

# 2D Imaging



# Industry-leading 2D X-ray units

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

Mac and  
Windows  
compatible



Planmeca ProX™



Planmeca ProOne®

Planmeca ProSensor® HD



Planmeca ProMax® 2D

## 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 Robot Arm) technology guarantees an anatomically accurate imaging geometry for clear, error-free images
- Easy upgrades – add cephalostat or 3D imaging capability at any time

# Planmeca ProMax<sup>®</sup> 2D

*Planmeca ProMax<sup>®</sup> 2D is a complete maxillofacial imaging system. The design and operation principles are based on the latest scientific research, technological innovations and the most demanding needs of modern-day radiology.*



## Effortless use

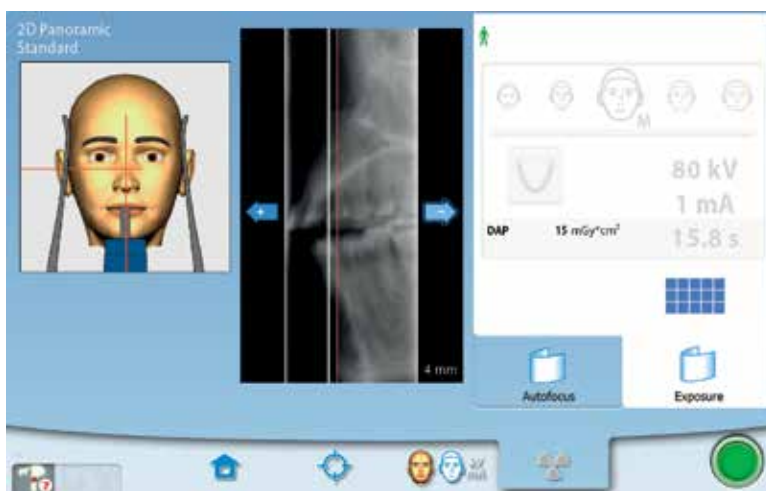
- Full-view patient positioning with triple-laser patient positioning lights
- Side entry for comfortable access
- Easy-to-use graphical interface
- Planmeca ProTouch™ Desktop for remote control panel operation on the imaging workstation
- Versatile Planmeca Romexis<sup>®</sup> 2D imaging software
- TWAIN support and full DICOM compliance



# Perfect panoramic images – every time

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

*The 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, enabling practically error-free patient positioning and dramatically reducing the need for retakes. The result is a perfect panoramic image.*



Our unique  
Autofocus for  
SCAR3 units



Positioning errors are now a thing of the past – with SCARA technology you can take a Planmeca Ultra Low Dose™ scout image of your patient's central incisors for a fast diagnostic panoramic image every time.

# Imaging programs you need

Our Planmeca ProMax® 2D X-ray system offers the widest variety of imaging programs available – easily meeting all your clinical needs.

## Panoramic imaging

In addition to the standard panoramic program, the following programs are offered:

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

## Horizontal and vertical segmenting for panoramic program

With the horizontal and vertical segmenting program, exposure can be strictly limited to the diagnostic region of interest. Patient dosage is reduced by up to 90% compared to 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. The multi-angle TMJ programs produce radiographs with images from three different angles, from either the lateral or PA view.

## Sinus imaging

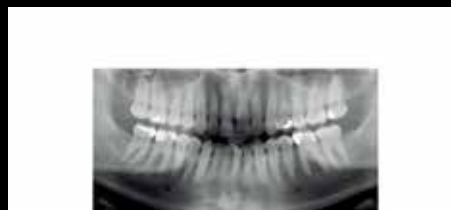
The sinus programs provide a clear view of the maxillary sinuses.

## Child mode for reduced dose

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



Standard Panoramic



Horizontal and vertical segmenting



Lateral sinus and PA linear sinus



True Bitewing



PA TMJ (closed & open)



Child mode

# Extraoral bitewings

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

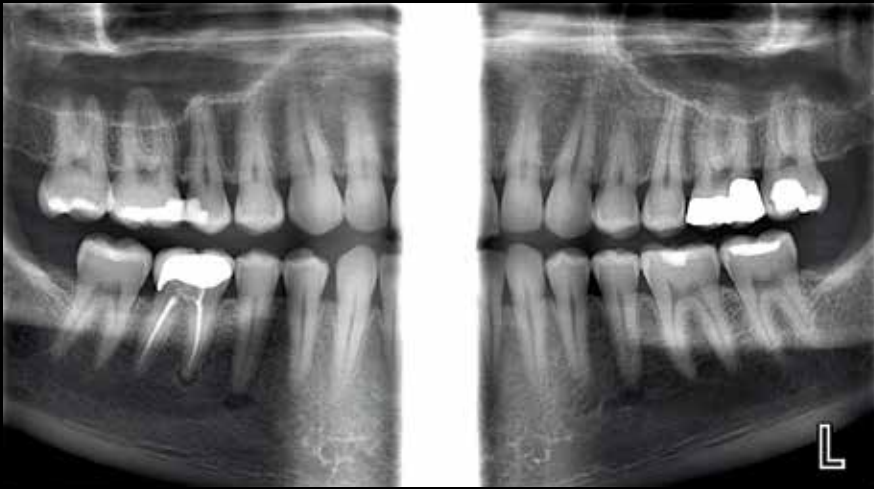
*Planmeca ProMax® extraoral bitewings are ideal for any practice. They provide greater diagnostic value, less radiation, and a more comfortable experience. Additionally, our extraoral bitewings are ideal for periodontics, elderly and child patients, claustrophobic patients, patients with a strong gag reflex, and patients in pain. Extraoral bitewings enhance clinical efficiency and take less time and effort than conventional intraoral bitewing imaging.*

