LOW PRESSURE ION GAUGE TUBE TYPE 8057

The 8057 is an ionization type of vacuum-gauge tube for measurement of gas pressure as low as $10^{-9}$ mm of mercury. The tube has a hard glass bulb with a 3/4 inch diameter tubulation. The 8057 employs a Bayard-Alpert electrode structure having a minimum of metal surface for ease of out-gassing.

The 8057 is a triode having two tungsten filaments which may be operated singly, in series, or in parallel. The helical grid structure is made of non-sag tungsten and is easily outgassed by connecting it directly to a suitable A-C or D-C supply.

The grid structure is operated at a positive potential with respect to the filament while the ion collector is at a negative potential. Electrons are accelerated from the filament to the grid; they bombard and ionize gas molecules, and the resultant positive ions are attracted to the collector. The ratio of the collector current (positive ion current) to the grid current is proportional to the gas pressure.

**ELECTRICAL:**
- Filament Type: Tungsten
- Filament Voltage (1 Filament): Approx. 7 AC or DC Volts
- Filament Current (1 Filament): 2.5 ± 8% Amperes

**MECHANICAL:**
- Maximum Tube Length: 5-1/4"
- Maximum Bulb Diameter: 2-1/16"
- Tubulation: 3/4 Inch
- Material: Nonax (Coming Code 7729)
- Mounting Position: Vertical

**MAXIMUM RATINGS:**
- Absolute Maximum Values:
  - Ion Collector Voltage: -100 max. Volts
  - Grid Voltage: +500 max. Volts
  - Ambient Temperature: 100 max. °C
  - Gas Pressure: 0.001 max. mm Hg.
- Typical Operation:
  - Ion Collector Voltage: -30 Volts
  - Grid Voltage: +150 Volts
  - Grid Current: 10 Ma.
  - Sensitivity: $1\mu a/10^{-9}$ mm Hg.
- Conditions For Outgassing Grid:
  - Grid Voltage: Approx. 6 to 7 Volts
  - Grid Current: Approx. 9 to 10 Amperes

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