ProOne Digital X-ray Imaging
Hardware Diagrams and System Requirements

ProOne
Digital X-Ray

CPU Specifications
Digital Image Workstation
- Pentium 4 or higher
- 640 MB or better RAM
- 2 GB or more RAM
- Microsoft Windows XP or Vista
- Ethernet 10/100 Mbit

Image Acquisition Workstation (2D)
- Romexis Software acquires the Panoramic, TMJ and Sinus images (2D).
- Romexis Imaging Software is used to enhance, filter, measure, diagnose, archive and export the images.

Network Server Specifications
- Pentium 4 or Higher
- 2 Hard Drives, 80 GB each min.
- 2 GB or more RAM
- Microsoft Windows XP or Vista
- Ethernet 10/100 Mbit

Additional Workstations
- Refer to Digital Image Acquisition Workstation (2D)

CPU Specifications
Additional Workstations
- Pentium 4 or Higher
- 2 Hard Drives, 80 GB each min.
- 2 GB or more RAM
- Microsoft Windows XP or Vista
- Ethernet 10/100 Mbit

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Note:
- An Uninterrupted Power Supply (UPS) Power Conditioner is recommended for the X-Ray.
- Install a new Planmeca Power Conditioner with a newly purchased Planmeca Imaging System and Planmeca USA, Inc will extend the product warranty from two years to three.

Additional Information
- All digital X-ray, compact and easy to use

Planmeca Power Conditioner
- Ethernet Ready
- The new built-in Ethernet connection for ProOne Digital X-rays offers direct network connectivity without the need for a PCI card or computer.
- You can readily plug the Ethernet connection directly into your network.

Standard 10/100 Switch
Optional
Local Area Network Connection
Required for sharing printer or adding additional workstations.

Optional
Printer

Planmeca ProOne™

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All digital X-ray, compact and easy to use
Simply Amazing

All digital
The ProOne Digital Panoramic X-ray’s sleek yet functional design combines simplicity with the latest state-of-the-art technology to provide ease of use, extensive diagnostic capabilities, and superior image quality in an affordable package.

The ProOne X-ray’s most notable feature is its compact footprint. Add to that its light weight of 152 lbs., and the result is a panoramic X-ray that can be used in almost any doctor’s office or imaging facility.

Upgradeable
Best of all, the ProOne Digital X-ray’s panoramic and basic programming can be upgraded to the optional ProOne Professional Program Package which includes Horizontal and Vertical Segmenting and advanced programs like the Improved Interproximal Program, Improved Orthogonal (Perio) Program and Bitewing Program. The optional Dynamic Exposure Control (DEC) may also be added at any time.

The Panoramic Bitewing Program is also available separately (without the Professional Program Package).

ProOne’s compact and lightweight design brings the benefits of direct digital imaging to almost any doctor’s office or imaging clinic.
Ease of operation

For every dentist and any patient

ProOne digital imaging benefits
Now the many benefits of direct digital radiography can be used in even the smallest of offices, offering many advantages both for the patient and for the imaging workflow of the practice.

Direct digital imaging saves time
Images are seen on the computer screen within seconds after the exposure without waiting for the processing of film in order to make a proper diagnosis.

ProOne’s CCD Direct Digital Technology
The digital sensor technology of the ProOne eliminates chemical processing of films, as well as the need for chemical developers, chemical disposal, and dark room. Digital imaging puts an end to the retakes and overhead associated with processing film.

Planmeca Romexis Digital Imaging Software helps with patient diagnosis
Romexis Software used with digital imaging is very helpful when it comes to diagnostics. Romexis can help enhance critical areas, highlight, extract, change contrast, and even enlarge an area of interest.

Digital imaging allows easy archiving and efficient record-keeping practices
A digital image requires much less storage space, is easier to access, and can be found in much less time than a film image. In addition, the Romexis imaging software is interfaced with or bridged with most practice management software programs, allowing easy access to all a patient’s information in one file.

Easy to operate
The ProOne X-ray unit provides absolute ease of use with cutting edge digital imaging technology. Simply select the desired image program, patient type, jaw shape and size, and position the patient. The unit’s graphical user interface ensures that all types of radiographic examinations are highly rapid and effortless to perform.

Quick and easy patient positioning
ProOne’s side entry and open patient positioning features minimize radiograph errors caused by incorrect patient positioning. Patient positioning is made quick, precise, and easy, as the user may monitor the patient freely from the front and side.

