Planmeca ProMax 2D

The complete maxillofacial imaging system
The benchmark for extraoral imaging

Advanced technology

- **Autofocus** positions automatically the focal layer 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 correct imaging geometry for clear, error-free images
- Easy upgrades – add cephalostat or 3D imaging capability at any time

Effortless use

- Full-view 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
Effortless and comfortable

Open patient positioning
- Position patients effortlessly thanks to open-face architecture
- Correct patient positioning either with Autofocus or manually
- Make fine adjustments using positioning lasers and joystick
- Work with an unrestricted view of your patient
- Avoid claustrophobic feelings in patients
- Accommodate wheelchairs easily with side-entry access

Laser-assisted patient alignment
- The midsagittal plane positioning beam indicates the correct sideways alignment
- 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
Effortless and comfortable

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
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
Perfect panoramic images – every time

- Positions the panoramic focal layer automatically
- Takes first short lateral scout exposure
- A special algorithm finds the jaw form and places it and calculates the optimal location of the layer
- Works only in SCARA\textsubscript{3} model
Dynamic Exposure Control

= Exposure Parameter Control + Automatic Gain Control

Exposure Parameter Control
- Adjusts the exposure parameters optimal for each patient automatically
- Prevents too low initial exposure parameters from causing under-exposure and/or poor image quality
- Prevents unnecessary high radiation levels
- Works in panoramic and cephalostat programs

Automatic Gain Control
- Adjusts the sensitivity of the sensor according to the amount of incoming radiation.
- Adapts automatically to patient anatomy
- Prevents pixel saturation even in soft tissue and direct radiation areas
- Works in all programs
Robot arm technology

- Combines an electro-mechanical construction with real-time computation of dynamic rotation patterns.
- Enables optimised radiography for each individual patient, meeting virtually any diagnostic requirement for maxillofacial dentistry.

User benefits
- The precise free-flowing arm movements allow for a wider variety of imaging programs not possible with other X-ray units with fixed rotations.
- SCARA offers superior imaging capabilities for both existing and future technologies.
Truthful images

- The focal layer shape is based on scientific study on human jaw shape
- The path of the rotating centre of the radiation beam influences the image quality
  - Long path starting and ending well outside the jaw
  - Truthful images
  - Less radiation
  - Less shadows
Truthful images

- Jaw shape and size vary according to size, age, gender and race
- Adjustable focal layer to fit different patient’s anatomy
- Constant magnification

Size:
- small – medium – large

Shape:
- sharp– average – square
**Different models for different needs**

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**Planmeca ProMax® 2D S3**
The three-joint model (SCARA3) has been designed for all imaging needs.

**Planmeca ProMax® 2D S2**
The two-joint model (SCARA2) for basic imaging.

**Planmeca ProMax 2D available also as film based!**
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

3D unit Planmeca ProMax 3D s

3D unit Planmeca ProMax 3D Classic
Basic panoramic programs

Standard panoramic program
• Constant magnification 1.2x

Paediatric mode
• Small focal layer
• Reduces the image area from top and sides and in this way the patient dose about 35%.
Basic TMJ programs

Lateral TMJ (closed & open)
- Adjustable angle (S3) and position
- Default angle 17°

PA TMJ (closed & open)
- Adjustable angle and position (S3)
- Default angle 17°
Basic sinus program

PA rotational sinus
- Straight layer
- Magnification 1.4x
Segmenting

Horizontal and vertical segmenting
- Any area of the patients jaw can be exposed separately
- Patient dose can be reduced up to 93% compared to full panoramic exposure
- Individual exposures taken of either the mandibular or maxillary jaw
Bitewing panoramic program

- Produces bitewing like images from premolar and molar areas including parts of maxilla, mandible and rami.
- Ideal for caries diagnosis
- The bottom of the maxillary sinus and as well the mandibular canal and the mental foramen are also visible.
- Magnification 1.4x, more details compared to the normal panoramic program.
- Uses improved interproximal angulation projection geometry.
- 50% dose reduction compared to the normal panoramic program.
Advanced panoramic programs

