



Product Data

STRATO 2000

Panoramic / Tomographic X-Ray System

General features

Movement technology:	multi-motor with digital trajectory control
Patient positioning:	face to face
Patient alignment:	through three laser pointers that allow to locate the three reference planes: mid-sagittal, Frankfurt, canine

Standard examination programs

In every program the compensation of spinal column is obtained by means of exposure parameters modulation, optimized in function of the anatomic program.

- **Adult panoramic**
- **Child panoramic** with trajectory optimization, exposure parameters reduction and reduced collimator
- **Adult hemipanoramic** (right and left)
- **Child hemipanoramic** (right and left)

Optional examination programs – U.C.A. packages

The U.C.A. (User Customizable Applications) expansion packages can be installed in Strato 2000 by connection to a common PC through a RS232 serial port.

The user can expand the Strato 2000 performances by himself through a guided procedure inside the DMS software, adding new examination packages that are especially designed for several different applications.

TMJ Package – Temporo-Mandibular Joint study

- **TMJ open/close mouth:** 4 images are taken on the same film: left/right condyle, open/close mouth. Condyles are examined in lateral projection
- **Bi-axial TMJ:** 4 images are taken on the same film: left/right condyle, longitudinal/oblique projection. One projection is parallel to condyle long axis, the other is tilted by 40° compared to the first.

IMPLANT package – Linear tomography for implantology

- **IMPLANT 2:** 1 longitudinal section + 1 transversal section
- **IMPLANT 4:** 1 longitudinal section + 3 transversal sections

Images size: 5x7cm

Longitudinal layer thickness: user selection among 4, 6, 8 mm

Transversal layer thickness: user selection among 2, 3, 4 mm

Distance between transversal layers: user selection among 2, 3, 4 mm (only for Implant 4)

Two dedicated bites are included to execute exams of mandibular and maxillary arches.



SINUS Package – Study of paranasal sinuses

- **Maxillary Sinus P-A:** one P-A projection, where both the maxillary sinuses are represented.
Possibility to correct the position of layer by +/- 7mm.
- **Maxillary sinus L-L:** L-L projection of right or left maxillary sinus.
Possibility to correct the position of layer by +/- 3mm.

Every examination is obtained thanks to stratigraphy method with high layer thickness. If patient type selected is "Child", layer position is moreover optimized.

A.D.A. package – Advanced Dental Applications

- **Improved orthogonality dentition:** panoramic projection limited to the dentition obtained with X-ray beam constantly perpendicular to the arch. It allows to reduce superimposition of adjacent teeth and to improve visualization of possible interproximal caries.

Cephalometric examination

Strato 2000 can be supplied with ceph arm, or can be upgraded to ceph examination at any time directly in you practice.

4 available programs. The system can be requested with the collimator set to operate mainly with 18x24 or 24x30cm size cassettes. The size must be specified at order.

Automatic alignment of x-ray source on cephalometric cassette.

Application	Formats for 18x24 cm size collimator	Formats for 24x30 cm size collimator
Skull latero-lateral	18 x 24 vertical Asymmetric	18 x 24 vertical Asymmetric
Skull antero/posterior or postero/anterior	18 x 24 vertical Symmetric	24 x 30 vertical Symmetric
Skull latero-Lateral, with full view of the nape	24 x 18 horizontal Asymmetric	24 x 30 vertical Asymmetric
Mainly latero-lateral. Can also be used for AP/PA projections	30 x 24 horizontal Symmetric	30 x 24 horizontal Symmetric

Anatomic programs

- Patient type: 2 choices: adult, child
- Patient size: 3 choices: small, medium, large
- Arch shape: 3 choices: narrow, standard, wide



Image magnification

- Panoramic 1.23 constant
- Open/close mouth TMJ 1.30 constant
- Bi-axial TMJ 1.30 medium
- Implant 1.37 constant
- Sinus 1.23 constant
- Cephalometry 1.1

Note: the magnification factor is calculated in the center of the focal layer, which is based on a shape of the mouth-ascending ramus complex, as defined in international literature.

