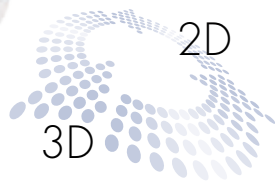




INSTRUMENTARIUM

**OP300**

Digital panoramic imaging system  
Digital cephalometric imaging system  
Digital CB3D imaging system



**A platform for changing needs.**

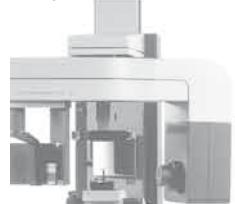
ORTHOPANTOMOGRAPH® OP300



1951



1961



1984



1992



2006



2009



2011

## Leading the way through the decades

- 1946 Professor Y.V. Paatero publishes his first paper on Panoramic Tomography.
- 1951 "Pantomography" equipment is presented.
- 1961 The first dental panoramic X-ray, ORTHOPANTOMOGRAPH® OP1, is developed.
- 1964 Commercialization of the ORTHOPANTOMOGRAPH® units begins with models OP2 and OP3.
- 1978 ORTHOPANTOMOGRAPH® becomes the leading name within dental panoramic imaging with models OP5/OC5, OP6 and OP10/OC10.
- 1992 New innovations, such as the lifting cassette head and linear tomography, are introduced along with the OP100 product family.
- 1999 Direct digital ORTHOPANTOMOGRAPH® OP100 product family is introduced.
- 2006 New ORTHOPANTOMOGRAPH® product family OP200 is launched.
- 2007 Volumetric Tomography (VT) is developed to maximize the performance of an ORTHOPANTOMOGRAPH® unit.
- 2009 A new member to the ORTHOPANTOMOGRAPH® product family – OP30 – is launched.
- 2011 ORTHOPANTOMOGRAPH® OP300, the most comprehensive 3-in-1 platform is launched to celebrate 50 years of ORTHOPANTOMOGRAPH® success.
- 2013 Introduction of the improved 3D image quality, new metal artifact reduction (MAR) tool and endo mode for ORTHOPANTOMOGRAPH® OP300 3D images.
- 2013 New revision of ORTHOPANTOMOGRAPH® OP30 is launched.

### Choose your own ORTHOPANTOMOGRAPH® OP30 OP200 OP300

	OP30	OP200	OP300
Standard panoramic	•		
Advanced panoramic		•	•
TMJ imaging	•	•	•
Volumetric Tomography		•	
Cone Beam 3D			•
Cephalometric		•	•



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# A platform for changing needs

ORTHOPANTOMOGRAPH® OP300 is the most comprehensive 3-in-1 platform designed for today and tomorrow. OP300 combines an advanced panoramic imaging system with either cephalometric or cone beam 3D or a combination of both, giving you a truly adaptable platform for different imaging applications and dental specialties. In addition, all of these options can be upgraded in the field after the initial purchase.

## Over 50 years of experience in panoramic imaging

ORTHOPANTOMOGRAPH®, introduced over 50 years ago, was a revolutionary groundbreaker and pacesetter for dental panoramic X-ray imaging. Today, ORTHOPANTOMOGRAPH® is regarded as the leading name in the panoramic X-ray world and often used even as a synonym for panoramic X-ray units.

# Gold standard image quality

Image quality is a result of many elements, such as the carefully planned features, chosen technology and sufficient technical characteristics of the system, along with proper patient positioning. ORTHOPANTOMOGRAPH® OP300 combines all these for your benefit and provides you with a perfect image – every single time. ORTHOPANTOMOGRAPH® OP300 masters the details.

## Stable and open patient positioning

A rigid 5-point positioning system, including forehead support, chin rest and bite fork, eliminates patient movement. The open design allows easy viewing and the positioning of the patient from either the left or right side.

## Latest sensor technology

The OP300 utilizes the latest in CMOS sensor technology. CMOS sensors provide a larger dynamic range combined with 14-bit image data and increased signal-to-noise ratio. The result is an intensely sharp image with reduction of unwanted under- and overexposures.

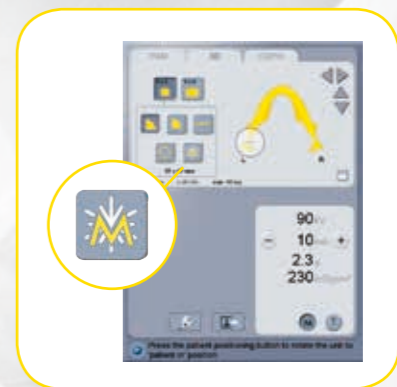
## Unsurpassed cephalometric results

The OP300 scanning cephalometric option offers unsurpassed visibility of tracing key reference points for orthodontic treatment planning. In addition, dose optimization is carried out by an adjustable scanning area and Automatic Facial Contour. AFC increases soft tissue visibility while decreasing patient dose.

## Metal artifact reduction (MAR) tool

The metal artifact reduction (MAR) tool offers the possibility of utilizing metal artifact reduction in 3D images. This improves diagnostic capabilities in cases where metallic artifacts from radio-opaque objects can be expected, for example:

- Endodontic analysis of teeth with root canal fillings
- Implant cases



## Complete usability

The large 10" touchscreen with easy-to-use interface enables professional usage from the very beginning. The clear and user friendly structure of controls allows fast and effortless workflow for all imaging modalities.

