

Planmeca ProMax 3D Classic CBCT unit

Introduction

The Planmeca ProMax 3D X-ray unit uses cone beam computerized tomography (CBCT) to produce threedimensional X-ray images. Panoramic and cephalometric techniques are used for two-dimensional X-rays. The images can be used for examination of dentomaxillofacial anatomy.

Features

Planmeca ProMax platform has patented SCARA3 construction. The movements enable the exact location of the image volume and thus the adjustment of the volume size

Volume size and target area are selectable on the control panel to meet diagnostic needs without excess radiation outside the area of interest.

Advanced stitching programs offer low dose, large volume imaging through the selection and targeting of up to 3 horizontal volumes. Once captures the targeted volumes are stitched together by Planmeca Romexis.

Pulsed exposure, which is accurately synchronized to the image capturing, enables short effective exposure time and low dose.

Proprietary Feldkamp based back projection reconstruction algorithm

Planmeca AINO™ Adaptive Image Noise Optimizer removes noise from CBCT images without losing valuable details.

Planmeca ARA™ Artefact Removal Algorithm reduces high contrast object artefacts.

Planmeca CALM™ detects and removes patient movement during 3D imaging.

Planmeca Ultra Low Dose™ imaging protocol reduces the patient dose to minimum.





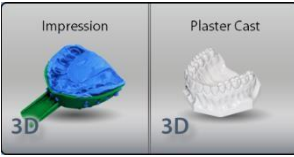


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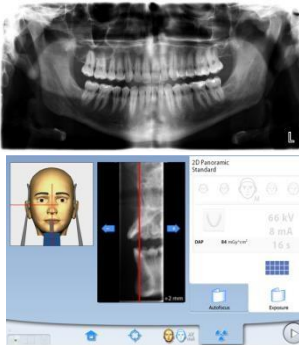

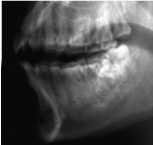
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Imaging capabilities

3D imaging

| | |
|---|---|
| <p>Planmeca ProMax 3D provides high resolution volumetric 3D images of the mandible and maxilla and whole teeth area.</p> |  |
| <p>Planmeca ProFace: 3D photograph capture in the same session with radiograph or separately.</p> |  |
| <p>Model scan programs: Special programs produce very precise 3D images of impressions and plaster casts.</p> |  |
| <p>Endodontic imaging mode.</p> |  |
| <p>Braces Protocol: A special program optimised for imaging patients with brackets for braces design.</p> |  |

2D imaging

| | |
|--|---|
| <p>The SmartPan system uses the same 3D sensor for 2D panoramic imaging. Includes also MultiView SmartPan, which produces 9 panoramic images in different angles. MultiView SmartPan can be used in the panoramic programs.</p> <p>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.</p> <p>Available: Basic and Advanced programs, True bitewing program, Segmenting. Planmeca Dimax sensor can be used as option.</p> |  |
| <p>Planmeca Dimax cephalostat or Planmeca ProCeph for cephalometric images</p> |  |
| <p>2D view with 3D program provides 2D images with diagnostic quality taken with 3D sensor.</p> |  |

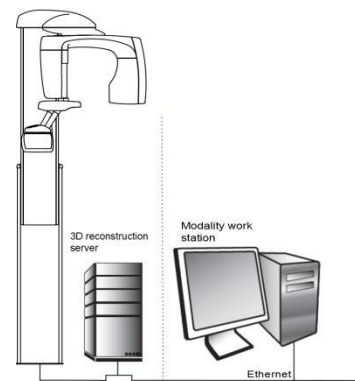
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Planmeca ProMax 3D system components

- Planmeca ProMax 3D unit including 3D sensor
- 3D reconstruction computer
- Special 3D patient support with support points in forehead and chin
- Stool for patient (optional)

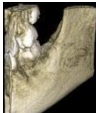
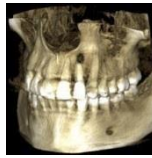



