



RS 3021 CJ

High- μ , water-cooled triode for Industrial RF Heating



25 kW triode for CO₂ laser

Based on more than 60 years of experience in the design and manufacture of electron tubes, Thales is a long-standing partner to most leading manufacturers of CO₂ laser systems, with thousands of machines in service worldwide and tens thousands of tubes already delivered.

Thales laser tubes, the original Siemens grid-controlled triodes and tetrodes, are used in a number of different industrial applications where reliability and performance are the key selection criteria. Typical applications are cutting and welding used for very high precision operations mainly in sheet metal fabrication and automotive industry.

The RS 3021 CJ triode, intended for CO₂ laser applications, is a bestseller on the laser market. This water-cooled triode uses a coaxial design and metal-ceramic technology. It delivers continuous RF power of 25 kW for laser power between 1200 and 4000 W.

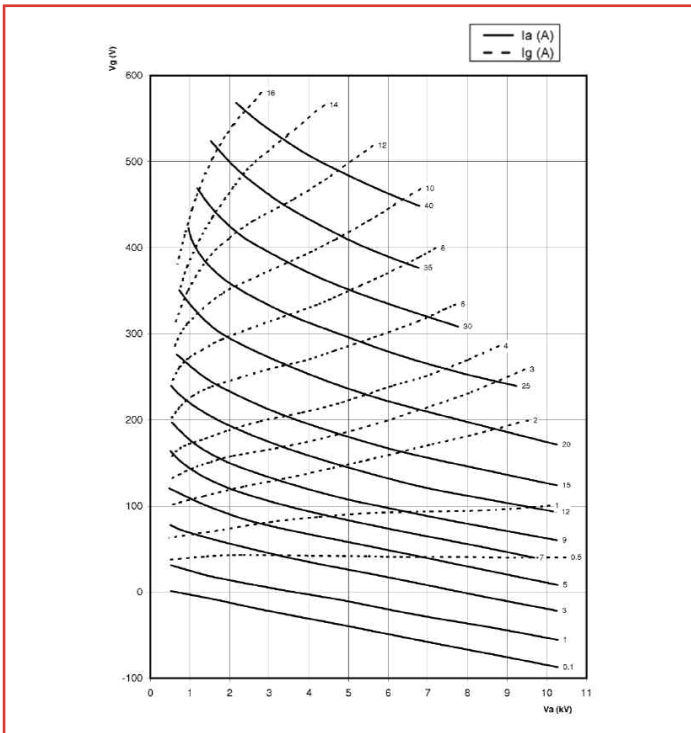
Thales offer products that fully meet today's laser market requirements with all the customer support and technical assistance services you need.

- Output power: 25 kW (CW mode)
- Anode voltage: 14 kV
- Anode dissipation: 20 kW
- Frequency up to 120 MHz

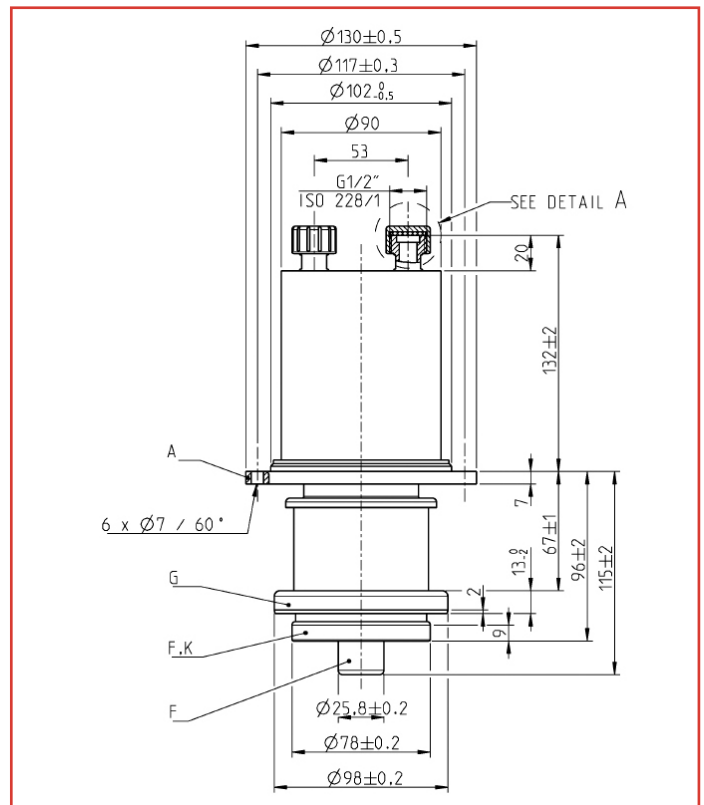
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Industrial RF Heating

Constant current characteristics



Outline drawing (in mm)



Technical specifications

Cathode	thoriated tungsten
Filament voltage	5.7 V
Filament current	137 A
Max. heater surge current	550 A
Amplification factor	120
Capacitances	
• grid-anode	23 pF
• grid-cathode	56 pF
• cathode-anode	0.3 pF

Mechanical characteristics

Operating position	vertical
Weight	4.1 kg
Dimensions	130 x 247 mm

Cooling characteristics (industrial water)

Max. water temperature at tube outlet	65 °C
Min. water pressure at tube inlet	6 bar
Max. T° at any point on the tube envelope	220 °C
Min. air flow on filament connections	0.7 m ³ /min

Maximum ratings

Frequency	120	MHz
Anode voltage		
• up to 40 MHz	14	kV
• from 40 to 80 MHz	12	kV
• from 80 to 120 MHz	10	kV
Grid voltage	-800	V
Grid current, at full load up to 40 MHz	1.7	A
Grid current, off load up to 40 MHz	2.1	A
DC cathode current	5	A
Peak cathode current	25	A
Anode dissipation	20	kW
Grid dissipation		
• up to 40 MHz	500	W
• from 40 to 80 MHz	420	W
• from 80 to 120 MHz	330	W

RF amplifier B or C class operation, common grid circuit

Frequency	<120	<120	MHz
Output power	22.7+1.28	12.3+0.32	kW
Anode voltage	9.5	9	kV
Anode DC idle current	0	0.3	A
Anode DC current	3.2	2.0	A
Anode dissipation	6.6	5.6	kW
Grid DC voltage	-220	-65	V
Grid DC current	920	450	mA
Grid dissipation	191	55	W
Peak RF cathode voltage	462	205	V
Drive power	0.39+1.28	0.08+0.32	kW

Thales propose ROEKG 321G socket which is convenient, fast and secure for the installation and deinstallation of the tube on any type of generator.

For more technical information regarding this tube, feel free to ask our distributor Richardson Electronics - www.rellaser.com

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