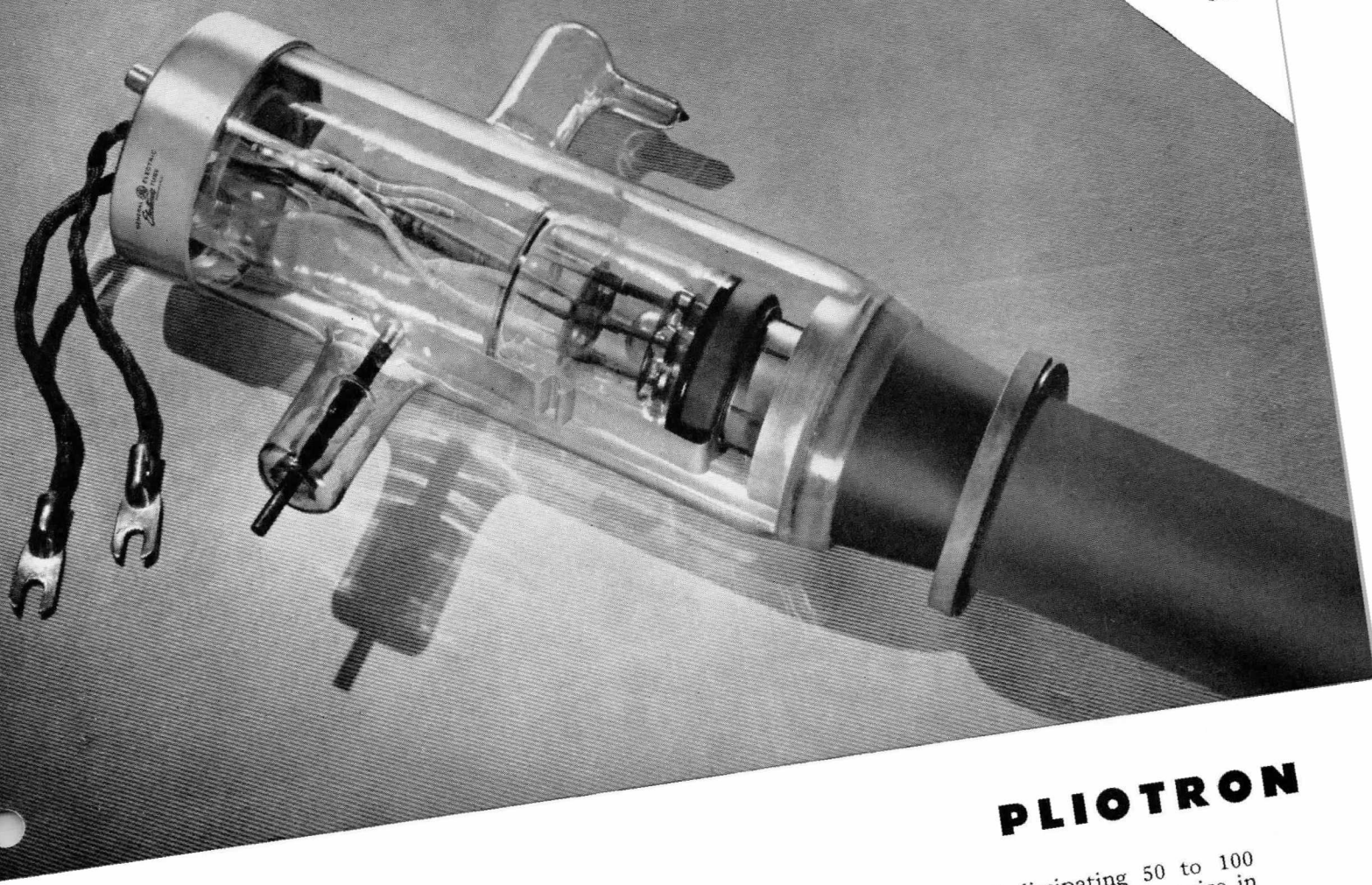




PLIOTRON

DESCRIPTION

The GL-862-A is a three-electrode power tube designed for use as a radio-frequency amplifier, oscillator, or Class B modulator. The plate is water-

cooled and is capable of dissipating 50 to 100 kilowatts, depending upon the class of service in which the tube is used.

◆ TECHNICAL INFORMATION

These data are for reference only. For design information refer to specifications.

