Planmeca ProMax 3D Classic

True all-in-one unit for all your imaging needs
Planmeca ProMax 3D family

Exceptional all-in-one units for even the most demanding maxillofacial imaging needs. An ideal imaging size for every application.
## Comparison

<table>
<thead>
<tr>
<th></th>
<th>Planmeca ProMax 3D s</th>
<th>Planmeca ProMax 3D Classic</th>
<th>Planmeca ProMax 3D Plus</th>
<th>Planmeca ProMax 3D Mid</th>
<th>Planmeca ProMax 3D Max</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Voxel size</strong></td>
<td>75 / 100 / 200 / 400 µm</td>
<td>75 / 100 / 150 / 200 / 400 µm</td>
<td>75 / 100 / 150 / 200 / 400 µm</td>
<td>75 / 100 / 150 / 200 / 400 / 600 µm</td>
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<tr>
<td><strong>Max. 3D volume</strong></td>
<td>Ø50 x 80 mm</td>
<td>Ø80 x 80 mm</td>
<td>Ø140 x 90 mm</td>
<td>Ø200 x 100 mm</td>
<td>Ø230 x 160 mm</td>
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<tr>
<td><strong>Max. 3D volume</strong></td>
<td>90 x 60 mm (3x horizontal)</td>
<td>140 x 105 mm (3x horizontal)</td>
<td>-</td>
<td>Ø200 x 170 mm</td>
<td>Ø230 x 260 mm</td>
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<td><strong>Stitching</strong></td>
<td>Horizontal</td>
<td>Horizontal</td>
<td>-</td>
<td>Motorised patient support for easy vertical stitching</td>
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<tr>
<td><strong>3D ENT programs</strong></td>
<td>No</td>
<td>No</td>
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<td>Yes</td>
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<tr>
<td><strong>3D Models scan</strong></td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
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<tr>
<td><strong>3D Endodontic imaging</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td><strong>2D view for 3D</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td><strong>SmartPan panoramic system</strong></td>
<td>Yes</td>
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<td><strong>Dimax panoramic imaging</strong></td>
<td>Optional</td>
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<td><strong>ProCeph or Dimax Cephalostat</strong></td>
<td>Optional</td>
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<td><strong>ProFace 3D face photo</strong></td>
<td>Yes</td>
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</tbody>
</table>
One unit – one software

Planmeca ProMax®

- Panoramic
- Extraoral Bitewings
- Cephalometric
- CBCT image
- 3D photo
- 3D model scans
  - Impressions
  - Plaster casts

Planmeca Romexis® software
CBCT with Planmeca ProMax 3D family

- Volume location can be freely defined
- Wide volume size selection – the right size for every need
- Different imaging modes for different clinical needs from Ultra low dose to High resolution
- Always follows the ALARA principle
- Freedom to select the correct dosage and image quality ratio according to the diagnostic need
Cone Beam Computed Tomography (CBCT)

CBCT is an X-ray imaging technology where a large number of 2D images are taken of a patient from different angles. A 3D volumetric image is then calculated from these 2D projections.
Planmeca ProMax 3D Classic

Effortless use:
- Effortless patient positioning and unmatched comfort
- True all-in-one X-ray unit: CBCT, panoramic and cephalometric imaging, 3D face photo, 3D models
- Easy to use for a smooth workflow
- Planmeca Romexis software
- Mac OS and Windows support

Advanced technology:
- Ideal resolutions and patient dose levels that always comply with the ALARA (As Low As Reasonably Achievable) principle
- Optimal volume size and location for every clinical need
- Special imaging protocols for dental applications
- Intelligent 3D reconstruction always produces the best image with high details and low noise
Virtual patient

CBCT image, 3D face photo and 3D model scan combination creates a virtual patient in 3D, helping you with all your clinical needs.
Planmeca ProFace

- Lasers scan face geometry
- Digital cameras capture colour texture
- Software calculates information into a 3D photo
- No additional equipment required; all components are integrated into the sensor housing
Planmeca ProFace

- Orthodontic planning
- Preoperative planning of maxillofacial/plastic surgery
- Surgery simulation
- **Radiation-free** treatment follow-up
- Before and after comparisons
- Patient and colleague communication
- Symmetry analysis
- Automatic creation of a series of 2D photos
- Patient documentation
- Bone and soft tissue evaluation
3D model scanning

