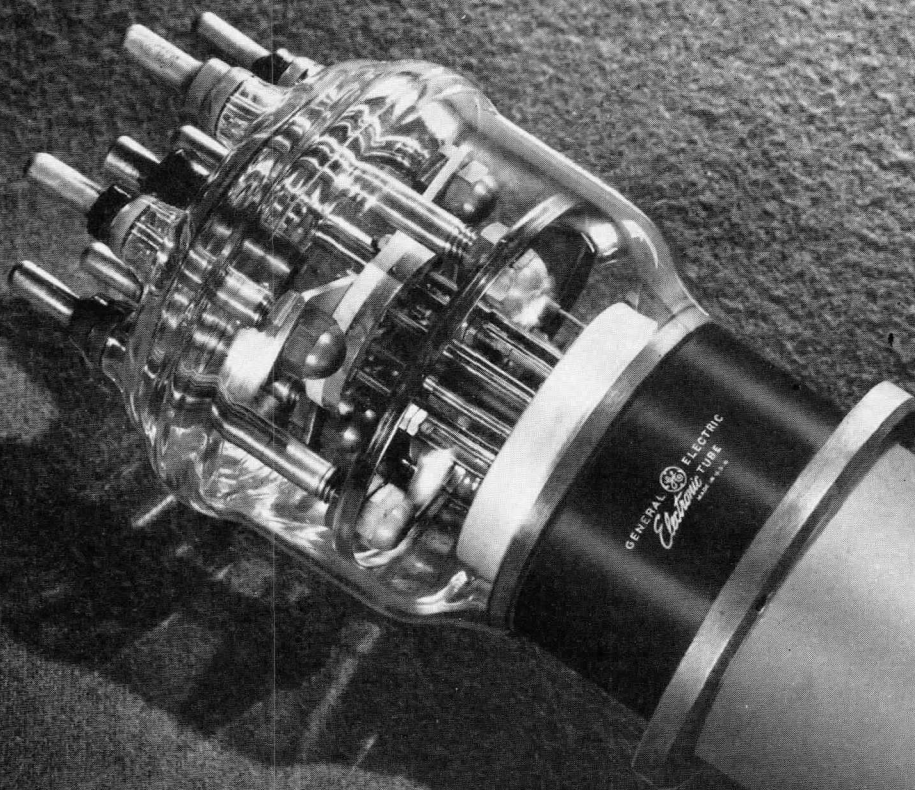




TRIODE

DESCRIPTION

The GL-895 is a water-cooled transmitting tube for use as a Class B modulator, radio-frequency power amplifier, or oscillator. The plate is capable of dissipating up to 40 kilowatts.

TECHNICAL INFORMATION

GENERAL

Electrical Data	Minimum	Bogey	Maximum	
Filament voltage, to neutral*	...	19	20	volts
Filament current, per phase	128	138	146	amperes
Filament starting current**	...	...	210	amperes
Filament cold resistance (per phase to Y center)	...	0.013	...	ohm
Amplification factor, $E_c = -100$ volts, $I_b = 1$ amp	30	37	43	
Interelectrode capacitances				
Grid-plate	32	40	48	uuf
Grid-filament	64	80	96	uuf
Plate-filament	5	8	11	uuf

*When the load conditions are lower than maximum, the tube may usually be operated with reduced filament voltage.

**Starting current must never exceed, even momentarily, a value of 210 amperes.


Electronic
 TUBE

GENERAL  ELECTRIC

Supersedes ETI-251B dated 4-48

TECHNICAL INFORMATION (CONT'D)

Mechanical Data

Mounting position.....	vertical, glass-end up
Type of cooling.....	water and forced air***
Water flow on anode.....	20-25 GPM
Maximum outgoing water temperature.....	70 C
Air flow to filament and grid thimbles.....	5 CFM
Maximum glass temperature.....	150 C
Net weight, approximate.....	25 pounds

***Water flow of 20 to 25 gallons per minute must start before application of any voltage and continue for at least 5 minutes after removal of voltage. Water temperature must not exceed 70 C under any conditions of operation. Air flow of 5 cubic feet per minute directed on filament and grid thimbles is required before application of any voltage, and for 5 minutes after all voltage is switched off, to limit temperature of grid and filament seals to a maximum of 150 C.

AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR—CLASS B

Maximum ratings, absolute values

D-c plate voltage.....	17,000 max	volts
Maximum signal d-c plate current†.....	9 max	amperes
Maximum signal plate input†.....	100,000 max	watts
Plate dissipation†.....	40,000 max	watts

Typical operation

Unless otherwise specified, values are for two tubes

D-c plate voltage.....	12,500	10,000	10,000	volts
Zero signal d-c plate current.....	1.50	2.00	2.00	amperes
Maximum signal d-c plate current.....	10.80	10.80	5.10	amperes
D-c grid voltage.....	-250	-200	-200	volts
Peak a-f grid-to-grid voltage.....	1300	1200	800	volts
Effective load resistance, plate to plate.....	2700	2100	3600	ohms
Maximum signal driving power, approximate.....	700	600	75	watts
Maximum signal power output, approximate.....	90,000	70,000	30,000	watts

† Averaged over any audio-frequency cycle of sine-wave form.

PLATE-MODULATED RADIO-FREQUENCY POWER AMPLIFIER—CLASS C TELEPHONY

CARRIER CONDITIONS PER TUBE FOR USE WITH A MAXIMUM MODULATION FACTOR OF 1.0

Maximum ratings, absolute values

D-c plate voltage.....	12,500 max	volts
D-c plate current.....	5 max	amperes
Plate input.....	62,500 max	watts
Plate dissipation.....	27,000 max	watts
D-c grid voltage.....	-3000 max	volts
D-c grid current.....	1.5 max	amperes

Typical operation

D-c plate voltage.....	12,500	12,500	10,000	volts
D-c plate current.....	2.5	4.40	3.35	amperes
D-c grid voltage.....	-1400	-1500	-1500	volts
Peak r-f grid voltage.....	1810	2080	2000	volts
Driving power, approximate.....	780	1700	1300	watts
Power output, approximate.....	25,000	45,000	25,000	watts

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

KEY-DOWN CONDITIONS PER TUBE WITHOUT MODULATION****

Maximum ratings, absolute values

D-c plate voltage.....	17,000 max	volts
D-c plate current.....	9 max	amperes
Plate input.....	140,000 max	watts
Plate dissipation.....	40,000 max	watts
D-c grid voltage.....	-3000 max	volts
D-c grid current.....	1.5 max	amperes

****Modulation, essentially negative, may be used if the positive peak of the audio envelope does not exceed 115 per cent of carrier conditions.

TECHNICAL INFORMATION (CONT'D)

Typical operation

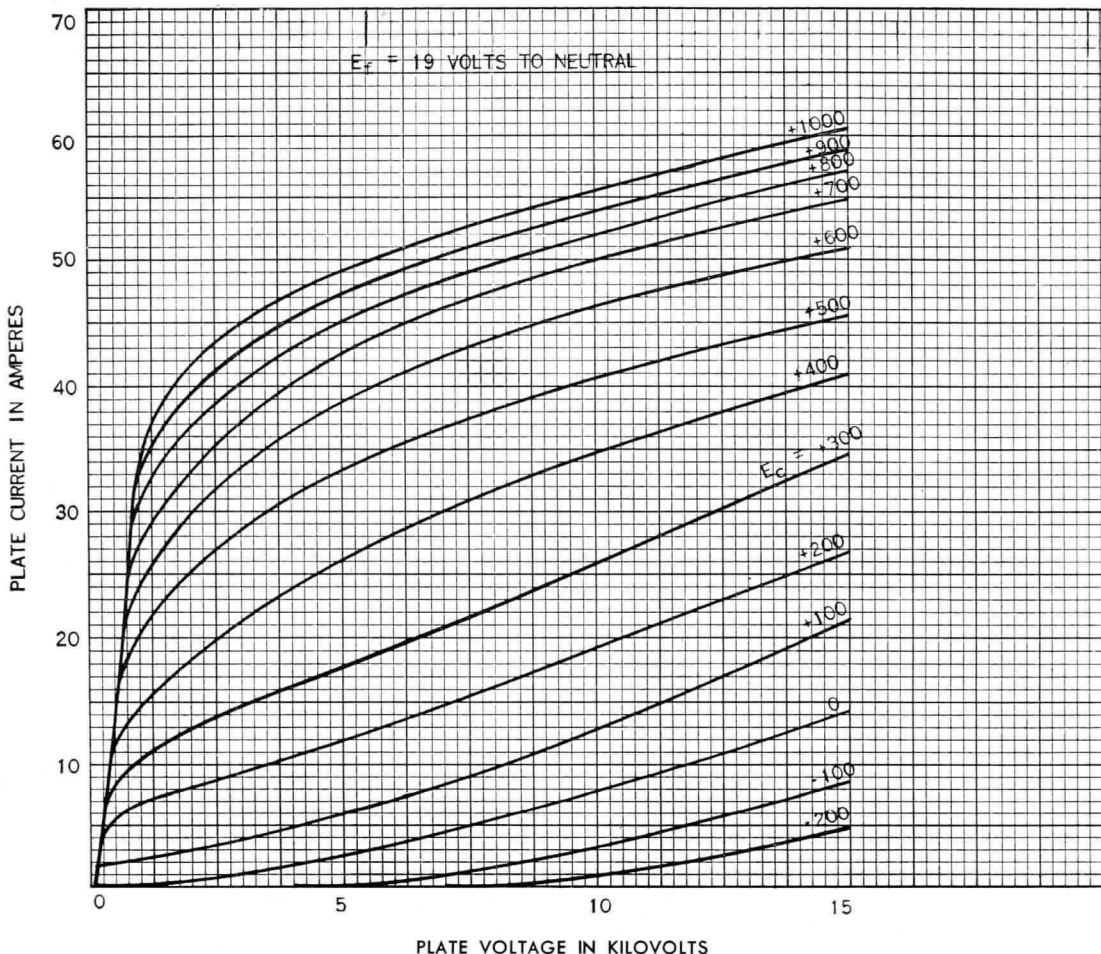
D-c plate voltage	17,000	15,000	12,000	10,000	volts
D-c plate current	7.50	8.60	7.20	7.15	amperes
D-c grid voltage	-1000	-700	-1000	-1000	volts
Peak r-f grid voltage	1700	1400	1700	1700	volts
D-c grid current, approximate	1.00	1.15	1.15	1.15	amperes
Driving power, approximate	1700	1500	1900	1900	watts
Power output, approximate	100,000	95,000	60,000	50,000	watts

