PLANMECA

2D Extraoral
Imaging

Welcome

An introduction from our president

"It's my great pleasure to introduce you to our pioneering 2D X-ray units. Our comprehensive range of digital units meets all your daily imaging needs – working perfectly with our highly advanced **Planmeca Romexis**® software for the most detailed extraoral and intraoral examinations possible.

I'm extremely proud of our product innovations, and for over 40 years we've worked closely with dental professionals to set new standards in our field. What makes us a bit different is that all core product development and manufacturing takes place in Finland – ensuring exceptional quality and unmatched attention to detail at every stage of the process.

We also have a dedicated team of R&D professionals behind the scenes, developing breakthrough innovations that make a real difference. Our robotic SCARA technology, for example, offers flexible, precise and complex movements needed for extraoral maxillofacial imaging. Our **Planmeca ProMax**® **2D** X-ray units are all 3D-ready, which means you can easily upgrade at a later point. I'm thrilled to invite you to discover our world of 2D imaging."

Heikki Kyöstilä
President and founder
Planmeca Group

Industry-leading 2D X-ray

*Introducing our world-class range of 2D X-ray units
– offering the most advanced and versatile devices and software
to meet all your 2D extraoral imaging needs.*

Planmeca ProOne®

reddot design award
winner 2009

iF product design award
2008

fenniaprize 09
good design grows global
HONORARY MENTION

units

Planmeca ProMax® 2D

A new benchmark for extraoral imaging

Planmeca extraoral units offer two alternative solutions to maxillofacial imaging. **Planmeca ProMax**® *– the complete imaging center – sets a new benchmark in panoramic and cephalometric imaging.* **Planmeca ProOne**® *is designed with simplicity in mind, a compact and easy-to-use panoramic X-ray unit that's both cost-effective and flexible.*

Extraoral imaging

Planmeca ProMax® 2D

The **Planmeca ProMax**® *is a complete maxillofacial imaging system, with design and operation principles based on the latest scientific research, technological innovations, and the most demanding needs of modern-day radiology.*

Key features:

Advanced technology

- **Autofocus** positions the focal layer automatically for perfect panoramic images
- **Dynamic Exposure Control** (DEC) measures the patient's radiation transparency and automatically adjusts exposure values
- Patented **SCARA** (Selectively Compliant Articulated Robotic Arm) technology guarantees anatomically accurate imaging geometry for clear, error-free images
- Easy upgrades – add cephalostat or 3D imaging capabilities at any time
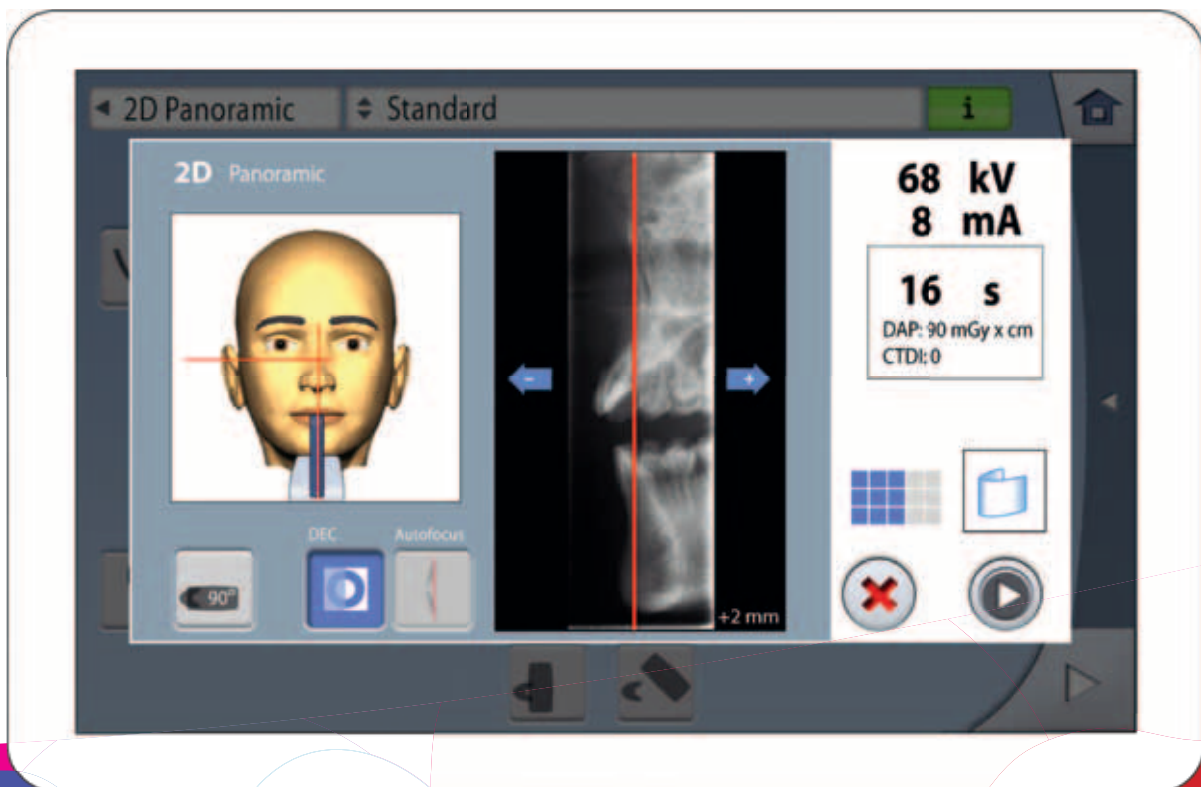
Effortless use

- Face-to-face patient positioning with triple-laser patient positioning lights
- Side entry for comfortable access
- Easy-to-use graphical interface
- Versatile **Planmeca Romexis**® 2D imaging software
- TWAIN support and full DICOM compliance

Perfect panoramic images

Imagine if your X-ray unit could recognize your patient's anatomy

ProMax's unique Autofocus feature automatically positions the focal layer using a low-dose scout image of the patient's central incisors. It uses landmarks in the patient's anatomy to calculate placement, dramatically reducing the need for retakes.
The result is a perfect panoramic image, every time.

– every time

Our unique Autofocus

Eliminate positioning errors – with SCARA technology you can take an ultra-low-dose scout image of your patient's central incisors for a quick, diagnostic panoramic image every time.
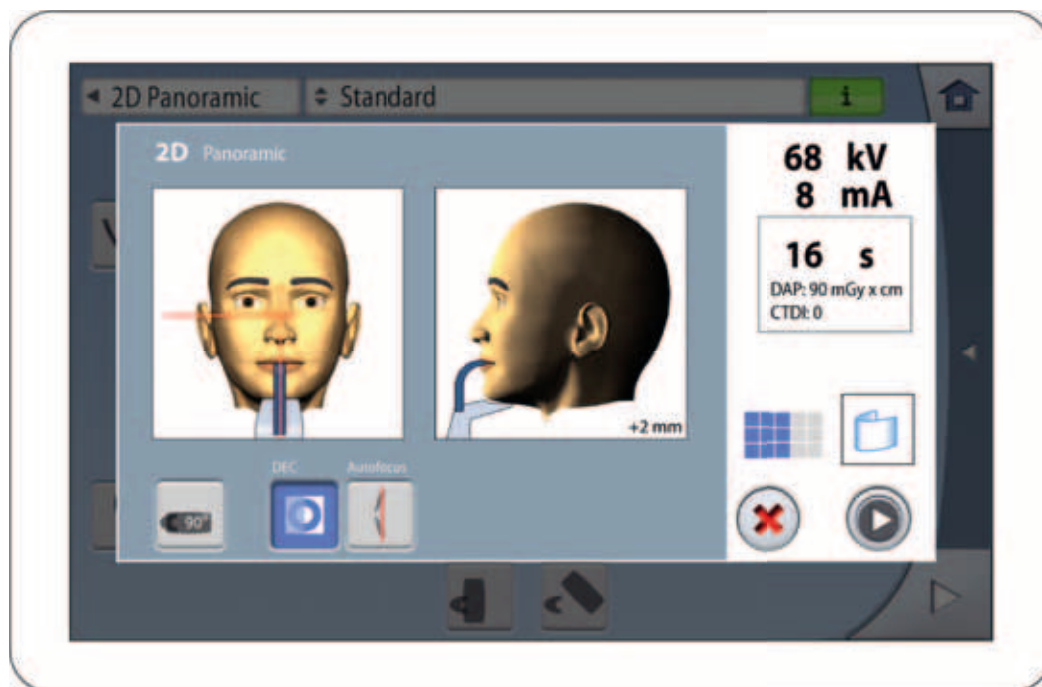
Effortless and comfortable

