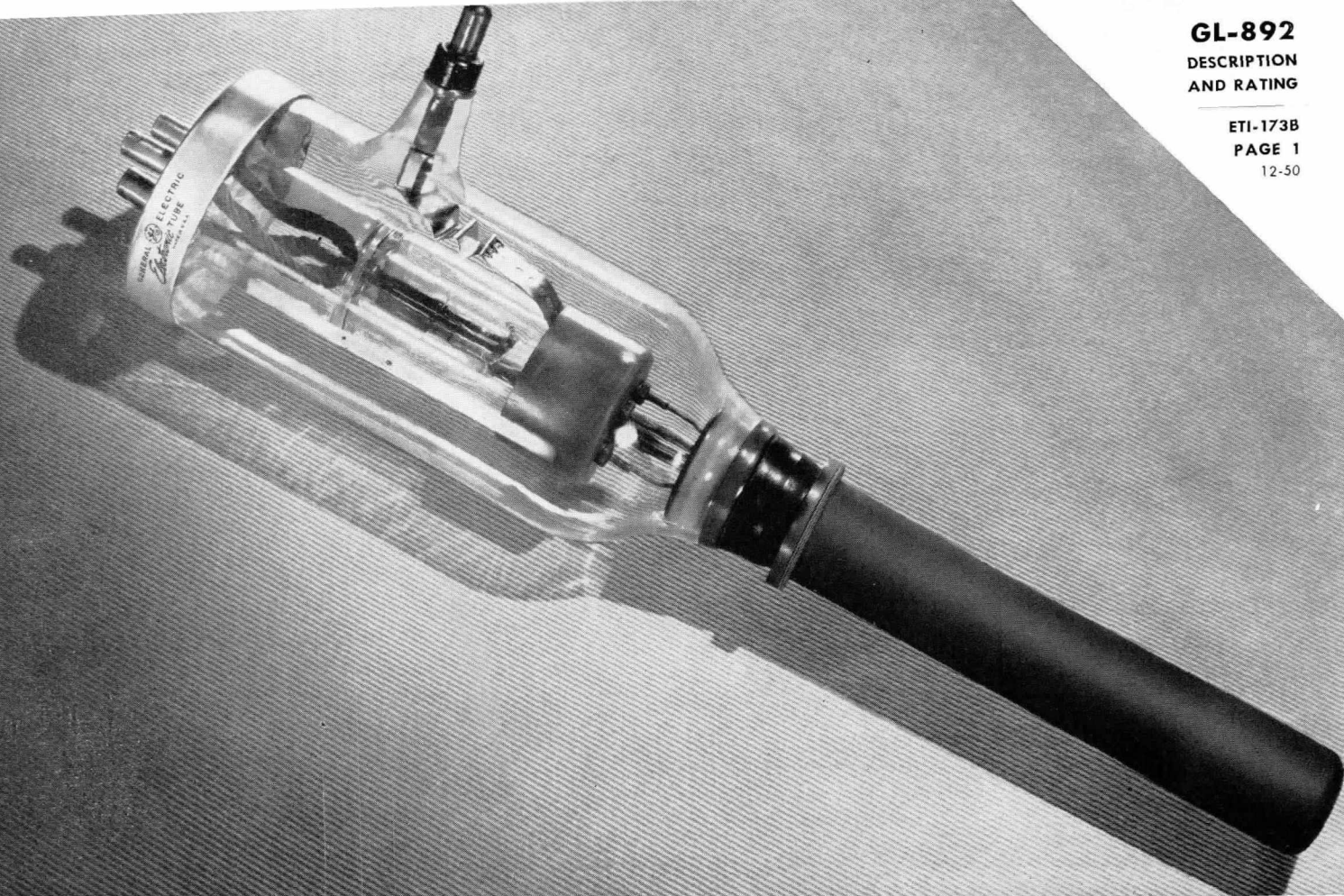




PLIOTRON

DESCRIPTION

The GL-892 is a three-electrode plotron of the double-filament type for use as a radio-frequency power amplifier, oscillator, and Class B modulator. The construction of the filament permits operation

from two-phase or single-phase alternating current as well as from direct current, for all classes of service. The plate is water-cooled and is capable of dissipating 6.6 to 10 kilowatts.

