




FreeZone® Freeze Dry Systems Selection Guide

	System Capacity	Style	Application Requirements and User Preferences	-50° C (-58° F) Collector/ Refrigeration <i>For aqueous samples Optional PTFE-coated collector available</i>	-84° C (-119° F) Cascade Collector/ Refrigeration <i>For samples with low eutectic points, including acetonitrile Optional PTFE-coated collector available on some models</i>
	1 Liter <i>See pages 6-7</i>	Benchtop	<ul style="list-style-type: none"> • Light sample loads • Limited floor space • Economical 	<ul style="list-style-type: none"> • 1/3 hp refrigeration system • Removes 1 liter of water in 24 hours* 	
	2.5 Liters <i>See pages 8-11</i>	Benchtop	<ul style="list-style-type: none"> • Light sample loads • Limited floor space 	<ul style="list-style-type: none"> • 1/3 hp refrigeration system • Removes 2 liters of water in 24 hours* 	<ul style="list-style-type: none"> • Two 1/3 hp refrigeration systems • Removes 2.2 liters of water in 24 hours*
	2.5 Liters <i>See pages 12-13</i>	Console	<ul style="list-style-type: none"> • Light sample loads • Low eutectic point samples 		<ul style="list-style-type: none"> • Two 1/3 hp refrigeration systems • Removes 2.2 liters of water in 24 hours*
	2.5 Liters <i>See pages 42-45</i>	Benchtop Triad™	<ul style="list-style-type: none"> • Light sample loads • Low eutectic point samples • Stoppers samples in bottles under vacuum 		<ul style="list-style-type: none"> • Two 1/3 hp refrigeration systems • Removes 1.8 liters of water in 24 hours*
	4.5 Liters <i>See pages 14-15, 18-19 and 22-23</i>	Benchtop	<ul style="list-style-type: none"> • Light to moderate sample loads • Limited floor space 	<ul style="list-style-type: none"> • 1/3 hp refrigeration system • Removes over 2 liters of water in 24 hours* 	<ul style="list-style-type: none"> • Two 1/3 hp refrigeration systems • Removes 4 liters of water in 24 hours*
	4.5 Liters <i>See pages 16-17 and 20-21</i>	Console	<ul style="list-style-type: none"> • Light to moderate sample loads 	<ul style="list-style-type: none"> • 1/3 hp refrigeration system • Removes over 2 liters of water in 24 hours* 	<ul style="list-style-type: none"> • Two 1/3 hp refrigeration systems • Removes 4 liters of water in 24 hours*
	6 Liters <i>See pages 24-25</i>	Benchtop	<ul style="list-style-type: none"> • Moderate sample loads • Limited floor space • Available with Stoppering Tray Dryer 	<ul style="list-style-type: none"> • 3/4 hp refrigeration system • Removes 4 liters of water in 24 hours* 	
	6 Liters <i>See pages 26-27 and 30-31</i>	Console	<ul style="list-style-type: none"> • Moderate sample loads • Broadest range of options • Available with Stoppering Tray Dryer 	<ul style="list-style-type: none"> • 3/4 hp refrigeration system • Removes 4 liters of water in 24 hours* 	<ul style="list-style-type: none"> • Two 1/3 hp refrigeration systems • Removes 4 liters of water in 24 hours*
	12 Liters <i>See pages 26, 28, 30 and 32</i>	Console	<ul style="list-style-type: none"> • Sample loads of varying volumes • Available with Stoppering Tray Dryer 	<ul style="list-style-type: none"> • 1 hp refrigeration system • Removes 8 liters of water in 24 hours* 	<ul style="list-style-type: none"> • Two 3/4 hp refrigeration systems • Removes up to 4 liters of water in 24 hours*
	18 Liters <i>See pages 26 and 29</i>	Console	<ul style="list-style-type: none"> • Large volumes of material or numerous sample batches 	<ul style="list-style-type: none"> • 1-1/2 hp refrigeration system • Removes 10 liters of water in 24 hours* 	

*Freeze drying rate will be lower for samples other than shell-frozen plain water.



