



## ITK 60-2

### Water-cooled triode for industrial RF heating



#### 180 kW triode for induction heating

Based on more than 60 years of experience in the design and manufacture of electron tubes, Thales is a long-standing partner to most producers of industrial heating machines. And we are the benchmark supplier of grid tubes.

The ITK 60-2 triode is intended for low power induction heating applications and delivers continuous RF power of 180 kW. It is especially well suited to industrial applications, such as pipe welding.

This water-cooled triode uses a coaxial design and metal-ceramic technology. It may be operated in CW or pulsemodes. For operation in pulse mode, the parameters depend on each equipment characteristics. Contact us for specific information.

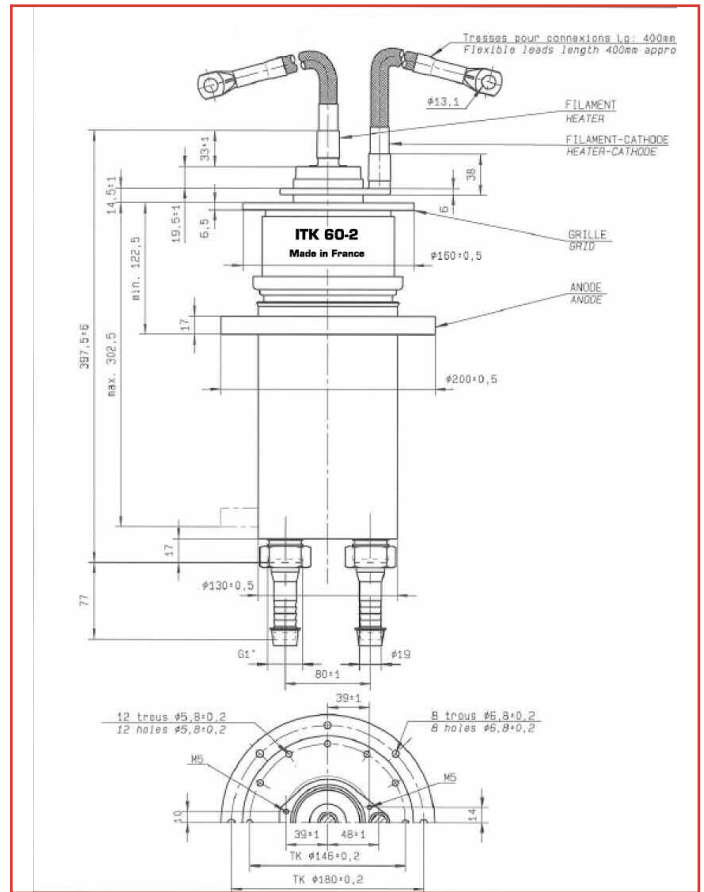
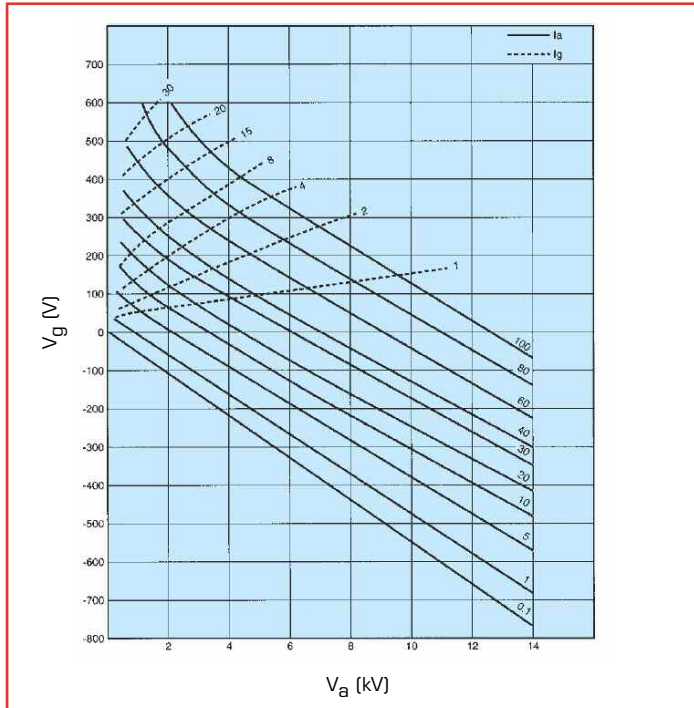
Thales is fully committed to the long-term viability of tube technology, and to delivering high-tech products based on our proven expertise in complex processes. We offer the widest range on the market, whether for dielectric or induction and laser applications, backed by all the customer support and technical assistance services you need.

- Output power: 180 kW (CW mode)
- Anode voltage: 14 kV
- Anode dissipation: 70 kW
- Frequency up to 30 MHz

# ITK 60-2

Industrial RF Heating triode

## Constant current characteristics



Technical specifications	
Cathode	thoriated tungsten
Filament voltage	13 V
Filament current	250 A
Max. heater surge current	900 A
Amplification factor	23
Capacitance	
• grid-anode	60 pF
• grid-cathode	130 pF
• cathode-anode	4 pF
Mechanical characteristics	
Operating position	vertical
Weight	10.6 kg
Dimensions	200 x 397 mm
Cooling characteristics (industrial water)	
Max. water temperature at tube outlet	60 °C
Min. water pressure at tube inlet	5 bar
Max. T° at any point on the tube envelop	220 °C
Min. air flow on filament connections	0.5 m <sup>3</sup> /min

Maximum ratings		
Frequency	30	MHz
Anode voltage	14	kV
• up to 15 MHz	13	kV
• from 15 to 30 MHz	13	kV
Grid voltage	-1500	V
Anode current, CW	25	A
Grid current	4	A
• at full load, CW	6	A
• at no load, CW	6	A
Peak cathode current CW	110	A
Anode dissipation	70	kW
Grid dissipation	1.8	kW
Grid resistance (tube non conducting)	10	kΩ
Class C, RF oscillator for industrial applications		
Frequency	15	30 MHz
Anode voltage	13	11 kV
Anode current	18	17 A
Grid current, on load	3.5	3.5 A
Anode input power	234	187 kW
Anode output power	178	141 kW
Anode dissipation	55	41.5 kW
Grid dissipation	1.53	1.5 kW
Grid resistance	250	225 Ω
Feedback ratio	11.7	12.9 %
Oscillator efficiency	76	75.4 %
<i>Operations at higher frequencies available on request.</i>		

For more technical information regarding this tube, feel free to ask our distributor Richardson Electronics - [www.rell.com](http://www.rell.com)

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