EITEL-McCULLOUGH, INC.
SAN BRUNO, CALIFORNIA

3X3000F1

LOW-MU TRIODE

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MODULATOR AMPLIFIER

The Eimac 3X3000F1 is a low-mu forced-air-cooled power triode intended for use as an audio amplifier or modulator. The maximum rated plate dissipation is 3000 watts.

Two 3X3000F1's in class-AB$_1$ audio service will deliver up to 10 kilowatts maximum-signal plate power output at 6000 plate volts without drawing grid current.

GENERAL CHARACTERISTICS

ELECTRICAL

Filament: Thoriated Tungsten	
Voltage	7.5 volts
Current	51 amperes
Amplification Factor (Average)	5
Direct Interelectrode Capacitances (Average)	
Grid-Plate	17 $\mu\mu$fd
Grid-Filament	29 $\mu\mu$fd
Plate-Filament	2.5 $\mu\mu$fd
Transconductance (I_b = 1.0 amp., E_b = 3000v.)	11,000 μmhos

MECHANICAL

Base	See outline drawing
Mounting Position	Vertical, base down or up
Cooling	Forced air
Maximum Temperatures:	
Grid and Filament Seals, Anode Cooler Core	150°C
Maximum Overall Dimensions:	
Length	9.0 inches
Diameter	4.16 inches
Net Weight	7.5 pounds
Shipping Weight	17 pounds

AUDIO FREQUENCY POWER AMPLIFIER OR MODULATOR

Class-AB$_1$

MAXIMUM RATINGS (Per tube)

D-C PLATE VOLTAGE	6000 MAX. VOLTS
D-C PLATE CURRENT	2.5 MAX. AMPERES
PLATE DISSIPATION	3000 MAX. WATTS
GRID DISSIPATION	50 MAX. WATTS

TYPICAL OPERATION (Sinusoidal wave, two tube unless otherwise specified)

D-C Plate Voltage	3000	4000	5000	6000 volts
D-C Grid Voltage (approx.)[1]	—600	—860	—1080	—1300 volts
Zero-Signal D-C Plate Current	665	500	400	335 ma
Max-Signal D-C Plate Current	3.35	3.00	2.80	2.65 amps
Effective Load, Plate-to-Plate	1170	2160	3320	4560 ohms
Peak A-F Grid Input Voltage (per tube)	555	760	995	1250 volts
Max-Signal Driving Power (approx.)	0	0	0	0 watts
Max-Signal Plate Power Input	10,000	12,000	14,000	16,000 watts
Max-Signal Plate Dissipation (per tube)	3000	3000	3000	3000 watts
Max-Signal Plate Power Output	4000	6000	8000	10,000 watts
Total Harmonic Distortion[2]	2.7	1.8	2.6	2.1 per cent

[1]Adjust to stated Zero-Signal D-C Plate Current. Can be expected to vary ±15%. Effective grid-circuit resistance must not exceed 200,000 ohms.
[2]At maximum signal without negative feedback.

APPLICATION

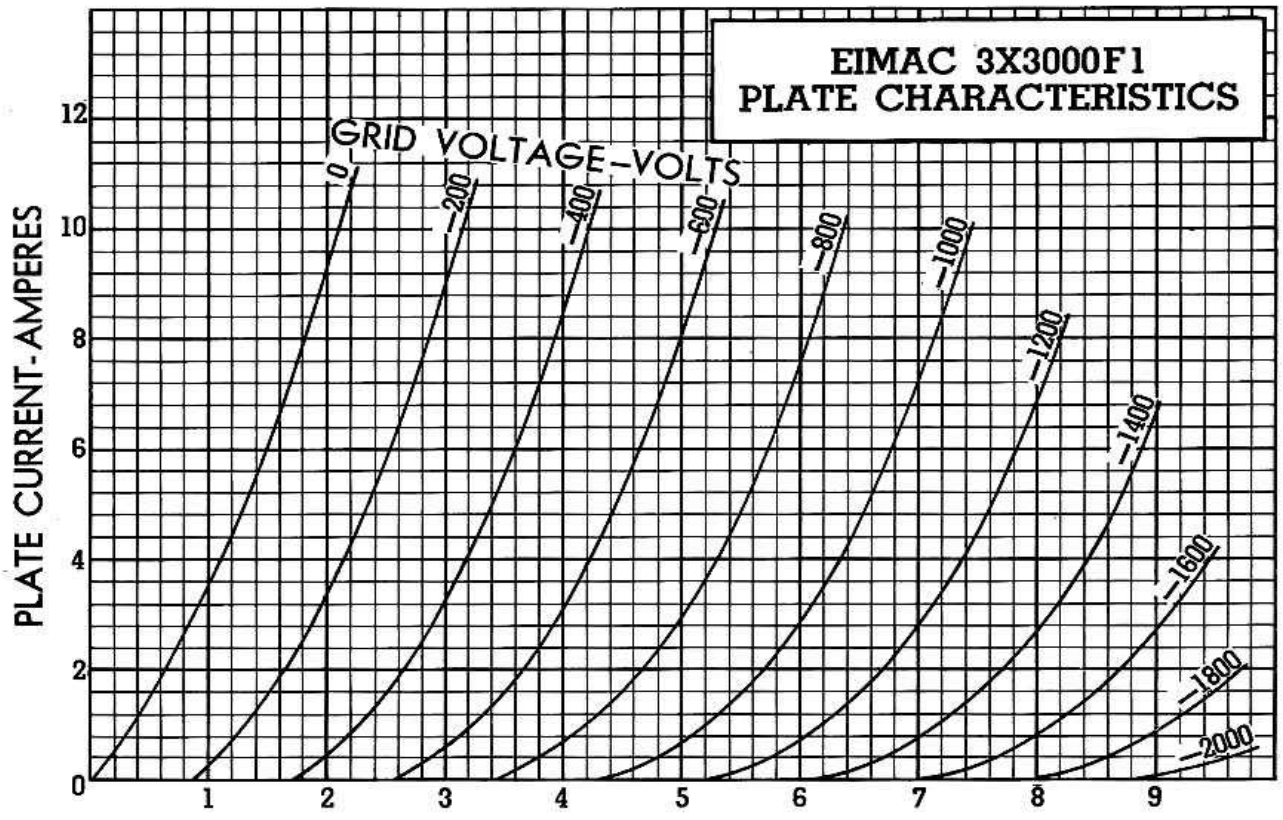
Filament Voltage—The filament voltage, as measured directly at the tube, should be the rated value of 7.5 volts. Variations should be held within the range of 7.12 to 7.87 volts.

