



# Trimble C5 & C5 HP

## MECHANICAL TOTAL STATION



### KEY FEATURES

- ▶ Enjoy all of the features of Trimble® Access™ software from both faces with two color touchscreen displays
- ▶ Fully integrated with Trimble Business Center office software to manage, process, and create customer deliverables
- ▶ Fast measuring speed
- ▶ Compact, lightweight and rugged

### Choose the model that works for you:

C5	C5 HP
Time of Flight / Pulse EDM 	Phase Shift EDM 
With Autofocus	Without Autofocus
<b>Prism</b> Range 5,000 m Accuracy 2 mm + 2 ppm	<b>Prism</b> Range 3,000 m Accuracy 1 mm + 1.5 ppm
<b>Reflectorless</b> Range 800 m Accuracy 3 mm + 2 ppm Measuring interval in Standard mode 0.9 s 35 mm beam divergence at 30 m 12 h operating time*	<b>Reflectorless</b> Range 500 m Accuracy 2 mm + 2 ppm Measuring interval in Standard mode 1.6 s 22 mm beam divergence at 30 m 18 h operating time**
Optical or laser plummet type	Optical plummet type

\* Measuring Angle and Distance Every 30 s when EDM Power Save Mode is set to "At Once."  
\*\* Measuring Angle and Distance Every 30 s.

Learn more: [geospatial.trimble.com/trimble-C5](https://www.geospatial.trimble.com/trimble-C5)

# Trimble C5 & C5 HP MECHANICAL TOTAL STATION

## DISTANCE MEASUREMENT

Range with specified prisms

Good conditions <sup>1</sup>	C5	C5 HP
With single prism 2.5 in (6.25 cm)	16,404 ft (5,000 m)	9,843 ft (3,000 m)
With reflector sheet 2 in x 2 in (5 cm x 5 cm)	984 ft (300 m)	886 ft (270 m)

Reflectorless mode

C5	Good <sup>1</sup>	Normal <sup>2</sup>	Difficult <sup>3</sup>
KGC (90%)	2,625 ft (800 m)	1,640 ft (500 m)	820 ft (250 m)
KGC (18%)	1,312 ft (400 m)	984 ft (300 m)	771 ft (235 m)

C5 HP	Good <sup>1</sup>	Normal <sup>2</sup>	Difficult <sup>3</sup>
KGC (90%)	1,640 ft (500 m)	1,312 ft (400 m)	820 ft (250 m)
KGC (18%)	1,148 ft (350 m)	820 ft (250 m)	656 ft (200 m)

Accuracy in standard measurement mode<sup>7</sup>

	C5	C5 HP <sup>4, 8</sup>
Prism <sup>4</sup>	± (2 mm + 2 ppm)	± (1 mm + 1.5 ppm)
Reflectorless	± (3 mm + 2 ppm)	± (2 mm + 2 ppm)

Measuring time<sup>5</sup>

C5	Standard mode	Fast standard mode	Tracking mode
Prism mode	0.9 s (initial 1.4 s)	0.5 s (initial 1.2 s)	0.3 s (initial 0.7 s)
Reflectorless Mode	1.0 s (initial 1.5 s)	0.5 s (initial 1.3 s)	0.3 s (initial 0.8 s)

C5 HP	Standard mode	Fast standard mode
Prism mode	1.6 s	1.2 s
Reflectorless Mode	2.1 s	1.6 s

## ANGLE MEASUREMENT

Accuracy (Standard Deviation based on ISO 17123-3) ... 1" (0.3 mgon), 2" (0.6 mgon), 3" (1.0 mgon), 5" (1.5 mgon)

Reading system ..... Absolute encoder  
 Minimum increment (Degree, Gon) ..... 0.1" (0.02 mgon)  
 1" model ..... 1.0" (0.2 mgon)  
 2", 3", 5" models ..... 2.4 in (62 mm)  
 Circle diameter ..... Diametrical/ Single  
 Horizontal/Vertical angle ..... 30x (19x/38x with optional eyepieces)

## TELESCOPE

Tube length ..... 5.0 in (128 mm)  
 Image ..... Erect  
 Magnification ..... 30x (19x/38x with optional eyepieces)  
 Effective diameter of objective  
 Trimble C5 ..... 1.77 in (45 mm)  
 Trimble C5 HP ..... 1.57 in (40 mm)  
 EDM Diameter  
 Trimble C5 ..... 1.97 in (50 mm)  
 Trimble C5 HP ..... 1.8 in (45 mm)  
 Field of view ..... 1° 25'  
 Resolving power ..... 3"  
 Minimum focusing distance ..... 4.9 ft (1.5 m)  
 Laser Pointer ..... Coaxial Red Light  
 Tracklight ..... Yes  
 Reticle Illumination ..... Yes, 4 steps

