

Appendix A: Hardware Specifications and Software System Requirements

Software requirements for the ControlMate software provided with the Hydra II system are:

ControlMate™ System Requirements
133MHz, 32Mb RAM
Microsoft Windows 95 or later operating system
5Mb file size
RS-232 communication port

The optional ControlMate OLE software component provides application developers with an ActiveX COM automation interface for the ControlMate device-control software.

Table A-1, on the next page, presents hardware specifications for the Hydra II base-unit models and optional factory-installed accessories for those models.

Table A-1: Hardware Specifications for Hydra II Microdispenser Systems (page 1 of 3)

Model*/Option	Min. Rec. Disp. Vol.	Max. Rec. Disp. Vol.	Syringe Type**	Electrical Service	Dimensions (HxWxD)	Weight	Footprint
Hydra II 96 base unit, stainless-steel needles				100-240VAC	21x10.5x14in 53x27x35.5cm	38lb 17.25kg	147in ² 951cm ²
100µL	100mL	100µL	1	Cat. # 109610			
290µL	0.5µL	290µL	1	Cat. # 109620			
580µL	1µL	580µL	1	Cat. # 109630			
1mL	5µL	1mL	2	Cat. # 109640			
Hydra II 96 base unit, resin/bead (R/B) syringes/needles				100-240VAC	21x10.5x14in 53x27x35.5cm	38lb 17.25kg	147in ² 951cm ²
290µL	1µL	290µL	3	Cat. # 109625			
580µL	2µL	580µL	3	Cat. # 109635			
1mL	5µL	1mL	3	Cat. # 109645			
Hydra II 96 base unit, DuraFlex needles				100-240VAC	21x10.5x14in 53x27x35.5cm	38lb 17.25kg	147in ² 951cm ²
100µL	100mL	100µL	4	Cat. # 109611			
290µL	0.5µL	290µL	4	Cat. # 109621			
580µL	1µL	580µL	4	Cat. # 109631			
1mL	5µL	1mL	5	Cat. # 109641			

* All base units include ControlMate software.

** Syringe Types: Types 1 through 6 are gas-tight and have stainless-steel plungers. Teflon tips are removable and replaceable.

- 1 – Stainless-steel needles with Teflon coating; Teflon tip on plunger
- 2 – Stainless-steel needles with Teflon coating; conical Teflon tip and seal on plunger
- 3 – Stainless-steel needles, wide-bore, with Teflon coating; conical Teflon tip and seal on plunger
- 4 – DuraFlex needles; Teflon tip on plunger
- 5 – DuraFlex needles; conical Teflon tip and seal on plunger
- 6 – Non-contact single-channel dispenser, 500µL total volume

*** Dimensions, Weight, and Footprint for Plate Stage include those for Hydra II base unit.

Table A-1: Hardware Specifications for Hydra II Microdispenser Systems (page 2 of 3)

Model*/Option	Min. Rec. Disp. Vol.	Max. Rec. Disp. Vol.	Syringe Type**	Electrical Service/Catalog Number	Dimensions (HxWxD)	Weight	Footprint
Hydra II 384 base unit, stainless-steel needles 100µL	100mL	100µL	1	100–240VAC Cat. # 138410	21x10.5x14in 53x27x35.5cm	38lb 17.25kg	147in ² 951cm ²
Hydra II 384 base unit, DuraFlex needles 100µL	100mL	100µL	4	100–240VAC Cat. # 138411	21x10.5x14in 53x27x35.5cm	38lb 17.25kg	147in ² 951cm ²
Automatic Syringe Wash Module option (flow rate = ~12mL/sec)	N.A.	N.A.	N.A.	100-120VAC/2A Cat. # 10961AW 220-240VAC/1A Cat. # 10962AW	12.5x6x13.5in 31x15x34cm	21lb 9.8kg	81in ² 521cm ²
2-Position X/Y Plate Stage option (resolution = 5 microns)	N.A.	N.A.	N.A.	Cat. # 10961XY (w/115V Wash Module) Cat. # 10962XY (w/240V Wash Module)	21x21x21in*** 53x53x53cm	46lb*** 21kg	441in ² *** 2841cm ²

* All base units include ControlMate software.
 ** Syringe Types: Types 1 through 6 are gas-tight and have stainless-steel plungers. Teflon tips are removable and replaceable.
 1 – Stainless-steel needles with Teflon coating; Teflon tip on plunger
 2 – Stainless-steel needles with Teflon coating; conical Teflon tip and seal on plunger
 3 – Stainless-steel needles, wide-bore, with Teflon coating; conical Teflon tip and seal on plunger
 4 – DuraFlex needles; Teflon tip on plunger
 5 – DuraFlex needles; conical Teflon tip and seal on plunger
 6 – Non-contact single-channel dispenser, 500µL total volume
 *** Dimensions, Weight, and Footprint for Plate Stage include those for Hydra II base unit.