## Versatile software tools

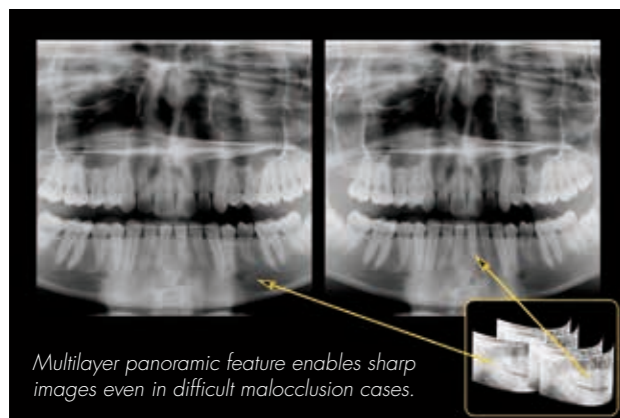
CLINIVIEW™ software offers professional tools for processing and viewing digital X-ray images. Open architecture and DICOM® format images enable easy connectivity for 3D viewing and planning software.



# Confident diagnostics

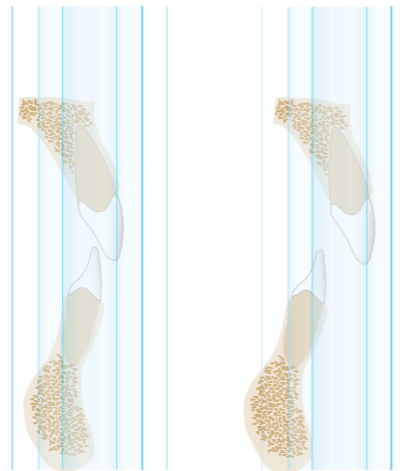
## Multilayer pan

The OP300 multilayer panoramic option provides five panoramic images with only one scan. This enables forgiving patient positioning and reduces possible retake exposures. Multilayer images are achieved in the same scanning time and dose as the traditional panoramic scan.



Multilayer panoramic feature enables sharp images even in difficult malocclusion cases.

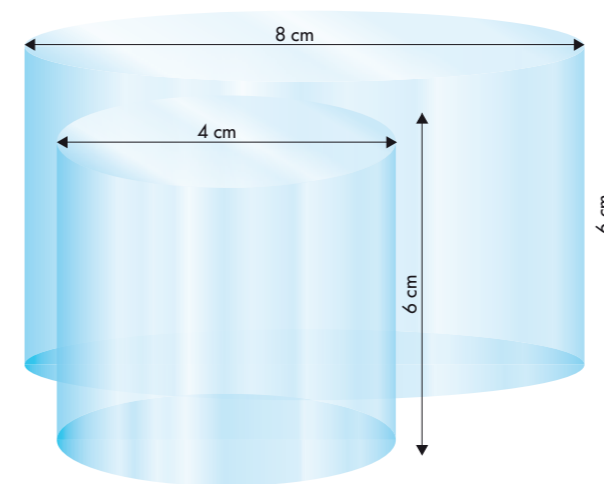
Choose the best of five different layers – or automatically select just one layer for use as a conventional panoramic unit.



Multilayer pan increases the thickness of the focal area compared to traditional panoramic imaging; this decreases patient positioning errors and aids in difficult malocclusion cases.

## Two available fields-of-view with 3D option:

- 6x4cm – a small FOV optimized for local diagnostics like single implant planning, 3rd molar extractions and endodontic procedures, keeping the patient dose at a substantially reduced level.
- 6x8cm – FOV covering complete dental arch for multiple implant placement and operations using surgical guides.



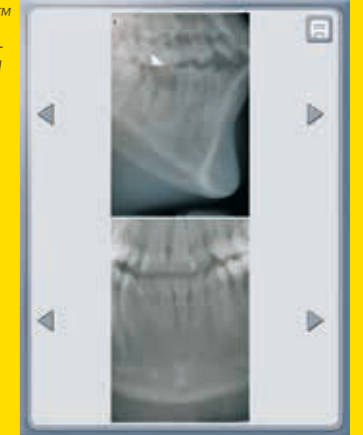
## SMARTVIEW™

A two-dimensional scout image can be taken before the 3D examination to adjust the target position visually from GUI screen. This guarantees precise positioning and eliminates risk of retake exposures.

Select freely and fine tune FOV position from GUI.



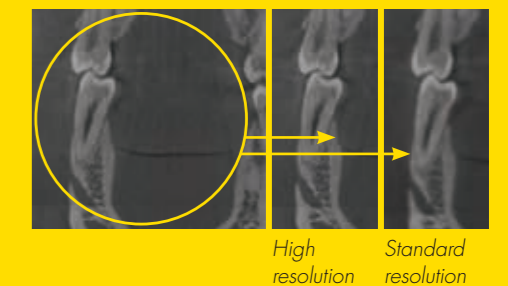
SMARTVIEW™ takes a two-dimensional scout of the selected area.



