ProVecta 3D Prime and ProVecta 3D Prime Ceph from Air Techniques

3D, 2D pan and ceph images with exceptional image quality

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Taking diagnostics to the next level

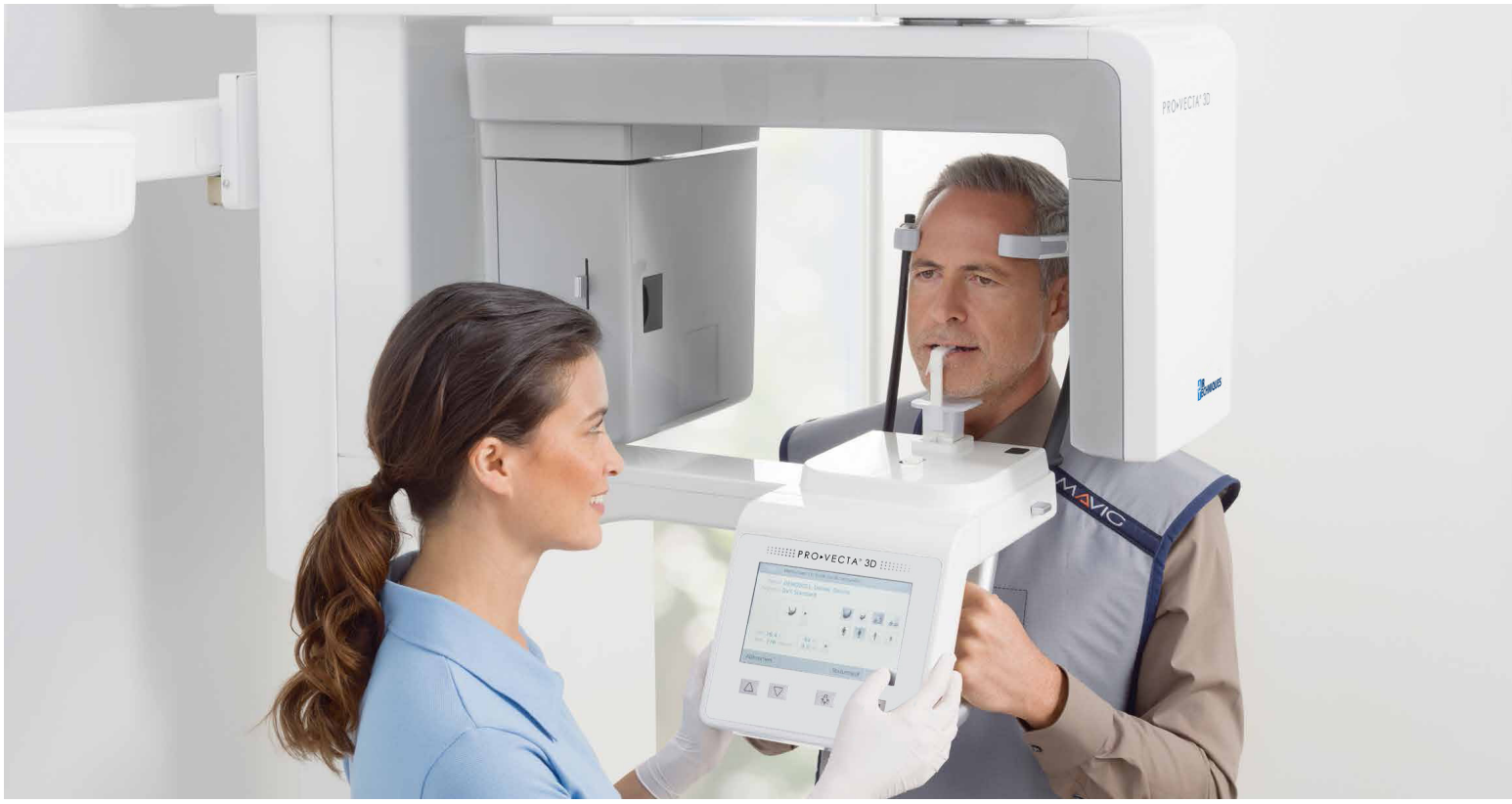
ProVecta 3D Prime combines diagnostic reliability with efficiency and lower radiation doses

GOOD DESIGN

Key Features

- Ideal 3D imaging volume matched to the jaw arch (Ø 130 x 85 mm)
- Ø 130 x 50 mm volumes for single images of the upper and lower jaw
- Ø 50 x 50 mm volumes in 80 or 120 µm resolution
- Excellent image quality in 2D and 3D thanks to the high-resolution CsI sensor with a pixel size of 49.5 µm
- Reduced radiation dose thanks to the anatomically adapted volume
- VisionX – modern, ergonomic image processing software

Ideal imaging volume, easy positioning, high image quality: ProVecta 3D Prime represents a milestone in the field of 3D X-ray systems. Thanks to its unique technology, the 3D images generated with this system cover everything you need for reliable diagnoses, well-founded treatment decisions and convincing patient communication. In addition, the S-Pan technology of ProVecta 3D Prime also enables pinpoint-accurate 2D Panoramic image acquisitions with superior Air Techniques quality. Thanks to a high-resolution CsI sensor with a pixel size of 49.5 µm, you can benefit from exceptional image quality – both in 3D and in 2D. All of this makes ProVecta 3D Prime a highly efficient solution for dentistry, and a safe investment.



3D diagnostics: the key indications

With ProVecta 3D Prime images you can increase diagnostic reliability and enable accurate treatment planning. The key indications at a glance:

Tooth development	▪ Hyperplasia or dysplasia ▪ Retained or impacted teeth
Fractures	▪ Root or jaw fractures
Implant technology	▪ Augmentation/bone formation ▪ Planning ▪ Complicated situations
Endodontics	▪ Periapical examinations ▪ Complex anomalies of the root canal system ▪ Fractured root canal instruments within the root canal
Foreign bodies	▪ Suspected perforation ▪ Localization of foreign bodies in the mouth and jaw area
Salivary stones	▪ Localization of salivary stones
Pathological changes	▪ Maxillary sinus area ▪ Jawbone ▪ Cysts, tumours, osteonecrosis

See what you need to see

ProVecta 3D Prime offers an ideal 3D volume that is adapted to the shape of the jaw

Perfect fit

The jaw-shaped field of view of the ProVecta 3D Prime shows an area of Ø 130 x 85 mm volume that is relevant for diagnostics and is thus visibly larger than many common volumes. The advantage of this is that by changing the volume shape, ProVecta 3D Prime also shows the rear molar area in full – an essential requirement for diagnosing an impacted wisdom tooth, for example. The special feature of ProVecta 3D Prime is that its imaging volume is based on the human anatomy, representing precisely the region you need covered for diagnostics in the dental region. The two additional volume sizes, Ø 130 x 50 mm upper jaw and Ø 130 x 50 mm lower jaw, ensure flexibility in day-to-day work in the practice and allow you to display the two jaws separately.

The ideal jaw-shaped volume is achieved with the aid of a special curved path with 540° rotation, for which the ProVecta 3D Prime requires just 18 seconds. In conjunction with a tightly collimated conical beam and the highly sensitive CsI sensor, this path allows the radiation dose to be kept particularly low. The ProVecta 3D Prime reconstruction algorithms allow the 3D volume to be displayed in the shortest possible time.

