MORITA

Veraviewepocs 3D

F40 and R100 with innovative 3D Reuleaux Full Arch FOV

Thinking ahead. Focused on life.

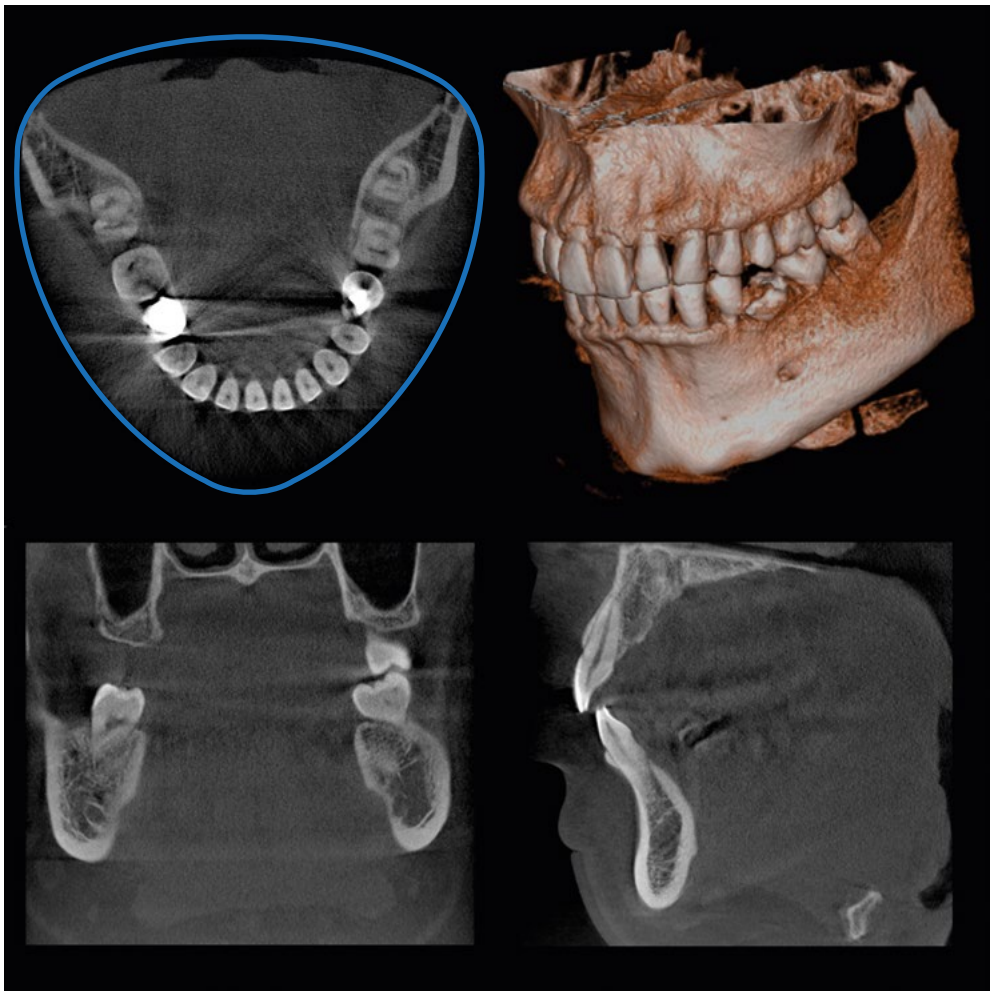
Veraviewepocs 3D R100

A New Frontier in X-ray Diagnostics

Veraviewepocs 3D R100 has changed the shape of 3D. This unit's groundbreaking and patented 3D Reuleaux Full Arch fields of view (FOVs) provide a unique shape for full arch imaging. With 8 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.

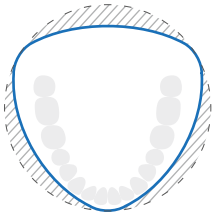
3D Reuleaux Full Arch FOV

3D Reuleaux Full Arch Field of View



Blue line indicates new full arch FOV, equivalent to 100 mm.

Reduce dose with the innovative 3D Reuleaux FOV.



New Patented 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 dosage by excluding areas outside the region of interest and allows a complete scan of the maxilla and/or the mandible.