## Two available resolutions

Both FOV sizes are high enough to easily cover the jaw bone and occlusion level. For both FOV sizes it is possible to choose between two resolutions:

- **Standard scan** takes only 10 seconds with exposure time only 2.3 seconds with optimized patient dose
- **High resolution scan** offers extremely sharp images for more detailed diagnosis



For 6 x 4cm FOV it is also possible to select **endo mode** for accurate diagnostic tasks:

- **85 µm voxel size** with MAR tool specially designed for endodontic applications



# Complete versatility

## Upgradeability

OP300 is designed and built as an expandable platform where both 3D and cephalometric options are field upgradeable. The cephalometric arm can be ordered for left- or right-side configuration, which is adaptable and can be changed in the field. In panoramic positioning, side is also adaptable for left or right configuration to ensure optimal system performance and ease of use. OP300 can truly grow with your practice and be tailored to users' preferences.

True  
3-in-1 platform



## Panoramics

A full range of panoramic imaging programs covers multiple modalities from everyday procedures to even more specialized imaging procedures. Automatic collimation for adults and pediatrics optimizes patient dose for increased patient safety.

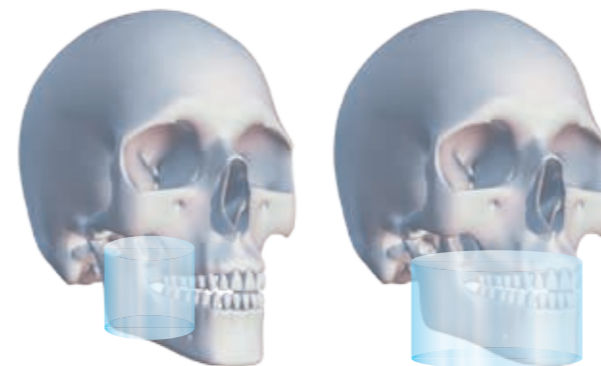
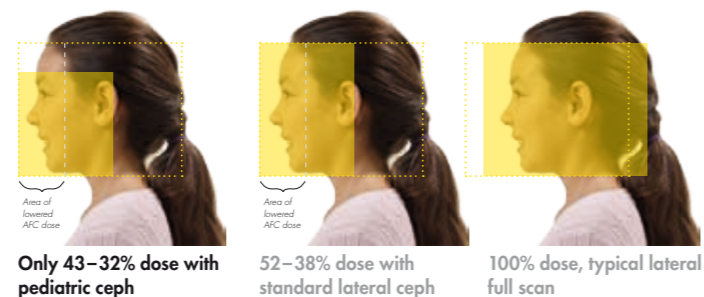
## Cephalometrics

Full range of projections: lateral ceph, AP/PA, obliques.

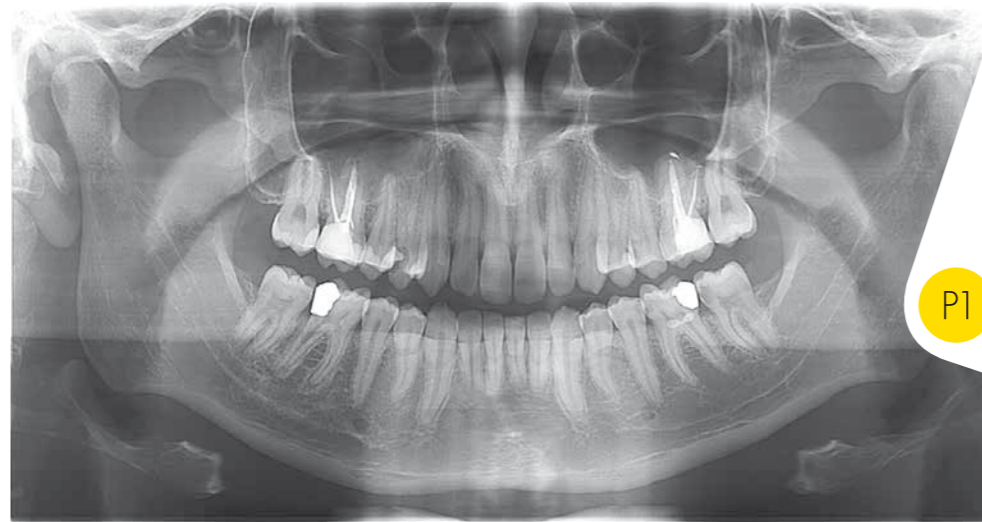
1. Fully adjustable scanning area ensures that by exposing only the required region, patient safety is greatly increased.
2. Automatic facial contour (AFC) decreases exposure factors in the facial soft tissue region to provide improved visibility of soft tissue tracing points in addition to a reduction in patient dose.

## 3D

Two fields-of-view combined with integrated motorized chin rest enable free FOV positioning within maxillofacial area. This ensures multiple different modalities from 3D TMJ analysis into implant planning with drilling guides.



# Clinical images



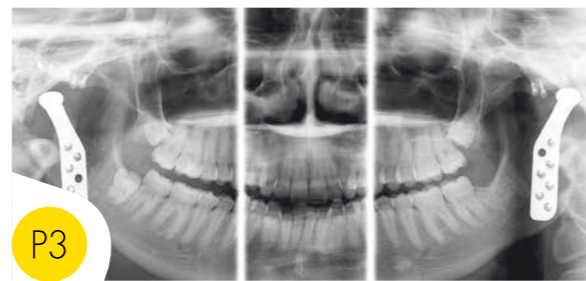
P1

The standard adult panoramic imaging program P1 provides a clear image.