◆ TECHNICAL INFORMATION

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

GENERAL

Electrical Data	Minimum	Bogey	Maximum
Filament voltage.....		22	23 volts
Filament current at bogey voltage.....	57	60	62 amperes
Filament starting current.....		0.031	120 amperes
Filament cold resistance.....		50.0	ohms
Amplification factor, $E_c = -50$ V, $I_b = 0.75$ A.....	42.5		57.5
Interelectrode capacitances			
Grid-plate.....	27	30	33 uuf
Grid-filament.....	15	20	24 uuf
Plate-filament.....	0.5	1.5	2.5 uuf

◆ Completely revised.


Electronic
TUBE

GENERAL  ELECTRIC

Supersedes ETI-173A dated 6-47

TECHNICAL INFORMATION (CONT'D)

Mechanical Data	Minimum	Bogey	Maximum
Mounting position—vertical, anode down			
Type of cooling—water			
Water flow on anode.....	3		8 gpm
Maximum outgoing temperature.....			70 C
Maximum glass temperature.....			150 C
Gasket—JTC gasket—1			
Net weight, approximate.....			3½ pounds

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

AUDIO-FREQUENCY POWER AMPLIFIER MODULATOR—CLASS B

Maximum Ratings, Absolute Values

D-c plate voltage.....	15,000 max	volts
Maximum signal d-c plate current†.....	2.0 max	amperes
Maximum signal plate input†.....	20,000 max	watts
Plate dissipation†.....	7,500 max	watts

Typical Operation

Unless otherwise specified, values are for two tubes

D-c plate voltage.....	6,000	10,000	12,500	volts
D-c grid voltage.....	0.0	—90	—170	volts
Peak a-f grid-to-grid voltage.....	1,000	1,380	1,370	volts
Zero signal d-c plate current.....	0.5	0.5	0.4	amperes
Maximum signal d-c plate current.....	2.6	3.3	2.8	amperes
Effective load resistance, plate to plate.....	4,200	6,400	10,000	ohms
Maximum signal driving power, approximate.....	135	240	160	watts
Maximum signal power output, approximate.....	8,000	20,000	22,000	watts

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.....	15,000 max	volts
D-c plate current.....	1.0 max	ampere
Plate input.....	15,000 max	watts
Plate dissipation.....	10,000 max	watts

Typical Operation

D-c plate voltage.....	6,000	10,000	14,000	volts
D-c grid voltage.....		—100	—190	volts
Peak r-f grid voltage.....	230	370	440	volts
D-c plate current.....	0.640	0.77	0.82	amperes
D-c grid current, approximate.....	0.030	0.060	0.03	amperes
Driving power, approximate//.....	77	133	106	watts
Power output, approximate.....	1,000	2,500	4,000	watts

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.....	10,000 max	volts
D-c grid voltage.....	—3,000 max	volts
D-c plate current.....	1.0 max	ampere
D-c grid current.....	0.3 max	ampere
Plate input.....	10,000 max	watts
Plate dissipation.....	6,600 max	watts

Typical Operation

D-c plate voltage.....	6,000	8,000	10,000	volts
D-c grid voltage.....	—1,000	—1,300	—1,600	volts
Peak r-f grid voltage.....	1,650	1,950	2,250	volts
D-c plate current.....	0.83	0.82	0.78	amperes
D-c grid current, approximate.....	0.28	0.24	0.23	amperes
Driving power, approximate.....	420	430	460	watts
Power output, approximate.....	3,500	5,000	6,000	watts

TECHNICAL INFORMATION (CONT'D)

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

Key-down conditions per tube without amplitude modulation†

Maximum Ratings, Absolute Values

D-c plate voltage.....	15,000 max	volts
D-c grid voltage.....	-3,000 max	volts
D-c plate current.....	2.0 max	amperes
D-c grid current.....	0.4 max	ampere
Plate input.....	30,000 max	watts
Plate dissipation.....	10,000 max	watts