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BUILT-IN OPTIONS

<p>-105° C (-157° F)** Cascade Collector/ Refrigeration</p> <p><i>For samples with very low eutectic points including acetonitrile and dilute methanol and ethanol</i></p>	<p>Purge Valve, Mini Vacuum Drying Chamber & Shell Freezer</p> <p><i>Available on some models</i></p>	<p>Drying Accessory</p> <p><i>Tray Dryers, Drying Chambers and Manifolds that accommodate samples in containers or in bulk</i></p>	<p>Vacuum Pump</p> <p><i>See pages 57-59</i></p>	<p>Glassware</p> <p><i>See pages 60-63</i></p>
		<ul style="list-style-type: none"> • REQUIRED— See drying accessories on pages 52-54. 	<ul style="list-style-type: none"> • REQUIRED— 86 liters/minute or larger displacement 	<ul style="list-style-type: none"> • REQUIRED— unless bulk drying
		<ul style="list-style-type: none"> • REQUIRED— See drying accessories on pages 52-54. 	<ul style="list-style-type: none"> • REQUIRED— 86 liters/minute or larger displacement 	<ul style="list-style-type: none"> • REQUIRED— unless bulk drying
		<ul style="list-style-type: none"> • REQUIRED— See drying accessories on pages 52-54. 	<ul style="list-style-type: none"> • REQUIRED— 86 liters/minute or larger displacement 	<ul style="list-style-type: none"> • REQUIRED— unless bulk drying
		<ul style="list-style-type: none"> • Permanently installed • One stoppering shelf • 4 ports 	<ul style="list-style-type: none"> • REQUIRED— 98 liters/minute or larger displacement† 	<ul style="list-style-type: none"> • REQUIRED— unless bulk drying
<ul style="list-style-type: none"> • Two 1/3 hp refrigeration systems • Removes 2.5 liters of water in 24 hours* 		<ul style="list-style-type: none"> • Permanently installed or included† • 10 ports or 12 ports† 	<ul style="list-style-type: none"> • REQUIRED— 86 liters/minute or larger displacement 	<ul style="list-style-type: none"> • REQUIRED— unless bulk drying
		<ul style="list-style-type: none"> • Permanently installed or included† • 10 ports or 12 ports† 	<ul style="list-style-type: none"> • REQUIRED— 86 liters/minute or larger displacement 	<ul style="list-style-type: none"> • REQUIRED— unless bulk drying
		<ul style="list-style-type: none"> • REQUIRED— See drying accessories on pages 46-54. 	<ul style="list-style-type: none"> • REQUIRED— 98 liters/minute or larger displacement†† 	<ul style="list-style-type: none"> • REQUIRED— unless bulk drying
	<ul style="list-style-type: none"> • Purge Valve available • Mini Vacuum Drying Chamber available • Shell Freezer available with -50° C models 	<ul style="list-style-type: none"> • REQUIRED— See drying accessories on pages 46-54. 	<ul style="list-style-type: none"> • REQUIRED— 98 liters/minute or larger displacement†† 	<ul style="list-style-type: none"> • REQUIRED— unless bulk drying
	<ul style="list-style-type: none"> • Purge Valve available • Mini Vacuum Drying Chamber available 	<ul style="list-style-type: none"> • REQUIRED— See drying accessories on pages 46-54. 	<ul style="list-style-type: none"> • REQUIRED— 98 liters/minute or larger displacement†† 	<ul style="list-style-type: none"> • REQUIRED— unless bulk drying
	<ul style="list-style-type: none"> • Purge Valve available • Mini Vacuum Drying Chamber available 	<ul style="list-style-type: none"> • REQUIRED— See drying accessories on pages 46-54. 	<ul style="list-style-type: none"> • REQUIRED— 98 liters/minute or larger displacement†† 	<ul style="list-style-type: none"> • REQUIRED— unless bulk drying

* Freeze drying rate will be lower for samples other than shell-frozen plain water.

** -105° C (-157° F) at 60 Hz, -102° C (-152° F) at 50 Hz

† FreeZone 4.5 Liter Freeze Dry Systems include a permanently-installed 10-port drying chamber. FreeZone Plus 4.5 Liter Cascade Freeze Dry Systems and FreeZone -105° C 4.5 Liter Freeze Dry Systems include a 12-Port Drying Chamber 10-273-19, which requires attachment.

†† 144 liters/minute displacement is recommended.