*Our industry-leading **Planmeca ProMax**® unit is known across the world for incredible ease of use and exceptional patient comfort, providing a smooth workflow and the best image quality possible.*
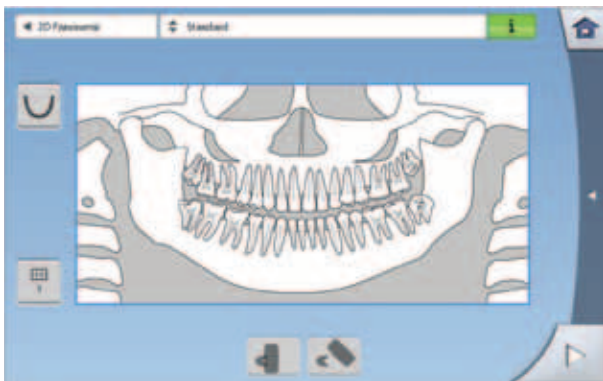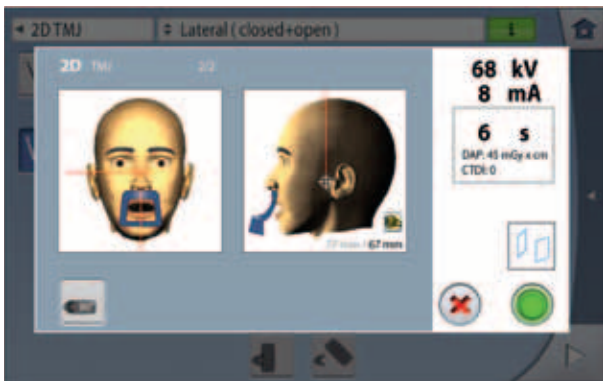
Face-to-face patient positioning

- Open-face architecture provides effortless patient positioning

- Correct patient positioning either with Autofocus or manually

- Make fine adjustments using positioning lasers and joystick

- Work with an unrestricted view of your patient

- Accommodate wheelchairs easily with side-entry access

Intuitive control panel

- Clear and straightforward graphical user interface guides you smoothly through your work

- Pre-programmed sites and exposure values for different image types and targets save you time and allow you to focus on your patients

Laser-assisted patient alignment

- A triple laser beam system accurately indicates the correct anatomical alignment points for patient positioning
- The Frankfort horizontal plane positioning beam shows the correct forward tilt of your patient's head
- The focal layer positioning beam indicates the focal layer position and ensures images are sharp and clear
- Fine adjustments can be made using the joystick

Adjustable focal layer

Based on scientific research, imaging geometry matches the shape of the focal layer with the patient's anatomy, resulting in clear panoramic radiographs. Simply select the shape of the focal layer on the graphical user interface according to the size and shape of the patient's jaw.

Improved image quality with Dynamic Exposure Control (DEC)

Unique digital Dynamic Exposure Control (DEC) automatically adjusts the exposure values for each individual patient based on their anatomic structure and bone density. This improves the quality of both panoramic and cephalometric images with more consistent brightness and contrast.

Patented SCARA technology

Planmeca ProMax® features highly advanced and exclusive SCARA (Selectively Compliant Articulated Robotic Arm) technology – providing flexible, precise, and complex movements required for rotational maxillofacial imaging.

Unlimited movement range

Our revolutionary SCARA technology combines electro-mechanical construction with real-time computation of dynamic rotation patterns. This enables optimized radiography for each individual patient, meeting virtually any diagnostic requirement in dentistry.

User benefits for SCARA

The precise free-flowing arm movements allow a wider variety of imaging programs not possible with other X-ray units, offering superior imaging capabilities for both existing and future technologies.

Different models for different needs

Planmeca ProMax® 2D S3

The three-joint model (SCARA3) **Planmeca ProMax® 2D S3** has been designed for all imaging needs: panoramic, anatomically accurate extraoral bitewing, TMJ, sinus, and 2D tomography.

Planmeca ProMax® 2D S2

The two-joint model (SCARA2) **Planmeca ProMax® 2D S2** includes basic programs for panoramic, extraoral bitewing, TMJ, and sinus imaging.

Both models can be easily upgraded to 3D imaging.

Imaging programs

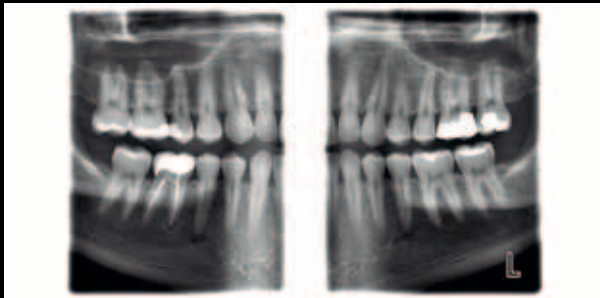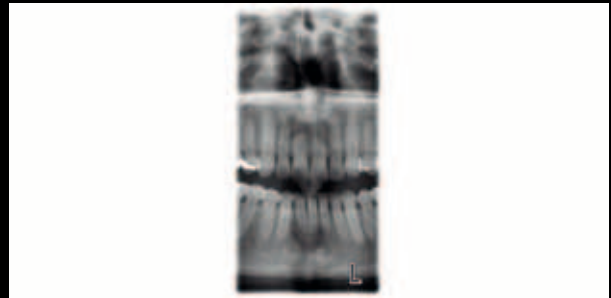|	Planmeca ProMax 2D S3	Planmeca ProMax 2D S2
Standard: Basic panoramic programs	Standard panoramic Lateral TMJ (closed & open) PA TMJ (closed & open) PA sinus	Standard panoramic Lateral TMJ (closed & open) PA TMJ (closed & open) PA sinus
Standard	Child (Pedo) mode for each standard and optional program to reduce the dose	
Standard	Horizontal and vertical segmenting for panoramic program	Horizontal and vertical segmentation for panoramic program
Standard	True Bitewing	Bitewing
Standard: Advanced panoramic programs	Interproximal panoramic Orthogonal (perio) panoramic Lateral-PA TMJ Lateral multiangle TMJ PA multiangle TMJ PA linear sinus Lateral sinus	
Optional: Tomography programs	Digital linear tomography and Transtomography in digital unit True linear tomography or Linear tomography in film unit	

All the imaging programs

Standard Panoramic
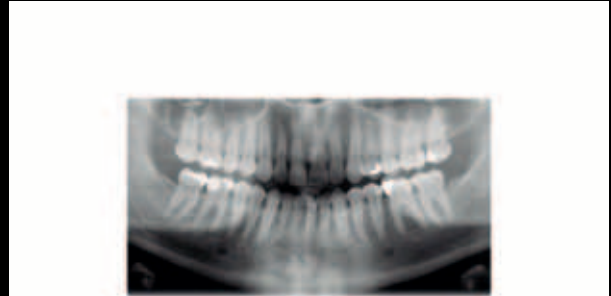
Horizontal and vertical segmentation

Anatomically Accurate Extraoral Bitewing

Horizontal and vertical segmentation

*Our **Planmeca ProMax**® X-ray unit offers the widest variety of imaging programs available to meet any clinical needs.*
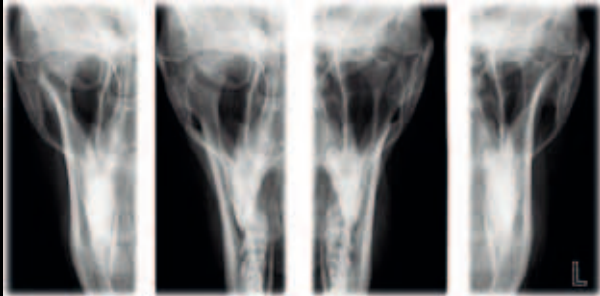
Panoramic imaging

In addition to the Standard panoramic program, the ProMax offers:

- Interproximal panoramic program, which generates an image where interproximal teeth contacts are open. Primarily used for caries detection.