Table A-1: Hardware Specifications for Hydra II Microdispenser Systems (page 3 of 3)

Model*/Option	Min. Rec. Disp. Vol.	Max. Rec. Disp. Vol.	Syringe Type**	Electrical Service/Catalog Number	Dimensions (HxWxD)	Weight	Footprint
Plus-One Single-Channel Non-Contact Nano Volume Dispenser	N.A.	N.A.	6	Cat. # 10962P1	12.5x7.5x12.6in 32x19x32cm		1182in ² 7626cm ²
				NanoFill Fluidics Module	9x8x12.5in 23x20x32cm		900in ² 5806cm ²
				Controller Unit	14.6x6.25x6.25in 37x16x16cm		571in ² 3684cm ²
<p>* All base units include ControlMate software.</p> <p>** Syringe Types: Types 1 through 6 are gas-tight and have stainless-steel plungers. Teflon tips are removable and replaceable.</p> <p>1 – Stainless-steel needles with Teflon coating; Teflon tip on plunger</p> <p>2 – Stainless-steel needles with Teflon coating; conical Teflon tip and seal on plunger</p> <p>3 – Stainless-steel needles, wide-bore, with Teflon coating; conical Teflon tip and seal on plunger</p> <p>4 – DuraFlex needles; Teflon tip on plunger</p> <p>5 – DuraFlex needles; conical Teflon tip and seal on plunger</p> <p>6 – Non-contact single-channel dispenser, 500µL total volume</p> <p>*** Dimensions, Weight, and Footprint for Plate Stage include those for Hydra II base unit.</p>							

Appendix B: Replacement Parts and Accessories

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This appendix describes replacement parts and accessories available for the Hydra II microdispensers.

For the latest information about replacement parts and accessories and to obtain catalog numbers for those items, please refer to the Hydra information page on the ApogentDiscoveries website at <http://www.apogentdiscoveries.com/> or contact your equipment provider. See page 1-11 for contact information.

Syringe Replacement Parts

Syringe replacement parts are available for each of the Hydra II microdispenser models. See page 1-8 for information about syringe design and construction.

The following syringe replacement parts are available:

- “Replacement Tango or Hydra syringes,” which include all parts of a syringe setup—glass syringe barrel, needle, plunger, and tip
- “Replacement Tango or Hydra barrels,” which include the glass syringe barrel, the needle, and the Teflon tip, but do not include the plunger
- “Replacement Teflon tips,” which are sold in quantities of 6, 25, and 100

Syringe parts are sold by syringe size and needle type, as follows:

Table B-1: Syringe Sizes Available for Hydra II Models

Hydra II model + needle type	Syringe Sizes Available
Hydra II 96 base unit with stainless steel needles	100µL, 290µL, 580µL, 1mL
Hydra II 96 base unit with resin/bead (R/B) syringes/needles	290µL, 580µL, 1mL
Hydra II 96 base unit with DuraFlex needles 384	100µL, 290µL, 580µL, 1mL
Hydra II 384 base unit with stainless steel needles	100µL
Hydra II 384 base unit with DuraFlex needles	100µL



Note: You can upgrade your syringe setup from one type of needle to another. For example, you can replace a full array of Teflon-coated stainless steel needles with an array of DuraFlex needles. You can also replace individual syringes with another type of syringe, creating a “mixed” array.

To order syringe replacement parts, please refer to the Hydra information page on the ApogentDiscoveries website at <http://www.apogentdiscoveries.com/> or contact your equipment provider. See page 1-11 for contact information.

Replacement syringes and syringe parts are identified by replacement option—that is, “syringes,” “barrels,” or “Teflon tips.” Ordering options within those categories are listed by catalog number, description (syringe size and needle type), and unit type.

Example of Ordering Information for Syringe Replacements

Replacement Tango or Hydra syringes. Includes barrel, needle, and plunger with Teflon tip.		
1029-44-0	290µL with Teflon-coated, stainless steel needle	Each
1029-44-5	290µL with DuraFlex needle	Each

Syringe Refurbishment

Syringe refurbishment is available for purchase for each of the Hydra II microdispenser models. “Refurbishment” includes cleaning of the syringe barrel and plunger and replacement of the needle and tip. The service is available for all syringe types.



Note: As part of refurbishment, you can upgrade your syringe setup from one type of needle to another; for example, you can replace a full array of Teflon-coated, stainless steel needles with an array of DuraFlex needles. You can also have individual

syringes replaced with another type of syringe, creating a “mixed” array on the microdispenser.

To order syringe refurbishment, please refer to the Hydra information page on the ApogentDiscoveries website at <http://www.apogentdiscoveries.com/> or contact your equipment provider. See page 1-11 for contact information.

Ordering options are listed by catalog number, description (including syringe array, syringe size, and needle type), and unit type.