Resolution modes

| Mode |  |  |  |  |  |
|--------------------------|--|--|--|---|--|
| | Endodontic (optional) | High resolution | HD (High Definition) | Normal | Low Dose |
| Voxel size μm | 75 | 100 | 150 | 200 | 400 |

3D Imaging programs and volume sizes



3D Dental programs

| Program | Volumes (child size) | Example | Mode / voxel |
|----------------------|--|--|--|
| Tooth | $\varnothing 50 \times 50$ ($\varnothing 42 \times 42$) |  | Endo 75 μm HR 100 μm HD 150 μm N 200 μm d LD 400 μm |
| | $\varnothing 50 \times 80$ ($\varnothing 42 \times 68$) | | HD 150 μm N 200 μm d LD 400 μm |
| Teeth | $\varnothing 80 \times 50$ $\varnothing 80 \times 80$ ($\varnothing 68 \times 42$ $\varnothing 68 \times 68$) |  | HD 150 μm N 200 μm d LD 400 μm |
| Teeth extended (80+) | $\varnothing 110 \times 50$ $\varnothing 110 \times 80$ |  | HD 150 μm N 200 μm d LD 400 μm |

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|-------------|-----------|--|-----------------------|
| Double scan | 2 x Teeth |  | N 400µm d LD 400µm |
| Triple scan | 3 x Teeth |  | N 400µm d LD 400µm |

Endo = endodontic, HR = high resolution, HD = High Definition, N = normal, LD = low dose, d = default

3D Model Scans

| | | | |
|-------------|--------|--|----------|
| Models scan | Ø80×40 |  | HD 100µm |
|-------------|--------|--|----------|

HR = high resolution, HD = High Definition, N = normal, LD = low dose, d = default

Planmeca Romexis Software

The Planmeca Romexis® software platform includes modules and tools for a wide range of dental specialties – from 2D and 3D imaging to CAD/CAM dentistry.

Planmeca Romexis software features

- Planmeca Romexis 2D Imaging (intraoral, panoramics, cephalometry, intraoral camera) ○ Romexis Smile Design ○ Romexis 2D Implant
 - Romexis Cephalometric Analysis
- Planmeca Romexis 3D Imaging
 - Romexis 3D Standard
 - Romexis 3D Advanced
 - Romexis 3D Implant
 - Romexis 3D Implant Guide
 - Romexis 4D Jaw Motion
 - Romexis CMF Surgery
 - Romexis 3D Ortho Studio Advanced

□ CAD/CAM

- Romexis Model Analyser
- PlanCAD Easy – Scan
- PlanCAD Easy – Design & Mill
- PlanCAD Easy – Complete
- PlanCAD Easy – Mill only

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Technical Specifications

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|------------------------|--|
| Classification | Medical Device Directive: 93/42/EEC (Class IIb) RoHS: 2011/65/EU IEC 60601-1: Class I, type B CISPR 11: Class B IP Classification: IP20 |
| Generator | Constant potential, microprocessor controlled, resonance mode, operating frequency 80 -150 kHz, Power Factor Corrector, complies with the standard IEC 60601-2-7 |
| X-ray tube | D-054SB |
| Focal spot size | 0.5×0.5mm, according to IEC 60336 |
| Total filtration | Pan / ceph: 2.5 mm Al eq 3D: 2.5 mm Al + 0.5 mm Cu |
| Anode voltage | Panoramic: 60 – 84 kV Cephalometry: 60 – 84 kV 3D: 60 – 90 kV |
| Anode current | Panoramic: 1 – 16 mA Cephalometry: 1 – 16 mA 3D: 1 – 14 mA (steps with R20 series: 1, 1.1, 1.25, 1.4, 1.6, 1.8, 2.0, 2.2, 2.5, 2.8, 3.2, 3.6, 4.0, 4.5, 5.0, 5.6, 6.3, 7.1, 8.0, 9.0, 10.0, 11.0, 12.5, 14.0, 16.0) |
| Exposure time | Panoramic: 2.5 -14 s Cephalostat scanning 6 – 10 s ProCeph cephalostat 0.1 - 0.8 s 3D: 3 – 14 s |
| SID | Panoramic: 501 mm Cephalometry: 1700 mm 3D / SmartPan: 528 mm |
| Focus to skin distance | 3D / Panoramic min. 150 mm Cephalometry 1500 mm |
| Angle | 5° |
| Magnification | Panoramic constant 1.2 Cephalometry 1.13 3D: 1.58 |
| Line voltage | 100 - 220 V/50 or 60 Hz 230 – 240 V/50 Hz Power Factor Corrector |
| Line current | 8 – 17 A |