Generator

- High frequency generator, constant potential
- Ripple < 4%
- Inverter frequency: 30 kHz
- High voltage: 50 ÷ 80kV_p, step 2 kV
- Anodic current 4 ÷ 12mA, step 1 mA for ceph
4 ÷ 10mA, step 1 mA for other exams
- Exposure times:
 - panoramic: 15 sec adult, 13.5 sec child
 - hemipanoramic: 8 sec. adult, 7.5 sec child
 - open/close mouth and bi-axial TMJ: 4x 2.65 sec
 - implant: from 3.4 sec (minimum for 2 images)
to 11.4 sec (maximum for 4 images)
 - maxillary sinus P-A: 10.4 sec
 - maxillary sinus L-L: 5.2 sec
 - improved orthogonality dentition: 12 sec
 - cephalometry: 0.2...3 sec

X-ray tube

- Focal spot size: 0.5 (IEC336)
- Heat storage capacity: 30kJ (40kHU)
- Total filtration: 2.5mm Al eq.
- Duty cycle: 1 exposure every 4 minutes for panoramic; 1:16 for other examinations (for each second of exposure, 16s of cooling time are needed).

Automatic collimator

- Primary collimator with motorized operation, automatic selection of 7 diaphragms:
 - adult panoramic
 - child panoramic
 - implant
 - 4 formats for cephalometry
- Secondary collimator near the cassette to reduce scattered radiation. Automatic selection of a dedicated collimator for implant.
- Soft tissue filter enhances profile of the soft tissues of the face on the lateral skull view. Motorized positioning can be adjusted to match the contour of any patient.



Cassette format

- Panoramic, TMJ, Implant, Sinus, A.D.A.: flat, 15x30cm
- Ceph: flat, 18x24 or 24x30cm (specify at order)

Standard accessories

- One flat cassette 15x30cm with screens for panoramic, TMJ and implant exams
- One flat cassette 18x24 or 24x30cm with screens. Only for versions with ceph arm
- Byte stick support
- Chin support for edentulous patients
- 5 bites with sticks
- 2 temple clamps
- X-ray push button with extensible cable
- 2 sterilizable handles
- 4 accessory-trays.

DMS software (option)

The DMS software (Data Management System) runs in Windows[®] operating system and allows to execute the following functions:

- Patients data archive (with possibility to manage more than one archive, for example one archive for each doctor in the office).
- Historical exams archive for each patient with exposure parameters storage.
- Repetition of an exam using the exposure parameters of a previous one.
- "Virtual keyboard" allows to set examination parameters from PC.
- Patients and exams archive print.
- Print of labels with patient and exam data for film identification.
- Archives import/export.
- Upgrade of U.C.A. examination packages.
- On-line documentation.
- Remote maintenance from PC (access reserved to service engineers)

The user can choose one of five available languages:
English, Italian, French, Spanish, German.

Minimum PC requirements for execution of DMS software and installation of U.C.A. packages:

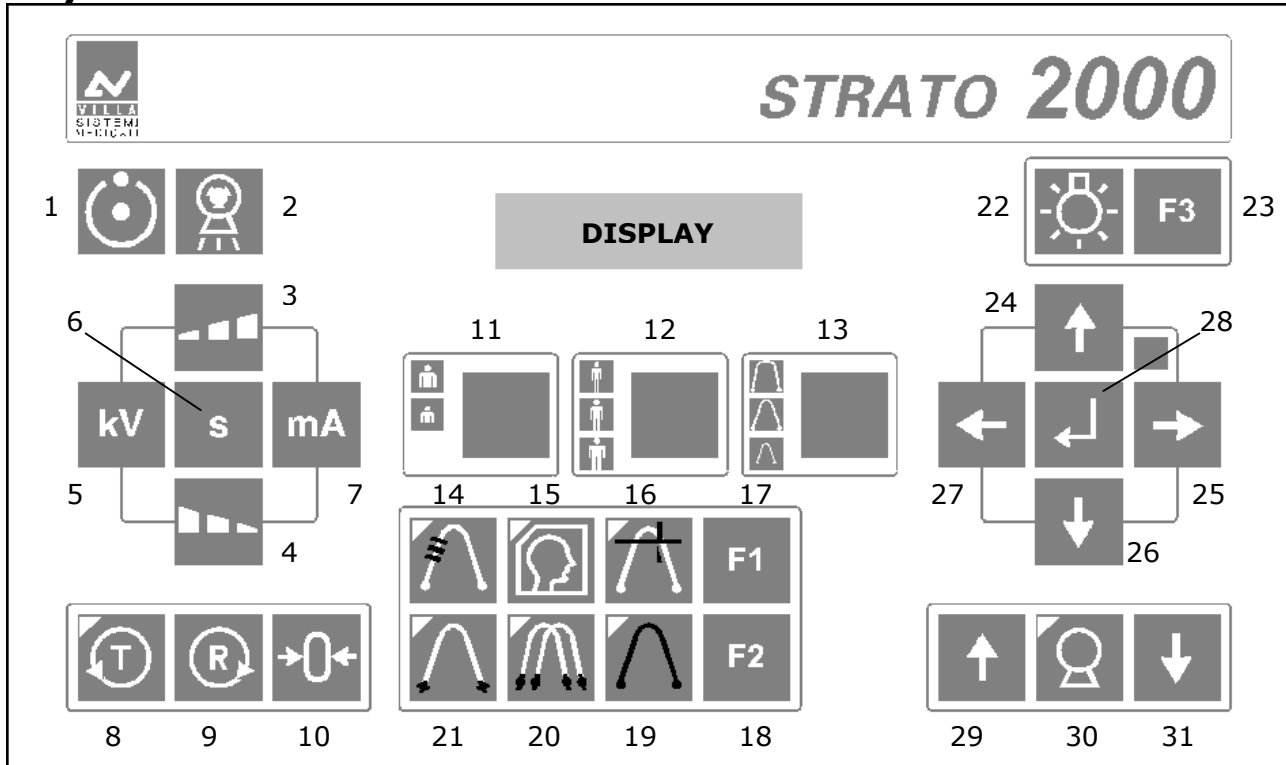
- CPU Pentium 100 MHz or better
- RAM memory 64 MB minimum
- Operating system Windows 98[®], or Windows Millenium Edition[®]
- Display resolution 800x600, 65535 colors or better
- CD-ROM Drive yes
- Serial Port standard RS 232 -9 pin connector

User interface

- Console with flat and waterproof surface for easy cleaning and disinfecting
- Back-lighted alphanumeric LCD display of 2 lines of 20 characters
- X-ray push button with extensible cable
- Every operation is guided by messages shown on the display



Keyboard functions



- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Ready for exposure signal lamp 2. X-ray emission warning lamp 3. Manual increase of kV, sec or mA 4. Manual decrease of kV, sec or mA 5. Select kV for manual variation 6. Select sec for manual variation 7. Select mA for manual variation 8. Execute exam in test mode without x-ray emission 9. Reset 10. Patient centering position 11. Anatomic selection: adult/child 12. Anatomic selection: patient size 13. Anatomic selection: arch shape 14. IMPLANT program selection 15. CEPH program selection 16. SINUS program selection | <ol style="list-style-type: none"> 17. Reserved for future expansions 18. Reserved for future expansions 19. Panoramic programs selection 20. TMJ open/close mouth programs selection 21. Bi-axial TMJ programs selection 22. Centering laser lights 23. Reserved for future expansions 24. Cursor movement for parameters selection 25. Cursor movement for parameters selection 26. Cursor movement for parameters selection 27. Cursor movement for parameters selection 28. "Enter" key: operation confirmation 29. Vertical movement: up 30. Safety key for vertical movement 31. Vertical movement: down |
|---|---|



Mechanical characteristics

- Source to image distance: 510 mm (20") (panoramic, TMJ, Implant, Sinus, A.D.A.)
1650 mm (65") (ceph)
- Vertical column movement: 670 mm (26.4") , motorized
- Weight
 - Version without ceph arm: 135kg
 - Version with ceph arm: 150kg
- Total height max: 2320mm (91.3")
- Length x Width
 - Versions without ceph arm: 1000x1250mm
 - Versions with ceph arm: 1770x1250mm
- Operating surface
 - Versions without ceph arm: 1300x1300mm
 - Versions with ceph arm: 1900x1300mm
- Type of installation: wall mount

Electrical characteristics

Power supply voltage	220/230/240 Vac (±10%) single phase	120 Vac (±10%) single phase
Frequency	50 Hz	60 Hz
Current rating	8A @ 230V	15A @ 108V
Power rating	2kVA	2 kVA




Communication capabilities

- One RS 232C serial port allows connection to a PC for U.C.A and D.M.S. functions.

