ORTHOPANTOMOGRAPH® OP200 D
ORTHOCEPH® OC200 D
VT – Volumetric Tomography
Leading the way through the decades

1946: Professor Y.V. Paatero publishes his first paper on Panoramic Tomography.
1951: “Pantomography” equipment is presented.
1961: The first dental panoramic X-ray, ORTHOPANTOMOGRAPH® OP1, is developed.
1964: Commercialization of the ORTHOPANTOMOGRAPH® units begins with models OP2 and OP3.
1978: ORTHOPANTOMOGRAPH® becomes the leading name within dental panoramic imaging with models OP5/OC5, OP6 and OP10/OC10.
1992: New innovations, such as the lifting cassette head and linear tomography, are introduced along with the OP100 product family.
1999: Direct digital ORTHOPANTOMOGRAPH® OP100 product family is introduced.
2006: New ORTHOPANTOMOGRAPH® product family, OP200, is launched.
2007: Volumetric Tomography (VT) is developed to maximize the performance of an ORTHOPANTOMOGRAPH® unit.
2009: A new member to the ORTHOPANTOMOGRAPH® product family – OP30 – is launched.
2011: ORTHOPANTOMOGRAPH® OP300, the most comprehensive 3-in-1 platform is launched to celebrate 50 years of ORTHOPANTOMOGRAPH® success.

Choose your own ORTHOPANTOMOGRAPH®

- Standard panoramic
- Advanced panoramic
- "VT" imaging
- Volumetric Tomography
- CB3D
- Cephalometric

OP30 | OP200 | OP300
---|---|---
• | • | •
• | • | •
• | • | •
• | • | •
• | • | •
• | • | •

Contents

A proven leader in panoramic imaging  2
ORTHOCEPH® OC200 D  6
VT – Volumetric tomography. The optimal solution.  4
SMARTPAD™ Touch screen. A new era of usability.  11
Essentials for excellence  12
Imaging programs  13
Configurations OP200 & OC200 (digital and film)  17
Specifications  18

A wise investment for today – and tomorrow
A proven leader in panoramic imaging

Accurate and stable patient positioning
Correct patient positioning is assured by three positioning laser lights. Frankfurt and midsagittal lights aid finding the correct angulation of the patient’s head and the occlusion correction light ensures proper anterior positioning.

A rigid 5-point positioning system including forehead support, chin rest and bite fork eliminates patient movement. The open design allows easy viewing and positioning of the patient from either the left or right side.

V-shaped beam – clinically proven imaging geometry
The V-shaped X-ray beam adapts to the human anatomy, providing even greater detail and a wider mandibular image layer. The V-shaped X-ray beam also allows for more penetrating power for the thicker maxilla area.

Partial programs – Decrease of dose
When a full panoramic image is not required, 1 to 5 segments of the horizontal image can be selected to expose only regions of diagnostic interest.

Correct imaging values – automatically
OP200 has a patented method for dose-controlled Automatic Exposure Control. The system measures patient bone thickness from the ramus and defines individual exposure values for patients with different sizes. This also enables individual Automatic Spine Compensation values to reduce spinal shadow in the image for each patient.

Special geometry
The Ortho Zone program provides a special geometry to solve two common imaging problems: metal artefacts in the molar region of the condyle, and the need for an exceptionally wide anterior layer for patients with malocclusion.
Fully adjustable scanning
OC200 D incorporates an advanced user-adjustable lateral scan method to expose only the desired portion of the skull. This method reduces the scanning time to a minimum of 5 seconds and reduces patient dose considerably.

OC200 D uses a patented Automatic Facial Contour (AFC) method for soft tissue enhancement in lateral views. The unit automatically adjusts the exposure values during scanning for better soft tissue definition.

Clinically correct image geometry
In order to produce equal and accurate horizontal and vertical magnification, OC200 D uses a patented method of synchronized tube head horizontal sweep and sensor movements while keeping the focal spot in the same position.

Stable patient positioning
The Frankfurt horizontal plane laser light, nasion support and rigid ear rods with locking system make patient positioning easy and convenient.

Perfect fit for your clinic
OC200 D can be set up in your clinic for right or left-handed cephalometric imaging and is “field changeable”. SMARTPAD™ can be installed on either side of the unit or on the wall.

