

Surphaser® 10HSX

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)	80
Max Horizontal Point Density (points/degree)	80
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, can be removed upon request
- Wi-Fi connectivity, can be removed upon request
- Tilt sensor, dual axis
- 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

- One panoramic or two fully integrated cameras; software for automatic color data mapping and dynamic exposure adjustment
- SMR-compatible B&W targets and targets case
- 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: 2.4 GHz or greater Pentium-compatible;
- System memory RAM 16GB or greater, 32GB recommended for processing
- OS: Windows 11
- USB 2.0 port or fully compliant USB 3.0 port

ENVIRONMENTAL

- Calibrated operating temperature: 5°C to 40 °C, non-condensing humidity

POWER REQUIREMENT

- 14-24V DC, 90W

Surphaser® 10HSX System Performance

Configuration (software selectable)	HQ ⁴	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 HQ and HS are software selectable options based on the same hardware model Surphaser 10HSX
System parameters may be changed without notice; parameters are rated independently