MORITA

Veraviewepocs 3D R100 & F40

Innovative 3D Reuleaux Full Arch FOV

Thinking ahead. Focused on life.

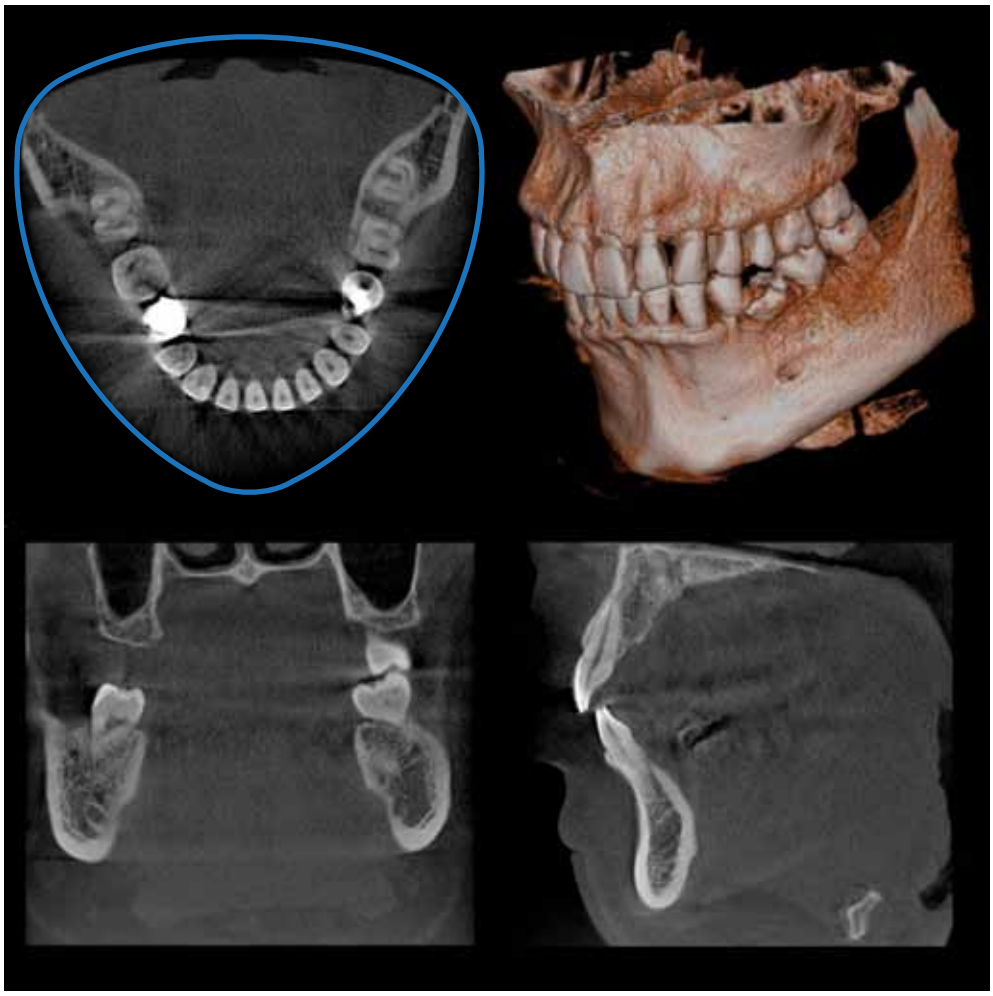
Veraviewepocs 3D R100

A New Frontier in X-ray Diagnostics

Veraviewepocs 3D R100 has changed the shape of FOV. This unit's groundbreaking and patent pending 3D Reuleaux Full Arch FOV (field of view) provides a unique shape for full arch imaging. With 6 field of view options and Morita's world renowned image quality, Veraviewepocs 3D R100 is suitable for a wide variety of dental applications including implant planning.

3D Reuleaux Full Arch FOV

3D Reuleaux Full Arch Field of View



Blue line indicates new full arch FOV, equivalent to Ø100 mm equivalent.

New Patent Pending Technology

Morita's new and completely unique 3D Reuleaux Full Arch FOV abandons the typical cylinder with a new convex triangle shape. By more closely matching the natural dental arch form, this groundbreaking FOV reduces dose by excluding areas outside the region of interest and allows a complete scan of the maxilla and/or the mandible.

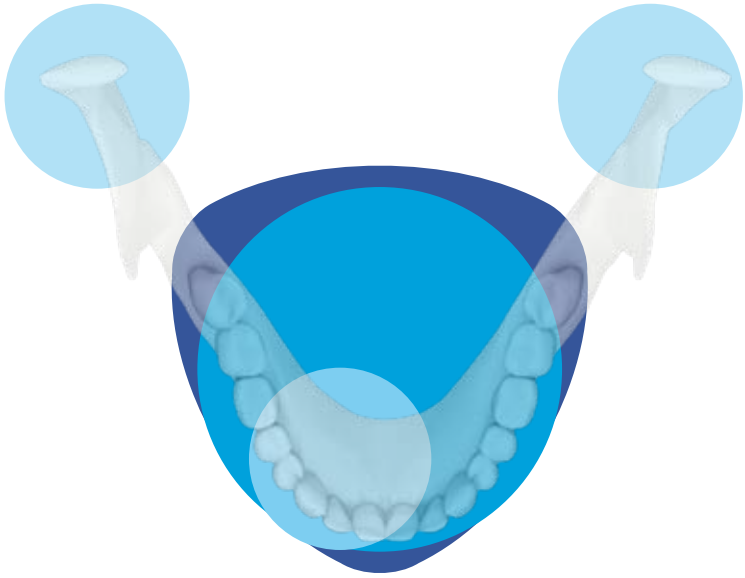
Not available on the Veraviewepocs 3D F40 model.

