



## ITK 15-2

### Water-cooled triode for industrial RF heating



#### 63 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 15-2 triode is intended for low power induction heating applications and delivers continuous RF power of 63 kW. It is especially well suited to industrial applications, such as heat treatment process.

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.

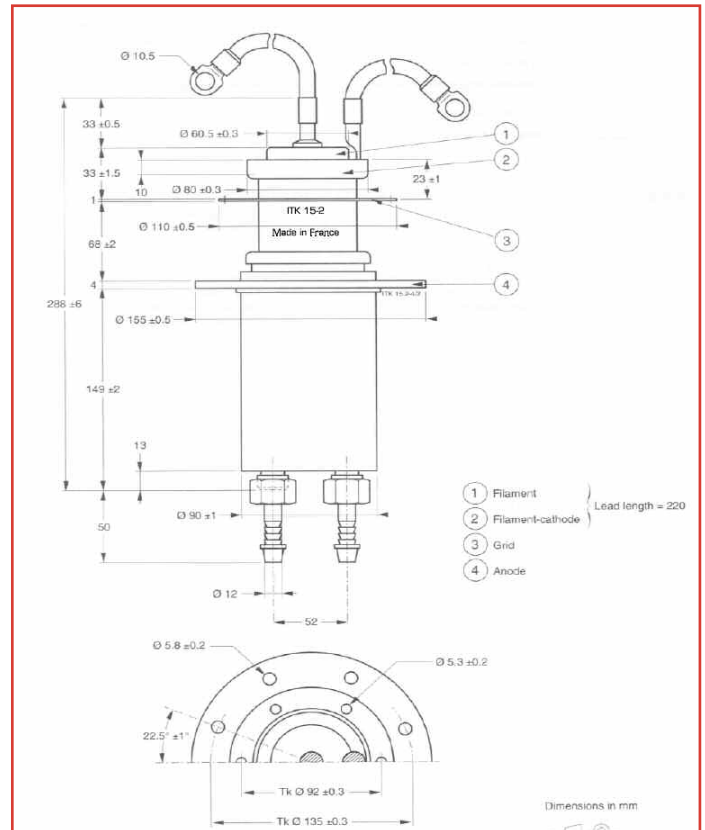
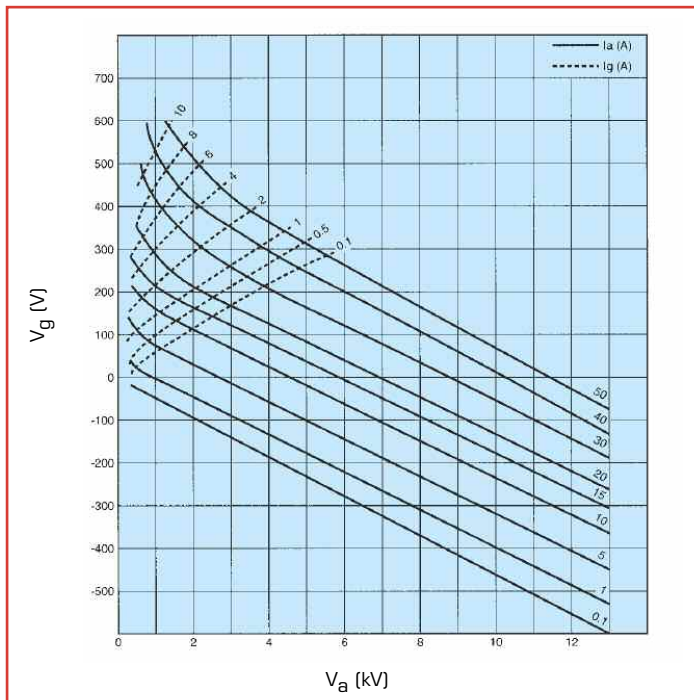
Thales is fully committed to the long-term viability of tube technology, and to delivering high-tech products based on our proven expertise in complex processes. We offer the widest range on the market, whether for dielectric or induction and laser applications, backed by all the customer support and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

- Output power: 63 kW (CW mode)
- Anode voltage: 13 kV
- Anode dissipation: 20 kW
- Frequency up to 120 MHz

# ITK 15-2

## Industrial RF Heating triode

### Constant current characteristics



### Technical specifications

Cathode	thoriated tungsten
Filament voltage	7.2 V
Filament current	180 A
Max. heater surge current	500 A
Amplification factor	25
Capacitance	
• grid-anode	25 pF
• grid-cathode	60 pF
• cathode-anode	1.4 pF

### Mechanical characteristics

Operating position	vertical
Weight	3.8 kg
Dimensions	155 x 288 mm

### Cooling characteristics (industrial water)

Max. water temperature at tube outlet	50 °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	120	MHz
Anode voltage		
• up to 30 MHz	13	kV
• from 30 to 60 MHz	11	kV
• from 60 to 90 MHz	9	kV
• from 90 to 120 MHz	7	kV
Grid voltage	-1500	V
Anode current, CW	8	A
Grid current, at full load, CW	1.6	A
Grid current, at no load, CW	3	A
Peak cathode current CW	40	A
Anode dissipation	20	kW
Grid dissipation		
• up to 30 MHz	600	W
• from 30 to 60 MHz	520	W
• from 60 to 90 MHz	460	W
• from 90 to 120 MHz	400	W
Grid resistance (tube non conducting)	10	kΩ

### Class C, RF oscillator for industrial applications

Frequency	30	60	MHz
Anode voltage	12	10	kV
Anode current	6.8	7.1	A
Grid current, on load	0.7	0.87	A
Anode input power	81.6	71	kW
Anode output power	63	54	kW
Anode dissipation	18	16	kW
Grid dissipation	222	305	W
Grid resistance	1.000	700	Ω
Feedback ratio	9.8	11.1	%
Oscillator efficiency	77	76.6	%

Operations at higher frequencies available on request.

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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