RAY-14
X-ray Tube Assembly

**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. Based on many years of experience in X-ray tube manufacturing, the RAY-14 was designed to meet the demand for low total cost of ownership.

**Features and customer benefits**

- High power on both focal spots
- Compact tube housing
- High long-term dose yield
- Excellent quality and reliability
- Available with 1- and 3-phase stator

### Technical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>150 kV</td>
<td>IEC 60613 (2010)</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 (180 Hz)</td>
<td>34 kW</td>
<td>80 kW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(at 130 W average anode input power)</td>
</tr>
<tr>
<td>Nominal radiographic anode input power (180 Hz)</td>
<td>34 kW</td>
<td>80 kW</td>
</tr>
<tr>
<td>Filament Heating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maximum current maximum voltage</td>
<td>5.4 A ≈ 10 V</td>
<td>5.5 A ≈ 15 V</td>
</tr>
<tr>
<td>Anode Angle</td>
<td>12°</td>
<td></td>
</tr>
<tr>
<td>Anode heat storage capacity</td>
<td>260 kJ = 350 kHU</td>
<td>IEC 60613 (1989)</td>
</tr>
<tr>
<td>Anode drive frequencies for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>exposure fluoro</td>
<td>150 / 180 Hz</td>
<td>20 / 30 Hz</td>
</tr>
<tr>
<td>Heat storage capacity of assembly</td>
<td>1.0 MJ = 1.35 MU</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 180 Hz
Thermal anode reference power 300 W

Focal spot IEC 1.2

According to IEC 60613 (1989)
Anode drive 180 Hz
Thermal anode reference power 300 W
Creating values is our passion.
Efficiency is our nature.
Partnership is our way.

Dimensional drawings (RAY-14S_3 and RAY-14S_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>–</td>
<td>RAY-14S_3</td>
<td>RAY-14S_3F</td>
</tr>
<tr>
<td>90°</td>
<td>–</td>
<td>Mat.-No. 7037000</td>
<td>7037208</td>
</tr>
<tr>
<td>Housing</td>
<td>RAY-14_1</td>
<td>RAY-14_3</td>
<td>–</td>
</tr>
<tr>
<td>90° reverse</td>
<td>Mat.-No. 7037133</td>
<td>Mat.-No. 7035483</td>
<td>–</td>
</tr>
</tbody>
</table>

Horn angles

- 90°
- 90° reverse

F = Focus position
Ref. = Reference axis
Dimensions are given in mm
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