- Storing impressions and gypsum models digitally in the Planmeca Romexis database
- Orthodontic follow-up
- Dental cast analysis
- Orthodontic treatment planning
- Pairing with CBCT in Planmeca Romexis for precise implant planning
- Surgical guide manufacturing, no need to send physical gypsum model
- Available Q1/2014 for ProMax 3D s
Ease of operation

Open patient positioning
- Effortless positioning with open-face architecture
- Work with an unrestricted view of your patient
- Avoid claustrophobic feelings in patient
- Accommodate wheelchairs easily with side-entry access

Laser-assisted patient alignment
- Patient standing or sitting
- Make fine adjustments using positioning lasers and joystick
- Verify correct positioning with a scout image
- Vertical fine-adjustment of the volume
- Automatic, vertically driving patient positioning system makes stitching of basic volumes easy
Ease of operation

User-friendly 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.
Ease of operation

- Pre-designed imaging programs for different targets: Incisors, Canines, Premolars, Molars, TMJ, Ear

- SCARA arm can position the rotation centre at any place

- Adjustment of the volume diameter is possible

- Exposure values automatically selected according to patient size and selected program
Imaging modes

**Endodontic mode**
- Voxel size 75 μm
- Effective exposure time 15 s

**High resolution mode**
- Voxel size 100 μm
- Effective exposure time 12 s

**HD (High Definition) mode**
- Voxel size 150 μm
- Effective exposure time 15 s

**Normal resolution mode**
- Voxel size 200 μm
- Effective exposure time 12 s

**Low dose mode**
- Voxel size 400 or 600 μm
- Lower exposure values
- Effective exposure time 2.4 s
- Remarkably lower dose
- Small file size
Planmeca AINO™
Adaptive Image Noise Optimizer

- Removes noise from CBCT images **without losing valuable details**. As a result, provides crystal-clear images.
- **Analyzes the reconstruction exposure data** during reconstruction and adaptively differentiates noise and fine details.
- Improves image quality in endodontic mode where noise is inherent due to extremely small voxel size.
- Especially useful **with Ultra low dose images** where noise is induced by the low dose.
Planmeca ARA™ - Artifact Removal Algorithm reduces metal artefacts effectively
Ultra low dose protocol

- Images taken with minimum exposure values: 90kV / 1.6 - 3 mA
- AINO Adaptive Image Noise Optimizer applied automatically
- Effective patient doses 1 - 30 mSv
- Useful in follow up studies with minimal dose
Ultra low dose samples

- FOV $\varnothing 8.5 \times 5$ cm, voxel size 400$\mu$m
- Exposure parameters 96kV / 1mA
- Effective patient dose 4 $\mu$Sv - less than normal PA!

- FOV $\varnothing 4 \times 5$ cm, voxel size 200$\mu$m
- Exposure parameters 90kV/ 1mA.
- Effective patient dose 7.9 $\mu$Sv!
Ultra low dose samples

- FOV Ø4x5 cm, voxel size 200μm
- Exposure parameters 90kV / 2mA
- Effective patient dose 14.4 μSv – less than standard panoramic!

- FOV Ø23x16 cm, voxel size 600 μm
- Exposure parameters 96kV/ 1mA
- Effective patient dose 21 μSV
3D programs

Tooth
- Adult: Ø50 x 50 mm, Ø50 x 80 mm
- Child: Ø42 x 42 mm, Ø42 x 68 mm
- Voxel Size: 75µm, 100µm, 200µm, 400µm

Tooth horizontal pair (stitched)
- Adult: Ø50 x 50 mm, Ø50 x 80 mm
- Child: Ø42 x 42 mm, Ø42 x 68 mm
- Voxel Size: 400µm, 600µm
3D programs

Double scan
- 2 basic volumes stitched together
- Adult: 2x Ø50 x 50 mm, 2x Ø50 x 80 mm (≈ 60 x 75 mm)
- Child: 2x Ø42 x 42 mm, 2x Ø42 x 68 mm
- Voxel Size: 200μm, 400μm

Triple scan
- 3 basic volumes stitched together
- Adult: 3x Ø50 x 50 mm, 3x Ø50 x 80 mm (≈ 60 x 90 mm)
- Child: 3x Ø42 x 42 mm, 3x Ø42 x 68 mm
- Voxel Size: 200μm, 400μm
3D models scans

