

312 NORTH NOPAL STREET • SANTA BARBARA, CALIFORNIA



PL-210

MOUNTING

The PL-210 must be mounted with the axis of the tube vertical, with the base up or down, and must be supported by either the lower edge or the upper flat portion of the suppressor-grid terminal ring, or by the anode cooler. The tube must not be supported by the glass or base pins.

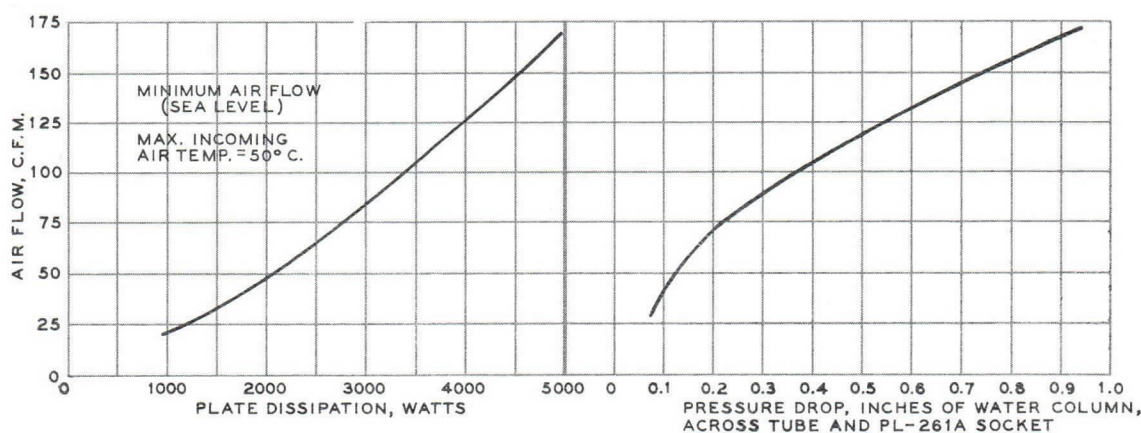
Contact to the suppressor, screen, and control-grid contact surfaces should be made by spring contact material in at least three places around the periphery of each surface.

The PL-261A, a special socket designed for use with the PL-210 and having air-directing provisions and contacts for all base pins and suppressor, screen and control-grid terminals, is available. The socket has built-in bypass capacitors for the screen grid, and the suppressor-grid contacts are grounded to the frame.

COOLING

Cooling air requirements for the PL-210, when used with the Penta PL-261A socket, are shown in the graph below. Any additional pressure drops in the air system between the blower and socket, such as might occur in an air duct, must be added to the pressure drop figure taken from the chart to determine the static pressure which must be maintained at the blower.

Sufficient cooling air must be provided to the base seals, suppressor, screen and control-grid contact surfaces to limit their temperature to a maximum of 175° C. When the PL-210 is used with the PL-261A socket and a pressurized chassis and the cooling air specified for 5000 watts plate dissipation is supplied, adequate base-seal cooling will be provided. At the stated cooling air requirements for values of plate dissipation less than 5000 watts sufficient supplementary cooling air must be directed at the base seals and contact surfaces to limit their temperatures to 175° C., maximum.



MAXIMUM RATINGS

CCS (Continuous Commercial Service)

D-C Plate Voltage	-	-	-	-	-	-	-	-	-	7500 volts
D-C Screen-Grid Voltage	-	-	-	-	-	-	-	-	-	1500 volts
D-C Suppressor-Grid Voltage	-	-	-	-	-	-	-	-	-	100 volts
D-C Control-Grid Voltage	-	-	-	-	-	-	-	-	-	-500 volts
D-C Plate Current	-	-	-	-	-	-	-	-	-	2.5 amperes
Screen-Grid Input	-	-	-	-	-	-	-	-	-	200 watts
Plate Dissipation	-	-	-	-	-	-	-	-	-	5000 watts

OPERATION — GENERAL

Maximum ratings and typical operating conditions for the PL-210 are given in the accompanying tabular data.

Filament voltage for the tube should be maintained as closely as possible to the rated value of 6.0 volts, measured at the socket. Decreased tube life and variations in power output may occur with prolonged operation at filament voltages more than five per cent from the rated value.

Screen-grid input in excess of the maximum rating can cause permanent damage to the PL-210. If screen voltage is obtained from a power supply separate from the plate voltage supply, the circuit should be so arranged that it is impossible to apply screen voltage without plate voltage. The use of a screen-grid overcurrent relay is recommended to remove screen voltage immediately in case of excessive screen current due to circuit maladjustment, grid bias failure, or accidental removal of plate circuit loading.

Grid-bias voltage must be obtained from a fixed bias supply in Class-AB₁ and AB₂ applications. The total grid circuit resistance should not exceed 25,000 ohms.

RADIO-FREQUENCY OPERATION

While the PL-210 may be operated without neutralization, provided the suppressor and screen-grids are effectively grounded for radio frequencies, it will usually be found advisable in low-distortion Class-AB₁ linear amplifier service, where reaction on the driver circuit must be eliminated, to neutralize the small feedback capacitance of the tube.

The input and output circuits of an amplifier using the PL-210 should be separated by a metal chassis or equivalent means. Reasonable precautions should be observed in regard to by-passing and shielding of the supply leads to prevent coupling between input and output through external circuits.

For Class-AB₁ linear amplifier service, the screen voltage for the PL-210 must be obtained from a well-regulated source, to prevent excessive screen voltage variations due to the changes in screen current which occur between zero-signal and full-signal conditions.



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