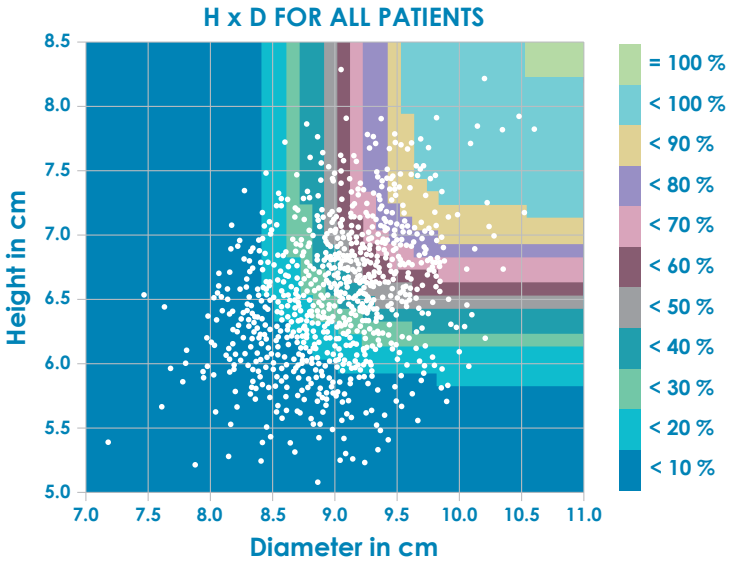
Additional volumes Ø 50 x 50 mm

In addition to jaw-shaped images and the two additional volume sizes for the upper and lower jaw, ProVecta 3D Prime offers ten Ø 50 x 50 mm volumes: five each for the upper jaw and for the lower jaw. These are used if the Indication only requires imaging of a certain region of the jaw, e.g. for endodontic or implant treatments. Depending on the required level of detail in the image, the volumes can be used with a resolution of either 80 or 120 µm.

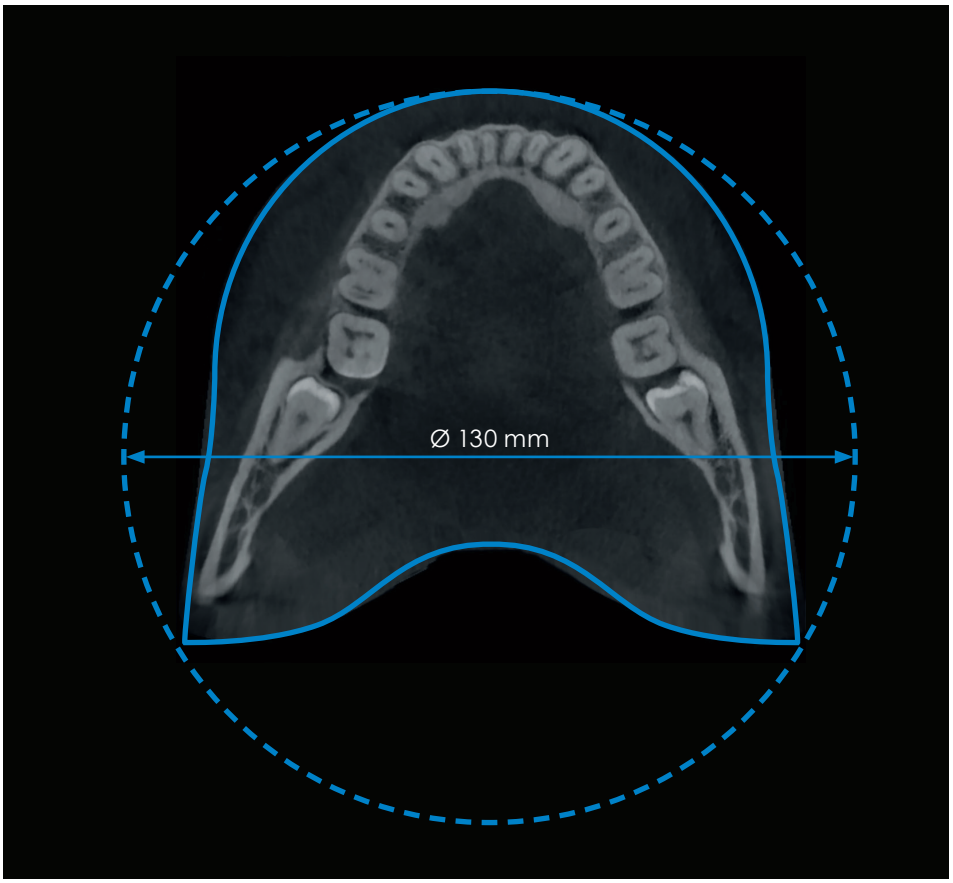
SQ mode

The SQ mode (Standard Quality mode) offers a further option for reducing the radiation dose. In this setting, the dose is reduced by 62% in comparison to HQ mode (Highest Quality mode). SQ mode can be used e.g. for implant planning, determination of the apical bone supply, for investigation of the sinuses or for the localization of impacted or excess teeth. SQ mode can be used in all programs.

1,020 patients were examined in a study from Dr Johannes Krause. The study shows that a volume with a height of 85 mm and diameter of 110 mm is required for 100% coverage of the dental region. With a volume of e.g. Ø 80 x 80 mm, only around 1.4% of all patients can be covered in full. The adapted, jaw-shaped volume of the ProVecta 3D Prime covers the dental region of all patients.*

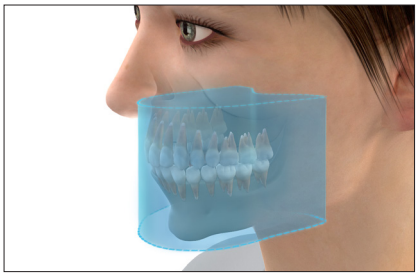


*Source and graphic bottom right: Dissertation conclusions, Dr Johannes Krause, "Investigations into the required field of view for imaging 3D diagnostics in dental medicine", 1 January 2013

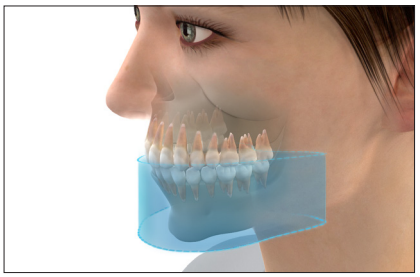


The jaw-shaped volume displays the region of a Ø 130 volume that is relevant for the diagnosis.

