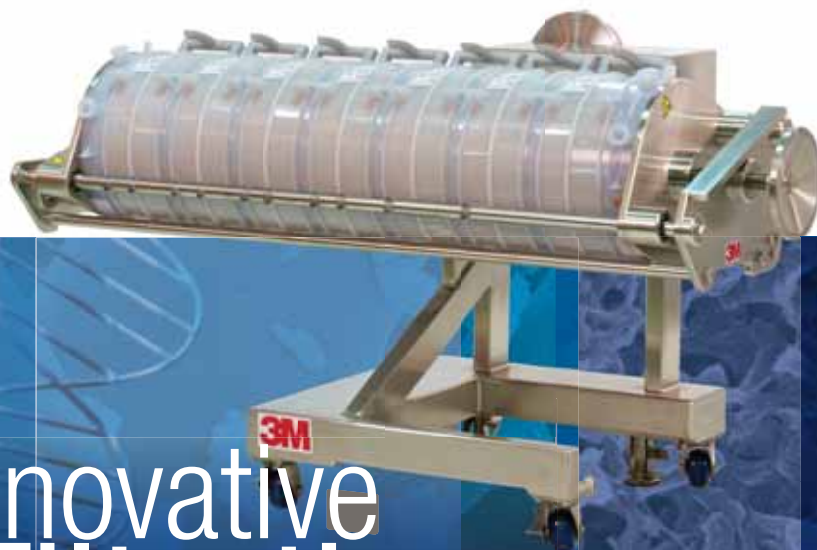


Zeta Plus™ Single-Use Depth Filtration Product Portfolio



Innovative
Filtration

Fast. Easy. Clean.

LENNTECH

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3M



Zeta Plus™ Encapsulated System... The System of Choice for Single-Use Depth Filtration

Features & Benefits

Ergonomically Designed Holder System:

Large holders (Model# 16EZB and #16EYC [not shown]) can be pivoted between horizontal and vertical positions.

- Enables loading and unloading at waist height.
- Minimal fluid spills when handling spent capsules.
- Single or two-stage depth filtration within one filter holder.

Vertical flow path.

- Full utilization of the filter media.
- Small footprint during filtration.



Model# 16EZB

Innovative Capsule/Manifold Design:

Translucent plastic shell (Standard Capsules).

- Easy detection of the liquid level inside, providing real time monitoring of the filtration process.

Solid core design with fully encapsulated shell.

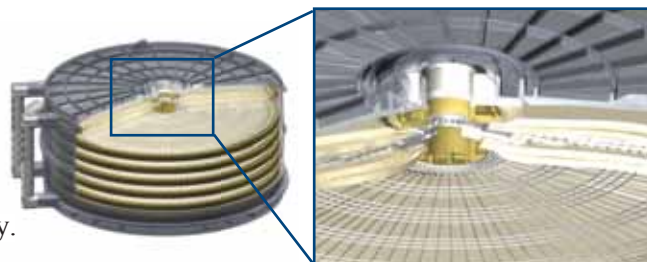
- Eliminates the need for a stainless steel housing and the cleaning step after filtration.
- Low hold-up volume.

Self guiding locking mechanism.

- Fast, reliable and robust capsule-to-capsule connectivity.

Lenticular style capsule design.

- Linear scalability from small to large systems.
- Consistency between single-use and conventional depth filtration.



Zeta Plus™ filter media:

- Both double layer and single layer Zeta Plus filter media are available.
- Superior performance in throughput and filtration efficiency.



**Zeta Plus™ Encapsulated
Standard Capsule Offering
With Polycarbonate Shells**

The Zeta Plus™ Encapsulated System is a single-use depth filtration system designed for the bioprocessing industry where upstream cell culture clarification or downstream impurity removal is required. The Zeta Plus Encapsulated System consists of three product lines: a small system that is ideal for lab scale production or scale-up studies, and two larger systems that are designed for production scale biomanufacturing. Each system is comprised of a filter holder, top and bottom manifolds, and the required number of capsules.



**Zeta Plus™ Encapsulated Capsule Offering
With Alkaline Resistant*
Polyphenylene / Polystyrene Shells**

The Zeta Plus Encapsulated Systems for production scale biomanufacturing feature an ergonomically designed large holder (Models# 16EZB and 16EZC) that can be pivoted between horizontal and vertical positions, allowing for convenient loading and unloading, minimal footprint during filtration, minimal fluid spills during unloading, and full utilization of the filter media.

The capsule design features a translucent plastic shell (standard capsules) for easy liquid level detection; a self guiding locking mechanism for fast and robust capsule-to-capsule connection; and the industry leading Zeta Plus depth filter media that provides superior filtration performance.



Zeta Plus™ Cartridges and Capsule Family



**Self Guiding Locking Mechanism Enables
Fast And Robust
Capsule-To-Capsule Connection**

* Based on testing with 1M NaOH and 5% NaClO (Bleach).
See Chemical Compatibility Guide (70-0202-2023-5/LITPHG03) for more information.



High Performance filter media

The Zeta Plus™ Encapsulated System utilizes the industry leading Zeta Plus depth filter media, including the double layer Zeta Plus EXT Series filter media and many popular single layer Zeta Plus filter media options including SP media and ZA media grades. The Zeta Plus EXT Series is a family of advanced dual zone depth filters designed to provide optimal clarification of bioprocess and biological fluids. Most Zeta Plus products using EXT Series filter media consist of two distinct layers, or “zones” of filter media with the upstream zone more open than the downstream one. This structure enhances the contaminant holding capacity of the filter media, reduces premature plugging and helps extend service life. All Zeta Plus EXT filter media grades are available in single-use format including a special grade (DELI08A) that is designed for lipid removal.

