

### Specifications:

- **Field of View:** 140 mm
- **Max. Scan Length:** 220 mm
- **Resolution (10% MTF):** > 8.5 tp/mm (<= 58 μm)
- **Voxel Size:** 17 - 273 μm
- **Image Matrix:** 512 x 512 up to 8192 x 8192

#### Patient protocol I:
- **Image matrix:** 2304 x 2304
- **Measurement time per stack (168 slices):** 2.1 min
- **For a patient scan with voxel size:** 60 μm

#### Patient protocol II (XtremeCT compatible):
- **Image matrix:** 1708 x 1708
- **Measurement time per stack (123 slices):** 1.4 min
- **For a patient scan with voxel size:** 82 μm

- **Detector Size:** 4608 x 400 [pixels], 221 mm x 19.5 mm
- **X-ray:** 68 kVp, 100 W
- **Focal Spot Size:** 60 μm
- **Target:** W
- **Effective Dose:** <5 μSv per measurement (ICRP 103)
- **Weight:** 570 kg
- **Size (WxDxH):** 1.42 m x 0.96 m x 1.42 m (scanner only)

#### Included Accessories:
- Chair, hand and foot casts, powerful computer workstation and software

#### Beam Geometry:
- Cone Beam

### The New Dimension in Bone Quality Assessment

The XtremeCT II is the new generation high resolution peripheral quantitative computed tomography (HR-pQCT).

The XtremeCT II is designed to measure the bone density and to quantify the three-dimensional microarchitecture of the bone at the distal radius and tibia at an even higher precision and speed than its predecessor, the XtremeCT. The system is designed to be used for research and treatment monitoring of osteoporosis.

#### Density Parameters:
- Cortical and Trabecular Density in Different Regions
- BMD and BMC

#### Structural Parameters:
- Trabecular Thickness
- Cortical Thickness
- Trabecular Separation
- Cortical porosity
- Trabecular Number
- Arterial calcification
- Volume Fraction

#### Registration of 3D-Region of Interest for Follow-up Scans (Common Region)

- normal
- osteoporotic
- muscle fat separation
- cortical porosity
- arterial calcification

---

### Densities and Structure

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>283</td>
<td>0.177</td>
<td>212</td>
<td>2.420</td>
<td>345</td>
<td>0.073</td>
<td>122</td>
<td>0.340</td>
<td>2.83</td>
<td>0.068</td>
<td>729</td>
<td></td>
</tr>
<tr>
<td>729</td>
<td>0.27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3D Density and Structure Analysis

**Hans Muster**

**Site:** Radius

**Pat-No.:** 10  **Filename:** C0000300

**M-No.:** 310  **Date:** 12-MAR-2017 10:31

**Born:** 01.01.1949  **Age:** 68
Hans Muster

Site: Radius
Pat-No.: 10  Filename: C0000300
M-No.: 310  Date: 12-MAR-2017 10:31
Born: 01.01.1949  Age: 68

### Specifications:
- **Field of View:** 140 mm
- **Max. Scan Length:** 220 mm
- **Resolution (10% MTF):** > 8.5 lp/mm (≤ 58 μm)
- **Voxel Size:** 17 - 273 μm
- **Image Matrix:** 512 x 512 up to 8192 x 8192

**Patient protocol I:**
- Image matrix: 2304 x 2304
- Measurement time per stack (168 slices): 2.1 min
- For a patient scan with voxel size: 60 μm

**Patient protocol II (XtremeCT compatible):**
- Image matrix: 1708 x 1708
- Measurement time per stack (123 slices): 1.4 min
- For a patient scan with voxel size: 82 μm

- **Detector Size:** 4608 x 400 [pixels], 221 mm x 19.5 mm
- **X-ray:** 68 kVp, 100 W
- **Focal Spot Size:** 60 μm
- **Target:** W
- **Effective Dose:** <5 μSv per measurement (ICRP 103)
- **Weight:** 570 kg
- **Size (WxDxH):** 1.42 m x 0.96 m x 1.42 m (scanner only)

**Included Accessories:** Chair, hand and foot casts, powerful computer workstation and software

**Beam Geometry:** Cone Beam

**The New Dimension in Bone Quality Assessment**

The XtremeCT II is the new generation high resolution peripheral quantitative computed tomography (HR-pQCT). The XtremeCT II is designed to measure the bone density and to quantify the three-dimensional microarchitecture of the bone at the distal radius and tibia at an even higher precision and speed than its predecessor, the XtremeCT. The system is designed to be used for research and treatment monitoring of osteoporosis.

**Density Parameters:**
- Cortical and Trabecular Density in Different Regions
- BMD and BMC

**Structural Parameters:**
- Trabecular Thickness
- Cortical Thickness
- Trabecular Number
- Arterial calcification
- Volume Fraction

**Registration of 3D-Region of Interest for Follow-up Scans (Common Region):**

- **D100**
- **Dtrab**
- **Dmeta**
- **Dinn**
- **Dcort**

### Densities and Structure Analysis

<table>
<thead>
<tr>
<th>Densities</th>
<th>Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>D100 [mg HA/ccm]</td>
<td>283</td>
</tr>
<tr>
<td>Dtrab [mg HA/ccm]</td>
<td>212</td>
</tr>
<tr>
<td>Dmeta [mg HA/ccm]</td>
<td>345</td>
</tr>
<tr>
<td>Dinn [mg HA/ccm]</td>
<td>122</td>
</tr>
<tr>
<td>Ratio: Meta/Inn [1]</td>
<td>2.83</td>
</tr>
<tr>
<td>Dcort [mg HA/ccm]</td>
<td>729</td>
</tr>
</tbody>
</table>

**3D Density and Structure Analysis**

- **D100** Average Bone Density
- **Dtrab** Trabecular Bone Density
- **Dmeta** Meta Trab. Bone Density
- **Dinn** Inner Trab. Bone Density
- **Dcort** Cortical Bone Density
- **BV/TV** Trab. Bone Volume to Tissue Volume
- **Tb.N** Number of Trabeculae
- **Tb.Th** Trabecular Thickness
- **Tb.Sp** Trabecular Separation
- **Tb.1/N.SD** StdDev of 1/Tb.N: Inhomogeneity of Network
- **C.Th** Cortical Thickness

**Registration of 3D-Region of Interest for Follow-up Scans (Common Region):**

- Normal
- Osteoporotic
- Muscle Fat Separation
- Cortical Porosity
- Arterial Calcification