Typical Operation

D-c plate voltage.....	8,000	10,000	12,000	volts
D-c grid voltage.....	-1,000	-1,300	-1,600	volts
Peak r-f grid voltage.....	1,700	2,150	2,550	volts
D-c plate current.....	1.17	1.4	1.55	amperes
D-c grid current, approximate.....	0.22	0.24	0.23	amperes
Driving power, approximate.....	330	495	565	watts
Power output, approximate.....	6,500	10,000	14,000	watts

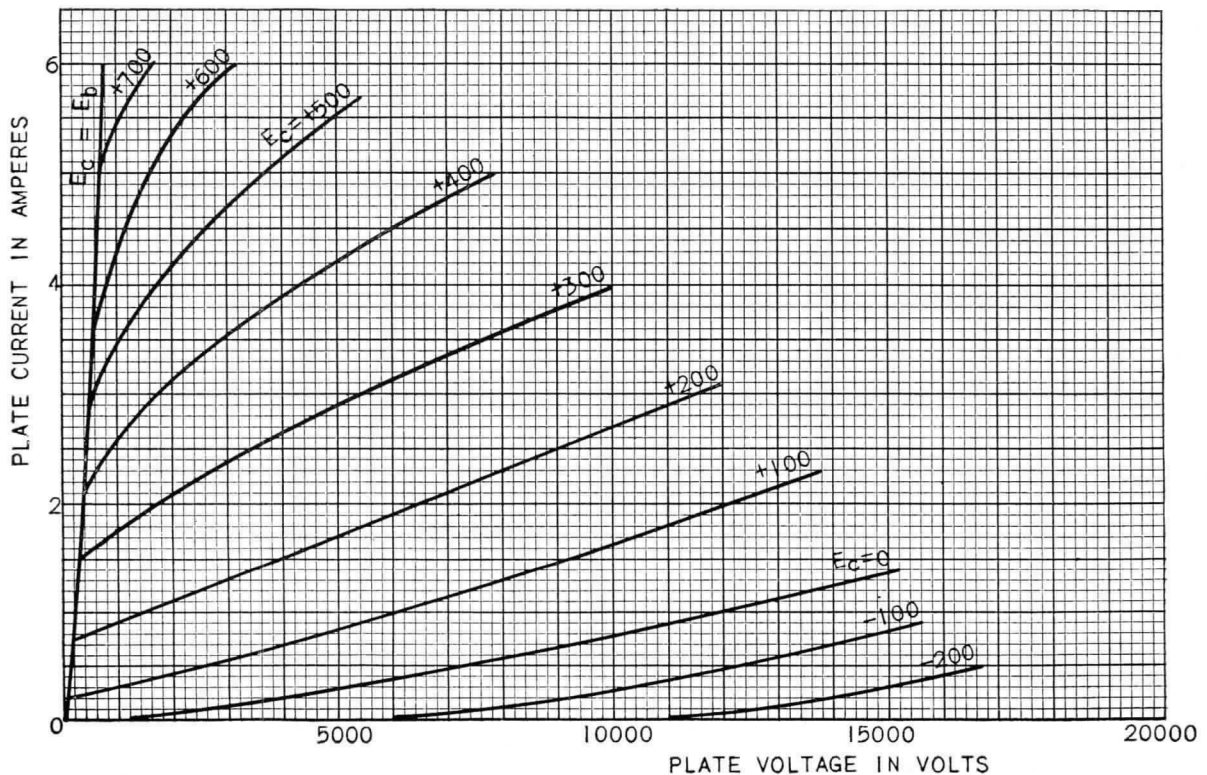
†Averaged over any audio-frequency cycle of sine-wave form.

//At crest of audio-frequency cycle with modulation factor of 1.0.