Applications

- Clarification of mammalian cell culture harvest.
- Enhanced protection of downstream processes.
- Clarification of bacteria, yeast and insect cell lysates.
- Host Cell Proteins (HCP) removal.
- Viruses and DNA reduction.
- Protein aggregates removal.
- Endotoxin removal.
- Anti-foaming agents removal.

Table 1a. Recommended Operating Parameters

	Zeta Plus™ Encapsulated System	Zeta Plus™ Scale-Up Capsules
Maximum Operating Pressure		
Inlet Pressure	3.4 bar (50 psi)	3.1 bar (45 psi)
Differential Pressure	2.4 bar (35 psi)	35 psi (2.4 bar)
Maximum Operating Temperature	40°C (104°F)	
Recommended Pre-use Rinse	54 L/m ² (1.3 gal/ft ²)	

The primary application for the Zeta Plus Encapsulated System is cell culture clarification after fermentation. The System can be employed alone, or in combination with centrifugation or Tangential Flow Filtration (TFF). An alternative application for the Zeta Plus Encapsulated System is downstream impurity removal. Taking advantage of its positive charge capacity, Zeta Plus filter media has been shown to be effective in removing contaminants such as host cell proteins (HCP), viruses, DNA, protein aggregates, and endotoxins.

In monoclonal antibody production, Zeta Plus filter media is increasingly being used as a polishing step after the Protein A column capture step, replacing traditional anion exchange chromatography.

Ergonomically Designed Filter Holders

Traditional depth filtration systems utilize lenticular style cartridge filters and a vertical filtration flow path to allow easy access to process liquids and efficient utilization of filter media. However, stacking cartridges from bottom to top can be cumbersome and dismantling the spent cartridges is often labor intensive. Furthermore, fluid spills during the unloading process could be problematic and, in some instances, might expose the operators to the process fluids.



Figure 1. Zeta Plus™ Encapsulated System



EZ16A



EZ16B



EZ16C

Recognizing the need for a depth filtration system that is fast, easy and clean, 3M designed filter holders (Model# 16EZB and #16EYC) that can be pivoted between the horizontal position for loading and unloading the capsules and manifolds, and the vertical position for filtration. Allowing loading and unloading at waist height eliminates the need for operators to lift capsules above their heads and reduces the risk of fluid spills when handling spent capsules. The use of the vertical flow path allows for full media utilization and a small system footprint during filtration.

Small Holder (Model# 16EZA)

The small holder is available for scale-up studies and lab scale protein production. This holder can accommodate from one to four 0.23 m² capsules, or one 1.6 m² (double layer) or 2.5 m² (single layer) capsule. Either single stage or two-stage depth filtration can be performed within the same holder. The standard small holder has a built-in torque limiter that will signal the operator when the holder assembly is properly sealed. A modified version is available that is ideal for applications where autoclaving is required.

Large Holder (Model# 16EZB)

The large holder can accommodate up to 17.5 m² of single layer Zeta Plus filter media (or 11.2 m² of double layer Zeta Plus filter media), and is ideal for small to large production scale purification processes.

Multi-Round Holder (Model# 16EYC)

The Multi-Round Holder incorporates multiple carousels to allow for additional filtration area for larger scale applications. Movement of the carousel from the horizontal load position to the vertical filtration position is done via automation. The Multi-Round Holder can be adapted to meet the specific needs of large-scale biomanufacturers. For more information, please contact your 3M Purification representative.

Innovative Capsule/Manifold Design

Two capsule configurations are available for use with the Zeta Plus™ Encapsulated System. The small capsule is designed for use with the small holder in lab scale production and scale-up studies. It has 0.23 m² filtration area and it accommodates both double layer and single layer Zeta Plus filter media. The large capsule is designed for use with both the small and large holders. It accommodates 1.6 m² double layer media or 2.5 m² single layer media. The large capsule has a self guiding locking mechanism for a fast, easy, and robust capsule-to-capsule connection, and a solid core design that eliminates the need for stainless steel bands and center post. In addition, this capsule also has two handles for convenient loading and unloading, and a low capsule fill volume and post-blown down hold-up volume. The capsule plastic shells are available in two different materials for a broad range of applications. The standard capsules use polycarbonate, thus have the translucent plastic shells that enables easy liquid level detection. The alkaline resistant* capsules use polyphenylene/polystyrene, and can be used in applications where NaOH is required either before or after filtration. Correspondingly, the single use top and bottom manifolds are also available in these two materials. The manifold set ensures the entire filtration process is fast, easy, and clean. An extra pair of manifolds is required to perform two-stage filtration within one holder assembly.

