

PRELIMINARY DESCRIPTION AND RATING

IGNITRON GL-6509

The GL-6509 is an ignitron for railroad locomotive rectifier service. This tube is designed to supply the auxiliary power requirements in those locomotives that utilize the GL-6504 ignitron as the main power supply. In addition to this service the 6509 ratings also make the tube particularly suitable for use as the main power source in multiple-unit car installations.

The tube is similar in construction to the GL-5555/FG-238-B ignitron but has the additional feature of baffles in the mercury pool to assure contact between the mercury and the ignitor points during swaying of the equipment.

TECHNICAL INFORMATION

GENERAL

Electrical

Cathode Excitation - Cyclic	
Cathode-Spot Starting - Ignitor	
Number of Electrodes	
Main Anodes	1
Main Cathodes	1
Ignitors	3
Arc Drop	
At 600 Amperes Peak	16.2 ± 0.5 Volts

Mechanical

Envelope Material - Metal	
Net Weight	25 Pounds

Thermal

Type of Cooling - Water	
Inlet Water Temperature, minimum	30 Centigrade
Outlet Water Temperature, maximum	
Peak Inverse Anode Voltage = 900	60 Centigrade
Peak Inverse Anode Voltage = 2100	45 Centigrade
Water Flow	
At Continuous Rated Average Current, minimum	3 Gallons per Minute
At No Load, minimum	1 Gallon per Minute
Characteristics for Water Cooling at Rated Minimum Flow	
Water Temperature Rise, maximum	4.5 Centigrade
Pressure Drop at 3 Gallons per Minute, maximum	2 Pounds per Square Inch

MAXIMUM RATINGS

Power-Rectifier Service *, Continuous Duty

Maximum Peak Anode Voltage		
Inverse	900	2100 Volts
Forward	900	2100 Volts

GENERAL ELECTRIC COMPANY

from JETEC release #1335, July 23, 1954

MAXIMUM RATINGS (Cont'd)

Power-Rectifier Service *, ASA - Continuous Duty

Maximum Anode Current			
Peak	1800	1200	Amperes
Average			
Continuous	200	150	Amperes
2 Hours, Averaged Over any 2-Minute Period	300	225	Amperes
1 Minute, Averaged Over any 1-Minute Period	400	300	Amperes
Fault	12000	9000	Amperes
Maximum Duration of Fault Current	-	0.15	Seconds
Frequency Range	25 to 60	25 to 60	Cycles per Second

* Ratings are for Zero Phase-Control Angle

Ignitor Requirements

Volt-Ampere-Time Requirements - See Curve K-9033883

Maximum Inverse Voltage	5	Volts
Maximum Current		
Root Mean Square	15	Amperes
Average	2.0	Amperes
Maximum Averaging Time	10	Seconds

June 28, 1954

TUBE DEPARTMENT
GENERAL ELECTRIC COMPANY
SCHENECTADY 5, NEW YORK

IGNITOR VOLT-AMPERE REQUIREMENTS

SEALED-IGNITRON RECTIFIERS

THE IGNITOR FIRING CIRCUIT SHOULD BE DESIGNED TO OPERATE WITHIN THE SHADED AREA.



