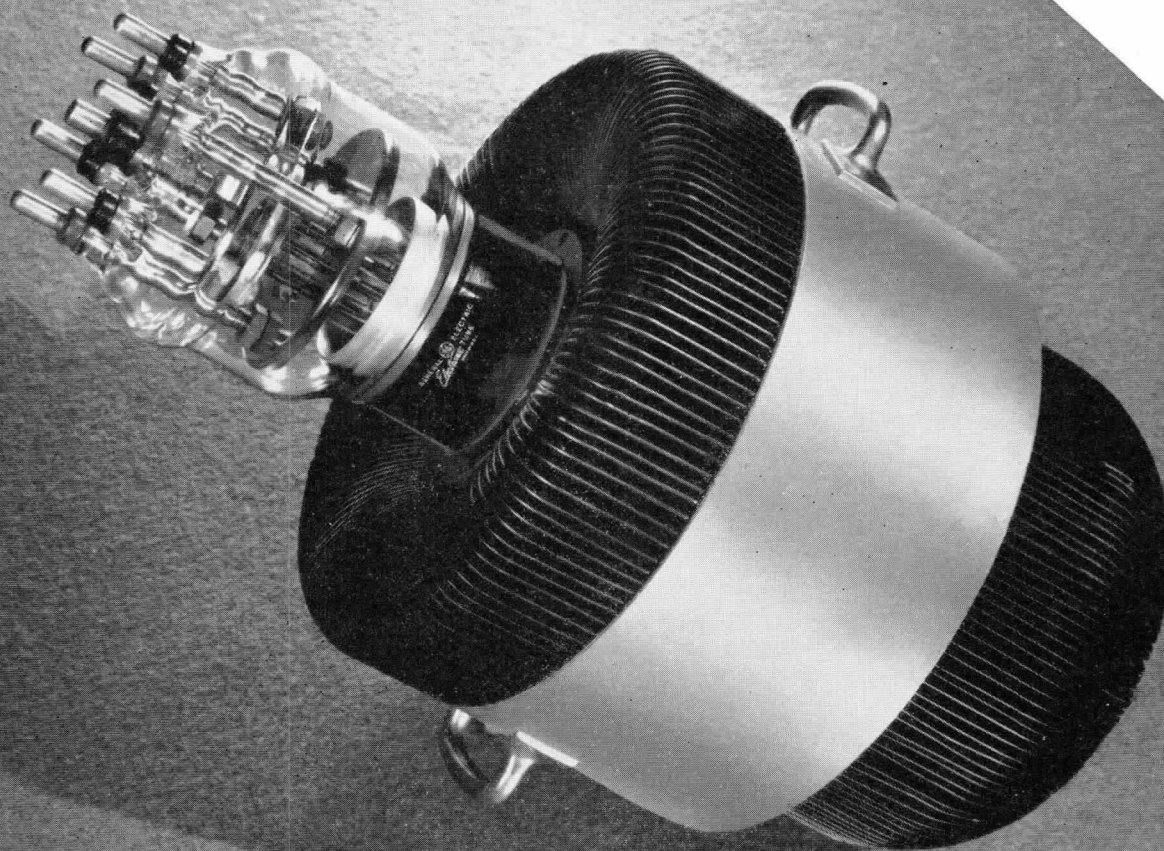




TRIODE

DESCRIPTION

The GL-895-R is a forced-air cooled transmitting tube for use as a Class B modulator, radio-frequency power amplifier, or oscillator. The plate is capable of dissipating up to 20 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


Electronic
TUBE

GENERAL  ELECTRIC

Supersedes ETI-252B dated 9-48

TECHNICAL INFORMATION (CONT'D)

Mechanical Data

Mounting position	vertical, radiator down		
Type of cooling	forced air		
Maximum incoming air temperature	45 C		
Required air flow on anode†			
Plate dissipation—kilowatts	20	16	12
Air flow—cubic feet per minute	1800	1550	1300
Pressure—inches water	1.5	1.1	0.8
Required air flow on filament and grid thimbles	5 CFM		
Maximum temperature of filament seals	150 C		
Net weight, approximate	225 pounds		

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

†Temperature of anode seal must not exceed 180 C.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

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†	50,000 max	watts
Plate dissipation†	20,000 max	watts
Temperature of air cooler**	180 max	C

