



## KEY FEATURES

Two Direct Reflex options

Advanced Trimble controller technology

Upgradable to Autolock® and robotic surveying

Four-speed servo-motors

Active search system

### DIRECT REFLEX TECHNOLOGY

The Trimble® 5600 Direct Reflex (DR) Total Station gives you access to the best and most productive measuring methods available for every measuring situation. Direct Reflex (DR) technology from Trimble enables measurement without a prism even to exceptional distances. Hard-to-reach or unsafe targets are no obstacle for the Trimble 5600. Measure quickly and safely without compromising accuracy.

Visible property boundaries and corners can be measured without gaining land access. Overhead cables, tunnels, bridges, quarry faces, stockpiles, buildings, and elevations can all be measured quickly and easily as well as safely in active or live traffic.

### TWO DR MEASUREMENT SYSTEMS AVAILABLE

#### DR Standard

The DR Standard option allows you to measure up to 70 m (230 ft) to a 90% reflective Kodak Gray Card and 50 m (164 ft) to an 18% reflective Kodak Gray Card. The range using a single prism is 5,000 m (16,400 ft) with an accuracy of  $\pm(2 \text{ mm} + 2 \text{ ppm})$ . The high-precision measurements, the distinct laser spot, and the narrow beam of the DR Standard make it an ideal tool for all types of interior measurements and short-range precision engineering tasks.

#### DR 200+

The long-range DR 200+ option allows you to measure up to 600 m (1,968 ft) to a 90% reflective Kodak Gray Card and 200 m (656 ft) to an 18% reflective Kodak Gray Card. That's 3.3 times farther than standard reflectorless total stations. And the range using a single prism is 5,500 m (18,040 ft) with an accuracy of  $\pm(3 \text{ mm} + 3 \text{ ppm})$ .

Its range and accuracy specification make the DR 200+ option ideal for everyday outdoor surveying tasks.

### ADVANCED TRIMBLE CONTROLLER TECHNOLOGY

The Trimble 5600 Total Station supports the latest Trimble controllers and field software. This enables you to benefit from innovative new software features such as GPS Search technology.

Trimble GPS Search technology uses GPS to guide your 5600 instrument to the robotic rover pole in seconds. GPS Search removes the hassle of lost target lock, and makes robotic surveying even more efficient. GPS Search uses GPS positioning to locate a prism anywhere, anytime, so that with a Trimble I.S. Rover, or even a GPS card, or Bluetooth receiver, the 5600 Total Station will locate the prism in just a few seconds.

### THE ORIGINAL INTEGRATED SURVEYING SOLUTION AND BEYOND

The Trimble 5600 Total Station is designed to support Trimble's original Integrated Surveying™ solution. Combine your GPS and optical data in one job file in powerful Trimble field software such as Trimble Survey Controller™. Transfer the job file seamlessly to your Trimble office software for processing.

This Integrated Surveying enables you to maximize the best of both surveying techniques for optimal efficiency in the field.

Whenever you're facing a new surveying challenge, your partnership with Trimble places the right tools and techniques, at your fingertips. Every Trimble system seamlessly integrates via shared workflows and technologies, making your everyday job site a place where the whole is greater than the sum of its parts: Welcome to the Connected Survey Site.



# TRIMBLE 5600 DR STANDARD TOTAL STATION

## PERFORMANCE SPECIFICATIONS

### Angle measurement

Accuracy (Standard deviation based on DIN 18723)

5603 .....	3" (1.0 mgon)
5605 .....	5" (1.5 mgon)
Angle reading (least count)	
Horizontal & vertical	
Standard measurement .....	1" (0.1 mgon)
Fast Standard .....	1" (0.1 mgon)
Tracking .....	2" (0.5 mgon)
Arithmetic mean value (D-bar)	
5603-5605	
Horizontal & vertical angle .....	1" (0.1 mgon)
Automatic level compensator .....	Dual-axis compensator $\pm 6'$ ( $\pm 100$ mgon)

### Distance measurement

Accuracy (standard deviation)