Various Fields of View

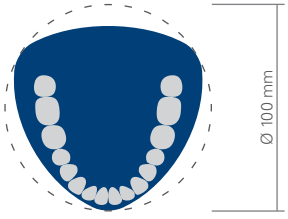
Exposure Areas for Multiple Diagnostics
The Veraviewepocs 3D R100 model offers a total of 6 exposure areas from Ø 40 x H 40 mm up to Ø 100 x H 80 mm for various diagnostic needs.

The new full arch scan captures the maxilla and/or the mandible with the equivalent of 100 mm in diameter and two height options of 50 or 80 mm. Its full arch capability, reduced dose, and exceptional clarity are ideal features for implant planning and oral surgery. This unit also offers small and medium field of view sizes suitable for endodontics, periodontics, as well as general dentistry.

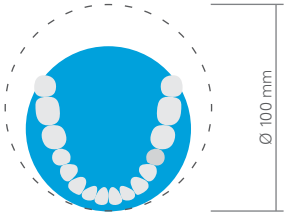
The Veraviewepocs 3D F40 model offers Ø 40 x H 80 mm and Ø 40 x H 40 mm fields of view, also suitable for a variety of applications.



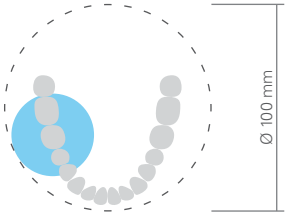
R100 Full Arch FOV



Ø 80 FOV

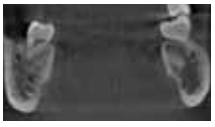


Ø 40 FOV



Fields of View


Ø 100 (Equivalent) x H 80 mm*


Ø 100 (Equivalent) x H 50 mm*


Ø 80 x H 80 mm


Ø 80 x H 50 mm


Ø 40 x H 80 mm


Ø 40 x H 40 mm

Veraviewepocs 3D R100 only

Veraviewepocs 3D R100 and Veraviewepocs 3D F40

*3D Reuleaux Full Arch FOV

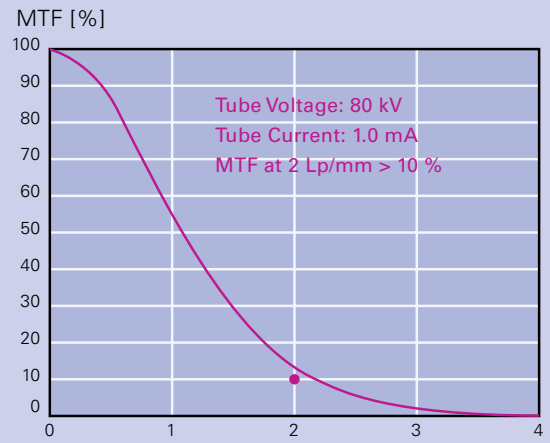
High Resolution Images
With Dose Reduction Feature

Dose Reduction Feature
Through advanced engineering, a Dose Reduction Mode optimizes the intensity of the X-rays which lowers exposure for easily penetrated tissues. Dose is reduced to a mere 60% of the standard mode.* By maximizing efficiency, the maxillary sinus membrane appears sharper than ever before with fewer artifacts.**

Resolution & Clarity
Veraviewepocs offers high resolution images of 125 µm voxel. It provides clear images of the periodontal pocket, the periodontal ligament, and the alveolar bone. It is extremely useful for implant therapy from planning to post-operative observation.

Ø 40 x H 80 mm high resolution image taken in Dose Reduction Mode

Spatial Resolution
MTF: Modulation Transfer Function



Super-High Resolution for All Image Areas
The resolution of Veraviewepocs is greater than 2 line pairs per mm (MTF 10%). The highly detailed images have a voxel size of 0.125 mm per side, and the slice thickness and interval can be set between 0.125 and 12.375 mm.

Note: The largest field of view of the Veraviewepocs 3D R100 model, Ø 100 mm (Equivalent) x H 80 mm, offers a voxel size of 0.16 mm.

* For Ø 40 X H 80 mm exposures. ** Compared to standard exposure mode.