Typical operation

Unless otherwise specified, values are for 2 tubes

D-c plate voltage	10,000	10,000	volts
Zero signal d-c plate current	2.00	2.00	amperes
Maximum signal d-c plate current	10.80	5.10	amperes
D-c grid voltage	-200	-200	volts
Peak a-f grid-to-grid voltage	1200	800	volts
Effective load resistance, plate to plate	2100	3600	ohms
Maximum signal driving power, approximate	600	75	watts
Maximum signal power output, approximate	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	13,500 max	watts
D-c grid voltage	-3000 max	volts
D-c grid current	1.5 max	amperes
Temperature of air cooler**	180 max	C

Typical operation

D-c plate voltage	12,500	12,500	10,000	volts
D-c plate current	2.50	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

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	17,000 max	volts
D-c plate current	9 max	amperes
Plate input	110,000 max	watts
Plate dissipation	20,000 max	watts
D-c grid voltage	—3000 max	volts
Grid current	1.5 max	amperes
Temperature of air cooler**	180 max	C

Typical operation

D-c plate voltage	17,000	15,000	12,000	10,000	volts
D-c plate current	6.0	6.4	7.20	7.15	amperes
D-c grid voltage	—1800	—1500	—1000	—1000	volts
D-c grid current, approximate	0.9	1.0	1.15	1.15	amperes
Driving power, approximate	2200	2100	1900	1900	watts
Power output, approximate	84,000	75,000	60,000	50,000	watts
Peak r-f grid voltage	2500	2200	1700	1700	volts

**Temperature is measured in thermometer well. The normal forced air of 1800 cubic feet per minute requires a static pressure of 1.5 inches of water and must be started before application of any voltage and continue for at least 5 minutes after removal of voltages. Temperature or anode seal must not exceed 180 C. An air flow of at least 5 cubic feet per minute through a nozzle directed at filament bases is required before and during application of any voltages to limit temperature of filament seals to 150 C.

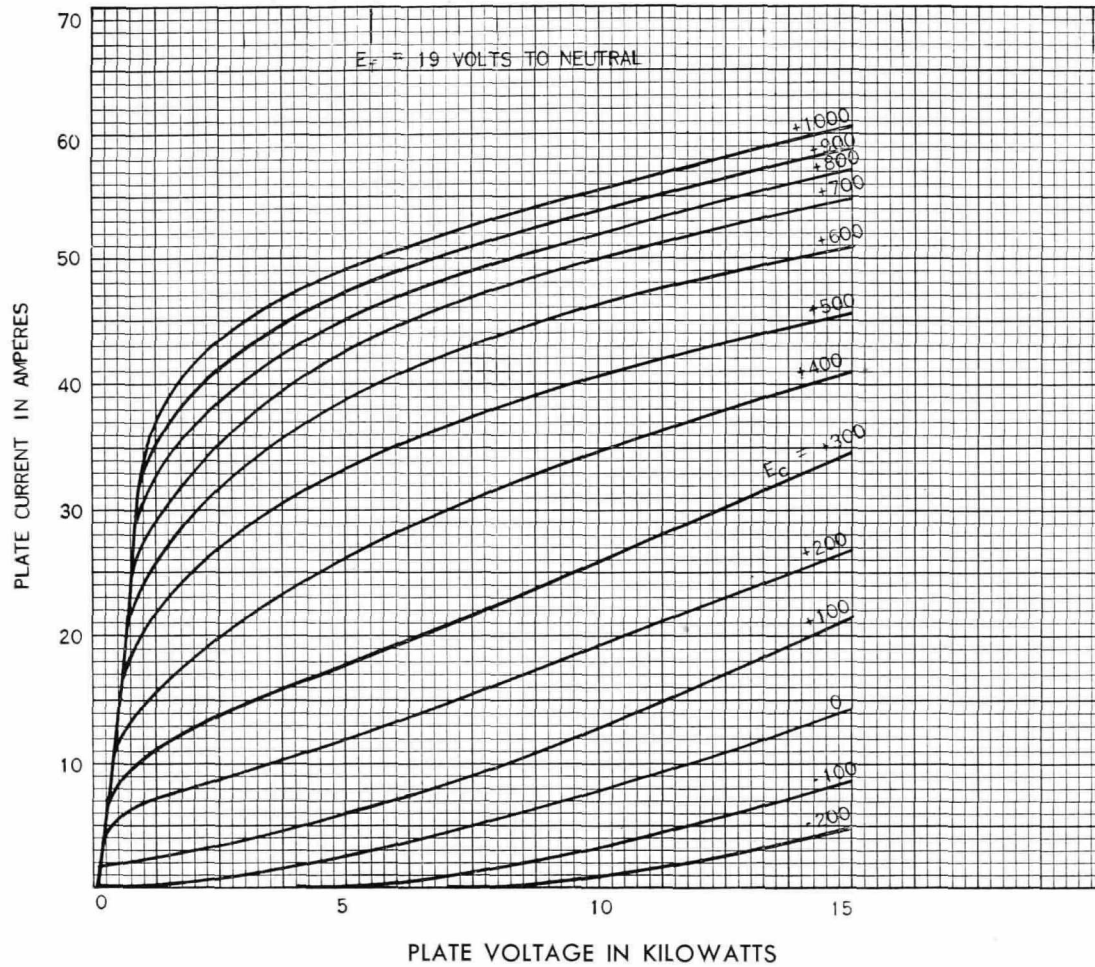
***Modulation, essentially negative, may be used if the positive peak of the audio frequency envelope does not exceed 115 per cent of the carrier conditions.