APPLICATION NOTES

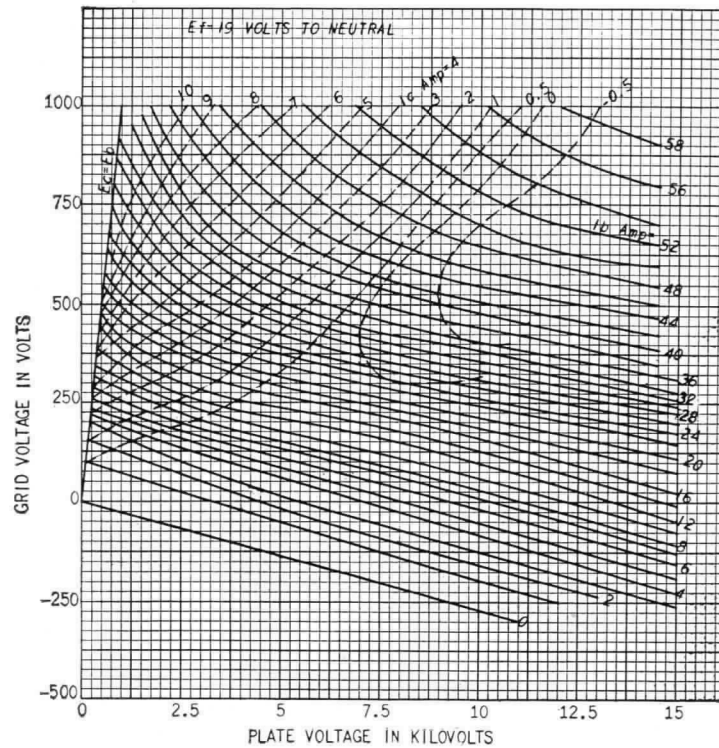
Maximum ratings apply up to 6 megacycles. The tube may be operated at higher frequencies provided the maximum values of plate voltage and power input are reduced according to the tabulation below (other maximum ratings are the same as shown above). Special attention should be given to adequate ventilation of the bulb at these frequencies.