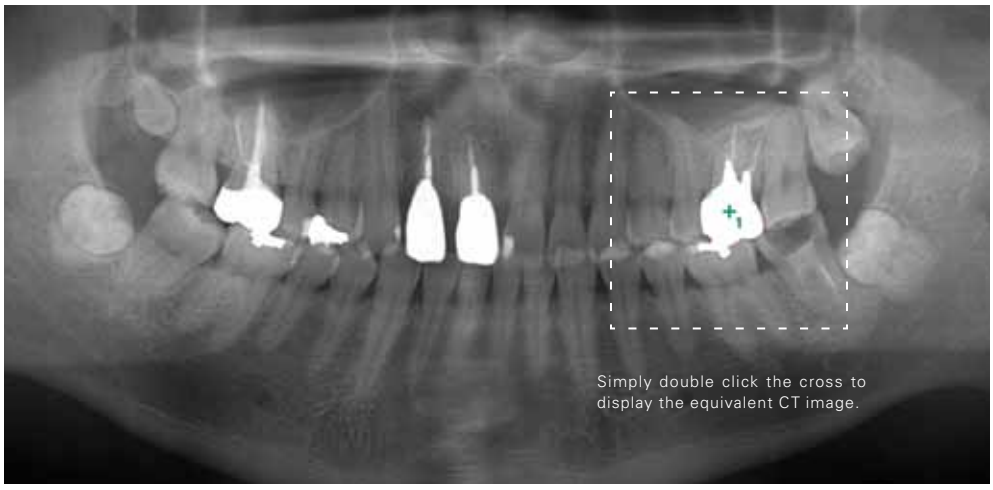
Easy 3D Positioning

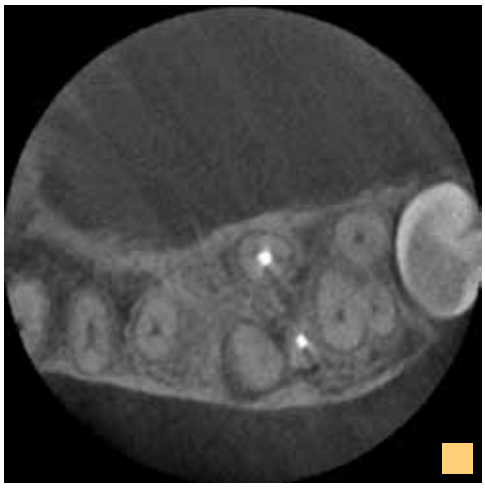
Flexibility
Veraviewepocs offers flexibility in positioning methods. The region of interest can be positioned by the panoramic image, the bi-directional scout, or the 5 positioning laser beams.

Panoramic Image with Scout Feature
Before taking a 3D image, a high resolution panoramic exposure is taken to target the region of interest on the PC monitor. The C-arm will automatically move into the optimum patient position to get 3D images at the center of the region of interest.

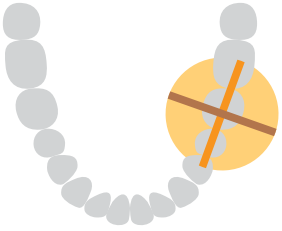
Bi-directional Scout
After initial positioning is accomplished by the 3 positioning laser beams, bi-directional X-ray images can be taken to confirm that the position is accurate. If it is not, simply adjust the position of the image on the computer by placing the cursor at the center of the region of interest.

Direct Positioning with 5 Laser Beams
5 positioning laser beams set the patient's position and align the region of interest. First, the patient's initial position is set using the 3 laser beams. Then, 2 additional laser beams are aligned to the region of interest. The C-arm will automatically move to the right position.