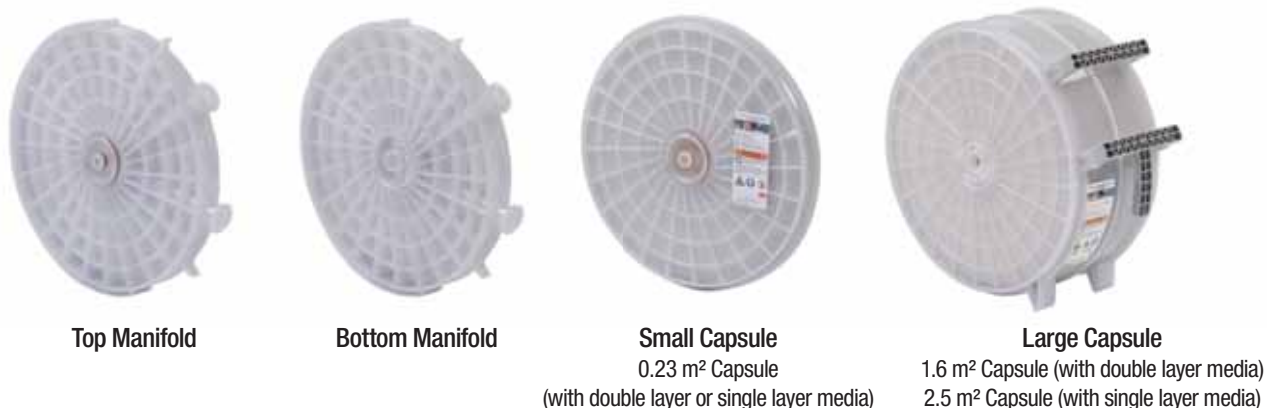
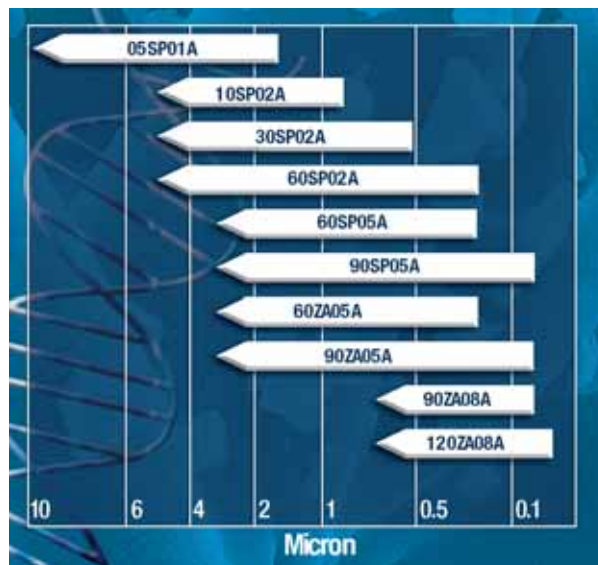


Figure 2. Nominal Retention Ratings for Zeta Plus™ EXT Grades
(For reference only. Retention ratings may vary depending on application.)



* Based on testing with 1M NaOH and 5% NaClO (Bleach).
See Chemical Compatibility Guide (70-0202-2023-5/
LITPHG03) for more information.

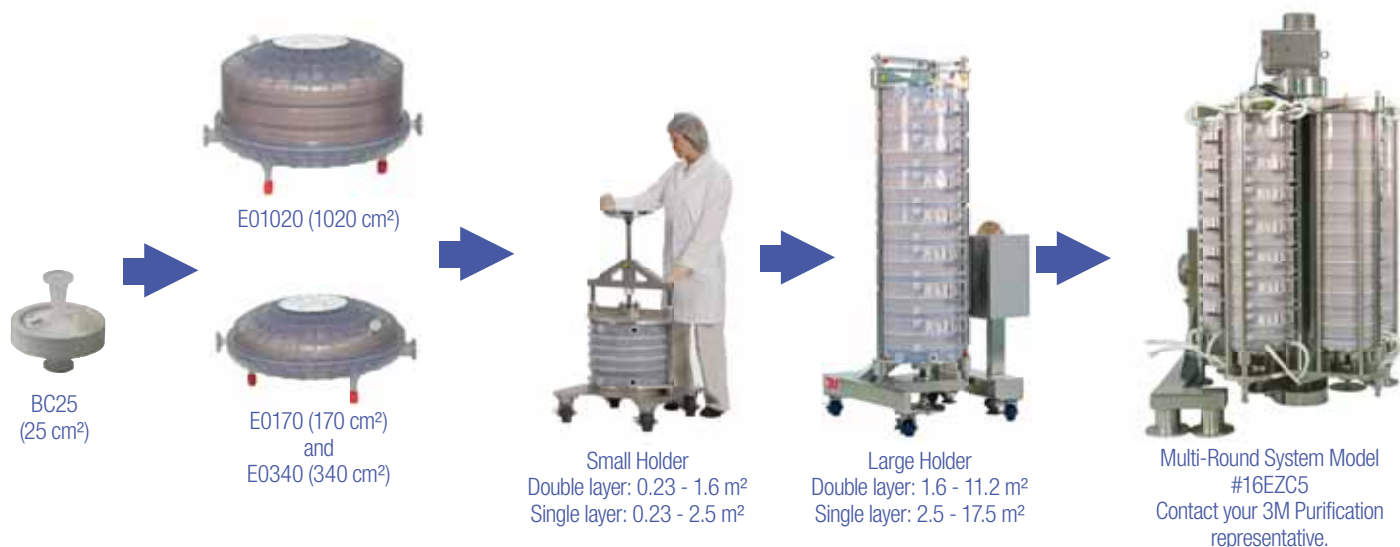


Figure 3. The Zeta Plus™ Encapsulated System Single-Use Depth Filtration Product Portfolio

Scalability

The Zeta Plus™ Encapsulated System retains the lenticular filter design and vertical flow path that are characteristics of traditional depth filtration systems, helping ensure consistent performance from bench scale to production scale, and from traditional non-disposable to disposable systems.

Four disposable scale-up devices are available for media grade selection and filter sizing. The BC25 capsule with 25 cm² filter media is ideal for media grade screening. The scale-up capsule filters with 170 cm², 340 cm² and 1020 cm² media are designed for intermediate scale-up studies and lab scale protein production. Combined with these small scale devices, the Zeta Plus Encapsulated System offers a completely single-use solution to process from 0.5 L to 2500+ L of liquid.



