



SURPHASER® — 3D LASER SCANNERS AND OEM PRODUCTS FOR LASER SCANNER MANUFACTURERS

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, historical preservation, architecture, and forensics.

SURPHASER® 25HSX

- Sub-millimeter accuracy scanners with scan rate of up to 1.2 million points per second
- Designed to operate in industrial and outdoors environments
- Software allows export of clean and accurate data sets into PolyWorks®, RapidForm®, Geomagic®, Cyclone®, RealWorks® and other applications for processing
- Portable and easy to move around - fits into optional carrying case approved for cabin luggage for most domestic airlines

FOR 3D SCANNER DEVELOPERS AND MANUFACTURERS:

OEM products based on advanced Surphaser technology - range unit and software. Software options include everything for rapid development of customized 3D laser scanner system best suited for particular application.

SURPHASER® 25HSX CONFIGURATION OPTIONS

Configuration	SR	IR_X	ER_XQ	ER_XS
Ambiguity Range, m	46	70	70	140
Recommended Work Range, m	0.2-5	0.4-30	1.5-50	1-70
Range Noise, 1 sigma, mm	0.07@2m	0.1@3m	0.2@8m	0.5@8m
Range Uncertainty, mm	< 0.3@3m	< 0.5@5m	< 1@15m	<1@15m



SURPHASER® 25HSX CASE STUDY I

BOEING 747: FUSELAGE SURFACE MODELING



Images courtesy of Mimic Studios, Inc.

12 scans, 380 million points
Scan time: **3 hours**

Processing time:

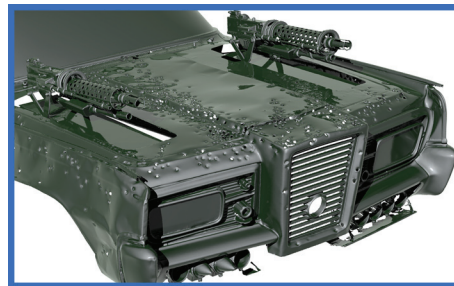
5 hours for polygon model creation

6 hours CAD modeling fuselage underside skin from scan data



SURPHASER® 25HSX CASE STUDY II

GREEN HORNET: SPECIAL EFFECTS DATA



Images courtesy of Mimic Studios, Inc.

12 scans, 70 million points
Scan time: **2 hours**

Processing time:

4 hours for alignment and polygon model creation



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Basis Software, Inc.
2811 152nd Ave NE,
Redmond, WA 98052

E-mail: info@surphaser.com
Telephone: 425-861-9390
Fax: 425-861-9311

www.surphaser.com



rapid solutions to 3D problems...

Surphaser® 25HSX Specification

GENERAL

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

Distance measurement Method:	Phase-shift
Laser Wavelength	685 nm (red)
Laser Type	CW
Laser Power	15mW
Laser Class: (IEC EN60825-1:2007)	Class 3R
Scan Rate (points/second)	216,000 to 1,200,000
Distance Resolution (mm)	0.001
Angular position data	
Vertical Angular Resolution	1 arc sec
Horizontal Angular Resolution	1 arc sec

Scan density control: software selectable

Min. Vertical Point Density (points/degree)	24
Min. Horizontal Point Density (points/degree)	10
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 (kg)	11
Dimensions 425mm L x 164mm W x 237mm H	



ENVIRONMENTAL

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

POWER SUPPLY

- 19-24V DC, 40W (65W peak)

STANDARD ACCESSORIES

- Shipping container
- USB 2.0 cable
- AC Adapter 110/240 AC, 19-24V DC, 3.5A

OPTIONAL ACCESSORIES

- Notebook PC
- Tablet PC
- On Board computer SurphPC™
- Li Ion 14V, 90Wh, 2.2lb Battery (provides 1.5 to 2 hours of continuous operation)
- Scanner carrying case (size approved for most domestic airlines cabin luggage requirements, weight restrictions vary, please check with airline(s) for up-to-date regulations)
- Tripod
- Tripod Quick Release Adapter
- Tripod attachment for Tablet PC, SurphPC™ or battery

HOST COMPUTER REQUIREMENTS

Minimum Configuration:

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

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¹All Noise and uncertainty figures are for 1 sigma level

²Range Noise -- local (short term) range variation, 1 sigma, 90% Lambertian surface

³Evaluated with contrast target best fit

⁴ER_XQ and ER_XS are software selectable options based on the same hardware model ER_X

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