

ADVANTEST®

Q8230
Optical Power Meter

Best suitable Optical power Meter for Optical Disk applications,
especially for Blu-ray Disc, HD-DVD, rewritable DVD and CD

- Three kinds of Sensors (Thin type/Cylindrical each) are available
 - Blue-Violet sensor Q82312/Q82322 for Blu-ray Disc,HD-DVD
 - High power sensor Q82313/Q82323 for high Power rewritable DVD and CD
 - Cost effective General-purpose sensor Q82311/Q82321
- USB interface for easy data acquisition (standard)



Q8230



The Q8230 is a high-performance handheld optical power meter. It is most suitable for R&D and production of LDs, optical pickups, and drives for optical disks.

Three kinds of thin optical sensors and three kinds of cylindrical sensors are available.

The main frame has 5.1/2 digits and 0.001dB of high resolution display.

The USB interface, equipped as standard, enables easy data acquisition.

Improvement of the photo diode achieves the long time reliability in the blue band.

● Q82311/Q82321: General-purpose Sensor

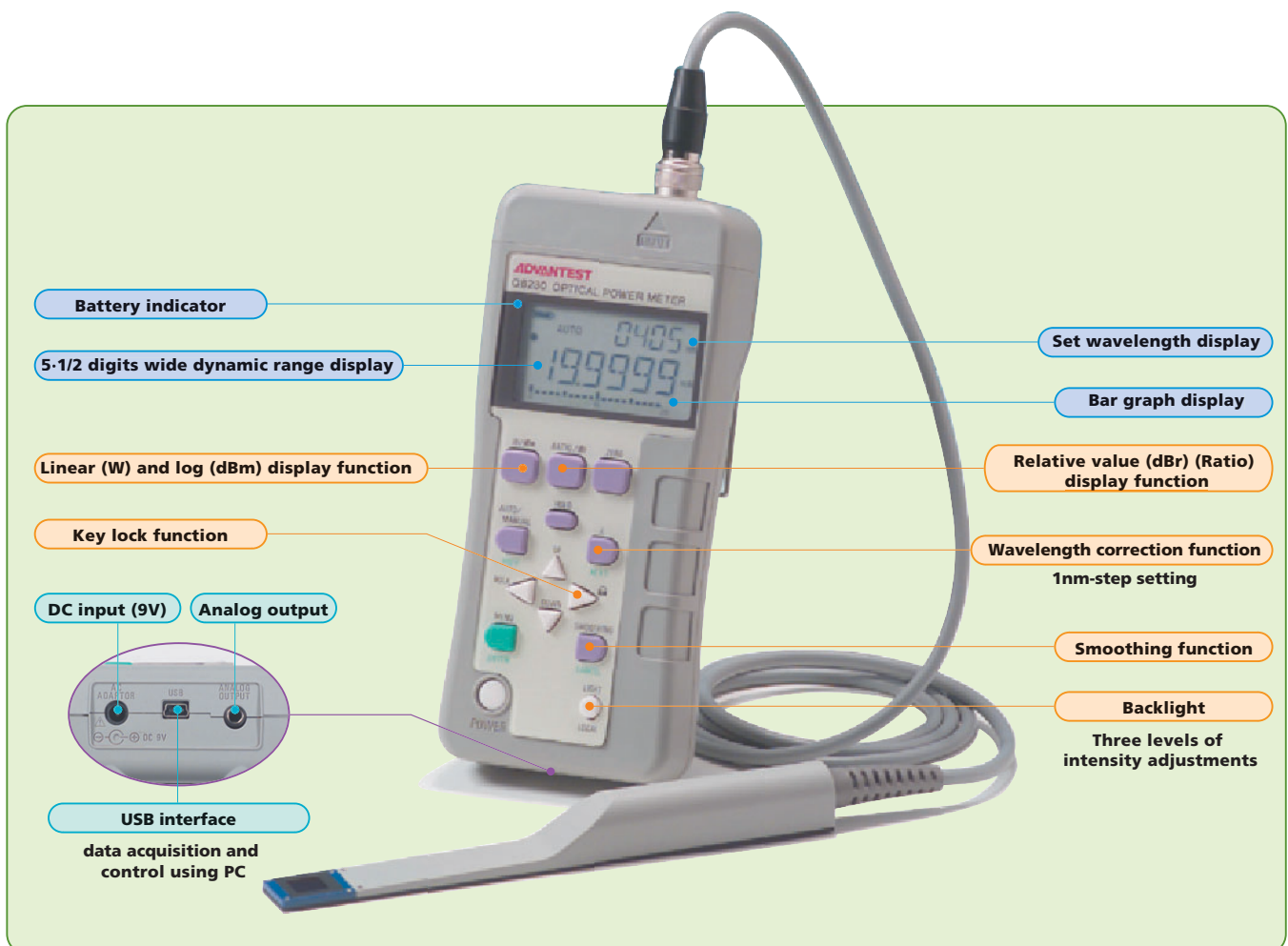
- Low price
- Individual wavelength sensitivity data is available (op.20)
- Power Calibration wavelength :780nm (standard), also 405nm (op.21) and 650nm (op.22) are prepared