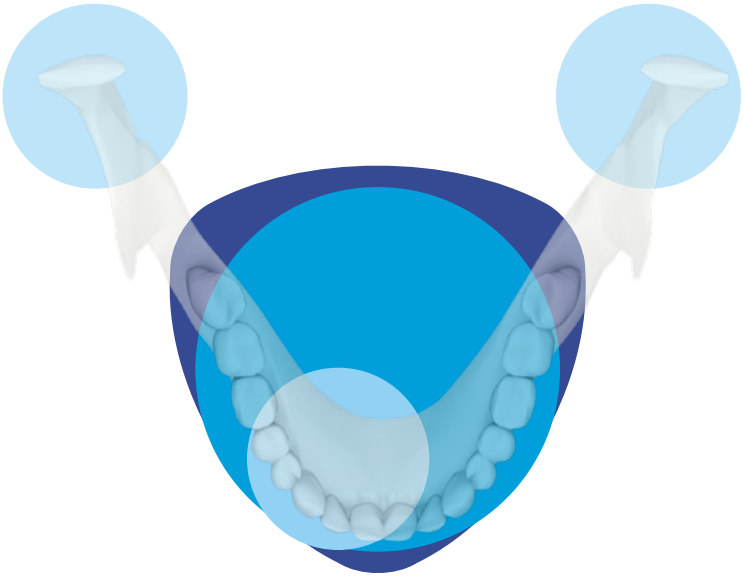
Not available on the Veraviewepocs 3D F40 model.

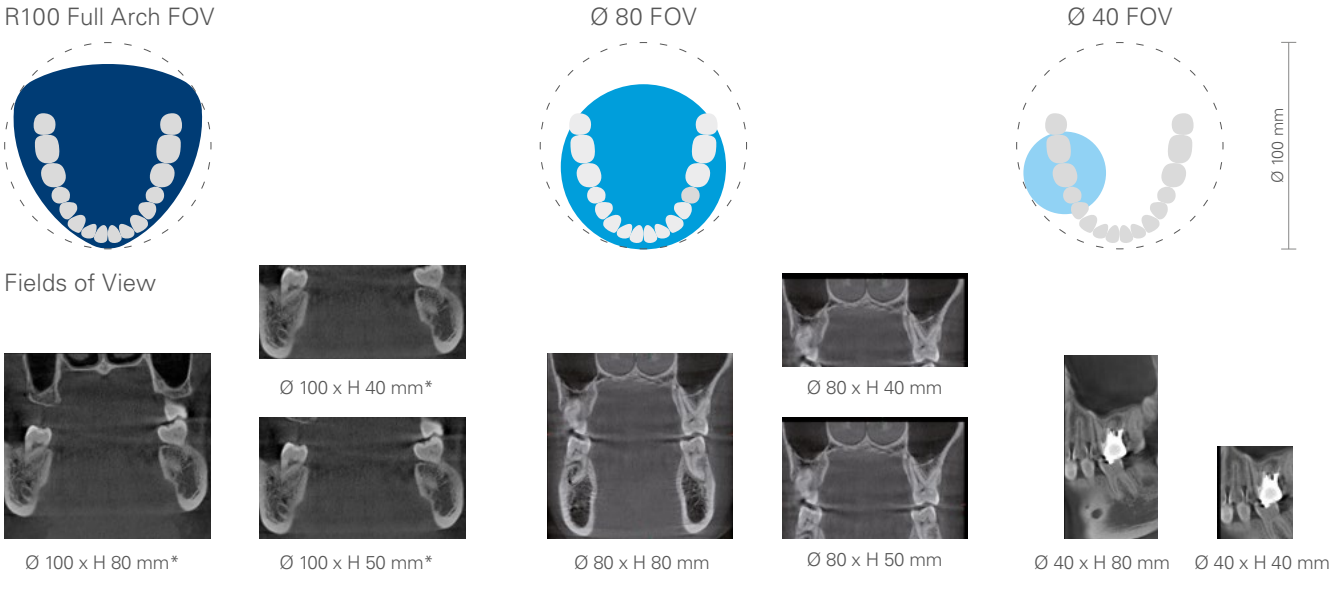
Various Fields of View

Eight Exposure Areas for Multiple Diagnostics
The Veraviewepocs 3D R100 model offers a total of 8 fields of view 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 three height options of 40, 50 or 80 mm. Its full arch capability, reduced dosage 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.