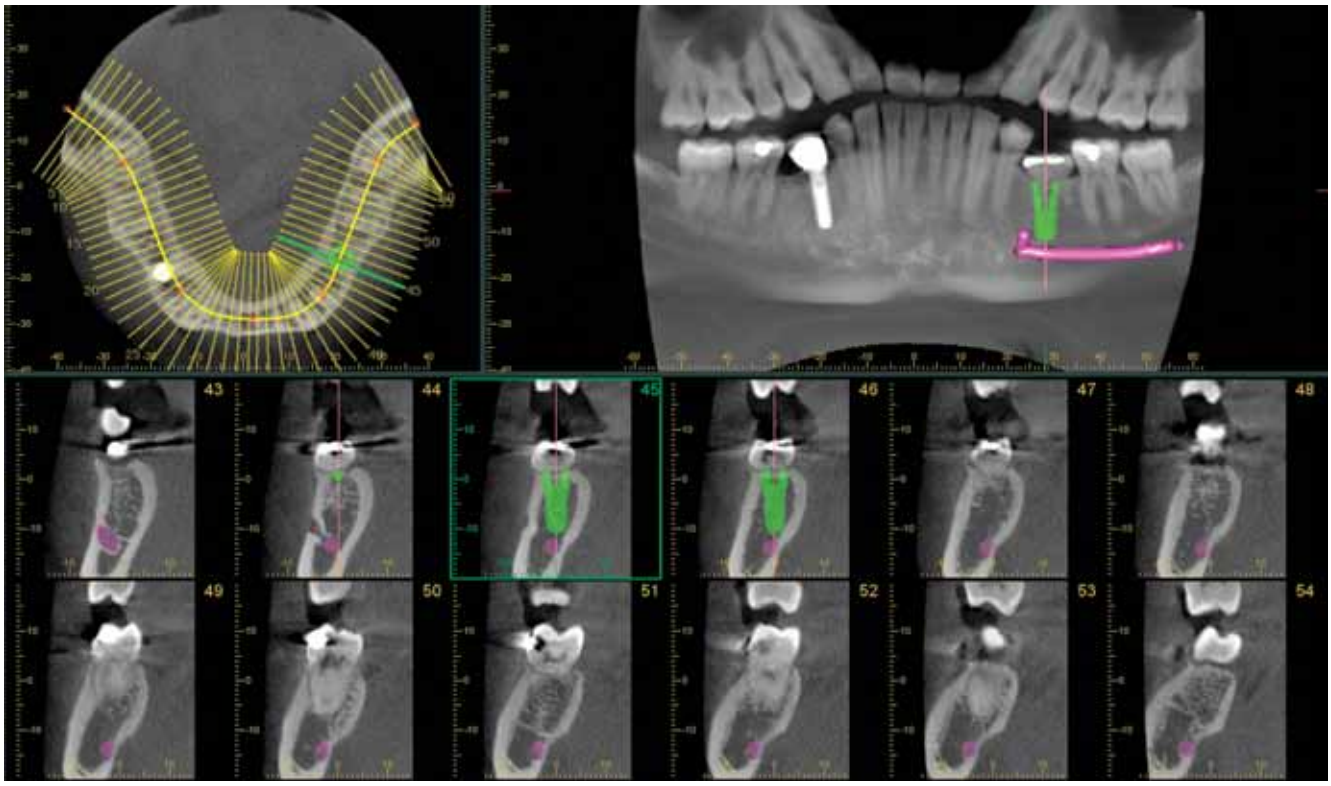


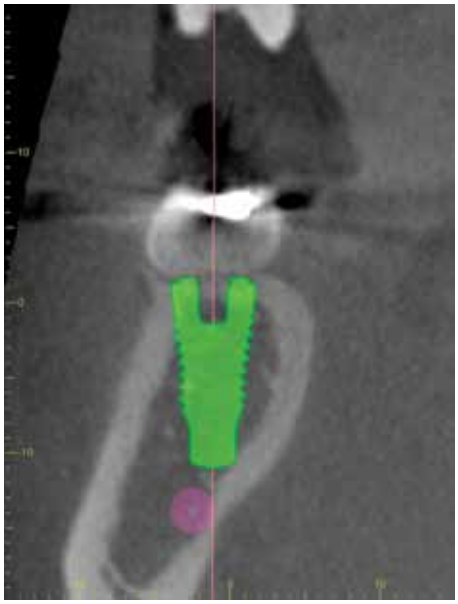


Clinical Case Example
The panoramic image above suggests that there is an apical lesion on the distal root of tooth #26. Further inspection with a 3D image, however, shows that the lesion is on the buccal side of an extremely curved mesial root.



3D Images for Implant Planning





Planning Process
Successful placement of implants starts with the very critical and detailed planning process. Identification of structures such as the sinus cavity, inferior alveolar nerve, and clear views of the bone structure are needed.

Veraviewepocs 3D R100 is ideal for implant planning with full arch imaging, industry leading clarity, and low dose to the patient.

Software
i-Dixel 2.0 software offers advanced implant planning features, plus compatibility with popular third party software.

cMPR Image Processing
Create cross sectional images of the dental arch.

Mandibular Canal Tracing
Highlight the mandibular canal for easier viewing, measuring the distance to the implant and determining its buccal and lingual position.

Advanced Software Features

Confirm Implant Position with Volume Rendered Image
A high resolution volume rendered image of the entire jaw can be created. This rendering makes it easy to explain each step of the implant planning and treatment process to the patient.

Implant Library
The implant library can be used to make realistic presentations for patients.

Link to Implant Simulation Software
By converting images to DICOM formats, implant simulation can be performed with other third party software.

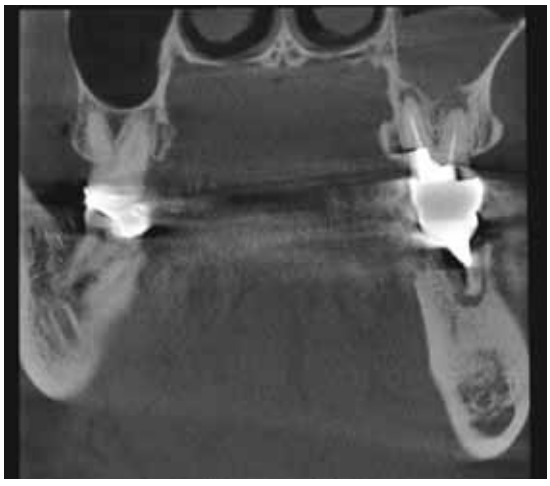
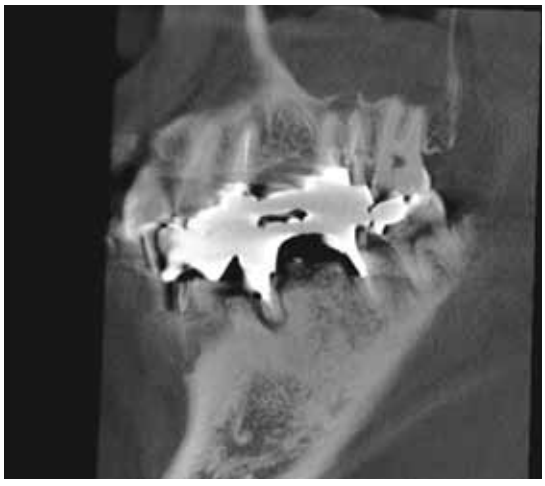
Presentation Preparation
The data for implant devices including length and diameter can be used to superimpose an image of the device on a 3D image to show patients and others.

Clinical Cases

Implantology
The patient was seen for a routine follow up visit following implant placement of tooth #16. The implant had been placed 9 years earlier. The coronal, sagittal, and axial views all confirm good quality bone around the implant and an absence of any pathology related to the treatment. The fine detail of the bone, especially in the coronal view, allows the clinician and the patient to feel confident about the current health of the implant.


Endodontics
The patient presented with a radiolucency around tooth #26 that had previously been treated endodontically. Conventional 2D imaging was inconclusive so a cone beam CT image was taken with the 3D R100. The sagittal and coronal views both showed that the endodontic therapy was failing and there were apical lesions on both the buccal and palatal roots.

The sagittal view clearly confirms a perforation of the Schneiderian membrane, while the coronal view identifies odontogenic maxillary sinusitis and mucosal thickening. The damage to the sinus membrane may have been overlooked if this case was diagnosed and treatment planned with an image that did not show the problem so clearly.

