



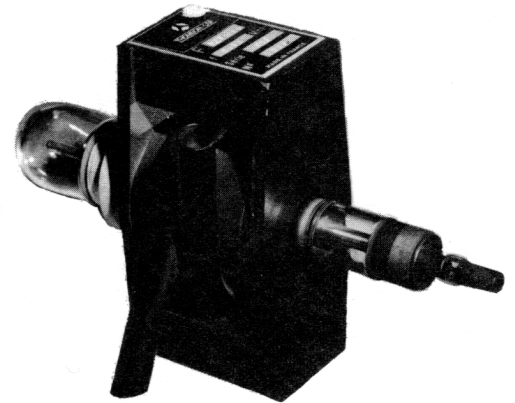
## MCF. 1166 MAGNETRON

The MCF 1166 is a magnetron designed specifically for industrial microwave heating or drying, and food processing.

It delivers 1500 W C.W. output power at 2450 MHz.

The magnetic field is provided by a permanent magnet which is an integral part of the tube.

The MCF 1166 is cooled by water circulation. The cathode is of impregnated type indirectly heated. The low heating power allows permanent warming of the cathode, making possible instantaneous starting of the microwave oscillation. The R.F. output mates either with a waveguide or with a cavity.



### GENERAL CHARACTERISTICS

#### Electrical

	min.	nom.	max.	
Heater warm-up voltage .....	-	12	-	V
Heater warm-up current .....	2.7	-	3.3	A
Heater warm-up time (1) .....	3	-	-	mn
Heater voltage in operation .....	-	0	-	V
Anode voltage, peak .....	3.5	-	3.7	kV
Anode current, average .....	0.2	-	0.8	A
Output power .....	1.2	-	-	kW
Frequency .....	2425	-	2475	MHz

(1) - not necessary, if the cathode preheating voltage has been applied after high voltage turned off.

#### Mechanical

Operating position .....	any
Weight .....	1.7 kg
Dimensions .....	see drawing
Cooling .....	water



**ABSOLUTE RATINGS  
(non simultaneous values)**

	min.	max.			min.	max.	
Heater voltage (1) . . . . .	—	13	V	Average applied power .	0.8	3.0	kW
Heater surge current . . . . .	—	10	A	Load VSWR . . . . . (2)	—	—	
Anode voltage, peak . . . . .	—	3.7	kV	Water flow (3) . . . . .	2	—	l/mn
Anode current, average . . . . .	—	0.85	A	Body temperature (4) . . . . .	—	125	°C
Anode current peak . . . . .	—	3	A	Connections temperature . . . . .	—	200	°C

- (1) - Heater voltage should be adjusted according to the curve page 3.
- (2) - In case of constant VSWR, the limit should be fixed to a maximum value of 3 : 1 for a minimum distance of the standing wave from the reference plane between 0.23 λ and 0.34 λ (see Rieke Diagramm). The maximum value of the VSWR is 4 : 1 for all other phases. When using in the cavity a device producing a periodic variation of the VSWR (preferred frequency = 100 to 120 Hz), the VSWR limitation is the same as above. Maximum instantaneous VSWR should not exceed 8 : 1.
- (3) - With a mean VSWR of 3 : 1 and anode current : 0.8 A - See curves page 3.
- (4) - At the temperature measurement point, shown in drawing page 4.

**TYPICAL OPERATION**

Heater voltage . . . . .	0	V	Output power . . . . .	1.6	kW
Anode voltage, peak . . . . .	3.6	kV	VSWR . . . . .	1.05 : 1	
Anode current, average . . . . .	0.75	A	Frequency :		
Applied power . . . . .	2.7	kW	(for VSWR 1 : 1) . . . . .	2450	MHz

**OPERATING INSTRUCTIONS**

**RF coupling**

The MCF 1166 magnetron is designed for operation with a rectangular waveguide transition RG 112/U  
The fixation ring should be tightened carefully.

For coupling into a circular waveguide or a cavity matching is obtained by means of a test probe adaptor especially designed to reproduce the magnetron RF output. (available on request).

**Application of anode voltage**

High voltage should be applied gradually until the average anode current reaches 0.75 A. In case of full voltage application, a preliminary setting should prevent anode voltage from exceeding 0.75 A.

When a magnetron that has been idle or stored for a period of time is taken into operation, the anode voltage should be rised slowly up to the nominal value.