Environmental characteristics

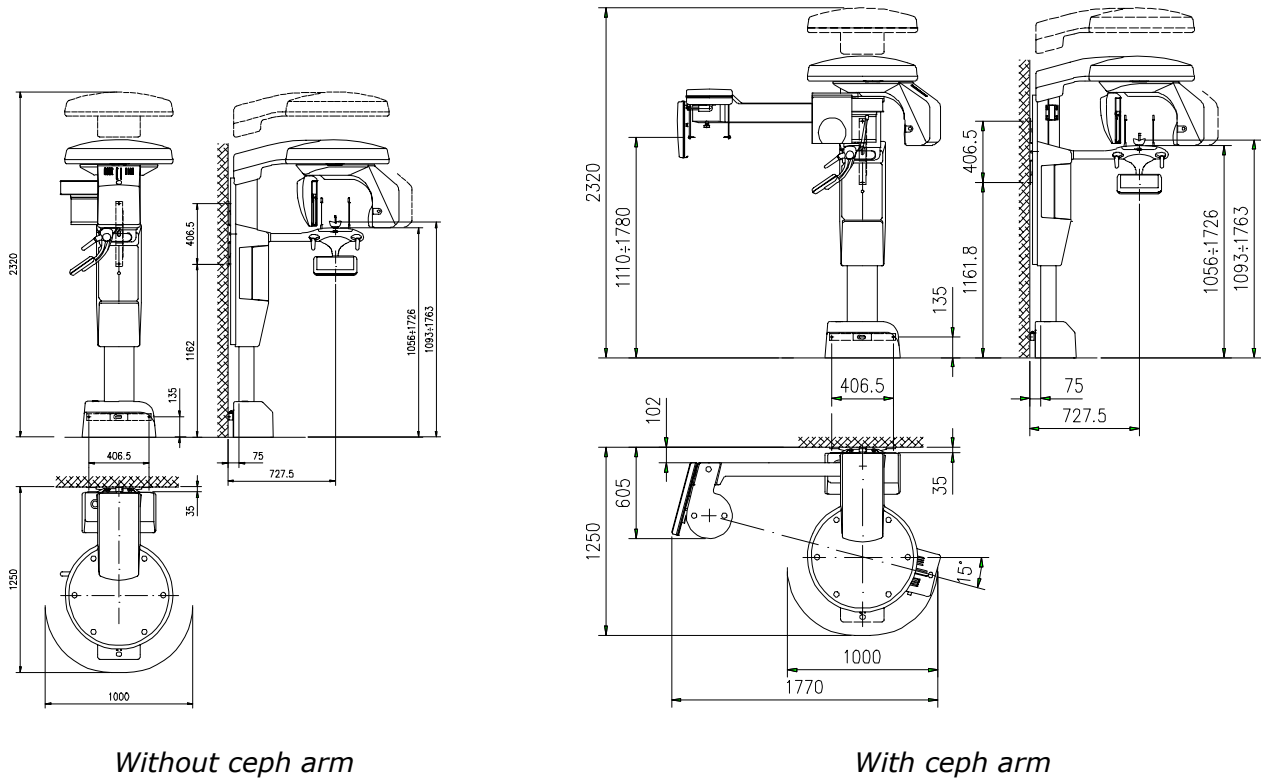
Operating temperature	+10°C ÷ +40°C
Operating relative humidity	30% ÷ 75%
Operating atmospheric pressure	700 - 1060 hPa
Transport and storage temperature	-20°C ÷ +70°C
Transport and storage relative humidity	<95 % non condensing
Transport and storage atmospheric pressure	500 - 1060 hPa

Standards and regulations

This product is designed and produced to meet the following standards: • EN 60601-1, EN 60601-1-1, EN 60601-1-2, EN 60601-1-3, EN 60601-2-7	
 0434	CE symbol grants the product compliance to the European Directive for Medical Devices 93/42 as a class IIB device.
	FDA approval grants the product compliance to USA Standards. (Only for 120V version)
	ETL approval. Meets requirement of UL 2601-1. (Only for 120V version)



Dimensions (all quotes in mm)



Note: Products are continuously under review in the light of technical advancement. The actual specification may therefore be subject to improvement or modification without notice.

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