Orthogonal panoramic program
- X-ray beam perpendicular to the jaw
- Extremely valuable for implant planning
- Helps to see crestal alveolar bone height to diagnose periodontal disease

Interproximal panoramic program
- The X-ray beam and the interproximal contacts of the teeth are parallel
- The teeth do not overlap
- Extremely useful for caries detection
Interproximal panoramic program

Normal panoramic geometry
- Teeth are overlapping

Geometry improved according to the teeth interproximal angulation
- No overlapping
Advanced TMJ programs

Lateral-PA double TMJ
• Adjustable angle and position
• Default angles 17° / 73°

PA multi-angle TMJ
• Adjustable angle and position
• Default angles 73° ± 7°
• Magnification 1.5x

Lateral multi-angle TMJ
• Adjustable angle and position
• Default angles 17° ± 7°
Advanced sinus programs

PA non-rotational sinus
- Magnification 1.35x

Lateral non-rotational sinus
- Left or right side
2D Tomography

Two tomography modes
- Digital linear tomography (one sweep)
- Digital Transtomography™ (multiple swing - oscillating and transitional movements combined)

- Straight tomographic layers
- Selectable layer
- Adjustable step between layers
- Constant 1.50x magnification
- Automatic or manual operations
- Specialised imaging at the dental practice
- High value for implantology
2D Tomography programs

Cross-sectional tomograms
• 1-4 cross-sectional images (manual)

• 3 cross sectional images with different angles
2D Tomography programs

Longitudinal tomograms
• 1-4 longitudinal images (manual)
• 3 longitudinal images with different angles
2D Tomography programs

Mixed tomograms
- 1 cross-sectional and 1 longitudinal images
- 3 cross-sectional images and 1 longitudinal image
- 3 cross-sectional images with different angles and 1 longitudinal image
- Mixed tomograms give 3D-information from the target site
- Necessary for exact measurements
2D Tomography

Automatic positioning
- Operator selects coordinates of the target
- ProMax finds the position automatically
- Impressions help the positioning
- Fine tuning with joystick and laser beams

- Precise positioning
- Quick procedure
- Less retakes
Quality cephalometry for orthodontics

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

Scanning Planmeca ProMax ceph
- Extremely low effective dose of radiation
- Image size of up to 30 x 27 cm
Cephalostat

- The functional and easy-to-use head positioners ensure 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 for cephalometric exposures and adjusts collimation
- Soft tissue filtration done in the Romexis imaging software
- No need for a mechanical filter
- Possible to view the image with and without the filter
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
High-tech digital imaging

Planmeca Dimax direct digital sensor
• Combined digital panoramic and cephalometric system
• The latest CCD technology
• Extremely fast image information transfer with Ethernet interface
• Eliminates the use of film, film processor and darkroom
High-tech digital imaging

Planmeca Dimax direct digital sensor
- Sensitive area: 6 x 146 mm
- Pixel size: 48 μm (binning: 48 / 96 / 142 μm)
- Short decay time scintillator
- Very high signal to noise ratio (SNR)
- Very high detective quantum efficiency (DQE)
- Dynamic range: 17 bit, 131072 grey values
- Data transfer: fast data link between sensor and computer
  - Excellent images
  - Real time imaging
Automatic Exposure Control

- Anatomic structures vary between patients
- Automatic selection of exposure parameters
- Selection of target film darkness level optional feature for ProMax X-ray

Panoramic AEC:
- Initial measurement
- Continuous adjustment

Cephalometric AEC:
- Two measurement points to assure optimal result for all projections
Film cephalostat

- Automatic and motorized alignment of the X-ray unit
- Functional head positioner
  ProMax Ceph CA
  - Automatic aperture selection
  - Light beam assisted soft tissue filter positioning
  ProMax Ceph CM
  - Aperture and soft tissue filter selection from the GUI
- Quick and accurate positioning
- No missed images, less retakes
Cephalometry

ProMax Ceph

- The best cephalometric system for all radiographic projections
- All cassette sizes:
  18 x 24 cm
  8” x 10”
  24 x 30 cm
Accessory cabinet

Convenient storage for unit accessories