**Cooling**

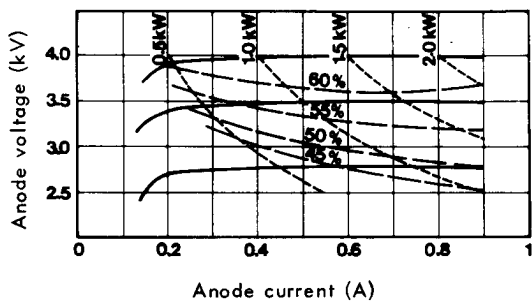
Air circulation should be provided in the glass shell area under adverse environmental conditions (high ambient temperature, high output power, etc...).

**Handling**

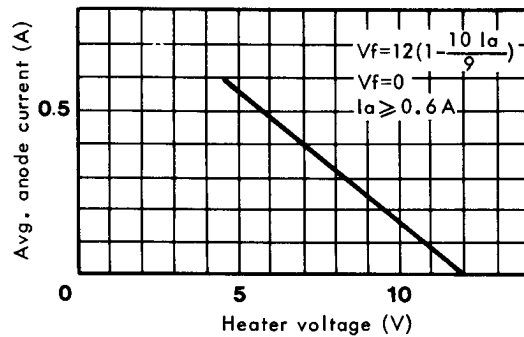
A minimum distance of 5 cm should be kept between the tube magnet and all other magnetic material.



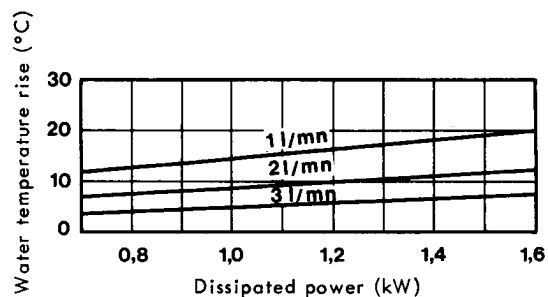
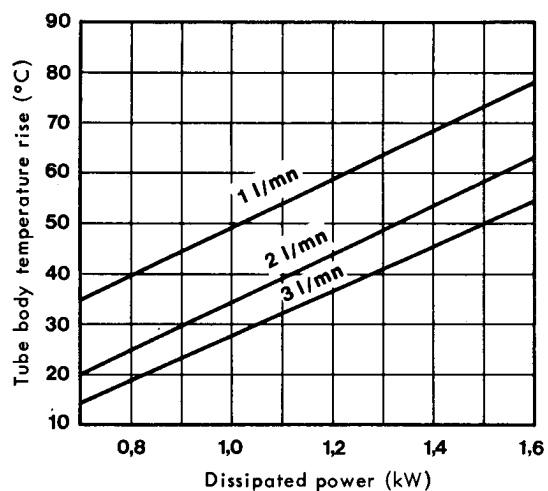
**PERFORMANCE CHART**