Impression scan
- Produces a "digital cast" of the impression

Gypsum model scan
- Both can be exported in .stl format for further analysis
- Available Q1/2014 for ProMax 3D s
Scout and 2D view

Scout
- Scout function takes two images (lateral and PA) of the target site
- Very useful for checking the volume position
- Increases the dose by only 0.5%

2D view
- Like scout images, but taken with a longer exposure time
- 2D views are automatically saved
- Can be used for pre 3D diagnosis
SmartPan system

- Images are taken with the same flat panel 3D sensor
- Workflow is the same as in 2D imaging programs
  - Same patient positioning
  - Same image processing parameters
- Frames grabbed with slit beam and narrow sensor area
- Tomosynthesis applied to calculate the panoramic images
~2000 frames, snap shots, are taken during the panoramic scan
9 different panoramic layers with 2 mm shift are calculated from the frames
+1 panoramic image in which the layer is optimised automatically
SmartPan system

- 10 panoramic images are saved as a stack
- You can browse the images and select the best
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
Software – Planmeca Romexis

- Mac OS and Windows compatible
- Complete imaging system for 2D and 3D images
- Versatile modules for implant planning, cephalometric analysis, airways, TMJ analysis, 3D orthodontic treatment planning, and more
- Compatibility
  - Full DICOM support
  - PMbrigde, TWAIN, Quick Launch
  - Open STL import and export etc.
- Free Planmeca Romexis Viewer application
- Planmeca iRomexis for iPad and iPhone
- Planmeca Romexis Cloud service for sharing images online
Planmeca Romexis software for all images

- 2D Imaging
  - 2D Implant Planning
- 3D Imaging
  - 3D Explorer
  - 3D Cross Sections
  - 3D Implant Planning
  - 3D TMJ
  - 3D ProFace & Surface
- Exporting and distributing images
- Printing & Reporting
- Patient & User Management
- Radiology Module
- Cephalometric Analysis module
- Planmeca Romexis 3D Ortho Studio
- Integration:
  - Planmeca iRomexis
  - Planmeca Romexis viewer
  - Planmeca Romexis Cloud
- Compatibility:
  - Native Mac OS compatibility
  - DICOM
Quality cephalometry for orthodontics

Digital cephalostat is ideal for cephalometry
- all information for orthodontic planning
- lower radiation dose
- faster procedure

3D to be used for e.g. detailed occlusion views and impacted teeth, if needed

One-shot Planmeca ProCeph
- Short exposure time – no motion artefacts, low patient dose
- Image sizes from 18 x 25 cm to 30 x 25 cm

Scanning Planmeca ProMax cephalostat
- Extremely low effective dose of radiation
- Image size of up to 30 x 27 cm
Cone beam 3D technology

- Planmeca ProMax 3D works with cone beam computed tomography (CBCT) principle
- CBCT uses a wide conical or pyramid shaped X-ray beam instead of a narrow fan beam
- The 3D image is one 3-dimensional volume, not a pile of narrow slices
- CBCT scan takes only one rotation around the patient. Medical CT needs several rounds around the patient
- CBCT:
  - is faster
  - has lower dose
  - has better resolution
3D Technology

- Snap shot images taken with synchronized X-ray pulses
- Stroboscopic effect for maximum clarity of the images
- Accumulated X-ray exposure time is from 6 to 12 s – reduced dose
- Proprietary 3D reconstruction algorithm
- Voxel size 75, 100, 150, 200 or 400 μm depending on resolution mode and volume size
Modern low dose medical CT: 685 - 1400 µSv (ICRP 2008)
Radiation dose of CBCT:
- Typically 20 - 1000 µSv
- ProMax 3D Classic: 1 - 200 µSv
- Panoramic image: 3 – 23 µSv
  - ProMax pan: 10 – 23 µSv
  - ProMax SmartPan: 12.5 – 30 µSv
- Intraoral image <8 µSv
Easy upgrade from 2D to 3D

2D unit
Planmeca ProMax 2D S3

3D unit
Planmeca ProMax 3D s

3D unit
Planmeca ProMax 3D Classic

2D unit
Planmeca ProMax 2D S2

2D unit
Planmeca ProMax 2D S3

3D unit
Planmeca ProMax 3D s

3D unit
Planmeca ProMax 3D Classic