

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

CV2420

Specification AD/CV2420  
Issue No. 2, dated 27. 1. 59.  
To be read in conjunction with K1006

SECURITY  
Specification Valve  
Unclassified Unclassified

—————> Indicates a change

<b>TYPE OF VALVE:</b> Tunable packaged Magnetron for CW operation.			<b>MARKING</b>  See K1001/4	
<b>CATHODE:</b> Indirectly heated.				
<b>PROTOTYPE:</b> VX8182				
<b>RATINGS</b>  (All limiting values are absolute)			<b>DIMENSIONS</b>  See drawing on Page 4 Page 3 of Specification AD/CV2421	
			Note	
Heater Voltage	(V)	6.3±0.6	A	
Heater Current (Nominal)	(A)	1.1		
Heater running Voltage at full power.	(V)	1.2	B	
Max. D.C. Anode Voltage	(V)	4.5		
Min. D.C. Anode Voltage	(V)	1100	C	
Max. Peak Anode Current (during modulation)	(mA)	900		
Max. Anode Current (unmodulated)	(mA)	100		
Nom. Anode Current (unmodulated)	(mA)	60		
Min. Anode Current (unmodulated)	(mA)	50		
Max. Mean Anode Input Power	(W)	20		
Min. Efficiency	(%)	60		
Max. Temperature of Anode Block	(°C)	10		
Min. Tuning Range	(Mc/s)	140		
		9150 to 9600		

NOTES

A. This heater voltage shall be applied at least two minutes before the application of anode voltage.

B. Immediately the anode voltage is applied the heater voltage must be adjusted as follows:-

- (i) to 4.5 V for <sup>input</sup> output power of 60 watts.  
(ii) to 6.3 V " " " " 0 to 20 watts.

Adjust proportionately for output power of 20 to 60 watts.

C. Measured at the anode block on the side remote from the blower.

TUNABLE PACKAGED MAGNETRON FOR CW OPERATION

Ratings:	Ef	Eb	ib	Ib	Pi	tk	Anode T	Eff'cy
Absolute	V	V	mA	mA	W	Sec.	°C	%
Maximum	6.3 +0.6 Note 1	1100	100 Note 5	60 Note 6	60	-	140	-
Minimum	4.5	900	-	20	-	120	-	10
Test		-	-	50	-	-	-	-
Conditions: Note 1								

<u>Ref.</u>	<u>Test</u>	<u>Conditions</u>	<u>Min.</u>	<u>Max.</u>
	ss Vibration:	2.5g at 170 e/s for 60 secs. No Voltages.	- Note 7	-
4.5	Holding Period:	t= 28 days		
4.10.8	Heater Current	Ef= 6.3V; Ib=0	If: 1.1 1.0	1.3 1.2A
4.10.5	Anode Voltage:	F1= 9150 Mc/s F2= 9600 Mc/s Note 1	Eb: 910 Eb: 910	1090V 1090V
4.16.3.6	Power Output:	F1= 9150 Mc/s F2= 9600 Mc/s	Po: 5 Bo: 5	- W - W
4.16.5	Pulling Factor:	F1= 9150 Mc/s F2= 9600 Mc/s Note 2	ΔF: - ΔF: -	20 Mc/s 20 Mc/s
4.16.6	ss Pushing Factor:	Ib= 25/50 mA d.c. F= 9375 Mc/s	ΔF: -	1 Mc/s per mA
4.11	Life Test (Long):	F= 9375 Mc/s Note 3	t: 500	- hrs
4.11.4	Life Test (Long) End Point:	Change in Power Output Note 3	Po: -	20%
4.11	Life Test (Short):	F= 9375 Mc/s Note 4	t: 20	- hrs

