

# Vista™ 16

## OPTICAL CT SCANNER



### KEY FEATURES

### BENEFITS

<b>Low Stray Light:</b>	New convergent light source improves accuracy and precision
<b>Fast:</b>	Acquisition, reconstruction and display of optical CT images in approximately 5 minutes
<b>Efficient:</b>	Simple on-screen controls and straightforward workflow
<b>Flexible:</b>	Different wavelengths available for different dosimeters, interchangeable aquariums available for different index of refraction matching liquids, open accessible data for research
<b>Compatible:</b>	Works with ClearView™ and 3 <sup>rd</sup> party radiochromic 3D dosimeters
<b>Clean:</b>	Top load design with dosimeter clamp on rotary stage reduces operator contact with dosimeters and aquarium liquids
<b>Two Sizes:</b>	For large or small 3D dosimeters

Existing laser scanners are slow, complicated and not clinically practical. Sparsely sampled 2D detector arrays do not provide enough points for confidence in 3D.

Vista™ 16 is a fast, reliable, geometrically accurate and dosimetrically accurate cone beam optical CT scanner.

Designed for **True 3D** dosimetry, Vista™ 16 is used for on-site or remote scanning of ClearView™ 3D dosimeters. The optical CT scanner includes software for acquisition, reconstruction, and display of 3D optical CT images. Images from Vista™ 16 are analyzed in a variety of 3<sup>rd</sup> party software applications.

Vista™ 16 makes use of a new convergent light source design which has been shown to reduce stray light and improve the accuracy and precision of optical CT measurements<sup>(1)</sup>.

The Vista™ 16 optical CT scanner is designed to work with radiochromic dosimeters, such as Fricke which have an absorption peak at 590 nm or 633 nm. Different wavelengths are available on request for different dosimeters and applications.



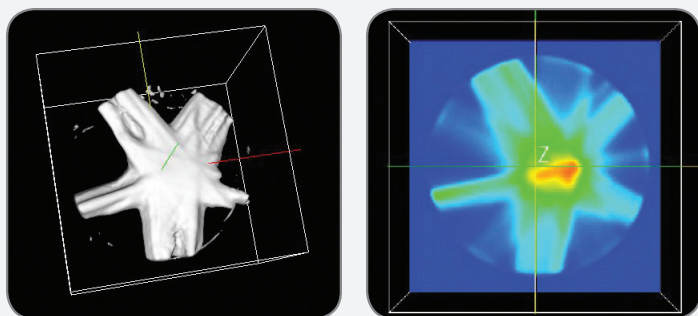
**Above:** Close-up of the liquid filled Vista™ 16 aquarium capable of scanning objects up to 15 cm diameter by 12 cm long.

1: Dekker KH, Battista JJ, Jordan KJ. Stray light in cone beam optical computed tomography: II. Reduction using a convergent light source.

Vista™ 16 is capable of scanning radiochromic dosimeters up to 15 cm diameter by 12 cm long. Objects are suspended in a liquid filled aquarium to provide index of refraction matching. Data is fully accessible for research applications.

Performance	Typical Scanning Laser Systems	Vista Optical CT Scanner
Scanning Time	6 minutes per slice	Less than 5 minutes for 360 projections, up to 400 slices
Reconstruction Time	6 minutes per slice	Less than 5 minutes for 100 slices
Spatial Resolution	0.5 mm, non isotropic	2.0, 1.0, 0.5, 0.25 mm, isotropic
Overall Time to Results	4 hours – 1 day or more	Less than 1 hour

**Above:** \*Results based on I. M. Oldham, J. H. Siewerdsen, S. Kumar, J. Wong and D. A. Jaffray; Optical-CT gel-dosimetry I: Basic investigations, Med. Phys. 30, 623-634, 2003



**Above:** Surface and color rendering of a multi-beam dose distribution.

## SPECIFICATIONS

- ▶ Aquarium:
  - Glass/Aluminum**
- ▶ Region of interest dimensions:
  - Up to 15 cm diameter x 12 cm long**
- ▶ Enclosure (Height includes cabinet containing motor):
  - 35 cm x 165 cm x 48 cm (WxLxH)**
- ▶ Electrical – 24V DC, 2.1A ; 120 – 240 V AC medical grade switching power supply provided

## ORDERING INFORMATION

- 100-2016 Vista™ 16 Cone Beam Optical CT Scanner  
System Includes:
- ▶ Scanner
  - ▶ Software
  - ▶ User's Guide
  - ▶ Aquarium for index of refraction matching liquid
  - ▶ Wavelength 530 nm (other wavelengths available on request)
  - ▶ 15 cm Rotary Stage
  - ▶ 5 Polyethylene terephthalate jars (15 cm diameter) Other Rotary Stage and Jar sizes available on request.

## ACCESSORIES

- 500-1067 Annual Service & Software Support  
500-1016 Aquarium (For Index of Refraction Matching)  
500-1045 Additional Light Source (Wavelength to be confirmed prior to ordering)  
500-1072 10 cm Rotary Stage  
500-1073 Dovetail Rotary Stage and Jar Clamp for Smaller Jars  
500-1074 Jar Clamp for Smaller jars

## MINIMUM TECHNICAL REQUIREMENTS

- ▶ **Operating System:** Windows 7, 10
- ▶ **Processor:** i7, 2 GHz or better
- ▶ **RAM:** 4GB or more
- ▶ **Graphics Card:** 512 MB or better with OpenGL 2.1
- ▶ **Peripheral Connectivity:** USB 3.0

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