P2

The pediatric panoramic program has a clinically adapted image layer and reduced image height.



P3

The Ortho Zone provides special geometry for an exceptionally wide anterior image layer.



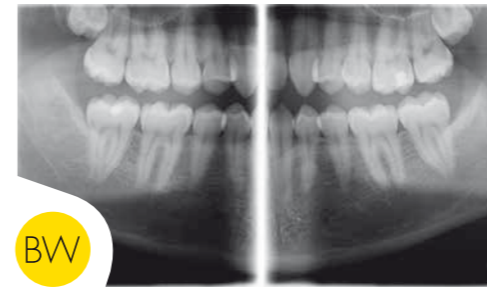
P4

The Orthogonal program reduces overlapping of the teeth.



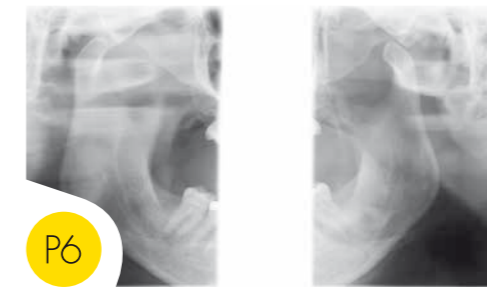
P5

The Wide Arch program is appropriate for patients with a wider than average dental anatomy.



BW

Bitewing-like view for a quick and easy alternative to intraoral bitewing imaging.



P6

Temporo-mandibular joint (TMJ) lateral view can be taken with mouth closed or open.



Segmentation available in all pan programs.



