

Known for its unsurpassed accuracy and scan quality, the Surphaser line of scanners offers both short range and medium range models ideal for use in reverse engineering, dimensional control, BIM, historical preservation, architecture, and forensics.

Surphaser® 10

- 3D hemispherical scanner with sub-millimeter accuracy and ranges up to 110 m
- Less than 5 kg (11 lb), compact and easily portable
- Class 1 laser , wavelength 1550 nm
- Built-in scan controller and battery
- Two fully integrated 5 megapixel cameras; software for automatic color data mapping
- WiFi connectivity
- Designed to operate in industrial and outdoors environments
- Automatic target extraction and target-based scan registration
- Rapid Preview Scan and on-screen areas of interest selection for high density scans
- Software allows export of clean and accurate data sets into PolyWorks®, Geomagic®, Cyclone®, RealWorks® and other applications for processing
- Extensive set of filters to isolate areas of interest and eliminate unreliable data



Configuration (software selectable)	10_HQ	10_HS
Recommended Work Range (m)	1-50	1-110
Ambiguity Range (m)	180	180
Angular Uncertainty (arc sec)	25	25
Range Noise, mm; 90% reflectivity	0.12@15m	0.25@15m
Range Noise, mm; 10% reflectivity	0.3@15m	0.7@15m
Range Uncertainty, mm	<0.7@15m	<0.9@15m

Surphaser® 10

Scanner Type	Phase Shift, Hemispherical Scanner with 360° x 270° field of view
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SYSTEM SPECIFICATIONS

Distance Measurement Method	Phase-shift
Laser Wavelength	1550 nm
Laser Type	CW
Laser Class: (IEC EN60825-1:2007)	Class 1
Scan Rate (points/second)	208,000
Internal Coordinate Representation Unit (mm)	0.001
Angular position data	
Beam diameter at Aperture	3mm
Internal Vertical Angular Representation Unit	1 arc sec
Internal Horizontal Angular Representation Unit	1 arc sec
Scan density control: software selectable	
Min. Vertical Point Density (points/degree)	12
Min. Horizontal Point Density (points/degree)	2
Max Vertical Point Density (points/degree)	90
Max Horizontal Point Density (points/degree)	90
Full Volume Scan Time (minutes, at 7200x7200 density)	4.5
Field-of-view (per scan, software selectable)	
Horizontal (maximum)	360°
Vertical (maximum)	270°
Physical dimensions and weight	
Weight with battery (kg)	5
Dimensions 278mm L x 200mm H x 118mm W	

**CLASS 1
LASER PRODUCT**

STANDARD ACCESSORIES, MODEL 10

Built-in scan controller, allows direct scanner control and data collection without a laptop
 WiFi connectivity
 Two 5MPix built-in cameras; software for automatic color data mapping is included
 Shipping container
 Surphaser USB 2.0 cable
 AC Adapter 110/240 AC, 14-24V DC, 3.5A
 Surphaser DC power cable
 Tripod Adapter
 Two Li-Ion 14V, 49Wh batteries, each provides 1.5 to 2 hours of operation
 2-bay charger
 1 year Limited Warranty and Basic Support contract

OPTIONAL ACCESSORIES

SMR-compatible B&W targets and targets case
 Tilt sensor, dual axis
 Scanner carrying case, size approved for most domestic airlines cabin requirements, weight restrictions vary, please check with airline(s) for up-to-date regulations
 Tripod
 Extended Warranty contract

HOST COMPUTER REQUIREMENTS

Optional minimum configuration

Processor: 1.8 GHz or greater Pentium-compatible;
 System memory RAM 1GB or greater, 2GB recommended
 OS: Windows XP, Vista, Windows 7, 8 or 10; 32-bit or 64-bit editions
 USB 2.0 port

ENVIRONMENTAL

Calibrated Operating Temperature: 5°C to 40 °C, non-condensing humidity

POWER REQUIREMENT

14-24V DC, 30W

Surphaser® 10 System Performance

Configuration (software selectable)	10_HQ ⁴	10_HS ⁴
Recommended Work Range (m)	1-50	1-110
Ambiguity Range (m)	180	180
Angular Uncertainty ^{1,3} (arc sec)	25	25
Range Noise ^{1,2} , mm; 90% reflectivity	0.12@15m	0.25@15m
Range Noise ^{1,2} , mm; 10% reflectivity	0.3@15m	0.7@15m
Range Uncertainty ³ , mm	<0.7@15m	<0.9@15m

¹ All noise and uncertainty figures are for 1 sigma level

² Range noise -- local (short term) range variation, Lambertian surface

³ Evaluated with contrast target best fit at data rate of 208,000 points per sec

⁴ 10_HQ and 10_HS are software selectable options based on the same hardware model Surphaser 10

System parameters may be changed without notice; parameters are rated independently