NOTES

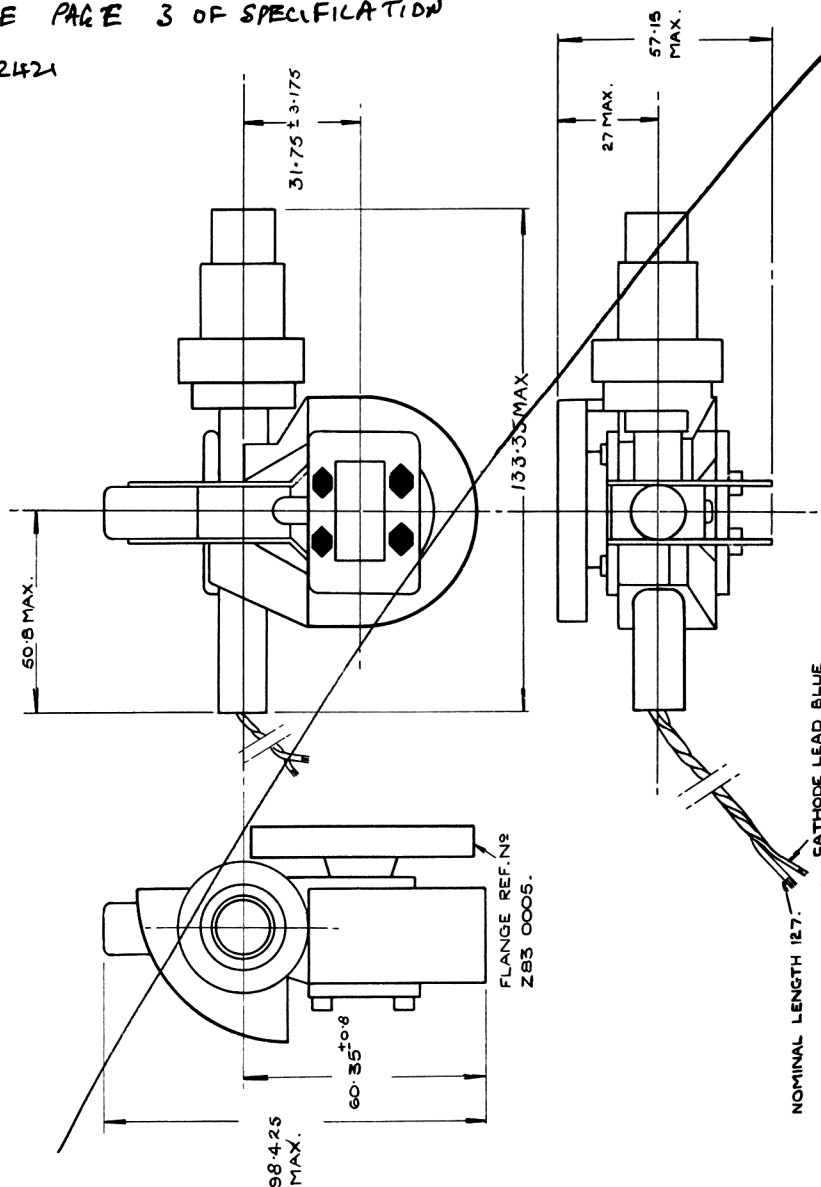
1. The valve shall be run with  $E_f = 6.5V$  only for not more than two minutes before the anode voltage is applied; and  $E_f$  shall be reduced to 4.5V immediately upon application of anode voltage.
2. Pulling figure to be measured with a VSWR of 1.5 : 1 varied through all phases.
3. One valve to be tested per year.
4. One valve to be tested per month. Valves to be within specification after test.
5. Peak anode current during modulation.
6. Anode current, unmodulated.
7. The directions of vibration to be:
  - (i) Perpendicular to the plane of the flange.
  - (ii) Parallel to the plane of the flange and to its narrower edges.

This test shall not result in shorts or defects which will cause the tube to be inoperative.

THIS DRAWING IS DELETED

SEE PAGE 3 OF SPECIFICATION

AD/CV2421



ALL DIMENSIONS ARE IN MMS.

SPECIFICATION AD/CV2420

Issue No. 2 dated 27.1.59.

AMENDMENT NO. 1

Page 1.

NOTE B. In items (i) and (ii) the words  
"output power" should be amended to "input  
power".

April, 1959.

Admiralty Surface Weapons Establishment

N.54914/D

✓ JWS. 4-7-59

ELECTRONIC VALVE SPECIFICATIONS  
SPECIFICATION AD/CV2420  
ISSUE No. 2 DATED 27.1.59

Amendment No. 2

Page 1.      Heater Current (Nominal)

Amend from 1.1A to read 1.2A.

Page 2.      4.10.8. Heater Current

Amend limits from 1.0A min. 1.2A max.  
to read: 1.1A min. 1.3A max.

May, 1961.      ADMIRALTY SURFACE WEAPONS ESTABLISHMENT

56926/D

✓ HRS  
28/1/69

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION AD/CV2420 ISSUE NO.2 DATED 27TH JANUARY 1959

AMENDMENT NO. 3

Page 1. No. of Pages: delete "4" and substitute "3"

Dimensions: Amend "See drawing on Page 4"  
to read, "See drawing on Page 3 of Specification  
AD/CV2421".

Page 4. Delete (but do not destroy) this drawing.

June, 1963.

T.V.C. for ASWE

(163871)

/AMS  
12/10/63