Frequency	6	12	25	megacycles
Percentage of maximum rated plate voltage and plate input				
Class C plate modulated	100	90	81	per cent
Class C unmodulated	100	85	70	per cent

GL-895 AVERAGE PLATE CHARACTERISTICS

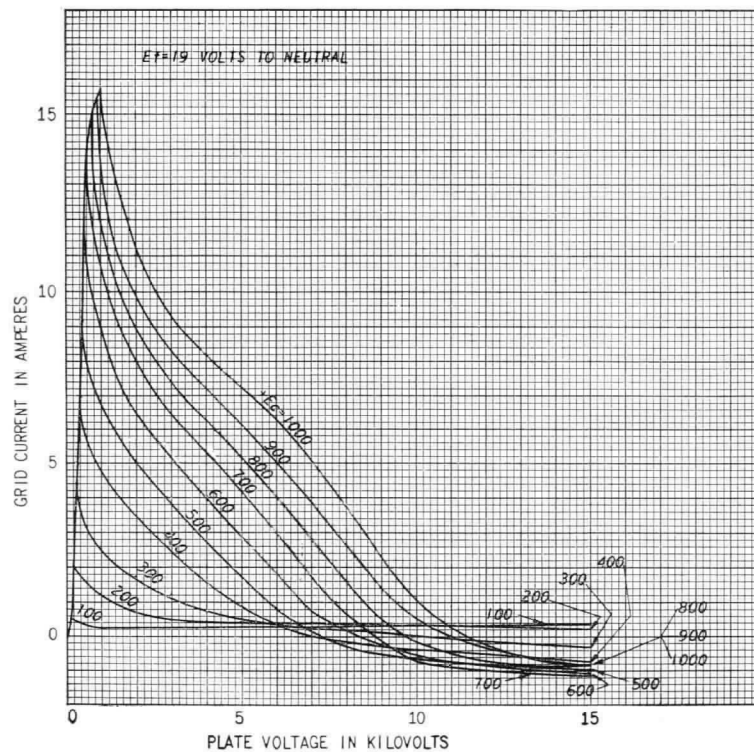


GL-895 CHARACTERISTICS



K-9186074

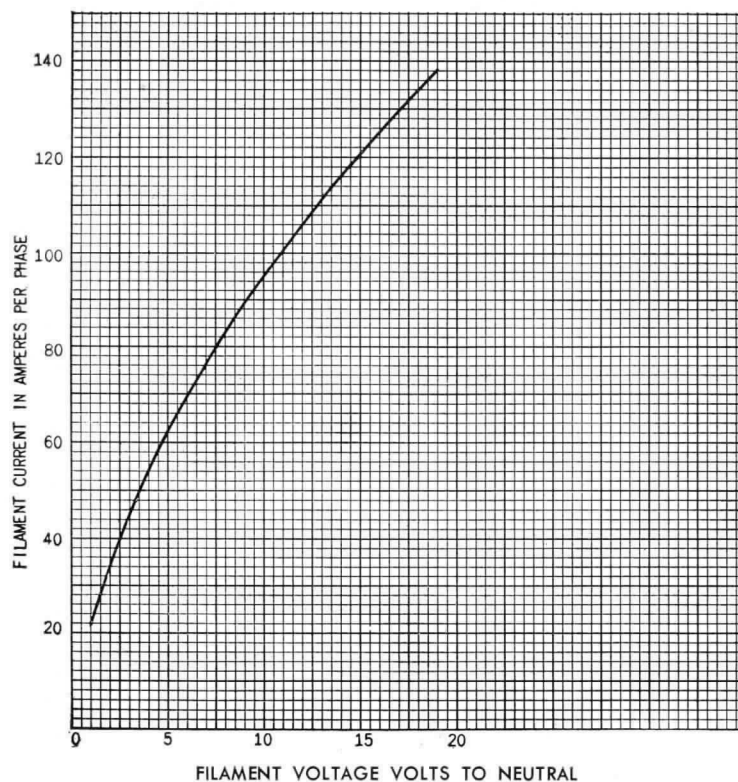
