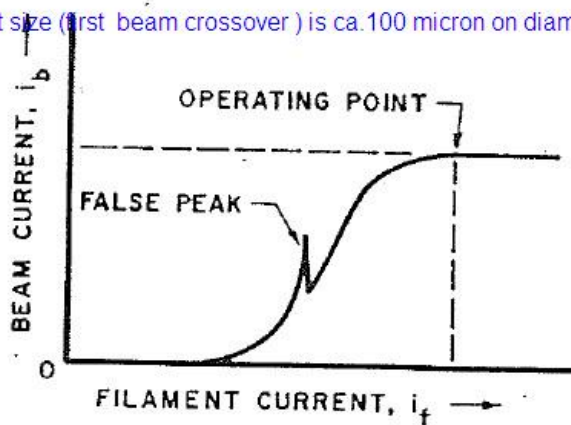


a negative potential applied to Wehnelt cylinder, together with an anode (connected to ground potential) to limit electron emission only from filament tip (for better coherency) down to first crossover ... GUN BIAS-current passed through the filament ("heat up" to get thermal emission)....

for W filament, its spot size (first beam crossover) is ca. 100 micron on diameter, if double condenser



there is always a so called "saturation point" for a thermal emission gun, to further increasing filament current beyond saturation point, there is no any further benefit than decreasing filament lifetime....