ORTHOPANTOMOGRAPH™ OP 3D Pro
A platform for changing needs
ORTHOPANTOMOGRAPH™
OP 3D Pro

OP 3D Pro is the most comprehensive 3-in-1 platform designed for today and tomorrow, covering the entire maxillofacial region. OP 3D Pro combines an advanced panoramic imaging system with either cephalometric or cone beam 3D or a combination of both, giving you a truly adaptable platform.

With OP units, each feature is optimized to provide the best possible image quality and efficient clinical use. OP 3D Pro masters the details.

Complete versatility
ORTHOPANTOMOGRAPH™ OP 3D Pro is a platform for changing needs. Depending on the configuration, OP 3D Pro can be upgraded with CBCT or cephalometric modalities.
Excellence for all clinical needs

- General Practitioners
- Endodontics
- Implantology
- Orthodontics
- Oral & Maxillofacial Surgery
- Periodontics
- Prosthodontics
- Airway
Control without compromise

With ORTHOPANTOMOGRAPH™ units, no usability compromises have been made. The OP 3D Pro system offers ultimate control for obtaining diagnostic information from the correct region of interest. This is achieved with the optimum combination of patient positioning and SMARTVIEW™ scout image.

**SMARTVIEW™ functionality**

SMARTVIEW™ functionality FOV positioning accuracy can be verified or adjusted if needed by taking SMARTVIEW™ scout image before CBCT examination. Furthermore, the FOV can be positioned freely to the region of interest, both in horizontal and vertical directions—with ease and confidence.

Even the smallest FOV can be efficiently and precisely positioned with the help of the intuitive user interface and SMARTVIEW™ functionality.
User-experience in focus

The large, easy-to-use 10” user interface enables intuitive usage and setting of imaging parameters from the very beginning. The result is fast and effortless workflow for all modalities.
3D images provide valuable information vital to diagnosis and determining the best course of treatment. Evaluation of different morphologies is easy as the region of interest can be viewed from all directions.

The precision of OP 3D Pro is founded on the carefully optimized image quality parameters of each program. Both the volume and the resolution can be selected according to the indication and region of interest. OP 3D Pro provides professionals with the tools to succeed.

**Automatic Dose Control for 3D**

With the proprietary ADC feature, patient-specific exposure settings are obtained automatically providing premium quality images at optimal dose for the patient.
Resolution for each indication

For each FOV size, it is possible to choose between different resolutions. Additionally, the user selectable Metal Artifact Reduction (MAR) tool can be used with every available FOV.

- **Low Dose Technology™ scan** (LDT) can be utilized in dose sensitive cases and control or follow-up situations where lower resolution is acceptable.
- **Standard resolution scan** with optimized patient dose can be used for general diagnostics.
- **High resolution scan** offers extremely sharp images for more detailed diagnosis.
- **Endo resolution scan** 85 µm voxel size with MAR tool specially designed for endodontic applications. Endo resolution is available for the smallest FOV.

Image quality and patient dose optimized—in all OP 3D Pro programs

80%

**Dose Reduction with Low Dose Technology™**

OP 3D Pro users have the luxury of using Low Dose Technology™ (LDT), which provides quality optimized low dose scans at up to an 80% reduction in dosing compared to the standard 3D acquisition protocol* while keeping the clinical value still intact.

**OP 3D Pro small panel**

- **FOV 6x4 cm**
  Optimized for single-site implants or localized diagnostics, keeping the patient dose at a substantially reduced level.

- **FOV 6x8 cm**
  Covers the complete dental arch for multiple implant placement and allows for the use of surgical guides.

**OP 3D Pro**

- **FOV 5x5 cm**
  Optimized for single-site implants or localized diagnostics, keeping the patient dose at a substantially reduced level.

- **FOV 6x8 cm**
  Covers the complete dental arch for multiple implant placement and allows for the use of surgical guides.

- **FOV 8x15 cm**
  Covers both mandible and maxilla including airway and upper cervical spine or the sinus. Both TM joints can also be studied.

- **FOV 13x15 cm**
  Covers the entire maxillofacial region.

- **FOV 8x8 cm**
  Covers the entire dentition, including both mandible and maxilla as well as a portion of maxillary sinus.
Clinical images

FOV 13 x 15 cm

FOV 8 x 15 cm
OP 3D Pro panoramic: Perfection brings confidence

Consistent, repeatable, gold-standard image quality offers the power to diagnose quickly and efficiently with a wide range of panoramic imaging programs. The unique combination of dedicated panoramic sensor, ADC, easy patient positioning and the best possible imaging geometry provide excellent diagnostic images—time after time.

**Automatic Dose Control (ADC)**
Proprietary ADC technology automatically optimizes panoramic exposure levels for each patient and every acquisition, resulting in patient-specific dosage and enhanced workflow efficiency.