12-10-45

GL-895
TYPICAL GRID-PLATE TRANSFER CHARACTERISTICS

K-9186088

12-10-45

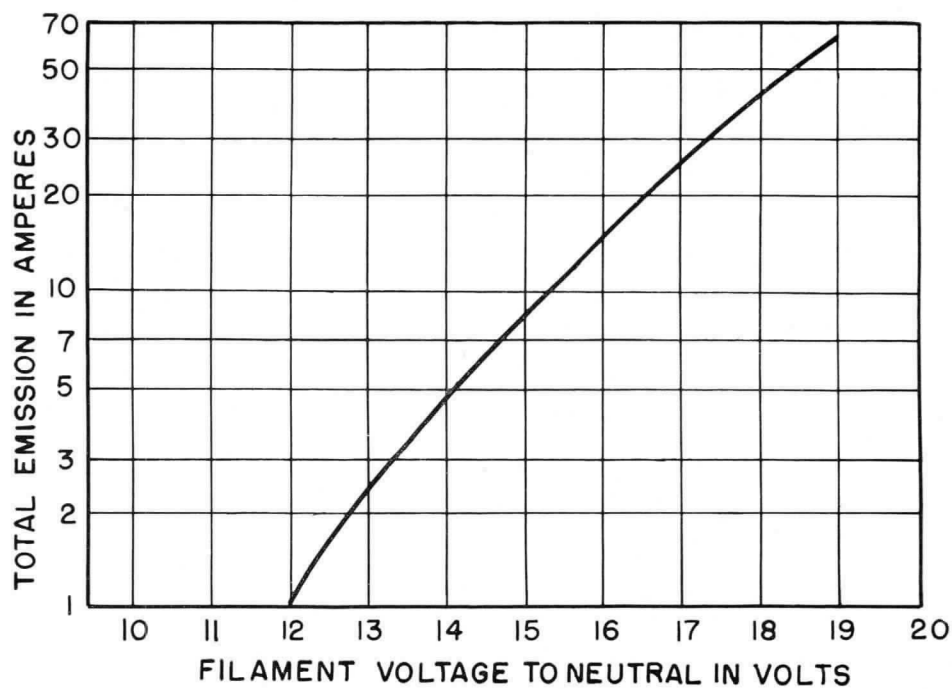
GL-895 FILAMENT CHARACTERISTICS



K-9186073

12-10-45

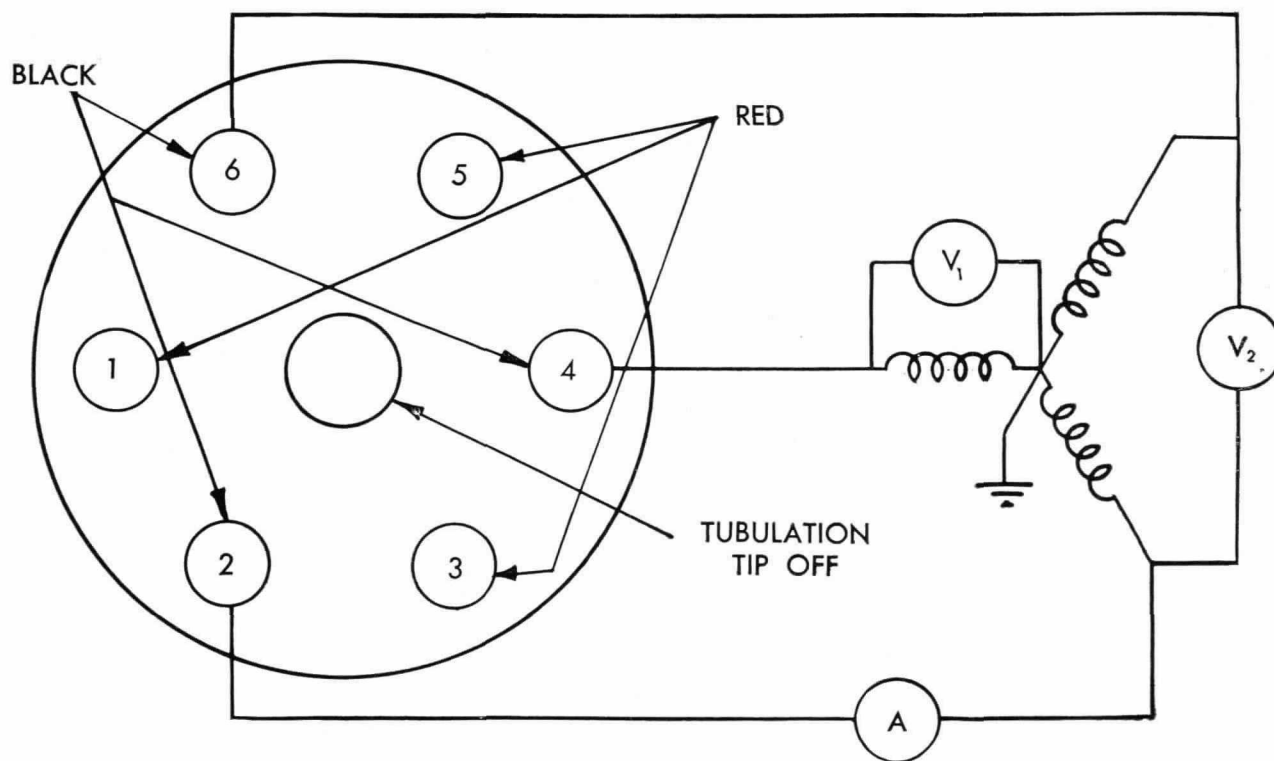
GL-895 AVERAGE FILAMENT EMISSION



K-9186072

1-9-46

GL-895 FILAMENT CONNECTIONS

