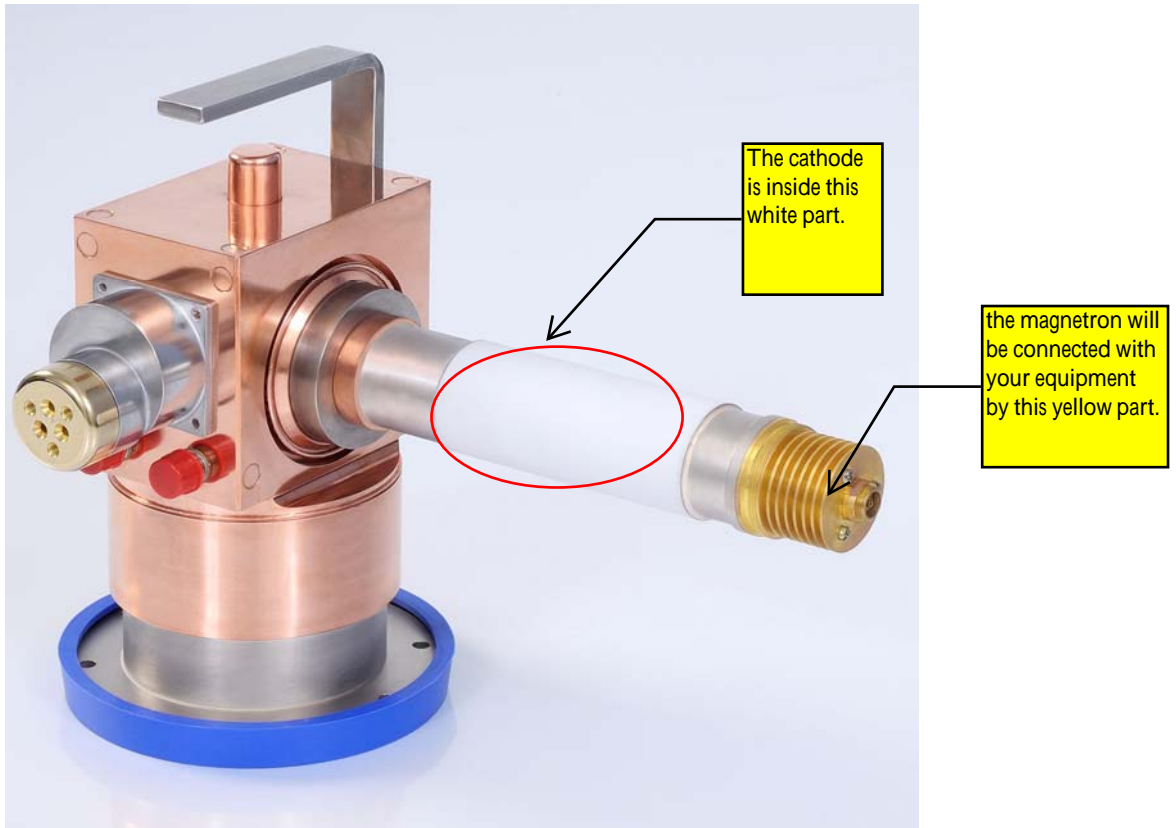




# GLM6090

## Tunable S-Band Magnetron



### ABRIDGED DATA

Mechanically tuned pulse magnetron intended primarily for linear accelerators.

Frequency range

(cooling water 40°C).....2993 to 3002 MHz

Peak output power. . . . .3.1MW

Magnet .....separate

Output.....to no. 10 (WR284) waveguide  
(72.14 × 34.04 mm internal)

Cooling .....water

### GENERAL DATA

#### Electrical

Cathode..... indirectly heated

Heater voltage.....14 V dc

Heater current.....8.0 A

Peak heater starting current, not to be exceeded.....20 A max

Cathode pre-heating time  
(minimum).....10 min

#### Mechanical

Overall dimensions.....see outline

Net weight.....8.6 kg approx

Tuner revolutions to cover frequency range  
..... 4.75

Mounting position.....any

#### Cooling

The magnetron is water cooled and has an integral water jacket. The recommended water flow is 5 litres per minute or more; a pressure of approximately 1.25 kg/cm<sup>2</sup> will be necessary to give this rate of flow. The outlet water temperature must not exceed 50°C.



