Digital medical imaging has significantly contributed to the improvement of diagnoses and the widespread use of less invasive procedures. Over the past 15 years, ACTEON® has committed to channeling its efforts into contributing to improve the accuracy of surgical procedures, and to reduce the radiation doses emitted. Through the development of ever more sophisticated yet intuitive 2.0 software packages, our R&D teams are able to innovate on a daily basis. In our permanent pursuit of excellence, we are proud today to present our latest innovations in this brochure.
## Technical Specifications

<table>
<thead>
<tr>
<th>X-ray Source</th>
<th>Panoramic</th>
<th>CBCT</th>
<th>Cephalometric</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tube type</strong></td>
<td>High-frequency DC generator</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total filtration</strong></td>
<td>2.8 mmAl / 85 kV</td>
<td>7.0 mmAl / 90 kV</td>
<td>2.8 mmAl / 85 kV</td>
</tr>
<tr>
<td><strong>Operation mode</strong></td>
<td>Continuous</td>
<td>Pulsed</td>
<td>Continuous</td>
</tr>
<tr>
<td><strong>Tube voltage</strong></td>
<td>60 - 85 kVp</td>
<td>90 kVp</td>
<td>60 - 85 kVp</td>
</tr>
<tr>
<td><strong>Anodic current</strong></td>
<td>4 - 10 mA</td>
<td>4 - 12 mA</td>
<td>4 - 10 mA</td>
</tr>
<tr>
<td><strong>Focal point</strong></td>
<td>0.5 mm</td>
<td>0.5 mm</td>
<td>0.5 mm</td>
</tr>
</tbody>
</table>

### Detector

<table>
<thead>
<tr>
<th>Type</th>
<th>Panoramic</th>
<th>CBCT</th>
<th>Cephalometric</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>CMOS</td>
<td>Flat Panel CMOS</td>
<td>CMOS</td>
</tr>
<tr>
<td><strong>FOV and format</strong></td>
<td>ø 40 x 40 mm, ø 60 x 60 mm, ø 80 x 80 mm, ø 110 x 80 mm</td>
<td>240 x 180 mm</td>
<td></td>
</tr>
<tr>
<td><strong>Pixel size/voxel size</strong></td>
<td>Pixel: 100 μm</td>
<td>Voxel: 75 μm</td>
<td>Pixel: 100 μm</td>
</tr>
</tbody>
</table>

### Acquisition

<table>
<thead>
<tr>
<th>Technique</th>
<th>Panoramic</th>
<th>CBCT</th>
<th>Cephalometric</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technique</strong></td>
<td>180° single scan</td>
<td>360° single scan</td>
<td>Single scan</td>
</tr>
<tr>
<td><strong>Exposure time</strong></td>
<td>3.3 s - 13.5 sec</td>
<td>4 - 12 s</td>
<td>15 sec</td>
</tr>
<tr>
<td><strong>Scanning time</strong></td>
<td>16.8 sec - 25 sec</td>
<td>12 - 30 sec</td>
<td>23 sec</td>
</tr>
</tbody>
</table>

### Image Format

<table>
<thead>
<tr>
<th>Format</th>
<th>Panoramic</th>
<th>CBCT</th>
<th>Cephalometric</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Format</strong></td>
<td>JPEG, BMP, PNG, DCM</td>
<td>DCM, STL</td>
<td>JPEG, BMP, PNG, TIFF, DCM</td>
</tr>
</tbody>
</table>

### Mechanical Data

<table>
<thead>
<tr>
<th>Max footprint dimensions</th>
<th>Panoramic</th>
<th>CBCT</th>
<th>Cephalometric</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>L 150 x W 110 cm</strong></td>
<td>L 150 x W 172 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Height</strong></td>
<td>Max: 235 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>170 kg (PAN)</td>
<td>185 kg (PAN-CBCT)</td>
<td>215 kg (PAN-CEPH)</td>
</tr>
</tbody>
</table>