- Orthogonal panoramic program, which produces an image with clearly visible alveolar crest for improved diagnostics. Ideal for periodontal imaging and implant planning.
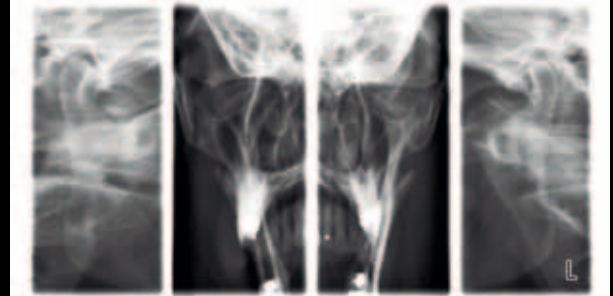
Extraoral bitewings

The Bitewing program uses improved interproximal angulation geometry. The result is a bitewing image pair with low patient dose and excellent diagnostic quality.
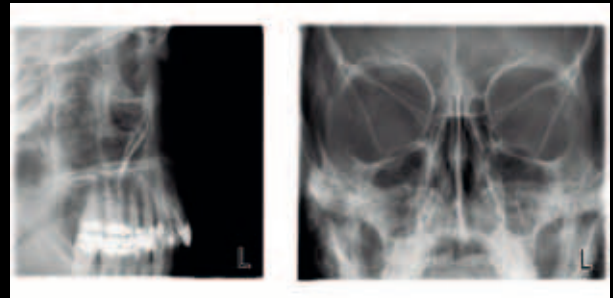
you need

PA TMJ (closed & open)

Lateral-PA TMJ

Lateral TMJ (closed & open)

Lateral sinus and PA linear sinus

Horizontal and vertical segmentation for panoramic imaging

With horizontal and vertical segmentation, exposure can be strictly limited to the diagnostic region of interest. Patient dosage is reduced by up to 90% compared to a full panoramic exposure.

TMJ imaging

The TMJ imaging programs produce lateral or posteroanterior views of open or closed temporomandibular joints. The imaging angle and position can be adjusted to correspond to the anatomy of each individual patient.

The Lateral-PA TMJ program captures lateral and PA views on the same radiograph. Multi-angle TMJ programs produce radiographs with images from three different angles, from either the lateral or PA view.

Sinus imaging

The Sinus programs provide a clear view of the maxillary sinuses.

Child mode for a lower dose

Child mode reduces the patient dose for all programs by reducing the imaging area and exposure values.
The focal layer can also be narrowed in the panoramic program.

Planmeca ProMax® 2D

Extraoral bitewings

What if you could do all your routine diagnostic imaging extraorally?

Planmeca ProMax® extraoral bitewings are ideal for periodontics, elderly and child patients, patients with a strong gag reflex, patients with special needs, and patients in pain. Extraoral bitewings enhance clinical efficiency and take less time and effort than conventional intraoral bitewing imaging.

### What are the advantages of extraoral bitewings?

- Ideal for all patients – no sensor positioning required
- Consistently opens interproximal contacts for better diagnostic value
- Captures a larger diagnostic area than in intraoral modalities
- More clinical data: canine to third molar
- Enhanced clinical efficiency – takes less time and effort than conventional intraoral bitewings
- Enhanced patient experience and comfort – eliminates gagging
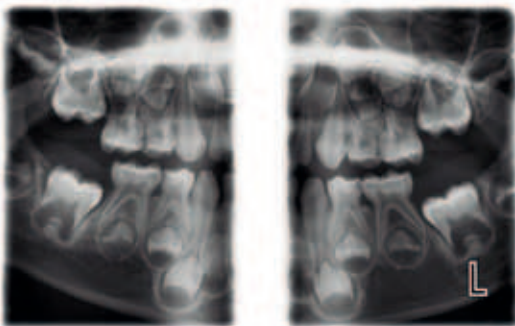
Better diagnostic value with extraoral bitewings
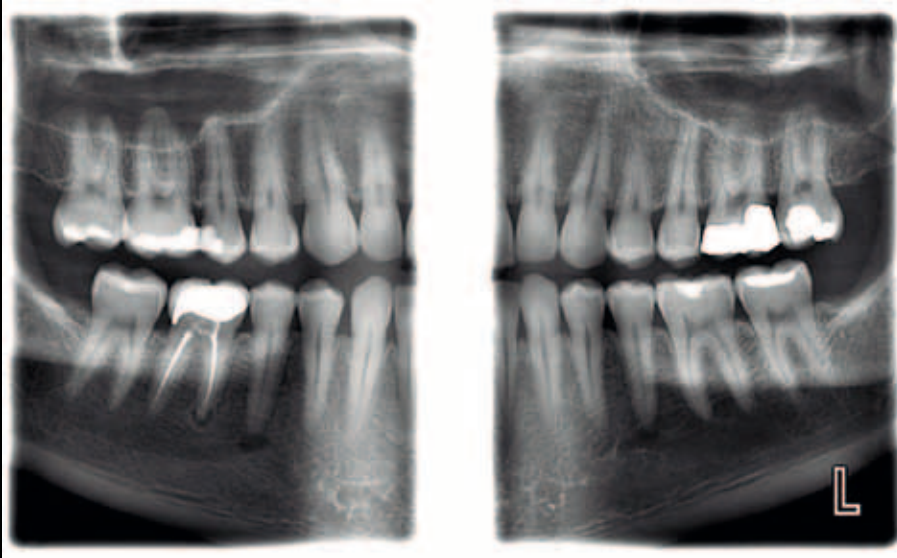
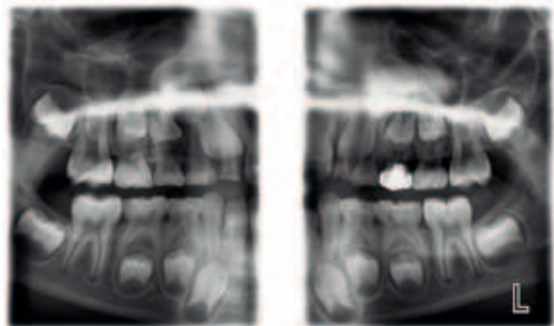**Anatomically Accurate Extraoral Bitewing Program, adult**
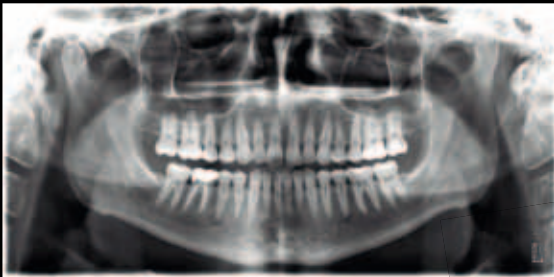
**Standard panoramic image
(Same patient as the bitewing above)**

