

FEDERAL

F-124-R TRANSMITTING TUBE



TECHNICAL DATA

Main Use	R-F Power Amplifier, Oscillator, Class B Modulator
Number of Electrodes	3
Filament Voltage Per Strand	13.6 volts
Current Per Strand	68.5 amperes
Type	Multistrand Tungsten
Excitation	D-C, 1, 3, or 6 ϕ A-C
Thermionic Emission	35 amperes
Average Characteristic Values calculated at $E_b=8000$, $I_b=1.6$ amperes, $E_f=13.6$ volts per strand	
Grid Voltage (approximate)	0 volts
Amplification Factor	42
Mutual Conductance	14000 micromhos
Plate Resistance	3000 ohms
Approximate Direct Inter-electrode Capacitances	
Plate to Grid	35 mmf.
Grid to Filament	37 mmf.
Plate to Filament	5 mmf.
Overall Dimensions	
Maximum Length	26 3/4 inches
Maximum Radius	6 1/4 inches
Type of Cooling	Forced Air

The information above and in the following pages by no means represents exact conditions of operation to be imposed for any particular situation. Since tubes are used under many widely different conditions the manufacturer will gladly furnish information regarding characteristics for design purposes.

Manufactured by
FEDERAL TELEGRAPH CO.
200 Mt. Pleasant Avenue Newark, N. J., U.S.A.

F-121-R Transmitting Tube
For maximum frequency of 20 megacycles

CLASS B AUDIO AMPLIFIER OR MODULATOR

D-C Plate Voltage	20000 volts
Max. Signal D-C Plate Cur.	5.0 amperes
Max. Signal Plate Input	50000 watts
Plate Dissipation	20000 watts

CLASS C R.F. POWER AMPLIFIER— TELEPHONY—PLATE MODULATED

(Carrier conditions per tube for use with modulation factor up to 1.0)

D-C Plate Voltage	14000 volts
D-C Plate Current	4.5 amperes
D-C Grid Current	2.0 amperes
R-F Grid Current	50 amperes
Plate Input	60000 watts
Plate Dissipation	15000 watts

CLASS B R-F POWER AMPLIFIER TELEPHONY

(Carrier conditions per tube for use with modulation factor up to 1.0)

D-C Plate Voltage	20000 volts
D-C Plate Current	3.5 amperes
R-F Grid Current	50 amperes
Plate Input	30000 watts
Plate Dissipation	20000 watts

CLASS C R-F POWER AMPLIFIER AND OSCILLATOR-TELEGRAPHY

(Key-down conditions per tube without modulation)*

D-C Plate Voltage	20000 volts
D-C Grid Voltage	-3000 volts
D-C Plate Current	7.0 amperes
D-C Grid Current	2.0 amperes
R-F Grid Current	50 amperes
Plate Input	100000 watts
Plate Dissipation	20000 watts

* Modulation essentially negative, may be used if the positive peak of the audio frequency envelope does not exceed 115% of the carrier condition value.

Typical Operation Data

F-124-R Transmitting Tube

CLASS C. R-F POWER AMPLIFIER AND OSCILLATOR-PLATE MODULATED

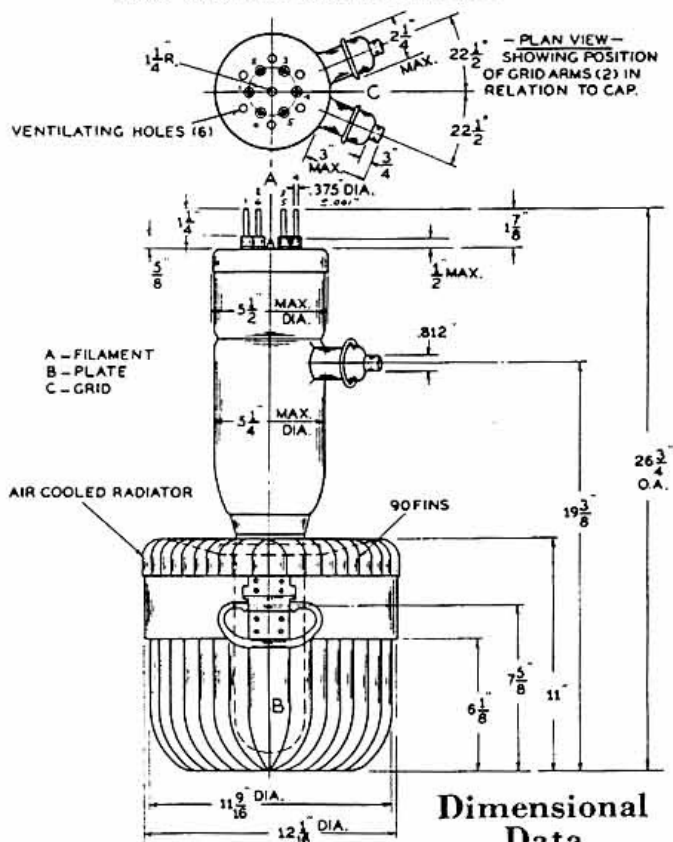
(Carrier conditions per tube for use with a modulation factor up to 1.0)

Filament Voltage	13.6 volts per strand
D-C Plate Voltage	12000 volts
D-C Grid Voltage	-725 volts (approx.)
Peak R-F Grid Input Voltage	1425 volts (approx.)
D-C Plate Current	3.31 amperes
D-C Grid Current	0.061 ampere
Driving Power	87 watts (approx.)
Power Output	26200 watts (approx.)

Air Requirements Per Tube

Anode Dissipation KW (1)	Minimum Recommended Air Flow Cu. Ft./Min.	Approx. Air Press.(2) In. of water	Air Velocity Through Fin. Assy. Ft./Min.	Approx. Temp. Rise of air Deg. Cent.
5	675	0.22	1365	30
10	950	0.43	1920	30
15	1500	1.10	3030	25
20	2100	2.15	5240	21

- (1) This is the anode dissipation exclusive of filament power dissipated through anode.
- (2) This pressure is measured at the base of tube mounting. Duct work must be considered to determine pressure against which blower must deliver required amount of air.



For multiphase filament connections, see description of Federal F-125-R Transmitting Tube.