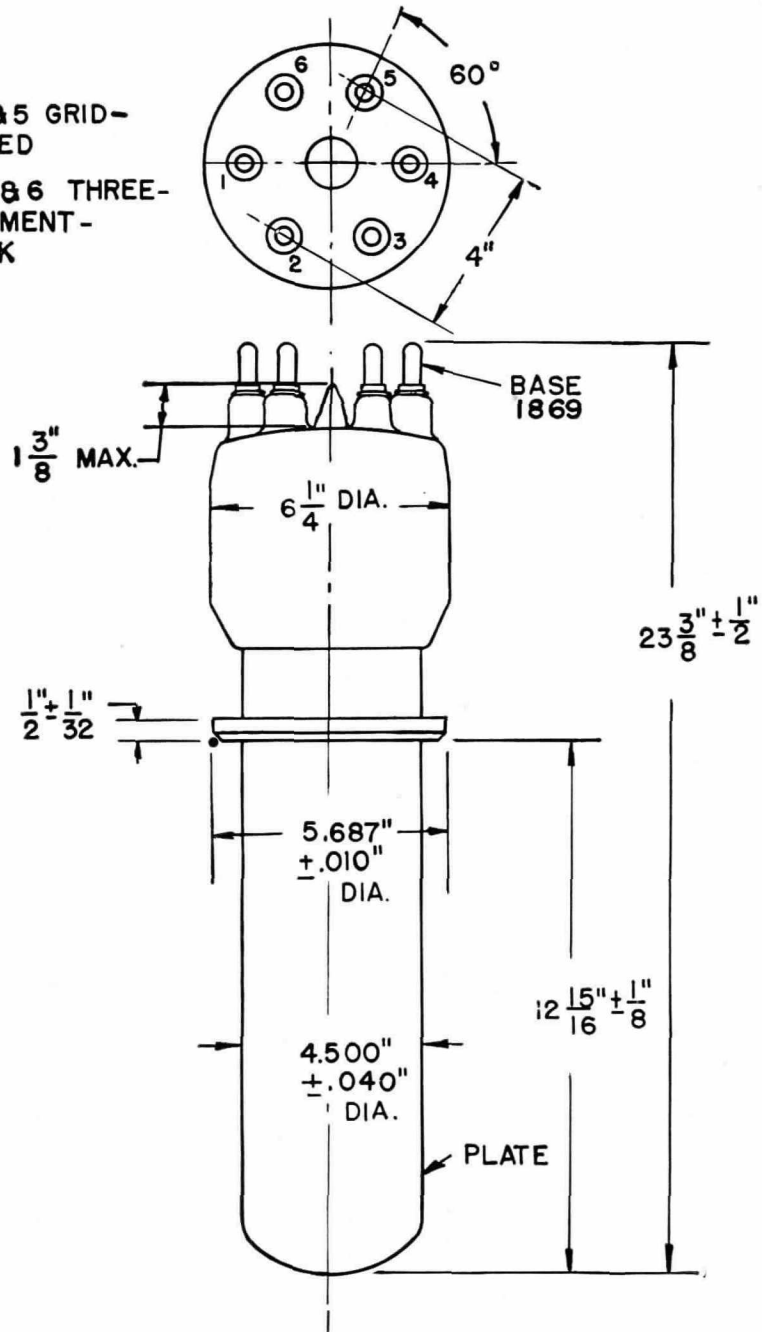
V₁ = 19 VOLTSV₂ = 33 VOLTS

A = 139 AMPERES

BLACK 2, 4, 6—FILAMENT TERMINALS

RED 1, 3, 5—GRID TERMINALS

TERMINALS 1,3 & 5 GRID-
MARKED RED
TERMINALS 2,4 & 6 THREE-
PHASE Y FILAMENT-
MARKED BLACK



OUTLINE
GL-895 PIOTRON

Tube Department, Electronics Division

GENERAL ELECTRIC

Schenectady, N. Y.