

EITEL-McCULLOUGH, INC.  
SAN CARLOS, CALIFORNIA

2X3000F

HIGH-VACUUM  
RECTIFIER

The Eimac 2X3000F is a high-vacuum, forced-air cooled, external-anode diode intended for use in high-power rectifier units whenever high peak-inverse voltages, extreme ambient temperatures, high operating frequency, or the production of high-frequency transients would prevent the use of mercury-vapor or gas-filled rectifier tubes.

### CHARACTERISTICS

#### ELECTRICAL

|           |                    |   |   |   |   |   |            |
|-----------|--------------------|---|---|---|---|---|------------|
| Filament: | Thoriated Tungsten |   |   |   |   |   |            |
| Voltage   | -                  | - | - | - | - | - | 7.5 volts  |
| Current   | -                  | - | - | - | - | - | 51 amperes |

#### MECHANICAL

|                                 |   |   |   |   |   |   |                           |
|---------------------------------|---|---|---|---|---|---|---------------------------|
| Operating Position              | - | - | - | - | - | - | Vertical, base down or up |
| Maximum Operating Temperatures: |   |   |   |   |   |   |                           |
| Glass-to-Metal Seals            | - | - | - | - | - | - | 175° C                    |
| Anode Core                      | - | - | - | - | - | - | 175° C                    |
| Net Weight                      | - | - | - | - | - | - | 5.7 pounds                |
| Shipping Weight (Approximate)   | - | - | - | - | - | - | 17 pounds                 |

#### MAXIMUM RATINGS

|                            |   |   |   |   |   |   |             |         |
|----------------------------|---|---|---|---|---|---|-------------|---------|
| PEAK INVERSE PLATE VOLTAGE | - | - | - | - | - | - | 25,000 MAX. | VOLTS   |
| PLATE DISSIPATION          | - | - | - | - | - | - | 3,000 MAX.  | WATTS   |
| DC PLATE CURRENT           | - | - | - | - | - | - | 3 MAX.      | AMPERES |
| PEAK PLATE CURRENT         | - | - | - | - | - | - | 20 MAX.     | AMPERES |

#### TYPICAL POWER-SUPPLY CAPABILITIES\*

| Circuit                           | Maximum<br>AC Input<br>Voltage<br>(volts rms) | Approx.<br>DC Output<br>Voltage<br>(volts) | Maximum<br>DC Output<br>Current<br>(amps) |
|-----------------------------------|-----------------------------------------------|--------------------------------------------|-------------------------------------------|
| Single-Phase, Full-Wave (2 tubes) | 17,700 total                                  | 8,000                                      | 6.0                                       |
| Single-Phase, Bridge (4 tubes)    | 17,700 total                                  | 16,000                                     | 6.0                                       |
| Three-Phase, Full-Wave (6 tubes)  | 10,200 per leg                                | 24,000                                     | 9.0                                       |

\*Choke-input filter with L equal to or greater than twice "critical"; zero circuit loss assumed.

#### COOLING

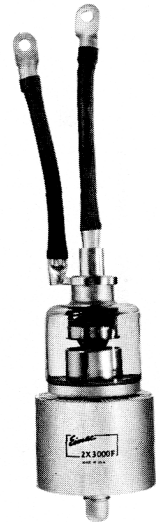
Sufficient forced air cooling must be provided to maintain seal and anode core temperature at 175°C or below. Air-flow must be started when filament power is applied and it is advisable to continue air-cooling for two minutes after all voltages are removed.

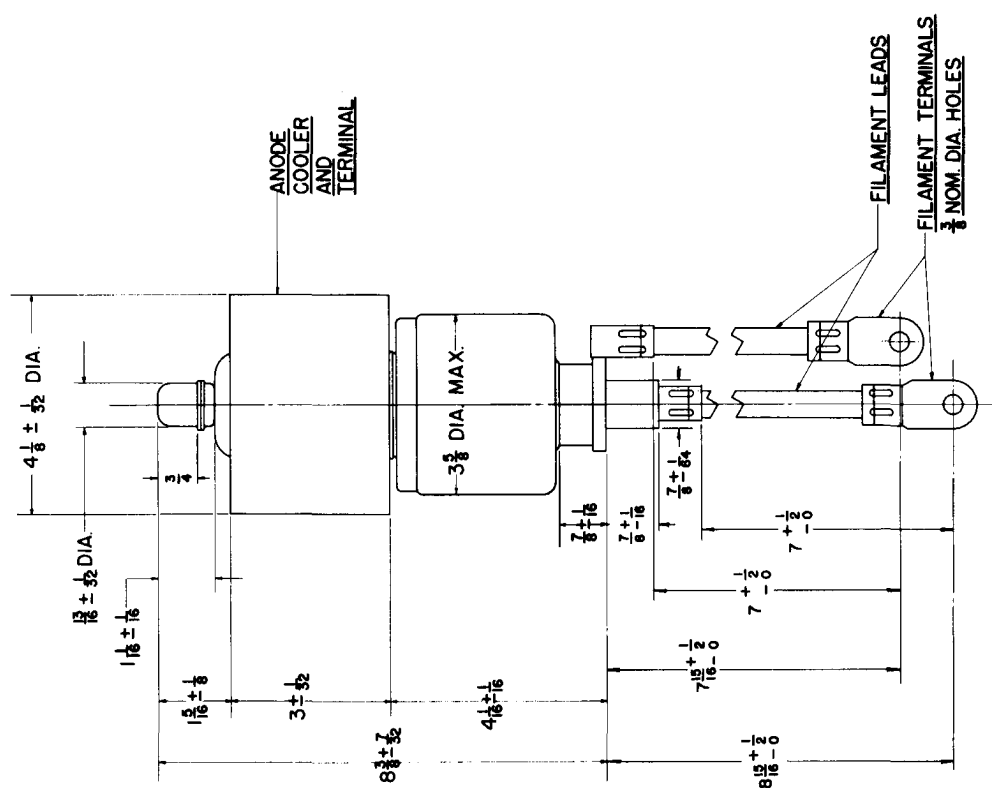
The table below lists minimum air-flow requirements to maintain tube temperatures below 175°C with air flowing in both the base-to-anode and anode-to-base directions. This tabulation presumes air at 40°C and sea level. A separate supply of approximately six cubic feet per minute, directed into the filament structure is also required to maintain rated filament seal temperatures. This is best accomplished using a small diameter insulating tubing directed into the stem, between the filament seals.

| Plate<br>Dissipation<br>(Watts) | MINIMUM COOLING AIR-FLOW REQUIREMENTS |                                       |                    |                                       |
|---------------------------------|---------------------------------------|---------------------------------------|--------------------|---------------------------------------|
|                                 | BASE-TO-ANODE FLOW                    |                                       | ANODE-TO-BASE FLOW |                                       |
|                                 | AIR-FLOW<br>(CFM)                     | PRESSURE DROP<br>(inches of<br>water) | AIR-FLOW<br>(CFM)  | PRESSURE DROP<br>(inches of<br>water) |
| 1000                            | 15                                    | 0.1                                   | 25                 | 0.2                                   |
| 2000                            | 45                                    | 0.4                                   | 75                 | 1.2                                   |
| 3000                            | 95                                    | 1.4                                   | 155                | 4.5                                   |

Note: An extra 375 watts have been added to these plate dissipation figures in preparing this tabulation, to compensate for filament dissipation.

For operation at high altitudes or higher ambient temperatures, these quantities should be increased. In all cases it is suggested that actual temperatures be measured to insure adequate cooling.





ALL DIMENSIONS  
IN INCHES