Triple laser beam alignment
Patient positioning is assisted by a triple laser beam system which accurately indicates the correct anatomical positioning points. The midsagittal plane positioning beam shows the correct sideways alignment of the patient’s head. The Frankfort horizontal plane positioning beam allows the correct head tilt. The focal layer positioning beam helps position the patient accurately inside the focal layer for a sharp and clear image.

Accessible by all patients
The PLANMECA ProOne easily handles any patient, from children and adults to those who are bedridden or wheelchair bound.

Side entry
ProOne’s side entry feature allows easy access for all patients; the exposure can be performed on a standing or a seated patient. If necessary, the patient can even remain seated in a wheelchair or lie in a hospital bed with upright lifted backrest.

Open view patient positioning
ProOne does not require mirrors to position the patient. Instead, the patient has an open and comfortable view. (This is especially useful when, for example, the patient is a small child who needs reassurance that a parent is nearby.)

Extremely simple design - compact and lightweight
The PLANMECA ProOne is extremely compact and lightweight with a simple, sleek design for quick and easy installation. ProOne is delivered fully assembled and ready to install. ProOne’s design consists of a simplified mechanical construction without mechanical buttons, minimal use of printed circuit boards, minimal cables and the latest universal components. Simply affix the 152 lb. ProOne to a wall or a freestanding base and the unit is ready for immediate use.
PLANMECA ProOne provides a variety of imaging programs for different radiographic needs. In addition to the standard panoramic programs, the following specific imaging programs represent a few of the programs included within the optional Professional Program Package:

- Improved Interproximal Program
- Improved Orthogonal (Perio) Program
- Bitewing Program

Note: The panoramic Bitewing Program can be added as a separate program.

ProOne also allows you to select the right exposure parameters, minimizing the radiation dose for all types of patients and diagnostic purposes.

ProOne’s advanced imaging geometry efficiently eliminates shadows and ghost images caused by objects outside the image layer, which significantly increases the diagnostic value of the radiograph.*

**Improved Interproximal Program**

The optional Improved Interproximal program produces a panoramic image with open interproximal contacts. Such a radiograph is especially useful in caries detection.

**Bitewing Images are ideal for caries diagnosis**

An image taken with the unit’s optional Bitewing Program, which utilizes the improved interproximal projection geometry, is similar to an intraoral bitewing image pair while also showing periapical information. The advantage is that the image is obtained with one simple extracranial exposure and a very low radiation dose (50% of standard panoramic).

**Optional Improved Orthogonal (Perio) Program**

produces an image where the alveolar crest is clearly visible for enhanced diagnostics of periodontal condition and traumas.

**The Pediatric Program** automatically reduces the exposed area from top and sides, which results in a 20-35% lower patient dose, without loss of diagnostic information.

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Program package

Optional Segmenting Program
limits the exposed area only to the area of diagnostic interest. With a simple selection on the GUI, the patient dose can be reduced by up to 90% compared to a full area panoramic exposure.

Optional Sinus Program
has a specially designed image layer providing a radiograph with a clear view of the maxillary sinuses.

The Automatic Double TMJ Program
produces a lateral view (above right) of open and closed temporomandibular joints on one radiograph.

The Optional Cross-sectional Program
is intended for simple cross-sectional imaging of TMJs and jaws in the molar and premolar region. These images convey highly valuable information on cross-sectional dimensions and the structure of the jaw.

ProOne Digital Panoramic X-ray Programs
All 5 Basic Programs come standard with the unit. The Professional Program Package is optional and contains over 12 advanced panoramic programs including the Bitewing Program. The optional Bitewing Program is also available separately.


Basic Programs
- Standard Panoramic Program
- Pediatric Program
- Double Lateral TMJ Program
- Double PA TMJ Program
- PA Sinus Program

Professional Program Package
- Horizontal and Vertical Segmenting
- Improved Orthogonal Program
- Improved Orthogonal Therapy Program
- Bitewing Program
- Double Lateral - PA TMJ Program
- Lateral 3 Angles - TMJ Program (left or right)
- Lateral Sinus Program (left or right)
- Lateral Midsagittal Sinus Program (left or right)

Available Separately
- Bitewing Program
Romexis Software
The Romexis Platform fully integrates digital imaging with the patient’s other clinical data. The system provides direct image capture from Planmeca’s X-Ray Imaging Units as well as an interface with 3rd party devices and software. It has a pure Java based interface that runs in various operating systems and modern web environments. Romexis includes a copy of MS SQL Express for storing and archiving all data on server hard drive.