## MAXIMUM AND MINIMUM RATINGS

### (Absolute values)

These ratings cannot necessarily be used simultaneously, and no individual rating should be exceeded.

	Min	Max	
Magnetic field	110.0	1650	mT
	1100	1650	gauss
Heater voltage	-	14	V dc
Heater starting current (peak)	-	20	A
Anode voltage (peak)	-	52	kV
Anode current (peak)	60	120	A
Input power (mean)	-	8.0	kW
Pulse duration	-	5.0	$\mu$ s
Rate of rise of voltage pulse	80	120	kV/ $\mu$ s
Outlet water temperature	-	50	$^{\circ}$ C
VSWR at output coupler	-	1.5:1	
Pressurizing of waveguide	-	3.1	kg/cm <sup>2</sup> g

## TEST CONDITIONS AND LIMITS

The magnetron is tested to comply with the following electrical specification.

### Test Conditions

Magnetic field	1600 $\pm$ 0.5 mT
	1600 $\pm$ 0.5 gauss
Heater voltage (for test)	0 V
Anode current (peak)	115 A
Duty cycle	0.001
Pulse duration	5.0 $\mu$ s
VSWR at output coupler	1.1:1
Minimum rate of rise of voltage pulse	120 kV/ $\mu$ s

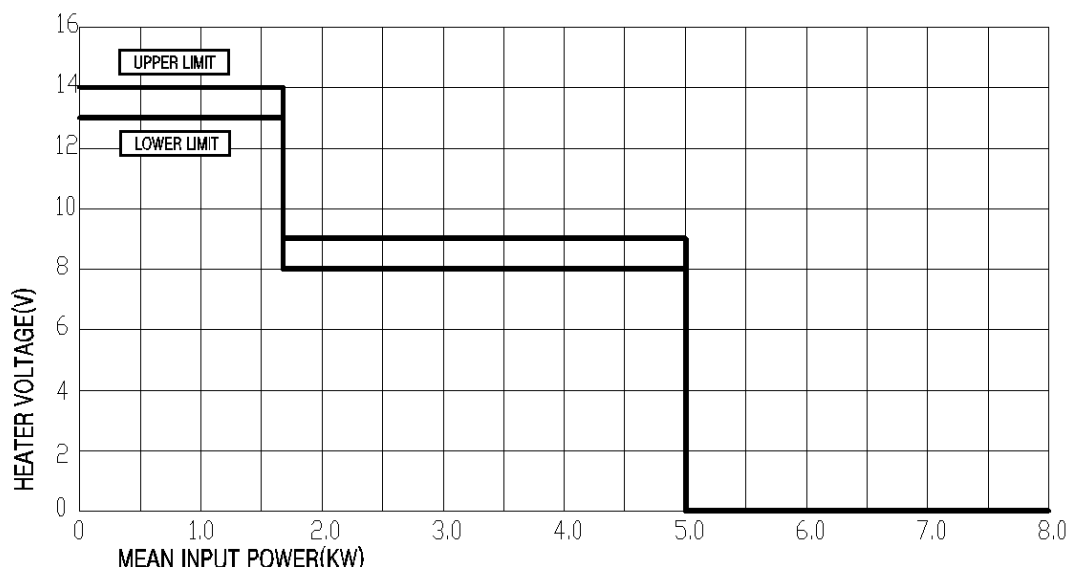
### Limits

	Min	Max	
Anode voltage (peak)	46	52	kV
Output power (mean)	3.0	-	kW
Frequency:			
lower end of tuning range	-	2993	MHz
upper end of tuning range	3002	-	MHz
RF bandwidth at 1/4 power	-	1.2	MHz
Frequency pulling (VSWR not less than 1.5:1)	-	7.0	MHz
Stability	-	0.5	%
Heater current	see note 15		
Inlet water at 25 $^{\circ}$ C			

### LIFE TEST

The quality of all production is monitored by the random selection of tubes which are then life-tested under typical operation conditions.

## HEATER VOLTAGE REDUCTION SCHEDULE



**OUTLINE (All dimensions without limits are nominal)**