Figure 4. Zeta Plus™ Scale-Up Capsules



Figure 5. Large Holder with Mechanical Polish Finish



Figure 6. Multi-Round System

Table 2a. Zeta Plus™ Encapsulated System Capsule Filter and Manifold Specifications

		Configuration			
		Small Capsule		Large Capsule	
		Standard	Alkaline Resistant ¹	Standard	Alkaline Resistant ¹
Dimensions (Height x Diameter)		5.7 cm x 45.2 cm (2.2" x 17.8")		20.3 cm x 45.2 cm (8.0" x 17.8")	
Weight					
Dry		3.3 kg (7 lbs)	3.4 kg (8 lbs)	10.0 kg (22 lbs)	10.7 kg (24 lbs)
Wet (post Blow-Down)		4.4 kg (10 lbs)	4.8 kg (11 lbs)	19.3 kg (43 lbs)	19.7 kg (43 lbs)
Materials of Construction					
filter media		Filter aids, cellulose, binding resin		Filter aids, cellulose, binding resin	
Outer Shell		Polycarbonate	Polyphenylene / Polystyrene	Polycarbonate	Polyphenylene / Polystyrene
O-rings		Silicone		Silicone	
Separators, Spacers and Connectors		Polypropylene		Polypropylene	
Edge Seals		Thermoplastic Elastomer		Thermoplastic Elastomer	
Handles		N/A		Nylon	
Hold-up Volume					
Capsule Fill Volume ²		Double Layer:	~ 1.1 L (~ 0.3 gal)	~ 5.2 L (~ 1.4 gal)	
		Single Layer:	~ 2.6 L (~ 0.7 gal)	~ 4.2 L (~1 .1 gal)	
Post Blow-Down Hold-up Volume ³		< 100 mL (<0.026 gal)		< 100 mL (<0.026 gal)	
Maximum Operating Line Pressure		3.4 bar (50 psig)		3.4 bar (50 psig)	
Maximum Differential Pressure					
Forward		2.4 bar (35 psid)		2.4 bar (35 psid)	
Sterilization		1 cycle autoclave (30 mins) at 126°C (259°F)		1 cycle autoclave (30 mins) at 126°C (259°F)	
Effective Filtration Area		0.23 m² (2.4 ft²)		Double layer: 1.6 m² (17.2 ft²) Single layer: 2.5 m² (27.0 ft²)	
Top/Bottom Manifold					
Dimensions (Height x Diameter)		5.2 cm x 45.2 cm (2.0" x 17.8")		5.2 cm x 45.2 cm (2.0" x 17.8")	
Connector		1.5" Sanitary Style		1.5" Sanitary Style	
Material		Polycarbonate	Polyphenylene / Polystyrene	Polycarbonate	Polyphenylene / Polystyrene
Weight		4.5 kg (10 lbs)	4.5 kg (10 lbs)	4.5 kg (10 lbs)	4.5 kg (10 lbs)
Hold up volume		< 250 mL (<0.07 gal)		< 250 mL (<0.07 gal)	

¹ Based on testing with 1M NaOH and 5% NaClO (Bleach). See Chemical Compatibility Guide (70-0202-2023-5/LITPHG03) for more information.

² Capsule Fill Volume is defined as the volume of liquid that is required to fill the portion of the capsule outside the filter media.

³ Post Blow-Down Hold-up Volume is defined as the volume of the residual liquid after nitrogen gas blow-down.

