

HF3 series

3.5kV FLOATING MICROCHANNEL PLATE POWER SUPPLIES AT UP TO 30 kV ISOLATION

Applications

Microchannel plates for Mass
Spectrometers & Electron Microscopes
Floating grid & bias voltages



These power supplies, based on the standard HP series (data sheet HP Series refers) are intended to power imaging detectors. They give 0 to +3.5 kV and can be floated on voltages up to ± 2.5 kV (HFxx2.5), ± 10 kV (HFxx010), ± 20 kV (HFxx020) & ± 30 kV (HFxx030) and use differential feedback techniques to allow the **24 volt power, control and monitor** signals to be at **ground potential**.

Electrical Specification

UNIT TYPE	OUTPUT	ISOLATION	OUTPUT RIPPLE	INJECTED RIPPLE ⁽¹⁾
HF003PAA2.5 HF003PAL2.5	0 TO +3.5 kV at 1 ma	± 2.5 kV ⁽²⁾	50 mV peak to peak	50 mV peak to peak 25 mV peak to peak
HF003PAA010 HF003PAL010	0 TO +3.5 kV at 1 ma	± 10 kV ⁽³⁾	75 mV peak to peak	75 mV peak to peak 35 mV peak to peak
HF003PAA020 HF003PAL020	0 TO +3.5 kV at 1 ma	± 20 kV ⁽³⁾	100 mV peak to peak	150 mV peak to peak 75mV peak to peak
HF003PAA030	0 TO +3.5kV at 1mA	± 30 kV ⁽³⁾	150mV peak to peak	200mV peak to peak

1) ripple injected into the power supply providing the floating voltage, measured assuming load capacitance of 1000 pF.

2) resistance to ground 400 Mohm on each output. (3) resistance to ground 600 Mohm on each output.

AA= Option Code:

AA=Standard Unit, PR=Pot & Ref Ctrl, PL=Pot & Ref Ctrl + Low Injected Ripple option

AL=Low Injected Ripple Option, but Pot & Ref Ctrl Option Not Fitted

Input voltages: +24 volt at 0.7 amp

Output voltage: See table above, for output voltage and isolation voltage.

Control: 0 to +10V gives 0 to +3.5 kV Tolerance $\pm 3\%$, input impedance > 100 kohm.

(At ground potential) INTERNAL or EXTERNAL potentiometer control Optional – option code P

Line regulation: Less than 0.1%.

Load regulation: Less than 0.1%.

Voltage monitor: 0 to +10V $\pm 3\%$ represents 0 to +3.5 kV. Source resistance 10 kohm.

Drift: Typically 0.1% of full scale voltage per hour, measured at constant input voltage, output voltage, load, polarity & ambient temperature after 1 hours warm up.

Temperature co-efficient: Less than 0.02% per °C.

Operating temperature: 0 °C to +50 °C.

Mechanical Specification

Size: 210 x 120 x 60 mm.

Input: Molex connector. (24V power, control and monitor are all at ground potential.)

Floating output: By twin flying screened (shielded) leads type URM43 isolation up to 10kV, TV30 (HFxx20/30).