



TV 2012 KLYSTRON

TV 2012 is a very high power sealed off klystron amplifier able to deliver a 5 MW peak power in "S" band.

It is specially designed to be used on particle accelerators.

It includes five resonators not tunable by the customer. The R.F. input is made on a "N" type coaxial plug and the output through one ceramic window set on a waveguide.

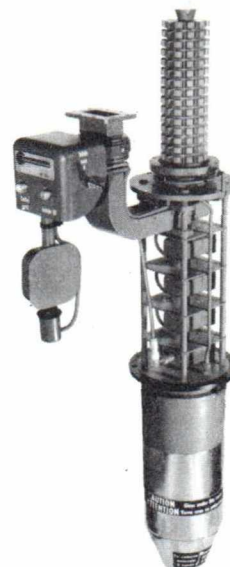
Each tube is tuned at the factory at a specified central frequency in the range 2700-3100 MHz.

Beam focalization is insured by a TV 19009 focus coil external to the tube.

The tube body and the window are cooled by a water flow and the collector by vaporization of water.

TV 2012 high frequency amplifier, of very large peak and average power, has the following advantages :

- high gain : 55 dB
- high efficiency (more than 40%) which enables a saving on cost and volume of the feeding devices.
- high operating safety due the Vapotron^{*} cooling technique of the collector.
- long life, the tube being fitted with an active getter.



GENERAL CHARACTERISTICS

Electrical

Type of cathode.....	indirectly heated, oxide coated, unipotential
Heater voltage.....	25 V $\pm$ 10% (3)
Heater current, approximately.....	25 A
Heating time, minimum.....	15 mm

Mechanical

Envelope.....	ceramic metal with glass cathode insulator
R.F input.....	UG 22 D/U plug (1)
R.F output.....	ceramic window on standard RG 48/U waveguide
Active getter input.....	UG 496/U plug (2)
Mounting position.....	vertical, cathode-end down
Net weight approximately.....	60 kg
Dimensions.....	1300 mm height

^{*} CFTH patented trade mark

(1) to be used in conjunction with UG 21 D/U connector.

(2) to be used in conjunction with UG 59 D/U connector.

(3) the exact heating voltage is indicated on the testing sheet of each tube. This voltage is to be observed within $\pm$ 5 %.



Type of cooling :

body and windows.....	water flow	} same circuit
collector.....	water vaporization	

MAXIMUM RATINGS

(non-simultaneous)

Load VSWR.....	1,5
Beam voltage.....	145 kV
Average applied power.....	35 kW
Collector dissipation.....	35 kW
Heater surge current.....	50 A
Voltage pulse duration.....	12 μ sec. (1)
Absolute pressure on output windows.....	4 kg/cm ² (56 PSI)
Duty cycle.....	.0024
Cooling water inlet temperature.....	50°C

TYPICAL OPERATIONS

(Max. VSWR 1.1)

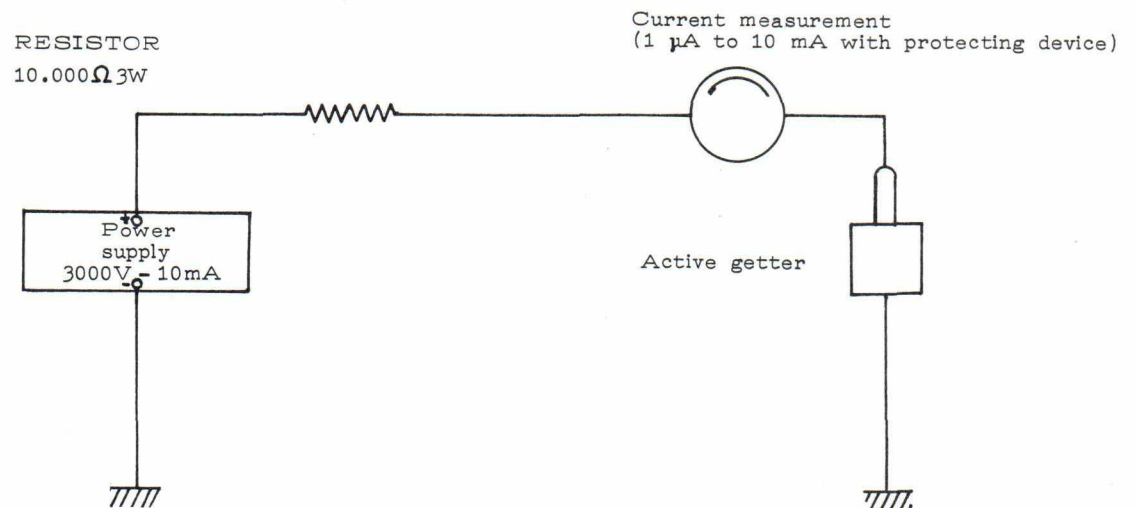
	<u>Example</u>
Beam voltage.....	130 kV
Beam current.....	95 A
Peak output power.....	5 MW
Average output power.....	10 kW
Gain.....	55 dB
Bandwidth at - 1 dB.....	15 Mc
Efficiency.....	40 %
Pulse duration.....	5 μ sec.
Cooling water flow.....	3 l/mn
Cooling water inlet pressure.....	1 kg/cm ²

(1) May be increased upon request.