**Better  
diagnostic value  
with extraoral  
bitewings**

### What are the advantages of extraoral bitewings?

- Ideal for all patients – no sensor positioning required
- Consistently opens interproximal contacts, giving better diagnostic value
- 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
- Half the radiation dose compared to conventional intraoral bitewings



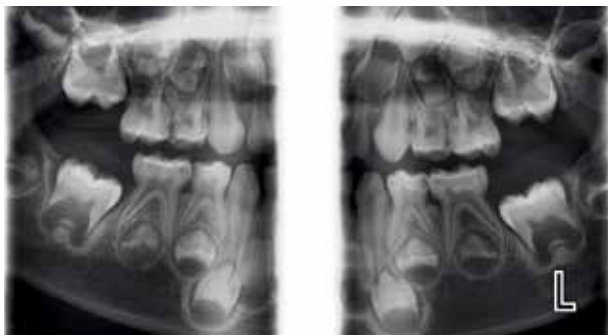


True Bitewing program, adult

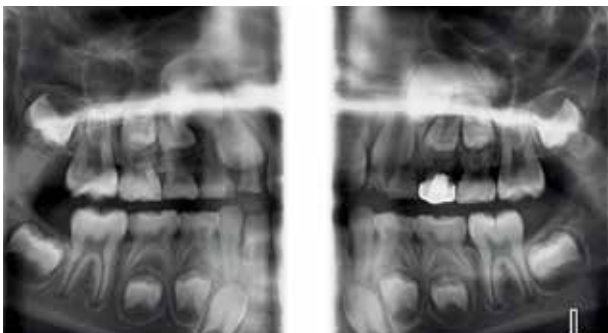
True bitewings  
only possible  
with our SCARA3  
technology



Standard panoramic image  
of the same patient as the bitewing above



True Bitewing program, 5-year-old child

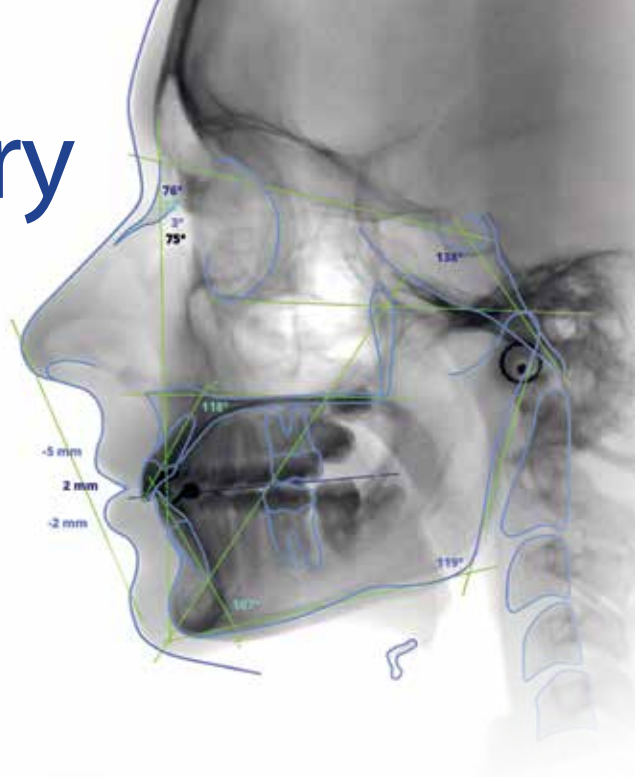


True Bitewing program, 8-year-old child



# Quality cephalometry for orthodontics

*Our exceptional equipment and advanced software have been designed to meet all your orthodontic needs.*



## Cephalometric imaging with Planmeca ProMax® systems

- The functional and easy-to-use head positioner ensures accurate positioning for all cephalometric projections
- The carbon fibre ear posts and nasal positioner are extremely stable, hygienic and transparent to radiation
- The unit automatically aligns itself to take cephalometric exposures and then selects a corresponding collimator
- Dedicated collimation options for pediatric imaging



## Two equipment options

### One-shot Planmeca ProCeph™ cephalostat

- Effective one-shot cephalostat
- Short exposure time – no motion artifacts, low patient dose
- Image sizes from 18 x 20 cm to 30 x 25 cm