### IEC

<table>
<thead>
<tr>
<th>Class and Type</th>
<th>Panoramic</th>
<th>CBCT</th>
<th>Cephalometric</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class I, Type B</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Computer (included with CBCT)

<table>
<thead>
<tr>
<th>IMAC® or MacBook® Pro</th>
<th>Windows® Workstation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
<td>Intel i5</td>
</tr>
<tr>
<td><strong>Hard Disk</strong></td>
<td>500 Go</td>
</tr>
<tr>
<td><strong>Graphic Processor</strong></td>
<td>NVIDIA GT 1 Go</td>
</tr>
<tr>
<td><strong>RAM Memory</strong></td>
<td>8 GB</td>
</tr>
<tr>
<td><strong>Network card</strong></td>
<td>1 Gb/s</td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>OS X Mavericks or later</td>
</tr>
</tbody>
</table>

### Tablet

| iPad Pro 9.7”, 32 Go, WIFI |

### DICOM 3.0 (Optional)

| Worklist, Storage, Query/Retrieve, Print, Verify |

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**I AM DEMANDING**

3D technology that facilitates implant planning with instant volume measurement and bone density assessment.
The evolution of dental technology is such that we can now perform procedures which were unimaginable 10 years ago. In the field of implantology, the success rate for implant placements has progressed notably due to pre-implant procedures. The implant is the key element in this revolution, but it is essential to also have a high quality bone support: ACTEON created a global solution for that with the combination of 3 products (X-MIND TRIUM, QUALIOS, PIEZOTOME).

• **X-MIND TRIUM™**: the 3D technology that facilitates the implant planning with immediate volume measurement and bone density assessment
• **QUALIOS™**: Unique structure and high mechanical resistance for optimal bone regeneration
• **PIEZOTOME® CUBE**: Dynamic power responsiveness for superior osseous surgery

All these ACTEON® innovations result from the research of 5 design offices which collaborate daily with international dental surgeons to offer patients faster, more natural results whilst minimising possible operative sequelae.

## MORE INVENTIVE

The X-Mind® trium implementation of therapy from the diagnosis is safer:
- quick
- less traumatic and stressful
- minimised surgical effects

The X-Mind® trium contributes to successful osseointegration with:
- assessment of bone density and volume
- easier clinical decision-making
- more reliable treatment planning
- focus adapted to the region of interest
- dose of radiation controlled

Bone density information, obtained using X-Mind® trium, supports the diagnosis based on other clinical data, under the expertise and supervision of the clinician.

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1Evaluation of a Novel Cone Beam Computed Tomography Scanner for Bone Density Examinations in Preoperative 3D Reconstructions and Correlation with Primary Implant Stability
Lars Sennerby, DDS, PhD; Peter Andersson, DDS; Luca Pagliani, MD, DDS; Claudio Giani, BioEng; Giacomo Moretti, BioEng; Massimo Molinari, BioEng; Alessandro Motroni, BioEng

Bone density information, obtained using X-Mind® trium, supports the diagnosis based on other clinical data, under the expertise and supervision of the clinician.
The ACTEON® Imaging Suite software offers intuitive navigation with the mouse and advanced functionality. It alone lets you manage all of your images, from scanning to viewing images from all ACTEON® imaging devices (CBCT, Panoramic, intraoral digital X-ray system, intraoral camera, etc.) and much more.

**A QUALITY IMAGE VIA AN INTERFACE THAT IS SIMPLE, QUICK, INTUITIVE**

- IMPLANT PLANNING
- CROWN PLACEMENT
- MANDIBULAR NERVE TRACING
- EASY NAVIGATION IN DIFFERENT SECTIONS
- MOUSE CONTROL
- BONE DENSITY ASSESSMENT AND VOLUME MEASUREMENT
- SURFACE, DISTANCE AND ANGLE MEASUREMENT
- SUBSTANTIAL AND SCALABLE IMPLANT LIBRARY
- PRINTED IMPLANT REPORT

**DICOM COMPATIBLE**

**EXPORTS TO STL FORMAT**

**PORTABILITY BECOMES OBVIOUS**

ACTEON® innovates once more by offering a unique iPad® application for its CBCT X-Mind® trium. A real technological breakthrough for dentists!