Cephalometric PA

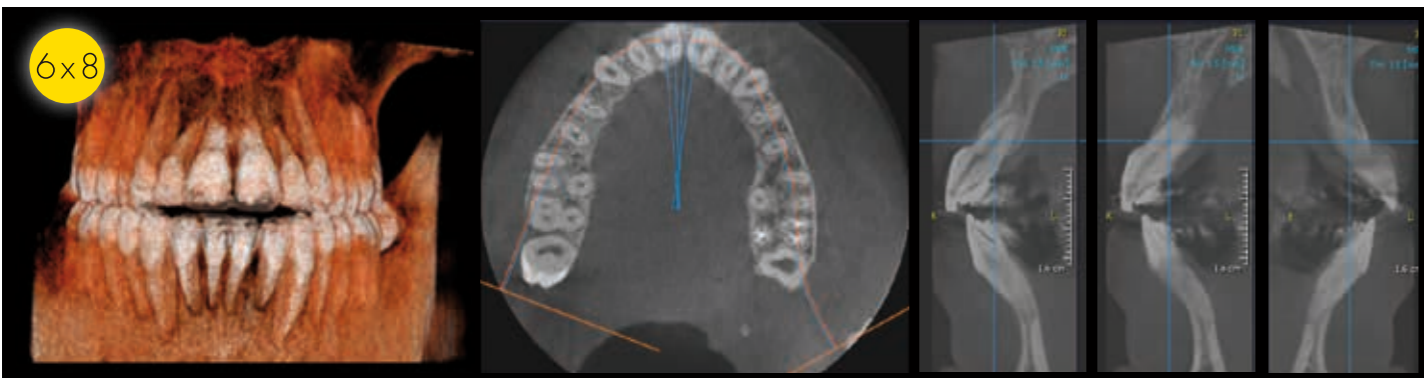
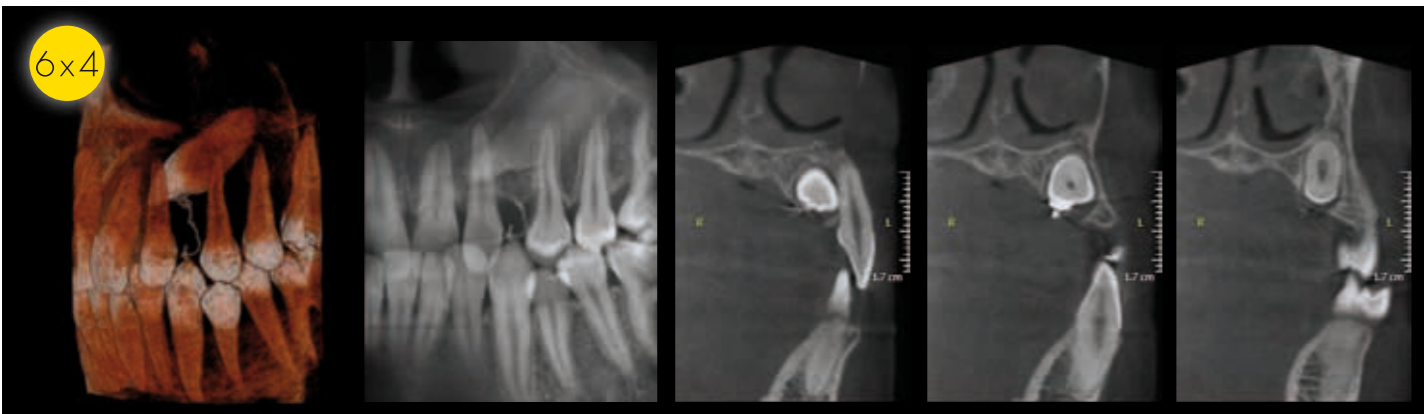
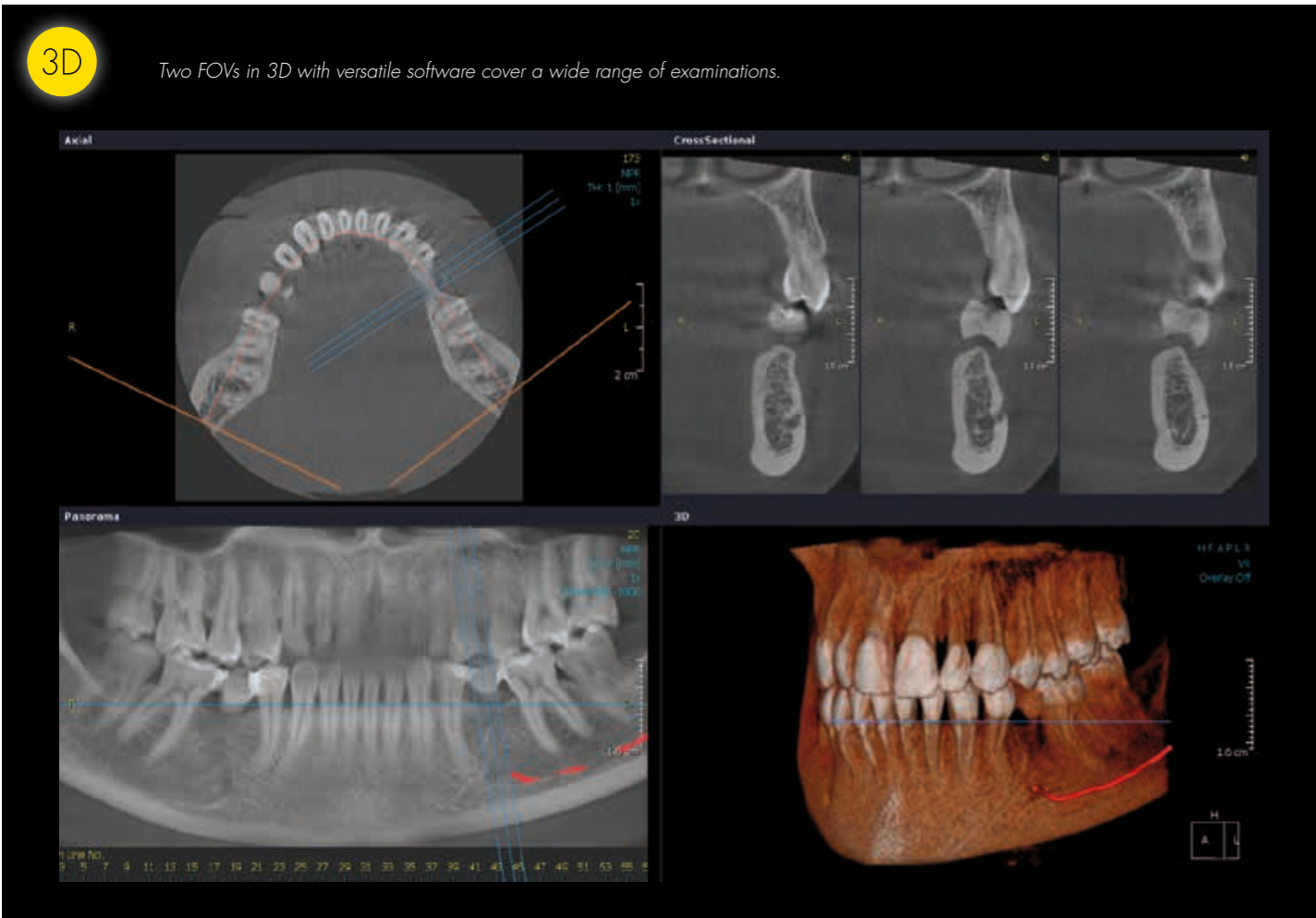
Carpus imaging