Full range of projections
ORTHOCEPH® patient positioning system provides a variety of imaging projections for cephalometric radiography. It is a comprehensive diagnostic device that includes lateral, facial, posteroanterior and oblique projections, as well as the possibility of hand and wrist imaging.

48% to 62% dose reduction
VT – Volumetric Tomography
The optimal solution

ORTHOPANTOMOGRAPH® OP200 with VT is the most advanced and comprehensive cross-sectional imaging system on the market. It provides accurate and valuable information especially for implant planning. With the VT there is no need for unit modifications or purchasing expensive sensors.

256 cross-sectional slices!
VT provides a continuously viewable stack of 256 cross-sectional slices. Each slice has a minimum thickness of 0.23 mm. Selection of the region of interest could not get easier.

Easy navigation of slices
The VT system has a slice navigator that shows the exact position of the cross-sectional slice in real time.

Excellent image quality
Our unique reconstruction method produces high-quality images using a patented method for making cross-sectional slices with narrow X-ray beam and standard panoramic sensor. This has been proven to give better image quality than other known reconstruction methods.

Implant planning tools
The implant planning tool helps you to easily determine the correct implant for treatment. The tool contains implant models from leading manufacturers. The software also provides the necessary measuring tools.

• Very easy and forgiving patient positioning • No measuring of patient or marking of impressions required • Upgradeable to every OP200 unit
SMARTNAV™ – Interactive navigator
SMARTNAV™ navigation software provides easy selection of imaging programs, arch sections, lateral scanning start position, and more. The user can easily set the desired imaging parameters in SMARTNAV™. All information is displayed and described in an intuitive manner.

SMARTPAD™ full-color touch screen
The large 12.1” SMARTPAD™ touchscreen has an easy-to-use menu with simple and intuitive navigation. SmartPad™ option is available for all OP200 D units.

Patient positioning animations
If in doubt, patient positioning animations specific to each imaging program demonstrate the proper patient positioning procedure.

Instant dynamic help
This feature provides quick and convenient information related to the imaging programs, such as the purpose of the program selected.

A new era of usability

Operators of the unit and their knowledge of the imaging methods may change with time – quality of ORTHOPANTOMOGRAPH® and ORTHOCEPH® images will not.
Imaging programs

Versatile imaging programs

In addition to the various standard panoramic programs, special imaging programs are available to facilitate easy diagnosis even with difficult clinical conditions.

Essentials for excellence

The quality of images is a result of many elements. A perfect image is as dependent on good patient positioning and support as technical features of the equipment or specifications of the workstation. ORTHOPANTOMOGRAPH® combines all possible factors for your benefit to ensure you a perfect image – every single time.

We master the details.

Essentials for excellent panoramic imaging

✓ Advanced high frequency generator technology, 2–16mA / 57–85kV
✓ Focal spot: 0.5 mm
✓ Clinically correct imaging geometry
✓ Correct beam shape: V-shaped X-ray beam
✓ Latest CCD technology
✓ Dose-controlled Automatic Exposure Control (AEC)
✓ Automatic Spine Compensation (ASC)
✓ Accurate and stable 5-point patient positioning
✓ Smooth rotation
✓ Positioning lights: 3 laser lights
✓ Professional software tools
✓ Proper monitor and viewing conditions: ask for a recommendation from your dealer

Essentials for excellent cephalometric imaging

✓ Clinically correct imaging geometry
✓ Powerful tubehead: 2–16mA / 57–85kV
✓ Fully adjustable lateral scan for fast exposures
✓ Exposure-controlled Automatic Facial Contour (AFC)
✓ Frankfurt horizontal plane laser light
✓ Stable patient positioning with ear holder locking
✓ Professional software tools
✓ Proper monitor and viewing conditions: ask for a recommendation from your dealer

Maxillary anterior region.

The Volumetric Tomography stack view and slice navigator. Optional modality.

Right mandibular region.

The Volumetric Tomography stack view and slice navigator. Optional modality.