GENERAL

Electrical Data

	Minimum	Bogey	Maximum
Filament voltage.....	199	33	34.6 volts
Filament current at bogey voltage.....		207	215 amperes
Filament starting current.....			360 amperes
Filament cold resistant.....			ohms
Amplification factor, $I_b = 3$ amperes, $E_c = -50$ volts d-c.....		0.018	
Interelectrode capacitances.....		45	
Grid-plate.....	54	69.5	85 uuf
Grid-filament.....	43	53	63 uuf
Plate-filament.....	3.0	4.5	6.0 uuf

◆ Completely revised.

GENERAL ELECTRIC

Supersedes ETI-169 dated 4-45

Electronic
TUBE

TECHNICAL INFORMATION (CONT'D)
Mechanical Data

Mounting position—vertical, anode down	
Type of cooling—water and forced air	
Water flow on anode	15-25 GPM
Maximum outgoing water temperature	70 C
Air flow	
To bulb	15 CFM
To stem	3 CFM
Gasket—Cat. No. 5182028P1	
Net weight, approximate	30 pounds

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS
AUDIO-FREQUENCY POWER AMPLIFIER—CLASS B

Maximum ratings, absolute values

D-c plate voltage	15,000 max	volts
Maximum signal d-c plate current*	7.5 max	amperes
Maximum signal plate input*	100 max	kilowatts
Plate dissipation*	50 max	kilowatts

Typical operation

Unless otherwise specified, values are for two tubes

D-c plate voltage	12,000	volts
D-c grid voltage	0	volts
Peak a-f grid-to-grid voltage	2000	volts
Zero-signal d-c plate current	3	amperes
Maximum signal d-c plate current	13	amperes
Effective load resistance, plate to plate	1800	ohms
Maximum signal driving power, approximate	450	watts
Maximum signal power output, approximate	90	kilowatts

RADIO-FREQUENCY POWER AMPLIFIER—CLASS B

Carrier conditions per tube for use with a maximum modulation factor of 1.0

Maximum ratings, absolute values

D-c plate voltage	20,000 max	volts
D-c plate current	5 max	amperes
Plate input	100 max	kilowatts
Plate dissipation	75 max	kilowatts

Typical operation

D-c plate voltage	12,000	15,000	18,000	volts
D-c grid voltage	-100	-150	-200	volts
D-c plate current	2.8	3.5	4.2	amperes
Peak r-f grid voltage	500	625	750	volts
Driving power, approximate†	0.5	0.75	1.1	kilowatts
Power output, approximate	11	17.5	25	kilowatts

PLATE-MODULATED RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—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	12,000 max	volts
D-c grid voltage	-3000 max	volts
D-c plate current	5 max	amperes
D-c grid current, approximate	1.25 max	amperes
Plate input	60 max	kilowatts
Plate dissipation	50 max	kilowatts

Typical operation

D-c plate voltage	8000	10,000	12,000	volts
D-c grid voltage	-700	-750	-800	volts
D-c plate current	4	4.5	5	amperes
D-c grid current, approximate	1	1	1	amperes
Peak r-f grid voltage, approximate	1700	1850	2000	volts
Driving power, approximate	1.7	1.85	2	kilowatts
Power output, approximate	24	34	45	kilowatts

TECHNICAL INFORMATION (CONT'D)

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR— CLASS C TELEGRAPHY

Key-down conditions per tube without modulation†

Maximum ratings, absolute values

D-c plate voltage	20,000 max	volts
D-c grid voltage	—3000 max	volts
D-c plate current	10 max	amperes
D-c grid current, approximate	1 max	ampere
Plate input	200 max	kilowatts
Plate dissipation	100 max	kilowatts

Typical operation

D-c plate voltage	12,000	15,000	18,000	volts
D-c grid voltage	—800	—900	—1000	volts
D-c plate current	6.25	7.5	8.33	amperes
D-c grid current, approximate	0.8	0.85	0.9	amperes
Peak r-f grid voltage, approximate	2050	2300	2550	volts
Driving power, approximate	1.6	2	2.4	kilowatts
Power output, approximate	50	75	100	kilowatts

* Averaged over any audio-frequency cycle.