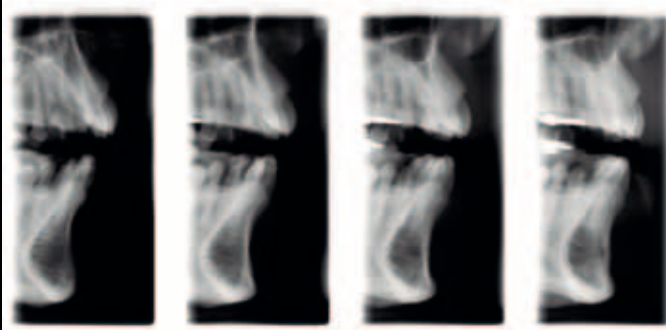Anatomically Accurate Extraoral Bitewings possible only with SCARA3 technology

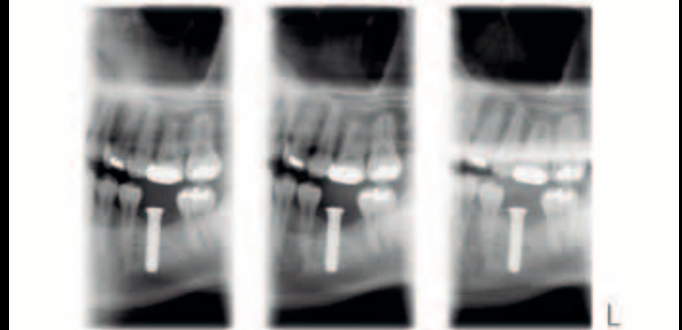Anatomically Accurate Extraoral Bitewing Program, 5-year-old child

Anatomically Accurate Extraoral Bitewing Program, 8-year-old child

New opportunities for

Cross-sectional tomography

Longitudinal tomography
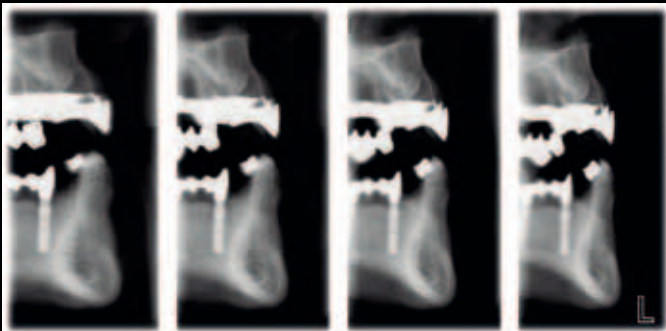
Cross-sectional tomography
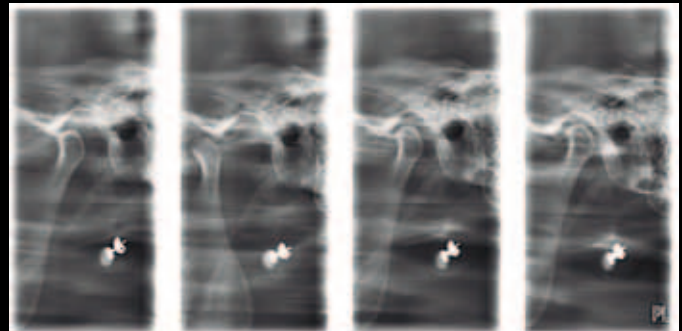
Longitudinal tomography

Planmeca ProMax® 2D tomography programs provide accurate tomographic information for the analysis, planning, and follow-up of implant and surgical procedures.

Valuable tools for implantology

The **Planmeca ProMax®** tomography system produces clear tomographic slices of any part of the maxilla, mandible, or temporomandibular joints. The cross-sectional or longitudinal tomographs can be adjusted to any specific angle, and the constant 1.5x magnification factor and combination programs enable accurate measurements.

tomography
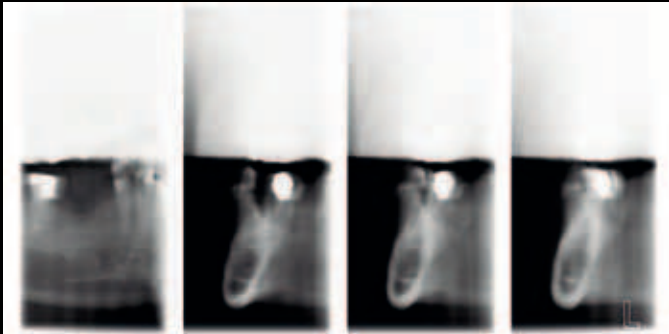
Combined tomography

Combined tomography

Combined tomography

Combined tomography

Accurate automated tomography

The position and angle of the tomographic exposure is automatically pre-adjusted according to program and target selection. An impression model of the patient's dental arch can be used for easy and reliable fine-alignment, which can then be carried out practically and intuitively using the positioning joystick. The dual laser beams indicate the exact site and orientation of the tomographic cut.
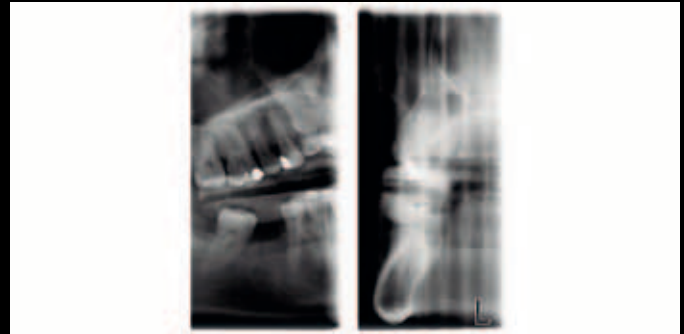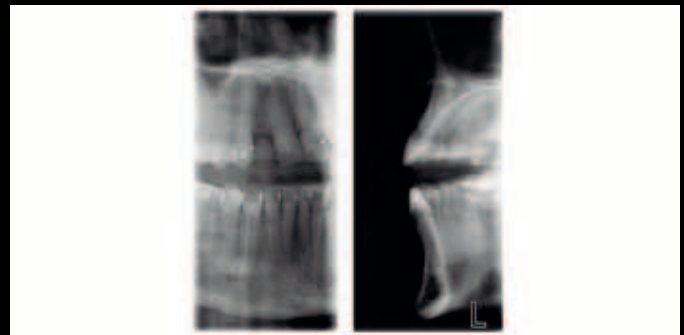
Ingenious Transtomography®

The digital tomography option in Planmeca ProMax offers two imaging systems: digital linear tomography and **Transtomography**®.

Our ingenious patented Transtomography system provides easier patient positioning and enhances the diagnostic value of the image. It uses a multiple-swing method to produce a linear tomography effect with a narrow X-ray beam.

Combined, cross-sectional and longitudinal tomography

The tomography programs include a wide range of manual and automatic cross-sectional and longitudinal imaging programs and their combinations.

Combined tomography is highly valuable in implant planning for integrating cross-sectional and longitudinal views on the same radiograph. Both transversal and longitudinal views show the same position in two perpendicular projections, giving three-dimensional information on the target with the same magnification.

Planmeca ProMax® 2D

Quality cephalometry for

We offer exceptional equipment and the most advanced software for all your orthodontic needs.

Cephalometric imaging with Planmeca ProMax® units

- The functional and easy-to-use head positioner ensures accurate positioning for all cephalometric projections

- The carbon fiber ear posts and nasal positioner are extremely stable, hygienic, and transparent to radiation

Easier and more accurate than ever before

orthodontics

Planmeca ProMax® cephalostat

- Digital cephalostat that scans your patient's head horizontally using a narrow X-ray beam with an extremely low effective dose of radiation

- Exceptional flexibility in image formats, with field sizes of up to 30 x 27 cm

Planmeca ProMax® 2D

Easy upgrades from

2D to 3D

Planmeca ProMax® – Own the future

Planmeca ProMax® 2D is designed with upgradeability in mind. The unit's modular structure allows easy conversion to different imaging modalities, while software-driven SCARA technology is extremely flexible, allowing you to upgrade without purchasing a new unit.

