3dMD
Providing the substance behind the image

World Leader in High Precision 3D Surface Imaging Systems

3dMD's systems are the most widely used ultra-fast, high-precision 3D surface imaging devices in leading teaching institutions, hospitals, and private practices worldwide with an outstanding reputation for accuracy, speed, and dependability. Recognized for commitment to scientific innovations in the field, 3dMD continues to provide advanced imaging systems to customers that are simple to use and reliable enough to withstand the pressures of imaging large numbers of patients in busy practice/clinical environments day-in and day-out.

Market Leadership: With 1,200-plus 3D cameras worldwide, 3dMD has been continuously developing and refining its sophisticated 3D technology products for the requirements of the healthcare community. Ten-plus years ago, 3dMD pioneered the commercial application of a new non-invasive imaging technique called "active stereo photogrammetry" with the goal of imaging the surface of the human form accurately and efficiently. 3dMD has combined robust software engineering with state-of-the-art, industrial-grade hardware components, which are constructed to rigorous quality inspection and performance testing standards, to ensure image quality and consistency over time in high-throughput environments.

Multi-Modal Image Fusion: A natural companion to CT/CBCT initiatives, 3dMD images register 1:1 to correct CBCT surface artifacts caused by patient movement during the duration of the scan; compensate for soft tissue compression from CBCT stabilization aids (i.e. chin cup); eliminate soft tissue draping from supine devices; and supplement any missing anatomical data (i.e. nose). More importantly, 3dMD enables you to accurately document the patient's natural head position and multiple facial expressions non-invasively throughout the treatment cycle. 3dMD patient images are incorporated with the corresponding CBCT/CT data at customer sites worldwide in a number of 3dMD supported 3D software applications such as Dolphin 3D™, SurgiCase CMF™ from Materialise, Maxilim™, OnyxCeph3D™, and VoXim® from IVS.

Multi-Modal Image Fusion

Flexible System Approach: While 3dMD manufactures a range of anatomy-specific imaging systems (i.e. 3dMDface System), each 3dMD system is constructed from a foundation of modular imaging components or units which serve as portable building blocks to make all 3dMD systems simple to reconfigure and easy to maintain. This provides an easy upgrade path for adding modular units to increase capture volume (i.e. from a 180-degree full face capture to 360-degree cranial capture). It also gives the user complete flexibility to reconfigure the modular units for a wide range of standard and custom anatomical requirements. 3dMD's products provide absolute versatility in the field and outstanding value for many years.

Mounted 3dMDface™ System

Ultra-High Precision Accuracy

- Capture Speed: ~1.5 milliseconds at highest resolution, eliminating the challenges and errors due to patient movement
- Geometry Generation: One continuous point cloud produced from the onset regardless of the number of camera viewpoints, which eliminates the data errors associated with merging/stitching data sets together
- Geometry Accuracy: ≤0.2mm RMS or better (depending on configuration)
- Accurate Texture Mapping: Simultaneous acquisition of geometry and high resolution color texture data to ensure accurate mapping to the geometry

Sophisticated landmarking & analysis techniques

Engineered Reliability

- Quality-Focused Engineering: Medical-grade machine vision cameras integrated with an industrial-grade flash system ensures repeatable, quality-oriented results 24/7 in high throughput environments
- Resilience to Harsh and/or Reflected Lighting: 3dMD's active stereo photogrammetry technique reliably ensures a quality geometry regardless of room lighting conditions or intense directional and/or reflected light
- Non-invasive: Eye-safe within the safety guidelines of any photographic flash-based system

Quantify soft tissue change

3dMDtrio™ System

Ease of Workflow

- Ease of use: Interface utilizes basic point-and-click routines. Calibration is a simple user process taking less than a couple of minutes. Optional Auto-Calibration feature.
- Imaging management integration: Dolphin Imaging, Practiceworks/Orthotrac, and others
- Wall-mount footprint: Easily fits into a busy practice or clinic environment by simply mounting it on a wall, ensuring consistent patient positioning and composure every time
- Fully Portable: All 3dMD systems can be broken down and transported easily allowing the same equipment to be used at any location.
- Processing flexibility: Immediate or offline at a convenient break point
- File formats supported: .tsb, .obj, .stl, .wrl, .aop, .dxf, .raw, ASCII

3dMDface™ System

- 180-degree face capture (ear-to-ear)
- Capture Speed: ~1.5 milliseconds at highest resolution... ideal for children
- Two modular units of 6 medical-grade, machine vision cameras and an industrial-grade flash system synchronized in a single capture
- Ultra-high fidelity color textures
- Small footprint and wall-mount option
- Portable laptop version also available
- Extremely reliable and easy to use
- Economical upgrade path to the 3dMDcranial™ and 3dMDtorso™ Systems

3dMDcranial™ System

- Full 360-degree head capture
- Capture Speed: ~1.5 milliseconds at highest resolution... ideal for children
- Four or five modular units of 12 or 15 machine vision cameras and an industrial-grade flash system synchronized in a single capture
- Reconfigurable to a 3dMDface System
- Proven support for a range of custom orthotic manufacturing processes

3dMDtorso™ System

- 180-degree torso capture including below the breast
- Capture Speed: ~1.5 milliseconds at highest resolution
- Depending on requirements, two, three, or four modular units of 6, 9, or 12 machine vision cameras and an industrial-grade flash system synchronized in a single capture

3dMDcranial5™ System

3dMD Software Applications

Today, 3dMD is also pioneering the field of Image Fusion software applications, where a number of 3D modalities (CT, CBCT, MRI, digital dental study models, etc) can be superimposed into a patient-specific anatomical reconstruction for a comprehensive representation of the patient for treatment.

- 3dMDpatient™ Software: Comprehensive 3D surface analysis
- 3dMDvultus™ Software: Sophisticated 3D treatment software for assessing the patient condition, planning patient treatments and surgery, analyzing airways, simulating outcomes, monitoring progress, and evaluating outcomes - a new generation of easy to use software tools that simulate hard and soft tissue outcomes using the patient's fused image as the anatomical foundation.
- 3dMDvultus™ Breast Simulation Module: Powerful biomechanical platform for calculating breast parameters and simulating in real-time how a manufacturer's implant will affect the size and contour.

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The leader in 3D surface imaging & applications

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