* * Coming soon
Easy-to-use software
A precise and detailed analysis of the existing bone volume is highly recommended in order to reduce complications associated with implant placement. The ACTEON® Imaging Suite 3D software displays the assessment of bone density all around the implant with just one click.

Communicate with the patient
If bone volume is low, the images and information supplied by the ACTEON® Imaging Suite 3D software can help you clearly explain your therapeutic recommendation to your patient. This explanation is particularly helpful if surgery and/or bone filling is necessary.

Indicator colours
Bone density information is clearly represented by the colours red and green.
- Green: High density
- Red: Low density

3D mapping
This completes the colour indicators.
Combined with its ACTEON® Imaging Suite software, X-Mind® trium is an essential tool for planning the treatment and post-procedure follow-up. Its 3D imaging offers high precision of the anatomy from a single scan and provides a full understanding of the patient's jaw. Its results are quick and accurate, thereby streamlining your workflow.

1. Locating and tracing the mandibular canal precisely is the first step in the implant planning procedure. It also measures the distance between the canal boundary and the implant.

2. 3D modelling can then be used to choose the size and shape of the implants in proportion to the patient's morphology based on a substantial and scalable implant library. Better still, you start by putting the crown in place, which serves as a guide for better positioning of the implant.

3. ACTEON® Imaging Suite gives useful information to assess volume and bone density for implant placement, which can effectively be used to guide the diagnosis and surgical treatment.

4. ACTEON® Imaging Suite exports imaging data generated by X-Mind® trium scans in STL format. This data can be imported into a surgical guide design software.

5. In less than a minute, you can produce and print a full implant report, to illustrate your written report (required). This illustrated report can also help you better inform your patient or a referring dental surgeon.
DETAILED IMAGING FOR ENDODONTICS

A THREE-DIMENSIONAL IMAGE FOR A MORE ACCURATE DIAGNOSIS

The multiple slices obtained with X-Mind® trium allow to navigate from the outside to the core of the tooth, and beyond.

5 REASONS TO USE DETAILED IMAGING

• Provide additional examination to 2D imaging in high-risk situations
• Highlight the list of potential risks prior to surgery
• Obtain very precise information about anatomical relationships
• Procure a valuable support in making decision for a safe and good therapy
• Accurately determine the working length of the tooth when resuming treatment

Indispensable for endodontics, the metallic artefact reduction filter of X-Mind® trium differentiates with extreme precision the nature of the dental and bone tissues.

Through its performance, X-Mind® trium contributes significantly to the accuracy of endodontic analyses, such as:

• The apex/sinus relationship
• The determination of the anatomy of dental roots
• The diagnosis of apical lesions and the diagnosis of fractures
• The apex/sinus relationship
MANY MORE CLINICAL BENEFITS THAN YOU CAN IMAGINE

HUGE VARIATION OF APPLICATIONS

In addition to applications designed exclusively for implantology or endodontics, X-Mind® trium responds directly to the needs of specialists and general practitioners in the diagnosis of pathologies related to periodontics, orthodontics and maxillofacial surgery. Benefits include:

- Evaluating a detailed morphology of the bone tissue
- Helping to diagnose infectious diseases
- Examining maxillofacial fractures
- Determining the protocol for extracting included teeth
- Conducting an orthodontic assessment
- Detecting dental anomalies
- Helping to diagnose temporomandibular joint disorders
- Exploring the maxillary sinuses

X-Mind® trium offers you a broad selection of field of view, letting you focus on the region of interest for the target diagnosis and reducing the patient’s exposure to X-rays:

- A 110x80 mm field of view will offer a full view of the dentition, mandibular canal and lower sinuses.

- A 60x60 mm or 80x80 mm field of view will be optimal for defining the positioning of one or more implants or for diagnosing periodontal problems.