Prism, high-precision DR Standard EDM*	
Standard measurement .....	$\pm(2 \text{ mm} + 2 \text{ ppm}) \pm(0.007 \text{ ft} + 2 \text{ ppm})$
Fast Standard .....	$\pm(3 \text{ mm} + 2 \text{ ppm}) \pm(0.01 \text{ ft} + 2 \text{ ppm})$
Tracking .....	$\pm(5 \text{ mm} + 2 \text{ ppm}) \pm(0.016 \text{ ft} + 2 \text{ ppm})$
Arithmetic mean value (D-bar) .....	$\pm(1 \text{ mm} + 1 \text{ ppm}) \pm(0.003 \text{ ft} + 1 \text{ ppm})$
Prism, DR Standard EDM	
Standard measurement .....	$\pm(2 \text{ mm} + 2 \text{ ppm}) \pm(0.007 \text{ ft} + 2 \text{ ppm})$
Fast Standard .....	$\pm(3 \text{ mm} + 2 \text{ ppm}) \pm(0.01 \text{ ft} + 2 \text{ ppm})$
Tracking .....	$\pm(5 \text{ mm} + 2 \text{ ppm}) \pm(0.016 \text{ ft} + 2 \text{ ppm})$
Arithmetic mean value (D-bar) .....	$\pm(2 \text{ mm} + 2 \text{ ppm}) \pm(0.007 \text{ ft} + 2 \text{ ppm})$
Reflective foil	
Standard measurement .....	$\pm(3 \text{ mm} + 2 \text{ ppm}) \pm(0.01 \text{ ft} + 2 \text{ ppm})$
Fast Standard .....	$\pm(3 \text{ mm} + 2 \text{ ppm}) \pm(0.01 \text{ ft} + 2 \text{ ppm})$
Tracking .....	$\pm(5 \text{ mm} + 2 \text{ ppm}) \pm(0.016 \text{ ft} + 2 \text{ ppm})$
Arithmetic mean value (D-bar) .....	$\pm(3 \text{ mm} + 2 \text{ ppm}) \pm(0.01 \text{ ft} + 2 \text{ ppm})$
Direct Reflex mode	
Standard measurement .....	$\pm(3 \text{ mm} + 2 \text{ ppm}) \pm(0.01 \text{ ft} + 2 \text{ ppm})$
Fast Standard .....	$\pm(5 \text{ mm} + 2 \text{ ppm}) \pm(0.016 \text{ ft} + 2 \text{ ppm})$
Tracking .....	$\pm(10 \text{ mm} + 2 \text{ ppm}) \pm(0.032 \text{ ft} + 2 \text{ ppm})$
Arithmetic mean value (D-bar) .....	$\pm(3 \text{ mm} + 2 \text{ ppm}) \pm(0.01 \text{ ft} + 2 \text{ ppm})$
Shortest possible range	
To prism .....	1.5 m (4.9 ft)
Direct Reflex .....	1.5 m (4.9 ft)
Reflective foil .....	2.5 m (8.2 ft)
Measuring time	
Prism mode	
Standard measurement .....	2 s
Fast Standard .....	1.8 s
Tracking .....	0.5 s
Arithmetic mean value (D-bar) .....	3.5 s per measurement. Repeats until stopped manually (or after 99 measurements)
Direct Reflex mode	
Standard measurement .....	3 s up to 30 m (98.4 ft) + 1 s/10 m (32.8 ft)
Fast Standard .....	2 s up to 30 m (98.4 ft) + 1 s/10 m (32.8 ft)
Tracking .....	0.8 s up to 30 m (98.4 ft) + 1 s/10 m (32.8 ft)
Arithmetic mean value (D-bar) .....	3.5 s per measurement. Repeats until stopped manually (or after 99 measurements)
Range (under standard clear conditions**)	
Range using prism	
1 prism .....	3,000 m (9,840 ft)
1 prism Long Range mode (for measurements >1000 m only) .....	5,000 m (16,400 ft)
3 prisms .....	5,000 m (16,400 ft)
3 prisms Long Range mode (for measurements >1000 m only) .....	7,500 m (24,600 ft)
Range using reflective foil	
Reflective foil 20 mm .....	100 m (328 ft)
Reflective foil 20 mm Long Range mode .....	200 m (656 ft)
Reflective foil 60 mm .....	250 m (820 ft)
Reflective foil 60 mm Long Range mode .....	800 m (2,625 ft)
Range Direct Reflex measurement (typically)	
Kodak Gray Card (18% reflective)*** .....	50 m (164 ft)
Kodak Gray Card (90% reflective)*** .....	70 m (230 ft)
Concrete .....	40-50 m (131-164 ft)
Wood construction .....	40-60 m (131-197 ft)
Metal construction .....	40-60 m (131-197 ft)
Light rock .....	40-50 m (131-164 ft)
Dark rock .....	30-40 m (98-131 ft)

\*\* Standard clear: No haze, overcast or moderate sunlight with very light heat shimmer. Range and accuracy are dependent on atmospheric conditions and background radiation.

\*\*\* Kodak Gray Card, Catalog number E1527795.

