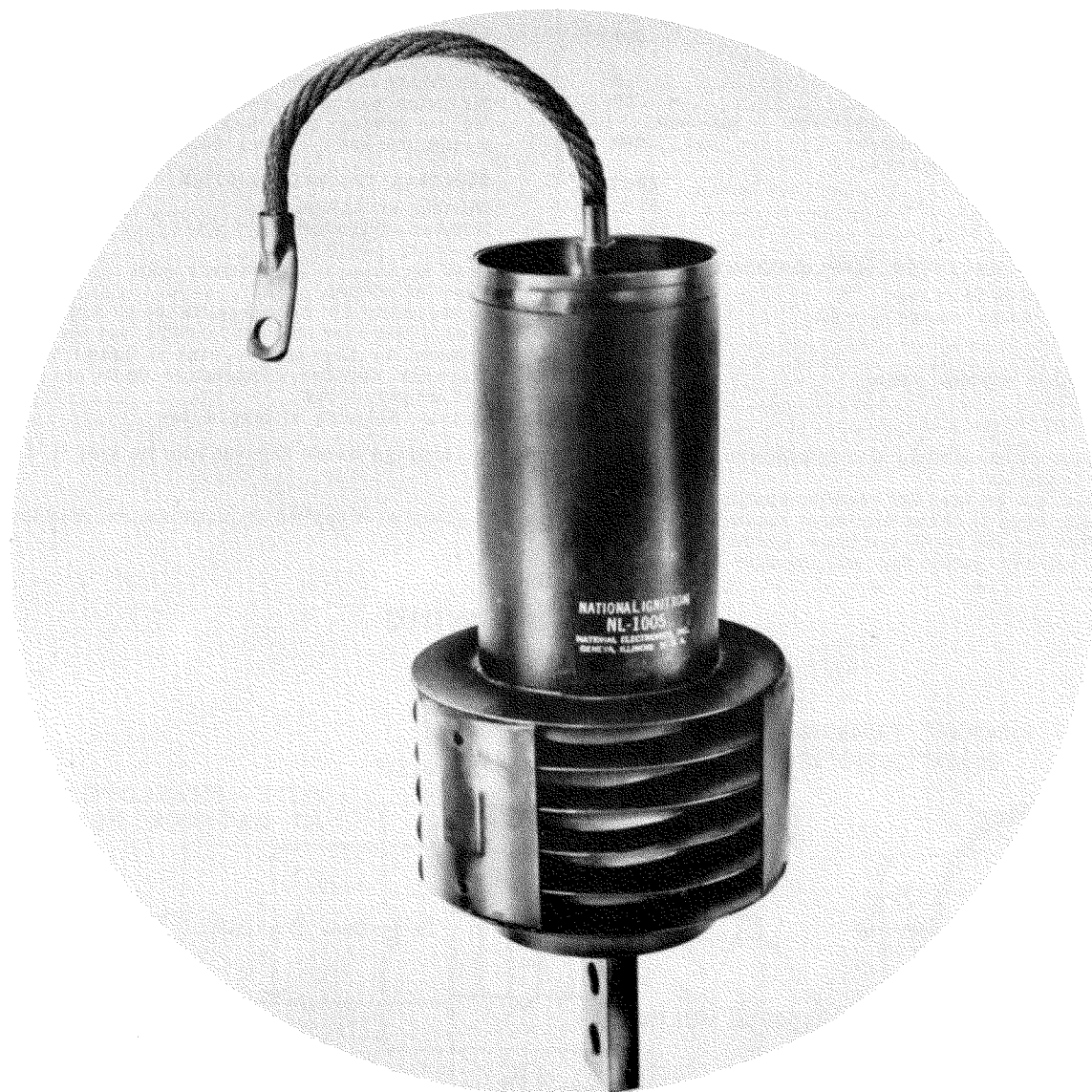


IGNITRON TUBE

**NL-1005
IGNITRON TUBE
56 Amperes dc**



NATIONAL IGNITRON NL-1005 is a sturdy, metal, air-cooled mercury pool tube designed especially for welder control and similar AC control applications. It is also useful in some rectifier applications. NL-1005 is designed for forced air cooling but may be used with free air cooling at reduced ratings.

NATIONAL ELECTRONICS, INC.

GENEVA, ILLINOIS, U. S. A.

NL-1005 IGNITRON TUBE

TECHNICAL INFORMATION

AC CONTROL APPLICATIONS — Ratings are based on full-cycle conduction (no phase delay) regardless of whether or not phase control is used, on frequencies from 25 to 60 cycles, and any voltage between 250 and 600 volts rms.