Complete Digital Imaging
Planmeca Romexis includes all dental imaging modalities: intraoral, panoramic, cephalometric and 3D imaging, dental tomography as well as intraoral video and still camera images. With a complete set of tools for image viewing, enhancement, measurement and annotation, Planmeca Romexis also improves the diagnostic value of radiographs.

Romexis Software Tools
- Customized templates
- Image navigator tool
- Image magnifier tool
- Point-to-point measurements tool
- Image filtering tool
- Pseudo-color enhancement tool
- Image inversion tool
- Tooth range program
- Image parameter tool
- Gray level auto-adjustment program
- Flashlight tool

TWAIN Driver
The TWAIN Driver allows direct digital X-ray image acquisition into a third party imaging software and for another vendor’s TWAIN compliant imaging software to directly acquire digital X-ray images taken with the ProOne.

DICOM Compliant
DICOM, short for Digital Imaging and Communications in Medicine, is a worldwide standard for image transfer in medical information systems. Romexis is 100% DICOM compatible and fully ADA compliant and provides, as an option, the widest possible DICOM functionalities.
**Graphic User Interface**
The full-color TFT display has a graphical user interface (GUI) that guides the operator with text and clear graphic symbols.

**Intuitive controls**
The GUI design is based on cognitive ergonomics: All settings are logically grouped and easy to understand. The imaging procedure, program selection and exposure parameters are intuitive to the operator and allow full focus on patient positioning and communication. All necessary information is shown on the main display with a hygienic wipe-clean surface.

*Focal layer adjustment*  
By simply touching the GUI, the operator can adjust the shape of the focal layer according to the jaw size and shape characteristics of the patient.

*Preview image*  
After the patient’s X-ray has been taken, a preview image is displayed across the graphical user interface.

*Preview magnification*  
For improved image validation, the GUI magnifies a selected portion of the preview when it is touched by the operator.

*Patient identification*  
If the patient is not already identified on the GUI through Romexis, simply touching the ID area on the screen will allow the operator to enter patient information.

*ProOne Digital Panoramic X-Ray Programs*  
1. Basic Programs:  
   - Standard Panoramic Program  
   - Pediatric Program  
   - Double Lateral TMJ Program  
   - Double PA TMJ Program  
   - PA Sinus Program  
2. Optional Professional Program Package:  
   - Horizontal and Vertical Segmenting  
   - Improved Interproximal Program  
   - Improved Orthogonal (Pen) Program  
   - Bleeding Program  
   - Double Lateral - PA TMJ Program  
   - Lateral 3 Angles TMJ Program (left or right)  
   - Lateral Sinus Program (left or right)  
   - Lateral Maxillary Sinus Program (left or right)  
   - Cross-sections, Manual or automatic

*Note:* Bitewing Program can be added as a separate program without purchasing the entire Professional Program package.

*Optional Dynamic Exposure Control*  
The unique digital Dynamic Exposure Control (DEC) optimizes the whole imaging chain individually for each patient. All components, from the X-ray generator to the digital sensor, are tuned to produce the optimum image quality.

*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

*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

*A self-diagnostic control system continuously monitors the unit. The system displays “help” messages which guide the operator and enable the correct use of the unit. The control system also displays error messages in case of abnormal operation. These error messages are stored in an error log to help both the operator and assist with technical service.*
Technical specifications

Generator
- Constant potential, resonance mode
- High frequency 60 - 80 kHz

X-ray tube
- D-058SR

Digital Sensor
- CCD Technology

Sensor Pixel Size
- 33µm

Image Pixel Size
- 132µm

Focal spot size
- 0.5 x 0.5 mm (IEC 336)

SID
- 480 mm (19 in)

Total filtration
- 2.5 mm Al

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
- 33.5 - 69 in. (85 - 175 cm)

Exterior color
- RAL 9016 (white)

Weight
- 69 kg (152 lbs.)

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ProOne Digital Pan
- Overhead View

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ProOne Digital Pan
- Front & Side Views

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Actual Product Dimensions
- Width: 30 inches
- Depth: 41 inches
- Height: 88 inches

Minimum Operational Dimensions
- Width: 38 inches
- Depth: 46.6 inches
- Height: 89 inches

Optimal Operational Dimensions
- Width: 54 inches
- Depth: 51 inches
- Height: 89 inches

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Mounting Brackets
- Wall Mount with Floor Mount
- Optional 2nd Wall Mount
- Hinge Spacing
- Approx. 59 in.

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Ports
- Under Back Cover
  - USB
  - Memory
  - Exposure Switch
  - Master Switch
  - Fuses

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