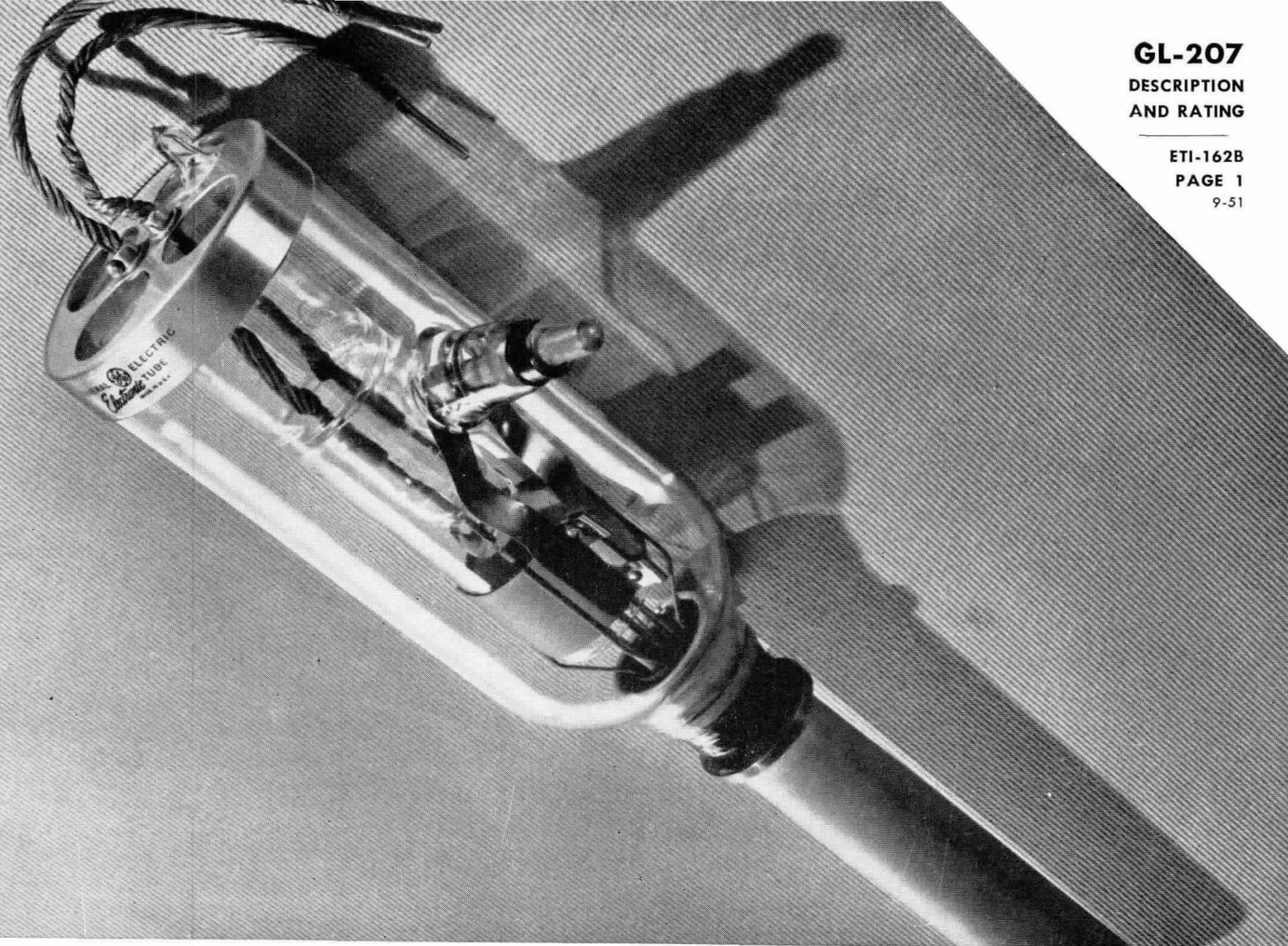




PLIOTRON

DESCRIPTION

The GL-207 is a three-electrode vacuum tube designed for use as a radio-frequency power amplifier, oscillator, or Class B modulator. The plate is water-cooled and capable of dissipating

6.6 to 10 kilowatts, depending on the service in which the tube is used. The cathode is a pure-tungsten filament. Maximum ratings apply up to 1.6 megacycles.

