

**PENTAX**

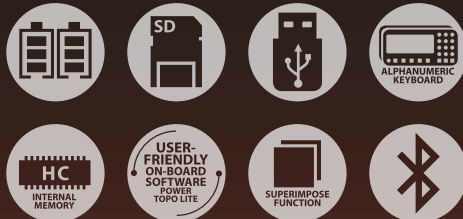
# R-200 Series

R-202NS | R-202P



## R-202NS Key Product Features

- 300m Reflectless EDM Range
- High Capacity Dual Battery
- Dual Axis Compensator
- Easy Transfer to a PC via USB, SD Connection
- PowerTopoLite Software
- 2" Angle Accuracy
- 10m Range Bluetooth Connection
- Large Capacity Internal Memory
- Alphanumeric Keyboard



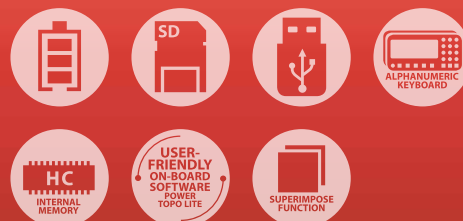
Bluetooth  
**10M**

**300M**  
Reflectless range



## R-202P Key Product Features

- Prism
- Single Battery
- Dual Axis Compensator
- Easy Transfer to a PC via USB, SD Connection
- 2" Angle Accuracy
- Large Capacity Internal Memory
- Alphanumeric Keyboard
- PowerTopoLite Software



Model	R-202P		R-202NS
<b>Telescope</b>	Magnification	30 x	
	Effective Aperture	45 mm	
	Resolving Power	3"	
	Field of View	2.6% (1° 30')	
	Minimum Focus	1.0 m	
	Focus	Manual	
<b>Distance Measurement</b>	Laser Class	Visible laser: Class III a (3R) (Reflectorless) / Class II (2) (Prism, Reflector sheet)	
<b>Measurement Range</b>	Reflectorless (*1)	...	0.5 ~ 300 m
	Reflector Sheet (*2)	...	1.5 ~ 600 m
	(Good Conditions) (*3) Mini Prism	1.5 ~ 1,200 m (1,500 m)	
	(Good Conditions) (*3) 1 P	1.5 ~ 3,000 m (4,000 m)	
<b>Accuracy</b>	(Good Conditions) (*3) 3 P	1.5 ~ 5,000 m (7,000 m)	
	Prism Normal Quick (*5)	1.5 ~ 10 m: $\pm(3+2 \text{ ppm} \times D)$ mm / 10 m ~ $\pm(2+2 \text{ ppm} \times D)$ mm, 1.5 ~ 10 m: $\pm(4+2 \text{ ppm} \times D)$ mm / 10 m ~ 500 m: $\pm(3+2 \text{ ppm} \times D)$ mm	
	Reflector Sheet Normal Quick (*5)	...	1.5 ~ 10 m: $\pm(3+2 \text{ ppm} \times D)$ mm / 10 m ~ $\pm(2+2 \text{ ppm} \times D)$ mm, 1.5 ~ 10 m: $\pm(4+2 \text{ ppm} \times D)$ mm / 10 m ~ 500 m: $\pm(3+2 \text{ ppm} \times D)$ mm
	Reflectorless	...	0.5~10 m: $\pm(5+2 \text{ ppm} \times D)$ mm 10~200 m: $\pm(3+2 \text{ ppm} \times D)$ mm 200~ m: $\pm(7+10 \text{ ppm} \times D)$ mm
	Minimum Count	0.1 mm (Fine mode) / 1 mm (Normal mode) / 10 mm (Track mode)	
<b>Measuring Time</b> (*4)	Repeat Meas. Normal (1 mm)	Prism 1.2 sec	Prism/Reflector sheet 1.2 sec Reflectorless 1.4 sec"
	Quick (1 mm) (*5)	Prism 1.0 sec	Prism/Reflector sheet 1.0 sec
	Track (10 mm)	Prism 0.4 sec	Prism/Reflector sheet/Reflectorless 0.4 sec
	Initial Meas. Normal (1 mm)	Prism 2.2 sec	Prism/Reflector sheet 2.2 sec Reflectorless 2.7 sec"
	Quick (1 mm) (*5)	Prism 1.8 sec	Prism/Reflector sheet 1.8 sec
<b>Angle</b>	Measurement Method	Absolute rotary encoder	
	Direction Method	Vertical / Horizontal angle: 2 sides	
	Minimum Count	1° / 5" selectable	
	Accuracy (ISO 17123-3)	2"	
<b>Compensator</b>		2 Axis	
<b>Target Screw</b>		1 speed	
<b>Sensitivity of Vials</b>	Plate Level	30" / 2 mm	
	Circular Level	8' / 2 mm	
<b>Laser Plummet</b>		Visible laser: $\pm 0.5$ mm (instrument height: 1.5 m) (Optical Plummet is optional)	
<b>Base</b>		Detachable	
<b>Dust &amp; Water Resistance</b>		IP56 (instrument only)	
<b>Ambient Temperature</b>		-20°C ~ +50°C / -4°F ~ 122°F (working range)	
<b>Tripod Thread</b>		5/8" x 11	
<b>Dimensions / Weight</b>	Dimensions	180 (W) x 342 (H) x 177 (L) mm	190 (W) x 343 (H) x 177 (L) mm
	Weight (incl. battery)	5.7 kg	
	Carrying Case	250 (W) x 365 (H) x 425 (L) mm	
<b>Battery Pack</b>	Power Source	Ni-MH 4300mAh x1 (rechargeable) DC 6.0 V	Li-Ion 3350mAh x 2 (rechargeable) DC 7.4V
	Operation Time (*6)	Approx. 7.0 hrs (ETH+EDM) / 15.0 hrs (ETH) & approx. 2.2 hrs of charging time	Approx. 10.0 hrs (ETH+EDM) / 20.0 hrs (ETH) & approx. 2.0 hrs of charging time (for 1 batt.)
	Weight	380 g	110 g
<b>Battery Charger and AC adapter</b>	Input Voltage	AC 100 ~ 240 V	AC 110 ~ 240 V
	Output Voltage	DC 7.5 V	DC 8.4 V
	Weight	460 g	470 g
<b>Data Process</b>	Data Recording Method	Internal Memory	
	Coordinates Data (*7)	25,000	
	Special Function	PowerTopoLite	
<b>Display / Keyboard</b>	I / F	RS-232C, SD CARD, USB mini TypeB	RS-232C, SD CARD, USB mini TypeB, Bluetooth(Class2)
	Display Type	Graphic LCD / 20 characters x 8 lines / 240 x 96 pixels	
	Quantity	2	
	Keys	22 each (12 numeric / 5 function / 5 special)	
<b>Laser Pointer</b>	Display Back Light	Intensity settings: 10 steps	
	Pointer	Yes	
<b>Date Clock</b>	Clock	Yes	

