

R180 Robotic Total Station

High precision
Robotic Total Station



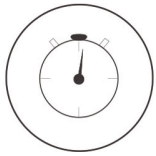
R180

High precision Robotic Total Station

The R180 is a highly accurate and fast Android robotic station. It features a rotation speed of 180°/sec and an EDM accuracy of 1 mm + 1 ppm, with a range of up to 1000 m without a prism. The R180 is available in two versions, 0.5" and 1" second. For both models, the quietness and smoothness in prism searches and rotations are among the most observed and appreciated features.

Equipped with the Android operating system, the R180 has Cube-a as onboard software. This enables users to navigate online and interact with the touch screen in an easy and familiar way.

The Cube-a onboard software includes all the classic functions of the program, as well as the integration of jobs done with GNSS and surveys done with the total station. This allows operators to achieve complex and professional work in a short time and with high accuracy. Additionally, the R180 has a camera and a light guide to further facilitate field work.



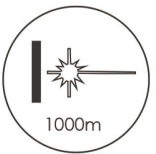
TDRIVE MOTOR, FAST AND SILENT

The R180 Robotic total station boasts a rotation speed of 180°/sec, making it one of the fastest in its product category. Not only is it speedy, but it is also impressively quiet, with noise levels among the lowest in its class. Additionally, the Tdrive technology, with a very high speed motor, allows for high-speed pursuit, even with a prism installed on moving vehicles. Not using gear technology ensures frictionless movement, greater durability, and less maintenance.



HIGH ACCURACY AND PROFESSIONAL RESULTS

This instrument is top-of-the-line. Its detailed engineering allows for exceptional performance, achieving an accuracy of 1 mm + 1 ppm with a prism, at a measurement speed of significantly less than one second.



LONG DISTANCE REFLECTORLESS

R180 guarantees high accuracy long range measurements: up to 1000 m in reflectorless mode and up to 6000 m using a single prism, with millimeter accuracy.



BUILT-IN CAMERA

The R180 is further enhanced by the addition of a built-in camera, which can be utilized thanks to the presence of two 6-inch screens. This camera allows you to view the points operator have surveyed on the large screens, or to use the image to help with collimation.



ANDROID AND CUBE-A ON BOARD

R180 is equipped with an Android operating system and has Cube-a installed on board. The 6-inch touch screens allow you to have complete control of the station.





cube·a

The R180 is equipped with the Android operating system and comes pre-installed with the powerful Cube-a program. This onboard software allows operators to easily integrate data from GNSS and surveys conducted with the total station. Communication and data exchange between the station and the controller (GNSS) is made simple with a Bluetooth connection. This means that with the total station, surveys carried out with GNSS, can be loaded through an external controller via Bluetooth. These surveys then can be completed within the total station. With Cube-a, users can navigate the program easily and efficiently, accessing all the classic functions of a total station while enjoying the added benefits of the Android operating system. This integration allows for seamless and streamlined workflows, saving time and effort while achieving the highest level of accuracy.



Fast360

The state-of-the-art robotic total station features a cutting-edge 360° prism search technology that allows users to locate their target quickly and accurately from any angle. This advanced capability enables surveys to be completed with greater speed and precision, all while enjoying the convenience of a fully automated system.

APC

The innovative robotic total station is designed with **Automatic Prism Centering** technology that takes the guesswork out of surveying. With this advanced system, users can easily and quickly center their prism with minimal effort. Thanks to the total station's automatic centering feature, surveying processes can be streamlined and made more efficient.

OnePole

The OnePole Solution is a surveying system that combines the high accuracy of prism measurements with the ability to measure points that are not visible from the Total Station (TS) using GNSS technology. While a TS requires reference points that must be visible from the station, an RTK GNSS receiver can quickly determine its position with centimeter-level accuracy using data from satellites. The OnePole Solution allows for the simultaneous use of TS and GNSS, and can easily switch between the two with a simple tap on a button. Additionally, the system reduces prism search times through auto-aiming to the current GNSS position.