◆ TECHNICAL INFORMATION

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

GENERAL CHARACTERISTICS

Electrical Data

Filament voltage (A-c or D-c)	22 volts
Filament current	52 amperes
Filament starting current, maximum	100 amperes
Filament cold resistance	0.03 ohm
Amplification factor	20
Direct interelectrode capacitances, approximate	
Grid-plate	27 uuf
Grid-filament	18 uuf
Plate-filament	2.0 uuf

◆ Revised.


Electronic
TUBE

GENERAL  ELECTRIC

Supersedes ETI-162A dated 8-48

TECHNICAL INFORMATION (CONT'D)

Mechanical Data

Mounting position—vertical, filament end up

Type of cooling—water

Water flow on anode 3-8 gallons per minute

Maximum outgoing water temperature 70 C

Maximum glass temperature* 150 C

Net weight, approximate 3 pounds

Shipping weight, approximate 10 pounds

* In installations where circulation of free air is restricted, or at the higher frequencies, forced-air cooling may be necessary to prevent this limit from being exceeded.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR—CLASS B

Maximum Ratings, Absolute Values

D-c plate voltage	15000 max volts
Maximum signal d-c plate current**	2 max amperes
Maximum signal plate input**	20 max kilowatts
Plate dissipation**	7.5 max kilowatts

Typical Operation

Unless otherwise specified, values are for two tubes

D-c plate voltage	6000	10000	12500	volts
D-c grid voltage χ	—210	—410	—575	volts
Peak a-f grid-to-grid voltage	1520	2140	2300	volts
Zero signal d-c plate current	0.5	0.5	0.4	ampere
Maximum signal d-c plate current	2.5	3.2	2.8	amperes
Effective load resistance, plate to plate	4200	6400	10000	ohms
Maximum signal driving power, approximate	190	380	400	watts
Maximum signal power output, approximate	8	20	22.5	kilowatts

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

 χ For d-c filament supply.

RADIO-FREQUENCY POWER AMPLIFIER—CLASS B TELEPHONY

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

Maximum Ratings, Absolute Values

D-c plate voltage	15000 max volts
D-c plate current	1 max ampere
Plate input	15 max kilowatts
Plate dissipation	10 max kilowatts

Typical Operation

D-c plate voltage	6000	10000	14000	volts
D-c grid voltage χ	—225	—440	—650	volts
Peak r-f grid voltage	400	600	730	volts
D-c plate current	0.62	0.93	1.0	ampere
Driving power, approximate***	72	16	0	watts
Power output, approximate	1	2.5	4	kilowatts

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

 χ For d-c filament supply.

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	10000 max volts
D-c grid voltage	—3000 max volts
D-c plate current	1 max ampere
D-c grid current	0.2 max ampere
Plate input	10 max kilowatts
Plate dissipation	6.6 max kilowatts

Typical Operation

D-c plate voltage	6000	8000	10000	volts
D-c grid voltage $\#$	—1200	—1600	—2000	volts
Peak r-f grid voltage	1860	2300	2660	volts
D-c plate current	0.76	0.78	0.75	ampere
D-c grid current, approximate	0.15	0.14	0.07	ampere
Driving power, approximate	280	325	185	watts
Power output, approximate	3.5	5	6	kilowatts

 $\#$ For a-c filament supply.

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.....	15000 max volts
D-c grid voltage.....	—3000 max volts
D-c plate current.....	2 max amperes
D-c grid current.....	0.2 max ampere
Plate input.....	30 max kilowatts
Plate dissipation.....	10 max kilowatts

Typical Operation

D-c plate voltage.....	8000	10000	12000	volts
D-c grid voltage‡.....	—1000	—1200	—1600	volts
Peak r-f grid voltage.....	1730	2050	2650	volts
D-c plate current.....	1.10	1.33	1.67	amperes
D-c grid current, approximate.....	0.17	0.12	0.09	ampere
Driving power, approximate.....	295	245	235	watts
Power output, approximate.....	6.5	10	15	kilowatts