### Scanning 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

**Easier and  
more accurate  
than ever before**



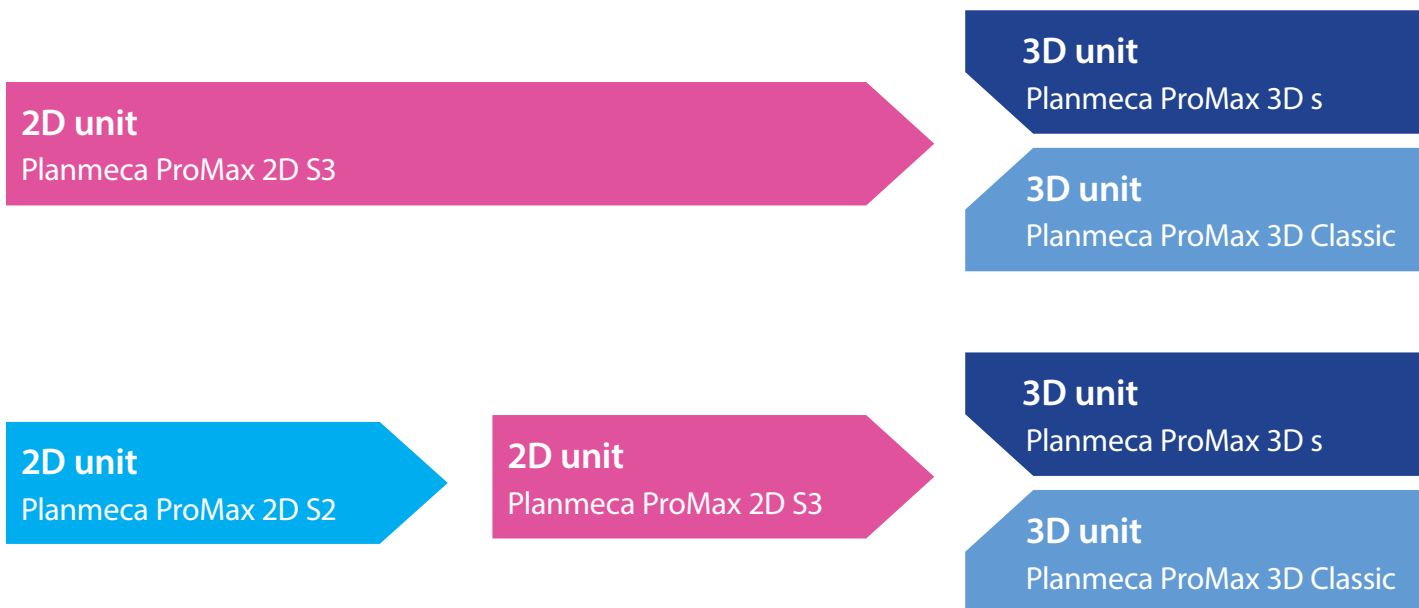
# Easy upgrade from 2D to 3D

## Planmeca ProMax® – future proof and a great investment

Planmeca ProMax® 2D is designed with upgradeability in mind. The unit's modular structure allows easy conversion to different imaging modalities, while the software-driven SCARA is extremely flexible, allowing you to benefit from new imaging projections.

Whether you're upgrading your 2D unit to 3D, or adding a cephalometric arm, Planmeca has the right solution for you.

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



Extraoral imaging

# Planmeca ProOne®

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



# Optimal imaging programs



Standard panoramic



Bitewing



Horizontal and vertical segmenting for panoramic program



Lateral TMJ

*Planmeca ProOne® offers you a wide variety of imaging programs for different radiographic needs. You can also select the correct exposure formats to minimize the radiation dose for all types of patients and diagnostic purposes.*



## Child mode for optimal pediatric imaging

In child mode, the imaging area and exposure values are reduced in all programs and also the focal layer can be narrowed in the panoramic program. The patient dose is reduced remarkably.



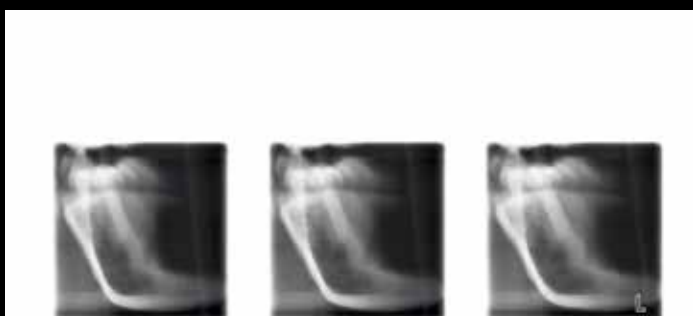
PA TMJ



PA Sinus and Lateral non rotational sinus



Lateral-PA TMJ



Cross-sections

### Imaging programs

<i>Standard:</i> Basic panoramic programs	Standard panoramic Lateral TMJ PA TMJ PA Sinus
<i>Standard</i>	Child (Pediatric) mode for each program to reduce the dose
<i>Optional</i>	Horizontal and vertical segmenting for panoramic program
<i>Optional</i>	Bitewing
<i>Optional:</i> Advanced panoramic programs	Interproximal panoramic Orthogonal (perio) panoramic Lateral-PA TMJ Lateral multiangle TMJ Lateral non rotational sinus Cross-sections Bitewing

