



Trimble RTS771

TOTAL STATION

THE POWER TO EXCEL

Delivering major workflow innovations for both typical surveying and specialized applications, you now have the power to redefine your performance potential.

Video-Assisted Control

Trimble VISION™ gives you the power to see everything the instrument sees without a trip back to the tripod. Direct your survey with live video images on the controller. Now you are free to capture measurements, to prism or reflectorless surfaces, with point and click efficiency.

Visual Verification

The on-board camera integrates surveyed data with the live scene image, so you can verify the work that you've done before leaving the job. Calibrated photo documentation provides customers with deliverables they know they can trust.

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.

SPECIALIZED ENGINEERING APPLICATIONS

For precision-build 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, at greater range, with the Class 2 Laser Pointer.
- ▶ Automatic Servo Focus sets the optical focus for quick manual aiming when monitoring points in DR mode.
- ▶ Silent, frictionless movement ensures unobtrusive operation in urban or residential settings.

Key Features

- ▶ 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



EDM	Servo Control	Angle Accuracy	Hardware Options
DR HP	Robotic, Autolock	1"	Trimble VISION

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PERFORMANCE

Angle measurement accuracy
 (standard deviation based on ISO17123-3) 1" (0.3 mgon)
 Angle display (least count) 0.1" (0.01 mgon)
 Distance measurement
 Accuracy (RMSE)
 Prism mode
 Standard 2 mm + 2 ppm (0.003 ft + 1 ppm)
 Standard deviation according to ISO17123-4 0.8 mm + 1 ppm (0.0026 ft + 1 ppm)
 Tracking 5 mm + 2 ppm (0.016 ft + 2 ppm)
 DR mode
 Standard measurement 3 mm + 2 ppm (0.01 ft + 2 ppm)
 Tracking 10 mm + 2 ppm (0.032 ft + 2 ppm)
 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)
 1 prism Long Range mode 5,000 m (16,400 ft)
 3 prism Long Range mode 7,000 m (23,000 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 Laser diode 660 nm; Laser class 1 in Prism mode
 Laser class 2 in DR mode
 Laser pointer coaxial (standard) 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
 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

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 10.8V, 6.5Ah, 70Wh
 Operating time⁴
 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 robotic⁴
 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 SURVEYING

Autolock and Robotic range²
 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

- 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).
- Dependent on selected size of search window.



Specifications subject to change without notice.