TUBE ACCESSORIES

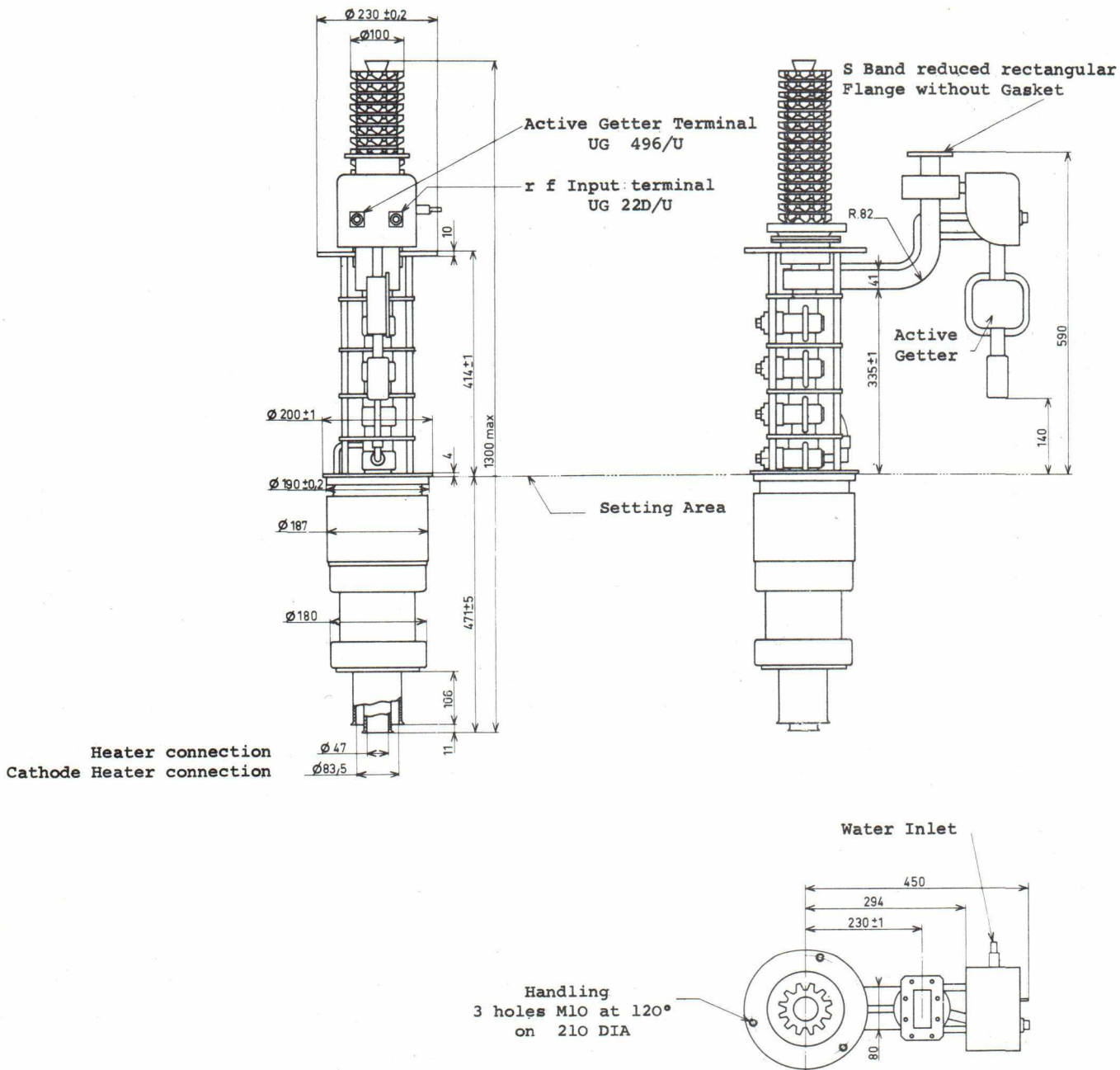
Focus coil.....	TV 19009
Heater-cathode connector.....	TV 19201
Boiler.....	TV 19300
Packaging.....	299 GB 21
Vapodyne System [*]	see Data TE 019

ACTIVE GETTER FEEDING CIRCUIT



The active getter operation requires the use of a TV 19.500 permanent magnet supplied with TV 19.009 Focus Coil.

OULTINE DRAWINGS



All dimensions in mm