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

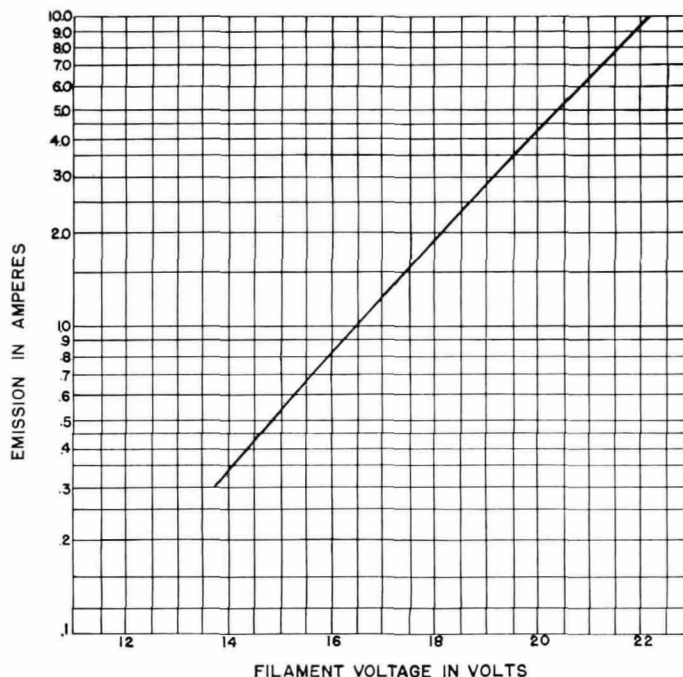
‡ Obtained from fixed supply, by grid resistor, or by cathode resistor. For a-c filament supply.

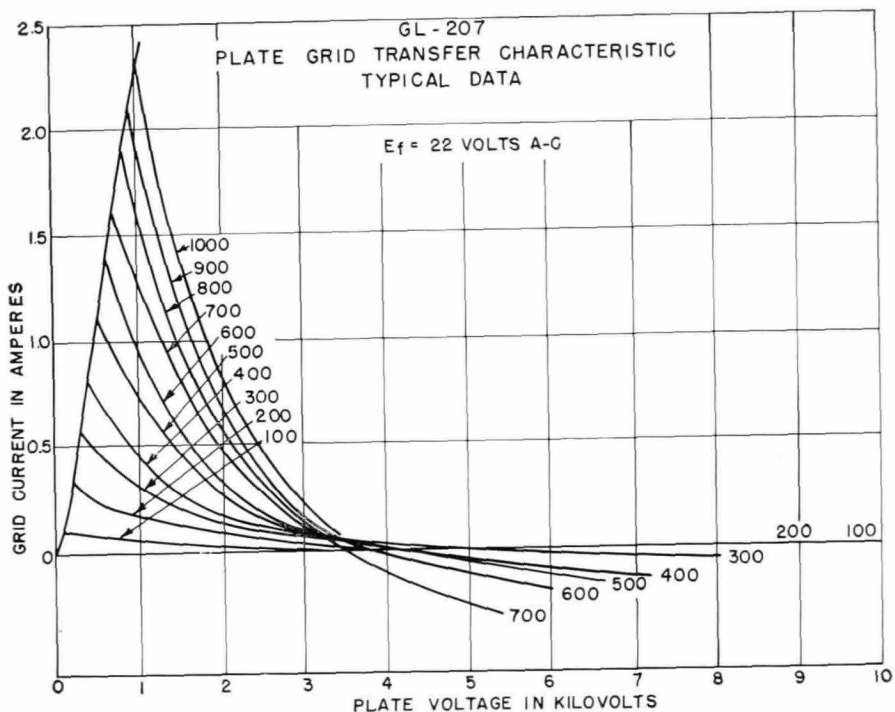
APPLICATION NOTES

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 megacycles			
Percentage of maximum rated plate voltage and plate input						
Class B	100	85	76 per cent			
Class C plate modulated	100	85	75 per cent			
Class C unmodulated	100	75	50 per cent			
Plate series protective resistors						
Series resistor	25	50	200	250	275	300 ohms
Maximum power output of rectifier	16	40	100	250	640	1600 kilowatts

