



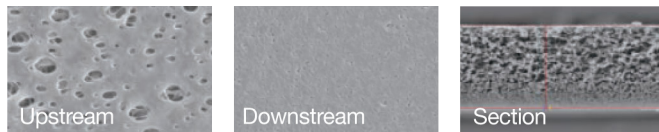
## NOVACISE™ HIGHLY ASYMMETRIC PES FILTERS

### ULTRA-HIGH PARTICLE REMOVAL EFFICIENCY, WITH HIGH FLOW RATE AND HIGH SURFACE ENERGY TO SUPPORT RAPID OPERATION

Cobetter Novacise™ Series is a cost-effective filtration alternative for dilute acids, bases and other process chemicals which are often used in certain high-purity wet etch and clean microelectronics applications.

The asymmetric PES membrane provides desirable characteristics including a high flux rate, high dirt holding capacity, and longer filter lifetime. In addition, the membrane structure reduces bubbles formation during flow.

Cobetter Novacise Filters have efficient particle retention and low metal extractables. In addition, these cartridges have high mechanical strength and are suitable for a wide variety of filtration applications.



#### FEATURE

#### BENEFIT

**High surface energy highly asymmetric PES membrane**

Very high flow rates and longer life  
Excellent particle retention  
Low surfactant binding  
Shorter equipment pre-operation time

**Polypropylene supports, cage, & core**

Low extractables  
Good chemical compatibility

**Manufactured in a cleanroom environment**

Meets high semiconductor manufacturing standards

**100% integrity tested**

Ensures fail-safe performance every time

#### SPECIFICATIONS

<b>Filter media</b>	Hydrophobic HAPES / Hydrophilic HAPES
<b>Supports/core/cage/end caps</b>	Polypropylene
<b>O-rings (cartridge only)</b>	TEV or EPDM
<b>Shell (disposable only)</b>	Polypropylene
<b>Max. operating temperature</b>	Cartridge: 90°C; Capsule: Please refer to ordering information
<b>Capsule max. operating pressure</b>	Please refer to ordering information
<b>Cartridge max. differential pressure</b>	Forward/Reverse: 0.34 MPa (3.4 bar, 49 psi) at 25°C

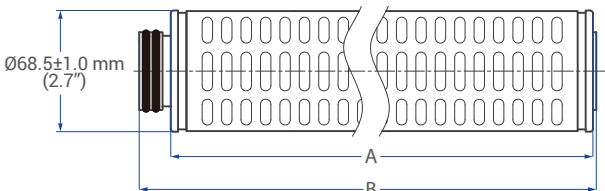


#### Typical Applications

- Process: Wet Etch and Cleans; chemical manufacturing
- Installation Point: Point of Tool, bulk filtration
- Chemistry: Dilute acids (such as BOE/DHF/SC2); Dilute bases (such as SC1/TMAH); DIW

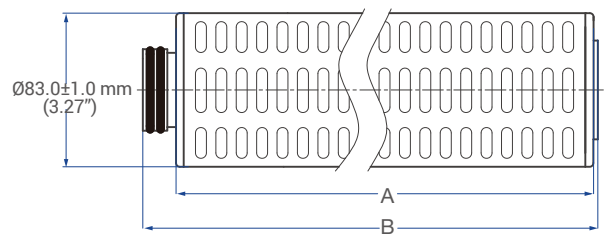
Effective filtration area	X1	Z1
	ø68 mm (2.7")	ø83 mm (3.27")
10"	0.8m <sup>2</sup> (8.6ft <sup>2</sup> )	1.4m <sup>2</sup> (15.0ft <sup>2</sup> )

**NOVACISE X1 CARTRIDGE FILTERS (2-222/FLAT)**



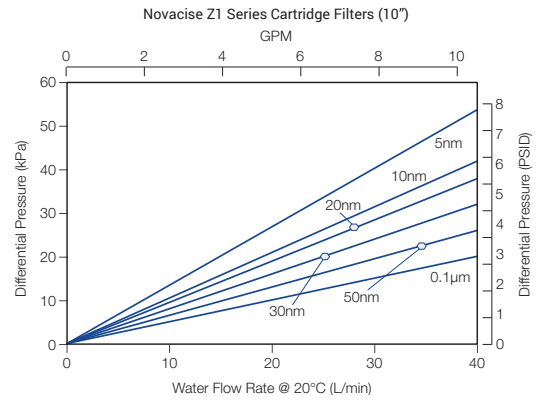
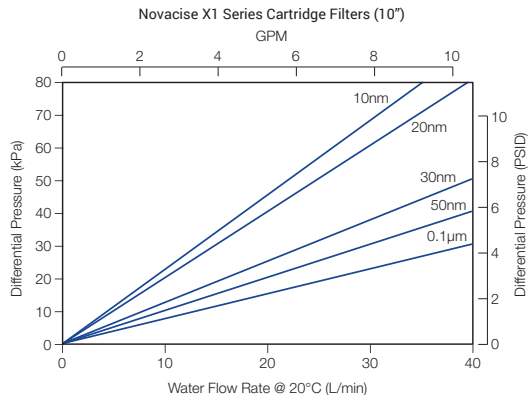
Length Code	A	B
04	102.5 ±1 mm (4")	122.0 ±1 mm (4.8")
10	242.5 ±2 mm (9.5")	262.5 ±2 mm (10.3")
20	488.0 ±3 mm (19.2")	508.0 ±3 mm (20.0")
20C	478.0 ±3 mm (18.8")	498.0 ±3 mm (19.6")
30	731.5 ±4 mm (28.8")	751.5 ±4 mm (29.6")