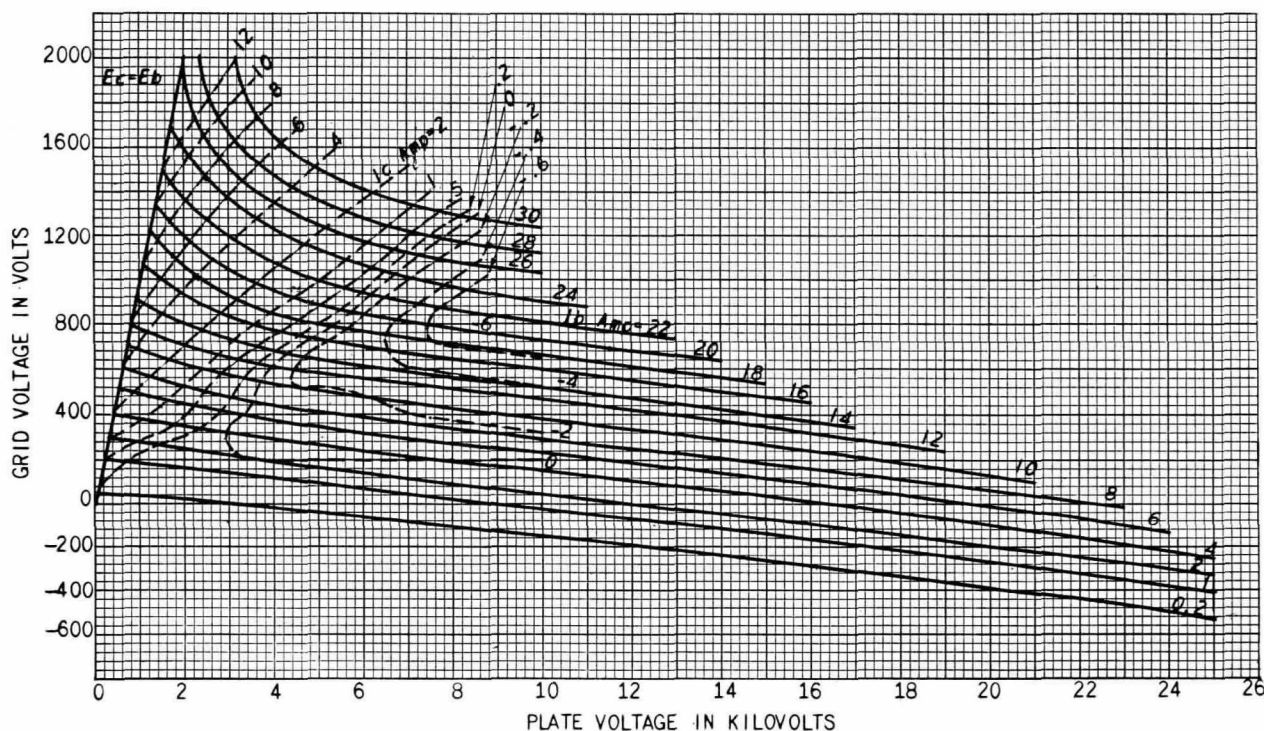
† At crest of audio-frequency cycle.

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

APPLICATION NOTES

Plate Series Protective Resistors (see paragraph describing plate circuit under Installation in the Instructions.)

Series resistor	10	20	40	50	ohms
Maximum power output of rectifier	100	250	640	1600	kilowatts

◆ GL-862-A CHARACTERISTICS ($E_c = 33$ VOLTS A-C)

