G.652), GI (50/125 µm), GI (62.5/125 µm)	SM (ITU-T G.652)
	Optical connector	FC, SC, LC, ferrule 2.5 mm dia., ferrule 1.25 mm dia.			
	Power range	–70 to +10 dBm	–50 to +26 dBm	–70 to +10 dBm	–50 to +26 dBm
	Noise level	–60 dBm	–40 dBm	–60 dBm	–40 dBm
	Uncertainty*1	±5%			
General	Display resolution	0.01 dB (> –60 dBm), 0.1 dB (≦ –60 dBm)	0.01 dB (> –40 dBm), 0.1 dB (≦ –40 dBm)	0.01 dB, 0.01 dBm, 0.0001 µW	
	Display unit	Absolute value: dBm, mW, µW Relative value: dB			
	Modulation mode	CW, CHOP (270 Hz, 1 kHz, 2 kHz)			
	Measurement interval	Approx. 150 ms			
	Measurement mode	Absolute measurement, relative measurement			
	Memory function	—		999 records	
	Interface	—		USB-B (mini)	
	Power supply	AAA dry or rechargeable battery		AA dry or rechargeable battery	
		Battery life time*2: Approx. 40 hours, Power save: Power off automatically in 10 minutes when idle, Battery check: Battery indicator			
	Emvironmental conditions	Operating temperature: –10 to +50°C, operating humidity: 20 to 80% (no condensation), storage temperature: –20 to +70°C, storage humidity: 5 to 95% (no condensation)			
	Compliant standards	EMC (Emissions): EN 61326-1 Class B, EN 55011 Class B Group 1, EMC standards of Australia and New Zealand EN55011 Class B, Group 1, Korea Electromagnetic Conformity standard, EMC (Immunity): EN61326-1 Table 2), EN61326-2-2, Environmental standard: EN50581			
	Dimensions and weight*3	63 (W) mm × 116 (H) mm × 35 (D) mm, approx. 160 g		76 (W) mm × 153 (H) mm × 43 (D) mm, approx. 280 g	
	Accessories	Connector adapters, four AAA dry batteries, carrying case, protector, strap operation guide, user's manual (CD)		Connector adapters, two AA dry batteries, carrying case, protector, strap operation guide, user's manual (CD)	

	Model	AQ4280A Optical Light Source	AQ4280B Optical Light Source	AQ4280C Optical Light Source
Light source	Light emitting element	LD		
	Applicable optical fiber	SM (ITU-T G.652)		
	Center wavelength	1310/1550 ±20 nm	1310/1550 ±20 nm, 1490 ±10 nm	1310/1550 ±20 nm, 1490/1625 ±10 nm
	Spectral width*4 *5	< 5 nm (1310 nm), < 10 nm (1550 nm)	< 5 nm (1310 nm, 1490 nm), < 10 nm (1550 nm)	< 5 nm (1310 nm, 1490 nm, 1625 nm), < 10 nm (1550 nm)
	Output power level*6	–5 dBm ±1 dB	–5 dBm ±1 dB	–5 dBm ±1 dB
	Power stability (15 min.)*4 *6	< ±0.05 dB	< ±0.05 dB (1310/1550 nm), < ±0.1 dB (1490 nm)	< ±0.05 dB (1310/1550 nm), < ±0.1 dB (1490/1625 nm)
	Modulation	CW, CHOP (270 Hz, 1 kHz, 2 kHz)		
	Optical connector	FC, SC, ST		
General	Power supply	AA dry or rechargeable battery, Battery life time*7: Approx. 25 hours, Power save: Power off automatically in 10 minutes when idle, Battery check: Battery indicator		
	Environmental conditions	Operating temperature: –10 to +50°C, operating humidity: 20 to 80% (no condensation), storage temperature: –20 to +70°C, storage humidity: 5 to 95% (no condensation)		
	Compliant standards	Safety standard: IEC 60825-1 Class 1 (Laser)*8, FDA 21CFR1040.10 (Laser)*9 EMC (Emissions): EN 61326-1 Class B, EN 55011 Class B Group 1, EMC standards of Australia and New Zealand EN55011 Class B, Group 1, Korea Electromagnetic Conformity Standard, EMC (Immunity): EN61326-1 Table 2), EN61326-2-2, Environmental standard: EN50581		
	Dimensions/Weight*3	76 (W) mm × 153 (H) mm × 43 (D) mm, approx. 300 g		
	Accessory	Connector adapters, two AA dry batteries, carrying case, protector, strap, operation guide, user's manual (CD)		

*1: Power level: 100 µW (–10 dBm), CW, wavelength: 1310 nm, spectral width: 5 nm or less (1310 nm), ambient temperature: 23 ±2°C, optical fiber: SM (ITU-T G.652), optical connector: FC/PC, excluding polarization dependence, including attachment and detachment of connector adapter, within 1 year.
*2: Continuous measurement, using alkaline dry cells, at 23°C ±2°C
*3: Excluding the protector
*4: Constant temperature within 23 ±2°C, CW light
*5: RMS (2σ, –20 dB)
*6: With an optical fiber cord (FC/PC, 2 m)
*7: Using alkaline dry cells, continuous measurement
*8: IEC/EN60825-1, GB7247.1



*9: 21CFR1040.10



Note. All the specifications are valid at 23 ±2°C and with the FC adapter, unless otherwise stated.

Model and suffix code

Model	Suffix code	Descriptions
AQ2170	—	Optical Power Meter
AQ2170H	—	Optical Power Meter (High power)
AQ2180	—	Optical Power Meter
AQ2180H	—	Optical Power Meter (High power)
AQ4280A	—	Optical Light Source (1310/1550 nm)
AQ4280B	—	Optical Light Source (1310/1490/1550 nm)
AQ4280C	—	Optical Light Source (1310/1550,1490/1625 nm)
option	/CAL	Calibration* (The calibration certificate is not included.)

* For ordering the calibration certificate (model: 735993), the /CAL option is required, and the calibration certificate can only be issued at the time of product delivery. It cannot be issued after the product delivery.

Accessories (optional)

Model	Name	Descriptions
A1071PJ	Connector adapter (FC)	For AQ2170/AQ2170H/ AQ2180/AQ2180H 
A1072PJ	Connector adapter (SC)	
A1073PJ	Connector adapter (LC)	
A1074PJ	Connector adapter (1.25 mm dia.)	
A1075PJ	Connector adapter (2.5 mm dia.)	
A1076PJ	Connector adapter (FC)	For AQ4280A/ AQ4280B/AQ4280C 
A1077PJ	Connector adapter (SC)	
A1078PJ	Connector adapter (ST)	
A1079PJ	Slit sleeve	For AQ4280A/AQ4280B/AQ4280C
B1006CZ	Carrying case	For AQ2170/AQ2170H/AQ2180/AQ2180H/AQ4280A/AQ4280B/AQ4280C
B1004ZZ	Protector set	For AQ2170/AQ2170H
B1005ZZ	Protector set	For AQ2180/AQ2180H/AQ4280A/AQ4280B/AQ4280C
B1002ZZ	Battery plate set	For AQ2170/AQ2170H
B1003ZZ	Battery plate set	For AQ2180/AQ2180H/AQ4280A/AQ4280B/AQ4280C

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YMI-KS-MI-SE06

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