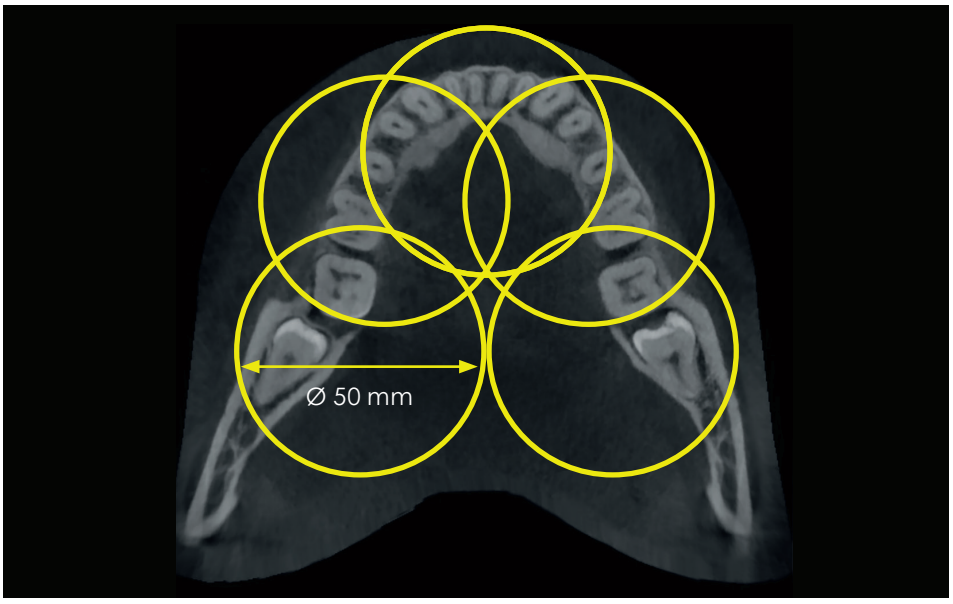
FOV Ø 130 x 85 mm



FOV Ø 130 x 50 mm

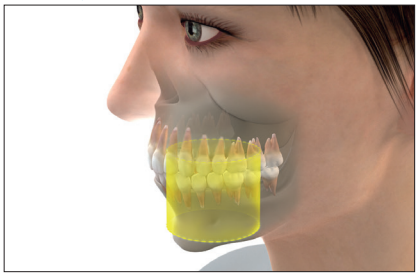


FOV Ø 130 x 50 mm, sinus

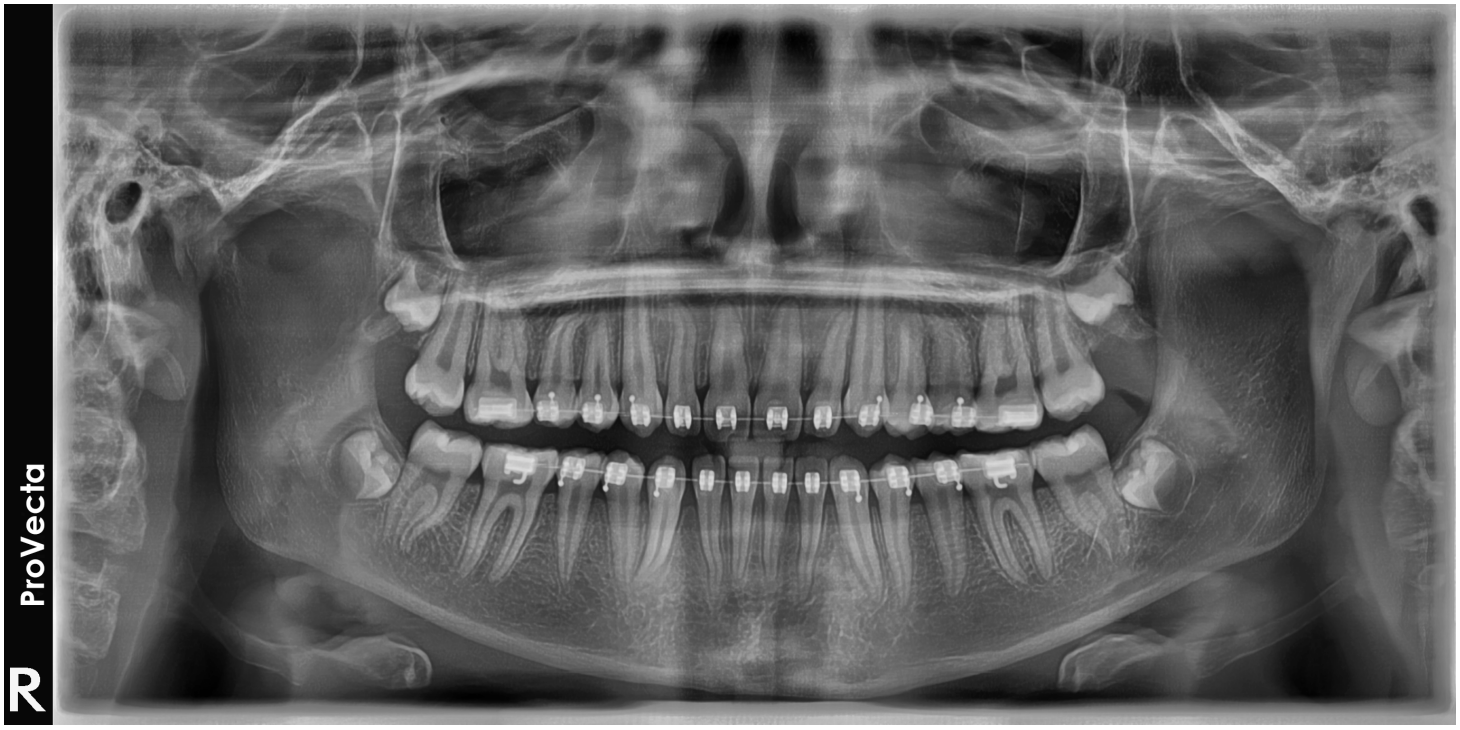


In addition to jaw-shaped images, ProVecta 3D Prime offers ten further Ø 50 x 50 mm volumes: five each for the upper jaw and for the lower jaw.

FOV Ø 50 x 50 mm



2D images with exceptional image quality



ProVecta 3D Prime offers not only excellent value, but will also help you and your surgery team to increase your flexibility. In addition to CBCT images, you can also use ProVecta 3D Prime to generate brilliant 2D panoramic images, which set new standards in the image sharpness of extraoral images. Thanks to this versatility, the new ProVecta 3D Prime will really add confidence to your surgery. The unit also raises the bar in terms of efficiency. It enables the scan of a complete 2D panoramic images image in a very short time of just seven seconds with an exceptionally low radiation dose. This will save you valuable time – compared to conventional X-ray solutions.

Key Features

- S-Pan technology for easier diagnostics
- CsI sensor for improved image quality and reduced radiation exposure
- Extremely fast: 2D panoramic images in 7 seconds
- Extremely forgiving with patient positioning errors – thanks to the S-Pan technology

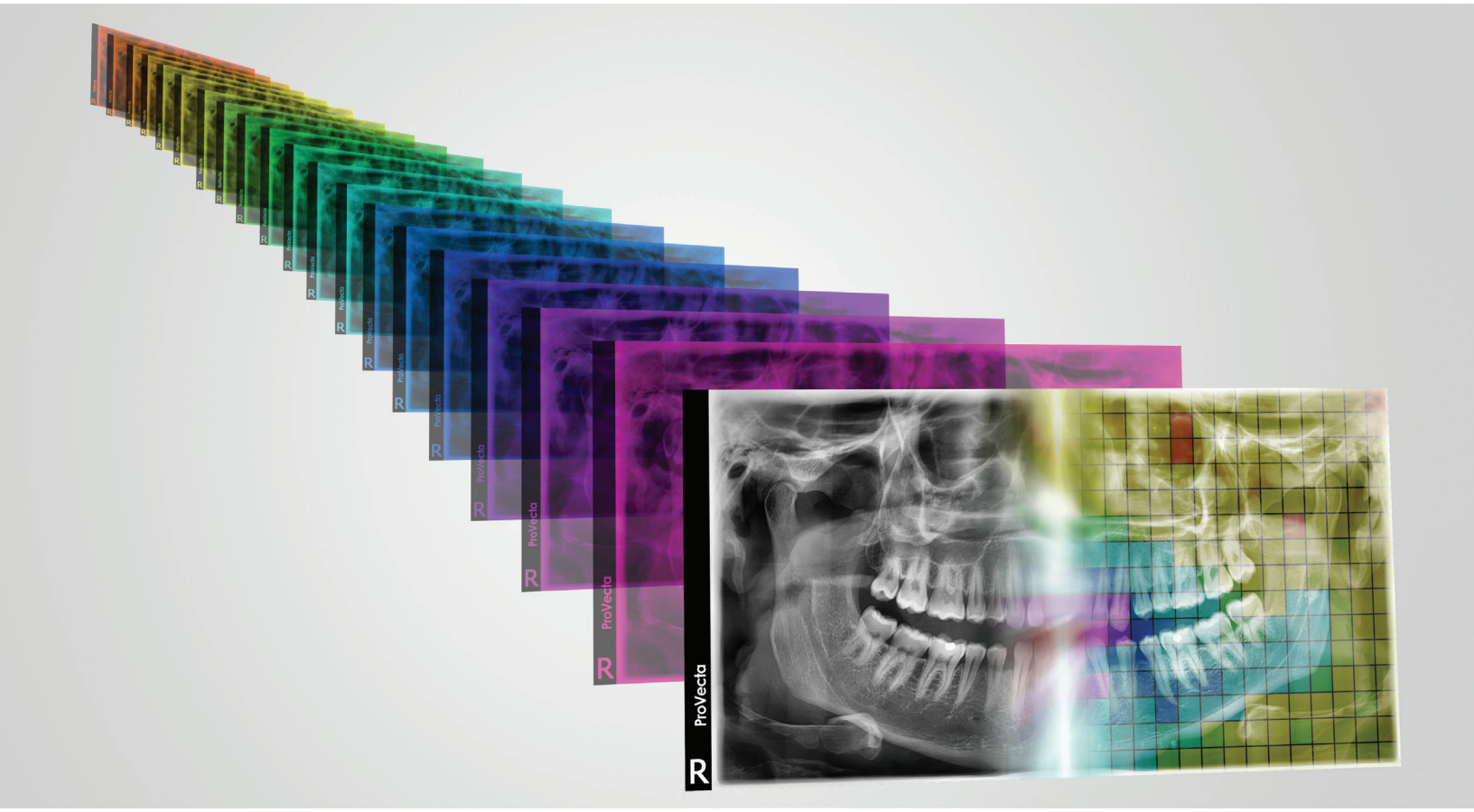
Panoramic X-ray programs

With a total of 17 X-ray programs, you are well equipped for every diagnostic requirement. In addition to the standard panoramic program, ProVecta 3D Prime also offers:

- Half-side recordings of right, left and front
- 4 child programs*: an acquisition mode with a smaller exposure area and a 45–56% reduction in the dose without any loss of diagnostic information
- 5 programs for orthogonal X-ray images
- 2 programs for temporomandibular imaging (functional diagnosis)
- 2 programs for sinus X-ray images to display paranasal sinuses

*Programs for children: for children and adolescents from the age of 7.