# Planmeca ProX™

*The advanced Planmeca ProX™ system provides easy and precise positioning, a straightforward imaging process and top quality images in high resolution. Planmeca ProX is uniquely designed to make intraoral imaging easier and more reliable than ever.*

## The premium intraoral X-ray system

- Optimal images for all diagnostic needs: variable kV and mA
- Quick and easy-to-use, pre-programmed quick settings, practical design
- Digital-ready
- Integrated with Planmeca ProSensor® HD sensor system
- Smooth workflow with Planmeca Romexis®
- Versatile installation options



## Highly adaptable imaging

Planmeca ProX™ adapts to both short-cone and long-cone imaging techniques. For maximum radiation hygiene, an additional rectangular collimator can be adapted for the long cone.

The steady X-ray unit arm provides accurate and drift-free positioning of the lightweight tube head. The unit's flexible installation options mean it can accommodate a wide range of requirements and clinic layouts.

## Quick imaging parameter settings

Planmeca ProX comes pre-programmed with quick settings for different exposure value combinations. Imaging parameters are automatically retrieved according to the selected exposure region and the diagnostic need, and values can also be manually adjusted if necessary. Simply select the image receptor to automatically adapt the pre-programmed settings for film, imaging plate or digital sensors, allowing rapid transition to new imaging technologies without reprogramming.

## Faster X-ray examinations with digital sensor

Benefit from the ultimate in user-friendly intraoral imaging by combining Planmeca ProX with the Planmeca ProSensor HD digital sensor system. The image is displayed on the screen just seconds after exposure, significantly reducing the time needed for an intraoral X-ray examination compared to conventional film.



# Planmeca ProSensor® HD

Experience usability like never before

*Our innovative Planmeca ProSensor® HD intraoral sensor offers a unique combination of unparalleled image quality, high-end patient-centred design, and usability. It sets a new standard for intraoral dental imaging – ensuring successful results and a smooth workflow in all treatment situations.*

## Cutting-edge image quality

With a true resolution of over 20 lp/mm, Planmeca ProSensor® HD offers real HD image quality. Supporting detailed diagnosis, the advanced imaging sensor with a fibre-optic layer captures sharp, low-noise and high contrast images. The wide dynamic range of the sensor ensures successful results each and every time.

## Patient-centered design

To fulfill all intraoral imaging needs, Planmeca ProSensor HD is available in three different sizes. The rounded sensor edges make the procedure comfortable for patients and outstanding images are ready in a matter of seconds.

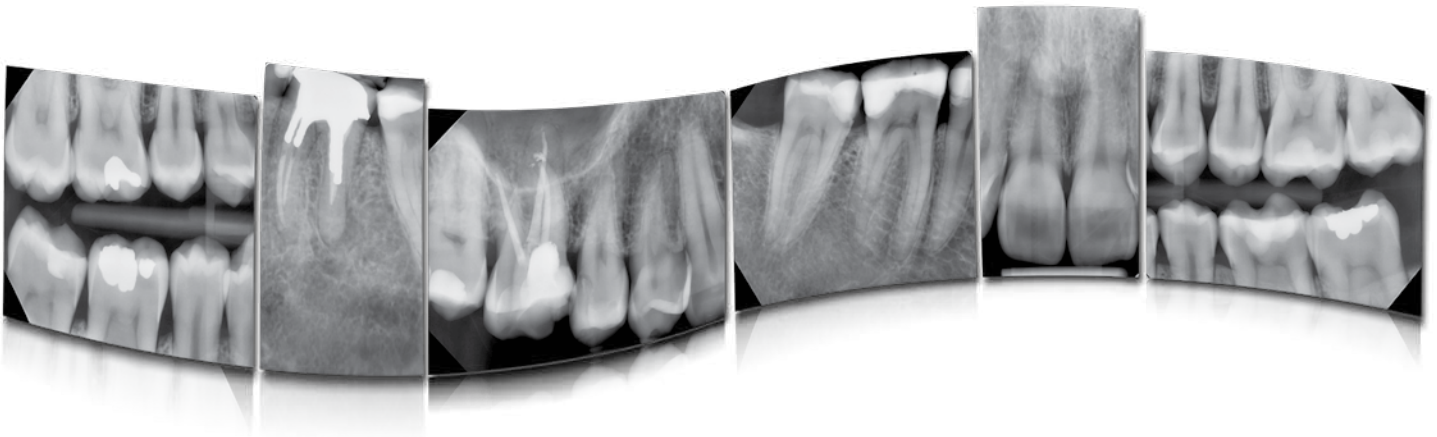
## Usability comes as a standard

Planmeca ProSensor HD is always easily at hand. It can be integrated into the Planmeca ProX™ intraoral X-ray unit, or connected to through Ethernet or a USB port. The sensor has a sophisticated magnetic connector that is easy to attach with only one hand, while the white sensor color enhances visibility to ease positioning. The elegant control box with a distinguished design is equipped with a color-coded LED light, providing instant visual feedback of the imaging procedure. Hermetically sealed housing ensures effective infection control.

