

NUCLEAR CORPORATION OF AMERICA
CENTRAL ELECTRONIC MANUFACTURERS DIVISION
Denville, New Jersey

High Vacuum Diode
Type XD-49R & XD-49W

DESCRIPTION

The XD-49 is available as a forced air cooled XD-49R or water cooled diode (XD-49W) for use in rectifier and clipper services and features a special thoriated tungsten filament.

SPECIFICATIONS

PHYSICAL	<u>XD-49W</u>	<u>XD-49R</u>
Length	9 7/8 max.	7 3/8 max.
Diameter	4	4 21/32 max.
Weight	1 3/4 approx.	5 1/2 pounds approx.
Mounting Position	Vertical	Vertical
Mounting Socket	--	CAS-A or CAS-B Series
Type of Cooling	Water	Forced Air
Required Air Flow on Anode (Air Cooled Tube)		
Anode Dissipation (kw)	Air Flow (cfm)	Pressure (in. of water)
1.0	50	0.20
1.8	75	0.26
2.4	125	0.58
3.0	190	1.21
Maximum Incoming Air Temperature		45°C
Maximum Glass Seal Temperature		180°C
Required Water Flow (Water Cooled Tube)		3 gpm for 5 kw dissipation
Required Water Flow (Water Cooled Tube)		70°C

ELECTRICAL

Filament	Thoriated Tungsten
Filament Voltage	15 Volts
Filament Current	36 Amperes
Filament Starting Surge Current	80 Amperes
Filament Cold Resistance	.042 Ohms

ELECTRICAL (RECTIFIER)	<u>XD-49W</u>	<u>XD-49R</u>
Filament Voltage	15 volts	15 volts
Filament Current	36 amperes	36 amperes
Peak Inverse Voltage (max.)	25 kilovolts	25 kilovolts
Average Anode Current	7 amperes	3 amperes

ELECTRICAL (RECTIFIER)

XD-49W

XD-49R'

Peak Anode Current (max.)

25 amperes

10 amperes

Maximum Dissipation

5 kilowatts

3 kilowatts

ELECTRICAL (CLIPPER)

Filament Voltage

16.2 volts

16.2 volts

Filament Current

39 amperes

39 amperes

Peak Inverse Voltage (max.)

25 kilovolts

25 kilovolts

Peak Anode Current (max.)