Pediatric cephalometric

Cephalometric

CEPH

Clinical images



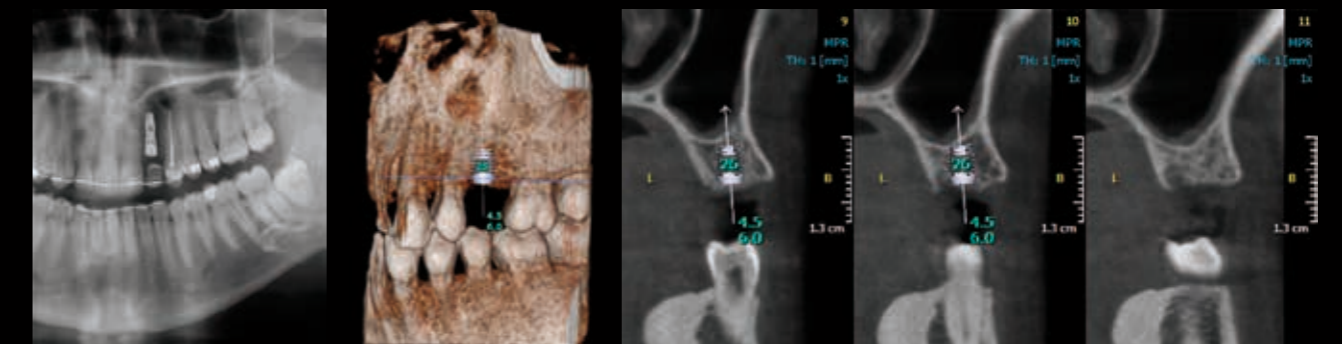
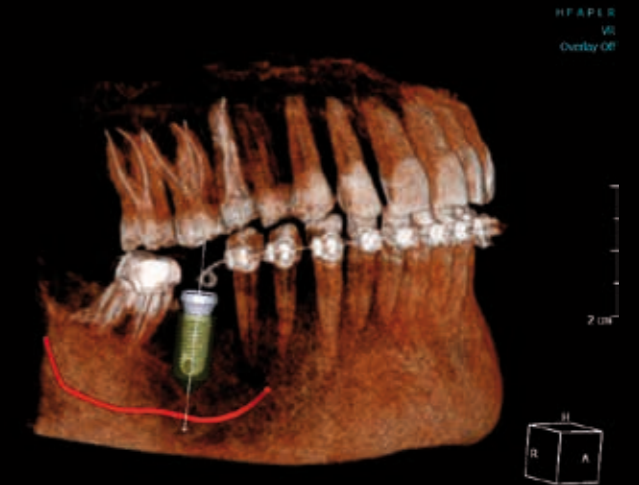
# Art of imaging for Implantology

## Diagnostic challenges

- To evaluate sufficient bone structure and quality, such as undercut and intrabony pathology, to avoid complications during surgery
- To evaluate sensitive anatomic structures like nerve canal, neighboring adjacent teeth and sinuses
- To conduct diagnostic, surgical and prosthodontical planning at once to avoid the need to refer the patient to another specialist

## Solution

- The OP300 gold standard image quality with multilayer panoramic imaging feature and cone beam 3D imaging option takes implant dentistry to a new level
- Precise patient positioning with SMARTVIEW™ scout enables needed structures to be present at imaging area
- The OP300 implant concept combines aesthetically driven virtual implant planning and custom-made surgical templates with precise depth and angle control for your benefit



Learn more [www.op300.com/implantology](http://www.op300.com/implantology)



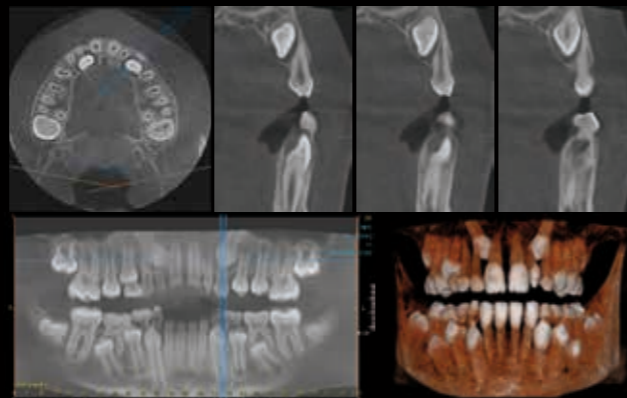
# Art of imaging for **O**rthodontics

# and for **E**ndodontics

**E**  
**NH**  
**ANCED**  
**DETAILS**  
**IMPROVED**  
**PATIENT CARE** ●

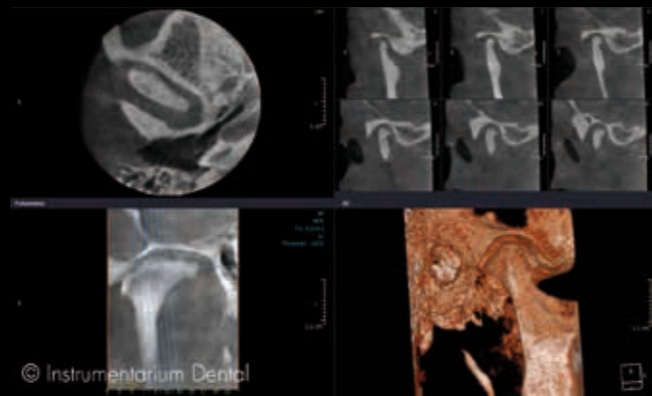
## Diagnostic challenge

- Pan images are unclear for patients with malocclusion
- Sometimes landmarks are not visible in ceph images
- Orthodontic treatment often requires multiple images for diagnosis and follow-up
- The effect of impacted teeth, hyperdontia and possible resorption on treatment plan is difficult to estimate with 2D images



## Solution

- The OP300 multilayer panoramic feature enables sharp images even in difficult malocclusion cases
- The dose-controlled Automatic Facial Contour (AFC) guarantees excellent visibility for cephalometric tracing points and soft tissues
- Adjustable lateral ceph field of view is especially suitable for pediatric patients and treatment follow-up
- The additional small field-of-view CBCT with precise and free 3D positioning can be used for impacted teeth localization and other special cases

