

Trimble RPT600

Rapid Positioning System



PERFORMANCE

Accuracy

Point Accuracy (based on ISO 17123-5, field test)	3 mm @ 50 m
Angle Accuracy (based on ISO 17123-3, lab collimator test)	3" (1.0 mgon)

Automatic level compensator

Type	MEMS, dual-axis, self-levelling
Accuracy	3" (1.0 mgon)
Working Range	± 5° (± 5.5 gon)

Distance measurement

Accuracy to Reflectors (based on ISO 17123-4)

Standard	2 mm (0.006 ft)
Tracking	3 mm (0.01 ft)
Accuracy Reflectorless Mode	2 mm (0.006 ft)

Measuring time

Reflector	Standard 0.2 sec
Reflector	Tracking 0.08 sec
Reflectorless	Mode 0.2...9 sec4)

Range Reflector Mode¹

Single Prism 50mm	300 m (980 ft)
Single Prism 25mm	250 m (820 ft)
Cat-Eye Reflector 80 mm	200 m (660 ft)
Foil Reflector 60 mm	150 m (500 ft)
Shortest possible range	1.0 m (3.3 ft)

Range Reflectorless Mode²

Kodak Gray Card (18% reflective)	90 m (300 ft)
Kodak Gray Card (90% reflective)	170 m (560 ft)
Shortest possible range	0.25 m (0.8 ft)

Robotic Tracking³

360° Cat-Eye Robotic Reflector	
Robotic Range	1.5 m (5 ft) 50 m (160 ft)
Maximum Search Distance	50 m (160 ft)
360° Prism Robotic Reflector	
Robotic Range	1.5 m (5 ft)
	125 m (400 ft)
Maximum Search Distance	125 m (400 ft)
Search Time (typical)	2-10 sec

AutoLock measurement⁴

Maximum Range to Backsight Reflectors

Single Prism 50mm	250 m (820 ft)
Single Prism 25mm	150 m (500 ft)
Cat-Eye Reflector 80 mm	90 m (300 ft)
Foil Reflector 60 mm	40 m (130 ft)
Shortest possible range	1.5 m (5 ft)

EDM SPECIFICATIONS

EDM Laser and Principle

Light source	Laser Diode 520 nm
Principle	TOF combined with Phase Shift, co-axial
Laser Class Safety	
Reflector Mode	Laser Class 2
Reflectorless Mode and Laser Pointer	Laser Class 2

EDM Beam divergence

Divergence	< 0.3 mrad
Diameter	< 15 mm @ 50 m (0.6 in/164 ft)
Diameter	< 30 mm @ 100 m (1.2 in/328 ft)

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GENERAL SPECIFICATIONS

Drives
 Drive system Friction Drive
 Rotation speed maximum 135°/sec (150 gon/sec)
 Rotation time Face 1 to Face 2 3.4 sec
 Positioning time 180° (200 gon) < 4 sec

Telescope
 Zoom Lens System 7 Lens positions
 Aperture 25 mm (1 in)
 Field of view 5.6 gon – 28 gon (5 deg – 25 deg)
 at 2 m (6.5 ft) 0.7 m (2.3 ft)
 at 100 m (328 ft) 8.7 m (29 ft)
 Focusing distance 1.5 m – Infinity (5 ft – Infinity)
 Crosshair Digital, superimposed
 Tracklight built in Red / Green Status LEDs
 Tracklight Range 100 m (328 ft)
 Trunnion axis height 172 mm (6.77 in)
 Trunnion axis height with 3-pin tribrach adapter 196 mm (7.71 in)

Environmental
 Operating temperature –20 °C to +50 °C (–4 °F to +122 °F)
 Dust and water proofing IP55

Power supply
 Internal battery Li-Ion, 11.1 V / 5.0 Ah or 10.8 V / 6.5 Ah
 Operating time Approx. 6...8 hours

Communications
 Wireless communication WLAN, single 2.4GHz band, IEEE 802.11 b/g/n

Weight
 Instrument 4.7 kg (10.3 lb)
 Internal battery 0.3 kg (0.66 lb)

CONTROL UNITS

Ruggedized Tablet Trimble branded
 OS MS-Windows 7 or later
 Field Application Software Trimble FieldLink

CERTIFICATION

CE Mark approval
 FCCID: QOQWF111
 IC: 5123A-BGTWF111
 EDM Laser Class 2
 Laser safety IEC 60825-1 2:2007

Trimble RPT600 only:
 RCM-Mark (Australia)
 GITEKI-Mark (Japan)
 ANATEL-Certification (Brazil)



Footnotes:

1. Reflector mode range under normal weather conditions, no fog, snow or rainfall, 20-30 km sight conditions. Not for copper coated reflectors!

2. EDM reflector-less range to

	A	B	C
Kodak Gray Card, 18% reflective	70 m (230 ft)	90 m (300 ft)	100 m (328 ft)
Kodak Gray Card, 90% reflective	140 m (460 ft)	170 m (560 ft)	200 m (650 ft)

3. Robotic / AutoLock range to

	A	B	C
Cat-Eye Robotic Reflector	45 m (150 ft)	50 m (165 ft)	55 m (180 ft)
360° Prism Robotic Reflector	100 m (328 ft)	125 m (410 ft)	150 m (500 ft)
50 mm Single Prism Reflector	200 m (650 ft)	250 m (820 ft)	300 m (980 ft)
25 mm Single Prism Reflector	100 m (328 ft)	150 m (500 ft)	200 m (650 ft)
80 mm Cat-Eye Reflector	70 m (230 ft)	90 m (300 ft)	100 m (328 ft)
60 mm Foil Reflector	30 m (100 ft)	40 m (130 ft)	50 m (160 ft)

A: Difficult conditions (haze, object in direct sunlight, high ambient light, 70...100 kLux)

B: Normal conditions (normal visibility, object in the shadow, moderate ambient light, < 10 kLux)

C: Best conditions (good visibility, overcast, twilight, indoor, underground, low ambient light, < 1 kLux)

4. Typical < 1 sec, max. 9 sec

Measurement time in reflectorless mode depends on

- Measurement range
- Ambient light conditions
- Object reflectivity (material, color, surface texture and angle of incidence)

Revision History:

Revision 1.0_5/13/2016



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