

# CRT

## Robotic TS

### High precision Robotic Total Station

The **Carlson CRT** 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 CRT 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 CRT has an onboard software. This enables users to navigate online and interact with the touch screen in an easy and familiar way.

The 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 CRT has a camera and a light guide to further facilitate field work.

- **TDRIVE MOTOR, FAST AND SILENT** The CRT 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 CRT** 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.



**ANGLE MEASUREMENT**

Accuracy <sup>1</sup>	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 45mm
Laser pointer	Red light, coaxial

**TILT SENSOR**

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

**DISTANCE MEASUREMENT RANGE<sup>2</sup>**

Standard prism mode	6000 m <sup>3</sup>
Reflectorless <sup>5</sup>	1000 m <sup>4</sup>

**DISTANCE MEASUREMENT ACCURACY<sup>6</sup>**

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/ USft/INTft
	0.0001 m/ 0.001 m
Display Resolution	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 <sup>2</sup>

**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
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**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 / IP66 <sup>8</sup>
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) <sup>7</sup>
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
Guide Light	Yes
Sensor	Temperature/ Pressure

**ON BOARD FIELD APPLICATION PROGRAMS**

Carlson Layout (under development)

- 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
- 8 On request when ordering