Trimble RTS873

ROBOTIC TOTAL STATION

ADVANCED TECHNOLOGY FOR CONSTRUCTION LAYOUT

Eliminate the guesswork. With it's 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 within the Trimble Field Link software, job data including points and linework are overlaid on the camera image.

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.

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.

Key Features

- 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
- MagDrive technology for maximum speed and efficiency
- MultiTrack technology offers the choice between passive and active tracking

Trimble

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PERFORMANCE

Angle measurement accuracy
(standard deviation based on ISO17123-3) . . . . . 3" (0.9 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)
Prism mode				
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")
DR mode				
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 . . . . . 3 s
Tracking . . . . . 0.4 s
Averaged observations . . . . . 3 s per measurement
DR mode
Standard . . . . . 3–15 s
Tracking . . . . . 0.4 s
Range (under standard clear conditions[1,2])
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)
White card (90% reflective)[3]	>150 m (492 ft)	150 m (492 ft)	70 m (229 ft)
Gray card (18% reflective)[3]	>120 m (394 ft)	120 m (394 ft)	50 m (164 ft)

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

EDM SPECIFICATIONS

Light source . . . . . Laserdiode 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 . . . . . 8'/2 mm (8'/0.007 ft)
Automatic level compensator
Type . . . . . Centered dual-axis
Accuracy . . . . . 0.5" (0.15 mgon)
Range . . . . . ±5.4' (±100 mgon)
Servo system . . . . . MagDrive servo technology, integrated servo/angle sensor; electromagnetic direct drive
Rotation speed . . . . . 115 degrees/s (128 gon/s)
Rotation time Face 1 to Face 2 . . . . . 2.6 s
Positioning speed180 degrees (200 gon) . . . . . 2.6 s
Centering
Centering system . . . . . Trimble 3-pin
Optical plummet . . . . . Built-in optical plummet
Magnification/shortest focusing distance . . . . . 2.3×/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 110.8V, 6.5Ah, 70Wh
Operating time[4]
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[4]
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
Security . . . . . Dual-layer password protection

ROBOTIC RANGE

Autolock and Robotic range[2]
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)[2]
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)[5] . . . . . 2–10 s

1 Standard clear: No haze. Overcast or moderate sunlight with very light heat shimmer.
2 Range and accuracy depend on atmospheric conditions, size of prisms and background radiation.
3 Kodak Gray Card, Catalog number E1527795.
4 The capacity in –20 °C (–5 °F) is 75% of the capacity at +20 °C (68 °F).
5 Dependent on selected size of search window.

Specifications subject to change without notice.