FEDERAL

F-124-A 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	29 mmf.
Grid to Filament	37 mmf.
Plate to Filament	5 mmf.
Overall Dimensions	
Maximum Length	25 15/16 inches
Maximum Radius	6 1/4 inches
Type of Cooling	Water
Water Jacket	Standard or Federal Type 1010-C

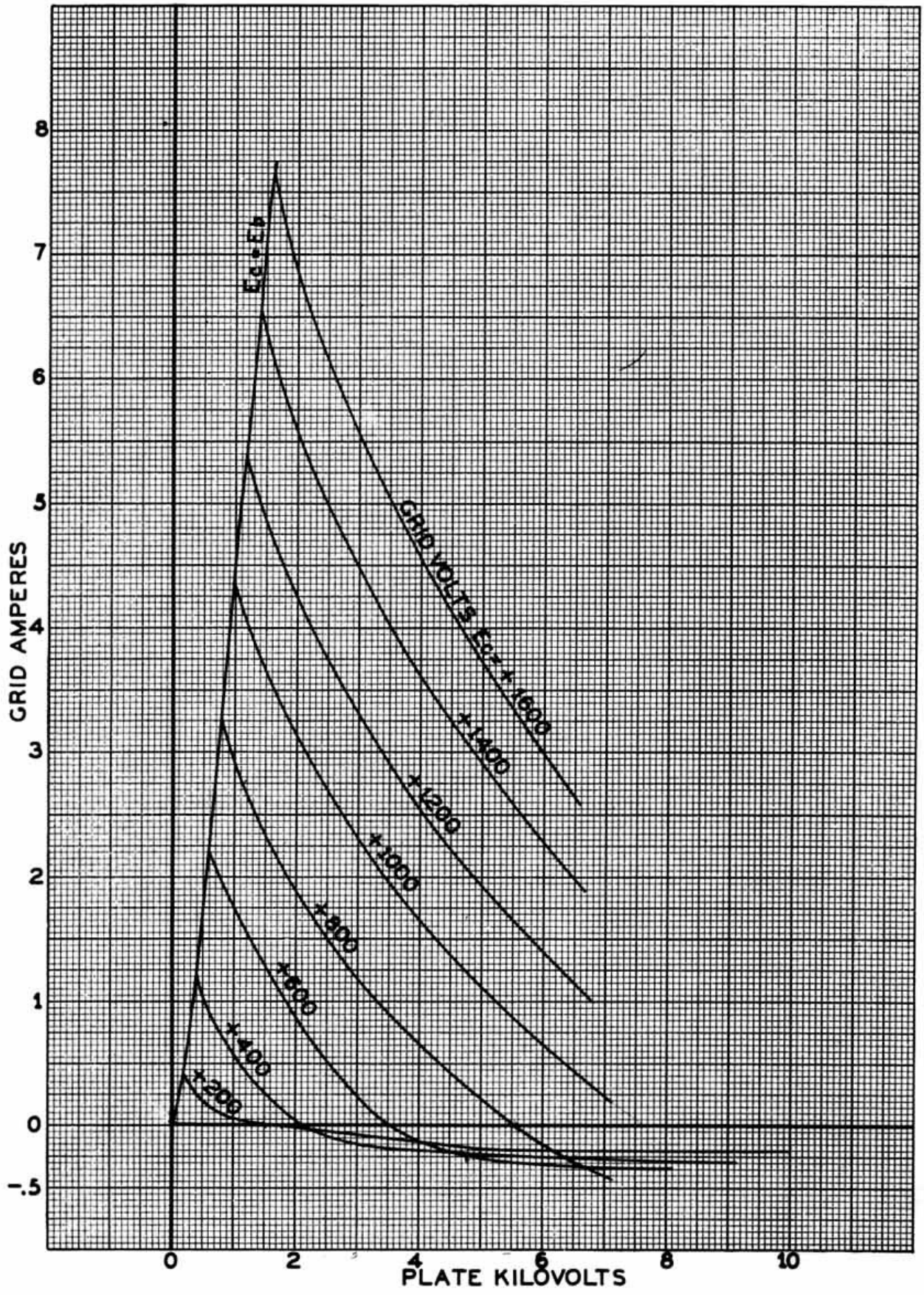
The information above and in the following pages by no means represents exact conditions of operation to be imposed for any particular situation. Since tubes are used under many widely different conditions the manufacturer will gladly furnish information regarding characteristics for design purposes.