Figure 7. Single-Use Manifolds and Capsule Filter Schematic

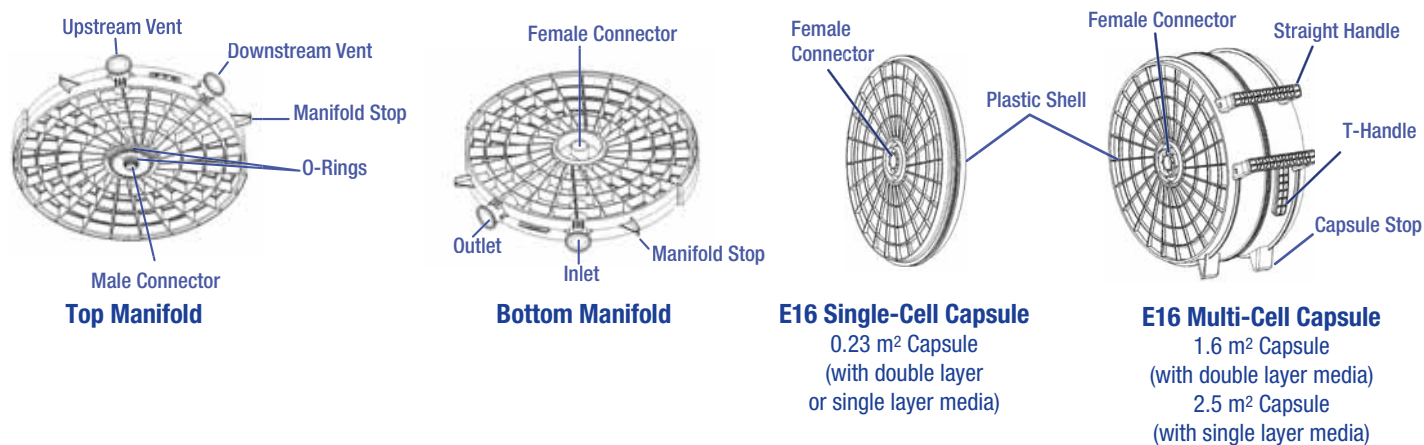




Table 2b: Zeta Plus Scale-Up Capsule Filter Specifications

	170 cm² Capsule	340 cm² Capsule	1020 cm² Capsule
Dimensions			
Height x Diameter	4.1" x 8.5" (10.3 cm x 21.6 cm)		6.0" x 8.5" (15.2 cm x 21.6 cm)
Weight			
Dry - Single Layer	1.0 kg (2.2 lb)	1.0 kg (2.1 lb)	1.4 kg (3.0 lb)
Dry - Double Layer	1.0 kg (2.2 lb)	1.0 kg (2.3 lb)	1.6 kg (3.5 lb)
Wet Post Blow-Down - Single Layer	1.1 kg (2.4 lb)	1.1 kg (2.5 lb)	1.8 kg (4.0 lb)
Wet Post Blow-Down - Double Layer	1.2 kg (2.6 lb)	1.3 kg (2.9 lb)	2.4 kg (5.2 lb)
Materials of Construction			
Capsule Shells	Polysulfone		
Separator, Spacer, Vent Cap	Polypropylene		
O-ring	Fluorocarbon		
Endcap & Edge Seals	Thermoplastic Elastomer		
Volume			
Capsule¹ Fill Volume - Single Layer	0.48 L	0.40 L	0.91 L
Capsule¹ Fill Volume - Double Layer	0.43 L	0.34 L	0.62 L
Post² Blow-Down Hold-up Volume - Single Layer	< 40 mL	< 40 mL	< 40 mL
Post² Blow-Down Hold-up Volume - Double Layer	< 40 mL	< 40 mL	< 40 mL
Miscellaneous			
Sterilization	1 cycle autoclave (30 min) @ 126°C (259°F)		
Effective Filtration Area	170 cm² (0.18 ft²)	340 cm² (0.37 ft²)	1,020 cm² (1.10 ft²)
Connector	1/2" Sanitary Style		

¹ Capsule Fill Volume is defined as the volume of liquid that is required to fill the portion of the capsule outside the filter media.

² Post Blow-Down Hold-up Volume is defined as the volume of the residual liquid after nitrogen gas blow-down.

IMPORTANT NOTICE: Always operate the filter system within the maximum differential pressure of 2.4 bar (35 psig).

Figure 8. Scale-Up Capsule Filter Schematics

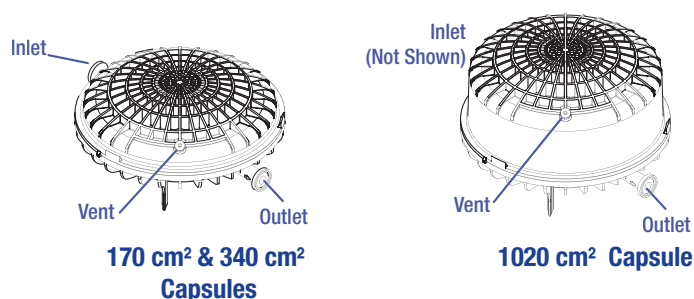


Table 3. Zeta Plus™ Encapsulated System Holder Specifications

	Holder Model		Multi-Round Holder (Model# 16E2C)
	Small Holder (Model# 16E2A)	Large Holder (Model# 16E2B)	
Maximum Operating Pressure	3.4 bar (50 psi)	3.4 bar (50 psi)	3.4 bar (50 psi)
Materials of Construction			Please contact your 3M Purification representative for details.
Frame	304 Stainless Steel	304 Stainless Steel	
End Plates	304 Stainless Steel	304 Stainless Steel	
Support Rods	440 Stainless Steel	316 Stainless Steel	
Stand	304 Stainless Steel	304 Stainless Steel	
Hand Wheels	300 Series Stainless Steel	300 Series Stainless Steel	
Gear Box	N/A	Epoxy Coated Cast Iron Cover	
Locking Bar	N/A	304 Stainless Steel	
Casters	Stainless Steel	Stainless Steel	N/A
Wheels	Phenolic	Polyurethane	
Surface Finish			Please contact your 3M Purification representative for details.
Standard	Satin Glass Bead Finish (4814901 and 4815501)	Mechanical Polish Finish (6123502)	
Special	Electropolish Finish (4814902)	N/A	

Table 4. Zeta Plus™ Encapsulated System Holder Capacity

Model	Single Stage		Two Stage	
	E16 Single-Cell Capsule	E16 Multi-Cell Capsule	E16 Single-Cell Capsule	E16 Multi-Cell Capsule
16E2A	4	1	2	NA
16E2B	NA	7	NA	6