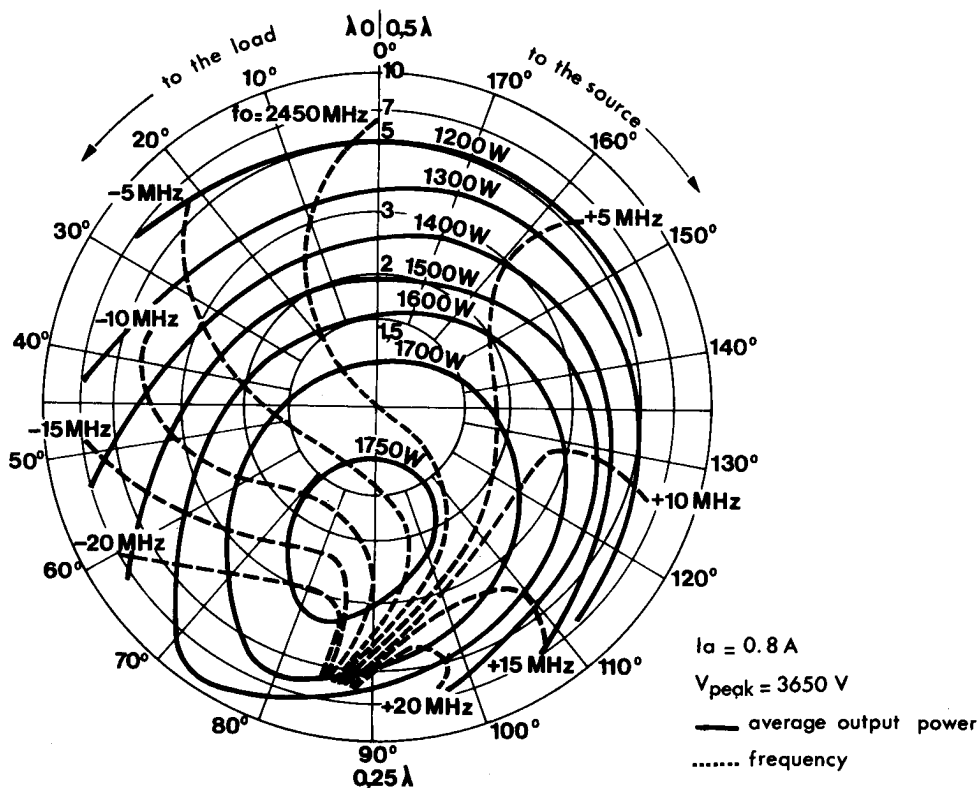
**HEATER VOLTAGE ADJUSTEMENT**



**COOLING CHARACTERISTICS**

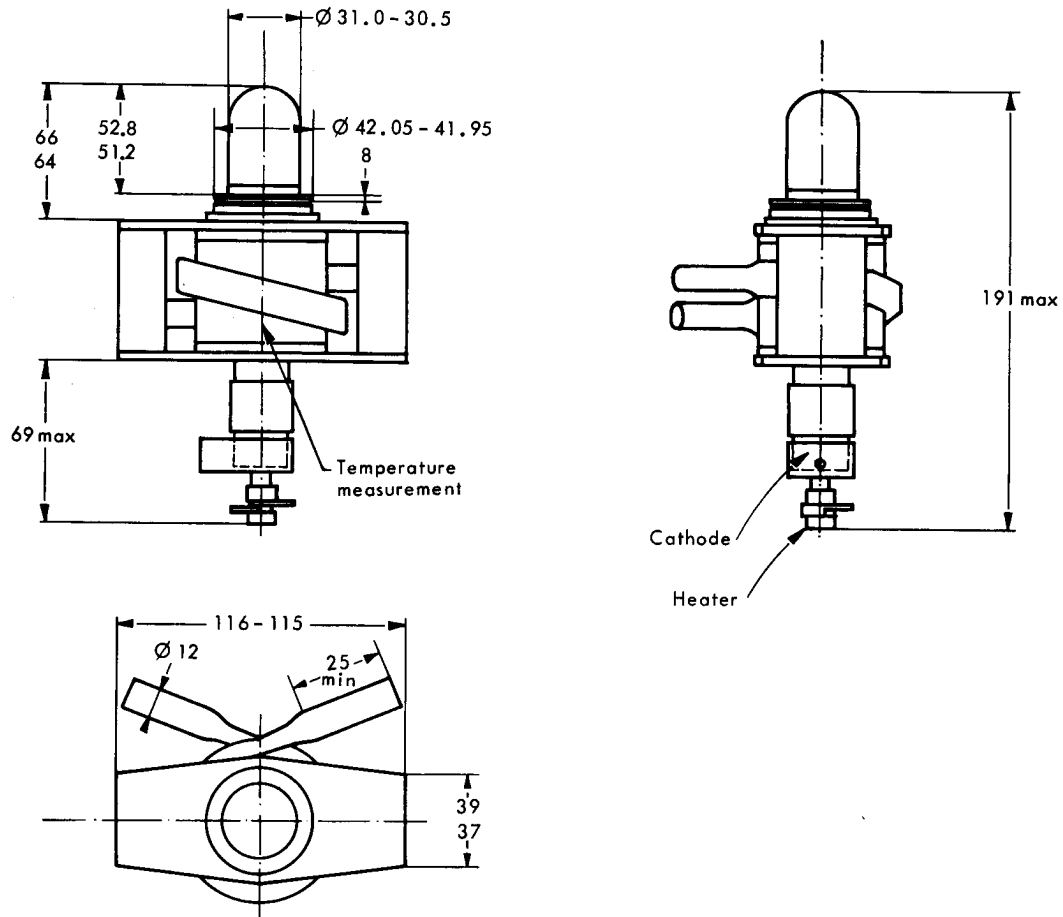


**Rieke diagramm**



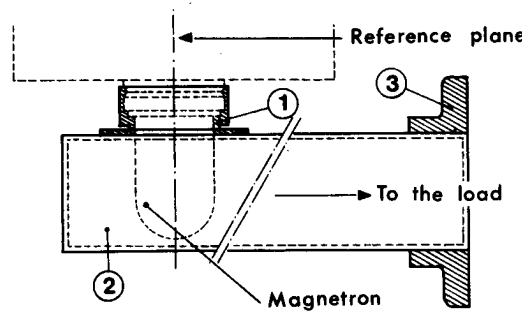


**OUTLINE DRAWING**



**Transition**

- 1- Clamp: 321 38259
- 2- Waveguide: RG 112/U
- 3- Flange: UG 553/U



Dimensions in mm.