**NOVACISE Z1 CARTRIDGE FILTERS (2-222/FLAT)**



Length Code	A	B
10	225.0 ±2 mm (8.9")	245.5 ±2 mm (9.7")
20	452.0 ±3 mm (17.8")	472.5 ±3 mm (18.6")

**CARTRIDGE FLOW RATES**



**X1 Ø68 MM (2.7") CARTRIDGE ORDERING INFORMATION**

EXAMPLE: **NVSX1NM10OTC10PMWH** = hydrophobic, 2.7"W, 10nm, 10" length, TEV O-rings, M grade, pre-wet

**NVS X1**  **OTC**

**Removal Rating**  
 NM10 = 10 nm    NM50 = 50 nm  
 NM20 = 20 nm    0010 = 0.1 µm  
 NM30 = 30 nm

**Nominal Length**  
 04 = 4"  
 10 = 10"  
 20 = 20"  
 30 = 30"

**O-ring**  
 P = TEV  
 E = EPDM

**Package**  
 D = Dry  
 WH = Prewet, UPW + 1% H<sub>2</sub>O<sub>2</sub>

**Cleanliness**  
 M = < 25 µg/device    5/10/20/50nm  
 H = < 40 µg/device    50nm/0.1µm  
 E = Electronic grade

**Z1 Ø83 MM (3.27") CARTRIDGE ORDERING INFORMATION**

EXAMPLE: **NVSZ1NM1010PMWH** = hydrophobic, 3.27"W, 10nm, 10" length, TEV O-rings, M grade, pre-wet

**NVS**  **Z1**  **OTC**

**Membrane**  
 Blank = Hydrophobic  
 H = Hydrophilic  
 50 nm, 0.1 µm

**Removal Rating**  
 NM05 = 5 nm  
 NM10 = 10 nm  
 NM20 = 20 nm  
 NM30 = 30 nm  
 NM50 = 50 nm  
 0010 = 0.1 µm

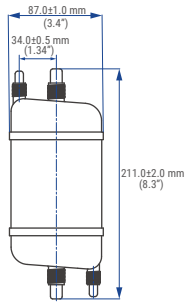
**Nominal Length**  
 10 = 10"  
 20 = 20"

**O-ring**  
 P = TEV  
 E = EPDM

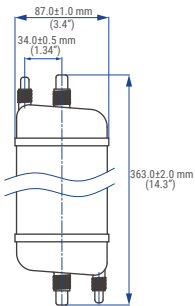
**Package**  
 D = Dry  
 WH = Prewet, UPW + 1% H<sub>2</sub>O<sub>2</sub>