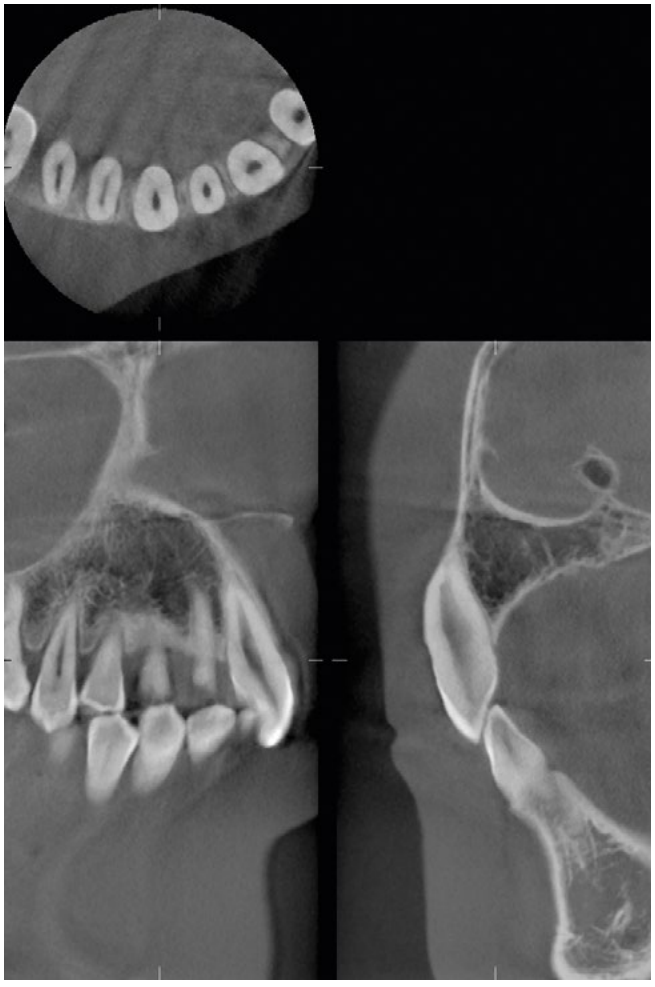


*3D Reuleaux Full Arch FOV

High Resolution Images With Dose Reduction Feature

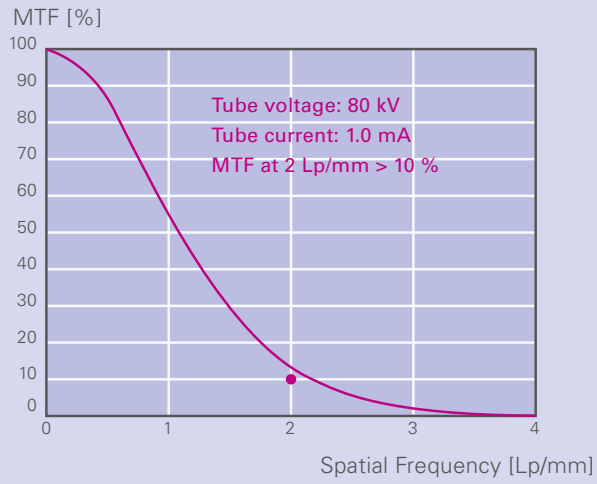
Dose Reduction Feature
Through advanced engineering, a Dose Reduction Mode optimizes the intensity of the X-rays which lowers exposure for easily penetrated tissues. Up to 40 % of dosage is reduced compared to the standard mode.* By maximizing efficiency, soft tissue, such as the maxillary sinus membrane and skin, appear sharper than ever before with fewer artifacts.**

Resolution & Clarity
Veraviewepocs offers high resolution images. 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 expanded radiographic area of Ø 80 x H 80 mm maintains the same high resolution as the smaller fields of view.

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

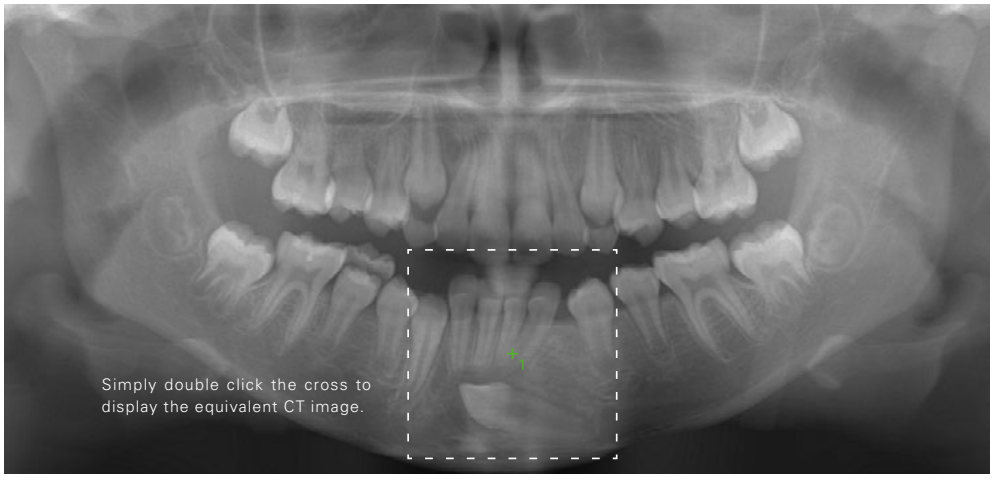
Easy 3D Positioning

Flexibility
Veraviewepocs offers flexibility in positioning methods. The region of interest can be positioned by the panoramic image, the 2-directional scout, or the positioning laser beams.