The standard adult panoramic imaging program P1 provides a clear image.
**Panoramic**

- **P2**
  - The pediatric panoramic program has a clinically adapted image layer and reduced image height.
- **P3**
  - The Ortho Zone provides special geometry for an exceptionally wide anterior image layer.
- **P5**
  - The Wide Arch program is appropriate for patients with unusually wide than average dental anatomy.
- **P4**
  - The Orthogonal program reduces overlapping of the teeth.
- **P8**
  - Sinus maxillary imaging program. P10 in film unit.
- **BW**
  - Bitewing-like view for a quick and easy alternative to intraoral bitewing imaging.

**TMJ**

- **P6**
  - Temporomandibular joint (TMJ) lateral view can be taken with mouth closed or open.
- **P7**
  - With the film unit, a special program is provided for taking both open and closed TMJ views on same film.
- **P9**
  - With the film unit, a special TMJ program provides both lateral and PA views on same film.
- **P8**
  - TMJ PA projection gives clear view of condyles with 1.8 magnification. P11 in film unit.
Cephalometric

The ORTHOCAP® patient positioning system enables a variety of imaging projections for cephalometric radiography. It includes facial, posterior-anterior and Submentovertex projections among others. P12 in film unit.

Carpus imaging with cephalostat units. Optional in some markets.

Digital

OC200 D unit shown with optional SMARTPAD™, embedded computer and optional base plate for free standing.

A hand control can be used instead of the SMARTPAD™.

The left-handed digital cephal comes with an additional positioning mirror.

Optional carpus holder for accurate wrist imaging with dental cephal.

Film

Film and cassette sizes

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panoramic cassette</td>
<td>15 x 30 cm (6” x 12”)</td>
</tr>
<tr>
<td>Optional panoramic</td>
<td>24 x 30 cm or 10” x 12” (CR model)</td>
</tr>
<tr>
<td>Standard cephalostat</td>
<td>18 x 24 cm or 8 x 10”</td>
</tr>
<tr>
<td>Optional cephalostat</td>
<td>24 x 30 cm or 10” x 12”</td>
</tr>
</tbody>
</table>

Film and cassette sizes

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panoramic cassette</td>
<td>15 x 30 cm (6” x 12”)</td>
</tr>
<tr>
<td>Optional panoramic</td>
<td>24 x 30 cm or 10” x 12” (CR model)</td>
</tr>
<tr>
<td>Standard cephalostat</td>
<td>18 x 24 cm or 8 x 10”</td>
</tr>
<tr>
<td>Optional cephalostat</td>
<td>24 x 30 cm or 10” x 12”</td>
</tr>
</tbody>
</table>

Film and cassette sizes

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panoramic cassette</td>
<td>15 x 30 cm (6” x 12”)</td>
</tr>
<tr>
<td>Optional panoramic</td>
<td>24 x 30 cm or 10” x 12” (CR model)</td>
</tr>
<tr>
<td>Standard cephalostat</td>
<td>18 x 24 cm or 8 x 10”</td>
</tr>
<tr>
<td>Optional cephalostat</td>
<td>24 x 30 cm or 10” x 12”</td>
</tr>
</tbody>
</table>

Film and cassette sizes

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panoramic cassette</td>
<td>15 x 30 cm (6” x 12”)</td>
</tr>
<tr>
<td>Optional panoramic</td>
<td>24 x 30 cm or 10” x 12” (CR model)</td>
</tr>
<tr>
<td>Standard cephalostat</td>
<td>18 x 24 cm or 8 x 10”</td>
</tr>
<tr>
<td>Optional cephalostat</td>
<td>24 x 30 cm or 10” x 12”</td>
</tr>
</tbody>
</table>

Film and cassette sizes

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panoramic cassette</td>
<td>15 x 30 cm (6” x 12”)</td>
</tr>
<tr>
<td>Optional panoramic</td>
<td>24 x 30 cm or 10” x 12” (CR model)</td>
</tr>
<tr>
<td>Standard cephalostat</td>
<td>18 x 24 cm or 8 x 10”</td>
</tr>
<tr>
<td>Optional cephalostat</td>
<td>24 x 30 cm or 10” x 12”</td>
</tr>
</tbody>
</table>
**Dimensions**

Panoramic unit corner installation (SMARTPAD™ may have to be installed on the wall)

Minimum space requirement for digital unit including built-in PC and the SMARTPAD™ mounted on cephal side