GL-207 FILAMENT EMISSION CHARACTERISTICS

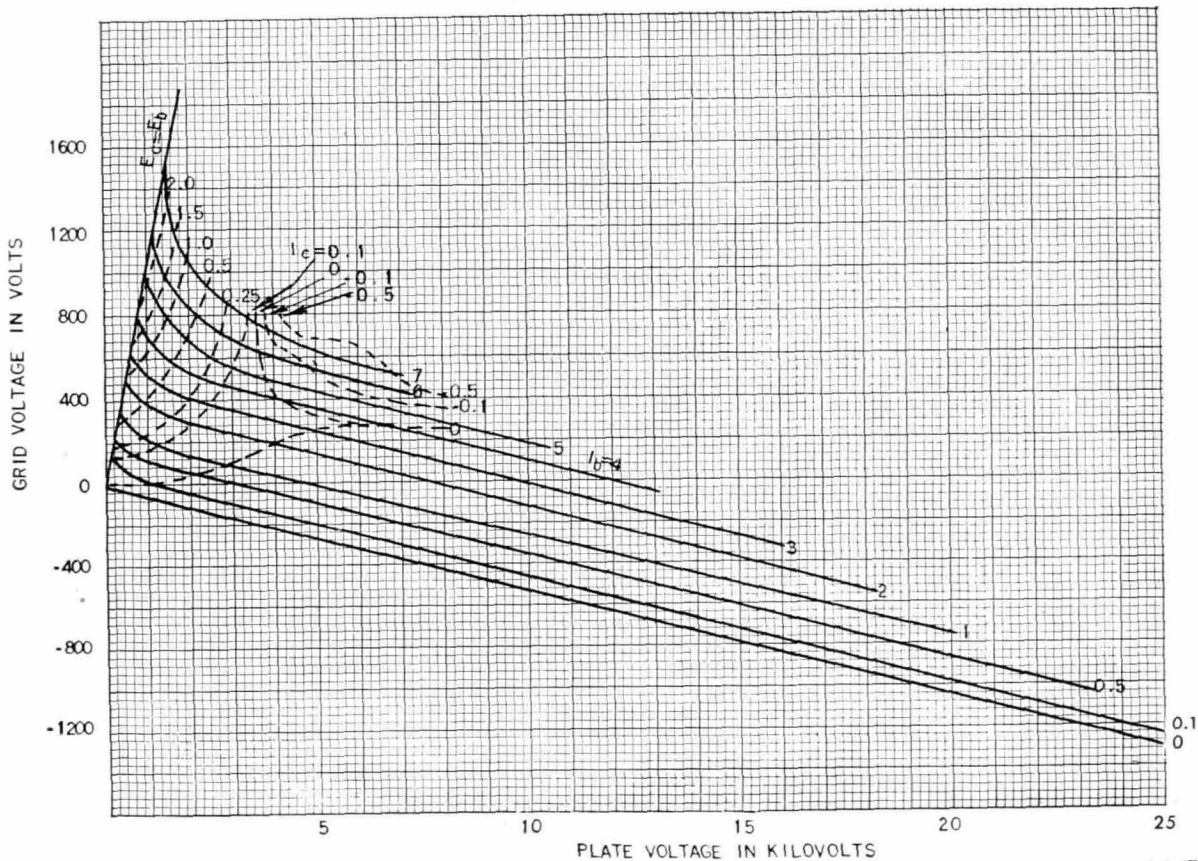




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