Individual options can be installed before delivery or added later, making Planmeca ProMax the most versatile all-in-one X-ray unit available.

2D unit
Planmeca ProMax 2D S3

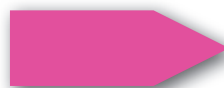**3D unit**
Planmeca ProMax 3D s

3D unit
Planmeca ProMax 3D

2D unit
Planmeca ProMax 2D S2

3D unit
Planmeca ProMax 3D s

3D unit
Planmeca ProMax 3D

Extraoral imaging

Planmeca ProOne®

PLANMECA

***Planmeca ProOne**® is our fully-featured panoramic X-ray, designed with simplicity in mind. Featuring cutting-edge innovations, Planmeca ProOne combines extensive diagnostic capabilities and superior image quality in a compact, easy-to-use unit.*

Easy patient positioning

Open patient positioning and side entry minimize errors caused by incorrect patient position allowing you to monitor the patient freely from both the front and side. Side entry allows easy access for all patients – standing or seated. Patient positioning is assisted by our triple laser beam system, which indicates correct anatomical positioning points.

User interface provides guidance

The full-color graphical user interface provides clear text and symbols to guide you through your procedure. Settings are intuitively grouped and easy to understand, speeding up imaging and allowing you to focus on communicating with your patient and positioning them correctly.

Autofocus – for perfect panoramics every time

The unique **Autofocus** feature automatically positions the focal layer using a low-dose scout image of the patient's central incisors. Landmarks in the patient's anatomy are used to calculate placement, enabling practically error-free patient positioning and dramatically reducing the need for retakes. The result is the perfect panoramic image, every time.

Optimal imaging programs
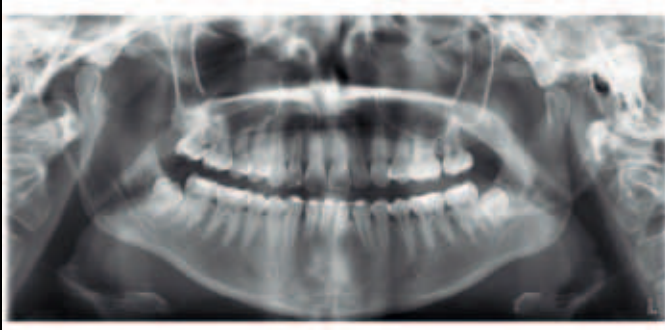
Standard panoramic

Bitewing
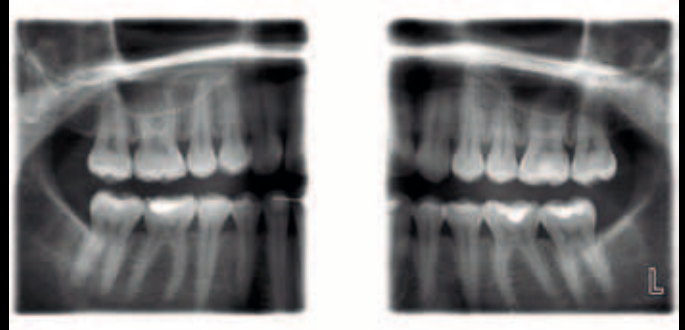

Horizontal and vertical segmenting for panoramic program
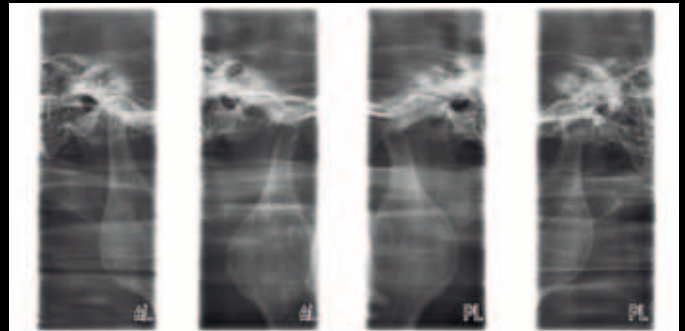
Lateral TMJ

Planmeca ProOne® offers a wide variety of imaging programs with selectable exposure formats to minimize radiation based on diagnostic need.
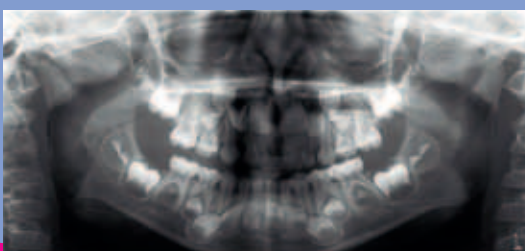
Child mode for optimal pediatric imaging

In child mode, the imaging area and exposure values are reduced in all programs. The focal layer can also be narrowed in the panoramic program for a significantly lower dose.
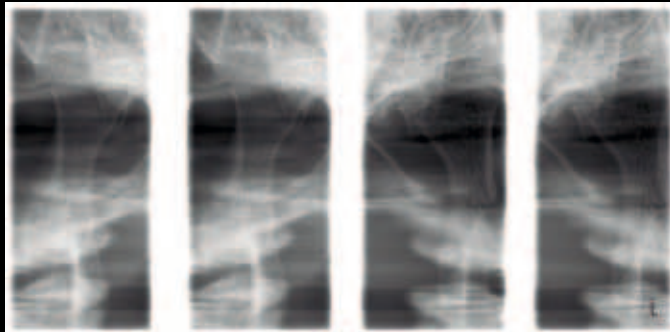
PA TMJ
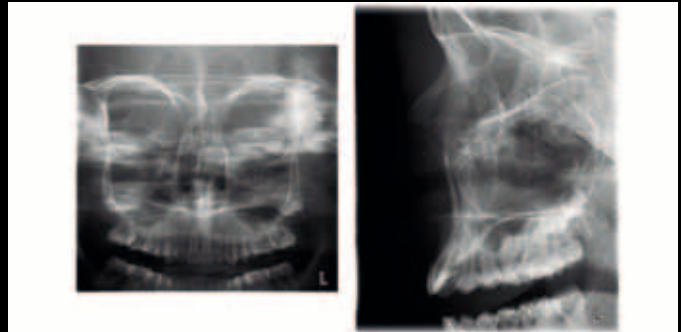
PA Sinus and Lateral Non-Rotational Sinus
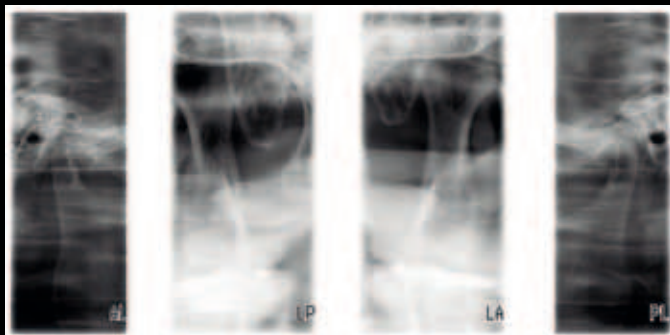
Lateral-PA TMJ
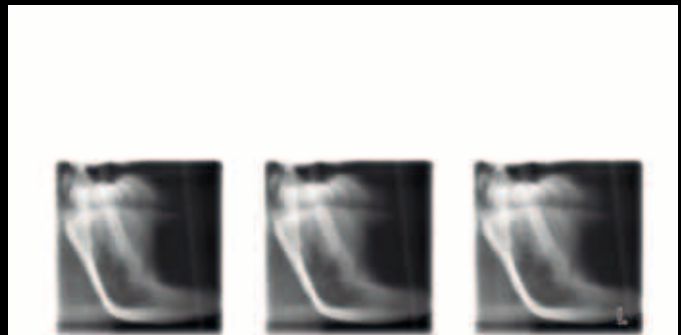
Cross-sections

