

## A High-Performance, Portable-Type Optical Power Meter with Wavelength Sensitivity Compensation Function

- 60-dB sensitivity at 1.3  $\mu\text{m}$
- 4 $\frac{1}{2}$ -digits of dynamic range
- Max-hold function
- Analog output



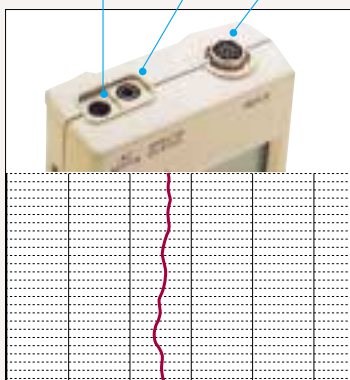
# Ideal for both communications and maintenance

The TQ8210 is a handheld optical power meter which can be combined with ADVANTEST silicon photodiode sensors for use at short wavelengths and an In GaAs or germanium photodiode sensor for use at long wavelengths.

It is designed to handle a wide range of applications, including such diverse uses as optical communications, laser printers, CD players and optomagnetic disk R&D and maintenance. In spite of its small size, the ADVANTEST design team provided the TQ8210 with such features as built-in response compensation, thereby ensuring high accuracy even when measurement range and sensor are changed. And, powered by batteries, the TQ8210 can be taken anywhere for accurate, reliable power measurements.

Usable with a long-wavelength (TQ82015/Q82018A), short-wavelength (Q82014A) or thin (Q82017A) sensor.

Analog output of input signal  
AC adaptor enables AC Line powered operation and battery charging.



Example of analog recording of output from the TQ8210

Backlighting for easy reading even in dark locations.

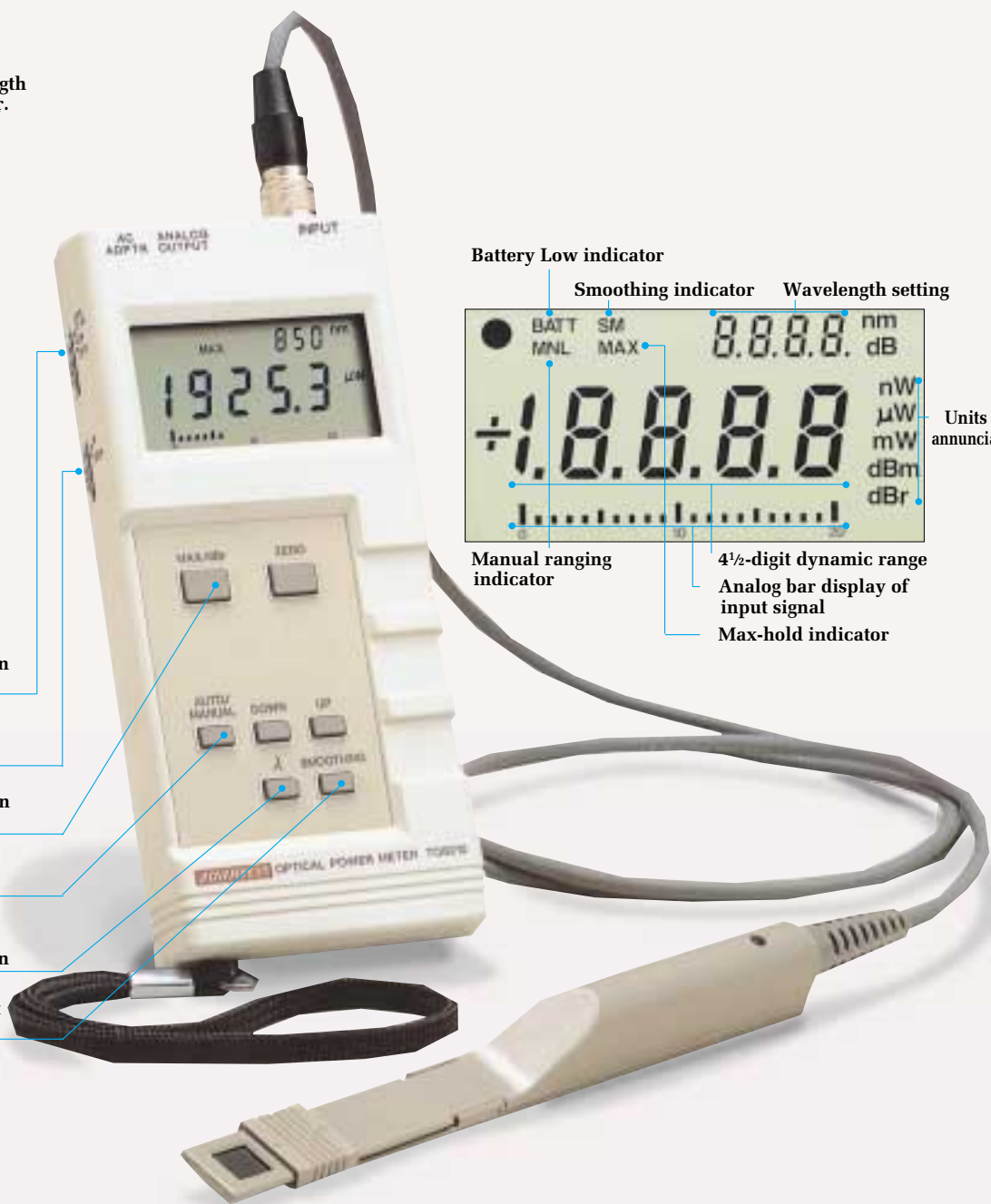
Linear display (W) or logarithmic display (dBm)

