The ISOVOLT Titan|neo generator powers a range of radiographic inspection technology—delivering the most reliable, consistent results in even the highest accuracy applications. So you can increase precision and inspect multiple parts each day even in 24/7 Testing Machines applications.

**Increased reproducibility:** Reduce exposure times for various materials in several operation modes with high, stable radiation and fluctuations <0.05%.

**Greater dependability:** An extended tube range and maximum current ensure enhanced imaging contrast and high penetration power.

**Unmatched flexibility:** Its modular design includes intelligent tube integration and permanent system monitoring—offering unmatched ramp-up times* and a 100% duty cycle for continuous operation in inline systems**.

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**Features**

- **Powerful performance**
- **Permanent system monitoring**
- **Modular design for easy integration**
- **Convenient, user-friendly controls**
- **Built-in safety features**

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*Depending on permissible tube data.

**Subject to operational generator cooling.
### Technical specifications

#### High voltage generator

<table>
<thead>
<tr>
<th></th>
<th>HP160</th>
<th>HP225</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max out voltage kV</td>
<td>~160</td>
<td>~225</td>
</tr>
<tr>
<td>Max out current mA</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Max out power kW</td>
<td>4.5 (limited by tube spec)</td>
<td>4.5 (limited by tube spec)</td>
</tr>
<tr>
<td>Insulation</td>
<td>Oil</td>
<td>Oil</td>
</tr>
<tr>
<td>Housing dim (w x d x h)</td>
<td>340 x 945 x 750 mm (13.38&quot; x 37.20&quot; x 29.52&quot;)</td>
<td>340 x 945 x 750 mm (13.38&quot; x 37.20&quot; x 29.52&quot;)</td>
</tr>
<tr>
<td>Weight</td>
<td>195 kg (429.9 lbs)</td>
<td>190 kg (418.87 lbs)</td>
</tr>
</tbody>
</table>

#### Tube voltage

<table>
<thead>
<tr>
<th></th>
<th>Presel and settings</th>
<th>From 5 to 160 kV in 1 kV</th>
<th>Dig display of set and act values</th>
<th>3 digits (set); 4 digits (act)</th>
<th>Display resolution</th>
<th>1 kV (set); 0.1 kV (act)</th>
<th>Accuracy</th>
<th>&lt;1%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reproducibility</td>
<td>&lt;0.01%</td>
<td>Temperature drift</td>
<td>&lt;80 ppm/K</td>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>

#### Tube current

<table>
<thead>
<tr>
<th></th>
<th>Presel and settings</th>
<th>From 0.1 to 45 mA in 0.1 mA</th>
<th>Dig display of set and act values</th>
<th>3 digits</th>
<th>Display resolution</th>
<th>0.1 mA</th>
<th>Accuracy</th>
<th>&lt;1%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reproducibility</td>
<td>&lt;0.25%</td>
<td>Temperature drift</td>
<td>&lt;100 ppm/K</td>
<td></td>
<td></td>
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<td></td>
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</table>

#### Exposure time

<table>
<thead>
<tr>
<th></th>
<th>Programmable timer</th>
<th>1</th>
<th>Presel and setting</th>
<th>1 ... 9999 s</th>
<th>Dig display of set and act values</th>
<th>4 digits</th>
<th>Prewarning</th>
<th>Audible and visible</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

#### Programmed mode

<table>
<thead>
<tr>
<th></th>
<th>Number of storable programs</th>
<th>250</th>
<th>Warm-up</th>
<th>Auto mode based on real time clock</th>
<th>X-ray tube set up</th>
<th>8 tube selectable from a database of 40 pre-programmed tubes</th>
<th>Operation history</th>
<th>Stored on SD</th>
<th>Warm-up history</th>
<th>Stored on SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

#### Control module

<table>
<thead>
<tr>
<th></th>
<th>Dimension w x d x h</th>
<th>440 x 114 x 295 mm (17.32&quot; x 4.48&quot; x 11.61&quot;)</th>
<th>Weight</th>
<th>3.8 kg (8.37 lbs)</th>
<th>3.8 kg (8.37 lbs)</th>
</tr>
</thead>
</table>