\*1 The measurement range and accuracy of reflectorless, and time required to measure may vary by the shape, size of surface area and reflection rate of the target and its environment.  
The measurement range of reflectorless is determined by the white side of the Kodak Gray Card. (Kodak is a trademark of Eastman Kodak Company)  
\*2 Reflector sheet: PENTAX genuine Reflector sheet  
\*3 The measurement range may vary by conditions of the environment.  
Normal conditions: 20 km visibility with slight shimmer  
Good conditions: 40 km visibility, overcast, no heat, no shimmer and moderate wind.  
\*4 EDM measuring time is determined in good conditions. It may takes longer than usual to measure

the distance exceeding 4000 m in prism mode. Also the measurement time in reflectorless mode is influenced by the shape, size and surface area and reflection rate of the target and its environment.  
\*5 Quick mode, which functions with prism and reflector sheet, is effective only under normal mode (1 mm) and up to 500 m.  
\*6 Distance measurement has been done every 30 second for the Operation time for "ETH+EDM".  
\*7 Number of points to be recorded may vary by usage.  
Maximum number of point to be recorded per job site: 1000 points  
Maximum number of job file to be recorded: 20 job files  
Maximum data points to be sent from PC to the instrument: 1000 points

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The CE marking assures that this product complies with the requirements of the EC directive for safety.



**DANGER**  
 LASER RADIATION - DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENT INTO SUNLIGHT  
 620-690 nm/4.75mW max.  
 CLASS IIIa LASER PRODUCT  
 Laserclass IIIa, conform FDA 21 CFR Ch. 1 § 1040

**CAUTION**  
 LASER RADIATION - DO NOT STARE INTO BEAM  
 620-690 nm/0.95mW max.  
 CLASS II LASER PRODUCT  
 Laserclass II, conform FDA 21 CFR Ch. 1 § 1040

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