Surphaser® 25HSX Specification

GENERAL

Scanner Type	Phase Shift, Hemispherical Scanner with 360° x 270° field of view
Host Computer	Notebook or Desktop PC with USB 2.0 port

SYSTEM PERFORMANCE

Single point accuracy

LASER SCANNING SYSTEM

Distance measurement Method:	Phase-shift
Laser Wavelength	690 nm (red)
Laser Type	CW
Laser Power	20mW
Laser Class: (IEC EN60825-1: 2007)	Class 3R
Scan Rate (points/second)	190,000, up to 800,000
Distance Resolution	0.001 mm
Angular position data	
Vertical Angular Resolution	8 arc sec
Horizontal Angular Resolution	8 arc sec

SCAN DENSITY CONTROL: SOFTWARE SELECTABLE[2]

Min. Vertical Point Density (points/degree)	24
Min. Horizontal Point Density (points/degree)	10
Max Vertical Point Density (points/degree)	120
Max Horizontal Point Density (points/degree)	120
Scan Time (at 7200x7200 density)	4.5 min
Field-of-view (per scan, software selectable)	
Horizontal (maximum)	360º
Vertical (maximum)	270º

ENVIRONMENTAL

Calibrated Operating Temperature: 5°C to 45 °C, non-condensing humidity

PHYSICAL DIMENSIONS AND WEIGHT

- Weight 10kg
- 480mm L x 170mm W x 285mm H

POWER SUPPLY

- 19-24V DC, 40W (60W peak)

STANDARD ACCESSORIES

- Scanner carrying case (size approved for most domestic airlines cabin luggage requirements)
- USB 2.0 cable
- AC Adapter 110/240 AC, 19-24V DC, 3A

OPTIONAL ACCESSORIES

- Tripod, Tribrach Tripod Adapter
- Notebook PC
- Li Ion 19V, 133Wh, 1Kg Battery (provides 2 to 4 hours of continuous operation) with AC charger.
- Shipping Container

SYSTEM REQUIREMENTS

Minimum Configuration:

- Processor: 0.5 GHz or greater Pentium –compatible; 1.2GHz or greater recommended
- System memory RAM 512MB or greater, 2GB recommended
- OS: Windows XP or Windows Vista
- USB 2.0 port

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Surphaser® 25HSX Configuration Options

Azimuth (Panoramic) Drive Options

- Direct Drive (Indoor Use Only)
- Gearbox Drive

Range Configurations

SR:	Short Range:	0.5m-5m
IR:	Intermediate Range	0.8m-16m
MR:	Medium Range:	1-27m
ER:	Extended Range:	1.5-38m

Surphaser® 25HSX System Performance

Configuration	SR[3]	IR[3]	MR[4]	ER[4]
Ambiguity Range	27	27	27	38.5
BSD: Best Signal Distance, m	1.3	2.7	5	5
ORF: Optimal Range[1], from, m	0.7	1.1	1.9	2.3
ORT: Optimal Range[1], to, m	3.6	8	11.0	12
1-pass mode				
ERF: Effective Range[2], from, m	0.45	1	1	1.5
ERT: Effective Range[2], to, m	5	16	21	31
Range Noise[5] at BSD, 90% Lambertian surface, mm	0.070	0.15	0.25	1
2-pass mode				
ERF2: Effective Range[2] 2 pass mode, from, m	0.2	0.8	1	1.5
ERT2: Effective Range[2] 2 pass mode, to, m	5	16	27	38.5
Range Noise[5] at BSD, 90% Lambertian surface, mm	0.045	0.070	0.1	0.15
Laser Spot Data				
LFD: Laser Focal Distance, m	1.8	5	5	5
Laser Spot Size at LFD, mm	0.5	2.3	2.3	2.3
Laser Spot Size at Aperture, mm	2.8	2.8	2.8	2.8
Laser Spot Size at ERT2	4.6	3.5	6.2	12
Target Acquisition Data[5] (contrast target best fit)				
Vertical Angle Uncertainty, arc sec	<30	<30	<30	<30
Horizontal Angle Uncertainty, arc sec	<30	<30	<30	<30
Range Uncertainty, mm	< 0.5 @3m	< 0.5 @5m	< 1 @15m	< 1 @15m
Total Target Position Uncertainty, mm	< 0.5 @3m	< 0.5 @5m	< 1 @15m	< 1 @15m

[1] Optimal Range Definition: Range Noise is under 150% of the Range Noise at BSD

[2] Effective Range Definition: 100% Distance Resolution for 30% Lambertian Surface

[3] With Direct Drive Azimuth Drive Option

[4] With Gearbox Azimuth Drive Option

[5] All Noise and Accuracy figures are for 1 sigma level

Range Noise -- local (short term) range variation, 1 sigma

System Parameters may be changed without notice.

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