Maximum power value hold function and relative (dBr) value display

Easy-to-use auto-ranging

Wavelength sensitivity compensation

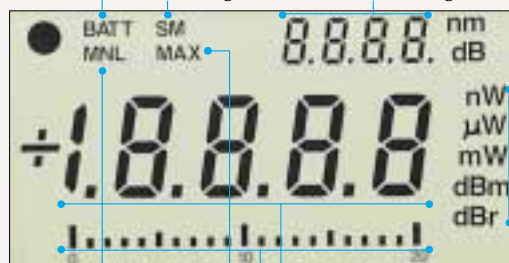
Smoothing ensures stable measurement results



Battery Low indicator

Smoothing indicator

Wavelength setting



Manual ranging indicator

4½-digit dynamic range

Analog bar display of input signal

Max-hold indicator

## Features

A wavelength sensitivity compensation function enables absolute power to be measured with high precision.

High-sensitivity ( - 60 dB) measurements at 1.3 $\mu$ m (using a Q82018A sensor)

Wide dynamic range (4-1/2 digits)

A smoothing function facilitates measurement in noisy environments or unstable conditions.

A max-hold function enables measurement of the maximum power value.

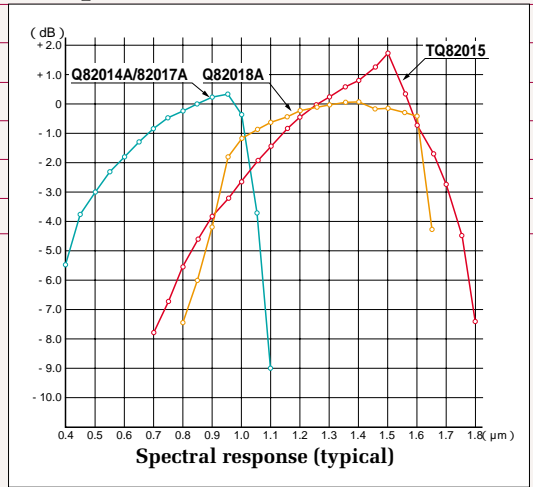
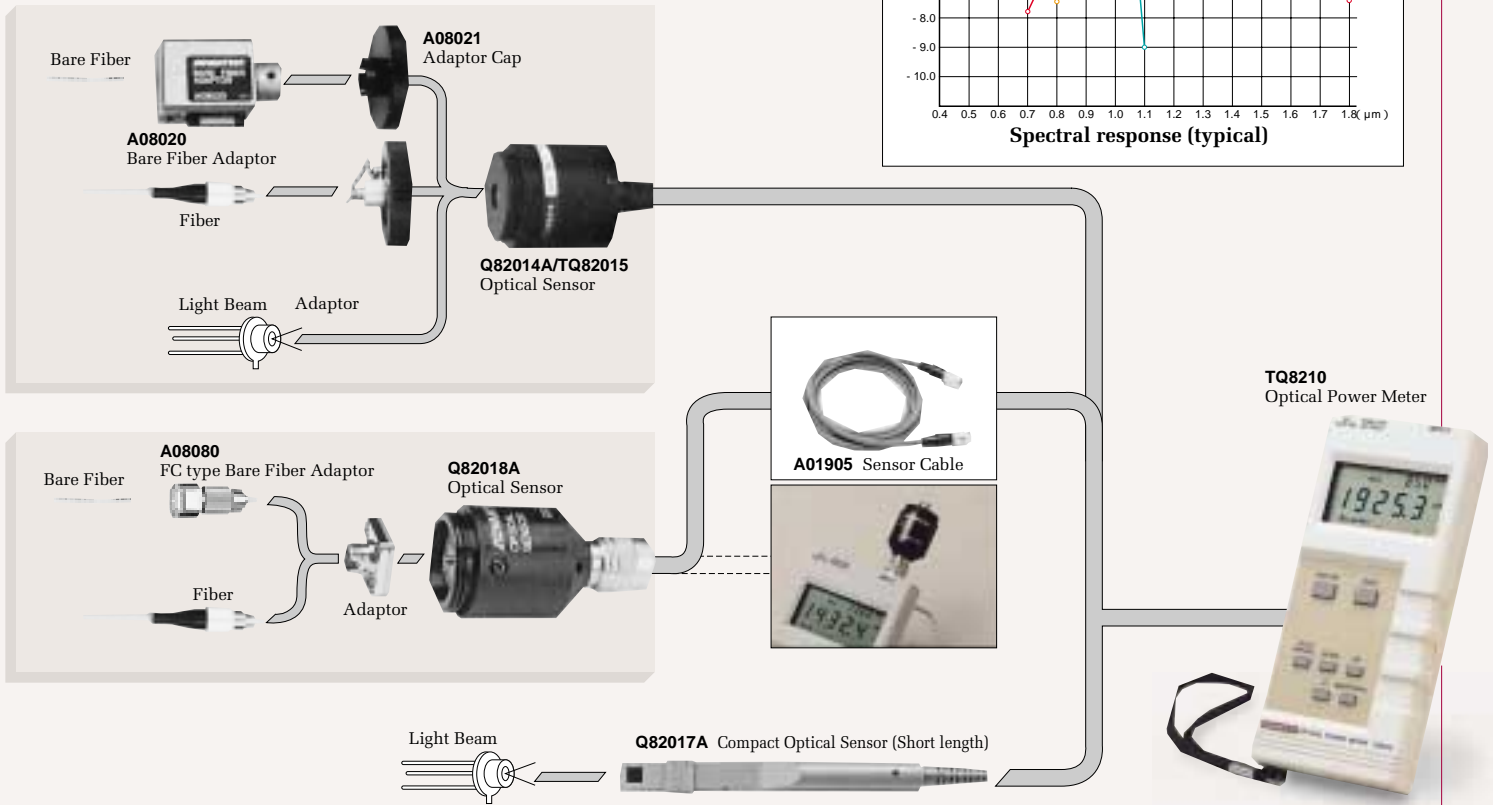
Possible to clean ferrule touch surface.

The liquid crystal display is backlit for reading in dark locations.

Easy-to-use auto-ranging.

Analog output function.

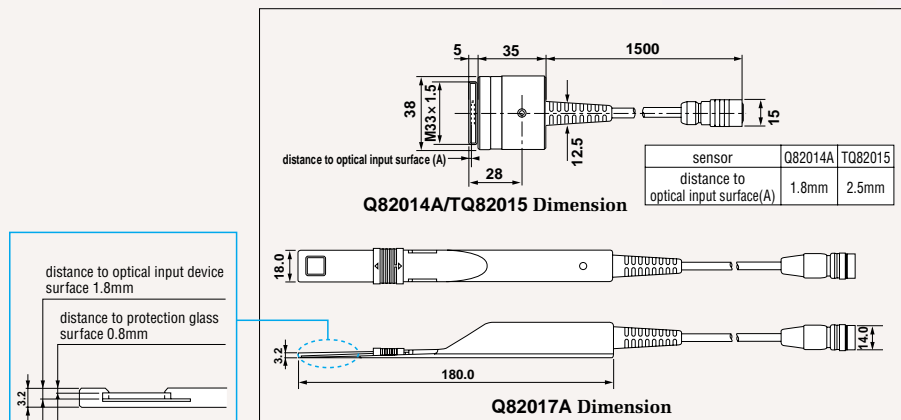
## Sample Configurations



Adaptor Table Corresponds to Connectors

	Q82014A	TQ82015	Q82018A
FC/PC	A08012	A08012	A08081*
SC	A08090	A08090	A08082
ST	A08096	A08096	A08083
Biconical	A08025	A08025	
D4	A08013	A08013	
DIN	A08029	A08029	
SMA 2.5	A08095	A08095	
SMA 3.175	A08028	A08028	