Example of Ordering Information for Syringe Refurbishment

Factory Refurbishment of Tango or Hydra Syringes		
1029-51-3	Tango or Hydra-96 and Tango or Hydra-384 100µL syringe with Teflon-coated stainless steel needle	Each
1029-51-4	Tango or Hydra-96 and Tango or Hydra-384 100µL syringe with DuraFlex needle	Each

Packaging-Materials Replacement

If you need to return merchandise to ApogentDiscoveries, you must return it in the original shipping containers and packaging. If you do not have the original shipping containers and packaging, you must purchase the packaging and pack the merchandise in it.

Caution: To return the microdispenser or microdispenser parts to ApogentDiscoveries, you must obtain return approval and authorization and provide information about how the instrument has been used. See page xi for complete instructions.



To order replacement packaging, please refer to the Hydra information page on the ApogentDiscoveries website at <http://www.apogentdiscoveries.com/> or contact your equipment provider. See page 1-11 for contact information.

Hydra II Microdispenser Automation Upgrades and Accessories

The following automation upgrades and accessories are available for the Hydra II microdispenser models covered in this manual. For the very latest product information, please refer to the Hydra information page on the ApogentDiscoveries website at <http://www.apogentdiscoveries.com/> or contact your equipment provider. See page 1-11 for contact information.

Table B-2: Factory-Installed Hydra II Optional Automation Accessories

Cat. #	Description	Unit
Automatic Syringe Wash Module		
10961AW	Auto Wash for Hydra II 115V. Factory Installed Option Only	Each
10962AW	Auto Wash for Hydra II 240V. Factory Installed Option Only	Each
2-Position X/Y Plate Stage (includes laptop PC and Auto Syringe Wash Module)		
10961XY	Two-position X/Y Plate Stage with 115V Wash Module. Factory Installed Option Only.	Each
10962XY	Two-position X/Y Plate Stage with 240V Wash Module. Factory Installed Option Only.	Each
Plus-One, Single-Channel Non-Contact Nano Volume Dispenser		
10962P1	Single-channel nano-volume dispenser, complete with single-needle wash. Requires purchase of X/Y Plate Stage accessory (10962XY). Factory Installed Option Only.	Each

Table B-3: Accessories for All Hydra II Microdispensers (page 1 of 2)

Cat. #	Description	Unit
1029-43-4	Pump Tubing Replacement Kit (for the Automated Syringe Wash System) [standard tubing]	Each
1029-43-4X	Pump Tubing Replacement Kit (for the Automated Syringe Wash System) [DMSO-resistant tubing]	Each
1029-49-0	Syringe needle cleaning wires (for standard 290 μ L, 580 μ L, 1mL syringes)	10/pk
1029-49-1	Syringe needle cleaning wires (for standard 100 μ L syringes)	10/pk
1029-49-2	Syringe needle cleaning wires (for R/B series syringes)	10/pk
1029-34-0	Isobar Surge Suppressor, 120V	Each
1029-41-0	Hydra-96 Plate Positioner for CyclePlate-384 and -192 ET PCR plates [for Hydra II 96 base unit and Hydra II 96 w/Auto Syringe Wash Module only]	Each
1029-41-5	Hydra-96 Plate Positioner for Standard 384 Well Plates [for Hydra II 96 base unit and Hydra II 96 w/Auto Syringe Wash Module only]	Each
1029-42-0	Dot blot vacuum manifold	Each

Table B-3: Accessories for All Hydra II Microdispensers (page 2 of 2)

Cat. #	Description	Unit
1029-41-1	CyclePlate-384 plate adaptor for Standard 384 manual positioner (1029-41-5)	Each
1029-41-2	CyclePlate-384DW Holder for Hydra Microdispensers and other dispensers	Each
1029-43-8	Connector Tubing Replacement Kit: Includes connector tubing between 3-pump module, wash reservoir and all connector fittings.	Each
1029-46-0	Whatman 1mm filter paper	100/pk
1029-66-0	Adapter for Greiner Bio-One CrystalQuick™ plate, left droplet well, aluminum	Each
1029-66-1	Adapter for Greiner Bio-One CrystalQuick™ plate, center droplet well, aluminum	Each
1029-66-2	Adapter for Greiner Bio-One CrystalQuick™ plate, right droplet well, aluminum	Each
1029-66-3	Adapter for Greiner Bio-One CrystalQuick™ plate, reservoir well, aluminum	Each

Table B-4: Hydra Reservoirs

Cat. #	Description	Unit
1064-05-5	V-Groove low volume reagent reservoir, polypropylene (nonsterile) [for Hydra II 96 only]	10/case
1064-15-5	V-Groove low volume reagent reservoir, polypropylene (sterile) [for Hydra II 96 only]	10/case
1064-05-1	Solution trays (polypropylene)	50
1064-05-2	Solution trays (polystyrene)	50
1064-05-3	Solution trays (polypropylene)	25
1064-05-4	Solution trays (polystyrene)	25
Various—see price list.	CyclePlate PCR plates—see “PCR Plates” in price list.	Various