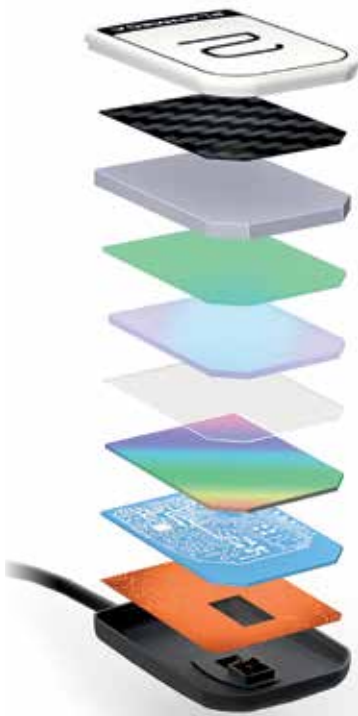
## Carefree choice

Planmeca ProSensor HD has been designed to last. For optimal endurance, the sensor cable has been reinforced and includes only two wires. Our special five-year warranty program ensures a safe investment for your practice.





## Each layer carefully designed – for perfect results



- White housing – enhanced visibility for easier positioning
- Carbon fiber plate – protection from bites and other external impacts
- Shock absorbing layer – protection against drops and shocks
- Scintillator – ensures sharp images with no blurring
- Fiber optic plate (FOP) – high signal-to-noise ratio (SNR) and modulation transfer function (MTF)
- Optical coupling – perfectly optimized and controlled, for a vivid image throughout the image area
- CMOS image sensor – HD class camera
- LTCC electronics – a robust sensor
- Back scattering shield – reliable patient protection and sharper images
- Cable – premium durability with Kevlar coating and only two wires

### Planmeca ProSensor® HD in a nutshell

- True resolution of over 20 lp/mm
- Sharp and low-noise images with high contrast
- Wide dynamic range
- Three sensor sizes with rounded edges
- Magnetic connector for ease of use
- Color-coded LED light on control box for instant visual feedback
- Hermetically sealed housing ensures effective infection control
- Integration with the Planmeca ProX™ X-ray unit
- Fully compatible with Windows and Mac
- Plug and play USB version
- Five-year warranty program – full three-year warranty + two-year warranty with 10% off of the valid net price

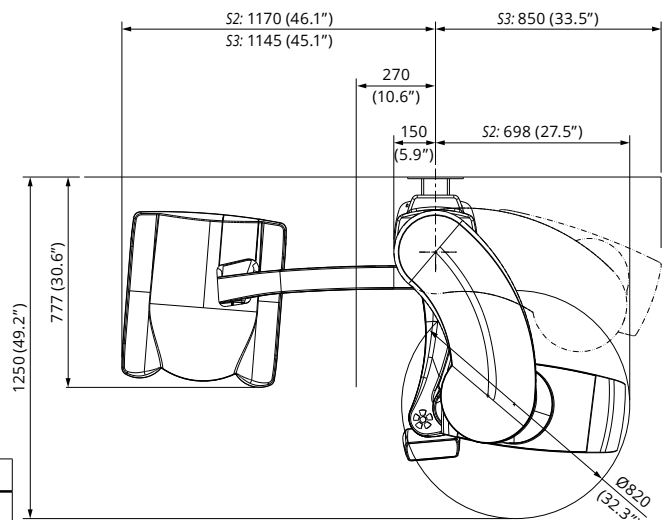
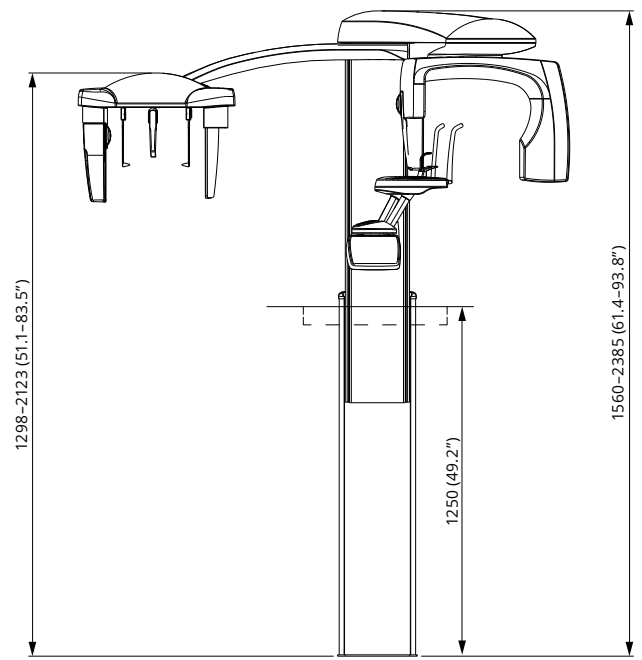
# Planmeca ProMax® 2D