Figure 9. Small Holder (Model# 16E2A) Dimensions

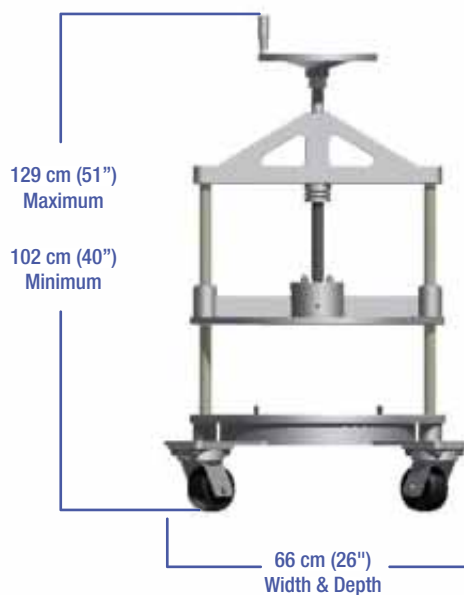
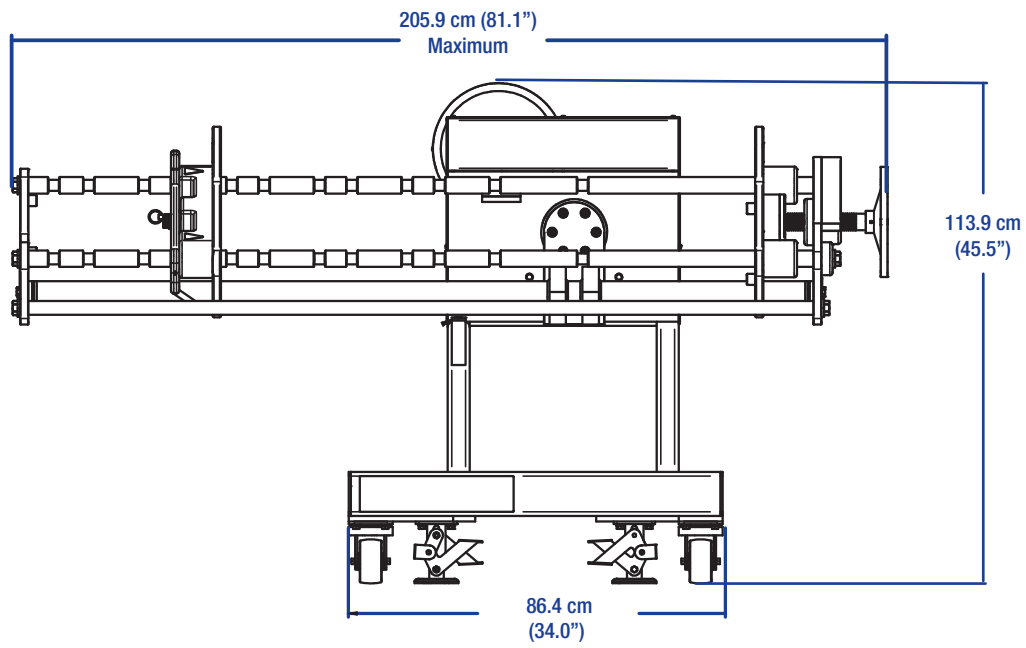
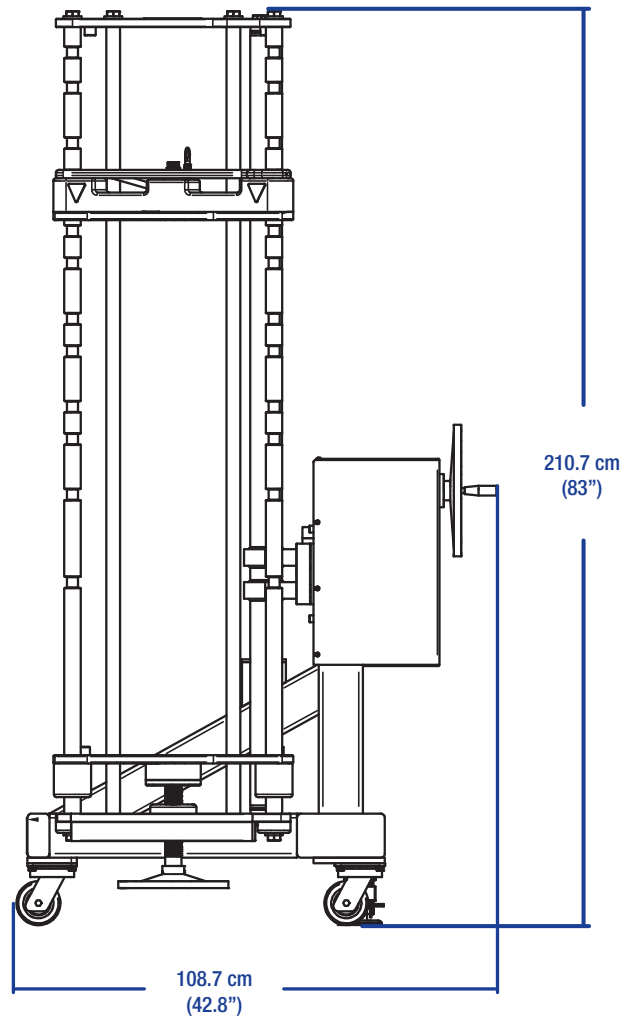


Figure 10. Large Holder (Model# 16EZB) Dimensions



Horizontal Position



Vertical Position



Ordering Guide

Capsule Filter Ordering Information - Double layer (U.S. Customers)

Catalog Number	Configuration	Number of Cells	Gasket Material	Grade			
E16	E - Standard	01 - 1 Cell	A - Silicone	05SP01A	60SP02A	120ZA05A	DELI08A
	R - Alkaline Resistant*	07 - 7 Cell		10SP01A	60SP03A	120ZA08A	
				10SP02A	60SP05A	120ZA10A	
				30SP02A	90SP05A	60ZA05A	
				30SP03A	90SP08A	90ZA05A	
				60SP01A		90ZA08A	

NOTES:

1. All Zeta Plus™ EXT media grades are available for order.
2. For further information regarding Zeta Plus EXT Series filter media, please reference 3M Purification Literature 70-0201-8862-2 (LITZPMEXT) or 70-0201-8863-0 (LITZPMEXTSP1) and Chemical Compatibility Guide 70-0202-2023-5 (LITPHG03)
3. DELI08A is a Zeta Plus EXT grade with two single layers of Delipid (DELI) media.
4. Single layer 05SP media is offered in 0.23 m² and 1.6 m² Capsule format. One part number example is E16E07A05SP.