● Q82312/Q82322: Blue Violet Sensor specialised for Blu-ray Disc and HD-DVD application

- Flat wavelength characteristic in the 400nm band
- Low incident-angle-dependency for high NA pickup
- Low reflection
- Individual wavelength sensitivity data is applied in standard

● Q82313/Q82323: high-power sensor suitable for Rewritable DVD and CD application

- Certified linearity up to 200mW even for focused beam (> 0.1mm dia.)
- Individual wavelength sensitivity data is applied in standard
- Power Calibration wavelength :650nm (standard), also 405nm (op.21) and 780nm (op.23) are prepared



Battery indicator

5.1/2 digits wide dynamic range display

Linear (W) and log (dBm) display function

Key lock function

DC input (9V)

Analog output

USB interface

data acquisition and control using PC

Set wavelength display

Bar graph display

Relative value (dBr) (Ratio) display function

Wavelength correction function
1nm-step setting

Smoothing function

Backlight
Three levels of intensity adjustments

General purpose sensor



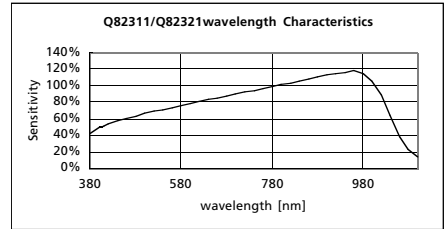
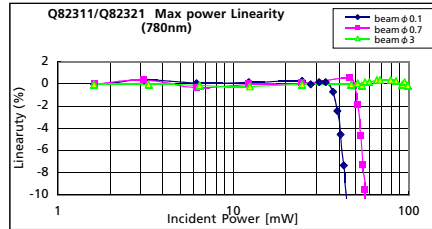
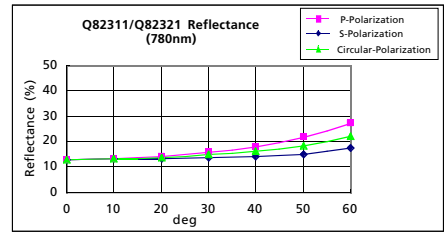
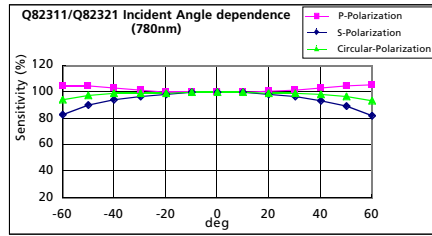
Q82311