Imaging programs

Basic panoramic programs	Standard panoramic
	Lateral TMJ
	PA TMJ
	PA Sinus
	Horizontal and vertical segmentation for panoramic program
	Bitewing
	Child (pediatric) mode for each program to reduce the dose
Advanced panoramic programs	Interproximal panoramic
	Orthogonal (perio) panoramic
	Lateral-PA TMJ
	Lateral multiangle TMJ
	Lateral non rotational sinus
	Cross-sections

Planmeca Romexis®
software for all images

Industry-leading imaging software
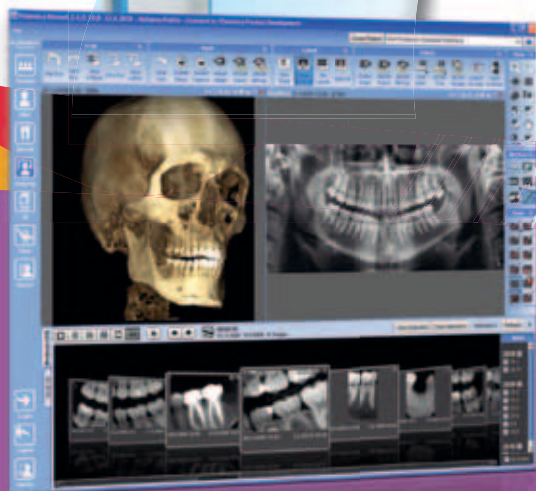
Planmeca Romexis® is an advanced, easy-to-use software suite providing tools to meet the imaging requirements set by any dental facility, from small clinics to large hospitals. It supports the most versatile range of 2D and 3D imaging modalities.

Mac OS
and Windows
compatible

High-performance

Planmeca Romexis® software offers versatile tools for viewing, enhancing, and processing 2D images. Diagnose images using a full range of enhancement tools – or view them from anywhere with our mobile app.
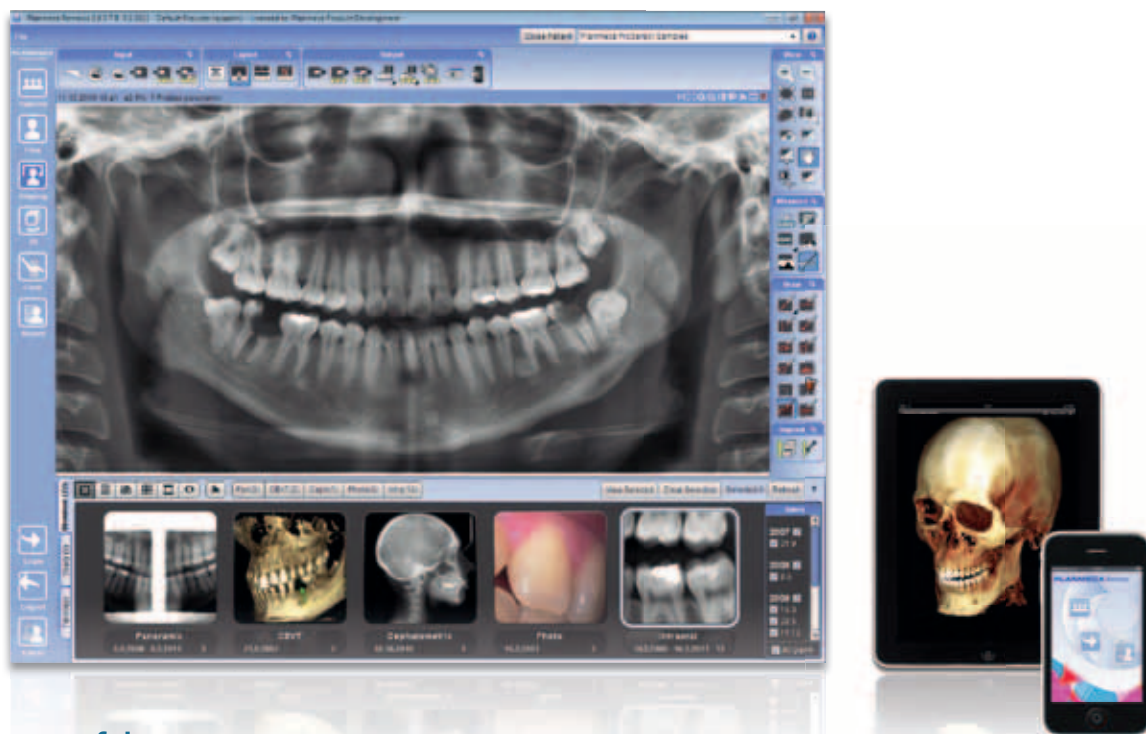
Easy and powerful

Planmeca Romexis® is the software of choice for viewing and processing 2D images from Planmeca X-ray units. Powerful enhancement and analysis tools provide the ability to accurately diagnose, while the intuitive interface allows confident, comfortable use from day one.

Sharing the results

Cases can be seamlessly transferred to mobile devices or partner clinics that use Planmeca Romexis or the free **Planmeca Romexis® Viewer**. Integration with other systems allows you to freely use third-party products. TWAIN support and DICOM standard compliance ensure that the software can be used together with most systems.

Free Planmeca Romexis® Viewer application

No installation required
Mac OS and Windows support
Distribute to specialists or patients

2D imaging

Integrated document management

The printing module with multi-page support is ideal for creating professional, high-quality printouts and radiology reports to be sent to referring dentists.

Documents of any type can be attached to patient files, providing a convenient storage for cephalometric tracing reports, referral letters and other information.
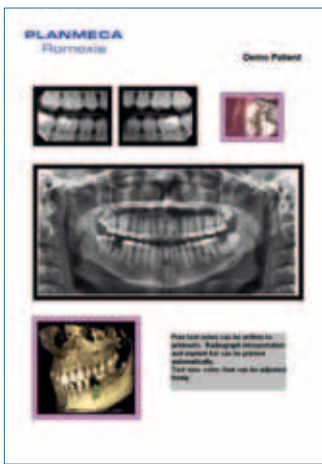
Advanced implant planning

Planmeca Romexis provides powerful tools for implant planning, including realistic implant models from over 30 manufacturers.
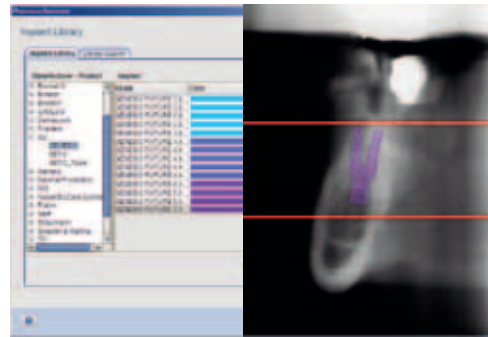
Planmeca Romexis®

Your mobile world of imaging

Access your images from anywhere in the world with our advanced mobile application. Consult your colleagues and communicate with your patients easily – wherever you are.

Planmeca iRomexis™

Planmeca iRomexis™ is a mobile companion application for the **Planmeca Romexis®** imaging software. It is specially designed for iPhone and iPad to view 2D and 3D images, 3D models, and **Planmeca ProFace®** images.

View all images taken with your Planmeca X-ray unit and communicate with your patients. Carry images on your mobile device and discuss with other professionals wherever you go.

The application can be downloaded for free from the App Store.