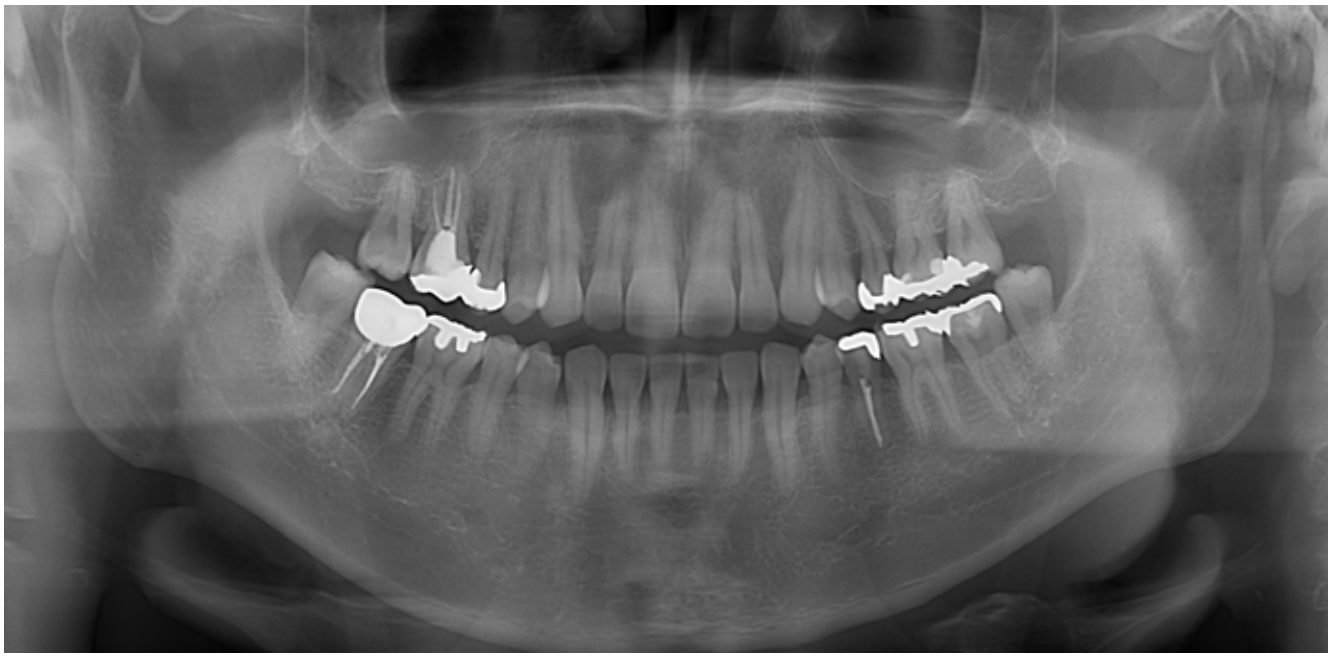



Oral Surgery
The patient presented with pain in the maxillary left region. A cone beam CT image was taken with the 3D R100 and it was revealed that tooth #28 was in fact impacted and was causing problems for tooth #27. The axial view demonstrated extensive bone loss near the apical area of #27 due to the lack of arch space needed for #28 to erupt.

The coronal view showed bone destruction all the way through the furcation of #27. The sagittal image not only shows the loss of osseous support around the entire apex of #27, but also shows damage to the sinus floor and mucosal thickening.

A portion of the clinical images were provided by
Kitasenju Radist Dental Clinic, i-View Imaging Center, Japan.

Panoramic Imaging



After focal plane adjustment

AF Automatic Positioning
This function makes patient positioning nearly effortless. A light beam sensor automatically positions the unit without requiring the patient to move. The light beam sensor measures the distance to the patient's teeth, then the arm automatically moves into the optimal position. This process produces images with a high degree of reproducibility.

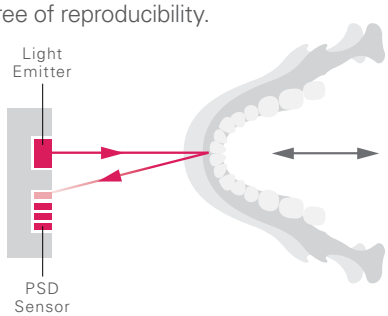
DDAE (Digital Direct Auto Exposure)
The DDAE function controls X-ray emission in real time depending on the area being examined and produces a wide dynamic range, as well as sharp and exceptionally clear images.

AIE (Auto Image Enhancement)
This software processing function uses a logarithmic conversion to adjust the overall density and to highlight shaded details, creating a better image.

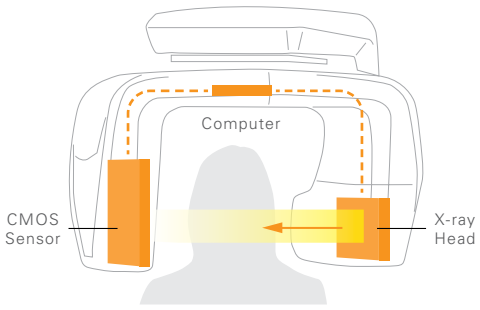
Standard Panoramic
The X-Y movement and arm rotation are coordinated by a computer control system to create a projection with the optimum image layer shape.

Orthogonal Panoramic
This projection controls the angle of X-ray penetration to reduce the overlapping of individual teeth.

Shadow Reduction Panoramic
This projection controls the angle of X-ray penetration to reduce the mandibular ramus shadow.