S-Pan technology



Reliable diagnoses thanks to incredibly sharp images

With S-Pan technology, the image regions that best correspond to the actual patient anatomy are automatically selected from a large number of parallel layers. These image parts are merged to form a panoramic image, which focuses on the actual anatomy of the patient. Deviations from the "average dentition" are taken into account, as are individually-angled teeth. The result is an image of impressive clarity, in which you will be able to immediately and effortlessly locate all anatomically relevant structures. Since the reconstruction is aligned to the actual position of the bite, incorrect positioning is compensated for to a certain extent. This saves time and prevents the need for additional retakes.

ProVecta 3D Prime Ceph – outstanding

Time-saving Cephalometric exposure with a low X-ray dose

Short scan time and high image quality with a low X-ray dose

The very short scan time of just 1.9 seconds helps to avoid motion artifacts and to reduce the radiation dose. The modern high-sensitivity CsI sensors enable excellent image quality.

3-in1 X-ray system

In addition to the various CBCT volumes and the 17 panoramic programs, ProVecta 3D Prime Ceph also offers six modes for all types of cephalometric exposures:

- Head Lateral
- Head Full Lateral
- Head PA
- SMV (submentovertex)
- Waters View
- Hand (Carpus)

Head lateral L

PA head

SMV (submentovertex)

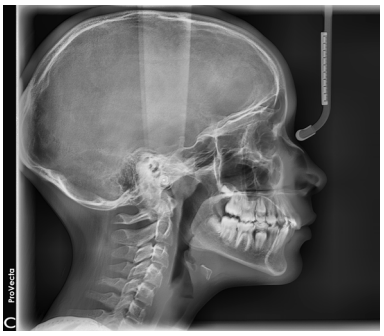
Waters view

Hand (Carpus)

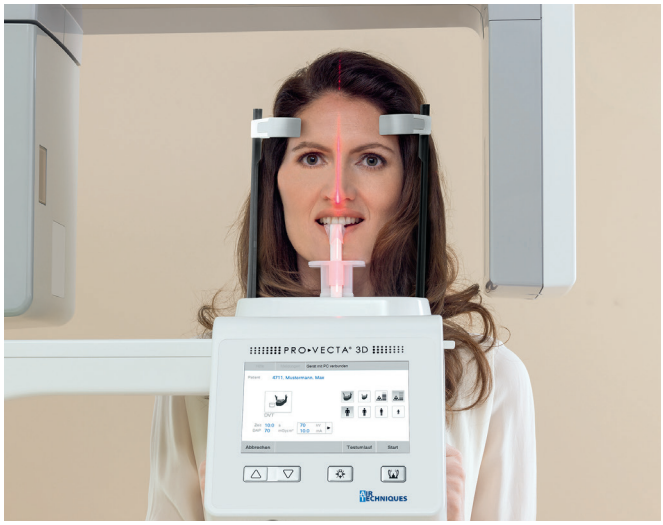
Saving you time and money

The ProVecta 3D Prime Ceph is equipped with two high-end CsI sensors. The advantage: there is no need for the cumbersome process of unplugging and reconnecting between the 3D X-ray unit and the Ceph arm. To start a Ceph X-ray image acquisition, all you need to do is select the corresponding program mode.

in ergonomics and efficiency



Intuitive, efficient and easy to use



Simple and efficient patient positioning

Three alignment lights (Sagittal, Frankfurt plane and Canine) for 2D X-ray images and two alignment lights (Sagittal and Frankfurt plane) for 3D images make positioning an easy and efficient task.

The display: all of the functions at a glance

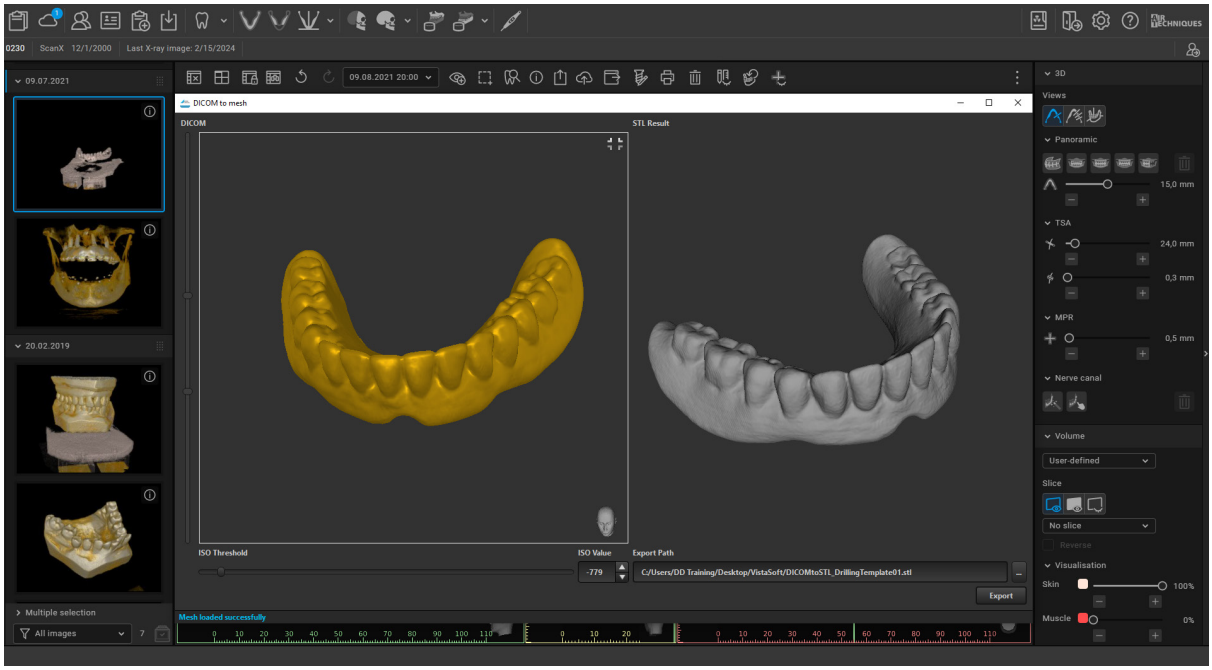
The innovative 7" touch-display of the ProVecta 3D Prime guides the operator reliably and clearly through the necessary steps. Handling and navigation are exceptionally intuitive, ensuring that the process of taking X-rays is as smooth and easy as possible.

Comfort bite: The basis for sharp images

With the Comfort Bite, ProVecta 3D Prime offers an even more stable fixation of the patient, which additionally reduces movement during the exposure.

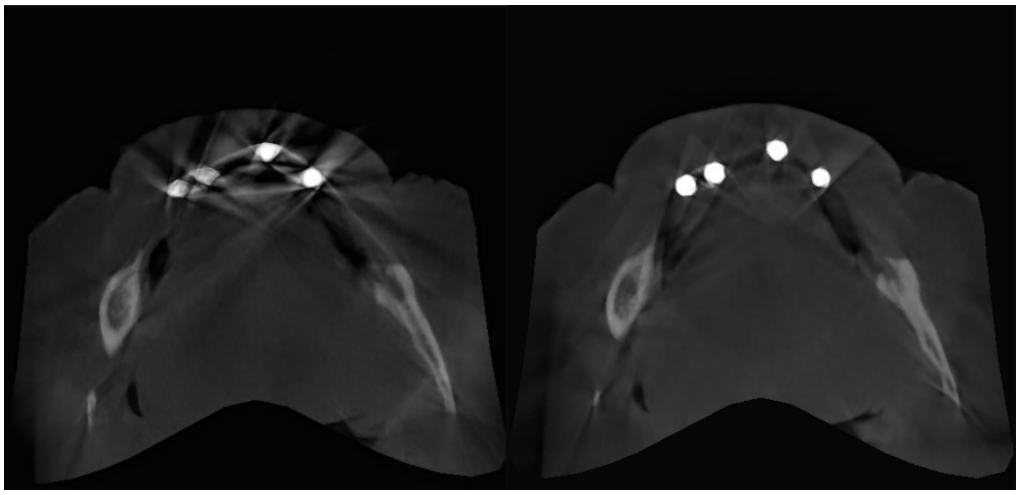
Thanks to its wider and softer support, it enables more comfortable positioning and is also ideal for edentulous patients.