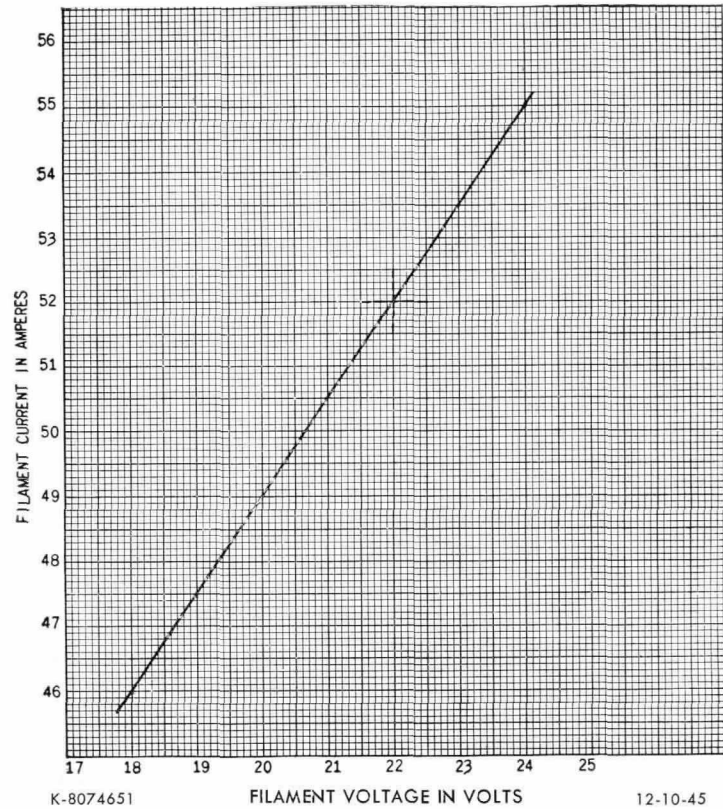
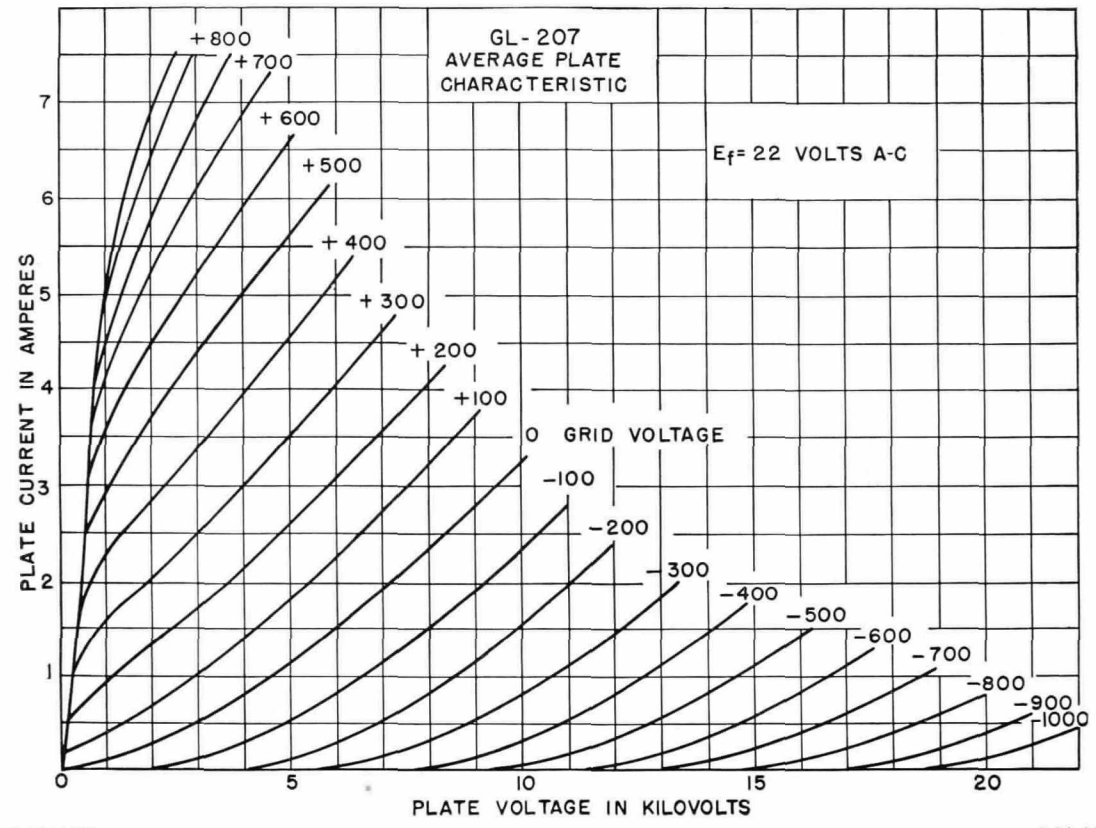
GL-207
CHARACTERISTICS
 $E_f = 22$ VOLTS A-C