AF Automatic positioning Technology

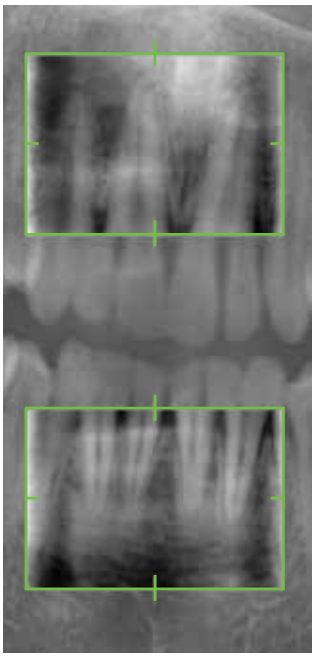


DDAE Mechanism

Focal Plane Adjustment After Exposure

Panoramic Focal Plane Adjustment
The focal plane for panoramic images can be adjusted after the exposure has been made to improve clarity and sharpness. The focus can be improved for points of varying depth as well as the surface. Select any point in the image for focus enhancement and then use the mouse wheel to make the adjustment.

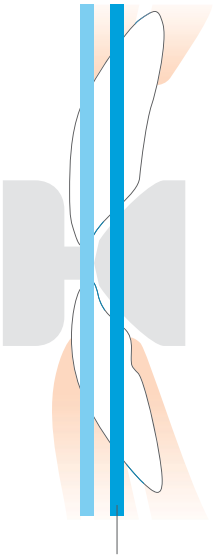
Before focal plane adjustment



Preview images are shown in the green frame to support the manipulation of focal plane adjustment

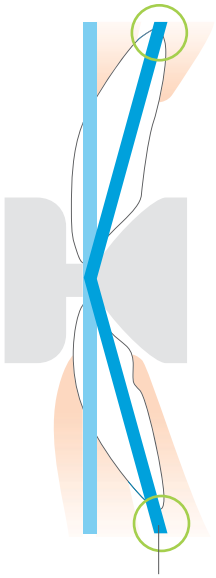
After focal plane adjustment

Focal Plane Adjustment Options
With various methods, the focal plane can be adjusted to obtain optimum image results.



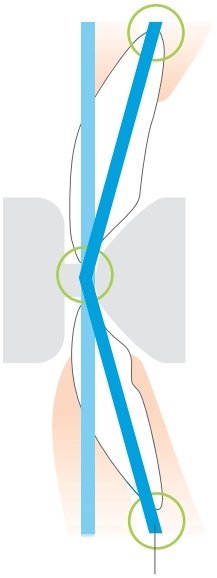
Adjusted Focal Plane

Single point adjustment – simply adjust the focal plane alignment to the posterior and anterior direction.



Adjusted Focal Plane

Two points adjustment – the focal plane position of the apical region can be adjusted separately at the mandibular and the maxilla. The layer position at the occlusal plane is fixed.



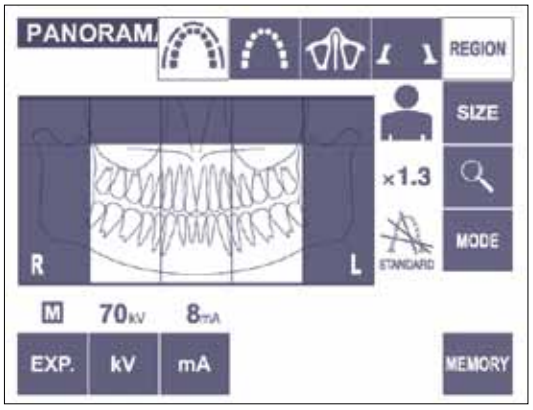
Adjusted Focal Plane

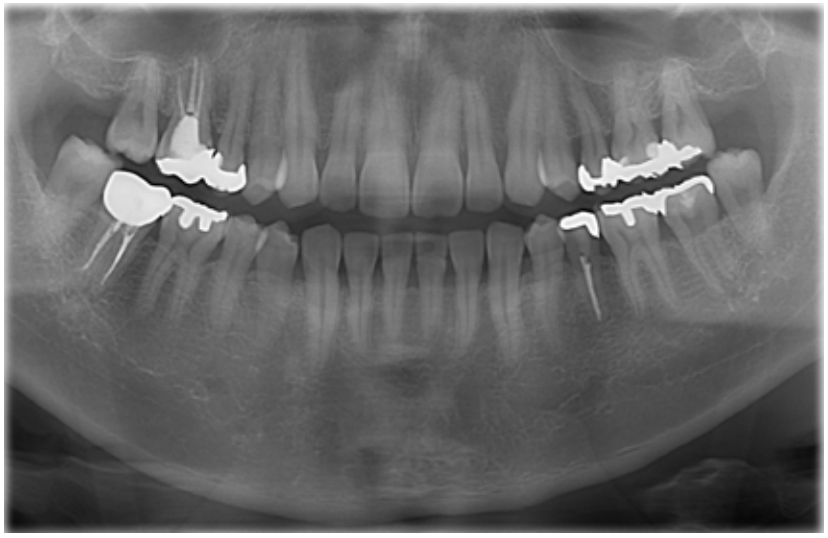
Three point adjustment – the focal plane position of the apical region at the mandibular, maxilla, and occlusal plane can be adjusted independently.