#### Connected loads

<table>
<thead>
<tr>
<th></th>
<th>Power connection</th>
<th>AUX: IN PE 230 V ±10% 50/60 Hz 10 A, MAIN: 3N PE 400/230 V ±10% 50/60 Hz 20 A or IN PE 230 V ±10% 50/60 Hz 63 A, 3-phase, grounded neutral TN-S or TN-C-S mains (star connected system), optional 3-phase isolation transformer</th>
<th>Mains fuses</th>
<th>AUX: 10 A (IN PE)</th>
<th>MAIN: 63 A (IN PE) or 20 A (3N PE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grounding</td>
<td>Separate grounding for X-ray tube and high voltage generator (minimum 6 mm²)</td>
<td>Operating temperature range</td>
<td>0 °C to +40 °C</td>
<td>0 °C to +40 °C</td>
</tr>
<tr>
<td></td>
<td>Storage temperature range</td>
<td>-30 °C to +70 °C</td>
<td>Storage temperature range</td>
<td>-30 °C to +70 °C</td>
<td></td>
</tr>
<tr>
<td>High voltage generator</td>
<td>HP320</td>
<td>HP450</td>
<td>HR240</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max out voltage kV</td>
<td>320</td>
<td>450</td>
<td>-240</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max out current mA</td>
<td>45</td>
<td>45</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max out power kW</td>
<td>4.5</td>
<td>4.5</td>
<td>0.320</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulation</td>
<td>Oil</td>
<td>Oil</td>
<td>Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing dim (w x d x h)</td>
<td>340 x 945 x 750 + 340 x 945 x 540 mm (13.38” x 37.20” x 21.25”)</td>
<td>340 x 945 x 750 + 340 x 945 x 540 mm (13.38” x 37.20” x 21.25”)</td>
<td>340 x 945 x 750 mm (13.38” x 37.20” x 29.52”)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>190+140 kg (418.87 + 308.64 lbs)</td>
<td>190+140 kg (418.87 + 308.64 lbs)</td>
<td>170 kg (374.78 lbs)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tube voltage</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Presel and settings</td>
<td>From 10 to 320 kV in 1 kV</td>
<td>From 10 to 450 kV in 1 kV</td>
<td>From 5 to 240 kV in 1 kV</td>
</tr>
<tr>
<td>Dig display of set and act values</td>
<td>3 digits (set); 4 digits (act)</td>
<td>3 digits (set); 4 digits (act)</td>
<td>3 digits</td>
</tr>
<tr>
<td>Display resolution</td>
<td>1 kV (set); 0.1 kV (act)</td>
<td>1 kV (set); 0.1 kV (act)</td>
<td>1 kV</td>
</tr>
<tr>
<td>Accuracy</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Reproducibility</td>
<td>&lt;0.01%</td>
<td>&lt;0.01%</td>
<td>&lt;0.01%</td>
</tr>
<tr>
<td>Temperature drift</td>
<td>&lt;80 ppm/K</td>
<td>&lt;80 ppm/K</td>
<td>&lt;80 ppm/K</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tube current</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Presel and settings</td>
<td>From 0.1 to 45 mA in 0.1 mA</td>
<td>From 0.1 to 45 mA in 0.1 mA</td>
<td>From 0.01 to 3 mA in 0.001 mA</td>
</tr>
<tr>
<td>Dig display of set and act values</td>
<td>3 digits</td>
<td>3 digits</td>
<td>4 digits</td>
</tr>
<tr>
<td>Display resolution</td>
<td>0.1 mA</td>
<td>0.1 mA</td>
<td>0.001 mA</td>
</tr>
<tr>
<td>Accuracy</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Reproducibility</td>
<td>&lt;0.25%</td>
<td>&lt;0.25%</td>
<td>&lt;0.25%</td>
</tr>
<tr>
<td>Temperature drift</td>
<td>&lt;100 ppm/K</td>
<td>&lt;100 ppm/K</td>
<td>&lt;100 ppm/K</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exposure time</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Programmable timer</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Presel and setting</td>
<td>1 ... 9999 s</td>
<td>1 ... 9999 s</td>
<td>1 ... 32767 s (xs-control)</td>
</tr>
<tr>
<td>Dig display of set and act values</td>
<td>4 digits</td>
<td>4 digits</td>
<td>5 digits</td>
</tr>
<tr>
<td>Prewarning</td>
<td>Audible and visible</td>
<td>Audible and visible</td>
<td>Audible and visible</td>
</tr>
<tr>
<td>Presel and setting</td>
<td>2 ... 120 s or deactivated</td>
<td>2 ... 120 s or deactivated</td>
<td>2 ... 255 s or deactivated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Programmed mode</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of storable programs</td>
<td>250</td>
<td>250</td>
<td>–</td>
</tr>
<tr>
<td>Warm-up</td>
<td>Auto mode based on real time clock</td>
<td>Auto mode based on real time clock</td>
<td>Automated intelligent tube conditioning</td>
</tr>
<tr>
<td>X-ray tube set up</td>
<td>8 tube selectable from a database of 45 pre-programmed tube</td>
<td>8 tube selectable from a database of 45 pre-programmed tube</td>
<td>–</td>
</tr>
<tr>
<td>Operation history</td>
<td>Stored on SD</td>
<td>Stored on SD</td>
<td>–</td>
</tr>
<tr>
<td>Warm-up history</td>
<td>Stored on SD</td>
<td>Stored on SD</td>
<td>–</td>
</tr>
</tbody>
</table>
## Control module