## Technical specifications

### Dimensions

### 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
	Scanning ceph	6.4–9.9 s
	ProCeph	0.1–0.8 s
	Tomo	3 s / frame
SID	Pan	500 mm (19 in.)
	Ceph	170 cm (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	100–120 V, 50 or 60 Hz	
Regulation	Automatic, ±10 %	
Line current	8–16 A	
Colour	White (RAL 9016)	



### Imaging programs

	Planmeca ProMax 2D S3	Planmeca ProMax 2D S2
<i>Standard:</i> 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
<i>Standard</i>	Child (Paediatric) mode for each standard and optional program to reduce the dose	Child (Paediatric) mode for each standard and optional program to reduce the dose
<i>Optional</i>	Horizontal and vertical segmenting for panoramic program	Horizontal and vertical segmenting for panoramic program
<i>Optional</i>	True Bitewing	Bitewing
<i>Optional:</i> Advanced panoramic programs	Interproximal panoramic Orthogonal (perio) panoramic Lateral-PA TMJ Lateral multiangle TMJ PA multiangle TMJ PA linear sinus Lateral sinus	
<i>Optional:</i> Tomography programs	Digital linear tomography	

### Physical space requirements

	Planmeca ProMax 2D	Planmeca ProMax 2D with cephalostat
Width	96 cm (38 in.)	194 cm (76 in.)
Depth	125 cm (49.2 in.)	125 cm (49 in.)
Height*	153–243 cm (60–96 in.)	153–243 cm (60–96 in.)
Weight	113 kg (lbs 248)	128 kg (lbs 282)

### Minimum operational space requirements

	Planmeca ProMax 2D	Planmeca ProMax 2D with cephalostat
Width	150 cm (59 in.)	215 cm (85 in.)
Depth	163 cm (64 in.)	163 cm (64 in.)
Height*	243 cm (96 in.)	243 cm (96 in.)

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



# 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
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)

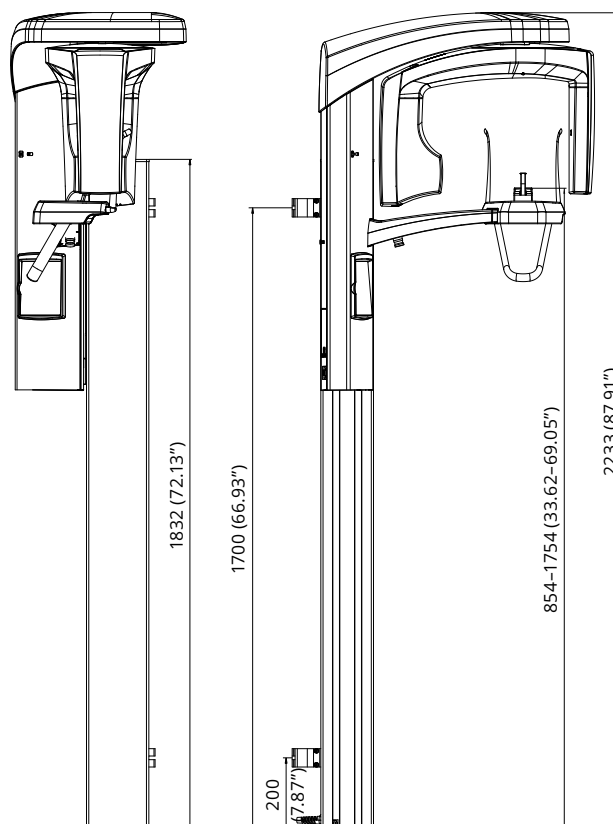
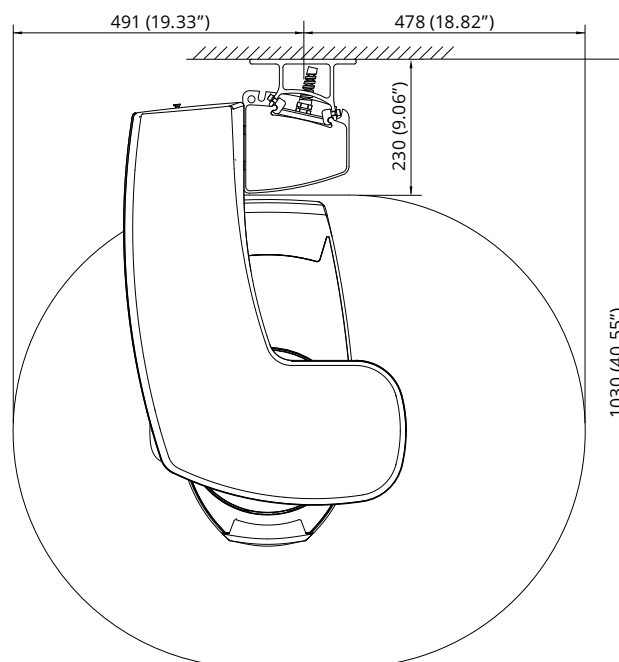
### Imaging programs

