Bayard Alpert Ionization Gauge Operating Conditions
Glass Envelope

Operating Biases

Collector :
0 VDC to Ground

Grid:
+150 to +180 VDC to Ground

Filament:
+30 VDC to Ground

Grid Degas:
6.3 to 7.5 VAC @ 10 A

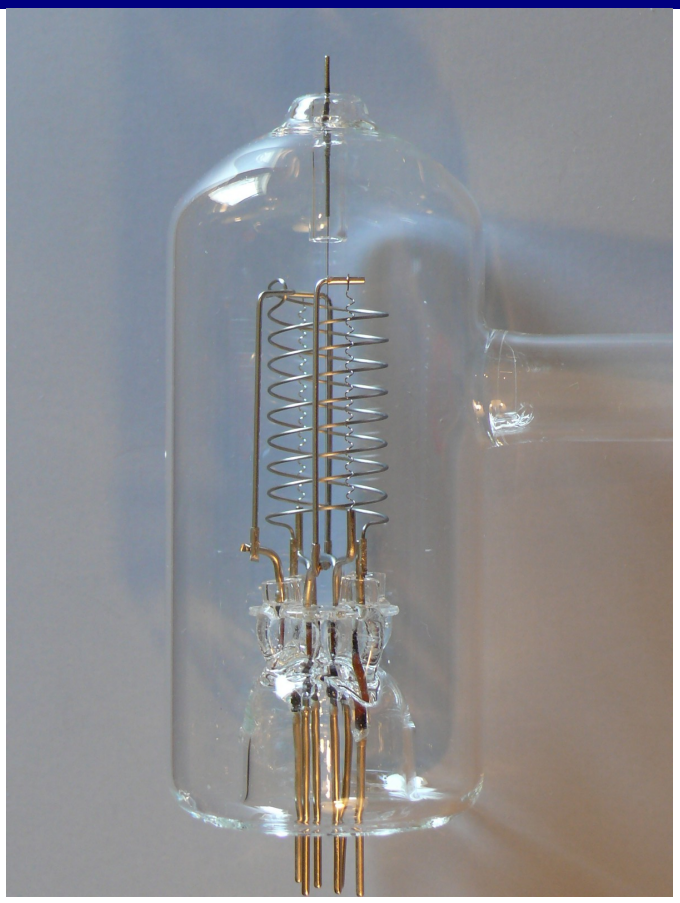
Operating Rating

Filament:
4 to 6 amp @ 3 to 5 volts

Operating Factors

Tungsten Filament [1]:
Gauge Factor[2]
14
Pressure Range
$1x10^{-3}$ to $2x10^{-10}$

Iridium (ThO2 Coating) [3]
Gauge Factor [2]
10
Pressure Range
$1x10^{-3}$ to $2x10^{-10}$



(1) Tungsten filaments operate at a very high temperature, resulting in a high gauge factor. This filament is very susceptible to failure by oxidation due to poor vacuum or sudden pressurization, but is relatively insensitive to contamination as found in implanter or sputtering systems.

(2) Gauge factor (S) is defined as: S = actual pressure / indicated pressure

(3) Iridium filaments cannot be operated at the same temperature as tungsten filaments because of iridium's lower melting temperature. A thoria or yttria coating is required to improve electron emission at the lower operating temperature. The iridium/thoria and iridium/yttria filaments are very resistant to oxidation due to poor vacuum or sudden pressurization, but are very susceptible to contamination by vacuum oil, and sputtering or implantation contamination.