Capsule Filter Ordering Information - Single layer (U.S. Customers)

Catalog Number	Configuration	Number of Cells	Gasket Material	Grade			
E16	E - Standard	01 - 1 Cell	A - Silicone	30LA	30LP	10SP	30ZA
	R - Alkaline Resistant*	11 - 11 Cell		50LA	50LP	30SP	60ZA
				60LA	60LP	50SP	90ZA
				90LA	90LP	60SP	DELI
						90SP	

Manifold Ordering Information

Manifold Part	3M PI Part Number	3M ID
Manifold Set (Standard)	6128901	70020256221
Manifold Set (Alkaline Resistant*)	6129001	70020262369

Filter Holder Ordering Information

Model Name	3M Catalog ID (U.S. Customers)	Description	3M ID	Model Name	3M Catalog ID (U.S. Customers)	Description	3M ID
16EZA	4814901	Standard Small Holder	70020233048	16EZB	6123502	Large Holder with Mechanical Polish Finish	70020252899
16EZA	4814902	Small Holder with Electropolish Finish	70020253889				
16EZA	4815501	Modified Small Holder Suitable for Autoclaving	70020236512				

Scale-Up Capsules - Double Layer

3M Catalog ID (U.S. Customers)	EFA cm ²	Material Code	Grade		
E	0170 0340 1020	FSA	05SP01A 10SP01A 10SP02A 30SP02A 30SP03A 60SP01A 60SP02A 60SP03A 60SP05A 90SP05A 90SP08A	60ZA05A 90ZA05A 90ZA08A 120ZA05A 120ZA08A 120ZA10A	DELI08A DELP08A

Scale-Up Capsules - Single Layer

3M Catalog ID (U.S. Customers)	EFA cm ²	Material Code	Grade			
E	0170 0340 1020	FSA	05SP 10SP 30SP 50SP 60SP 90SP	30LA 50LA 60LA 90LA	30LP 50LP 60LP 90LP	30ZA 60ZA 90ZA DELI

* Based on testing with 1M NaOH and 5% NaClO (Bleach). See Chemical Compatibility Guide (70-0202-2023-5/LITPHG03) for more information.



Capsule 3M ID Numbers for International Customers

Standard Zeta Plus™ Encapsulated System Capsule Filters

3M Catalog ID (U.S. Customers)	3M ID (International Customers)	3M ID (U.S. Customers)	3M ID (International Customers)
E16E01A05SP	70020288414	E16E07A05SP	70020288562
E16E01A05SP01A	70020239011	E16E07A05SP01A	70020236918
E16E01A10SP	70020288422	E16E07A10SP02A	70020236561
E16E01A10SP02A	70020239029	E16E07A120ZA08A	70020236926
E16E01A120ZA08A	70020238526	E16E07A30SP02A	70020236942
E16E01A30LA	70020288430	E16E07A60SP02A	70020236603
E16E01A30LP	70020288448	E16E07A60SP05A	70020236959
E16E01A30SP	70020288455	E16E07A60ZA05A	70020236967
E16E01A30SP02A	70020238534	E16E07A90SP05A	70020236629
E16E01A30ZA	70020288364	E16E07A90ZA05A	70020236975
E16E01A50LA	70020288471	E16E07A90ZA08A	70020236983
E16E01A50LP	70020288489	E16E11A10SP	70020288596
E16E01A50SP	70020274430	E16E11A30LA	70020288604
E16E01A60LA	70020288497	E16E11A30LP	70020288612
E16E01A60LP	70020288505	E16E11A30SP	70020288620
E16E01A60SP	70020288513	E16E11A30ZA	70020288638
E16E01A60SP02A	70020239078	E16E11A50LA	70020288646
E16E01A60SP05A	70020239094	E16E11A50LP	70020288653
E16E01A60ZA	70020283605	E16E11A50SP	70020288661
E16E01A60ZA05A	70020238542	E16E11A60LA	70020288679
E16E01A90LA	70020288521	E16E11A60LP	70020288687
E16E01A90LP	70020288539	E16E11A60SP	70020288695
E16E01A90SP	70020288547	E16E11A60ZA	70020288703
E16E01A90SP05A	70020239102	E16E11A90LA	70020288711
E16E01A90ZA	70020288356	E16E11A90LP	70020288729
E16E01A90ZA05A	70020239128	E16E11A90SP	70020288737
E16E01A90ZA08A	70020238559	E16E11A90ZA	70020288745
E16E01ADELI	70020256130	E16E11ADELI	70020288588

Alkaline Resistant Zeta Plus™ Encapsulated System Capsule Filters*

3M Catalog ID (U.S. Customers)	3M ID (International Customers)	3M ID (U.S. Customers)	3M ID (International Customers)
E16R01A05SP	70020288992	E16R07A05SP	70020289008
E16R01A05SP01A	70020262609	E16R07A05SP01A	70020262740
E16R01A10SP	70020288794	E16R07A10SP02A	70020262757
E16R01A10SP02A	70020262625	E16R07A120ZA08A	70020262773
E16R01A120ZA08A	70020262641	E16R07A30SP02A	70020262799
E16R01A30LA	70020288802	E16R07A60SP02A	70020262823
E16R01A30LP	70020288810	E16R07A60SP05A	70020262849
E16R01A30SP	70020288828	E16R07A60ZA05A	70020262856
E16R01A30SP02A	70020262948	E16R07A90SP05A	70020262864
E16R01A30ZA	70020288364	E16R07A90ZA05A	70020262880
E16R01A50LA	70020288836	E16R07A90ZA08A	70020262898
E16R01A50LP	70020288844	E16R11A10SP	70020289024
E16R01A50SP	70020288851	E16R11A30LA	70020289032
E16R01A60LA	70020288869	E16R11A30LP	70020289040
E16R01A60LP	70020288877	E16R11A30SP	70020289057
E16R01A60SP	70020288885	E16R11A30ZA	70020289065
E16R01A60SP02A	70020262682	E16R11A50LA	70020289073
E16R01A60SP05A	70020262955	E16R11A50LP	70020289081
E16R01A60ZA	70020284587	E16R11A50SP	70020289099
E16R01A60ZA05A	70020262708	E16R11A60LA	70020289107
E16R01A90LA	70020288893	E16R11A60LP	70020289115
E16R01A90LP	70020288901	E16R11A60SP	70020289123
E16R01A90SP	70020288919	E16R11A60ZA	70020289131
E16R01A90SP05A	70020262716	E16R11A90LA	70020289149
E16R01A90ZA	70020288927	E16R11A90LP	70020289156
E16R01A90ZA05A	70020262963	E16R11A90SP	70020289164
E16R01A90ZA08A	70020262732	E16R11A90ZA	70020289172
E16R01ADELI	70020288786	E16R11ADELI	70020289016