Digitalization of plaster casts and surgical guides



Plaster casts can be digitalized with the aid of the optional model holder for ProVecta 3D Prime. The VisionX tool "DICOM-to-STL" then converts the data to open-source STL files for planning purposes to print the data out with a 3D printer. The scans and STL files are saved with the relevant patient to ensure you can always access all image data.

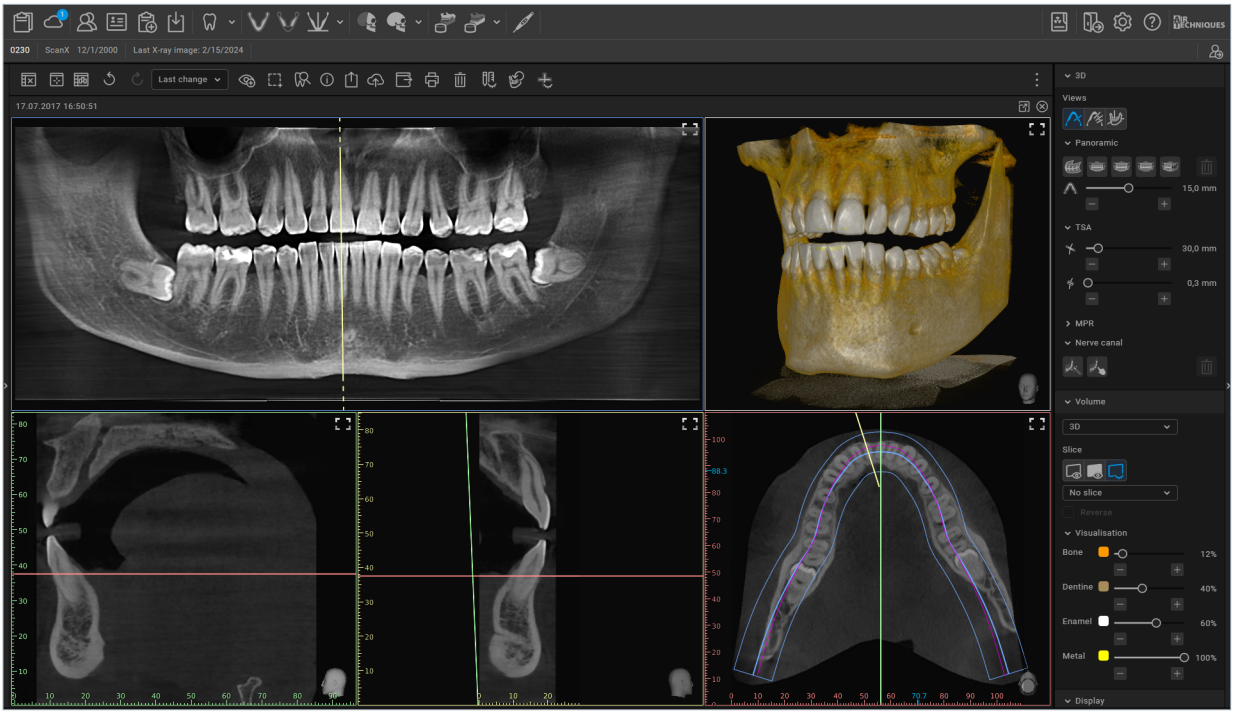
ProVecta 3D Prime metal artifact reduction (MAR)



Metal artifacts are a real challenge for 3D imaging. In the three-dimensional reconstruction, radiopaque objects generate shadows (areas that are displayed completely white) and streaks. Particularly on patients with metal prosthetics, these artifacts make diagnostic work much more difficult. VisionX MAR eliminates these metal artifacts automatically with the aid of state-of-the-art algorithms and is able to present anatomical structures much better as a result.

VisionX: simple workflow, intuitive working

VisionX is an extremely comfortable and efficient solution for the capture, editing and display of digital 2D and 3D X-ray images.



VisionX is intuitive to operate and opens up additional options for reliable diagnostics. Images can be edited using digital filters that adjust the contrast and sharpness of the X-ray image to assist the diagnosis. The network-capable software supports the export of DICOM data as well as various interfaces to all standard practice management software. The new design of VisionX has been optimized for professional diagnostics so that it offers you the best possible support. Thanks to the one-click principle, the software is quick and easy to operate – all the functions you need on a daily basis are just a single mouse click away. This will make your work faster than ever before.

Easy image comparisons on the light table

VisionX enables the reproduction of video, X-ray and 3D images on a shared digital light table. This allows you to consult images from different sources in your diagnostics. All 3D views can be rotated and tilted for optimum alignment. With the aid of a "navigation head", which always displays the current position, orientation is very simple in the different views.

All notes created in each layer can be quickly located with a list: with just one click, the view will jump to the corresponding layer, without the need for laborious searches.

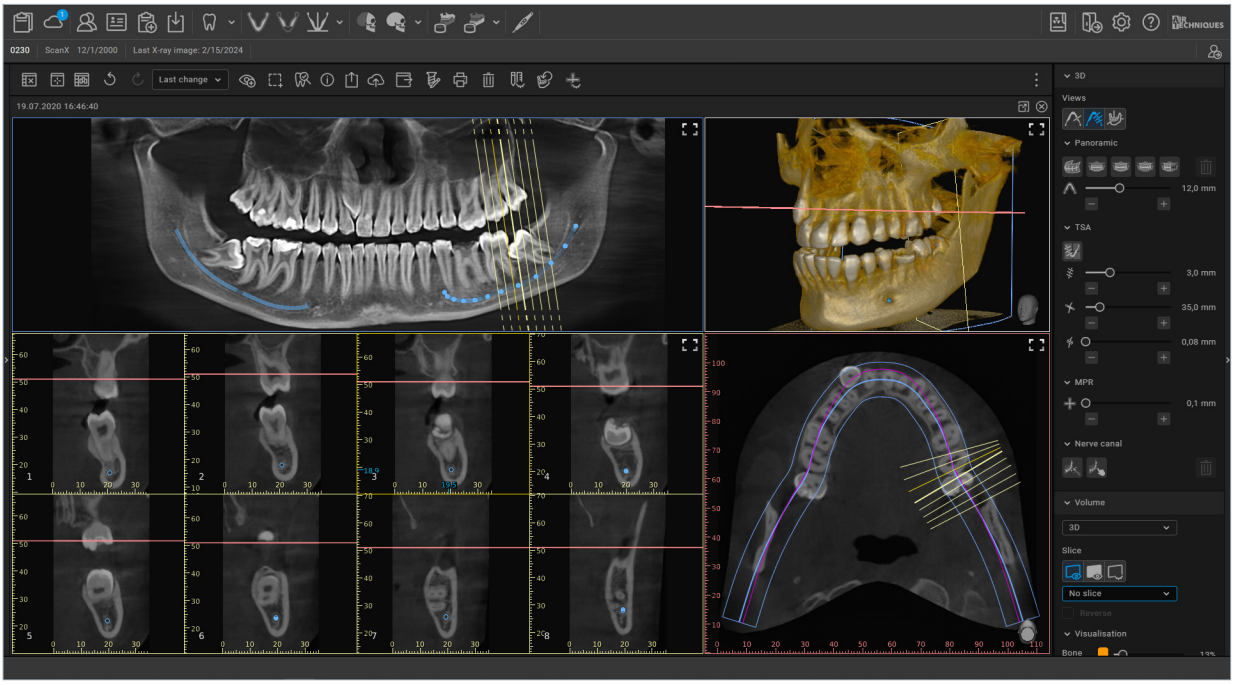
Automated panoramic reconstruction is just one click away

The rendered 2D panoramic view makes it easier to navigate in the 3D volume. The panoramic curve required for this is automatically positioned by VisionX. A slider is used to select the required layer thickness.

