

# —Standard Valves—

4212-E  
Valve

## 4212-E VALVE TRIODE.

The 4212-E valve employs a molybdenum anode and hard glass bulb.

### SPECIFICATION.

#### Cathode.

Thoriated tungsten filament.  
Constant voltage type.

#### Base.

Extra large 4-pin bayonet.

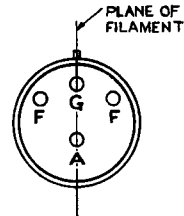
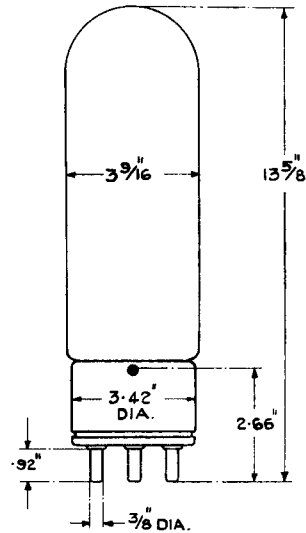
#### Dimensions.

Max. overall length  $13\frac{5}{8}"$  (34.6 cms.)  
Bulb diameter  $3\frac{9}{16}"$  (9.1 cms.)  
Net weight 1.6 lbs. (725 gms.)

#### Constants.

Filament voltage 14 volts  
Nominal filament current 6 amps.  
Total emission 4 amps.

- \*Impedance 1,900 ohms  
\*Amplification factor 16  
\*Mutual conductance 8.4 mA per volt  
Grid-anode capacity  $18.8 \mu\mu\text{F}$ .  
Anode-filament capacity  $8.6 \mu\mu\text{F}$ .  
Grid-filament capacity  $14.9 \mu\mu\text{F}$ .  
\* at  $V_p = 2,000$  volts.  $V_g = -90$  volts.



### LIMITING CONDITIONS FOR SAFE OPERATION.

Maximum direct anode voltage	3,000 volts
Maximum direct anode current	350 mA.
Maximum anode dissipation	275 watts
Maximum direct grid current	75 mA.
Maximum frequency for above ratings	1.5 Mc.
Maximum anode voltage for frequency of 4.5 Mc.	1,000 volts

Note :—This valve should be mounted so that the plane of the filament is vertical.

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## TYPICAL OPERATING CONDITIONS.

	Class A AF Amp. and Mod.		
Direct anode voltage	1,500	1,250	volts
Grid bias	—57	—40	volts
Direct anode current	170	200	milliamps
Load impedance	5,000	3,000	ohms
Undistorted output	50	40	watts

	Class B AF Amp. and Mod. For balanced 2 valve circuit		
Direct anode voltage	2,000	1,500	volts
Grid bias	—105	—75	volts
Anode current per valve—zero signal	40	50	mA.
Anode current per valve—maximum signal	300	300	mA.
Anode dissipation	250	200	watts
Load resistance—anode to anode	8,000	5,900	ohms
Maximum output, 2 Valves	650	500	watts

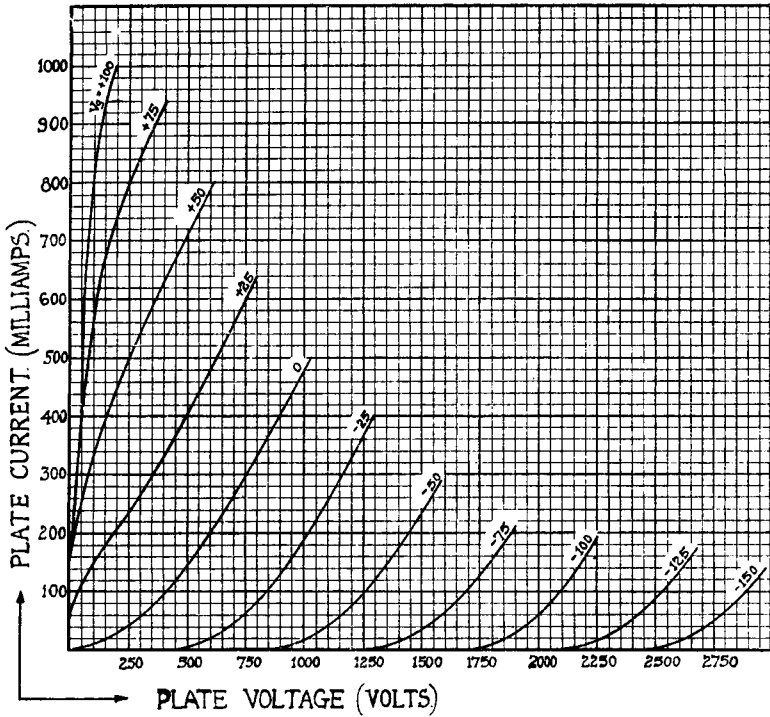
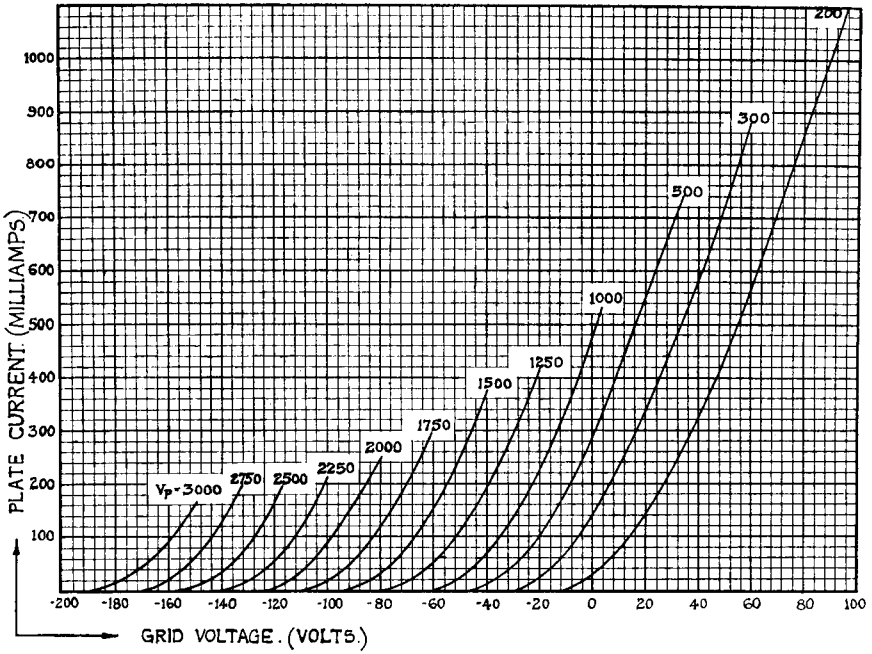
## RADIO FREQUENCY OPERATION

	Class B Telephony		Class C Telephony		Class C Telegraphy	
	Modulated carrier applied to grid		Subject to anode modulation		Unmodulated	
Direct anode voltage	2,000	1,500	1,500	1,000	2,000	1,500 volts
Direct anode current	0.206	0.275	0.300	0.300	0.300	0.300 amps.
Grid bias	—120	—90	—200	—125	—185	—150 to —200 volts
Anode dissipation	275	275	150	100	200	150 watts
Carrier output	137	137	300	200	400	300 watts

The curves shown on sheet V.4212-E.2 are taken with direct filament heating, grid and anode voltages being referred to the negative end of the filament.

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