RAY-12
X-ray Tube Assembly

Data Sheet

Description
This compact X-ray tube assembly was developed for use in radiography and fluoroscopy systems. The integrated high-quality tube with glass design has two superimposed focal spots and a reinforced 74 mm anode.

Features and customer benefits
- Available with 1- and 3-phase stator
- Designed for high patient throughput with 450 W tube assembly cooling power (with fan)
- Compact tube housing
- High long-term dose yield
- Excellent quality and reliability

Technical Data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>IEC 60613 (2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>150 kV</td>
<td></td>
</tr>
<tr>
<td>Nominal voltage Fluoroscopy</td>
<td>110 kV</td>
<td></td>
</tr>
<tr>
<td>Nominal focal spot values</td>
<td>0.6</td>
<td>1.2</td>
</tr>
<tr>
<td>Nominal anode input power (60 Hz)</td>
<td>22 kW</td>
<td>54 kW</td>
</tr>
<tr>
<td>Nominal radiographic anode input power (60 Hz)</td>
<td>22 kW</td>
<td>54 kW</td>
</tr>
<tr>
<td>Filament Heating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maximum current</td>
<td>4.6 A</td>
<td>≈ 9.0 V</td>
</tr>
<tr>
<td>maximum voltage</td>
<td>5.5 A</td>
<td>≈ 15.0 V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AC &lt; 50 kHz</td>
</tr>
<tr>
<td>Anode Angle</td>
<td>12°</td>
<td></td>
</tr>
<tr>
<td>Anode heat storage capacity</td>
<td>170 kJ = 230 kHU</td>
<td>IEC 60613 (1989)</td>
</tr>
<tr>
<td>Anode drive frequencies for exposure fluoro</td>
<td>50/60 Hz</td>
<td>20/30 Hz</td>
</tr>
<tr>
<td>Heat storage capacity of assembly</td>
<td>1.0 MJ = 1.35 MHU</td>
<td>IEC 60613</td>
</tr>
<tr>
<td>Max. continuous heat dissipation of assembly (without/with fan)</td>
<td>275 W/450 W</td>
<td>IEC 60613 (2010) (at ambient temperature &lt; 25 °C)</td>
</tr>
<tr>
<td>Radiation Leakage</td>
<td>≤ 0.8 mGy/h</td>
<td>IEC 60601-1-3</td>
</tr>
<tr>
<td>Total inherent filtration</td>
<td>2.5 mm Al/75 kV</td>
<td>IEC 60522, IEC 60601-1-3</td>
</tr>
<tr>
<td>Weight (incl. flange)</td>
<td>≈ 18 kg</td>
<td></td>
</tr>
</tbody>
</table>
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Heating and cooling curves

Anode

According to IEC 60613 (1989)

X-ray tube assembly (without fan)

According to IEC 60613 (1989)

Rating charts

Focal spot IEC 0.6

According to IEC 60613 (1989)
Anode drive 50 Hz
Thermal anode reference power 300 W

Focal spot IEC 1.2

According to IEC 60613 (1989)
Anode drive 60 Hz
Thermal anode reference power 300 W
Creating values is our passion.

Efficiency is our nature.

Partnership is our way.

Dimensional drawings (RAY-12S_3 and RAY-12S_1)

Trunnion rings, high-voltage cables, stator cables with shielding and safety switch cables are optionally available.

Types and material numbers

<table>
<thead>
<tr>
<th></th>
<th>1-phase drive, without collimator flange</th>
<th>3-phase drive, without collimator flange</th>
<th>3-phase drive, with collimator flange</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>RAY-12S_1</td>
<td>RAY-12S_3</td>
<td>RAY-12S_3F</td>
</tr>
<tr>
<td>90° Mat.-No</td>
<td>7037166</td>
<td>7036994</td>
<td>7037224</td>
</tr>
<tr>
<td>Housing 90° reverse</td>
<td>Mat.-No. 7037158</td>
<td>Mat.-No. 7036317</td>
<td>–</td>
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</tbody>
</table>

Horn angles

90° View from cathode side

90° reverse
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