# TRIMBLE 5600 DR 200+ TOTAL STATION

## PERFORMANCE SPECIFICATIONS

### Angle measurement

Accuracy (Standard deviation based on DIN 18723)

5603	3" (1.0 mgon)
5605	5" (1.5 mgon)

Angle reading (least count)

Horizontal & vertical	
Standard measurement	1" (0.1 mgon)
Fast Standard	1" (0.1 mgon)
Tracking	2" (0.5 mgon)

Arithmetic mean value (D-bar)

5603-5605	
Horizontal & vertical angle	1" (0.1 mgon)

Automatic level compensator ..... Dual-axis compensator  $\pm 6'$  ( $\pm 100$  mgon)

### Distance measurement

Accuracy (standard deviation)

Prism	
Standard measurement	$\pm(3 \text{ mm} + 3 \text{ ppm}) \pm(0.01 \text{ ft} + 3 \text{ ppm})$
Fast Standard	$\pm(8 \text{ mm} + 3 \text{ ppm}) \pm(0.025 \text{ ft} + 3 \text{ ppm})$
Tracking	$\pm(10 \text{ mm} + 3 \text{ ppm}) \pm(0.032 \text{ ft} + 3 \text{ ppm})$
Arithmetic mean value (D-bar)	$\pm(3 \text{ mm} + 3 \text{ ppm}) \pm(0.01 \text{ ft} + 3 \text{ ppm})$

Reflective foil

Standard measurement	$\pm(3 \text{ mm} + 3 \text{ ppm}) \pm(0.01 \text{ ft} + 3 \text{ ppm})$
Fast Standard	$\pm(8 \text{ mm} + 3 \text{ ppm}) \pm(0.025 \text{ ft} + 3 \text{ ppm})$
Tracking	$\pm(10 \text{ mm} + 3 \text{ ppm}) \pm(0.032 \text{ ft} + 3 \text{ ppm})$
Arithmetic mean value (D-bar)	$\pm(3 \text{ mm} + 3 \text{ ppm}) \pm(0.01 \text{ ft} + 3 \text{ ppm})$

Direct Reflex mode

5-200 m (16.4 ft-656 ft)	
Standard measurement	$\pm(3 \text{ mm} + 3 \text{ ppm}) \pm(0.01 \text{ ft} + 3 \text{ ppm})$
Fast Standard	$\pm(8 \text{ mm} + 3 \text{ ppm}) \pm(0.025 \text{ ft} + 3 \text{ ppm})$
Tracking	$\pm(10 \text{ mm} + 3 \text{ ppm}) \pm(0.032 \text{ ft} + 3 \text{ ppm})$
Arithmetic mean value (D-bar)	$\pm(3 \text{ mm} + 3 \text{ ppm}) \pm(0.01 \text{ ft} + 3 \text{ ppm})$
> 200 m (656 ft)	$\pm(5 \text{ mm} + 3 \text{ ppm}) \pm(0.016 \text{ ft} + 3 \text{ ppm})$

Shortest possible range

To prism	2 m (6.56 ft)
Direct Reflex	2 m (6.56 ft)
Reflective foil	2 m (6.56 ft)

Measuring time

Prism mode	
Standard measurement	0.3 s
Fast Standard	0.3 s
Tracking	0.4 s
Arithmetic mean value (D-bar)	3.5 s per measurement. Repeats until stopped manually (or after 99 measurements)

Direct Reflex mode

Standard measurement	3-7 s
Fast Standard	3-7 s
Tracking	0.4 s
Arithmetic mean value (D-bar)	3.5 s per measurement. Repeats until stopped manually (or after 99 measurements)

Range (under standard clear conditions\*)

Range using prism	
1 prism	2,500 m (8,200 ft)
1 prism Long Range mode	5,500 m (18,040 ft) (max. range)
3 prisms	2,500 m (8,200 ft)
3 prisms Long Range mode	5,500 m (18,040 ft) (max. range)

Range Direct Reflex measurement (typically)

Kodak Gray Card (18% reflective)**	>200 m (656 ft)
Kodak Gray Card (90% reflective)**	>600 m (1,968 ft)
Concrete	200-300 m (656-984 ft)
Wood construction	150-300 m (492-984 ft)
Metal construction	150-200 m (492-656 ft)
Light rock	150-250 m (492-820 ft)
Dark rock	100-150 m (328-492 ft)

Range using reflective foil in Direct Reflex mode

Reflective foil 20 mm	800 m (2,624 ft)
Reflective foil 60 mm	1600 m (5,248 ft)

\* Standard clear: No haze, overcast or moderate sunlight with very light heat shimmer. Range and accuracy are dependent on atmospheric conditions and background radiation.

\*\* Kodak Gray Card, Catalog number E1527795.