<i>Standard:</i> Basic panoramic programs	Standard panoramic Lateral TMJ PA TMJ PA Sinus
<i>Standard</i>	Child (Paediatric) mode for each program to reduce the dose
<i>Optional</i>	Horizontal and vertical segmenting for panoramic program
<i>Optional</i>	Bitewing
<i>Optional:</i> Advanced panoramic programs	Interproximal panoramic Orthogonal (perio) panoramic Lateral-PA TMJ Lateral multiangle TMJ Lateral non rotational sinus Cross-sections Bitewing

### Physical space requirements

Width	Depth	Height
97 cm	103 cm	223 cm
38 in.	41 in.	88 in.

### Dimensions



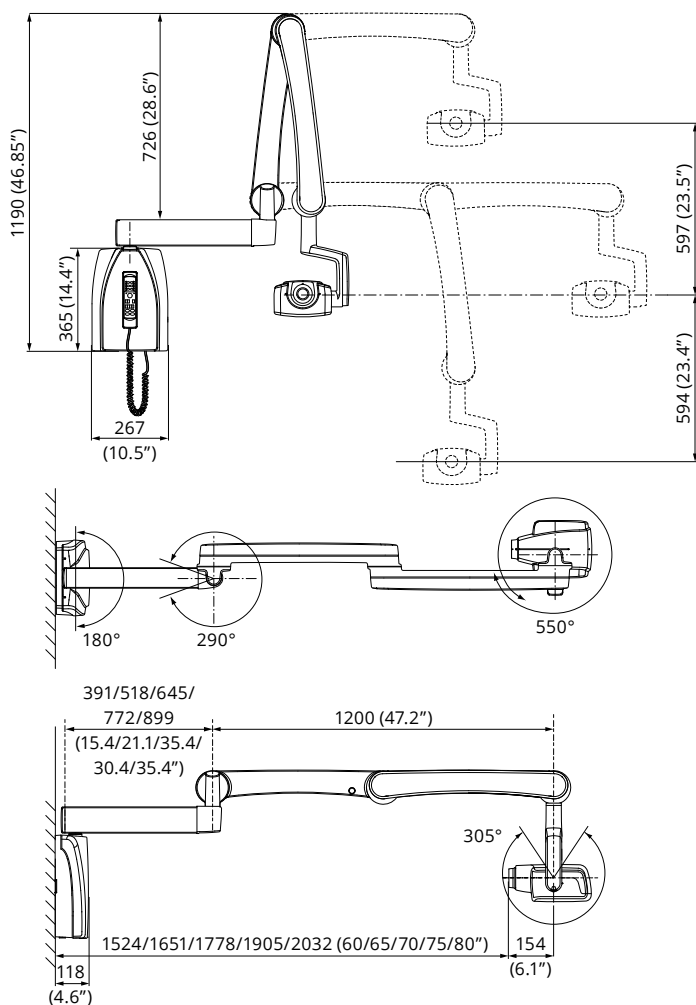
# Planmeca ProX™

## Technical specifications

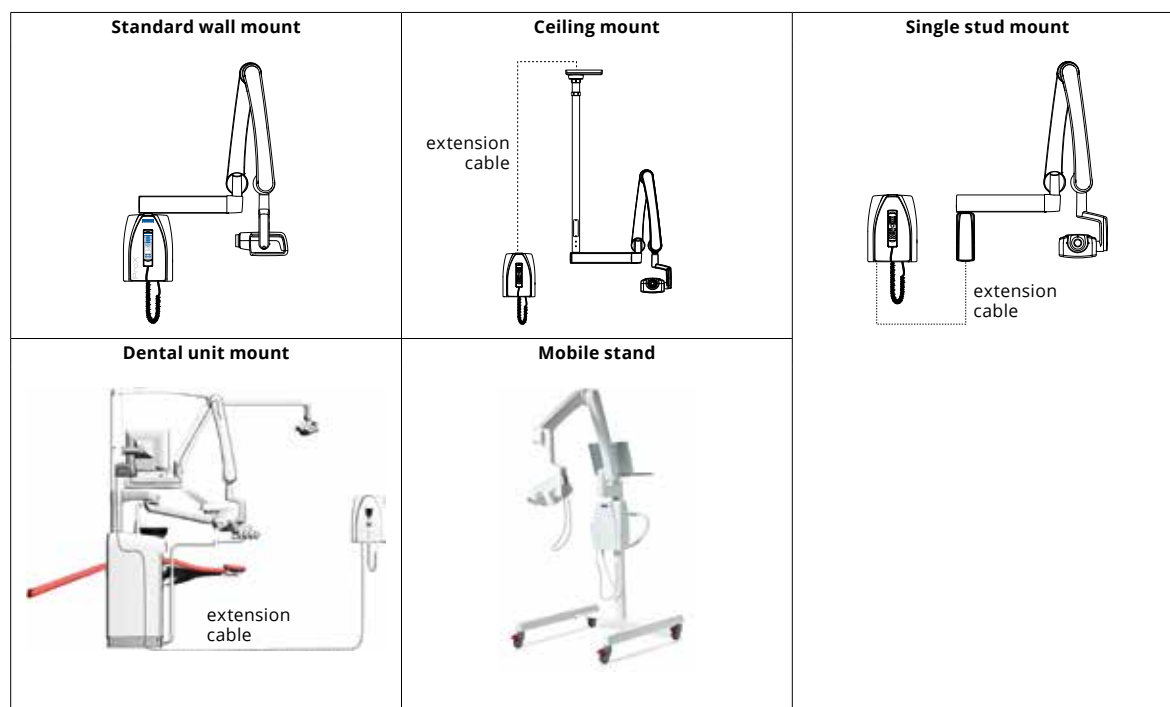
### Technical data

Generator	Constant potential, microprocessor controlled, operating frequency 66 kHz
X-ray tube	Toshiba D-041SB
Focal spot size	0.4 mm according to IEC 60336
Cone diameter	60 mm (2.36 in.) Rectangular 36 x 45 mm (1.42 x 1.77 in.)
Max. symmetrical radiation field	Ø60 mm at SSD 200 mm Ø60 mm at SSD 300 mm according to IEC 806
Total filtration	min. 2.5 mm Al equivalent at 70 kV according to IEC 60522
Inherent filtration	1 mm Al equivalent at 70 kV according to IEC 60522
Anode voltage	60, 63, 66, 70 kV
Anode current	8, 7, 6, 5, 4, 3, 2 mA
Exposure times	0.01-2 sec., 24 steps
SSD (Source-Skin Distance) Standard/Long	200 mm (8 in.)/300 mm (12 in.)
Mains voltage	110-115 V~/60 Hz
Duty cycle	1:13.5
Electrical classification	Class I Type B
Weight	total 29 kg (64 lbs) tube head with standard cone 4.2 kg (9.3 lbs) tube head with long cone 4.5 kg (10 lbs)
Colour	White (RAL 9016)

### Dimensions



### Installation options

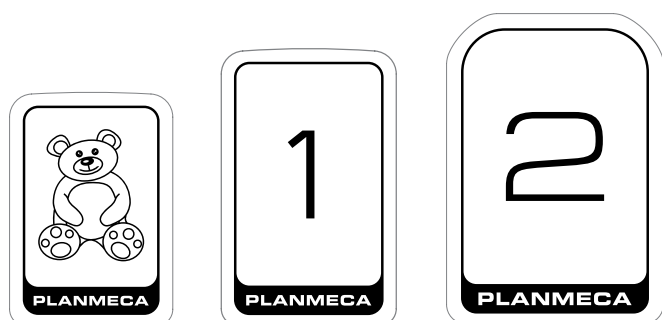


# Planmeca ProSensor® HD

## Technical specifications

### Technical data for Planmeca ProSensor® HD

	Size 0	Size 1	Size 2