APPLICATION NOTES

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

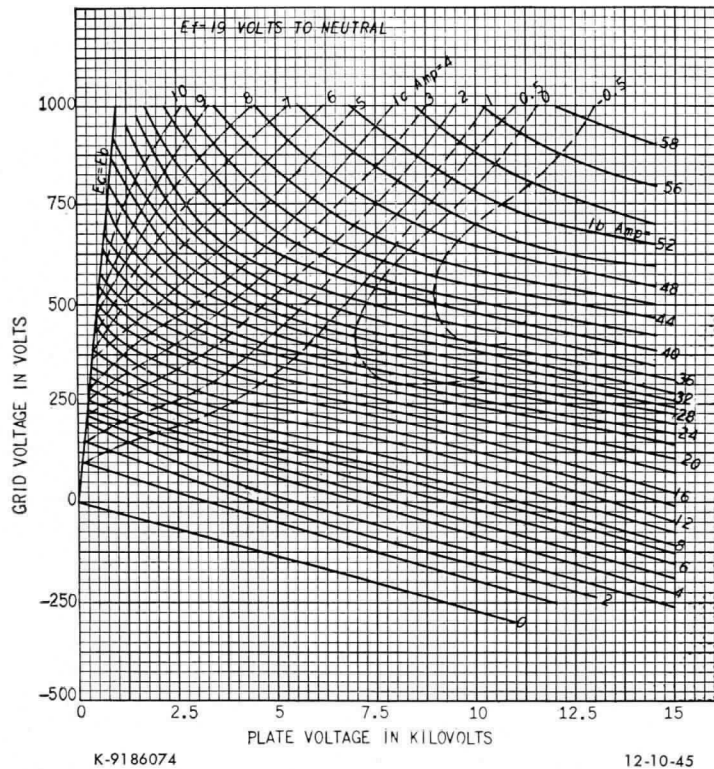
GL-895-R AVERAGE PLATE CHARACTERISTICS



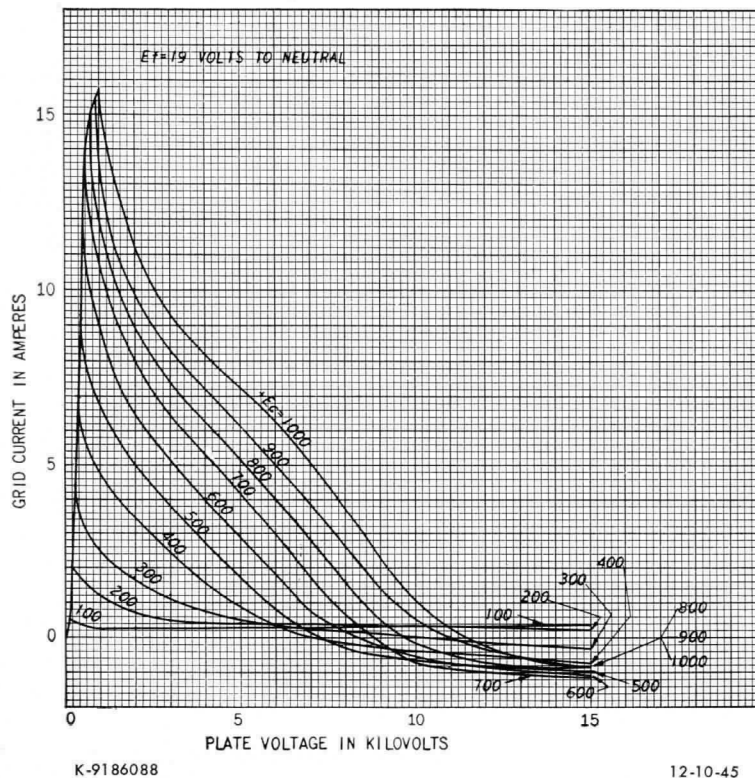
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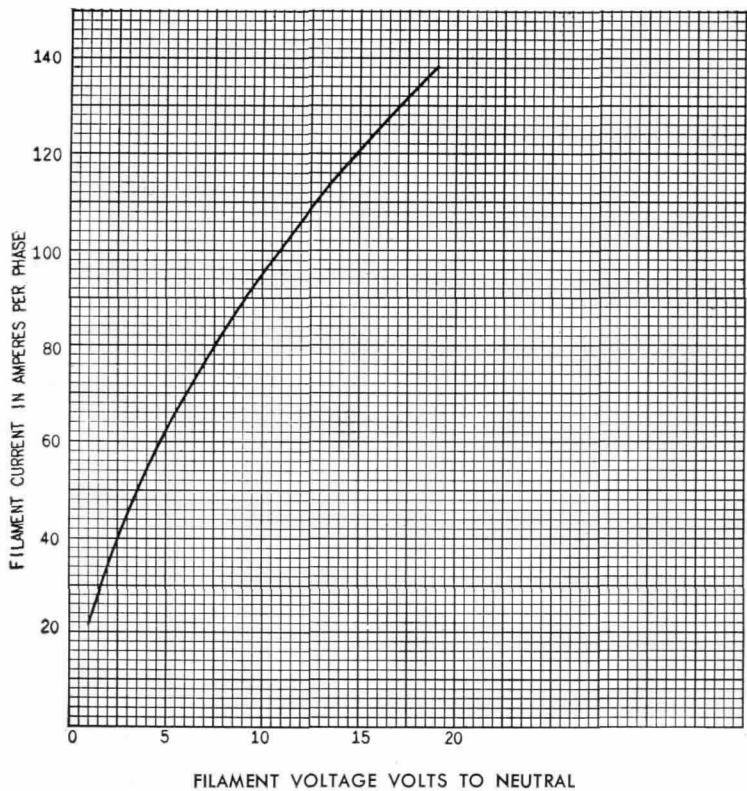
GL-895-R CHARACTERISTICS