**GENERAL SPECIFICATIONS**

**Trimble 5600 DR 200+**

Light source ..... Pulsed laserdiode 870 nm  
 Laser class 1  
 Laser pointer eccentric (optional) ..... Laser class 2  
 Beam divergence  
 Horizontal ..... 0.4 mrad (4 cm/100 m) (0.13 ft/328 ft)  
 Vertical ..... 0.8 mrad (8 cm/100 m) (0.26 ft/328 ft)

**Trimble 5600 DR Standard**

Light source ..... Laserdiode 660 nm  
 Laser class 1 in Prism mode  
 Laser class 2 Direct Reflex  
 Laser pointer coaxial (Standard) ..... Laser class 2  
 Beam divergence  
 Horizontal ..... 0.4 mrad (4 cm/100 m) (0.13 ft/328 ft)  
 Vertical ..... 0.8 mrad (8 cm/100 m) (0.26 ft/328 ft)

**General**

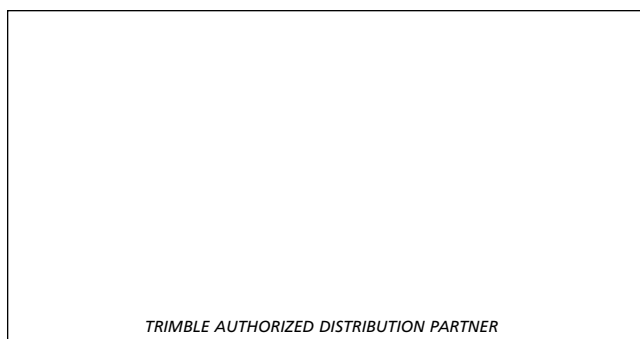
Atmospheric correction ..... -60 to 195 ppm continuously  
 Leveling  
 Circular level in tribrach ..... .8"/0.007 ft)  
 Electronic 2-axis level in the  
 LC-display with a resolution of ..... 6" (2 mgon)  
 Clamps and slow motions ..... Servo-drive. Endless fine adjustment  
 Centering  
 Centering system ..... Trimble 3-pin  
 Optical plummet ..... Optical plummet in tribrach  
 Magnification ..... 2.4x  
 Shortest focusing distance ..... 0.5 m (1.6 ft) to infinity  
 Telescope  
 Magnification ..... 26x (30x Optional)  
 Aperture ..... 40 mm (1.57 in)  
 Field of view at 100 m (328 ft) ..... 2.6 m (8.5 ft)  
 Shortest focusing distance ..... 1.7 m (5.58 ft) to infinity  
 Illuminated crosshair ..... Variable (15 steps)  
 Tracklight ..... Optional (Servo only)  
 Standard (Autolock and Robotic)  
 Operating temperature ..... -20 °C to +50 °C (-5 °F to +122 °F)  
 Power Supply  
 Internal battery ..... Rechargeable NiMH battery 12 V, 1.8 Ah  
 Operating time approx. 3 h (Servo only)  
 External battery ..... External rechargeable NiMH batteries  
 12 V, 3.8-11.4 Ah  
 Operating time approx. 11 h Autolock,  
 9 h Robotic (11.4 Ah)  
 Weight  
 Instrument (not including controller) ..... 6.6 kg (14.5 lb)  
 Tribrach ..... 0.7 kg (1.5 lb)  
 Internal battery ..... 0.4 kg (0.9 lb)  
 Instrument for Robotic surveying  
 (incl. Tracker, and built in radio) ..... 7.5 kg (16.5 lb)  
 Trunnion axis height ..... 205 mm (8.1 in)

**SPECIFICATIONS FOR ROBOTIC SURVEYING**

Range  
 Robotic\* ..... Up to 1,200 m (3,937 ft) depending on type of RMT  
 Autolock\* ..... Up to 2,200 m (7,218 ft) depending on type of RMT  
 Shortest search distance ..... 2 m (6.5 ft)  
 Tracker pointing precision at  
 200 m (656 ft) (standard deviation) ..... <2 mm (0.007 ft)  
 Angle reading (least count)  
 Standard measurement ..... 1" (0.1 mgon)  
 Fast Standard ..... 1" (0.1 mgon)  
 Tracking ..... 2" (0.5 mgon)  
 Arithmetic mean value (D-bar) ..... 1" (0.1 mgon)  
 Measuring time DR Standard, DR 200+  
 Standard measurement ..... .5-8 s  
 Fast Standard ..... .5-8 s  
 Tracking ..... 0.4 s  
 Arithmetic mean value (D-bar) ..... 3.5 s per measurement.  
 Repeats until stopped manually  
 (or after 99 measurements).  
 Search time (typical)\*\* ..... 2-10 s  
 Search area ..... 360 degrees (400 gon) or defined  
 horizontal & vertical search window

\* Standard clear: No haze, overcast or moderate sunlight with very light heat shimmer.  
 Range and accuracy are dependent on atmospheric conditions and background radiation.  
 \*\* Dependent on selected search window.

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