

# Trimble RTS873 Robotic Total Station

## Advanced Technology for Construction layout

Eliminate the guesswork. With its bright, autofocusing green laser, the RTS873 heightens layout precision on the jobsite.

- **100% Robotic Operation**  
Trimble VISION provides you with the ability to direct layout with live video images on the Trimble Field Tablet, maximizing your command of the job.
- **Visual Verification**  
To provide an accurate documentation of the design and field image that is displayed

### GREEN LASER POINTER

Improve layout accuracy and speed of DR layout. The RTS873 autofocusing green beam optimizes visibility of placement points at all distances.

### UNEVEN SURFACE CORRECTION

Combined with Trimble Field Link running on the tablet, this system will compensate for uneven floors and ceilings to ensure positioning accuracy.

- **A Smarter Pointer**

with bright green, autofocusing laser and auto-correction for uneven surfaces

- **Trimble VISION**

video-assisted robotic measurement

- **Visual verification** with

data overlay and photo documentation

Provided by Xpert Survey Equipment  
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within the Trimble Field Link software, job data including points and linework are overlaid on the camera image.



## BUILT FOR CONSTRUCTION

For construction applications, you need a measurement solution with optimal speed, accuracy and reliability. Combine the Trimble DR HP Precision EDM with Trimble VISION and you have the flexibility to tackle the most demanding projects.

- Visually mark points, with high precision, using the Auto-focusing Class 2 Green Laser Pointer.
- **Automatic Servo Focus** sets the optical focus for quick manual aiming when laying out points in DR mode.
- Combine with Trimble Field Link software running on the Trimble Field Tablet to optimize your accuracy and productivity.

- **MagDrive technology**

for maximum speed and efficiency

- **MultiTrack technology**

offers the choice between passive and active tracking

# GENERAL SPECIFICATIONS

## PERFORMANCE

Angle measurement accuracy (standard deviation based on DIN 18723) ..... 3" (1.0 mgon)  
 Angle display (least count) ..... 0.1" (0.01 mgon)  
 Distance measurement

Typical Accuracy	50 m (164 ft)	100 m (328 ft)	200 m (656 ft)	300 m (984 ft)
<b>Prism mode</b>				
Standard	2 mm (5/64")	3 mm (1/8")	4 mm (5/32")	6 mm (15/64")
Tracking	5 mm (13/64")	5 mm (13/64")	6 mm (15/64")	8 mm (5/16")
<b>DR mode</b>				
Standard	3 mm (1/8")	4 mm (5/32")	5 mm (13/64")	6 mm (15/64")
Tracking	10 mm (25/64")	10 mm (25/64")	11 mm (7/16")	12 mm (15/32")

Measuring time  
 Prism mode  
 Standard ..... 2.5 s  
 Tracking ..... 0.4 s  
 Averaged observations ..... 2.6 s per measurement  
 DR mode  
 Standard ..... 3–15 s  
 Tracking ..... 0.4 s  
 Range (under standard clear conditions)<sup>2</sup>  
 Prism mode  
 1 prism ..... 3,000 m (9,800 ft)  
 Shortest range ..... 1.5 m (4.9 ft)  
 DR mode

	Good (Good visibility, low ambient light)	Normal (Normal visibility, moderate sunlight, some heat shimmer)	Difficult (Haze, object in direct sunlight, turbulence)
<b>White card (90% reflective)</b>	>150 m (492 ft)	150 m (492 ft)	70 m (229 ft)
<b>Gray card (18% reflective)</b>	>120 m (394 ft)	120 m (394 ft)	50 m (164 ft)

Shortest range ..... 1.5 m (4.9 ft)