GL-895-R TYPICAL GRID-PLATE TRANSFER CHARACTERISTICS



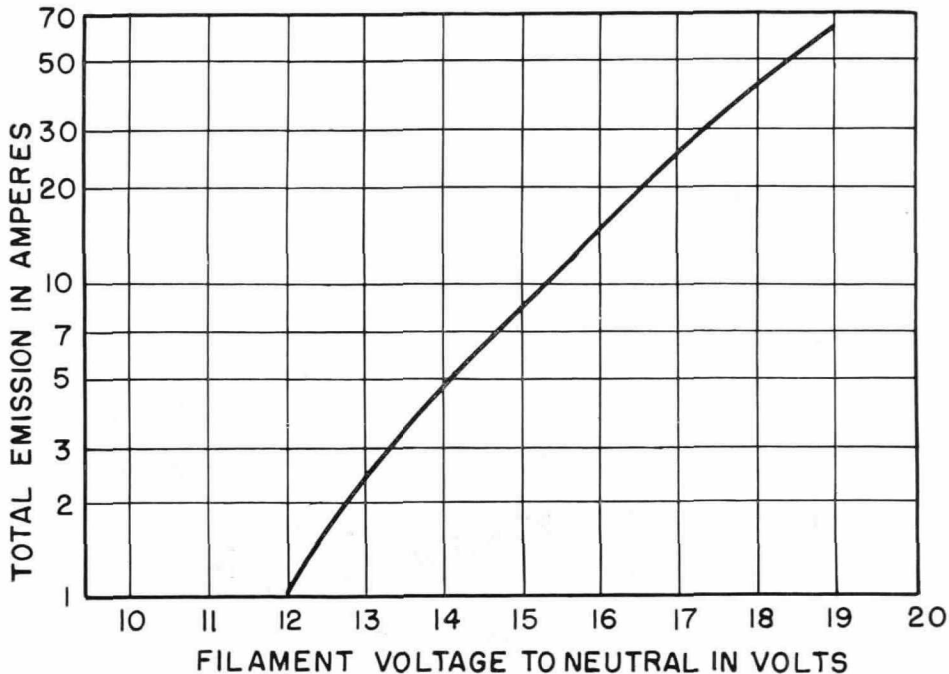
GL-895-R FILAMENT CHARACTERISTICS



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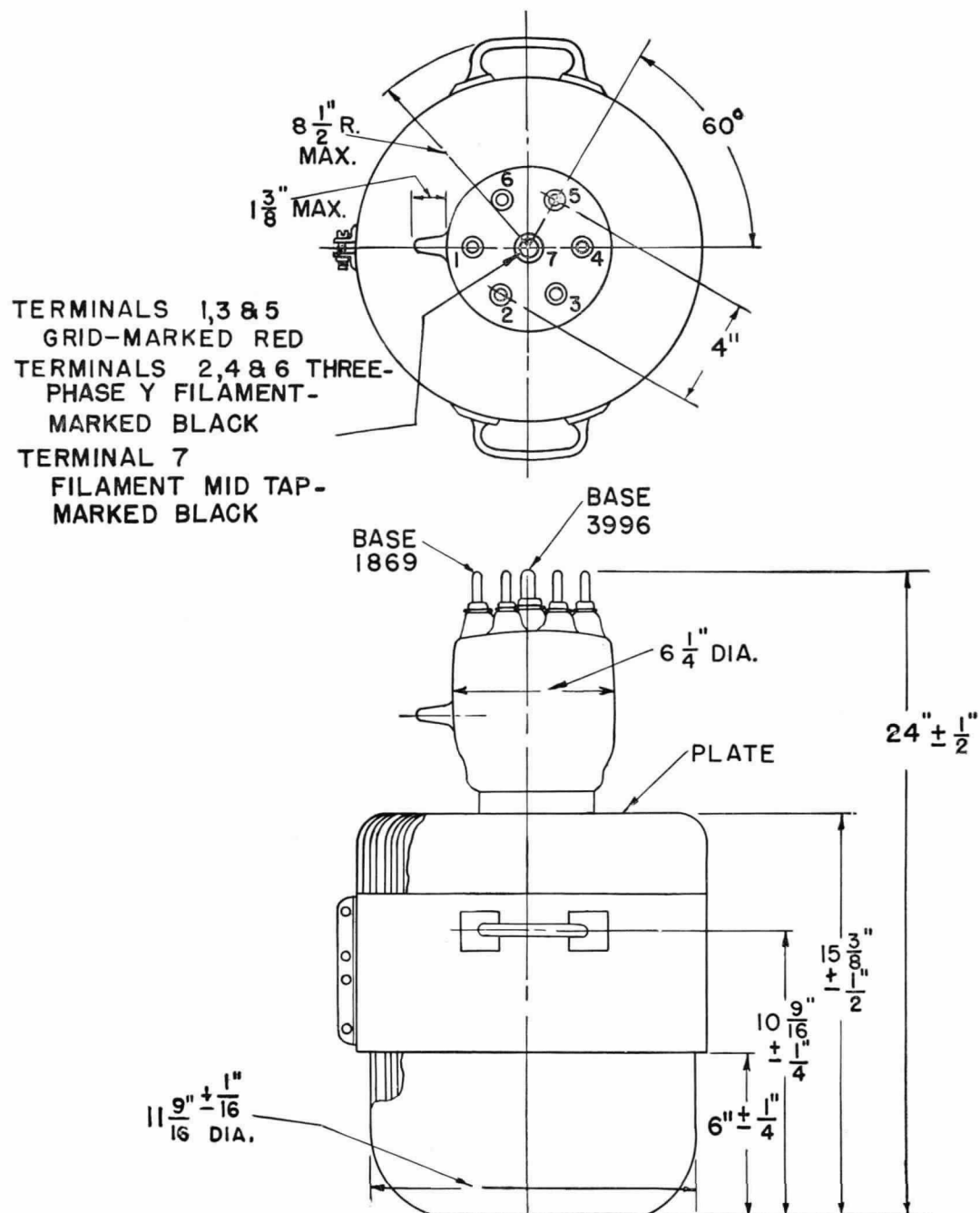
GL-895-R AVERAGE FILAMENT EMISSION



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OUTLINE
GL-895-R PIOTRON



Tube Department, Electronics Division

GENERAL ELECTRIC

Schenectady, N. Y.