

—Standard Valves—

4220-C
Valve

4220-C VALVE

SINGLE ENDED
WATER COOLED TRIODE.
SPECIFICATION.

Cathode.

Pure Tungsten filament.
Constant voltage type.

Water Jacket.

Type MS.1362 Grp. 1 for anode dissipation
up to 6 Kw.
Type MS.1362 Grp. 20 used for below panel
connection for anode dissipation up to
6 Kw.
Type 223 LUIA for anode dissipation over
6 Kw.

Water Flow.

5 gallons per minute.

Dimensions.

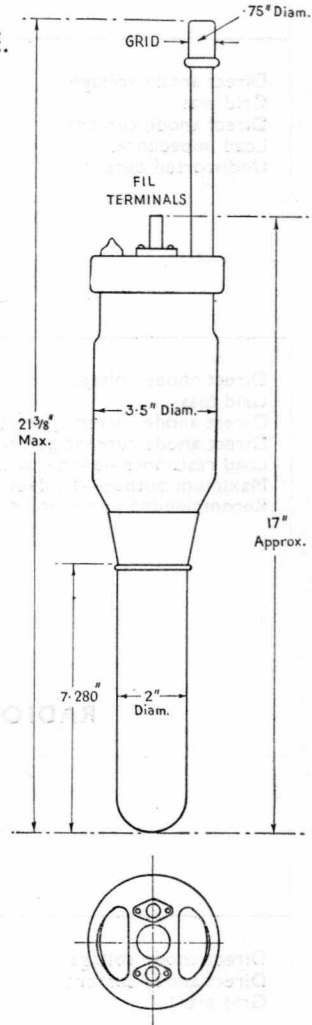
Overall length $21\frac{3}{8}"$ (54.6 cms.)
Bulb diameter $3\frac{1}{2}"$ (9.1 cms.)
Net weight $2\frac{7}{8}$ lbs. (1,300 gms.)

Constants.

Filament voltage 22 volts
(exact filament voltage marked
on bulb)
Nominal filament current 41 amps.
Total emission 6 amps.
*Impedance 7,500 ohms
*Amplification factor 40
*Mutual conductance 5.3 mA per volt
Grid-anode capacity $20.5 \mu\mu\text{F}$
Grid-filament capacity $20 \mu\mu\text{F}$
Anode-filament capacity $3 \mu\mu\text{F}$
* at $V_p = 10\text{kV}$ $I_p = 0.8$ amp.

LIMITING CONDITIONS FOR SAFE OPERATION.

Maximum direct anode voltage	13,000 volts
Maximum direct anode voltage for anode modulation	9,000 volts
Maximum direct anode current	1.5 amps.
Maximum anode dissipation	10 Kw.
Maximum grid dissipation	200 watts
Maximum frequency for above ratings	1 Mc.
Maximum anode voltage for frequency of 2 Mc.	7,500 volts



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March, 1939

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TYPICAL OPERATING CONDITIONS.

	Class A AF Amp. and Mod.		
Direct anode voltage	10,000	12,000	volts
Grid bias	—150	—200	volts
Direct anode current	0.30	0.38	amps.
Load impedance	17,500	10,000	ohms
Undistorted output	325	545	watts

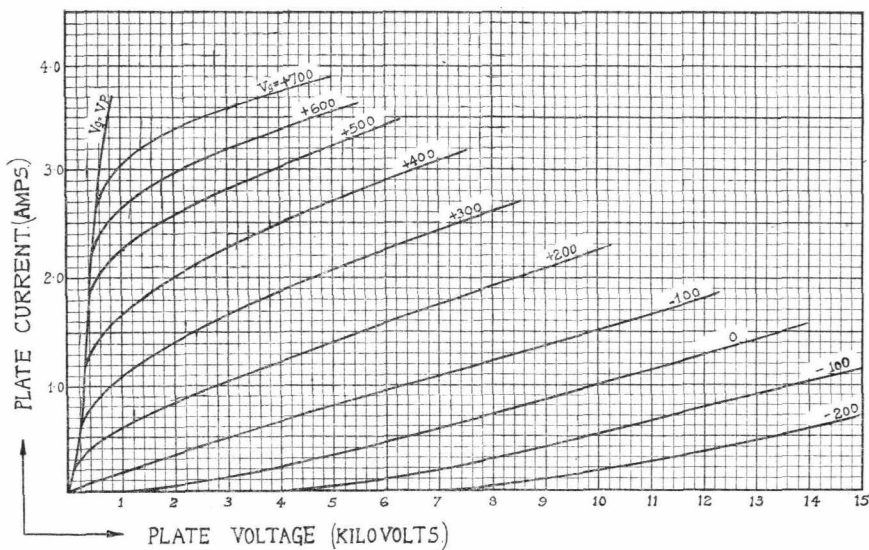
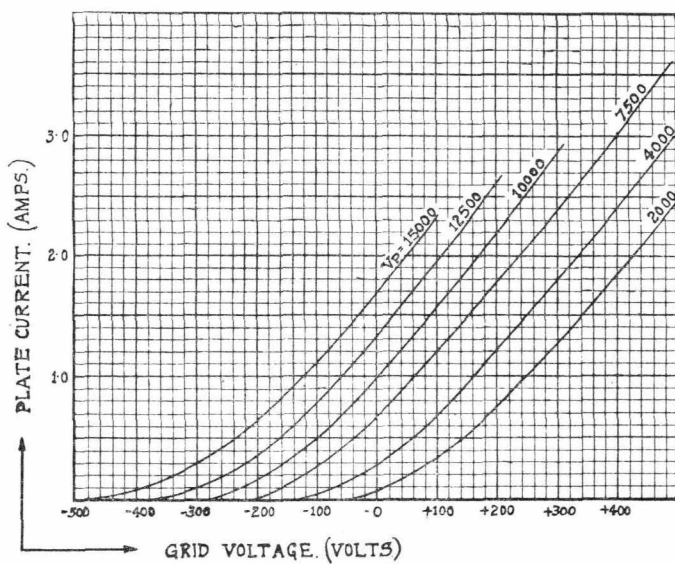
	Class B AF Amp. and Mod. For balanced 2 valve circuit		
Direct anode voltage	10,000	5,000	volts
Grid bias	—190	—75	volts
Direct anode current per valve—zero signal	0.20	0.10	amps.
Direct anode current per valve—maximum signal	1.3	1.3	amps.
Load resistance—anode to anode	7,000	3,480	ohms
Maximum output—2 valves	14,500	7,200	watts
Recommended power for driving stage	2,000	2,000	watts

RADIO FREQUENCY OPERATION.

	Class B Telephony		Class C Telephony		Class C Telegraphy	
	Modulated Carrier applied to grid		Subject to anode modulation		Unmodulated	
Direct anode voltage	12,000	10,000	7,500	5,000	10,000	7,500 volts
Direct anode current	0.6	0.6	0.6	0.6	1.1	1.1 amps
Grid bias	—350	—300	—600	—300	—470	—350 to —450 volts
Anode dissipation	4,850	4,100	1,350	1,100	3,500	2,650 watts
Carrier output	2,350	1,900	3,150	1,900	7,500	5,600 watts

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V.4220-C.2
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1210-C
Valve

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