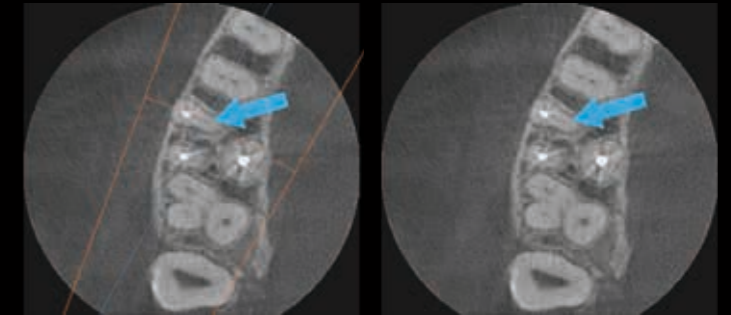


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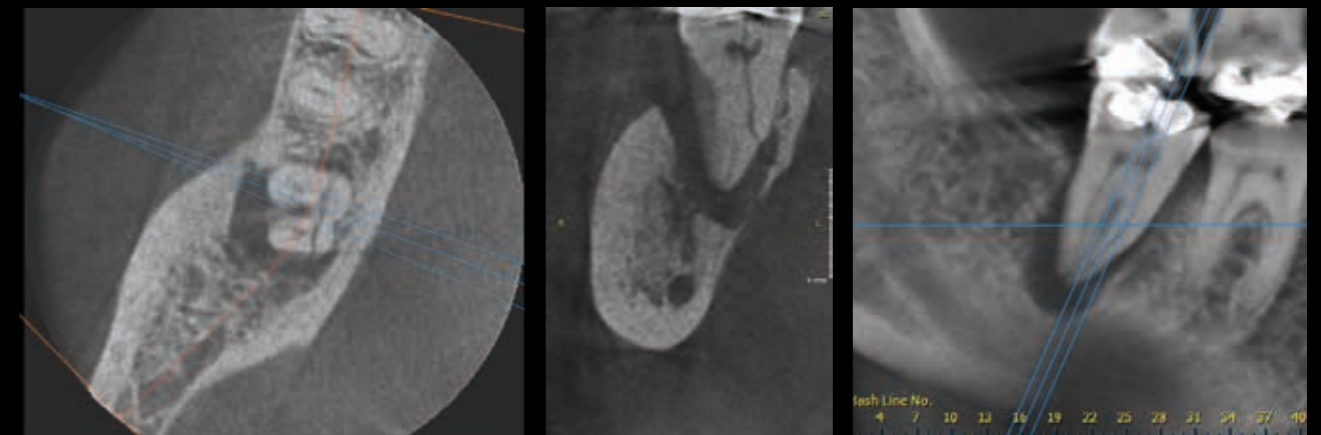
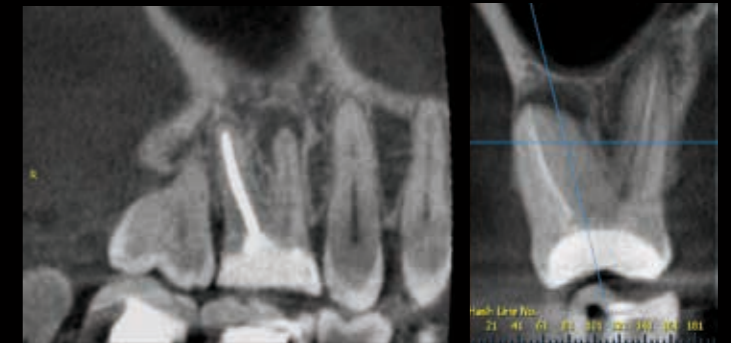
## Diagnostic challenge

- Roots and periodontal ligament not always clearly seen on panoramic images
- Root and root canal morphology is often difficult to evaluate based on only 2D (periapical or panoramic) images
- Root canal fillings most often cause artifacts to the images and decreases the accuracy of diagnosing root fractures