Q82321

Sensor Characteristics

Q82311/Q82321



Blue-Violet Sensor

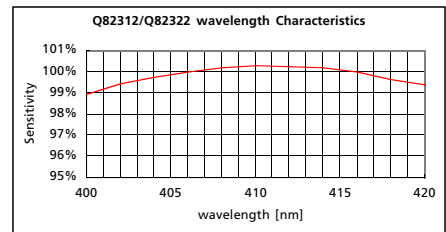
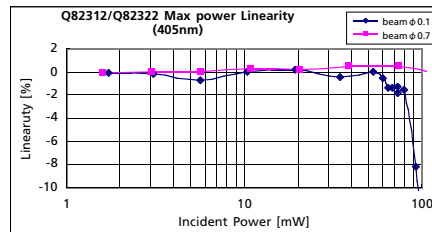
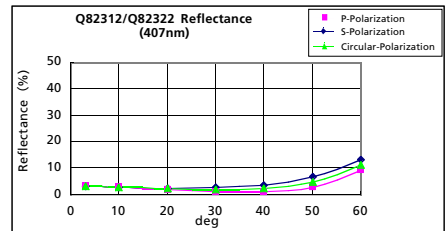
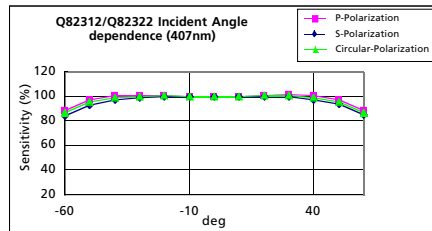


Q82312



Q82322

Q82312/Q82322



High Power Sensor

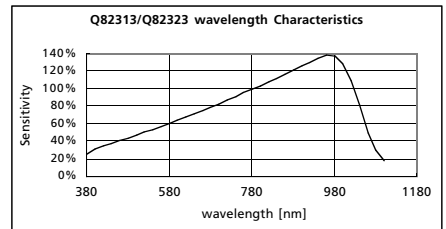
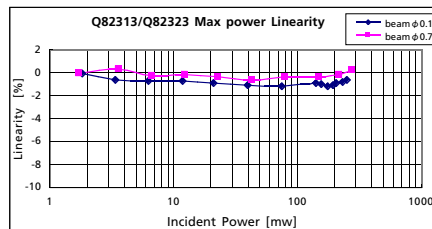
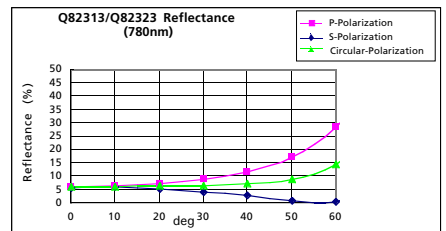
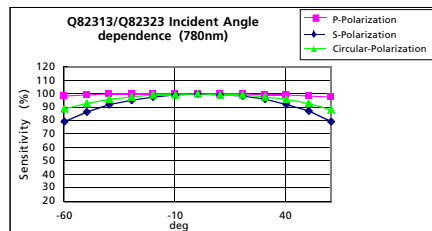


Q82313



Q82323

Q82313/Q82323



Performance specifications

All the accuracies are guaranteed for one year under the conditions of temperature + 23 ± 5°C and relative humidity 70% or less.

Optical sensor specifications (sold separately)

