Topcon CR-P1

Laser Scanner



The CR-P1 Laser Scanner is a vital tool for construction, architecture, and engineering professionals, providing accurate 3D data to optimize workflows. Available in two models – CR-P1 S (100 m range) and CR-P1 M (200 m range) – it excels at capturing high-resolution data for building design, documenting large renovation sites, and ensuring precision in construction progress and as-built plans, even in challenging environments.

- 2 million points per second scanning speed
- 3D accuracy: 2 mm
  Distance accuracy: 1mm
- 2-year manufacturer warranty
- Real-time scan registration and real-time complete dataset processing in Collage Site

Performance Specifications	CR-P1 S	CR-P1 M
Unambiguity Interval[1]	614 m	614 m
Range:		
White, 90% Reflectivity	0.5–100 m	0.5–200 m
Dark-grey, 10% Reflectivity	0.5–100 m	0.5–150 m
Black, 2% Reflectivity	0.5–50 m	0.5–50 m
Range Noise[2,3]:		
White, 90% Reflectivity	0.1 mm @ 10 m, 0.2 mm @ 25 m	
Dark-grey, 10% Reflectivity	0.3 mm @ 10 m, 0.4 mm @ 25 m	
Black, 2% Reflectivity	0.7 mm @ 10 m, 1.2 mm @ 25 m	
Max Speed	Up to 2 MPts/sec	
3D Accuracy[4]	2 mm @ 10 m, 3.5 mm @ 25 m	
Ranging Error[5]	±1 mm	
Angular Accuracy[6]	19 arcsec	
LaserHDR	Yes	
Temperature Range[7]	Operating: +5° to +40° C Extended Operating: -10° to +55° C Storage: -10° to +60° C	

Additional Performance Specifications

Color Unit:	
HDR Camera	13 MPx - 2x, 3x, 5x brackets
Parallax	Minimized due to co-axial design
Deflection Unit:	
Field of View	300° vertical / 360° horizontal
Step Size	vertical 0.009° (40,960 Pts on 360°) horizontal 0.009° (40,960 Pts on 360°)
Max. Scan Speed	97 Hz (vertical)
Laser (Optical Transmitter):	
Laser Class	Laser Class 1
Wavelength	1553.5 nm
Beam Divergence	0.3 mrad (1/e)
Beam Diameter at Exit	2.12 mm (1/e)
Data Handling and Control:	
Data Storage	SATA 3.0 SSD 128 GB and SDXC™ V30 64 GB SD Card; SD3.0, UHS-I / SDXC™ / SDHC™, max. 512 GB
Scanner Control	Via touch screen display and WLAN connection

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Interface Connection:	
WLAN	IEEE 802.11 ac/a/b/g/n 2x2 MIMO, as access point or client in existing networks (2.4 and 5 GHz)
USB	USB 3 port

Additional Features

Dual Axis Compensator	Performs a leveling of each scan with an accuracy of 19 arcsec valid within ±2°
Accessory Bay	The accessory bay connects versatile accessories to the scanner
Inverse Mounting	Yes
Real-time, On-site Registration	Complete data registration on-site with Collage Site
Electronic Automation Interface	Available as option, only at point of sale
Retake Photos	Select individual photographs with unwanted objects and retake them

General Specifications

Power Supply	19 V (external supply), 14.4 V (internal battery)
Typical Power Consumption	19 W idle, 32 W scanning, 72 W charging
Typical Battery Operation Time	About 4 hours
Typical Scan Time: From start until the scanner can be moved[10]	Gray scale < 1 min | HDR Colored < 1:15 min
Ingress Protection (IP) Rating Class	54
Humidity	Non-condensing
Weight	4.4 kg (including battery)
Size/Dimensions	230 x 183 x 103 mm
Calibration	Recommended annually
Manufacturer Warranty	2 year

1. @ 0.5MPts/s, depends on scanning speed
2. Ranging noise is defined as the variation of distance samples from repeated measurements of a single point at 122k Pts/sec
3. Some surfaces can lead to additional noise
4. For distances larger 25 m add 0.1 mm/m of uncertainty
5. Ranging error is defined as a systematic measurement error at around 10 m and 25 m
6. It is recommended to perform on-site compensation in the event the unit is exposed to exceptional temperature or mechanical stress
7. Low temperature operation: scanner has to be powered on while internal temperature is at or above 15° C. High temperature operation: additional accessory Thermal Cover required
8. 2x150°, homogeneous point spacing is not guaranteed
9. Ferromagnetic objects can disturb the earth magnetic field and lead to inaccurate measurements
10. Accelerated Profile with PanoCam

Images are illustrative only. Product and service availability varies by country.
Contact your local representative for details. Specifications subject to change without notice.
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