

# Trimble RTS655 Robotic Total Station

## Accuracy for Everyday Applications

With the Trimble RTS655 Robotic Total Station contractors can improve efficiency and accuracy for common layout tasks in building construction.

- For Everyday Layout**  
 Automate building layout tasks with total confidence. The Trimble RTS655 streamlines layout of excavation lines, concrete forms, anchor bolts and control lines. Versatile enough for light topographic projects and as-built data collection, the RTS655 can handle almost any challenge on the job site.

## UNSURPASSED TOTAL STATION TECHNOLOGY

Trimble MagDrive™ Servo Technology provides for exceptional speed and accuracy with smooth, silent operation.

Trimble SurePoint™ Technology ensures accurate measurements by automatically correcting for unwanted movement due to wind, sinkage, and other factors.

Trimble MultiTrack™ technology locks on and tracks passive prisms for control measurements and active targets for dynamic measurement, stakeout and grade control.

## 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 Class 3R 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:

- MagDrive technology for maximum speed and efficiency
- MultiTrack technology offers the choice between passive and active tracking
- Quickly mark layout points with Class 3 laser Pointer



EDM	Servo Control	Angle Accuracy	Hardware Options
DR	Robotic, Autolock	5"	Trimble VISION

# GENERAL SPECIFICATIONS

## PERFORMANCE

Angle measurement accuracy (standard deviation based on DIN 18723) . . . . . 5" (1.5 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")	6 mm (15/64")	8 mm (5/16")
Tracking	5 mm (13/64")	6 mm (15/64")	8 mm (5/16")	10 mm (25/64")
<b>DR mode</b>				
Standard	3 mm (1/8")	4 mm (5/32")	6 mm (5/64")	9 mm (23/64")
Tracking	10 mm (25/64")	11 mm (7/16")	12 mm (15/32")	13 mm (33/64")

Measuring time  
 Prism mode  
 Standard . . . . . 2.5 s  
 Tracking . . . . . 0.4 s  
 Averaged observations . . . . . 2.5 s per measurement  
 DR mode  
 Standard . . . . . 3–15 s  
 Tracking . . . . . 0.4 s  
 Range (under standard clear conditions<sup>1,2</sup>)  
 Prism mode  
 1 prism . . . . . 2,500 m (8,202 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)
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<b>White card (90% reflective)<sup>3</sup></b>	400 m (1312 ft)	400 m (1312 ft)	186 m (610 ft)
<b>Gray card (18% reflective)<sup>3</sup></b>	250 m (820 ft)	250 m (820 ft)	116 m (381 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) . . . . . Laser class 3R  
 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  
 Horizontal . . . . . 2 cm/50 m (0.066 ft/164 ft)  
 Vertical . . . . . 2 cm/50 m (0.066 ft/164 ft)  
 Atmospheric correction . . . . . -130 ppm to 160 ppm continuously

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 Bluetooth type approvals are country specific. Contact your local Trimble Authorized Distribution Partner for more information.  
 6 Dependent on selected size of search window.

## GENERAL SPECIFICATIONS

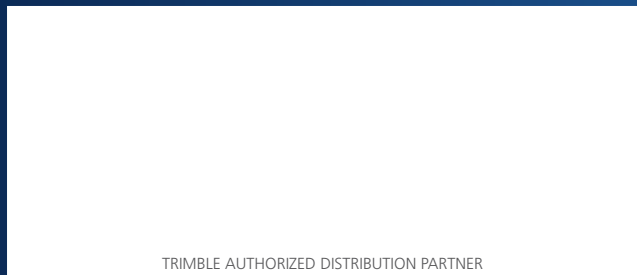
Leveling  
 Circular level in tribrach . . . . . 8/2 mm (8'/0.007 ft)  
 Automatic level compensator  
 Type . . . . . Centered dual-axis  
 Accuracy . . . . . 0.5" (0.15 mgon)  
 Range . . . . . ±5.4' (±100 mgon)  
 Servo system . . . . . MagDrive servo technology, integrated servo/angle sensor; electromagnetic direct drive  
 Rotation speed . . . . . 115 degrees/s (128 gon/s)  
 Rotation time Face 1 to Face 2 . . . . . 2.6 s  
 Positioning speed 180 degrees (200 gon) . . . . . 2.6 s  
 Clamps and slow motions . . . . . Servo-driven, endless fine adjustment  
 Centering  
 Centering 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)  
 Telescope  
 Magnification . . . . . 30x  
 Aperture . . . . . 40 mm (1.57 in)  
 Field of view at 100 m (328 ft) . . . . . 2.6 m at 100 m (8.5 ft at 328 ft)  
 Shortest focusing distance . . . . . 1.5 m (4.92 ft) to infinity  
 Illuminated crosshair . . . . . Variable (10 steps)  
 Autofocus . . . . . Standard  
 Tracklight built in . . . . . Not available in all models  
 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>5</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>2</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>6</sup> . . . . . 2–10 s

Specifications subject to change without notice.

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