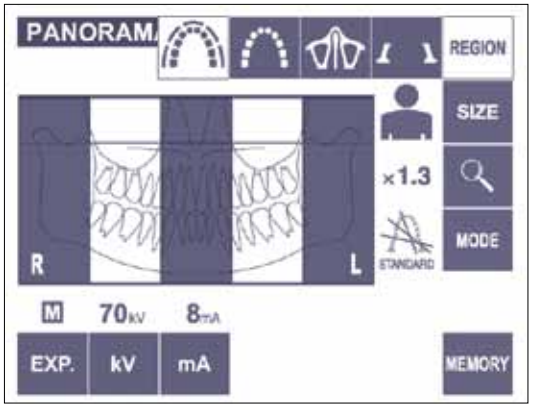
Partial Panoramic Function

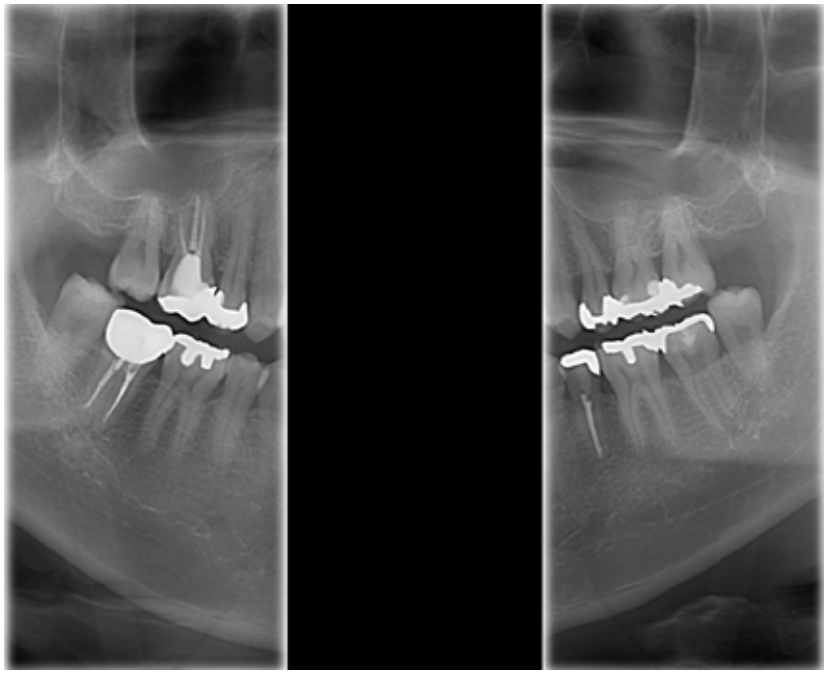
When a full panoramic image is not required, 1 to 5 sections of the panoramic image, as well as the maxillary sinus, can be excluded to expose only those areas within the region of interest. By excluding parts of the dental arch, dose is reduced.

The partial panoramic function is easy to operate. Simply press the Partial Panorama key and the panoramic and maxillary sinus appear with equally divided sections. Select any to exclude them from the irradiation area.









Cephalometric Imaging

High Speed
The Veraviewepocs system offers high speed performance requiring only 2.6 to 5.8 seconds for a lateral projection. The speed helps ensure high quality images each and every time. For pediatric patients, the reduced scan time is especially helpful as repeat images due to patient movement are virtually eliminated.

Low Dose
With only a tenth of the dose compared to a conventional X-ray*, the exposure level is significantly reduced.

High Quality Image with Wide Dynamic Range
You obtain far more information about hard and soft tissue – with just a single acquisition.

Variable Imaging Processing
The variable image processing technique generates optimum grayscale values by varying scanning speeds for hard and soft tissue.

Processing Time
On average, image processing is completed within just 20 seconds.

Partial Cephalometric Images
If not needed for examination, X-ray dose can be reduced by eliminating the area behind the auditory canal. There are 3 partial image patterns.

* Comparison made to Veraviewepocs film-based system

Specifications

Trade name:	Veraviewepocs 3D
Model:	X550
Type:	EX-1, EX-2
Unit configurations: (EX-1, EX-2 available in all configurations)	Veraviewepocs 3D R100 Pan Veraviewepocs 3D R100 Pan/Ceph Veraviewepocs 3D F40 Pan Veraviewepocs 3D F40 Pan/Ceph
Input voltage:	EX-1: AC 120V 60 Hz EX-2: AC 220/230/240V 50/60 Hz
Power consumption:	2.3 kVA
Dimensions Main unit:	W 40.15" x D 51.18" x H 92.72" (W 1,020 x D 1,300 x H 2,355 mm)
With Cephalometric:	W 78.74" x D 51.18" x H 92.72" (W 2,000 x D 1,300 x H 2,355 mm)
Weight:	Approx. 419 lbs. (Approx. 190 kg) Approx. 573 lbs. with Cephalometric (Approx. 260 kg with Cephalometric)
X-ray generator Tube voltage: Tube current: Effective focal spot:	 60-90kV (depending on exposure mode) 1-10mA (depending on exposure mode) 0.5 mm
3D image Exposure time: Tube voltage and current:	 Approx. 9.4 seconds Normal mode 1 - 10mA (1mA step) @ 75 - 80 kV (5kV step) 1 - 8mA (1mA step) @ 85 - 90 kV (5kV step) Dose reduction mode 3 - 10mA (1mA step) @ 75 - 80 kV (5kV step) 3 - 8mA (1mA step) @ 85 - 90 kV (5kV step)
3D R100 imaging area:	Ø 40 mm x H 40 mm Ø 40 mm x H 80 mm Ø 80 mm x H 50 mm Ø 80 mm x H 80 mm
3D Reuleaux Full Arch FOV:	Ø 100 mm (Equivalent) x H 50 mm Ø 100 mm (Equivalent) x H 80 mm
3D F40 imaging area:	Ø 40 mm x H 40 mm Ø 40 mm x H 80 mm