Panoramic Image with Scout Feature
Before taking a 3D image, a high resolution panoramic exposure can be opened from the existing data base 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.

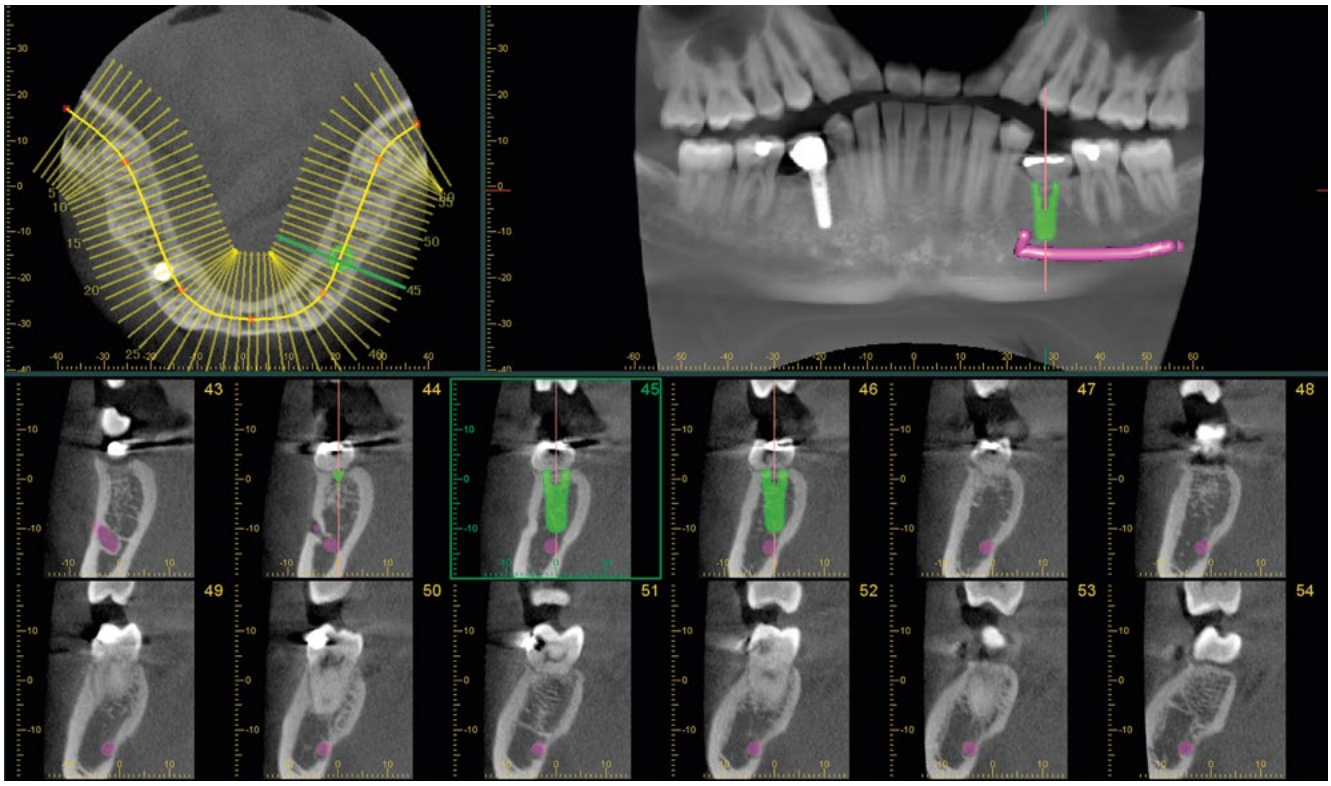
2-Directional Scout
After initial positioning is accomplished by the 3 positioning laser beams, 2-directional X-ray images can be taken to confirm that the position is accurate. If it is not, simply adjust the position of the image on the computer by placing the cursor at the center of the region of interest.

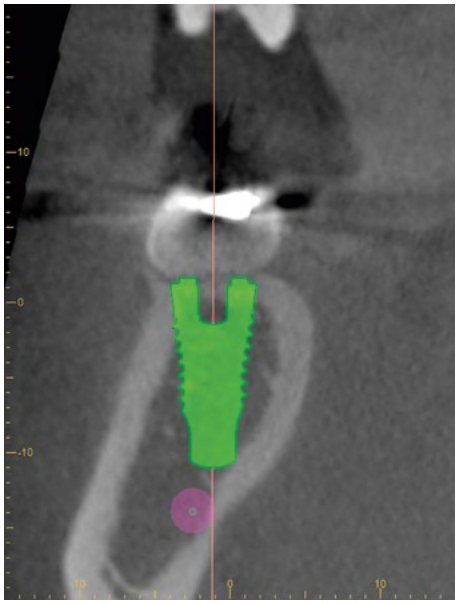
Direct Positioning with Laser Beams
Positioning laser beams set the patient's position and align the region of interest. The C-arm will automatically move to the right position.