Sensor specifications

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|--------------------|--|
| Pixel size | 127 μm |
| Active surface | 13x13 cm |
| Dimax | |
| CCD pixel size | 48 μm |
| Image pixel size | 48/96/144 μm (selectable) |
| CCD active surface | 6x146 mm, panoramic 6x292 mm, cephalometric |
| ProCeph | |
| Pixel size | 139 μm |
| Active surface | 300 x 250 mm |
| Resolution | max. 4.1 lp/mm, (Nyquist limit) |

The 3D Reconstruction Server

3D reconstruction server is a zero maintenance Linux based high-performance computer, which captures images from imaging device and performs a 3D reconstruction routine. This automated routine converts the original image frames acquired into the 3D volume, which is then transmitted to the Modality Workstation (Planmeca Romexis Image Acquisition Workstation) and to Planmeca Romexis Server for storage.

3D Reconstruction Server is included in all deliveries.

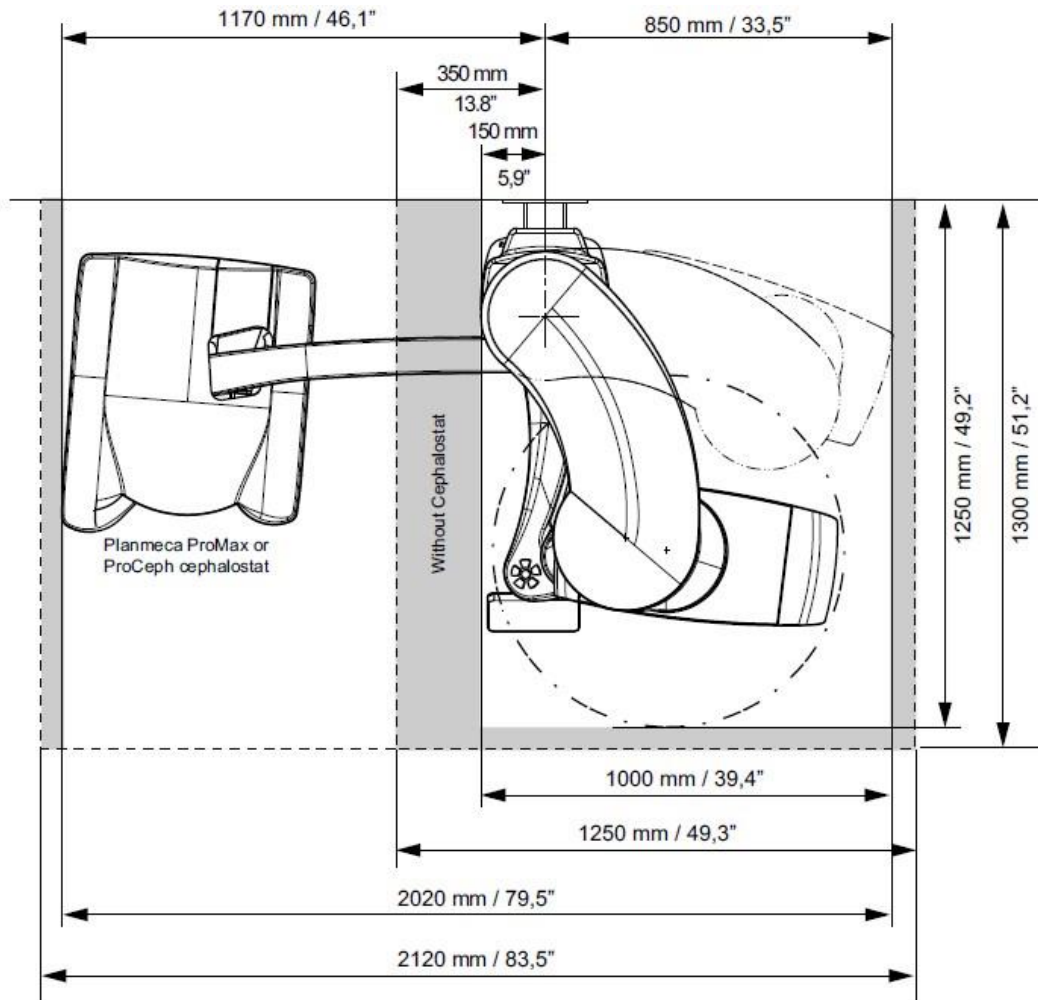
Dimensions

The following figures illustrate the X-ray unit dimensions and the minimum empty space required (grey area) to enable the fluent operation.

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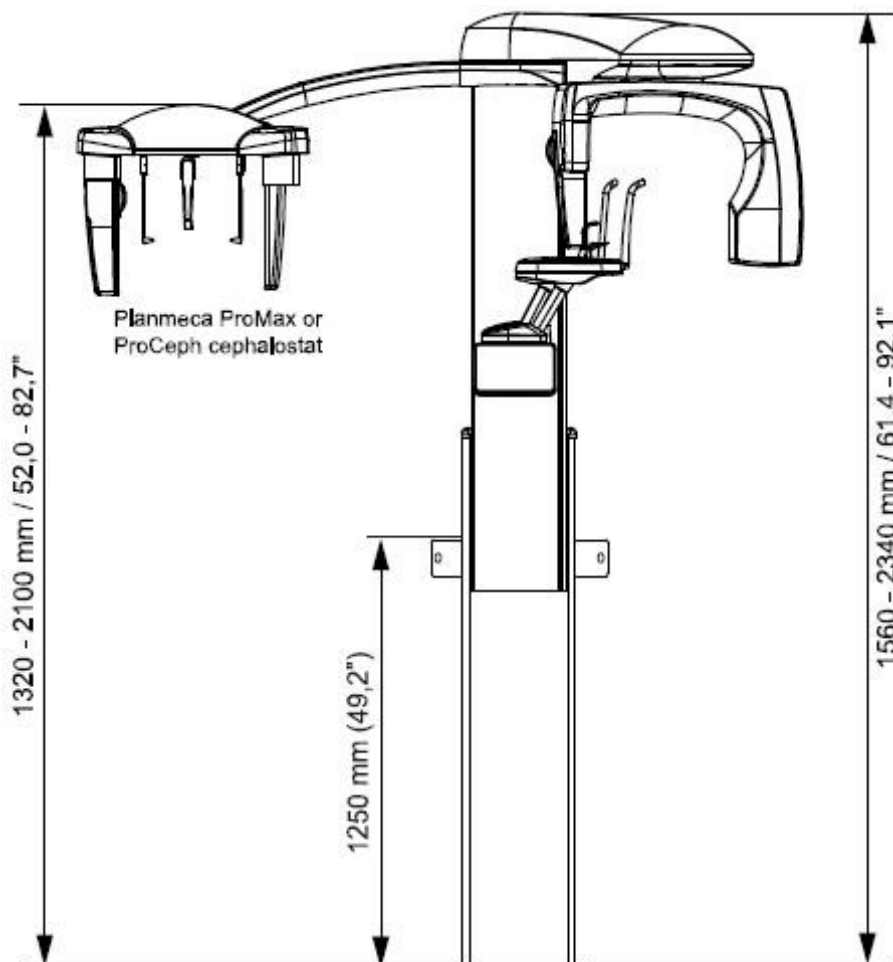
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Maximum height is adjustable

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|----------------------------|---|
| Weight | 119 kg (262 lbs) 26 kg (57 lbs) scanning cephalostat 20 kg (44 lbs) ProCeph |
| Chin rest level | 96 – 178 cm |
| Cephalostat ear post level | 97 – 179 cm |

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