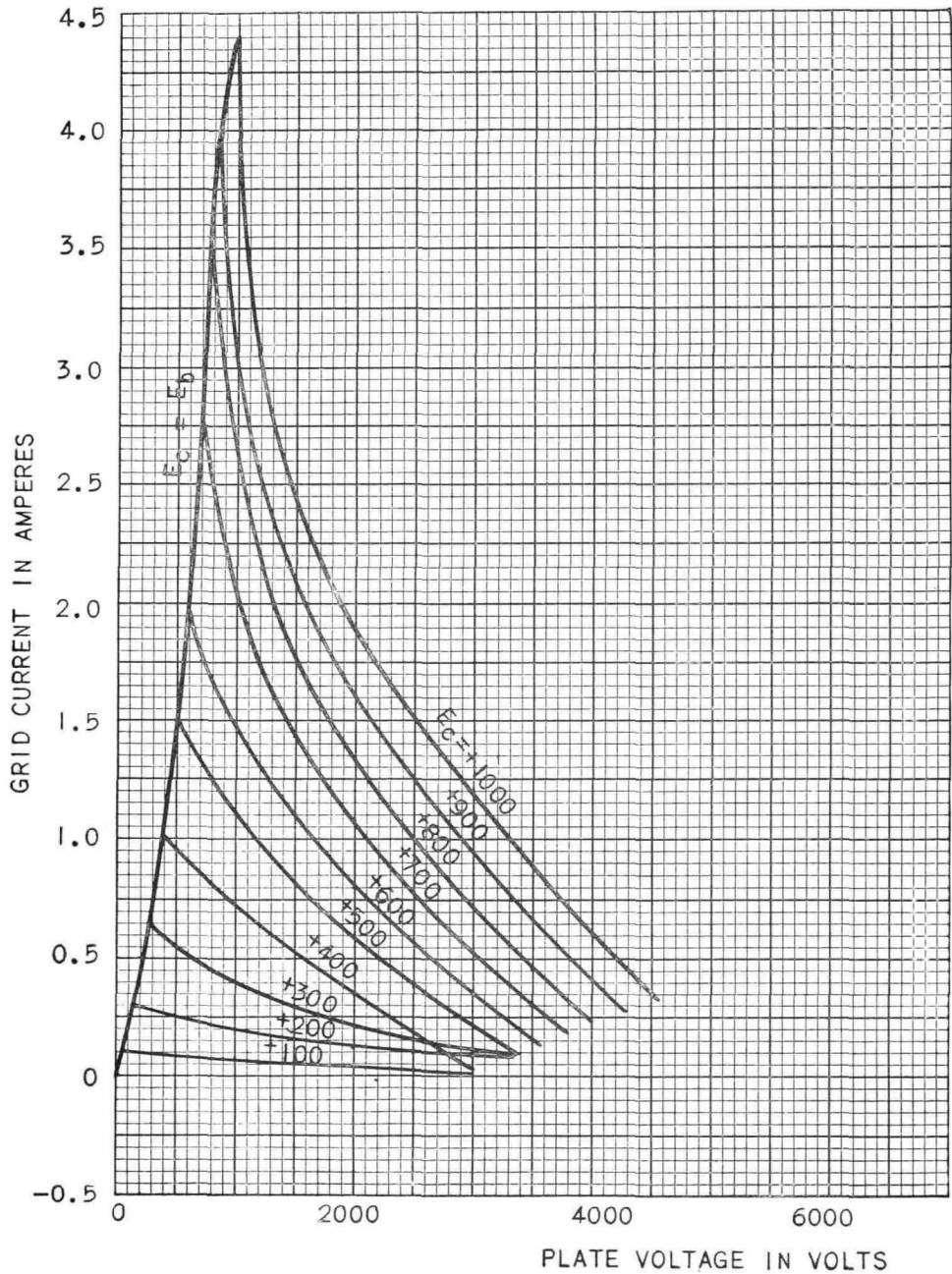
‡Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115 percent of the carrier conditions.