**Multilayer pan**
The OP 3D Pro multilayer feature provides five panoramic images with only one scan to compensate for incorrect patient positioning and difficult anatomies—all achieved in the same scanning time and dose as the traditional panoramic scan.

**ORTHOfocus™ feature—sharp images automatically**
With the user-selectable ORTHOfocus™ feature, optimum panoramic layer is provided automatically and every time.
The standard adult panoramic imaging program provides clear and consistent image.

The pediatric panoramic program has a clinically adapted image layer and reduced images height.

Bitewing-like view is a quick and easy alternative to intraoral bitewing imaging.
OP 3D Pro cephalometric: Unsurpassed results

A variety of cephalometric imaging programs are available for OP 3D Pro. Furthermore, it can be tailored to your preferences. The cephalometric arm can be positioned to either side for optimum use of space and user-experience.

**Excellent image quality for every patient**
Automatic Facial Contour (AFC) automatically decreases the exposure values during the scan for better soft tissue definition in the facial region.

**Adjustable scanning area**
Fully adjustable scanning area ensures that by exposing only the required region, the patient dose is decreased.

True 3-in-1 platform
Cliniview™

**Fast and accurate diagnosis**

The CLINIVIEW™ software is specifically designed for your workflow. Image storage and processing, as well as diagnostic decisions, treatment planning and printing, are built to function intuitively. The main focus is on extreme fluency of use for fast, accurate diagnoses. CLINIVIEW™ software is highly compatible and connected. Utilizing the industry-standard DICOM format, images can be transported between CLINIVIEW™ software and a wide range of other sources, including TWAIN.

Invivo™

**Powered by Anatomage**

The software is incredibly powerful, yet intuitive, which helps doctors concentrate on treatment planning versus the tool itself. Clinicians have so much control in implant selection and placement. They can adjust and size the implant directly in the 3D rendering, design the crown and abutment and perform the surgery virtually. The software also helps clinicians create accurate treatment plans for ortho, endo, oral surgery and restorative cases. The potential to treat different cases is enormous.
Leading the way through the decades

For more than 50 years, the name of ORTHOPANTOMOGRAPH™ system has stood for ultimate reliability and clinically correct maxillofacial imaging.

1946
Professor Y.V. Paatero publishes his first paper on Panoramic Tomography.

1961
The first dental panoramic X-ray, ORTHOPANTOMOGRAPH™ OP1, is developed.

1978
ORTHOPANTOMOGRAPH™ system becomes the leading name within dental panoramic imaging with models OP5/OC5, OP6 and OP10/OC10.

1999
Direct digital ORTHOPANTOMOGRAPH™ OP100 product family is introduced.

2007
Volumetric Tomography (VT) is developed to maximize the performance of an ORTHOPANTOMOGRAPH™ unit.

2013
New revision of ORTHOPANTOMOGRAPH™ OP30 unit is launched.

2017
ORTHOPANTOMOGRAPH™ product family introduces OP 3D Pro product family and OP 2D product.

1951
“Pantomography” equipment is presented.

1964
Commercialization of the ORTHOPANTOMOGRAPH™ units begins with models OP2 and OP3.

1992
New innovations, such as the lifting cassette head and linear tomography, are introduced along with the OP100 product family.

2006
New ORTHOPANTOMOGRAPH™ product family OP200 is launched.

2009
A new member to the ORTHOPANTOMOGRAPH™ product family—OP30—is launched.

2011
CBCT era begins. ORTHOPANTOMOGRAPH™ OP300, the most comprehensive 3-in-1 platform, is launched to celebrate 50 years of ORTHOPANTOMOGRAPH™ success.

2013
Introduction of improved 3D image quality, new Metal Artifact Reduction (MAR) tool and endo mode for ORTHOPANTOMOGRAPH™ OP300 3D images.

2014
ORTHOPANTOMOGRAPH™ OP300 Maxio configuration, offering diagnostic information of the entire maxillofacial region, is launched.
KaVo—Dental Excellence

KaVo is committed to providing the foundation so our customers can do more of what is important to them. Through product innovation, world-class service and exceptional support, KaVo brings the best dental technology—from Gendex, Instrumentarium Dental, NOMAD, and SOREDEX—together as one.

The known KaVo quality is now available in an impressive product portfolio. We are proud to offer handpieces, treatment units and world-class imaging solutions and more.