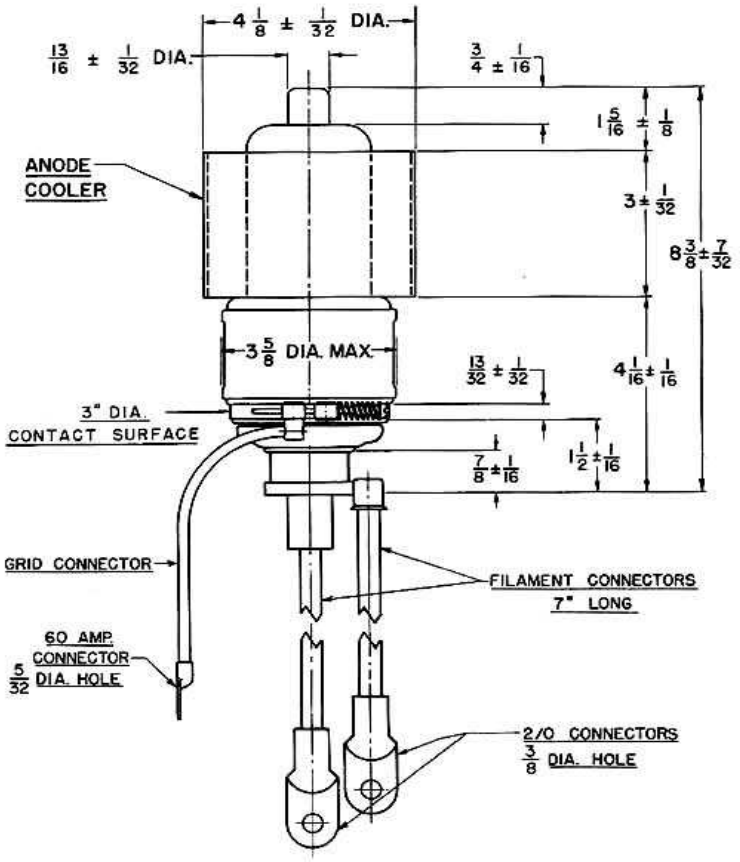
Cooling—The 3X30000F1 requires an air-flow of 150 cubic feet per minute through the anode cooler. This corresponds to a pressure drop across the cooler of 2.2 inches of water. A flow of 6 cubic feet per minute must also be directed into the filament stem structure, between the inner and outer filament conductors.

The air-flow must be started when power is applied to the filament, and must continue without interruption until all electrode voltages have been removed from the tube. It is advisable to permit the air-cooling system to operate for two minutes or more after the removal of power.

These air requirements are based upon operation at an ambient temperature of 20°C and at sea level.

Cooling conditions for the 3X3000F1 may be considered satisfactory if the temperature of the anode cooler core and of the metal parts of the metal-to-glass seals is not allowed to exceed 150°C. A convenient accessory for the measurement of these temperatures is "Tempilaq", a temperature-sensitive lacquer manufactured by the Tempil Corporation, 132 West 22nd St., New York 11, N. Y.





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