Maximum ratings apply up to 1.6 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	1.6	7.5	20.0	megacycles
Percentage of Maximum Rated Plate Voltage and Plate Input				
Class B.....	100	85	76	percent
Class C plate modulated.....	100	85	75	percent
Class C unmodulated.....	100	75	50	percent

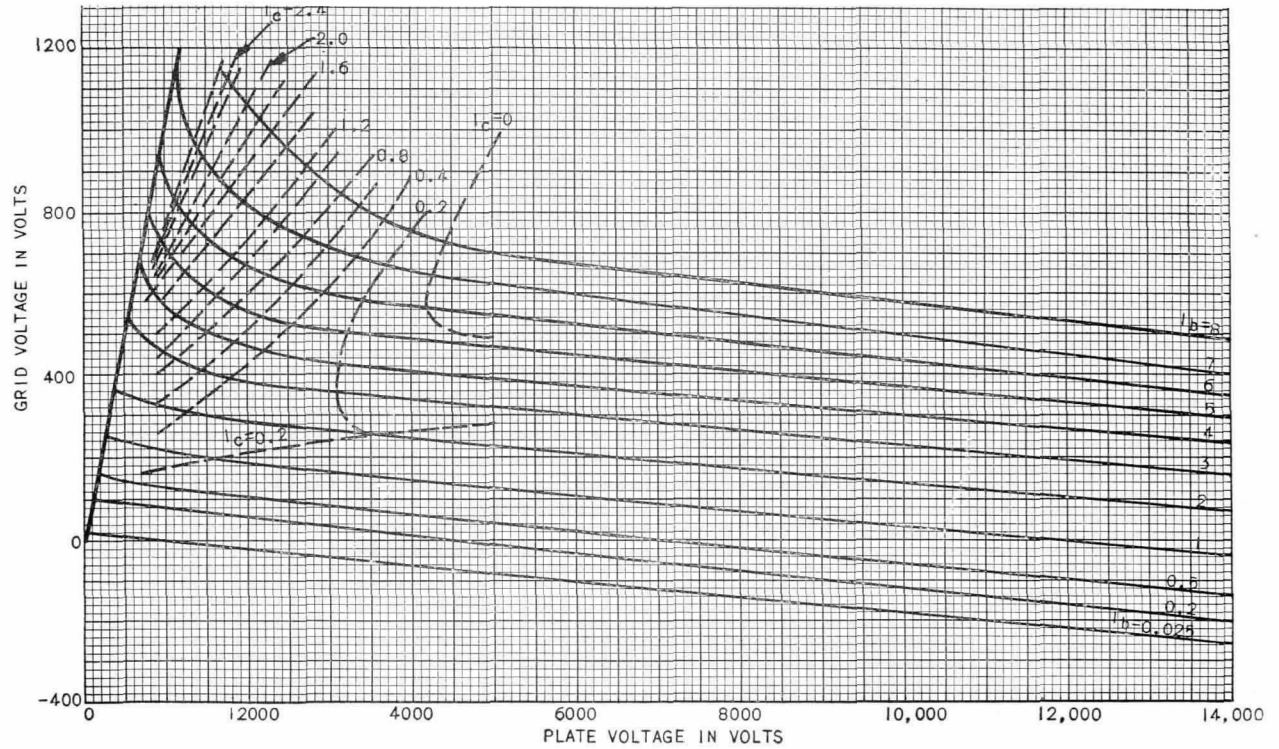
◆ GL-892 AVERAGE PLATE CHARACTERISTICS ($E_c = 22$ VOLTS A-C)

