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.

# Ultra Short Range Surphaser® 75USR

- Ultra Short Range (0.25m - 2.5 m) hemispherical scanner
- Unique combination of deep sub-millimeter accuracy, depth of field, and scanning speed
- Less than 5 kg (11 lb), compact and easily portable
- Built-in scan controller and battery
- Two fully integrated 5 megapixel cameras; software for automatic color data mapping and dynamic exposure adjustment is included
- 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
- Extensive set of filters to isolate areas of interest and eliminate unreliable data
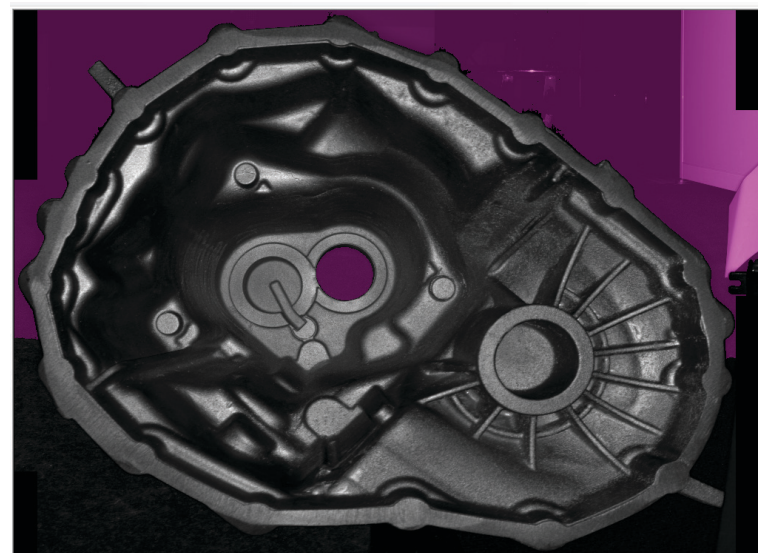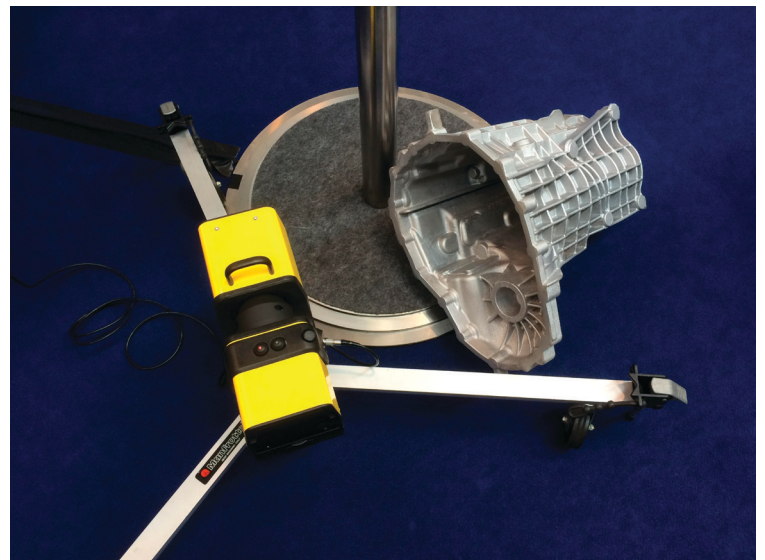




| Recommended Work Range (m) | 0.25-2.5 |
|---|---|
| Angular Uncertainty (arc sec) | 25 |
| Range Noise, mm; 90% reflectivity | 0.025@0.3m-2m |
| Range Noise, mm; 10% reflectivity | 0.07@0.5m-1.8m |
| Range Uncertainty, mm | <0.15 @1.5m |

# Surphaser® 75 Ultra Short Range

| Scanner Type | Phase Shift, Hemispherical Scanner with 360° x 270° field of view |
|---|---|

## SYSTEM SPECIFICATIONS

| | |
|---|---|
| Distance Measurement Method | Phase-shift |
| Laser Wavelength | 685 nm |
| Laser Type | CW |
| Laser Class: (IEC EN60825-1:2007) | Class3R |
| Scan Rate (points/second) | 208,000 |
| Internal Coordinate Representation Unit (mm) | 0.001 |
| **Angular position data** | |
| Beam diameter, mm | 0.8@0.5m, 1.2@2m |
| 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 ppd |
| Min. Horizontal Point Density (lines/degree) | 2 lpd |
| Max Vertical Point Density (points/degree) | 90 ppd |
| Max Horizontal Point Density (lines/degree) | 78 lpd |
| Full Volume Scan Time (minutes, at 7200x7200 density) | 4.5 |
| **Field-of-view  (per scan, software selectable)** | |
| Horizontal (maximum) | 360º |
| Vertical (maximum) | 270º |
| **Physical dimensions and weight** | |
| Weight with battery (kg) | 4.9 |
| Dimensions 278mm L x 200mm H x 118mm W | |

```
LASER LIGHT
AVOID DIRECT EYE EXPOSURE
CLASS 3R LASER PRODUCT
PER IEC/EN 60825−1/Ed 2:2007
< 1 mW ave in 28 µJ pulses at 685 nm
```
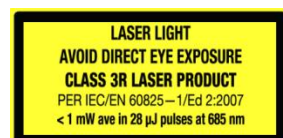
### STANDARD ACCESSORIES, MODEL 75USR

- Built-in scan controller, allows scanner control, operation, and data collection without a laptop
- WiFi connectivity
- Two 5MPix built-in color cameras; includes software for automatic color data mapping and dynamic exposure adjustment
- 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 Battery Charger
- Shipping container
- 1 year Limited Warranty and Basic Support contract

### OPTIONAL ACCESSORIES

- Scanner carrying bag, size approved for most domestic airlines' cabin requirements, weight restrictions vary, please check with airline(s) for up-to-date regulations
- Tripod
- SMR-compatible B&W targets and targets case
- Tilt sensor, dual axis
- 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® 75USR System Performance

| | |
|---|---|
| Recommended Work Range (m) | 0.25-2.5 |
| Ambiguity Range (m) | 180 |
| Angular Uncertainty[1,3] (arc sec) | 25 |
| Range Noise[1,2], mm; 90% reflectivity | 0.025@0.3m-2m |
| Range Noise[1,2], mm; 11% reflectivity | 0.07@0.5m-1.8m |
| Range Uncertainty[3], mm | <0.15 @1.5m |

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