

Specification MAP/CV348/Issue 2 Dated 21.12.48. To be read in conjunction with K1001, ignoring clauses:- 5.2, 5.3, 5.8.	<table border="1"> <tr> <th colspan="2">SECURITY</th></tr> <tr> <td>Specification</td><td>Valve</td></tr> <tr> <td><del>UNCLASSIFIED</del></td><td>UNCLASSIFIED</td></tr> </table>	SECURITY		Specification	Valve	<del>UNCLASSIFIED</del>	UNCLASSIFIED
SECURITY							
Specification	Valve						
<del>UNCLASSIFIED</del>	UNCLASSIFIED						

→ Indicates a change

<u>TYPE OF VALVE</u> - Magnetron			<u>MARKING</u> See K1001/4 Additional marking "CATHODE" adjacent to cathode terminal	
<u>CATHODE</u> - Indirectly heated				
<u>ENVELOPE</u> - Copper				
<u>PROTOTYPE</u> - VX4012				
<u>RATING</u>			<u>Note</u>	<u>PACKING</u> See K1005
Filament Voltage	(V)	6.3		<u>DIMENSIONS AND CONNECTIONS</u> See drawings on page 3.
Filament Current	(A)	1.25		
Nominal Operating Frequency	(Mc/s)	9375		
Max. Mean Power Input	(W)	180	A	
Max. Peak Power Input	(kW)	150	A	
Max. Pulse Length	(μsecs)	2.25		
<u>TYPICAL OPERATING CONDITIONS</u>				
Peak Anode Voltage	(kV)	13.0	A	
Peak Anode Current	(A)	10.0	A	
Peak Power Output	(kW)	4.0	A	
Frequency Pulling	(Mc/s)	15		
<u>NOTES</u>				
A. When operating under these conditions the magnetron must be air cooled such that the temperature of the block does not exceed 140°C.				
B. The filament volts should be applied for a period of at least two minutes before H.T. volts are applied.				

To be performed in addition to those applicable in K1001.

Test Conditions					Test	Limits		No. Tested	Notes
						Min.	Max.		
Vf	Pulse length in $\mu$ sec. See Note 3	Rep. Freq. Per Sec.	Peak Ia A						
a	6.3	0	0	0	If (A)	1.0	1.5	100%	2
b	0	1.0	1200	10.0	Valve shall not cause overload relay to trip more than 5 times. Relay characteristic to be agreed.			100%	4
c	0	1.0	1200	10.0	Va (kV)	12.5	13.5	100%	2 & 4
d	0	1.0	1200	10.0	Output frequency (Mc/s)	9335	9415	100%	4
e	0	1.0	1200	10.0	Efficiency	25%	-	100%	4 & 6
f	0	1.0	1200	10.0	There shall be no continuous base line on the oscilloscope corresponding to pulses on an incorrect frequency.			T.A.	4 & 5

NOTES

- For the above tests the temperature of the magnetron block shall not exceed  $140^{\circ}$ .
- The valve shall be run for a period of not more than 2 minutes with Vf = 6.3V. At the end of that time the H.T. voltage shall be switched on and the filament voltage switched off simultaneously.
- The time of rise of the pulse shall not exceed 0.1  $\mu$ sec. and the time of fall shall not exceed 0.25  $\mu$ sec., both being measured between points where amplitude is 10% and 85% of the average amplitude of the flattest 80% of top of pulse.
- Wave Guide (standard English Wave Guide) shall be terminated in a resistive load giving a standing wave voltage ratio better than 1.1 to 1.0. The matching shall be adjusted so that the frequency pulling produced by a standing wave ratio of 1.5 to 1.0 in any phase is less than 15 Mc/s.
- To be measured using a high Q wave meter with the output fed through a pulse amplifier into an oscilloscope sufficiently sensitive to give a reasonable indication on 5% missed pulses.
- If a valve which has once passed test clause (d) is retested for any reason, it shall be considered satisfactory if the measured output on retest is within  $\pm 10\%$  of original value.