Minimum space requirement for film unit

**Film and digital unit height and SMARTPAD™ width**

**Technical specification**

**Technical specifications**

- **generator**: high frequency DC, 75–150 kHz
- **X-ray tube**: D-0315
- **focal spot size**: 0.5 mm, according to IEC 336
- **total filtration**: min 2.5 mm Al
- **tube voltage**: 57–85 W
- **tube current**: 2–16 mA
- **nominal voltage**: 110/230 VAC +/-10% 50/60 Hz
- **main fuses**: 10 A @ 230 VAC, 15 A @ 110 VAC
- **power consumption**: 2.3 kVA @ 230 VAC, 1.65 kVA @ 110 VAC

<table>
<thead>
<tr>
<th>Model</th>
<th>Patient positioning lights</th>
<th>Nominal magnification</th>
<th>Number of imaging programs</th>
<th>Imaged area variations</th>
<th>Exposure time</th>
<th>Weight approx.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP200 D</td>
<td>3</td>
<td>1.3</td>
<td>9</td>
<td>34</td>
<td>2.7–14.1 s</td>
<td>175 kg / 385 lbs</td>
</tr>
<tr>
<td>OC200 D</td>
<td>4</td>
<td>1.14 (cpih)</td>
<td>12</td>
<td>34–9</td>
<td>5–20 s</td>
<td>210 kg / 465 lbs</td>
</tr>
<tr>
<td>OP200</td>
<td>3</td>
<td>1.3</td>
<td>10</td>
<td>31</td>
<td>2.7–14.1 s</td>
<td>175 kg / 385 lbs</td>
</tr>
<tr>
<td>OC200</td>
<td>3</td>
<td>1.08–1.14 (cpih)</td>
<td>12</td>
<td>31</td>
<td>0.1–3.2 s</td>
<td>210 kg / 465 lbs</td>
</tr>
</tbody>
</table>

**VT specification**

- **X-ray beam**: fan beam
- **Volumetric image size**: 60 x 60 x 60 mm
- **Number of slices**: 256
- **Slice thickness**: 0.23 mm
- **Dose**: 1.3 x panoramic image (Depending on number of projection images)

**Digital specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sensor pixel size</th>
<th>Image pixel size</th>
<th>Image field height</th>
<th>PC minimum requirement for image capture</th>
<th>Operating system</th>
<th>DICOM® compatibility</th>
<th>TWAIN connectivity</th>
<th>Embedded computer</th>
<th>SMARTPAD™</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP200 D</td>
<td>48 x 48 µm</td>
<td>96 x 96 µm</td>
<td>5.8 inches / 147 mm</td>
<td>Pentium 1 GHz or equivalent, 512 MB, 40 GB, 1 PCI slot</td>
<td>WIN 2000 / XP / 2003 Server / Vista</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
</tr>
<tr>
<td>OC200 D</td>
<td>48 x 48 µm</td>
<td>96 x 96 µm</td>
<td>8.7 inches / 221 mm</td>
<td>Pentium 1 GHz or equivalent, 512 MB, 40 GB, 1 PCI slot</td>
<td>WIN 2000 / XP / 2003 Server / Vista</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
</tr>
</tbody>
</table>

* DICOM® is the registered trademark of the National Electrical Manufacturers Association for its standards publications relating to digital communications of medical information.
Instrumentarium Dental develops, manufactures and markets high-tech systems and solutions for dental and maxillofacial imaging. We work in close cooperation with dental professionals, universities and other research centers in our quest to develop solutions that will meet and exceed the expectations of our customers. As the establisher of panoramic X-ray imaging, we are committed to providing high clinical performance while still maintaining simplicity, ease of use and workflow efficiency.

The Instrumentarium Dental product portfolio consists of a full range of premium quality imaging solutions for intraoral, extraoral and 3D imaging. For more detailed information about our products, please visit www.instrumentariumdental.com.

Instrumentarium Dental reserves the right to make changes to specifications and features shown herein, or to discontinue the product described at any time without notice or obligation. Contact your Instrumentarium Dental representative for the most current information.


ORTHOPANTOMOGRAPH®/ORTHOCEPH®/CLINIVIEW™/SMARTPAD™/SMARTNAV™ is a registered trademark/ a common law trademark of Instrumentarium Dental, PaloDEx Group Oy.