Manufactured by

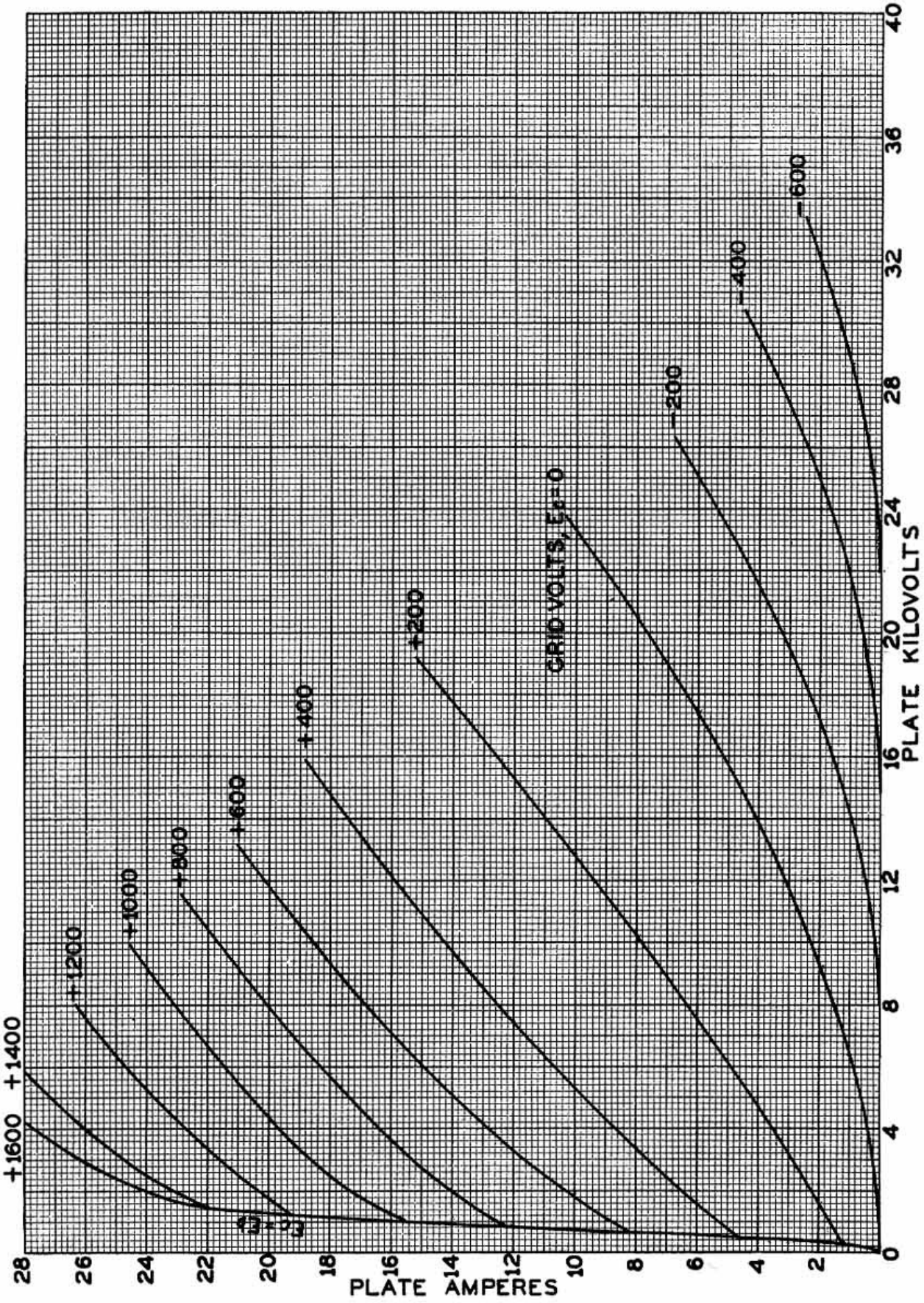
FEDERAL TELEGRAPH CO.

200 Mt. Pleasant Avenue Newark, N. J., U.S.A.

AVERAGE GRID CHARACTERISTICS F-124-A Transmitting Tube



AVERAGE PLATE CHARACTERISTICS F-124-A Transmitting Tube



Maximum Ratings

F-124-A 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	30000 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	60000 watts
Plate Dissipation	40000 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	30000 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	135000 watts
Plate Dissipation	40000 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-A 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.)

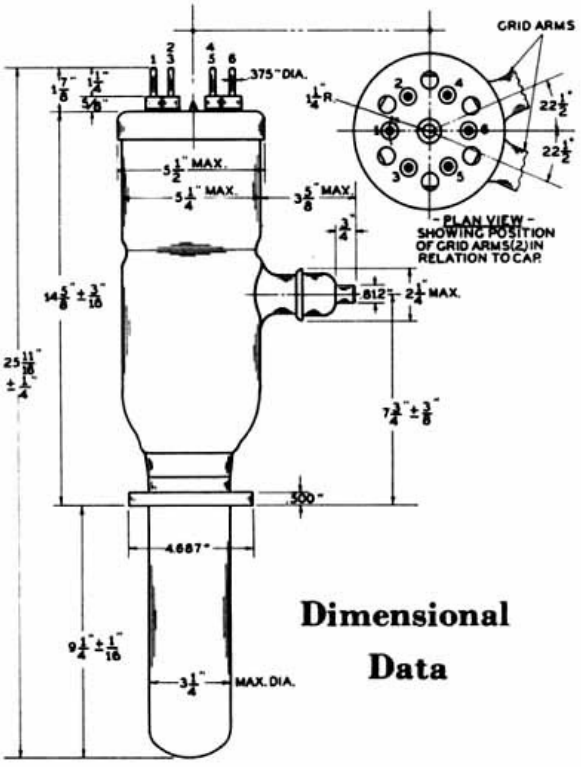
CLASS B, R-F POWER AMPLIFIER

(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	17500 volts
D-C Grid Voltage	-300 volts (approx.)
Peak R-F Grid Input Voltage	480 volts (approx.)
D-C Plate Current	2.1 amperes
D-C Grid Current	-0.02 ampere
Driving Power*	100 watts (approx.)
Load Impedance	2550 ohms
Power Output	13100 watts (approx.)

* At crest of A-F cycle

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



Dimensional Data