¹ Maximum demand — kva	600
¹ Corresponding maximum average anode current per tube — amps dc	30.2
¹ Maximum average anode current per tube—amps dc	56
¹ Corresponding maximum demand — kva	200
¹ Maximum averaging time — seconds	
At 500 volts rms	9
At 250 volts rms.	18
Maximum surge current — peak amps — per cent of max. rms. demand current	250
⁴ Maximum cylinder temperature	
At 600 volts rms	80°C
At 500 volts rms	85°C
At 250 volts rms	90°C

INTERMITTENT RECTIFIER APPLICATIONS — Frequencies from 25 to 60 cycles.

Maximum peak anode voltage — volts	
Inverse	500
Forward	500
Maximum anode current, amps	
Instantaneous	700
Average, per tube	40

¹Using log-log paper, straight line interpolation of Demand Current vs. Average Anode Current may be used to determine intermediate ratings.

²Curves must not be used for rectifier applications.

³Ignition will occur if either maximum required instantaneous positive potential is applied or maximum required instantaneous current flows for the rated maximum ignitor ignition time.

⁴Measured between center fins and opposite blower.

Averaging time — seconds	3
Surge, peak amps, averaging time — 0.15 seconds	6000
Maximum cylinder temperature at 500 volts peak	75°C

IGNITION REQUIREMENTS (same for both applications)

Ignitor Voltage

Maximum instantaneous allowed, ignitor positive, volts 900

³Maximum instantaneous required, ignitor positive, volts 200

Maximum instantaneous allowed, ignitor negative, volts 5

Ignitor Current

Maximum instantaneous allowed — amperes 100

³Maximum instantaneous required — amperes 30

Maximum average allowed — amperes 1

³Ignitor ignition time, maximum — microseconds 100

Ignitor current averaging time — seconds 5

GENERAL CHARACTERISTICS

Number of Anodes 1

Number of Ignitors 1

Mounting position Vertical

Peak arc drop — approximate volts 12

Type of cooling forced air

Approximate air flow required at 50 amperes dc for

 45°C rise over ambient — cubic feet per minute 140

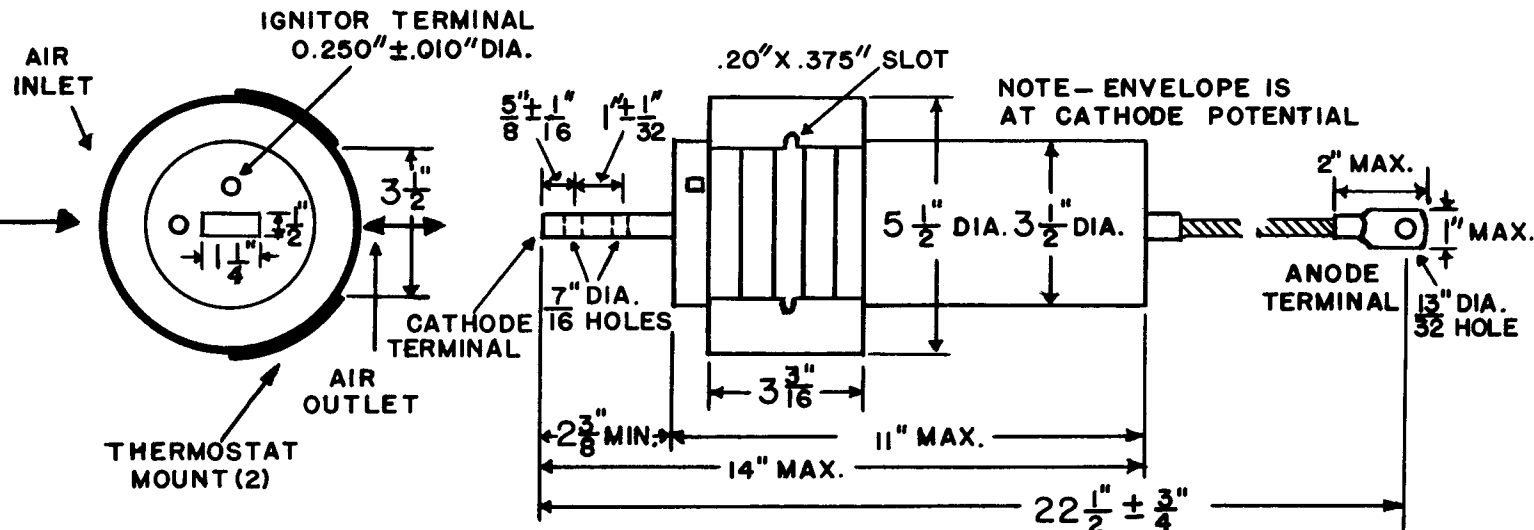
Reduced air flow may be used at lighter load as long as

Maximum Cylinder Temperature limits are not exceeded.

Net weight — lbs. 7

Approx. Shipping Weight — lbs. 15

OUTLINE DRAWING



Printed in U. S. A. 7-57 G

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