## EDM SPECIFICATIONS

Light source ..... Laser diode 660 nm; Laser class 1 in Prism mode  
 Laser class 2 in DR mode  
 Laser pointer coaxial (standard) ..... Autofocusing green laser class 2  
 Beam divergence Prism mode  
 Horizontal ..... 4 cm/100 m (0.13 ft/328 ft)  
 Vertical ..... 4 cm/100 m (0.13 ft/328 ft)  
 Beam divergence DR mode ..... Autofocusing  
 Atmospheric correction ..... -130 ppm to 160 ppm continuously

## CAMERA

Chip ..... Color Digital Image Sensor  
 Resolution ..... 2048 x 1536 pixels  
 Focal length ..... 23 mm  
 Depth of field ..... 3 m to infinity  
 Field of view ..... 15.5 deg x 12.3 deg  
 Digital zoom ..... 4-step (1x, 2x, 4x, 8x)  
 Video streaming ..... 5 frames/sec

## GENERAL SPECIFICATIONS

Leveling  
 Circular level in tribrach ..... 832 mm (32.007 ft)  
 Automatic level compensator  
 Type ..... General dual-axis  
 Accuracy ..... 0.5" (0.15 mgon)  
 Range ..... ±24" (0.61 mgon)  
 Servo system ..... MagDrive servo technology, integrated servomotor, integrated servomotor, electronic drive  
 Rotator speed ..... 115 degrees/s (128 gon/s)  
 Rotation time Face 1 to Face 2 ..... 2.6 s  
 Positioning speed (at degrees) (200 gon) ..... 2.6 s  
 Centering  
 Clamping system ..... Trimble 3-pin  
 Optical plummet ..... Built-in optical plummet  
 Magnification/shortest focusing distance ..... 2.3x/0.5 m to infinity (1.6 ft to infinity)  
 Operating temperature ..... -20° C to +50° C (-4° F to +122° F)  
 Dust and water proofing ..... IP55  
 Humidity ..... 100% condensing

Power supply  
 Internal battery ..... Rechargeable Li-Ion battery 11.1 V, 5.0 Ah  
 Operating time<sup>4</sup>  
 One internal battery ..... Approx. 6.5 hours  
 Three internal batteries in multi-battery adapter ..... Approx. 18 hours  
 Robotic holder with one internal battery ..... 13.5 hours  
 Operating time with video robotic<sup>4</sup>  
 One battery ..... 5.5 hours  
 Three batteries in multi-battery adapter ..... 17 hours

## Weight

Instrument (Servo/Autolock) ..... 5.15 kg (11.35 lb)  
 Instrument (Robotic) ..... 5.25 kg (11.57 lb)  
 Trimble CU controller ..... 0.4 kg (0.88 lb)  
 Tribrach ..... 0.7 kg (1.54 lb)  
 Internal battery ..... 0.35 kg (0.77 lb)  
 Trunnion axis height ..... 196 mm (7.71 in)  
 Communication ..... USB, Serial, Bluetooth<sup>®</sup>  
 Security ..... Dual-layer password protection

## ROBOTIC RANGE

Autolock and Robotic range<sup>2</sup>  
 Passive prisms ..... 500–700 m (1,640–2,297 ft)  
 Trimble MultiTrack Target ..... 800 m (2,625 ft)  
 Autolock pointing precision at 200 m (656 ft) (standard deviation)<sup>1</sup>  
 Passive prisms ..... <2 mm (0.007 ft)  
 Trimble MultiTrack Target ..... <2 mm (0.007 ft)  
 Shortest search distance ..... 0.2 m (.65 ft)  
 Search time (typical)<sup>1</sup> ..... 2–10 s

- Standard clear. No haze. Overcast or moderate sunlight with very light heat shimmer.
- Range and accuracy depend on atmospheric conditions, size of prisms and background radiation.
- Kodak Gray Card, Catalog number E1527795.
- The capacity in -20°C (-5°F) is 75% of the capacity at +20°C (68°F).
- Bluetooth type approvals are country specific. Contact your local Trimble Authorized Distribution Partner for more information.
- Dependent on selected size of search window.

Specifications subject to change without notice.