Clinical Case Example
The panoramic image above reveals a horizontally impacted left mandibular canine. Further inspection with a 3D volume shows the relationship of the impacted tooth and the anterior mandibular incisors. It also reveals widening of the follicular sac suggesting the presence of a dentigerous cyst.

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.

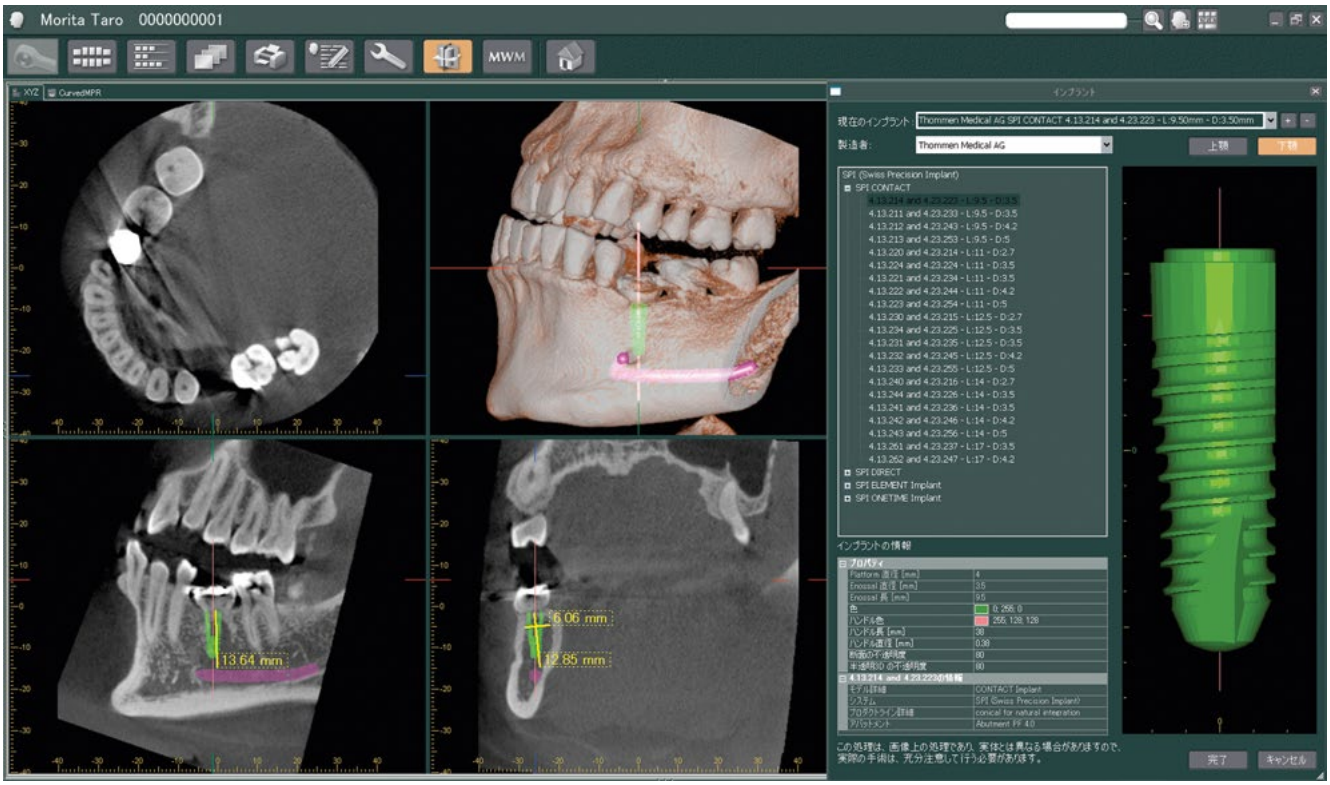
Veraviewepocs 3D R100 is ideal for implant planning with full arch imaging, industry leading clarity, and low dosage to the patient.

Software
i-Dixel 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.