Available on the
App Store

Planmeca iRomexis™

PLANMECA
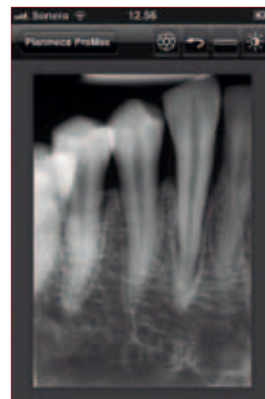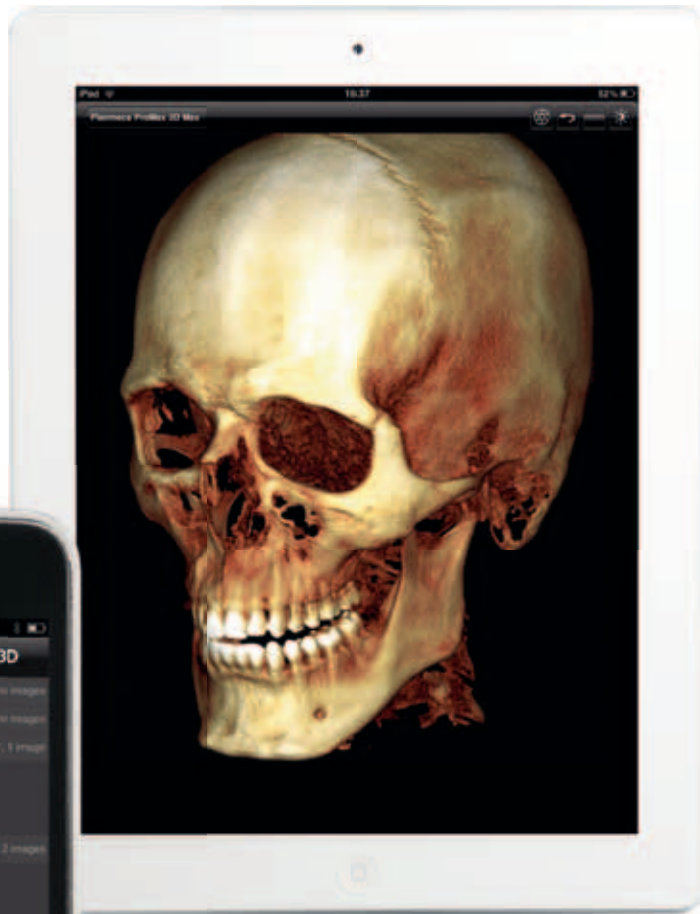
Planmeca Romexis®

Share images
and expertise online

Planmeca Romexis® user

- Radiology center
- General practice

Advantages

- Seamlessly integrated into
  Planmeca Romexis® ensuring an
  efficient workflow – no need for
  external applications or CDs and DVDs

- Automatic delivery of images
  and attachments

- Automatic notification to recipient
  of new cases

- Cases can be sent to any recipient who
  has an e-mail account

- Secure transfer and storage of
  information

- Streamline your communication with
  Planmeca Romexis® Cloud

Features

Sending images to recipient

- 2D images: panoramic, cephalometric,
  photos, intraoral X-ray images

- 3D images: CBCT, 3D photos, surface scans

- All annotations and other elements
  are included

Sending documents to recipient

- Attach one or more referrals, reports,
  or other documents

Planmeca Romexis® Cloud is an advanced image transfer service exclusive to *Planmeca Romexis®* users. Now you can share images and expertise securely with all partners who use Planmeca Romexis, the free *Planmeca Romexis® Viewer,* or the *Planmeca iRomexis™* mobile application.

Planmeca Romexis® Cloud

IMAGE
REFERRAL
INTERPRETATION

Anybody, anywhere

- General practitioner
- Colleague
- Radiologist
- Specialist
- Dental lab
- Patient

Versatile possibilites for communication

Recipients can download and view images for free using:

- Planmeca Romexis
- Free **Planmeca® Romexis Viewer**
- Free **Planmeca iRomexis™** iOS application on iPad and iPhone

Planmeca Romexis® software and Planmeca Romexis® Cloud subscription are required for sending new cases. Visit http://online.planmeca.com/ to subscribe and start sending images now.

Technical specifications

**Dimensions for unit
with digital cephalostat**

1298–2123 (51.1–83.5")

1560–2385 (61.4–93.8")

1250 (49.2")

S2: 1170 (46.1")

S3: 1145 (45.1")

S3: 850 (33.5")

270 (10.6")

150 (5.9")

S2: 698 (27.5")

777 (30.6")

1250 (49.2")

Ø820 (32.3")
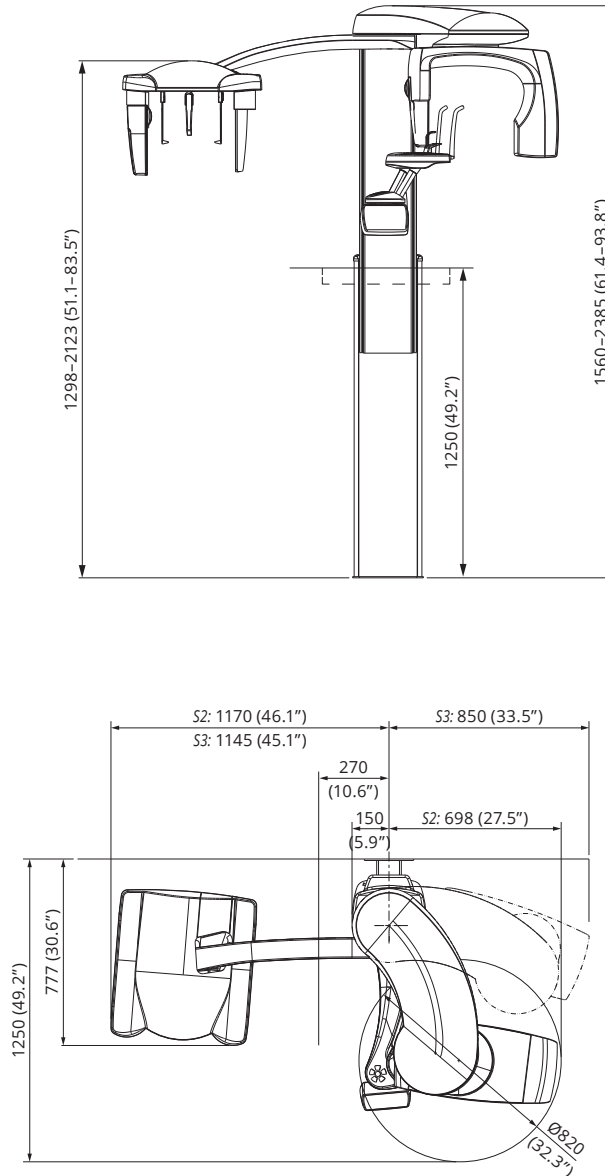
Physical space requirements   Minimum operational space requirements

	Planmeca ProMax 2D	Planmeca ProMax 2D with cephalostat	Planmeca ProMax 2D	Planmeca ProMax 2D with cephalostat
Width	96 cm (38 in.)	194 cm (76 in.)	150 cm (59 in.)	215 cm (85 in.)
Depth	125 cm (49 in.)	125 cm (49 in.)	163 cm (64 in.)	163 cm (64 in.)
Height*	153–243 cm (60–96 in.)	153–243 cm (60–96 in.)	243 cm (96 in.)	243 cm (96 in.)
Weight	113 kg (lbs 248)	128 kg (lbs 282)		

*The maximum height of the unit can be adjusted for offices with limited ceiling space.