- A 40x40 mm field of view with resolution at 75 μm is ideal for diagnosis and endodontic treatment.
EXCEPTIONAL IMAGE QUALITY

360° ROTATION FROM 18 TO 27 SECONDS DEPENDING ON THE SELECTED FIELD OF VIEW

A HIGHER RESOLUTION 75 μm

The quality of the diagnosis and endodontic treatments improves significantly with resolution at 75 μm on the X-Mind® trium.

In addition to obtaining a perfect view through adapted spatial resolution, pulsed mode scanning, high sensitivity CMOS sensor, and the use of small fields of view allow for a notable reduction in X-rays.

X-Mind® trium has a scanning and reconstruction algorithm that produces a high quality 3D image. The representation of bone material in the maxillofacial skeleton is accurate and perfectly uniform, regardless of the viewing axis.
X-Mind® trium is equipped with a dynamic artefact reduction filter to eliminate streaks and dark bands caused by the presence of metal.

The image can be freely reconstructed with adjustable filter levels based on the target level of information and the need to cut out artefacts.

The goal is to best isolate the desired information during the examination.
**PANORAMIC & CEPHALOMETRIC MODES**

**PANORAMIC RADIOGRAPHY**

Whether raw or filtered to optimise the details, panoramic X-Mind® trium images support a fast and easy diagnosis.

**DENTAL PANORAMIC**

**PANORAMIC WITH IMPROVED ORTHOGONALITY**

X-ray beam perpendicular to the jaw for better orthogonality and to reduce the overlapping of crowns.

**CHILD PANORAMIC**

**BITEWING**

A quick bitewing image in one shot.

**TMJ SECTIONS**

Due to its patented cinematic and collimation, patient positioning is easier on X-Mind® trium.

Install the cephalometric arm on the right or left, depending on the configuration of the office.

**MAXILLARY SINUS**

Both open and closed mouth images.

**CEPHALOMETRIC RADIOGRAPHY**

Due to its patented cinematic and collimation, patient positioning is easier on X-Mind® trium.

Install the cephalometric arm on the right or left, depending on the configuration of the office.

**FULL SKULL LATERAL**

**POSTERIOR ANTERIOR**
Beyond the simple replacement of missing teeth, increased life expectancy and aesthetic concerns have led to the development of implant procedures. Patients now have the opportunity both to improve their quality of life through the latest restorative techniques and, with the help of CBCT, to obtain a faster and more accurate diagnosis with a less exposure to X-rays.

Owning your own ACTEON® 3D extraoral imaging system in your office is a great asset for quick and accurate diagnoses, saving time and improving your patient’s satisfaction. The three-dimensional image on the screen lets you provide your patient with the necessary up to date information. In addition, this demonstration and its illustrated explanations will be crucial in obtaining the patient’s full involvement and agreement with the proposed treatment plan. Finally, X-Mind® trium allows you to print a full illustrated implant report in just a few seconds to be provided to your patient and/or their referring dental surgeon.

The introduction of 3D medical scanners has provided significant benefits for the diagnosis of complex diseases. Cone Beam Computed Tomography (CBCT) machines, have made these exams more common, making it possible to provide better diagnoses within the dental office.

ACTEON® is fully involved in this technological revolution by providing effective extraoral solutions for diagnosis that are comprehensive in their use and fully meet the expectations of dental surgeons and their patients.

Patients who are reassured and satisfied.

The true diagnosis of pain.

Time-saving and instant results for the dental surgeon.
3 SOLUTIONS IN 1

SELECT NOW, IMPROVE LATER

• X-Mind® trium has an extensive range of options. It is upgradable on site.
• X-Mind® trium will adapt to the ever increasing needs of your clinic by adding 3D imaging or digital cephalometric modalities when you decide it is necessary.

ACTEON SERVICE & YOU

“Clinical trainers” are available to show you the clinical aspects and patient benefits of ACTEON® products and train you on how to use them.

Free, ongoing and unlimited service can be reached Monday to Friday, from 09:00 to 18:00.

ACTEON® can also analyse and troubleshoot remotely, and specialist technicians can provide on-site service as quickly as possible.