

# Revolutionary 3D Scene Capture, Viewing and Analysis

## DeltaSphere™ - 3000 3D Scanner

## SceneVision-3D™ Software



### Capture Everything!

Millions of 3D measurements, dozens of photos, all captured automatically in just a few minutes. Preserve the *whole* scene, digitally – forever. The DeltaSphere-3000 3D Scene Digitizer makes this possible.

Instead of deciding what measurements to make at the scene, the DeltaSphere-3000 scans an entire room. Then, during the scan, or days or even months later, make any measurements you need on your PC or laptop – just as if the scene still existed.

### Groundbreaking Technology

The DeltaSphere-3000 starts with a laser rangefinder similar to those used in a surveyor's Total Station – except 20,000 times faster. Combined with sophisticated positioning motors, an embedded computer controller, and computer graphics software, the DeltaSphere-3000 doesn't just make a single measurement – it makes thousands of measurements each second. When it's done you've recorded the position of every point touched by the laser – as if you've used a tape measure or Total Station millions of times.

### Digital Color, Too

The DeltaSphere-3000's color option uses a calibrated, professional digital camera to automatically capture color photos associated with each of the scans. These photos are then combined with the laser scans to create a color model of the scene.

This scene reconstruction is different from an artist's rendering or typical computer animation. This is actual data measured and photographed at the scene – and represents a new step forward for scene analysis and presentation.

### SceneVision-3D Software

The DeltaSphere-3000 Scanner captures the data, and SceneVision-3D puts that data in your hands. Designed especially for law enforcement, SceneVision-3D is the first tool to combine real-world 2D images and 3D data in one package for scene reconstruction, viewing, analysis, and presentation. And you don't need to be a computer expert to use it. What can you do in SceneVision-3D?

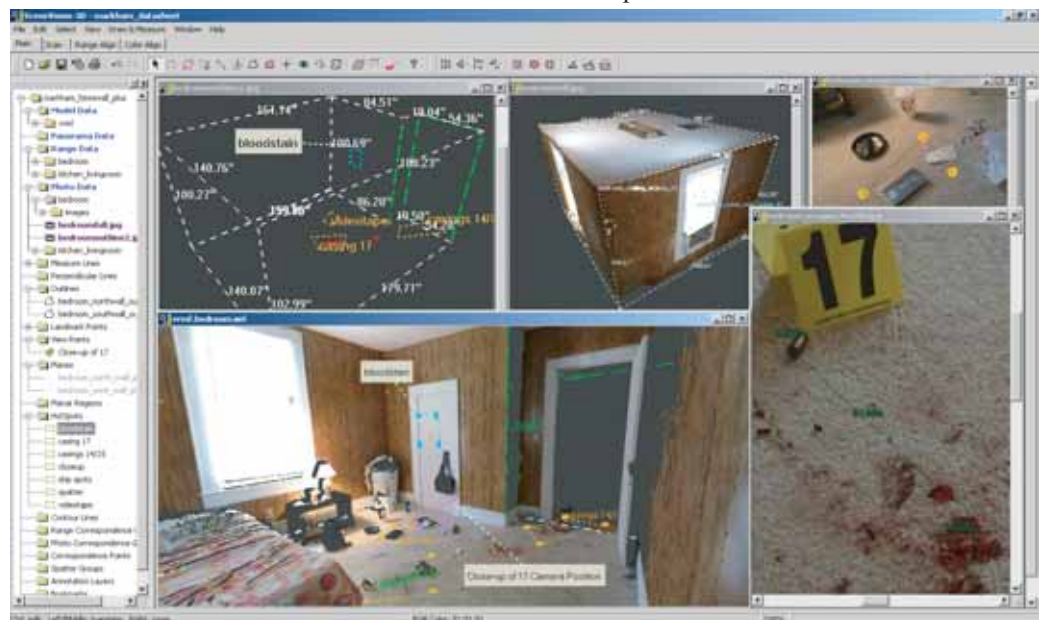
□ It's a powerful viewing tool. Display photos taken with the DeltaSphere or any other digital photos. View 3D data from any

perspective – even from viewpoints where your camera couldn't go – like directly overhead.