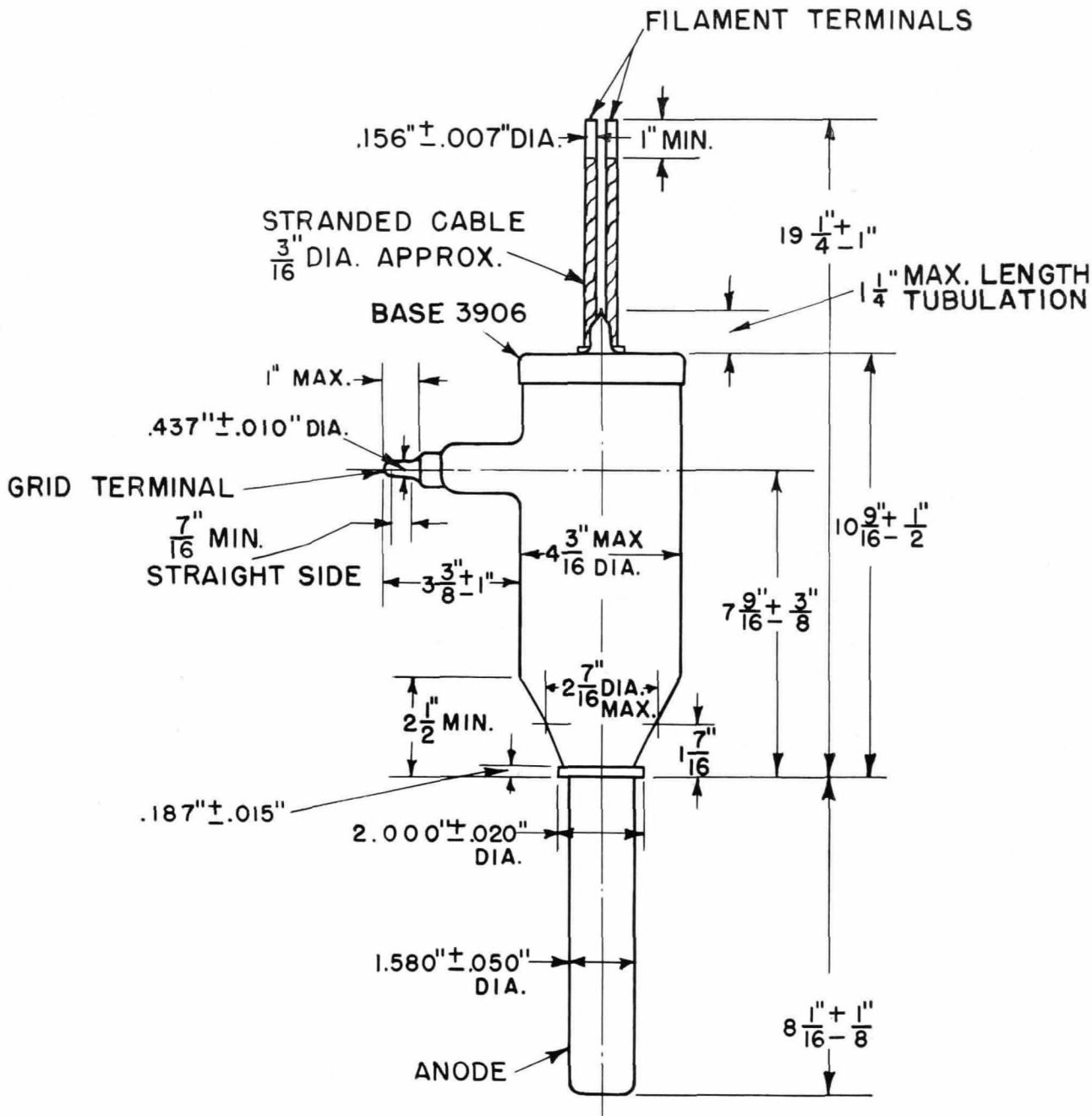


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GL-207 FILAMENT CHARACTERISTIC
(COLD RESISTANCE OF FILAMENT = 0.03 OHMS)





OUTLINE
GL-207 PIOTRON

K-5182095

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Tube Department, Electronics Division

GENERAL  ELECTRIC

Schenectady, N. Y.