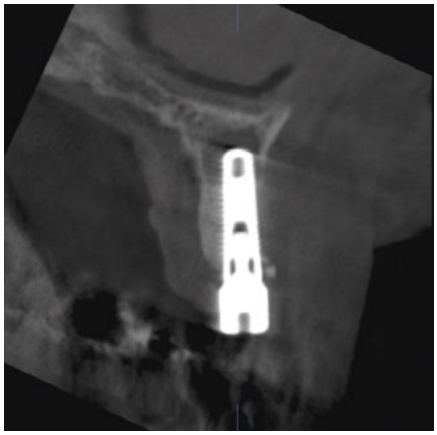
Implant Library
The implant library can be used to make realistic presentations for patients.

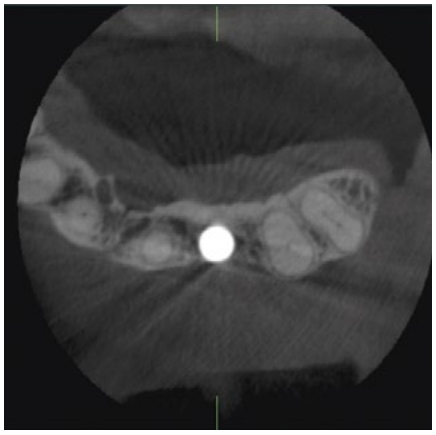
Link to Implant Simulation Software
By converting images to DICOM formats, implant simulation can be performed with other third party software.

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.

Clinical Cases

Implantology
The patient was seen for a routine follow-up visit following implant placement in the area of the left maxillary lateral incisor. The implant had been placed 3 months earlier. The coronal, sagittal, and axial planes revealed a large, round, well defined, non-corticated, low density area associated with the apical aspect of the implant. The high resolution images also shows absence of the buccal cortical plate confirming a poor prognosis for the case due to peri-implantitis.



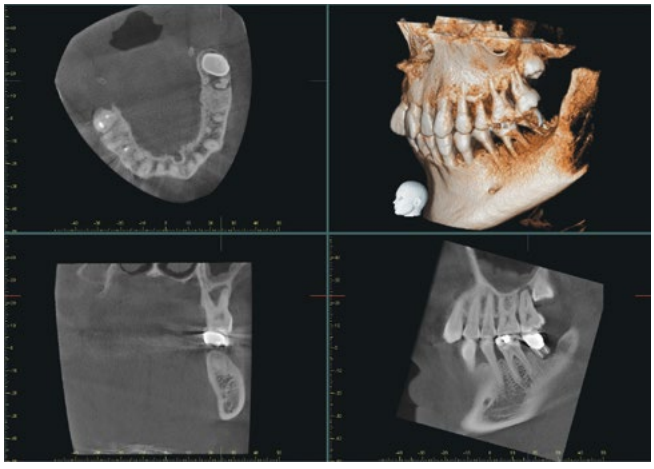


Periodontics
The patient reported tooth sensitivity in the left maxillary second molar. A small volume cone beam CT of the left posterior maxilla was acquired with the 3D R100. The sagittal and coronal views showed severe vertical bone loss associated with the palatal root of the left maxillary second molar, along with mucosal thickening in the left maxillary sinus.

Oral Surgery

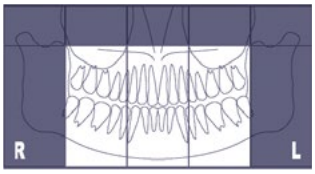
The patient presented with pain in the maxillary left region. A cone beam CT image was taken with the 3D R100 and it was revealed that tooth #28 was in fact impacted and was causing problems for tooth #27. The axial view demonstrated extensive bone loss near the apical area of #27 due to the lack of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

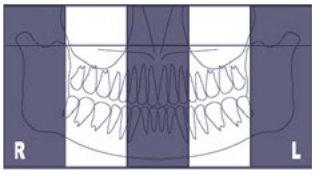
The coronal view showed bone destruction all the way through the furcation of #27. The sagittal image not only shows the loss of osseous support around the entire apex of #27, but also shows damage to the sinus floor and mucosal thickening.



Clinical images provided by:
Dr. Bruno Azevedo, Assistant Professor, University of Louisville School of Dentistry and Kitasenju Radist Dental Clinic, i-View Imaging Center, Japan.

Panoramic Imaging





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.

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.

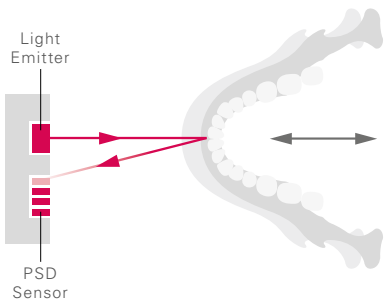
DDAE (Digital Direct Auto Exposure)
The DDAE function controls X-ray emission in real time depending on the area being examined and produces a wide dynamic range, as well as sharp and exceptionally clear images.