□ It's a data processing and model creation tool. Create photo-realistic 3D computer graphics models and 360° panoramas.

□ It's a groundbreaking analysis tool. Measure distances between any two points in the data – and draw measurement lines in 2D or 3D. Measure the perpendicular distance between a point and the floor or a wall. Mark key landmark points in a scene; label them and add notes. Add close-up photos, taken with the DeltaSphere camera or your own camera, as 'hot spots' in the scene. Analyze blood spatter on surfaces – automatically producing 3D trajectory lines representing the path of the blood to the surface. Build 'viewpoints' showing precisely what was visible to a person at a particular location in the scene.

□ It's a great presentation tool. Interactively navigate through a 3D scene, in real-time, providing a real sense of 'being there'. Capture images from the 3D models which show critical viewpoints, measurements, or photographic details. Zoom in for close-ups or back up for the whole scene.



## SceneVision-3D Specifications

- Align multiple scans to create a single model
- Align color with laser range data
- View many forms of data
  - 3D VRML models with or without color
  - Image data in TIFF, JPEG and other standard formats
  - RTPI files (laser range data) with or without color
  - Text files used for annotation
  - Create 360° panoramic images
- Draw on VRML, image and/or range data (in 2D or 3D)
  - Measurement lines between any two points
  - Measurement lines from a point perpendicular to a plane
  - Points
  - Polygonal outlines of objects
- Identify planes corresponding to walls, floors and ceilings
- Add photos/images as "hot spots" in the data
- Add labels and text notes to any of the individual elements
- Integrate close-up photos with 3D VRML models
- Analyze blood spatter and automatically produce lines in 3D models representing the path of the blood

System Requirements - PC/Laptop, Windows 2000/XP, Pentium 4 or better, 3D Graphics card



Blood spatter visualization (with close up)

## DeltaSphere-3000 3D Digitizer - Specifications and Performance

### Integrated Hardware Components

- Time-of-flight, modulated beam, laser range finder (Class IIIA -670nm., 5mW. max or Class 3R -780nm., 8mW. max )
- Embedded CPU with Ethernet connectivity
- Elevation and azimuth positioning subsystems
- Separate AC power supply and DC cable included. Can run off a car or auxiliary rechargeable battery (not included)
- Standard photographer's and surveyor's tripod mounts
- High-quality shipping case included
- Color option includes professional digital camera, lens and camera mount

### Integrated Software (for user-supplied PC)

- Interactive scanning control specifying FOV, speed, and resolution
- Data storage, preview and measuring tool. View range data as a 2D projection during and after scanning.
- Conversion to 3D points and 3D models
- Compatible with popular polygon conversion software. Export for InnovMetric PolyWorks, Inus Rapidform, plus VRML and ASCII X,Y,Z,Intensity.
- Color option includes camera control, IEEE 1394 image capture to PC, and color-mapping tool.

### Performance

Range	1ft. - 50ft. Maximum
Range Resolution	.01in.
Range Accuracy	0.3in.
Angular Accuracy	0.015 degrees
Beam Diameter	0.1in at 0ft.; 0.28in. at 30ft.
Scan Rate	24,000 samples/second
Scan Density	5-20 samples/degree,
Field of View	290° elevation x 360° azimuth

### System Specifications

External Power Supply	110-240 VAC, 50-60Hz
Power Requirement	12 VDC, 3 amps (typical)
Dimensions	14"(L) x 14"(H) x 4"(W)
Weight	22 lbs.
Operating Temp.	0 - 45° C
PC Requirements	Windows 2000/XP, 256Mb memory, large storage for scans
Warranty	1 year

\*specifications subject to change without notice



DeltaSphere reconstruction of a staged car crash

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