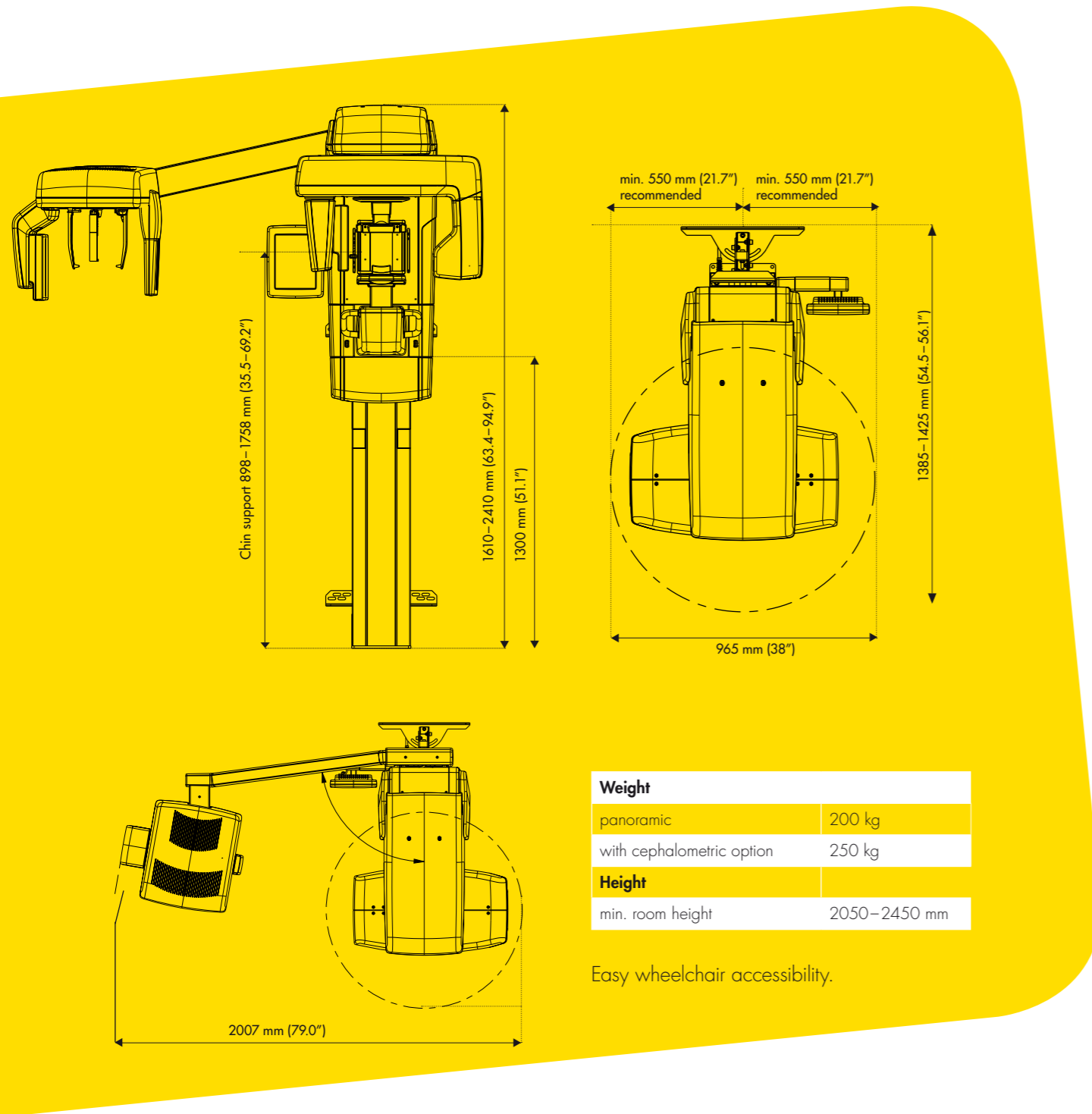
## Solution

- With multilayer panoramic feature the sharp layer can be easily adjusted to present roots and periodontal ligaments
- 6 x 4 cm (HxW) field of view 3D with accurate positioning improves diagnostics of atypical morphologies
- 3D program dedicated for endodontics with high resolution and MAR (Metal artifact reduction) tool helps in seeing small details surrounding radio-opaque objects



# D

## Dimensions



# T

## Technical specifications

### Technical specifications

generator	high frequency DC, 75–150 kHz
focal spot	0.5 mm IEC 336
tube voltage	57–90 kV
tube current	4–16 mA
minimum total filtration	3.2 mm Al

### Panoramic

image detector	CMOS	<b>Cephalometric</b>	
sensor pixel size	100 µm	image detector	CMOS
image pixel size	100 µm	sensor pixel size	100 µm
scan time	8.6–16.1 s	image pixel size	100 µm
image field height	151 mm	scan time	6.5 s – 20 s
		image field width	160 mm – 270 mm

### 3D

image detector	CMOS
image voxel size	85 µm – 300 µm
scan time	10–20 s
exposure time	2.34 s – 12.5 s, pulsed X-ray
image volume sizes (HxW)	61 mm x 41 mm, 61 mm x 78 mm
DICOM® support	yes

DICOM® is the registered trademark of the National Electrical Manufacturers Association for its standards publications relating to digital communications of medical information.

### Minimum system requirements for acquisition computer

processor	2.5 GHz dual core, or better
memory	3 GB RAM or more
hard disk	500 GB or more
expansion slot	PCI Express x16, full length
network	Gigabit Ethernet, 1000Base-T
power supply	500 watt minimum
operating system	Windows 7 or Windows Vista (32 or 64-bit)

Please refer to CLINVIEW™ Installation manual for full software specifications and requirements or contact your local dealer.

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**Instrumentarium Dental** develops, manufactures and markets high-tech systems and solutions for dental and maxillo-facial imaging. We work in close co-operation with dental professionals, universities and other research centers in our quest to develop solutions that will meet and exceed the expectations of our customers. As the establisher of panoramic X-ray imaging, we are committed to providing high clinical performance while still maintaining simplicity, ease of use and workflow efficiency.

The Instrumentarium Dental product portfolio consists of a full range of premium quality imaging solutions for intraoral, extraoral and 3D imaging. For more detailed information about our products, please visit [www.instrumentariumdental.com](http://www.instrumentariumdental.com).

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