Sensor size	33.6 x 23.4 mm (1.33 x 0.92 in.)	39.7 x 25.1 mm (1.56 x 0.99 in.)	44.1 x 30.4 mm (1.76 x 1.2 in.)
Active area	25.5 x 18.9 mm (1.0 x 0.74 in.)	30.6 x 20.7 mm (1.20 x 0.81 in.)	36 x 26.1 mm (1.42 x 1.03 in.)
Number of pixels, normal	850 x 629 px	1020 x 690 px	1200 x 870 px
Number of pixels, high	-	2040 x 1380 px	2400 x 1740 px
Pixel size, normal	30 µm x 30 µm		
Pixel size, high	15 µm x 15 µm		
Theoretical resolution	33 lp/mm		
Resolution, normal	17 lp/mm		
Resolution, high	>20 lp/mm		
Interface	USB or Ethernet		
View delay	<5 sec.		



# Planmeca Romexis®

## Technical specifications

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 7 Pro (64 bit) / Win 8.1 Pro (64 bit) / Win 10 Pro (64 bit)  Win 2008 Server / Win 2012 Server / Win 2016 Server  Mac* (OS Yosemite or newer)  For detailed information please see system requirements of Planmeca Romexis <a href="http://www.planmeca.com">www.planmeca.com</a>  *Cephalometric Analysis module, 3D Ortho Studio module and Planmeca PlanCAD Easy are supported on Windows operating systems.
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)
3 <sup>rd</sup> party software integrations	Dolphin Imaging Nobel Clinician Materialise Dental Simplant Straumann coDiagnostiX

# One software for all.



Planmeca Oy designs and manufactures a full line of industry-leading dental equipment, including 3D and 2D imaging devices, CAD/CAM solutions, dental care units and software. Planmeca Oy, the parent company of the Finnish Planmeca Group, is strongly committed to better care through innovation, and it is the largest privately held company in the field.

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## PLANMECA

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