		Thin type			Cylindrical type		
Model		Q82311 (General-purpose)	Q82312 (Blue-violet)	Q82313 (High-power)	Q82321 (General-purpose)	Q82322 (Blue-violet)	Q82323 (High-power)
Wavelength range		390 to 1100nm	390 to 450nm	390 to 1100nm	390 to 1100nm	390 to 450nm	390 to 1100nm
Power range	Display in dBm	-60 to +17dBm	-50 to +20dBm	-50 to +23dBm	-60 to +17dBm	-50 to +20dBm	-50 to +23dBm
	Display in W	1nW to 50mW	10nW to 100mW	10nW to 200mW	1nW to 50mW	10nW to 100mW	10nW to 200mW
	Beam diameter	at 3mm dia. or more	at 1mm dia. or more	at 0.1mm dia. or more	at 3mm dia. or more	at 1mm dia. or more	at 0.1mm dia. or more
Sensor element		SI Photo Diode					
Sensing area		Approx. 9.5 x 9.5mm [□]	Approx. 10 x 10mm [□]	Approx. 8.5mm dia.	Approx. 8.5mm dia.		
Effective sensing area ^{*1}		Approx. 8.5 x 8.5mm [□]		Approx. 6mm dia.	Approx. 6.5mm dia.		Approx. 6mm dia.
Calibrated wavelength ^{*2}		780nm	405nm	650nm	780nm	405nm	650nm
Measuring accuracy (at 1mW input)		±2.5% (at calibrated wavelength)			±2.5% (at calibrated wavelength)		
		±3.5% ^{*3} (400 to 1000nm)	±3.5% (390 to 450nm)	±3.5% (400 to 1000nm)	±3.5% ^{*3} (400 to 1000nm)	±3.5% (390 to 450nm)	±3.5% (400 to 1000nm)
Wavelength sensitivity compensation range		390 to 1100nm	390 to 450nm	390 to 1100nm	390 to 1100nm	390 to 450nm	390 to 1100nm
Dimensions:		Approx. 18 (width) x 180 (length) x 20 (height) mm	Approx. 18 (width) x 180 (length) x 19.3 (height) mm		Approx. 38(diameter) x 40(length)mm		
Weight:		110g or less	120g or less		160g or less		

*1 Range where the relative sensitivity for the center is within ±10%. *2 Changeable with option *3 For Q82311 and Q82321, this value is achieved only when option +20 is specified.

Mainframe specifications

Resolution:	0.1pW (in W), 0.001dB (in dBm)
Accuracy:	The following value is added to the accuracy of each sensor for display in W (Within 24 hours after offset zero execution)
20nW range:	± (0.55%+2000 digits)
200nW range:	± (0.15%+200 digits)
2μW to 200mW range:	± (0%+70 digits)
Display:	LCD with three-level backlight
Wavelength display:	4 digits
Power display:	5-1/2 digits (Unit: mW, μW, nW, dBm, and dBm) Bar graph display
Range switching:	Eight ranges, automatic, manual, and remote
Measurement speed:	5 samples/sec or faster
Wavelength sensitivity correction:	Automatic correction of sensor wavelength sensitivity via wavelength setting (in 1nm step)
Offset zero:	Sensor offset stored in memory for automatic correction
Relative value display:	Ratio(display in W), dBr (display in dBm)
Analog output:	Analog output according to the input signal ^(*)
Output voltage:	0V to 2V Output resistance: 10Ω or less
Output connector:	2-pin mini-jack (3.5mm dia.)
USB interface:	Conforming to USB1.1 (connector mini B/female)
Auto Power-off:	Power-off in about 30 minutes without key or remote operation (Function can be set to ON/OFF)
Backup function:	Four setting conditions can be stored in memory.
Other functions:	Smoothing function, MAX value hold function, CF arithmetic operation (allows setting of one correction coefficient value for the measurement value), selection of the number of digits to be displayed, key lock, and battery-check function

*4 The full scale values change according to the sensor model, the wavelength setting, correction value (CF), and the range setting.

General specifications

Operating environment:	Ambient temperature: 0 to 40°C Relative humidity: 80% or less (No condensation)
Storage environment:	Ambient temperature: -20 to +70°C Relative humidity: 80% or less (No condensation)
Warm-up time:	30 minutes or more (to achieve prescribed accuracy)
Power supply	
Battery drive:	Four AA batteries ^(*)
Battery life:	60 hours (alkaline batteries under the conditions of maximum incidence power 1mW, backlight off, and ambient temperature +23±5°C)
DC input:	9V 100mA or less
AC adapter:	AC100V - 240V
Power supply frequency:	50/60Hz
Power consumption:	100 - 120V 5VA or less, 220 - 240V 10VA or less (using the AC adapter included as the standard)
Dimensions:	Approx. 80 (width) x 180 (height) x 40 (depth)mm
Weight:	300g or less (excluding AA batteries)

*5. The voltages of the battery cells are within the nominal voltage range from 1.2V to 1.5V. Batteries are not included.