| Dimension (w x d x h) | 440 x 114 x 295 mm  
|----------------------| (17.32" x 4.48" x 11.61") |
| Weight              | 3.8 kg (8.37 lbs) |

## Connected loads

| Power connection            | AUX: 1N PE 230 V ±10% 50/60 Hz 10 A,  
|                            | MAIN: 3N PE 400/230 V ±10% 50/60 Hz 20 A or 1N PE 230 V ±10% 50/60 Hz 63 A,  
|                            | 3-phase, grounded neutral TN-S or TN-C-S mains (star connected system), optional 3-phase isolation transformer  
| Grounding                  | Separate grounding for X-ray tube and high voltage generator (min. 6 mm²)  
| Mains fuses                | AUX: 10 A (1N PE)  
|                            | MAIN: 63 A (1N PE) or 20 A (3N PE) time-delay fuses, customer-supplied  
| Operating temperature range| 0 °C to +40 °C  
| Storage temperature range  | -30 °C to +70 °C  

| Power connection            | AUX: 1N PE 230 V ±10% 50/60 Hz 10 A,  
|                            | MAIN: 3N PE 400/230 V ±10% 50/60 Hz 20 A or 1N PE 230 V ±10% 50/60 Hz 63 A,  
|                            | 3-phase, grounded neutral TN-S or TN-C-S mains (star connected system), optional 3-phase isolation transformer  
| Grounding                  | Separate grounding for X-ray tube and high voltage generator (min. 6 mm²)  
| Mains fuses                | AUX: 10 A (1N PE)  
|                            | MAIN: 63 A (1N PE) or 20 A (3N PE) time-delay fuses, customer-supplied  
| Operating temperature range| 0 °C to +40 °C  
| Storage temperature range  | -30 °C to +70 °C  

| Power connection            | IN PE 230 V ± 10% 50/60 Hz 10 A AUX,  
|                            | IN PE 230 V ± 10% 50/60 Hz 10 A MAIN  
| Grounding                  | Separate grounding for X-ray tube and high voltage generator (min. 6 mm²)  
| Mains fuses                | 10 A (1N PE) integrated into aux switch,  
|                            | 10 A (1N PE) integrated into main switch  
| Operating temperature range| 0 °C to +40 °C  
| Storage temperature range  | -30 °C to +70 °C  

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