

# SYRINGE PUMPS

## PHD ULTRA™ 4400

SYRINGE PUMPS PHD ULTRA™ 4400



PHD ULTRA™ 4400  
Stand-Alone

### KEY FEATURES

- Delivers >200 lbs (91 kg) linear pumping force across a wide flow rate range
- Accurate and smooth flow
- Ideally suited for stainless steel syringes
- Easy-to-use touch screen and icon interface
- Program simple to complex Methods without a PC
- Legendary reliability – 2 year warranty

### APPLICATIONS

- High Pressure Injections
- Drug Delivery
- Pumping Highly Corrosive Fluids
- Injecting into High Pressure Reaction Vessels
- Remote pumping of Hazardous Material

The PHD ULTRA™ 4400 is a single syringe infusion/withdrawal programmable syringe pump. This pump allows you to create, save and run simple to complex Methods without a PC or just enter a flow rate and run. The flow rate range is 3.06 pl/min to 216.0 ml/min with 200 lbs of adjustable force across the entire flow rate range. For more information on the PHD ULTRA™ 4400 including features and programming see page 26.

The PHD ULTRA™ 4400 pump is ideal for high pressure applications. This pump is available in two configurations: stand-alone and remote. The remote model consists of a control unit, a syringe pumping mechanism and a 5 foot cable to connect the two units.

The PHD ULTRA™ 4400 has a footswitch input, RS-232 and USB serial ports for computer control, RS-485 ports for daisy chaining pumps and Digital I/O for external control via an independent computer or device. There is also an option for daisy chaining pumps through the RS-232 (RJ-11) ports. This option must be ordered at the time the pump is ordered. See page 26 for more information on connectivity.

Specifications	PHD ULTRA™ 4400 Stand-Alone	PHD ULTRA™ 4400 Remote
<b>TYPE</b>	Microprocessor single syringe infusion/withdrawal programmable	Microprocessor single syringe infusion/withdrawal programmable
<b>ACCURACY</b>	±0.35%	±0.35%
<b>REPRODUCIBILITY</b>	±0.05%	±0.05%
<b>SYRINGES</b>		
<b>Type</b>	Glass, Plastic or Stainless Steel	
<b>Size Minimum</b>	0.5 µl	0.5 µl
<b>Size Maximum</b>	140 ml	140 ml
<b>FLOW RATE:</b>		
<b>Minimum</b>	3.06 pl/min	3.06 pl/min
<b>Maximum</b>	216.0 ml/min	216.0 ml/min
<b>DISPLAY</b>	4.3" WQVGA TFT color display with touchscreen	
<b>CONNECTORS:</b>		
<b>RS-232</b>	9-pin D-Sub Connector	9-pin D-Sub Connector
<b>RS-485</b>	IEEE-1394, 6 pos	IEEE-1394, 6 pos
<b>USB</b>	Type B	Type B
<b>I/O &amp; TTL</b>	15-pin D-Sub Connector	15-pin D-Sub Connector
<b>Footswitch</b>	Phono jack	Phono jack
<b>AVERAGE LINEAR FORCE</b>	91 kg (200 lbs) @ 100% Force Selection	91 kg (200 lbs) @ 100% Force Selection
<b>STEP RESOLUTION</b>	0.164 µm/µstep	0.164 µm/µstep
<b>VOLTAGE RANGE</b>	Universal input 100/240 VAC, 50/60 Hz, 50 W, 0.5 A fuse	Universal input 100/240 VAC, 50/60 Hz, 75 W, 0.5 A fuse
<b>DIMENSIONS, H x W x D:</b>		
<b>Control Box</b>	30.48 x 21.59 x 18.4 cm (12 x 8.5 x 7.25 in)	30.5 x 21.6 x 10.8 cm (12 x 8.5 x 4.25 in)
<b>Remote Box</b>	N/A	27.9 x 13.5 x 18.4 cm (11.0 x 5.3 x 7.25 in)
<b>WEIGHT</b>	5.5 kg (12.1 lbs)	6.4 kg (14.1 lbs)
<b>REGULATORY CERTIFICATIONS</b>	CE, ETL (UL, CSA), WEEE, EU RoHS and CB Scheme	
<b>Order #</b>	<b>PC2 70-3010</b>	<b>PC2 70-3310</b>

### Accessories

<b>PC2 70-4000</b>	RS-485 Cable for Pump-to-Pump Communication, 0.5 m (1.6 ft)
<b>PC2 70-4021</b>	RS-485 Cable for Pump-to-Pump Communication, 1 m (3.3 ft)
<b>PC2 70-4001</b>	RS-485 Cable for Pump-to-Pump Communication, 2 m (6.6 ft)
<b>PC2 70-4002</b>	USB Cable for PC-to-Pump Communication, 2 m (6.6 ft)
<b>PC2 70-4003</b>	USB Cable for PC-to-Pump Communication, 5 m (16.4 ft)
<b>PC2 70-4004</b>	RS-232 Cable for PC-to-Pump Communication, 9-pin D-sub, 2 m (6.6 ft)
<b>PC2 70-4020</b>	RS-485 Cable (IEEE-1394) Remote Extension Cable, 9.1 m (30 ft)
<b>PC2 70-4005</b>	Adapter, PHD Digital I/O
<b>PC2 72-4006</b>	Adapter, D-sub 15 to Term, Blk
<b>PC2 70-3315</b>	Footswitch (with Phono Plug)
<b>PC2 55-7760</b>	Cable Assy, Daisy-chain, Legacy RS-232 RJ-11, 0.6 m (2 ft)
<b>PC2 72-2478</b>	Cable Assy, Daisy-chain, Legacy RS-232 RJ-11, 2.1 m (7 ft)