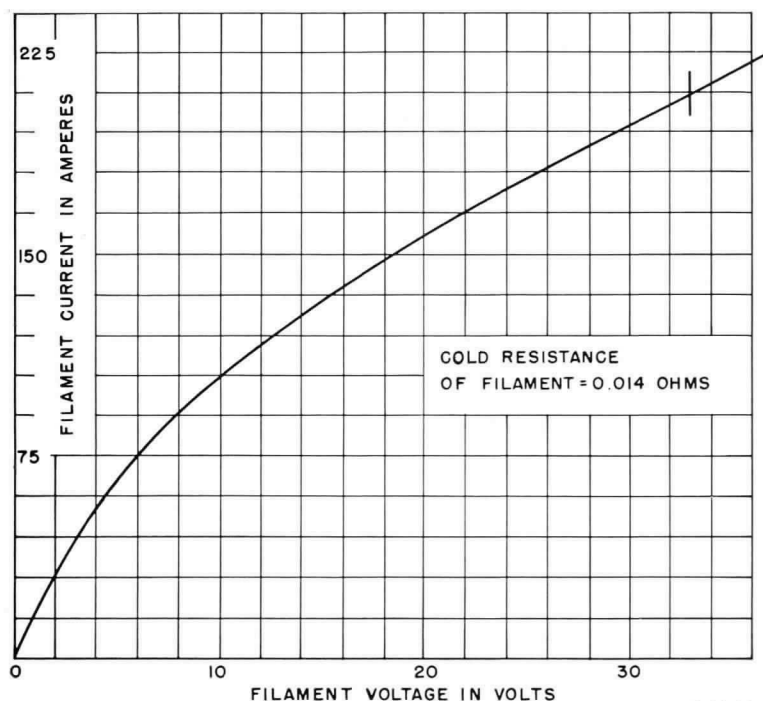
GL-862-A

ETI-169A

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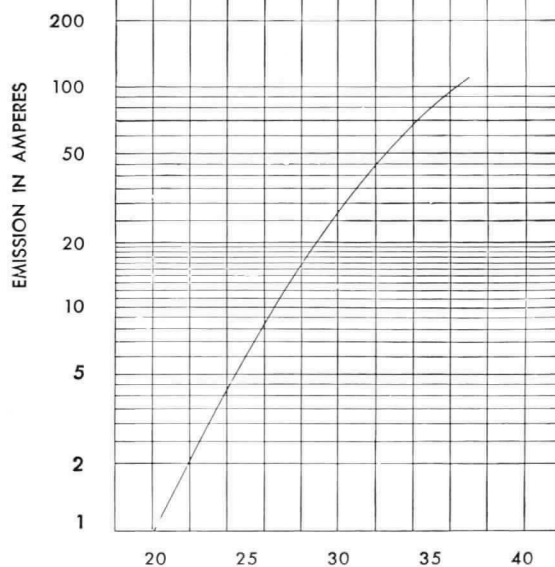
GL-862-A
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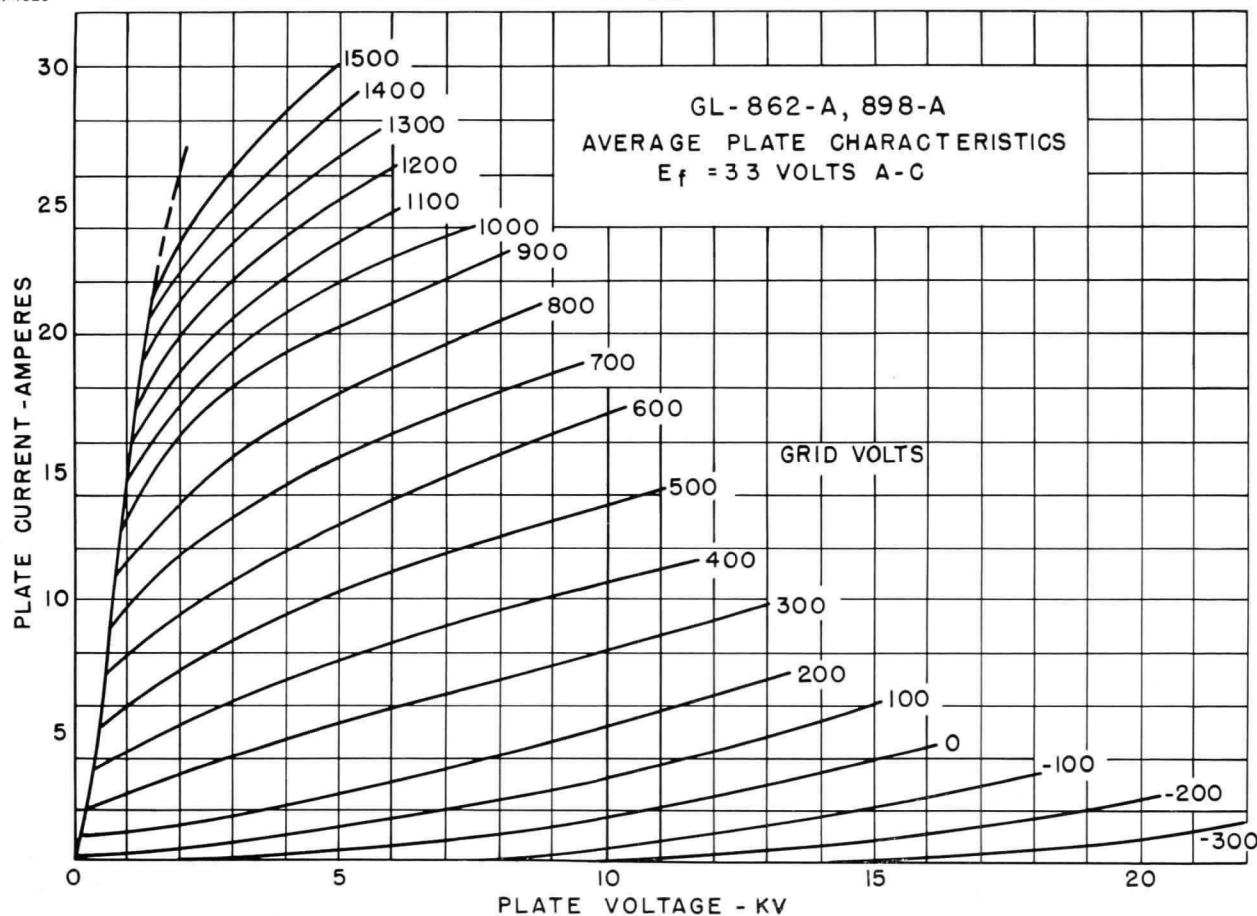
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GL-898-A
EMISSION CHARACTERISTIC