Zeta Plus™ ScaleUp Capsule 3M ID Numbers

3M Catalog ID (U.S. Customers)	3M ID (International Customers)
E0170FSA05SP01A	70020290170
E0170FSA10SP01A	70020290196
E0170FSA10SP02A	70020290204
E0170FSA30SP02A	70020290279
E0170FSA30SP03A	70020290287
E0170FSA60SP01A	70020290360
E0170FSA60SP02A	70020290378
E0170FSA60SP03A	70020290386
E0170FSA60SP05A	70020290394
E0170FSA90SP05A	70020290451
E0170FSA90SP08A	70020290469
E0170FSA60ZA05A	70020290410
E0170FSA90ZA05A	70020290485
E0170FSA90ZA08A	70020290493
E0170FSA120ZA05A	70020290212
E0170FSA120ZA08A	70020290220
E0170FSA120ZA10A	70020290238
E0170FSADELI08A	70020290147
E0170FSADELP08A	70020290154
E0170FSA05SP	70020290162
E0170FSA10SP	70020290188
E0170FSA30SP	70020290261
E0170FSA50SP	70020290329
E0170FSA60SP	70020290352
E0170FSA90SP	70020290444
E0170FSA30ZA	70020290295
E0170FSA60ZA	70020290402
E0170FSA90ZA	70020290477
E0170FSA30LA	70020290246
E0170FSA50LA	70020290303
E0170FSA60LA	70020290337
E0170FSA90LA	70020290428
E0170FSA30LP	70020290253
E0170FSA50LP	70020290311
E0170FSA60LP	70020290345
E0170FSA90LP	70020290436
E0170FSADELI	70020290139

3M Catalog ID (U.S. Customers)	3M ID (International Customers)
E0340FSA05SP01A	70020290543
E0340FSA10SP01A	70020290568
E0340FSA10SP02A	70020290576
E0340FSA30SP02A	70020290642
E0340FSA30SP03A	70020290659
E0340FSA60SP01A	70020290733
E0340FSA60SP02A	70020290741
E0340FSA60SP03A	70020290758
E0340FSA60SP05A	70020290766
E0340FSA90SP05A	70020290824
E0340FSA90SP08A	70020290832
E0340FSA60ZA05A	70020290782
E0340FSA90ZA05A	70020290857
E0340FSA90ZA08A	70020290865
E0340FSA120ZA05A	70020290584
E0340FSA120ZA08A	70020290592
E0340FSA120ZA10A	70020290600
E0340FSADELI08A	70020290519
E0340FSADELP08A	70020290527
E0340FSA05SP	70020290535
E0340FSA10SP	70020290550
E0340FSA30SP	70020290634
E0340FSA50SP	70020290691
E0340FSA60SP	70020290725
E0340FSA90SP	70020290816
E0340FSA30ZA	70020290667
E0340FSA60ZA	70020290774
E0340FSA90ZA	70020290840
E0340FSA30LA	70020290618
E0340FSA50LA	70020290675
E0340FSA60LA	70020290709
E0340FSA90LA	70020290790
E0340FSA30LP	70020290626
E0340FSA50LP	70020290683
E0340FSA60LP	70020290717
E0340FSA90LP	70020290808
E0340FSADELI	70020290501

3M Catalog ID (U.S. Customers)	3M ID (International Customers)
E1020FSA05SP01A	70020290915
E1020FSA10SP01A	70020290931
E1020FSA10SP02A	70020290949
E1020FSA30SP02A	70020291012
E1020FSA30SP03A	70020291020
E1020FSA60SP01A	70020291103
E1020FSA60SP02A	70020291111
E1020FSA60SP03A	70020291129
E1020FSA60SP05A	70020291137
E1020FSA90SP05A	70020291194
E1020FSA90SP08A	70020291202
E1020FSA60ZA05A	70020291152
E1020FSA90ZA05A	70020291228
E1020FSA90ZA08A	70020291236
E1020FSA120ZA05A	70020290956
E1020FSA120ZA08A	70020290964
E1020FSA120ZA10A	70020290972
E1020FSADELI08A	70020290881
E1020FSADELP08A	70020290899
E1020FSA05SP	70020290907
E1020FSA10SP	70020290923
E1020FSA30SP	70020291004
E1020FSA50SP	70020291061
E1020FSA60SP	70020291095
E1020FSA90SP	70020291186
E1020FSA30ZA	70020291038
E1020FSA60ZA	70020291145
E1020FSA90ZA	70020291210
E1020FSA30LA	70020290980
E1020FSA50LA	70020291046
E1020FSA60LA	70020291079
E1020FSA90LA	70020291160
E1020FSA30LP	70020290998
E1020FSA50LP	70020291053
E1020FSA60LP	70020291087
E1020FSA90LP	70020291178
E1020FSADELI	70020290873



Enabling SCALABILITY for Cell Culture Clarification from R&D to **Large-Scale Production**



Zeta Plus™ Encapsulated Depth Filter Platform

Lab / R&D	Scale-Up	Pilot Production	Large Scale Production	Multi-Round Production
				
Up to 1 Liter	Up to 50 Liters	Up to 400 Liters	Up to 5,000 Liters	Up to 25,000 Liters





Innovative Filtration

Fast. Easy. Clean.

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