R180 TECHNICAL FEATURES

ANGLE MEASUREMENT

| | |
|-----------------------|----------------------------|
| Accuracy ¹ | 0.5"-1" |
| Reading system | Absolute four-quadrant |
| Display Resolution | 0.1" |
| Angle Units | DEG 360°/GON 400/MIL 6.400 |

TELESCOPE

| | |
|------------------------------|--------------------|
| Magnification/ Field of view | 30x / 1°30' |
| Tube length | 164.5 mm |
| Minimum focus distance | 1.5 m |
| Objective aperture | Ø 45 mm |
| Laser pointer | Red light, coaxial |

TILT SENSOR

| | |
|-----------------------------|----------------------------------|
| Type | Dual-axis liquid-electric sensor |
| Compensation range/accuracy | ± 3.0'/1" |

DISTANCE MEASUREMENT RANGE²

| | |
|----------------------------|---------------------|
| Standard prism mode | 6000 m ³ |
| Reflectorless ⁵ | 1000 m ⁴ |

DISTANCE MEASUREMENT ACCURACY⁶

| | |
|---------------------|--------------|
| Standard prism mode | 1 mm + 1 ppm |
| Reflectorless | 2 mm + 2 ppm |

MEASUREMENT TIME

| | |
|--|------------------------------------|
| Standard prism mode (Tracking/Single) | <0.3 / 0.7 sec |
| Reflectorless | Typically 0.8 sec (>500 m, >5 sec) |

DISTANCE MEASUREMENT

| | |
|--------------------|--------------------------------------|
| Distance Unit | m/US ft/INT ft |
| Display Resolution | 0.0001 m/0.001 m 0.001 ft/0.01 ft |

MOTORIZATION

| | |
|------------------------------|-----------------------------|
| Technology | Tdrive |
| Max rotation speed | 180°/sec |
| APC-Target Aiming Range | 1.5 - 1000 m |
| APC-Measurement Time | <10 sec |
| Fast360°-Target Aiming Range | 1.5 - 600 m |
| Fast360°-Angle | H: 360° - V: 20° |
| AIM accuracy | ± 1 mm @ 100 m ² |

LASER PLUMMET

| | |
|------------|---------------------------|
| Laser type | 635nm semiconductor laser |
| Accuracy | 1mm/1.5 m |
| Spot | ± 1.8mm/1.5 m |

LEVEL VIAL SENSITIVITY

| | |
|----------------|--------|
| Circular level | 8'/2mm |
|----------------|--------|

ENVIRONMENTAL CONDITIONS

| | |
|-----------------------|-------------------------------|
| Operating Temperature | -20° C +50° C (-4°F to 122°F) |
| Storage Temperature | -20° C +60° C (-4°F to 140°F) |
| Waterproof/Dustproof | IP65 |
| Humidity | 95% non-condensing |

PHYSICAL SPECIFICATION

| | |
|---------------------------------------|--------------------|
| Dimensions | 430 x 255 x 235 mm |
| Weight including battery and tribrach | 9.3 Kg |

POWER

| | |
|-------------------------------|---|
| Battery Voltage/Capacity/Type | 14.4 V / 6400 mAh / Li-ion |
| Batteries number | 2 |
| Operating time | 6 hours (one internal battery) ⁷ |
| Battery charger | 100/240 V, charging time 4h |

OTHER SPECIFICATIONS

| | |
|---------------|--|
| CPU | MSM8953 |
| Display | Two sides, 6" color LCD 720x1280 pixel touch screen |
| OS | Android |
| Memory | RAM: 3GB, ROM: 32GB |
| Interface | RS-232/Micro USB/ Bluetooth long range |
| Data transfer | 4G (build-in), Bluetooth, WLAN, Hotspot |
| Camera | ✓ |
| Guide Light | ✓ |
| Sensor | Temperature/Pressure |

ONBOARD FIELD APPLICATION PROGRAMS

| |
|---------------|
| Cube-a TS-GPS |
|---------------|

¹ Standard deviation based on ISO 17123-3

² Good condition: no haze, visibility about 40km, no heat shimmer, breeze

³ Class 1

⁴ Class 3R

⁵ Under optimal conditions on good surface

⁶ Standard deviation based on ISO 17123-4

⁷ Battery duration depends also on display brightness

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