

# Laboratory Power Supplies

## HPD Series

300 Watts with Linear Performance

Voltage Range: 0-15 VDC to 0-60 VDC

Current Range: 0-20 A to 0-5 A

Low noise and ripple  
Excellent line/load regulation  
Constant voltage or constant current operation with automatic crossover and mode indication  
Current limit  
Front and rear outputs standard  
LabVIEW® and LabWindows® drivers  
Remote sense  
CE, CSA approvals



The HPD Series stands for „High Power Density“, providing 300 watts in a quarter-rack wide chassis.

The HPD uses switch-mode technology combined with linear post regulation to provide performance comparable to an all-linear design. Excellent line and load regulation is matched by low noise and good transient response.

This series is available in a single package for benchtop use.

For systems applications, multiple units can also be rack mounted in one unit configurations four up to independent 300 watt outputs. Further, the 300 watt HPD can be combined in max-and-match rack combinations with the 60 watt XT Series or 500W XPD Series units.

### General Specifications (Specifications are subject to change without notice.)

Operational AC Input Voltage	Single unit: 200 - 250 VAC at 6 amps or 115 VAC $\pm 10\%$ 47 - 63 Hz
Switching Frequency	Nominal 100 kHz
Voltage Mode Transient Response Time	<500 $\mu$ s recovery to 50 mV band for $\pm 50\%$ load change in the range of 25% to 100% of the rated load
Operating Ambient Temperature	0 to 30° C for full rated output. Above 30° C, derate output linearly to zero at 70° C.
Storage Temperature Range	-55 to 85° C
Humidity Range	0 to 80% RH, non-condensing
Front Panel Voltage and Current Control	10-turn voltage and 1-turn current potentiometers
Front Panel Voltage Control Resolution	0.02% of maximum voltage
AC Input Connector Type	IEC 320 connector
Weight (one unit)	Approximately 3.5 kg
Approvals	CE marked units meet EN61010-1, EN61000-6-2 and EN61000-6-4, CSA certified
Protections	overvoltage protection, overtemperature protection
Analog Programming (With optional APG interface installed.)	
Remote On/Off and Interlock	2-25 V signal or TTL-compatible input, selectable logic
Remote Analog Programming Option	0-10 VDC for 0-100% of rated voltage or current $\pm 1.0\%$ , 0-10 k $\Omega$ for 0-100% of rated voltage or current $\pm 1.0\%$
Remote Monitoring	0-10 VDC for 0-100% of rated voltage or current $\pm 1.0\%$
Over Voltage Protection Trip Range	3 V to full output +10%
Tracking Accuracy	$\pm 1\%$ for series operation

Contact Zentro-Elektrik for complete product specifications.

## Electrical Specifications<sup>1</sup> (Specifications are subject to change without notice.)

Model	HPD 15-20	HPD 30-10	HPD 60-5
<b>Output Ratings:</b>			
Output Voltage	0-15 V	0-30 V	0-60 V
Output Current	0-20 A	0-10 A	0-5 A
Output Power	300 W	300 W	300 W
<b>Line Regulation:<sup>2</sup></b>			
Voltage (0.01% of Vmax + 2 mV)	3.5 mV	5 mV	8 mV
Current (0.01% of Imax + 1 mA)	3 mA	2 mA	1.5 mA
<b>Load Regulation:<sup>3</sup></b>			
Voltage (0.01% of Vmax + 2 mV)	3.5 mV	5 mV	8 mV
Current (0.01% of Imax + 1 mA)	3 mA	2 mA	1.5 mA
<b>Meter Accuracy:</b>			
Voltage (1% of Vmax + 1 count)	0.25 V	0.4 V	0.7 V
Current (1% of Imax + 1 count)	0.3 A	0.2 A	0.06 A
<b>Output Noise &amp; Ripple:</b>			
rms	5 mV	5 mV	5 mV
p-p (0-20 MHz)	100 mV	100 mV	100 mV
<b>Drift (8 hours):<sup>4</sup></b>			
Voltage (0.02% of Vmax)	3 mV	6 mV	12 mV
Current (0.03% of Imax)	6 mA	3 mA	1.5 mA
<b>Temperature Coefficient:<sup>5</sup></b>			
Voltage (0.015% of Vmax/° C)	2.25 mV	4.5 mV	9 mV
Current (0.02% of Imax/° C)	4 mA	2 mA	1 mA

<sup>1</sup> Specifications indicate typical performance at 25° C ± 5° C, nominal line input of 120 VAC.

<sup>2</sup> For input voltage variation over the AC input voltage range, with constant rated load.

<sup>3</sup> For 0-100% load variation, with constant nominal line voltage.

<sup>4</sup> Maximum drift over 8 hours with constant line, load, and temperature, after 60-minute warm-up.

<sup>5</sup> Change in output per ° C change in ambient temperature, with constant line and load.

## Options

GPB-HPD	IEEE 488.2(GPIB) Interface card (16-bit)
RS-232-HPD	RS-232 Interface card (16-bit)
APG-HPD	Analog programming interface card
M2	200-250 VAC Input (50/60 Hz)
M2S	Switch selectable input 110 VAC or 220 VAC
M11	10-turn current potentiometer
M13A	Locking knobs for front panel controls
RM-XHS	19-inch rack mount kit for up to 4-HPD, XPD or XT power supplies

Contact Zentro-Elektrik for custom voltage and current combinations, dual configurations, and other options.