◆ GL-892
AVERAGE GRID-PLATE TRANSFER CHARACTERISTICS
 $E_f = 22$ VOLTS, A-C, SINGLE-PHASE EXCITATION



◆ GL-892

AVERAGE CONSTANT-CURRENT CHARACTERISTICS

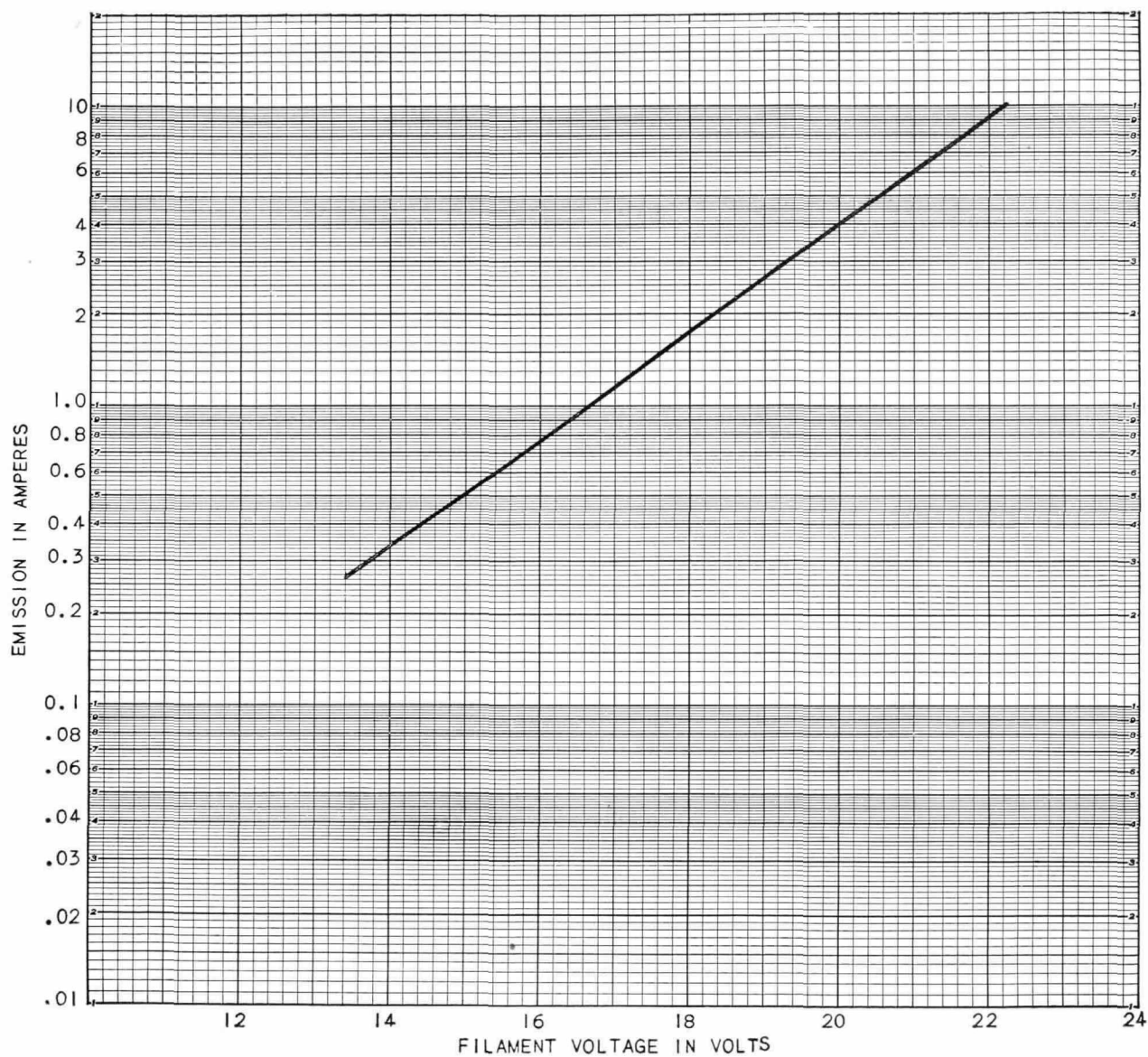
 $E_f = 22$ VOLTS A-C, SINGLE-PHASE EXCITATION