160 amperes

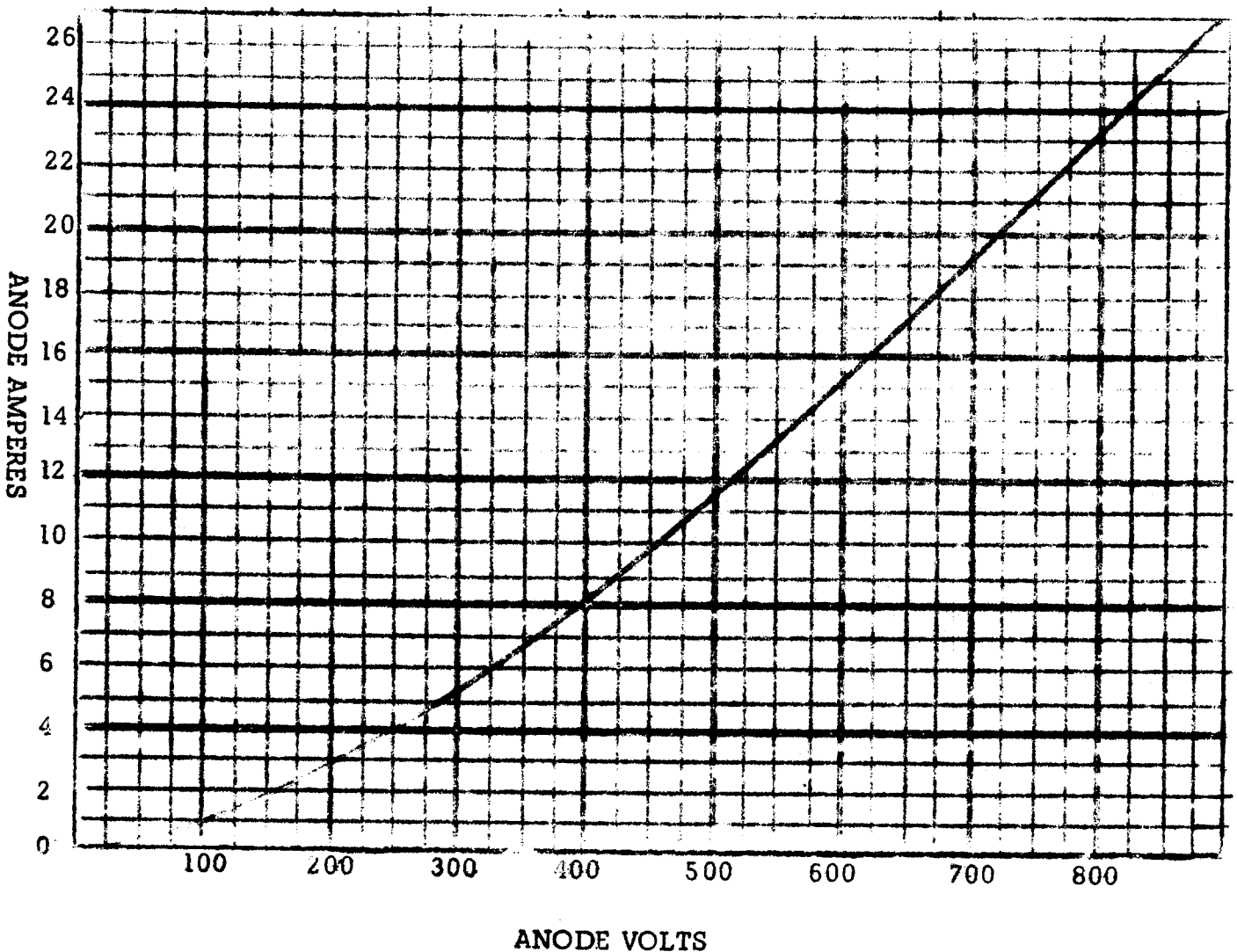
160 amperes

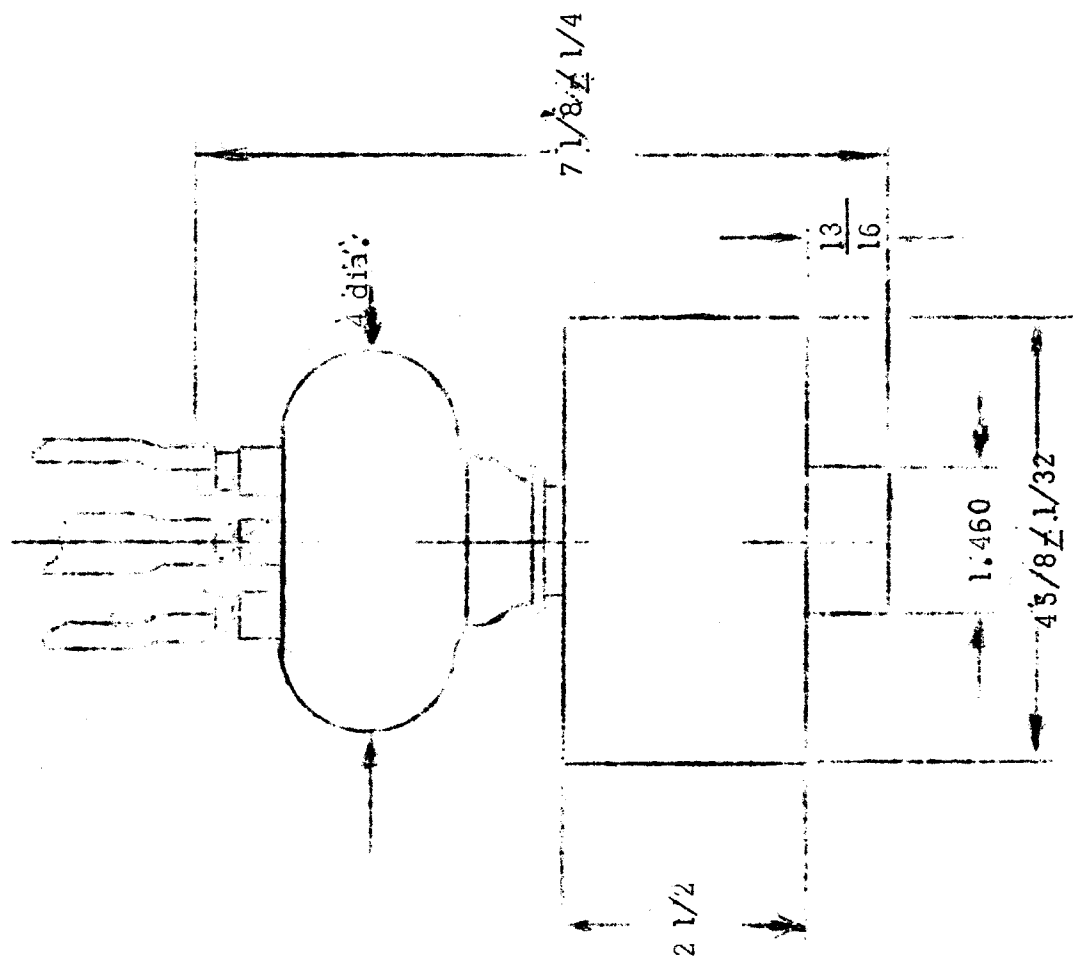
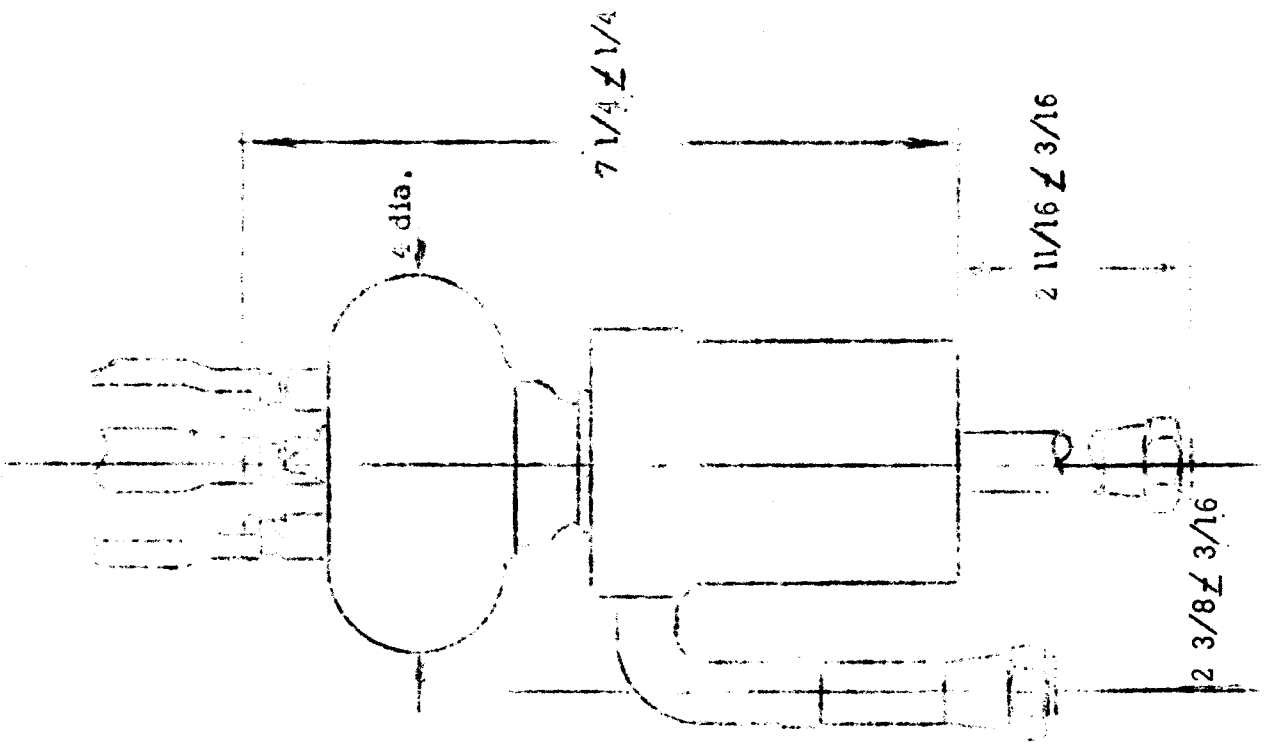
RMS Anode Current

8 amperes

4 amperes

See Safety Code for Industrial Use of X-Rays published by A.S.A.





TUBE TYPE XD-49

PULSE CHARACTERISTIC PLATE CURVE

CHARLES BRUNING COMPANY, Inc.
MADE IN U. S. A.

BRUNING 700 20
10 X 10 TO 1/2 INCH

ANODE AMPERES

200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30

0 1 2 3 4 5 6 7 8 9 10 11 12

ANODE KILOVOLTS

$E_f = 162 \text{ V.a.c.}$