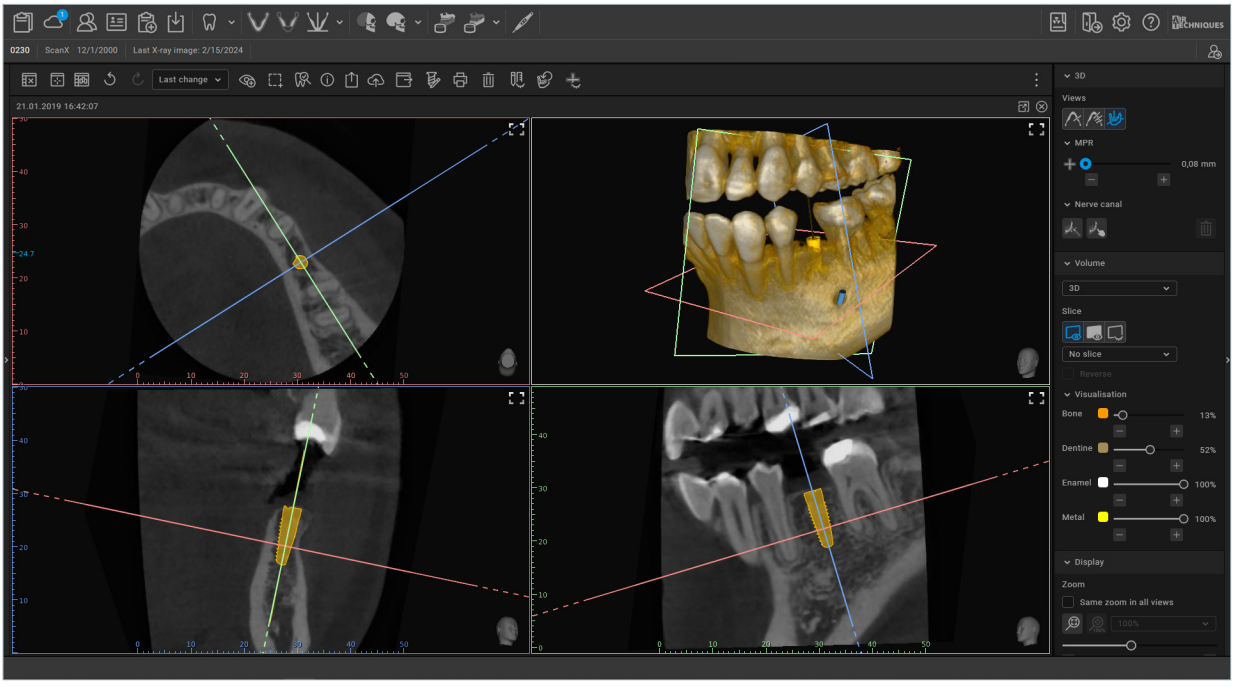
VisionX is network capable and compatible with all current X-ray, scanner and camera systems from Air Techniques. Thanks to VisionX MobileConnect and the optional "Imaging App", the image data can be called up at any time on an iPad.

VisionX - key features

- One-click principle – All main functions are only a mouse click away
- Self-explanatory icons for intuitive handling
- Ergonomic design with simple and well thought-out workflows for efficient operation
- Modern saving concept – changes are saved automatically
- Implant visualization



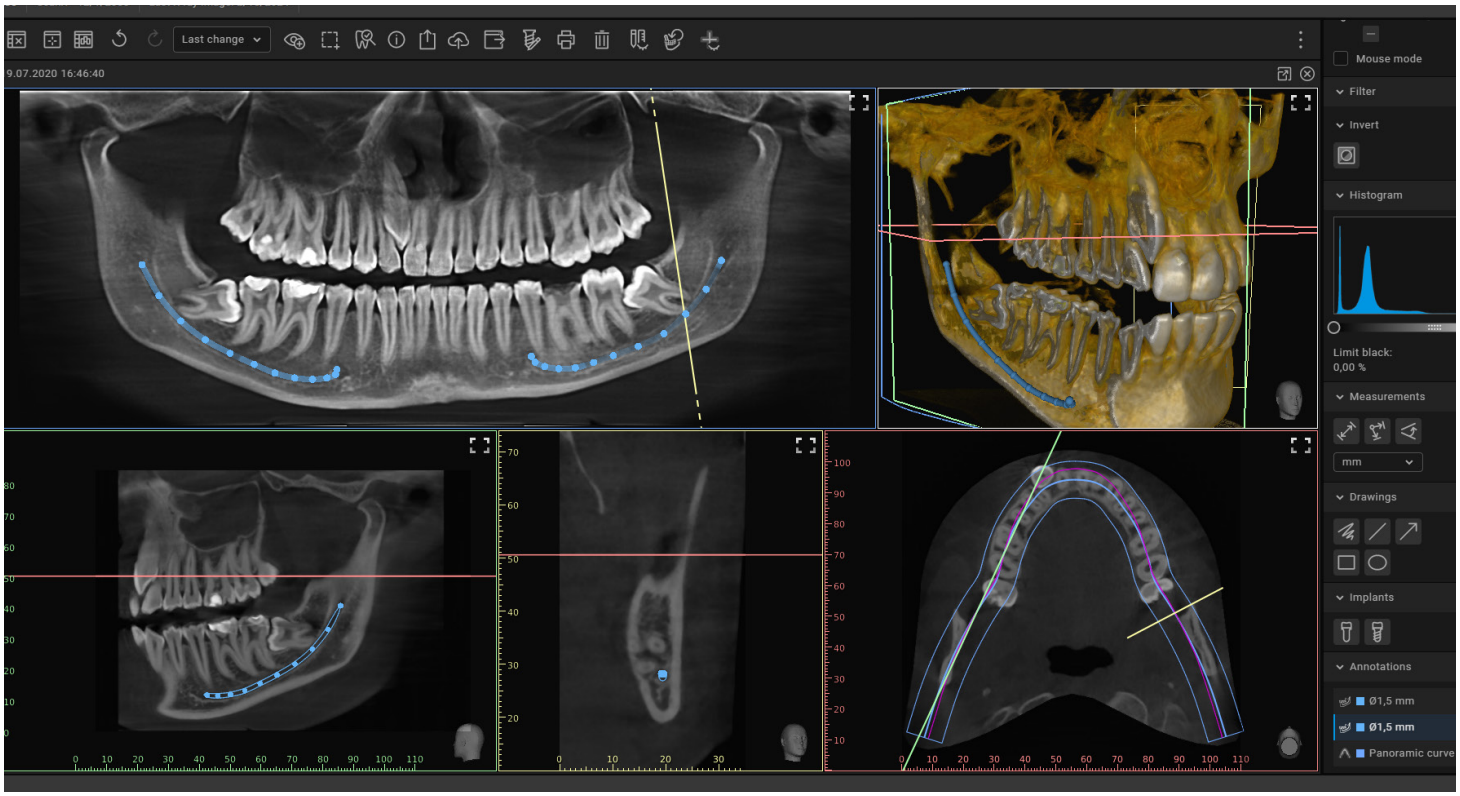
With VisionX and its AI-assisted algorithms you can easily display the automatically calculated mandibular canal and check its correct course via the transversal layer images (TSA view).



Implant planning with a 5 x 5 volume image. Shown here in the MPR view.

VisionX AI included

With the VisionX package you will gain access to powerful AI features that will make your day-to-day work in the practice noticeably more effective, but will also significantly increase the reliability of diagnostic work ahead of complicated procedures.