Everyday, we are empowering clinicians to do more of what matters.
## Technical Specifications

### Minimum System Requirements for 3D Acquisition Workstation

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU (processor)</strong></td>
<td>Intel Core i5, i7 or Xeon, 4-cores or more</td>
</tr>
<tr>
<td><strong>GPU (graphics processing unit)</strong></td>
<td>NVIDIA Quadro M2000 4GB or GeForce GTX 1050 Ti 4GB</td>
</tr>
<tr>
<td><strong>RAM (memory)</strong></td>
<td>8 GB or more</td>
</tr>
<tr>
<td><strong>Storage (hard disk)</strong></td>
<td>1 TB or more</td>
</tr>
<tr>
<td><strong>Network</strong></td>
<td>Gigabit Ethernet 1000 Mb/s</td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>Windows 10 Pro or Enterprise, 64-bit</td>
</tr>
<tr>
<td></td>
<td>Windows 8.1 Pro or Enterprise, 64-bit</td>
</tr>
<tr>
<td></td>
<td>Windows 7 Professional, Ultimate or Enterprise, 64-bit, with SP1</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>1920 x 1080 resolution (Full HD) or higher, at least 300 cd/m² brightness for typical room lighting, native contrast ratio 100:1 or better, 8-bit panel strongly recommended</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>OpenCL 1.1 support</td>
</tr>
<tr>
<td></td>
<td>DVD-ROM drive</td>
</tr>
<tr>
<td></td>
<td>Anti-virus software</td>
</tr>
<tr>
<td><strong>Notes</strong></td>
<td>Please refer to software and device installation manuals for detailed requirements</td>
</tr>
</tbody>
</table>

### 2D

<table>
<thead>
<tr>
<th>Feature</th>
<th>Panoramic</th>
<th>Cephalometric</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Image Detector</strong></td>
<td>CMOS</td>
<td>CMOS</td>
</tr>
<tr>
<td><strong>Sensor Pixel Size</strong></td>
<td>100 µm</td>
<td>100 µm</td>
</tr>
<tr>
<td><strong>Image Pixel Size</strong></td>
<td>100 µm</td>
<td>100 µm</td>
</tr>
<tr>
<td><strong>Scan/Exposure Time</strong></td>
<td>8.6-16.1 s</td>
<td>10-20 s</td>
</tr>
<tr>
<td><strong>Image Field Height</strong></td>
<td>148 mm</td>
<td>170 mm-260 mm</td>
</tr>
<tr>
<td><strong>Imaging Programs</strong></td>
<td>Standard, Pediatric, Ortho Zone, Orthological, Wide Arch, Lat TMJ, PA TMJ, Maxillary Sinus, Bitewing</td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>200 kg/440 lbs</td>
<td>250 kg/551 lbs</td>
</tr>
</tbody>
</table>

### 3D

<table>
<thead>
<tr>
<th>Feature</th>
<th>OP 3D Pro small panel</th>
<th>OP 3D Pro</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Image Detector</strong></td>
<td>CMOS</td>
<td>CMOS</td>
</tr>
<tr>
<td><strong>Image Voxel Size</strong></td>
<td>85 µm-330 µm</td>
<td>85 µm-420 µm</td>
</tr>
<tr>
<td><strong>Scan Time</strong></td>
<td>11-21 s</td>
<td>11-42 s</td>
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<tr>
<td><strong>Exposure Time</strong></td>
<td>1.2-12.6 s</td>
<td>1.2-8.7 s</td>
</tr>
<tr>
<td><strong>Image Volume Sizes (HxW)</strong></td>
<td>61x41, 61x78 mm</td>
<td>50 x 50, 61 x 78, 78 x 78, 78 x 150, 130 x 150 mm</td>
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<tr>
<td><strong>DICOM Support</strong></td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td><strong>Min. room height</strong></td>
<td>2050-2450 mm</td>
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### DICOM Support

- Yes

### Unit Dimensions

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<td><strong>Focal Spot</strong></td>
<td>0.5 mm, IEC 336</td>
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<tr>
<td><strong>Tube Voltage</strong></td>
<td>57-90 kV</td>
</tr>
<tr>
<td><strong>Tube Current</strong></td>
<td>3.2-16 mA</td>
</tr>
<tr>
<td><strong>HU Capacity</strong></td>
<td>35 kJ, 49 000 HU</td>
</tr>
<tr>
<td><strong>Minimum Total Filtration</strong></td>
<td>3.2 mm Al</td>
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<td><strong>Wheelchair accessible</strong></td>
<td>Yes</td>
</tr>
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Dental Excellence from KaVo.

**Handpieces**
KaVo has always been the leader in creating innovative solutions for dental practitioners. Our vast line of quality handpieces showcase our attention to your level of care while delivering performance that lasts.

**Treatment Units**
Beautiful lines, patient comfort and simple operation are just a few of the benefits to the line of KaVo treatment units. Everything you need to perform any procedure—all in one solution.

**Imaging Solutions**
Designed with ease-of-use for all clinicians in mind, KaVo now offers dependable and consistent imaging solutions that provide vital information to support accurate diagnosis and predictable treatment planning.

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