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.

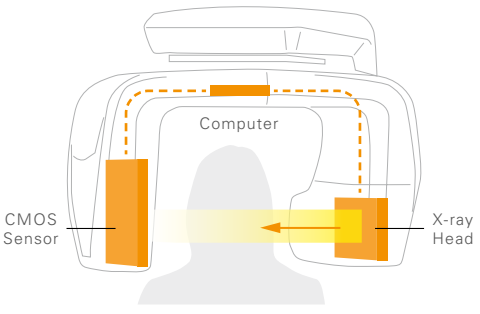
Standard Panoramic
The X-Y movement and arm rotation are coordinated by a computer control system to create a projection with the optimum image layer shape.

Orthoradial 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.



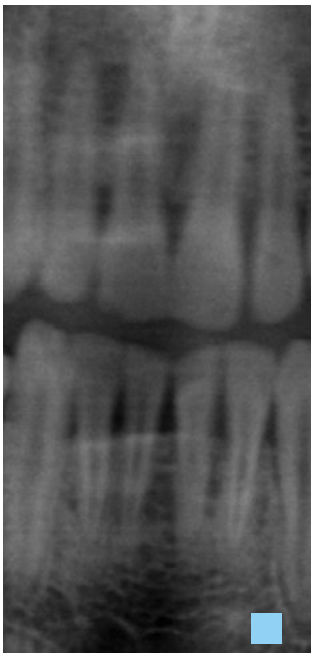
AF Automatic positioning Technology



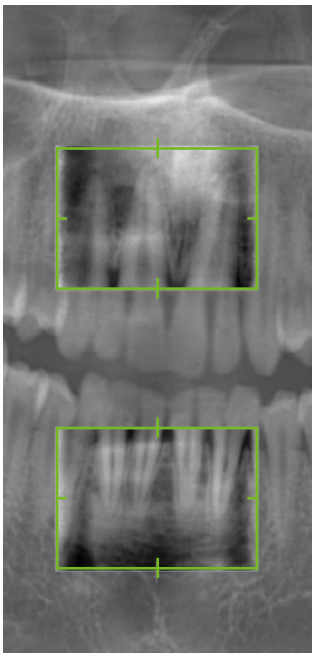
DDAE Mechanism

Image Layer Adjustment After Exposure

Panoramic Image Layer Adjustment
The image layer 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.



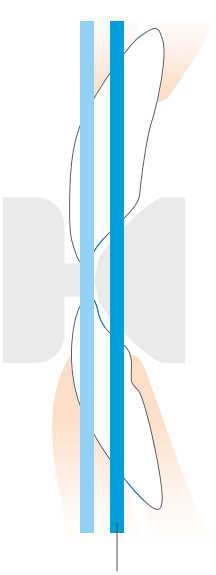
Before Image Layer Adjustment



Preview images are shown in the green frame to support the manipulation of image layer adjustment

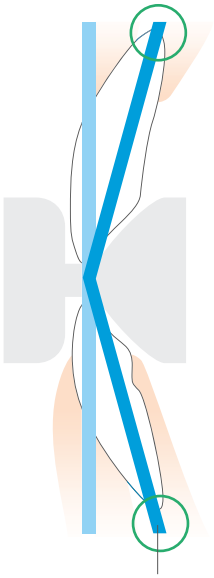
After Image Layer Adjustment

Image Layer Adjustment Options
With various methods, the image layer can be adjusted to obtain optimum image results.



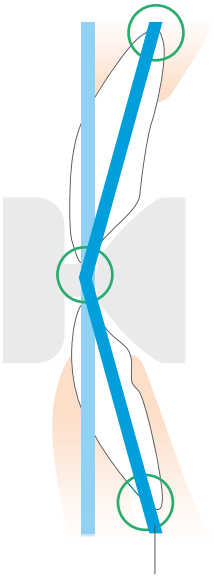
Adjusted Image Layer

Single point adjustment – simply adjust the image layer alignment to the posterior and anterior direction.



Adjusted Image Layer

Two points adjustment – the image layer 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 Image Layer

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

Cephalometric Imaging

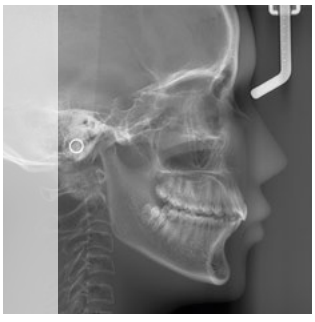
High Speed
The Veraviewepocs system offers high speed performance requiring only 4.9 seconds for a cephalometric scan. The speed helps ensure high quality images each and every time. For pediatric patients, the reduced scan time is especially helpful as repeat images due to patient movement are virtually eliminated.