Technical data

Generator	Constant potential, resonance mode high frequency 80–150 kHz	
X-ray tube	D-054SB-P	
Focal spot size	0.5 x 0.5 mm (IEC 336)	
Total filtration	min. 2.5 mm Al equivalent	
Anode voltage	50–84 kV	
Anode current	0.5–16 mA DC	
Exposure time	Pan	2.7–16 s
	Ceph	0.2–19 s
	Tomo	3–24 s / frame
SID	Pan	500 mm (19 in.)
	Ceph	163–170 cm (64–67 in.)
Magnification	Pan	constant 1.2
	Ceph	1.08–1.13
CCD pixel size	48 µm	
Image pixel size	48/96/144 µm selectable	
CCD active surface	Pan	6 x 147 mm
	Ceph	6 x 295 mm
Resolution (digital)	Pan	max. 9 lp/mm
	Ceph	max. 5.7 lp/mm
Image field (digital)	Pan	14 x 30 cm (5.5 x 12 in.)
	Ceph	24/27 x 18/30 cm (9/10.6 x 7/11.8 in.)
File size, uncompressed (digital)	Pan	4–33 MB
	Ceph	7–16 MB
Line voltage	100–240 V, 50 or 60 Hz	
Regulation	Automatic, ±10 %	
Line current	8–16 A	
Color	White (RAL 9016)	

Imaging programs

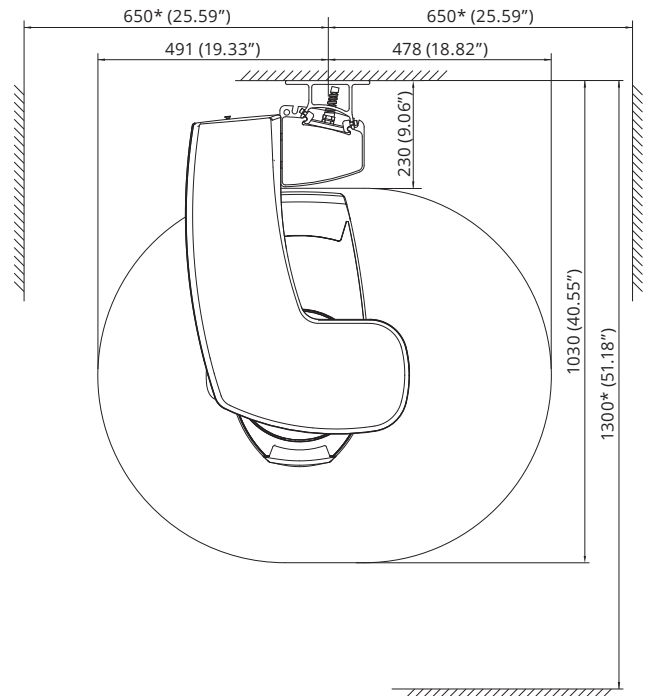|	Planmeca ProMax 2D S3	Planmeca ProMax 2D S2
Standard: Basic panoramic programs	Standard panoramic	Standard panoramic
	Lateral TMJ (closed & open)	Lateral TMJ (closed & open)
	PA TMJ (closed & open)	PA TMJ (closed & open)
	PA sinus	PA sinus
Standard	Child (pediatric) mode for each standard and optional program to reduce the dose	
Standard	Horizontal and vertical segmenting for panoramic program	Horizontal and vertical segmenting for panoramic program
Standard	True Bitewing	Bitewing
Standard: Advanced panoramic programs	Interproximal panoramic	
	Orthogonal (perio) panoramic	
	Lateral-PA TMJ	
	Lateral multiangle TMJ	
	PA multiangle TMJ	
	PA linear sinus	
	Lateral sinus	
Optional: Tomography programs	Digital linear tomography and Transtomography in digital unit	
	True linear tomography or Linear tomography in film unit	

Stand out with color

Pink

Sky

Sun

Lime

Steel

Planmeca ProOne®
Technical specifications

Technical data

Generator	Constant potential, resonance mode high frequency 60–80 kHz
X-ray tube	D-058SBR
Focal spot size	0.5 x 0.5 mm (IEC 336)
SID	480 mm (19 in.)
Total filtration	min. 2.5 mm Al eq.
Anode voltage	60–70 kV
Anode current	2–7 mA DC
Exposure time	2–10 s
Magnification	1.22–1.29
Line voltage	100–132 V~ 50/60 Hz, 180–240 V~ 50 Hz
Regulation	±10 % (automatic)
Line current	8–16 A
Power uptake	max: 850 W
Chin rest level	95–178 cm (37.4–70 in.)
Colour	White (RAL 9016)
Weight	67 kg (148 lbs)

Imaging programs

Basic panoramic programs	Standard panoramic
	Lateral TMJ
	PA TMJ
	PA Sinus
	Horizontal and vertical segmentation for panoramic program
	Bitewing
	Child (pediatric) mode for each program to reduce the dose
Advanced panoramic programs	Interproximal panoramic
	Orthogonal (perio) panoramic
	Lateral-PA TMJ
	Lateral multiangle TMJ
	Lateral non rotational sinus
	Cross-sections

*Minimum operational space requirements

Width	Depth	Height
130 cm	130 cm	223 cm
51 in.	51 in.	88 in.

Dimensions

Planmeca Romexis®
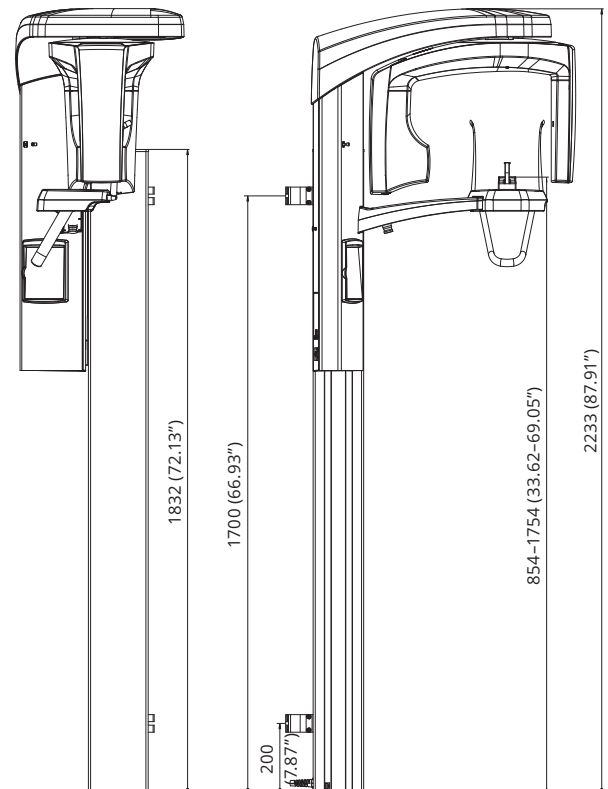
Technical specifications

Computer requirements

Supported 2D modalities	Intraoral Panoramic Cephalometric 2D linear tomography Photos Stack images (CBCT slices and panoramic slices)
Supported 3D modalities	3D CBCT 3D photo 3D surface scan
Supported photo sources	Intraoral camera Digital camera or scanner (import or TWAIN capture)
Operating systems	Win XP / Win Vista Pro/ Win 7/ Win 8 Win 2003 Server /Win 2008 Server Mac OS X* For detailed information please see system requirements of Planmeca Romexis www.planmeca.com *Cephalometric Analysis module and 3D Ortho Studio module are not supported on Mac OS.
Image formats	JPEG or TIFF (2D image) DICOM (2D and 3D image) STL (3D image) TIFF, JPEG, PNG, BMP (import/export)
Image size	2D X-ray image: 1–9 MB 3D X-ray image: typically 50 MB–1 GB
Installation options	Client–Server Java Web Start deployment
DICOM 3.0 support	DICOM Import/Export DICOM DIR Media Storage DICOM Print SCU DICOM Storage SCU DICOM Worklist SCU DICOM Query/Retrieve DICOM Storage Commitment DICOM MPPS
Interfaces	TWAIN Client PMBridge (patient information and images) VDDS (patient information and images) InfoCarrier (patient information) Datagate (patient and user information)
3rd party software integrations	Dolphin Imaging Nobel Clinician Materialise Dental Simplant Straumann coDiagnostiX Cybermed N-Liten

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