

PENTAX | Reflectorless Total Station

R-2500NS Series

R-2501NS | R-2502NS

R-2503NS | R-2505NS



- + Long EDM range measuring distance:
reflectorless up to 600 m
and in prism mode up to 7,000 m
- + Dual display as standard equipment
- + Easy transfer to a PC via SD card,
USB mini and RS-232C data port
- + Pre-loaded PowerTopoLite software
which offers a package of versatile
application functions
- + Guiding lights for easy & fast stakeout



- + Trigger key on the side cover for
quick & light measurement key stroke



- + Dual battery system for long operation
time in the field



Increase your work efficiency

TI Asahi Co.,Ltd
Focusing on True Performance

TOTAL STATION SPECIFICATIONS

| Model | | R-2501NS | R-2502NS | R-2503NS | R-2505NS |
|-----------------------------|--|--|--|--|----------|
| Telescope | Magnification | 30X | | | |
| | Effective Aperture | 45mm (EDM45mm) | | | |
| | Resolving Power | 3" | | | |
| | Field of View | 1°30' (2.6%) | | | |
| | Minimum Focus | 1.0 m | | | |
| Distance Measurement | Laser Class | Laser Pointer: Class 2, When measuring: Class 3R | | | |
| | Measurement Range Good Conditions *3 | | | | |
| | Reflectorless *1 | 0.5m ~ 600m | | | |
| | Reflector Sheet *2 | 1.5m ~ 600 (800) m | | | |
| | 1P | 1.5m ~ 7000 (9999) m | | | |
| | 3P | 1.5m ~ 9000 (9999) m | | | |
| | Mini Prism | 1.5m ~ 2500 (3000) m | | | |
| | Measurement Accuracy *4 | | | | |
| | Reflectorless | 0.5 ~ 100m | ±(3+2ppm×D) mm | | |
| | | 100 ~ 300m | ±(5+2ppm×D) mm | | |
| | | 300m ~ | ±(7+2ppm×D) mm | | |
| | Prism /Reflector Sheet *5 | | ±(2+2ppm×D) mm | | |
| | Minimum Count | | Normal Meas.: 1 mm or 0.1 mm/Fast Meas.: 10 mm | | |
| | Measurement Time *5 | | | | |
| | Initial Meas. | Reflectorless | Approx. 1.0 sec. | | |
| | | Prism/Refl. Sheet | Approx. 1.2 sec. | | |
| | Continuous Meas. | Reflectorless | Approx. 0.8 sec. | | |
| | | Prism/Refl. Sheet | Approx. 0.8 sec. | | |
| Angle Measurement | Weather Correlation | Auto, Temp., Pressure input /PPM No-Input Selectable | | Temp., Pressure Input /PPM No-Input Selectable | |
| | Laser Pointer | Yes | | | |
| | Measuring Method | Absolute Rotary Encoder | | | |
| | Detection Method | H: 2 Sides Detection V: 2 Sides Detection | | | |
| | Minimum Count | 5"/1" Selectable | | | |
| | Accuracy (ISO 17123-3) | 1 " | 2 " | 3 " | 5 " |
| | Tangent Screw | 2 Speed | | 1 Speed | |
| | Display Type | 2 Sides with Illumination | | | |
| | Compensator *7 | Compensator Type | Float Type Level | Capacitance Type Level | |
| | | Compensator Axis | 3 Axis | 2 Axis | |
| | Compensator Range | ± 3 ' | | | |
| Special Function | Measurement/Calculation | File Management, Measure, View & Edit, Free Station, Stakeout, Traverse, VPN, I/O, Calculation, RDM, Preference, Load Design, PegSurvey (Mining Software)*optional | | | |
| Data Process | Data Recording Method | Internal Memory/SD Card | | | |
| | Capacity (Coordinates/Observation Data) *8 | Approx. 60,000 points | | | |
| Interface | | SD Card Slot, Mini USB Port, RS-232C, Bluetooth Class 2 | | | |
| Sensitivity of Vials | Electrical Level | 30"/1 div. | | N/A | |
| | Circular Level | 8"/2 mm | | | |
| Laser Plummet | | Brightness and Optical Axis Adjustable | | | |
| Base | | Detachable | | | |
| Dust & Water Protection | | IP56 (instrument only) | | | |
| Operating Temperature Range | | -20 °C ~ +50 °C | | | |
| Dimensions | | 190 (W) x 343 (H) x 177 (L) mm | | | |
| Weight (incl. Battery) | | 5.7 kg | | | |
| Battery Pack (BP07) | Power Source | Li-ion 7.4V 3350mAh, equipped with 2 batteries as standard, Hot-Swappable | | | |
| | Operation Time/Charge | | | | |
| | Continous Meas. | Approx.. 15 hrs. (Measured once every 30 sec.) *6 | | | |
| | Angle Meas. | Approx. 47.5 hrs. | | | |
| | Charging Time | 1 battery: approx. 2 hrs. / When charging 2 batteries at the same time: approx. 4 hrs. | | | |

*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 registered trademark of Eastman Kodak Company).

*2 Reflector sheet: based on PENTAX Genuine Reflector sheet.

*3 Normal or good weather conditions are based on the following conditions.

Normal conditions: 20km visibility with slight shimmer, weak sunlight and moderate wind.

*4 During the automatic weather correction, the value of ppm error is 10ppm in case of the prism or reflector sheet measurement. Also in case of the reflectorless measurement, it will be 18ppm depending on the distance (300m or more) and change in environmental conditions, shape, area and reflectance of targets.

*5 EDM measuring time is determined in good conditions. It may takes longer than usual to measure the distance exceeding 4000m in prism mode and 300m in reflectorless mode.

*6 When EDM energy saving setting is "Yes".

*7 The 3-axis correction is a function to correct the orthogonal error between the horizontal axis and the collimation axis and the orthogonal error between the vertical axis and the horizontal axis in addition to the XY 2-axis correction.

*8 The number of recorded points varies depending on the observation method and it is the number of observed points when the coordinate, one pair of observation and pairs of observation are used separately, but not combination of each of them. The pairs of observation is a typical number of observation points in the case of one pair of five-direction observation. Maximum number of recorded points in one site: 3,000 points Maximum number of sites created: 20 sites Maximum number of data transfer points from personal computer to total station 1,000 points.

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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



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

ISO 9001: 2015 Certified

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