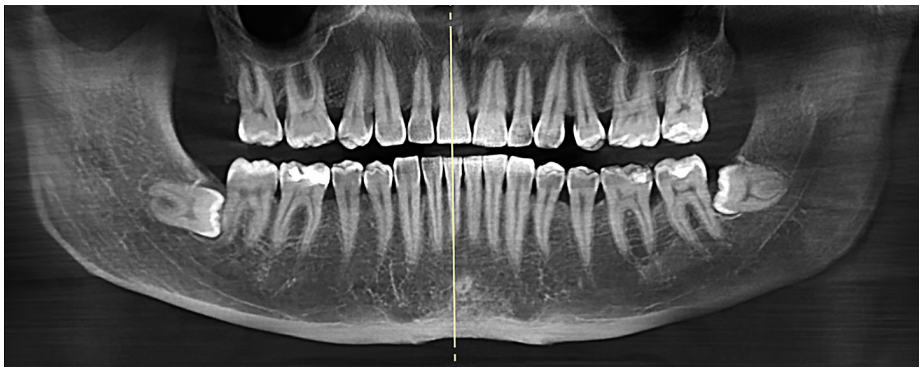


AI-assisted marking of the nerve canal

The AI-assisted mandibular canal detection system automatically calculates the position of the nerve canal in three-dimensional X-ray images. The dental professional merely needs to check the proposed position.

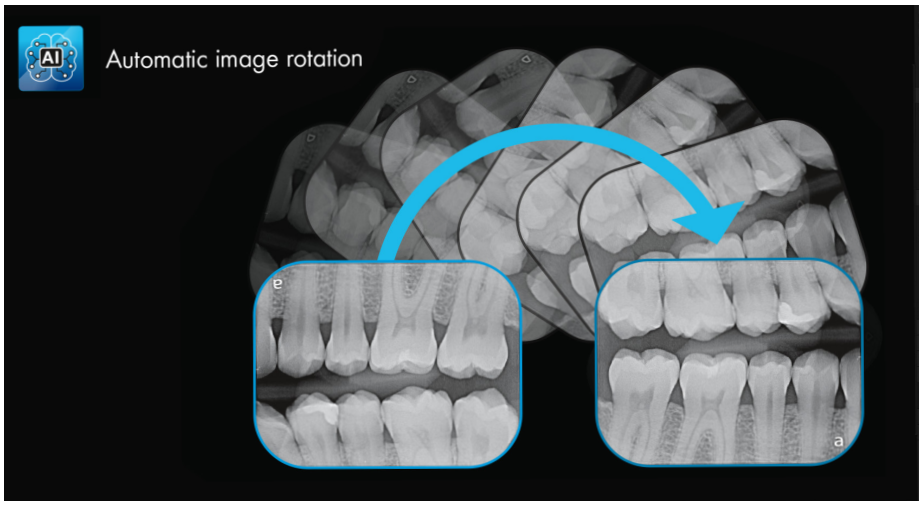
Panoramic display – AI-assisted

On 3D images, VisionX uses intelligent algorithms to adapt the calculated panoramic view to the anatomy of the patient. This displays a significantly improved panoramic image, which shows the anatomy of the patient much more clearly.

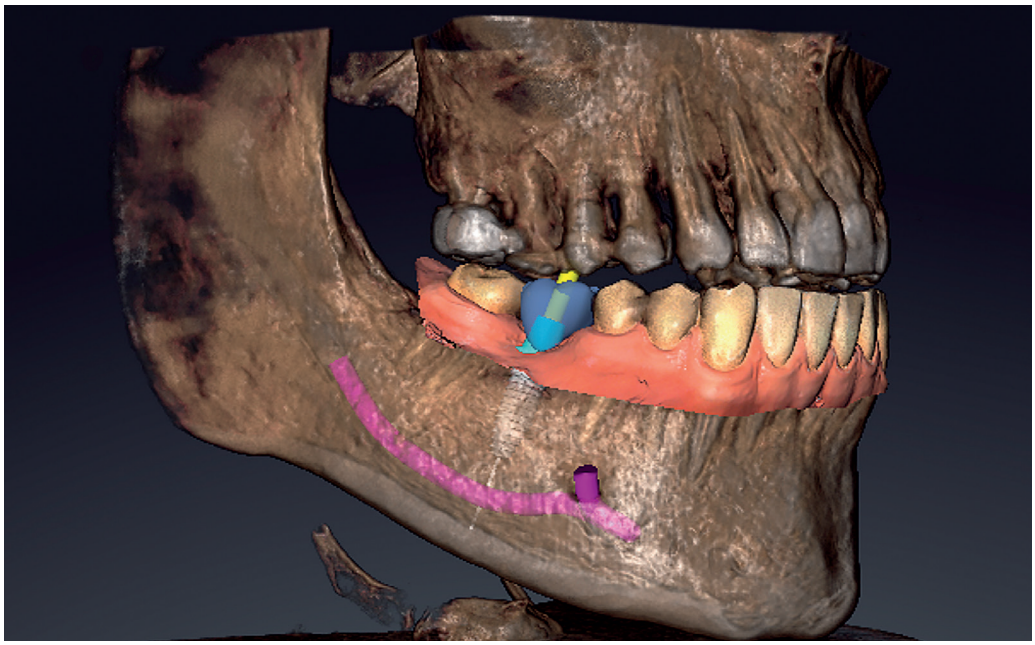


Automatic image rotation

The imaging software uses an algorithm based on artificial intelligence to check the orientation of intraoral X-ray images with the aid of anatomical features shown and corrects the rotation of the image automatically if needed. This will save you valuable time.



Digital implant workflow with VisionX and SICAT



Implant planning – simple and intuitive

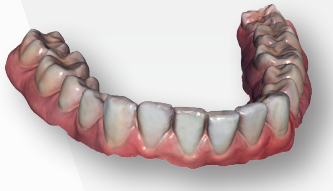
Through its cooperation with SICAT, Air Techniques has been able to stay faithful to its philosophy of helping dental practices prepare themselves for the future with improved workflows in their day-to-day operations. Customers of both companies benefit, because CEREC-based implant planning data can now also be produced with Air Techniques X-ray units. For more than a decade, SICAT has supplied application-oriented applications with innovative solutions for many specialist areas of digital dentistry. With SICAT Implant 2.0 your implant planning is now even easier and faster. You can order SICAT surgical guides directly from the software to put your implant plans straight into practice with the world's only solution for CEREC Guide planning.

1

CBCT image with ProVecta 3D Prime

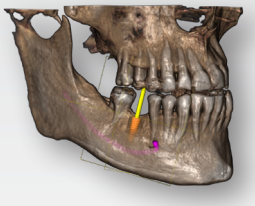
2

Digital impression – open STL format



3

Implant planning with SICAT Implant – open DICOM format



4

Surgical guide fabrication

VisionX Cloud View: Share faster - view easier

There's no faster way to share

Viewing images from the cloud made easy for all image formats, including DICOM. Especially for CBCT images, all the familiar VisionX editing tools and views (panorama, TSA and MPR) are available. In addition, all implants, nerve canals, annotations, and optimized panoramic images are displayed."

It's as easy as... drag, drop & share.

Drag Drag Drag Drag

Simply drag and drop the image into your browser.

Drop Drop Drop Drop

Whether 2D or 3D, all dental images can now be viewed and temporarily modified directly in the browser.

Share Share Share Share

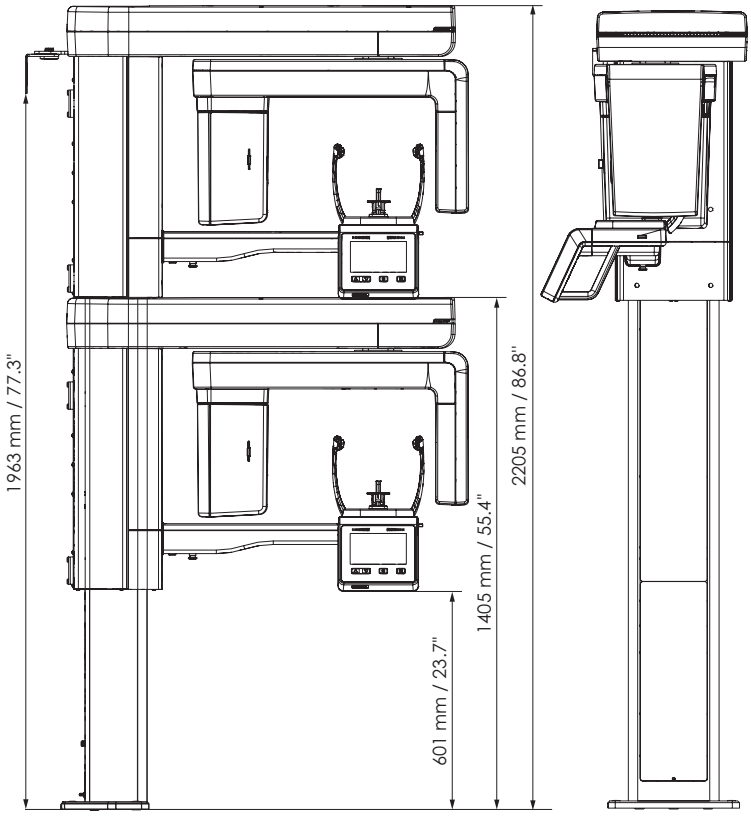
Share faster, view easier.