Standard accessories

AC adapter (AC100V to 240V):	A146001
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Cables (sold separately)

USB cable (1m USB A/male-mini B/male)	A112010
Analog output cable (1m):	A01225

AC Cable (2pin type)	*6 Option No.	Accessory No.
CCC	OPT8230+94	CC014003
UL/CSA	OPT8230+95	CC014001
EN	OPT8230+96	CC014002

*6: These option include the English operation manual and AC cable.

Connector Adapter for Q8232* Series Cylindrical sensor (sold separately)

Connector type	Model
FC	A08012

Wavelength sensitivity correction and calibration with additional wavelengths as options

Wavelength sensitivity correction: Performs correction by measuring the wavelength sensitivity of each sensor at calibration.(Correction based on the typical value has been applied to Q82311 of the standard specification.)

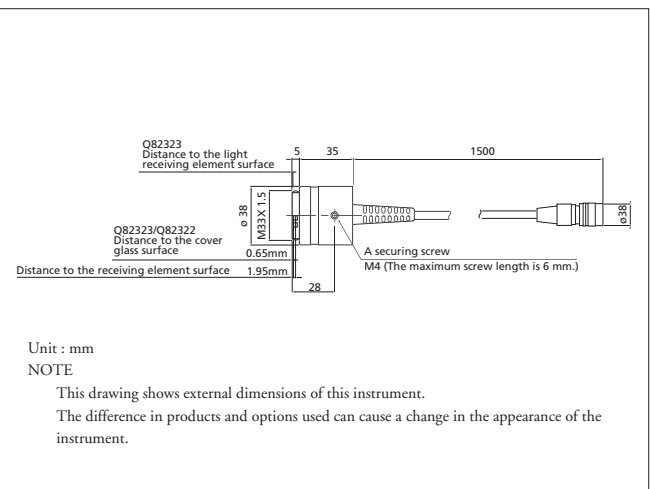
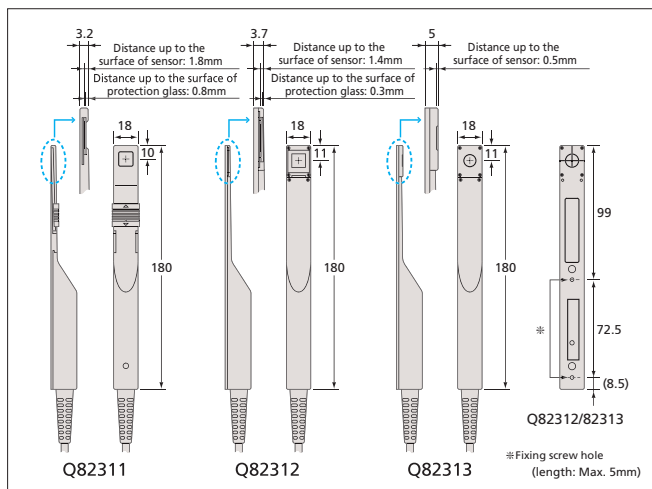
Calibration with additional wavelengths as options: Calibration performed using the wavelengths other than those available as the standard (Multiple options are allowed)

Optical sensor	Q82311	Q82312	Q82313	Q82321	Q82322	Q82323
Wavelength sensitivity correction option	OPT82311+20	Standard specification	Standard specification	OPT82321+20	Standard specification	Standard specification
Calibration with additional wavelengths as options						
405nm	OPT82311+21	Standard specification	OPT82313+21	OPT82321+21	Standard specification	OPT82323+21
650nm	OPT82311+22	—	Standard specification	OPT82321+22	—	Standard specification
780nm	Standard specification	—	OPT82313+23	Standard specification	—	OPT82323+23

*Please read the instruction manual before using this product so as to ensure correct usage.

*Any part of the specifications may be changed without prior notice in response to user requests or as a result of enhancement of quality control by Advantest.

Exterior dimensions



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