

# IGNITRON TUBE

**NL-5550**

**IGNITRON TUBE**

**22.4 Amperes dc**



NL-5550 is a mercury pool tube designed especially for resistance welding control. Its rating is approximately equivalent to a 150-ampere magnetic contactor.

NL-5550 can be used to control 25-60 cycle AC at voltages of 250 to 600 volts. It can also be used to control stored electrostatic energy for resistance welding.

## NATIONAL ELECTRONICS, INC.

GENEVA, ILLINOIS, U. S. A.

# NL-5550 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 to 600 volts rms.

|                                                                                   |     |      |
|-----------------------------------------------------------------------------------|-----|------|
| Maximum clamp temperature, °C .....                                               | 75  | 50   |
| <sup>1</sup> Maximum demand — kva .....                                           | 150 | 300  |
| <sup>1</sup> Corresponding maximum average anode current per tube — amps DC ..... | 4.9 | 12.1 |
| <sup>1</sup> Maximum average anode current per tube — amps DC .....               | 9.0 | 22.4 |
| <sup>1</sup> Corresponding maximum demand — kva .....                             | 50  | 100  |

|                                               |      |     |
|-----------------------------------------------|------|-----|
| <sup>1</sup> Maximum averaging time — seconds |      |     |
| At 600 volts rms. ....                        | 11.6 | 9.2 |
| At 250 volts rms. ....                        | 27.8 | 22  |
| Maximum surge current —                       |      |     |
| Peak amps .....                               | 280  | 280 |
| percent of max. rms demand current            |      |     |

## CAPACITOR DISCHARGE RATINGS

|                                     |      |      |
|-------------------------------------|------|------|
| Maximum discharges per sec. ....    | 60   | 60   |
| Peak forward voltage, max. ....     | 3000 | 6000 |
| Peak inverse volts, max. ....       | 3000 | 3000 |
| Peak anode current, max. amps. .... | 500  | 500  |

|                                                      |     |      |     |      |
|------------------------------------------------------|-----|------|-----|------|
| Maximum temp. of cooling clamp, °C                   | 70  | 40   | 60  | 40   |
| Corresponding maximum average current, amps DC ..... | 3   | 15   | 2.5 | 8    |
| Maximum averaging time, sec. ....                    | 3.3 | 0.66 | 4.0 | 1.25 |

## IGNITION REQUIREMENTS (same for both applications)

### Ignitor Voltage

Maximum instantaneous allowed, ignitor positive — anode voltage

<sup>3</sup>Maximum instantaneous required, ignitor positive — volts .....

Maximum instantaneous allowed, ignitor negative — volts 5

### Ignitor Current

Maximum instantaneous allowed — amperes .....

<sup>3</sup>Maximum instantaneous required — amperes .....

Maximum average allowed — ampere .....

<sup>3</sup>Ignitor ignition time maximum — microseconds .....

Ignitor current averaging time — seconds .....

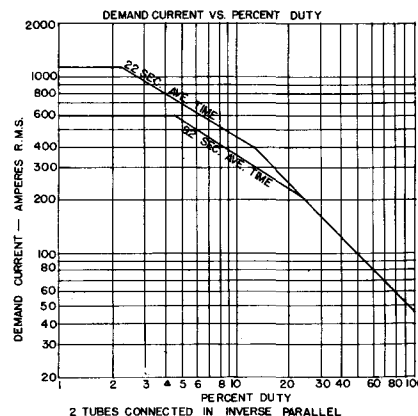
## GENERAL CHARACTERISTICS

|                                            |                    |
|--------------------------------------------|--------------------|
| Number of anodes .....                     | 1                  |
| Number of ignitors .....                   | 1                  |
| Mounting position .....                    | Vertical           |
| Peak arc drop — approximate volts .....    | 12                 |
| Type of cooling .....                      | Water cooled clamp |
| Minimum inlet water temperature — °C ..... | 0                  |
| Net weight — lbs. ....                     | 1.5                |
| Approx. shipping weight — lbs. ....        | 8                  |

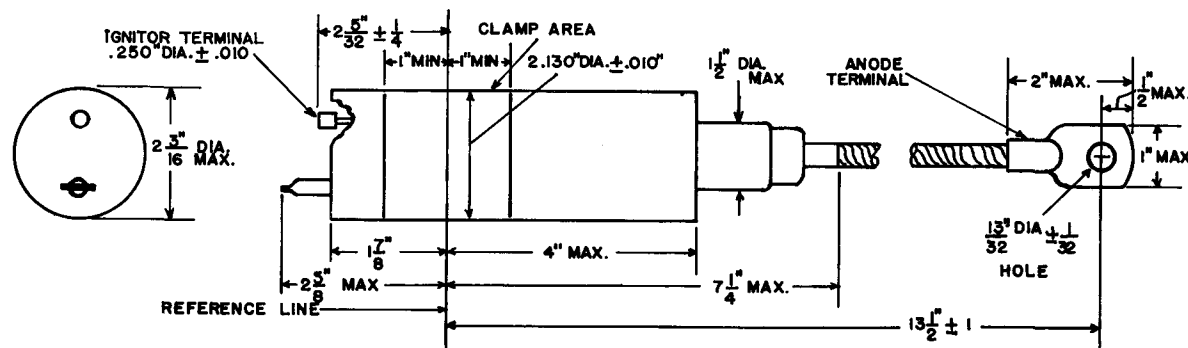
<sup>1</sup>Using log-log paper, straight line interpolation of Demand Current vs. Average Anode Current may be used to determine intermediate ratings.

<sup>2</sup>Using log-log paper, straight line interpolation between listed points may be used to determine intermediate ratings of average anode current and maximum averaging time vs. temperature.

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



## OUTLINE DRAWING



Printed in USA 5-56 GR

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