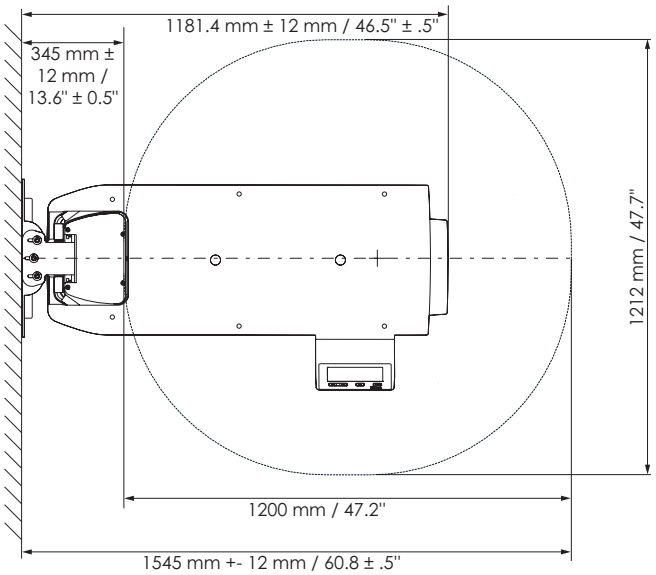
Facts and figures at a glance

ProVecta 3D Prime PN: A7750

X-ray HV Generator	
Voltage, current	60–99 kV, 4–16 mA
Rated power	1.6 kW (For 1 Second) 170W (Continuous)
Tube	
Focal spot size	0.5 mm (IEC60336)
Total filtration	2.8 mm AL (at 50kV)
Image Detector	
Type	CsI CMOS photodiode array
Pixel size	49.5 µm
Active sensor surface	135.8 x 36.4 mm
Scan Times	
Scan times	From 2 to 18 secs.
Panoramic programs	
Panoramic image	17
Image capture programs for children	4

Magnification factor	
2D images	1.26 (Pan)
3D volumes	
	130 x 85 mm diagnostic 130 x 70 mm diagnostic 50 x 50 mm
Device dimensions	
Height	55.35" (1406mm)x 86.85" (2206 mm)
Weight	396 lbs
Height adjustment range	33"
Width x Depth	47.72" (1212mm) x 60.83" (1545mm)
Installation	Wall mounting
Electrical connections	
Mains voltage	200 – 240 V AC
Frequency	50/60 Hz
Rated power	2.2 kVA





ProVecta 3D Prime Ceph PN: A7850

X-ray HV Generator	
Voltage, current	60–99 kV, 4–16 mA
Rated power	1.6 kW (For 1 Second) 170W (Continuous)

Tube	
Focal spot size	0.5 mm (IEC60336)
Total filtration	2.8 mm AL (at 50kV)

Image Detector		
Type	CsI CMOS photodiode array	
Pixel size	49.5 µm	100 µm
Active sensor surface	135.8 x 36.4 mm	157.2 x 16.3 mm

Scan Times	
Scan times	From 2 to 18 secsonds for lateral head images; in quick scan mode: 1.9 seconds (line scan)

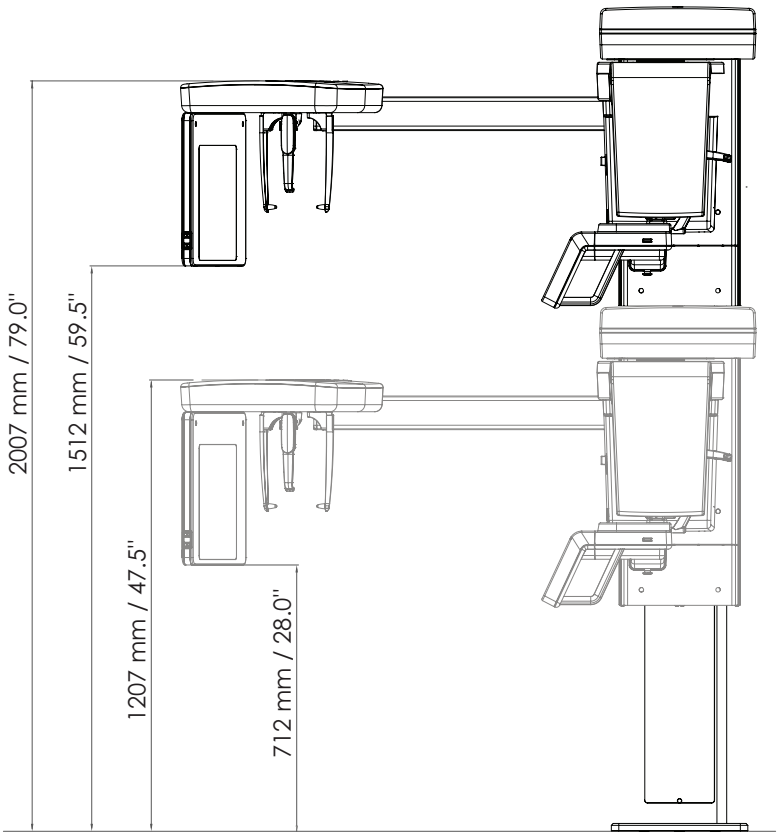
Panoramic and Cephalometric programs	
Panoramic image acquisition	17
Programs for children	4
Cephalometric programs	6

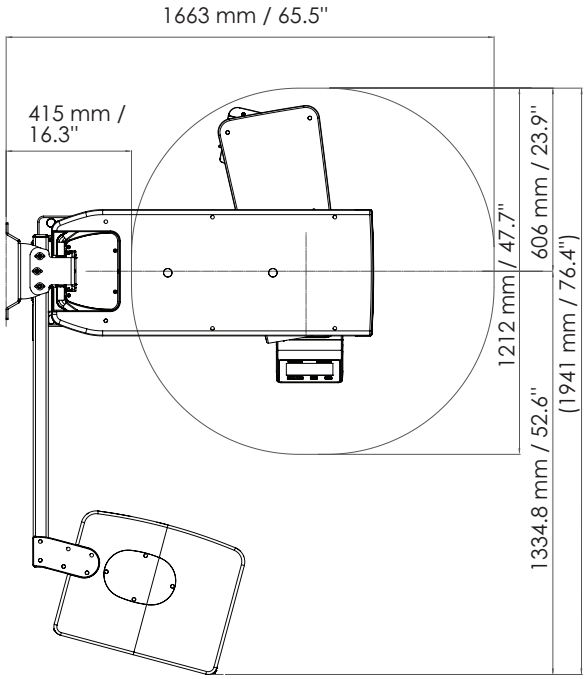
Magnification factor		
2D images	1.26 (Pan)	1.15 (Ceph)

3D volumes	
	130 x 85 mm diagnostic 130 x 70 mm diagnostic 50 x 50 mm

Device dimensions	
Height	55.35'' (1406mm)x 86.85'' (2206mm)
Weight	445 lbs
Height adjustment range	31.5''
Width x Depth	76.41'' (1940.8mm) x 63.58'' (1615mm)
Installation	Wall mounting

Electrical connections	
Mains voltage	200 – 240 V AC
Frequency	50/60 Hz
Rated power	170 W, maximal 2.2 kVA





Want to know more?

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ProVecta HD

ProVecta S-Pan Ceph

ProVecta 3D Prime

CamX

SensorX

VisionX

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