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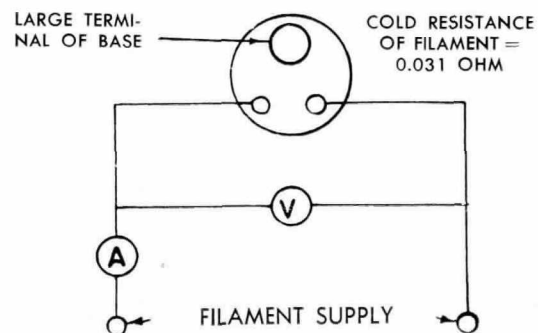
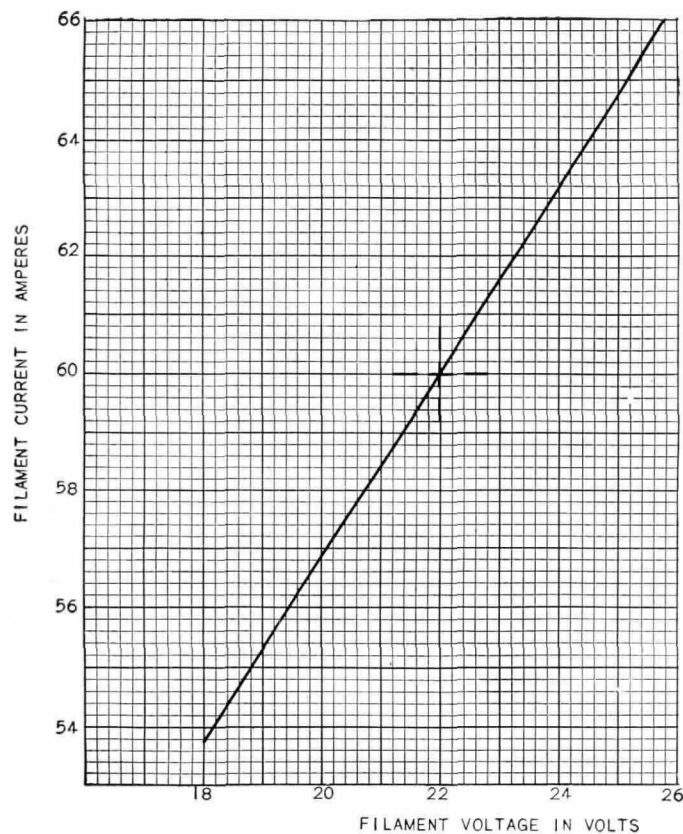
◆ New drawing.

1-11-51

◆ GL-892 AVERAGE FILAMENT EMISSION CHARACTERISTIC



◆ GL-892 AVERAGE FILAMENT CHARACTERISTICS



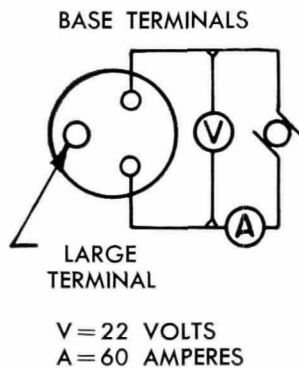
K-69087-72A441

◆ New drawing.

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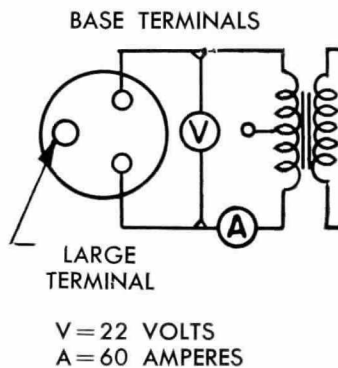
GL-892 FILAMENT CONNECTIONS

WITH D-C EXCITATION

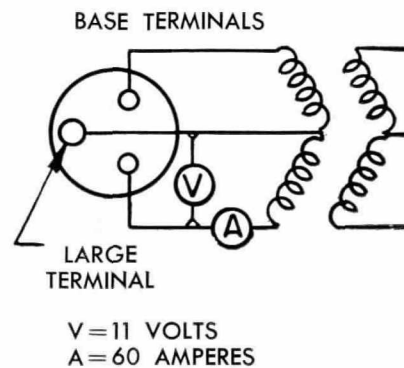


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WITH SINGLE-PHASE A-C EXCITATION