Low Dose
With only a tenth of the dosage 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. With this technique, the entire exposure time is only 4.1 seconds. Without this feature, the processing time is 4.9 seconds.

Processing Time
Imaging process can be completed within 20 seconds.



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

* Comparison made to Veraviewepocs film-based system

Trade name:	Veraviewepocs 3D R100 / 3D F40
Model:	X550
Type:	Veraviewepocs 3D R100 Pan Veraviewepocs 3D R100 Pan/Ceph Veraviewepocs 3D F40 Pan Veraviewepocs 3D F40 Pan/Ceph
Input voltage:	EX-2: 220/230/240 V 50/60 Hz
Power consumption:	2.3 kVA
Dimensions	
Main unit:	W 1,020 x D 1,300 x H 2,355 mm
With Cephalometric:	W 2,000 x D 1,300 x H 2,355 mm
Weight:	Approx. 190 kg Approx. 260 kg with Cephalometric
X-ray generator	
Tube voltage:	60-90kV (depending on exposure mode)
Tube current:	1-10mA (depending on exposure mode)
Effective focal spot:	0.5 mm
3D image	
Exposure time:	Approx. 9.4 seconds
3D R100 imaging area:	Ø 40 mm x H 40 mm, Ø 40 mm x H 80 mm Ø 80 mm x H 40 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 40 mm, 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

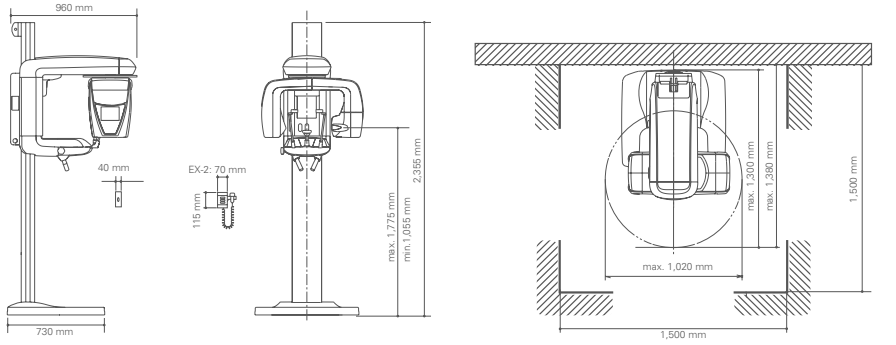
Panoramic image	
Exposure time:	High speed mode: Approx. 7.4 sec. (Standard) High definition mode: Approx. 15 sec. (High definiton mode is available for R100 only)
Imaging programs:	Standard Panoramic (standard, orthoradial and shadow reduction projections) Magnification: 1.3 X throughout and 1.6 X throughout
	Pedodontic Panoramic (standard, orthoradial and shadow reduction projections) Magnification: 1.3 X throughout and 1.6 X throughout
	Maxillary Sinus Panoramic (anterior / posterior) Magnification: 1.5 X throughout
	TMJ Quadruple Image Magnification: 1.3 X throughout

Cephalometric projections (option)
- Posterior-anterior (PA)
- Lateral (LA)
- Hand

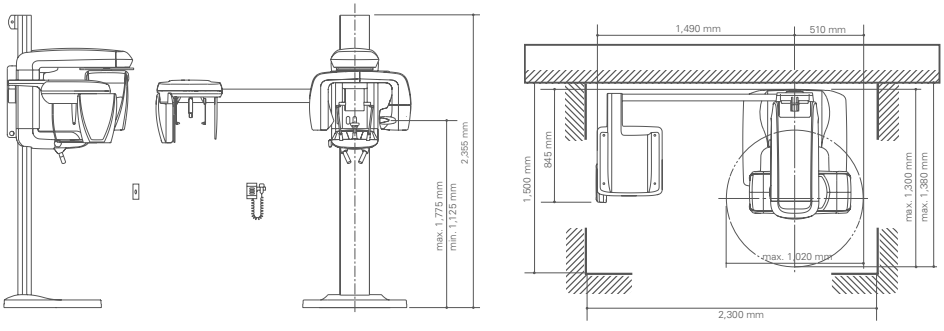
– Cephalometric is an optional feature.
– The Veraviewepocs 3D must be fixed to the floor and the wall.
– Always have patients wear X-ray protective equipment.

Machine Dimensions & Suggested Operating Space Requirements

Panoramic:



Panoramic/
Cephalometric:



Diagnostic and Imaging Equipment

Treatment Units

Handpieces and Instruments

Endodontic Systems

Laser Equipment

Laboratory Devices

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Subject to technical changes and errors.
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