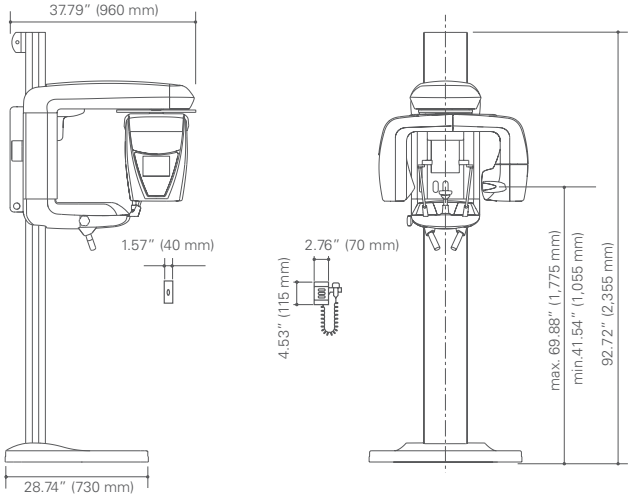
Panoramic image Exposure time:	 High speed mode: Approx. 7.4 sec. (Standard) High definition mode: Approx. 15 sec. (High definiton mode is available for R100 only)
Imaging programs:	Standard Panoramic (standard, orthogonal and shadow reduction projections) Magnification: 1.3 X throughout and 1.6 X throughout Pedodontic Panoramic (standard, orthogonal and shadow reduction projections) Magnification: 1.3 X throughout and 1.6 X throughout Maxillary Sinus Panoramic (posterior and anterior) Magnification: 1.5 X throughout TMJ Quadruple Image Magnification: 1.3 X throughout Partial Panoramic Magnification: 1.3 X throughout
Cephalometric image (option) Projection:	 Posterior-anterior (PA) and Lateral (LA)

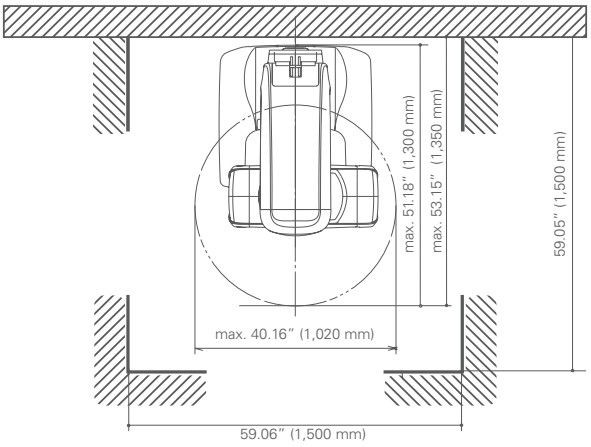
Exposure time PA projection With variable imaging processing: Without variable imaging processing:	 4.1 seconds 5.0 seconds
Lateral projection With variable imaging processing: Without variable imaging processing:	 5.8 seconds, 4.2 seconds (partial ceph) 3.5 seconds, 2.6 seconds (partial ceph)

- Cephalometric is an optional feature.
- The Veraviewepocs 3D must be fixed to the floor and the wall.
- Always have patients wear X-ray protective gear.

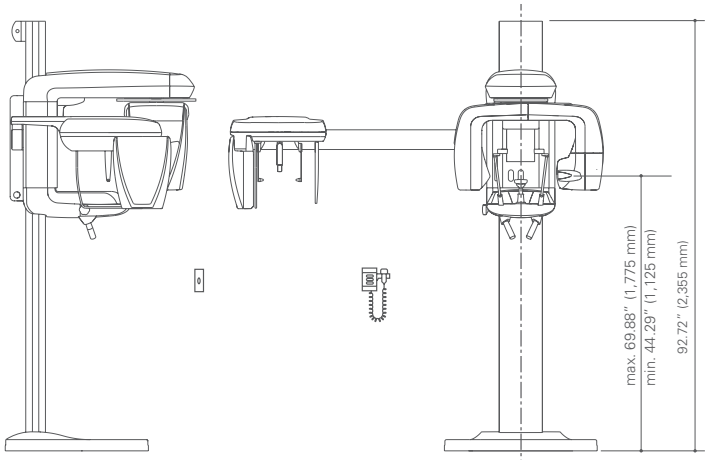
Machine Dimensions & Suggested Operating Space Requirements

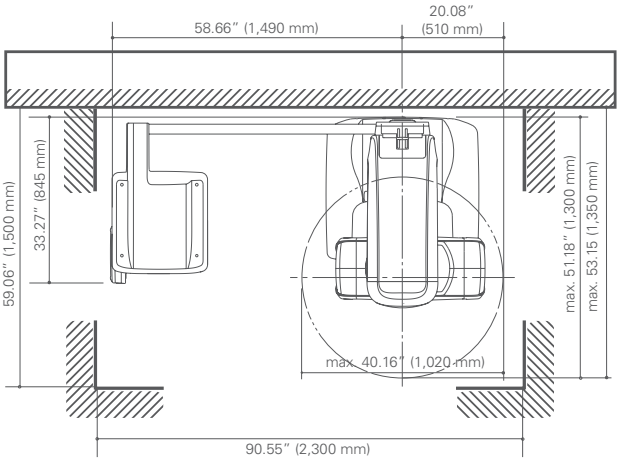
Panoramic





Panoramic/Cephalometric:





Diagnostic/Imaging Equipment

Treatment Units

Handpieces and Instruments

Laser Equipment

Laboratory Devices

Educational and Training Systems

Auxiliaries

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