\*Standard accessories



# Specifications

## Mainframe Specifications

**Resolution:** 0.005% to 0.1% (with unit of W)  
0.01% (with unit of dBm)

**Absolute Accuracy of A/D converter:**  $\pm 0.2\%$  (included sensor measurement accuracy)

**Display:** LCD with back light for use in dark location

**Wavelength readout** 4 digits(nm)

**Power readout** 4-1/2 digits (mW,  $\mu$ W, nW, dBm, dBr)

**Range switching:** Automatic or manual

**Measurement speed:** 2 Measurements/s or faster

**Max-Hold and dBr Functions:**

**Max-hold (for wait measurement)** The maximum measured value is held

**dBr (for dBr measurement)** The value relative to a reference value is indicated.

**Wavelength sensitivity compensation:** Automatic compensation of sensor sensitivity at set wavelengths.

**Smoothing function:** Digital smoothing (by moving averages, 2 to 20 averages)

**Offset and zero:** Stores sensor offset for automatic compensation.

**Analog output:** Proportional to the input signal

Output voltage: 0V to 2V Output impedance: Max 10

Output connector: 2-pin mini-jack

## Optical Sensors Specifications (Option)

Model	Q82014A optical sensor (for short wavelengths)	TQ82015 optical sensor (for Long wavelengths)	Q82017A thin-type optical sensor	Q82018A (for long wavelengths)
Wavelength range	0.4 to 1.1 $\mu$ m	0.8 to 1.6 $\mu$ m	0.4 to 1.1 $\mu$ m	0.8 to 1.65 $\mu$ m
Power range *2	-60 to +17 dBm (1 nW to 50 mW)	-40 to +10 dBm (100 nW to 10 mW)	-60 to +17 dBm (1 nW to 50 mW)	-60 to 0 dBm (1 nW to 1 mW)
Sensor element	Si	Ge	Si	InGaAs PIN
Light input format	Direct			FC*1
Photoreceptive area	Approx. 8 mm	Approx. 5 mm	Approx. 10 x 10 mm	
Measurement range	8 ranges in 10 dB steps	5 ranges in 10 dB steps	8 ranges in 10 dB steps	6 ranges in 10 dB steps
Measurement accuracy	$\pm 5\%$ (at 850nm, -20 dBm input)	$\pm 5\%$ (at 1300 nm, -20 dBm input)	$\pm 5\%$ (at 850 nm, -20 dBm input)	$\pm 5\%$ (at 1300 nm, -20 dBm input)
Wavelength sensitivity compensation range	0.4 to 1.1 $\mu$ m	0.8 to 1.7 $\mu$ m	0.4 to 1.1 $\mu$ m	0.75 to 1.7 $\mu$ m

\*1 For other connector types, contact ADVANTEST's sales office or sales representatives.

\*2 Measured with each wavelength range. The maximum level is measured when the light is received on the entire photoreceptive area of the sensor.

## General Specifications

**Operating conditions:** 0°C to 40°C, 85% RH or less

**Power:** Internal NiCd battery (more than 8 hours when LCD backlight is ON, More than 10 hours when LCD backlight is OFF.)

**Change of AC power requirement:**

Specified at the time of ordering (The Ni-Cd battery can be changed)

Option No.	Standard	42
Supply voltage (V)	90 to 110(A08017)	200 to 245(A08019)

### Power Consumption

Option No.	Standard	32	42*
Supply voltage(V)	90 to 110(A08017)	103 to 132(A08035)	200 to 245(A08019)
Power consumption	5VA or less	5VA or less	6.4VA or less

\*Option 42 receives CE Mark Approval.

**Dimensions:** Approx. 80 (W) x 180 (L) x 35 (H) mm

**Mass:** 400g maximum

**Standard Accessories:** AC adaptors A08017 (90 to 110V AC) or

A08035 (103 to 132V AC) or A08019 (200 to 245V AC)

specified at time of ordering

Analog output cable: A01225

## Accessories

**Adaptors** (Optional accessories)

**FC Adaptor A08012**

**D4 Adaptor A08013**

**OF2 Adaptor A08014**

**Bare-fiber Adaptor (FC type) A08024**

**Bare-fiber Adaptor (V groove) A08020**

**Adaptor Cap A08021**

**Dummy Fiber TQ11831**

**ATT Biconical A08025**

**Diamond 2.5/3.5 A08026/27**

**Amphenol SMA A08028**

**Siemens A08029**

**Sumitomo Mini-BNC A08030**

**MBO A08031**

**HFBR-4000 A08032**