- 1 Good conditions (good visibility, overcast, twilight, low ambient light).
- 2 Normal conditions (normal visibility, object in the shadow, moderate ambient light).
- 3 Difficult conditions (haze, object in direct sunlight, high ambient light).
- 4 Standard Deviation based on ISO 17123-4
- 5 Measuring time may vary depending on measuring distance and conditions. Specification based on average of repeated measurements.
- 6 Battery life specification at 77 °F (25 °C). Operation times may vary depending on the condition and deterioration of the battery.
- 6a When EDM power save mode set to "At once".
- 7 For both prism and reflectorless modes, EDM accuracy in fast standard mode is ± (10 mm + 5 ppm) for the C5, ± (5 mm + 5 ppm) for the C5 HP and tracking mode is ± (20 mm + 5 ppm) for the C5 only.
- 8 C5 HP accuracy in standard measurement mode to a prism less than 1000 m away is ± (1 mm + 1.5 ppm). At a range greater than or equal to 1000 m, the accuracy is ± (2 mm + 2 ppm).

## TILT SENSOR

Type ..... Dual-axis  
 Method ..... Liquid-electric detection  
 Compensation range ..... ±3

## COMMUNICATIONS

Communication ports ..... 1 x serial (RS-232C), 2 x USB (host and client)  
 Wireless communications ..... Integrated Bluetooth\*

## POWER

Hot swappable Li-ion battery (x2) ..... 3.6 V  
 Output voltage ..... approx. 6 h

Operating time <sup>6</sup>	C5	C5 HP
Distance/ angle measurement every 30 s	12 h <sup>6a</sup>	18 h
Continuous distance / angle measurement	7 h	10.5 h

## GENERAL SPECIFICATIONS

Autofocus  
 Trimble C5 ..... Yes  
 Trimble C5 HP ..... No  
 Level vials  
 Sensitivity of Circular level vial on tribrach ..... 10' / 2 mm  
 Tangent Clamps ..... Yes  
 Display face 1 ..... Color LCD back-lit (640 x 480 pixel)  
 Display face 2 ..... Color LCD back-lit (640 x 480 pixel)  
 Operating system ..... Windows® Embedded Compact 7  
 Processor ..... Dual Core 800 MHz  
 Point memory ..... 512 MB RAM, 4 GB flash memory  
 Internal Plummet ..... Optical or Class 2 Laser  
 Optical Plummet:  
 Magnification ..... 3x  
 Field of view ..... 5°  
 Minimum focusing distance ..... 0.5 m  
 Dimensions (W x D x H) ..... 7.2 in x 6.7 in x 12.5 in  
 (184 mm x 169 mm x 318 mm)  
 Weight (approx.)  
 1", 2", 3", 5" Main unit  
 Trimble C5 ..... 9.5 lb (4.3 kg)  
 Trimble C5 HP ..... 9.7 lb (4.4 kg)  
 Battery ..... 0.2 lb (0.1 kg)  
 Carrying case ..... 5.7 lb (2.6 kg)

## ENVIRONMENTAL

Operating temperature range ..... -4 °F to +122 °F (-20 °C to +50 °C)  
 Storage temperature range ..... -13 °F to +140 °F (-25 °C to +60 °C)  
 Atmospheric correction  
 Temperature range ..... -40 °F to +140 °F (-40 °C to +60 °C)  
 Barometric pressure ..... 15.8 inHg to 39.3 inHg (400 mmHg to 999 mmHg)  
 or (533 hPa to 1,332 hPa)  
 Dust and water protection ..... IP66

## CERTIFICATION

Class B Part 15 FCC certification, CE Mark approval, RCM Mark.  
 IEC60825-1 am 2007, IEC60825-1 am 2014, FDA notice 50  
 C5  
 Prism/Reflectorless mode ..... Class 1 laser  
 Laser Plummet/Laser Pointer ..... Class 2 laser  
 C5 HP  
 Prism mode ..... Class 1 laser  
 Reflectorless/Laser Pointer ..... Class 3R laser

Bluetooth type approvals are country specific.  
 Specifications subject to change without notice.





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