**Cleanliness**  
 M = < 25 µg/device    5/10/20/50nm  
 H = < 40 µg/device    50nm/0.1µm  
 E = Electronic grade

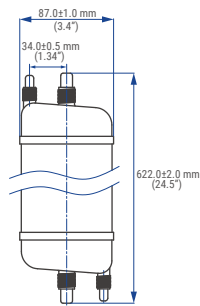
**NOVACISE CAPSULE FILTERS**



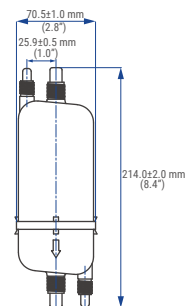
**BFL64-4**



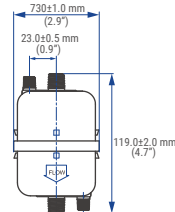
**BFL64-10**



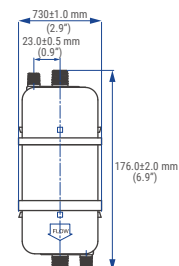
**BFL64-20**



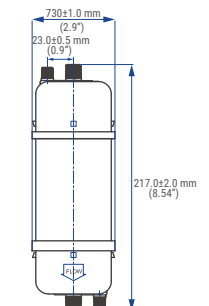
**FL64**



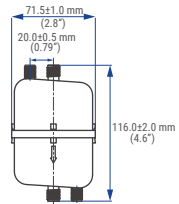
**NPT42**



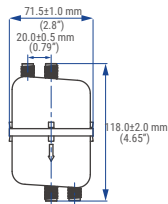
**NPT742**



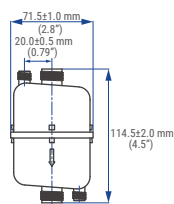
**NPT942**



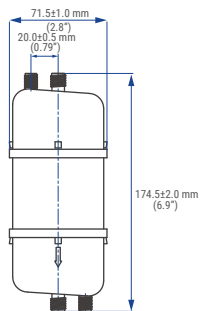
**SW43**



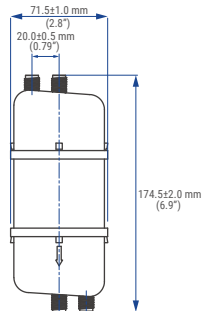
**SW4**



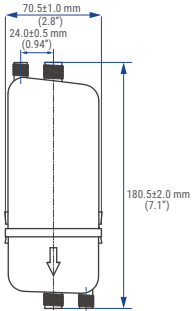
**SW84**



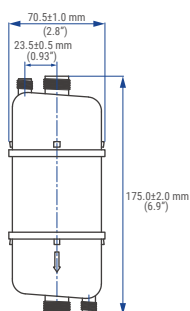
**SW743**



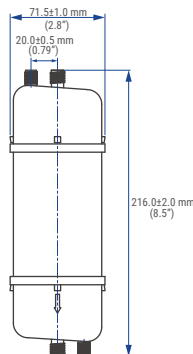
**SW744**



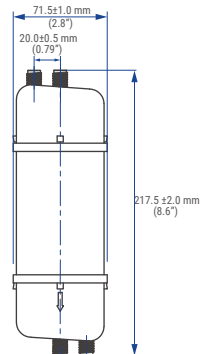
**SW764**



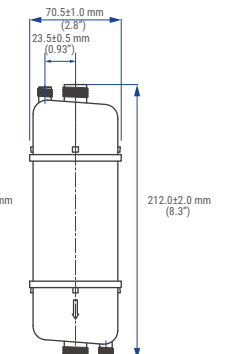
**SW784**



**SW943**



**SW944**



**SW984**

## NOVACISE CAPSULE ORDERING INFORMATION<sup>1</sup>

EXAMPLE: NVSHNM50SW44ED = Hydrophilic, 50 nm, compression 1/4" IO, 1/4" VD, electronics grade, dry

**NVS**

**Membrane**  
 \_ = Hydrophobic  
 H = Hydrophilic  
 50 nm, 0.1 μm

**Removal Rating**  
 NM05 = 5 nm  
 NM10 = 10 nm  
 NM20 = 20 nm  
 NM30 = 30 nm  
 NM50 = 50 nm  
 0010 = 0.1 μm

**Cleanliness**  
 M = < 25 μg/device 5/10/20/50nm  
 H = < 40 μg/device 50nm/0.1μm  
 E = Electronic grade

**Package**  
 D = Dry  
 WH = Prewet, UPW + 1% H<sub>2</sub>O<sub>2</sub>

Connection Type	Inlet/Outlet	Vent/Drain	Lengths	Max. Operating Temp.	Max Operating Pressure
BFL64-4 = Flare Type	3/8"	1/4"	211 mm (8.3")	40°C	0.41 MPa@40°C
BFL64-10 = Flare Type	3/8"	1/4"	363 mm (14.3")		
BFL64-20 = Flare Type	3/8"	1/4"	622 mm (24.5")		
FL64 = Flare Type	3/8"	1/4"	214 mm (8.4")	60°C	0.51 MPa@38°C
NPT42 = NPT	1/4"	1/8"	119 mm (4.7")		
NPT742 = NPT	1/4"	1/8"	176 mm (6.9")		
NPT942 = NPT	1/4"	1/8"	217 mm (8.5")		
SW43 = Compression	1/4"	4 mm	116 mm (4.6")		
SW743 = Compression	1/4"	4 mm	174.5 mm (6.9")		
SW943 = Compression	1/4"	4 mm	216 mm (8.5")		
SW44 = Compression	1/4"	1/4"	118mm (4.6")		
SW744 = Compression	1/4"	1/4"	174.5 mm (6.9")		
SW944 = Compression	1/4"	1/4"	217.5 mm (8.6")		
SW84 = Compression	1/2"	1/4"	114.5 mm (4.5")		
SW784 = Compression	1/2"	1/4"	175 mm (6.9")		
SW984 = Compression	1/2"	1/4"	212 mm (8.3")		
SW764 = Compression	3/8"	1/4"	180.5 mm (7.1")		

<sup>1</sup> Not all combinations of surface area options and removal ratings are available. Please contact Banner Industries with any questions about part number availability.



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