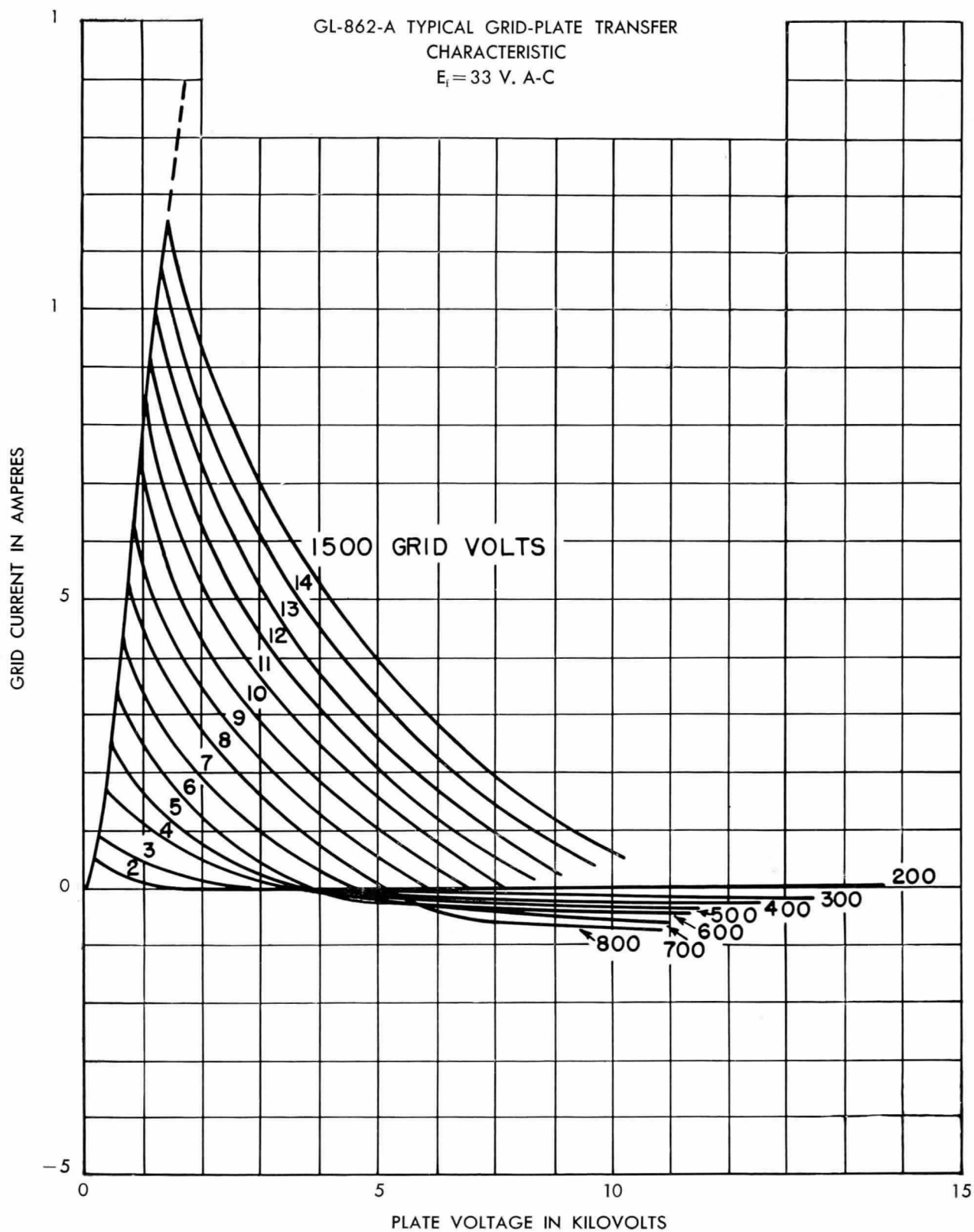


FILAMENT VOLTAGE IN VOLTS (SINGLE-PHASE FILAMENT EXCITATION)
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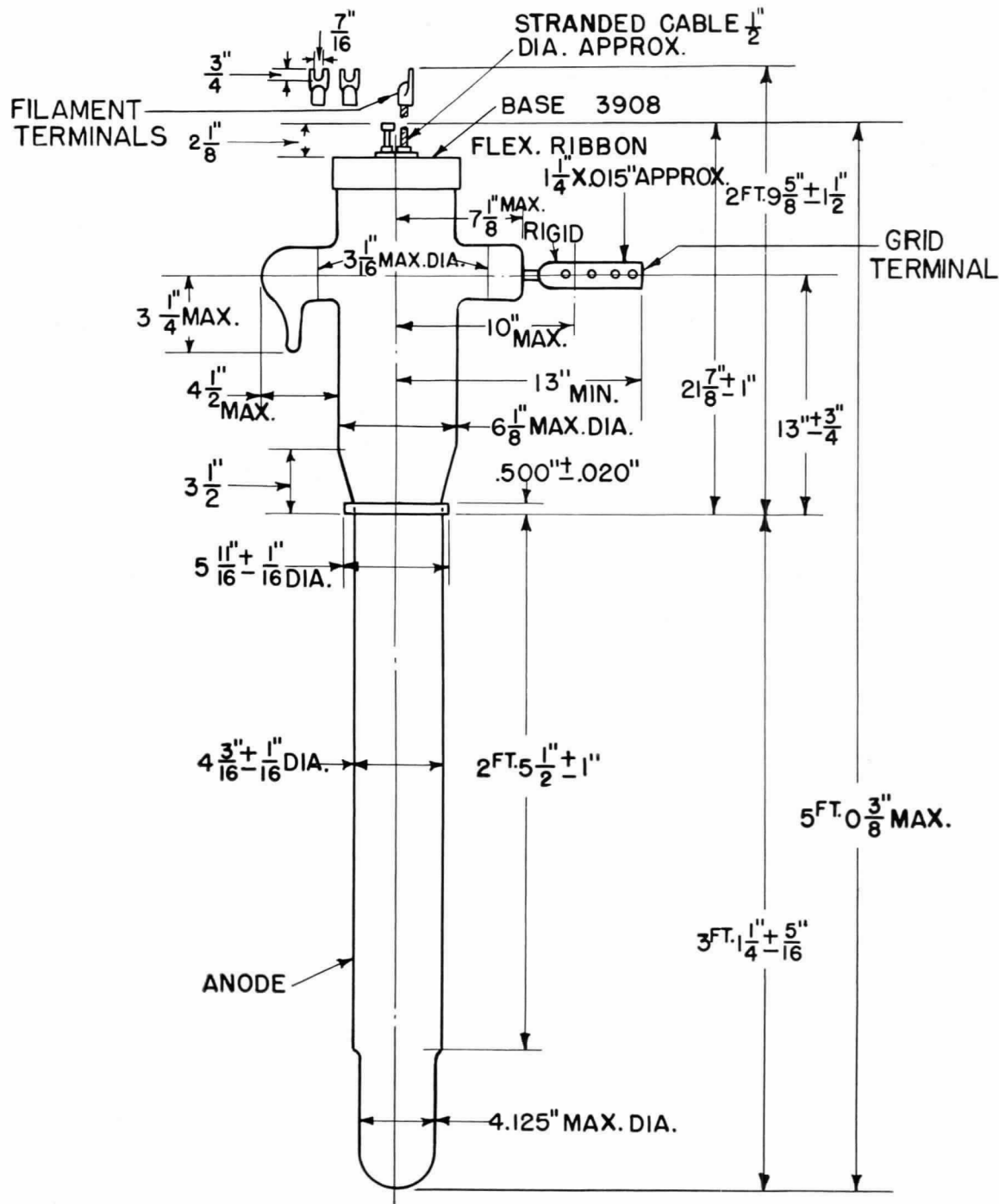
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GL-862-A

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◆ OUTLINE GL-862-A PIOTRON



K-3846052
Revised.

6-7-45

Tube Divisions, Electronics Department

GENERAL ELECTRIC

Schenectady, N. Y.