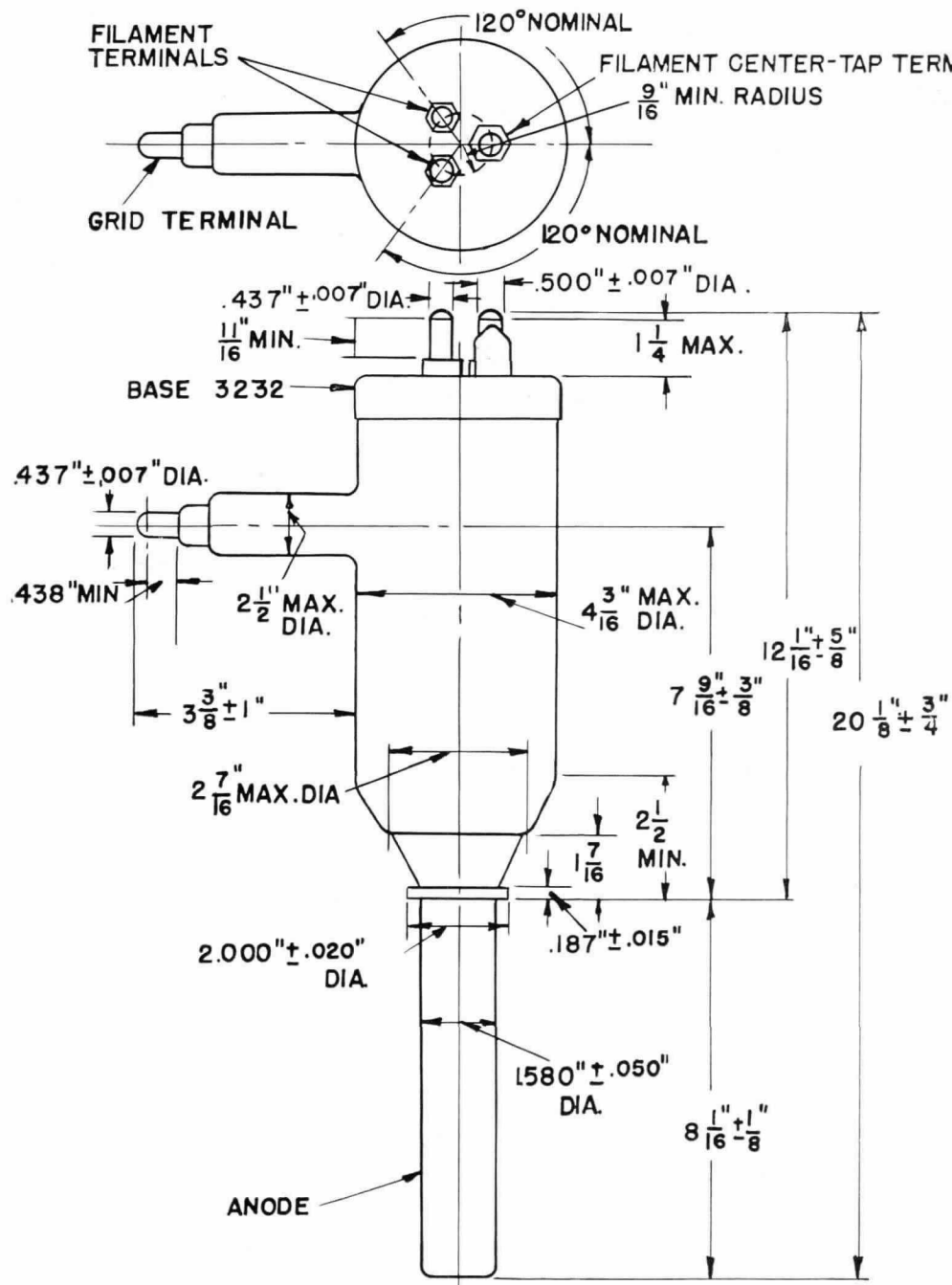


WITH TWO-PHASE A-C EXCITATION



12-1-44

OUTLINE GL-892 PIOTRON



K-6966979

3-11-47

Tube Divisions, Electronics Department

GENERAL  **ELECTRIC**

Schenectady, N. Y.