

The IP sanitary housings are constructed from 316 L stainless steel and designed and built in accordance with AD Merkblätter 95. They have a pressure rating design of 8 bar g and can be used in temperatures up to 150 °C. This ensures they are compatible with most process applications. Interior and exterior surfaces are polished and crevice-free to meet industry requirements for surface finish.

The IP housings are fully CE marked in accordance with the European Pressure Equipment Directive (PED) and suitable for lenticular depth filters such as Zeta Plus™, ZetaCarbon, Zeta Plus MH™ and Zeta Plus EXT™.

Pressure Equipment Directive 97/23/CE

IP housings are available in either PED 97/23/CE Category I or Category III versions (Dependant on vessel volume and pressure ratings). The operator of these vessels must ensure that they are used in conformity with the PED (and ATEX) regulations at all times.

The actual pressure and temperature that these vessels can be used at will depend on the type and nature of the fluid being processed (Group 1: Hazardous, Group 2: Other), and whether it falls into the gas/vapour or liquid categories as defined by the PED. Do not use IP housings with Group 1 (hazardous) gas or vapour.

Please refer to the PED Data Table 3 for details of the permissible operating conditions for these vessels.

ATEX Directive 94/9/CE

IP housings are approved for use in ATEX condition II-2-G/D-T5.

The user of these housings must ensure that they are used in accordance with the requirements of these PED and ATEX directives at all times. Please consult your local 3M Purification representative for any other classification or further information.



Features and Benefits

316L stainless steel construction

- Provides excellent corrosion protection for rugged, long-lasting service.

Optimum quality standards at competitive costs

- Ensure the most appropriate housing is available at the right price.

State of the art design, engineering and manufacturing

- Provides flexibility in surface finish specifications, housing sizes and connection options.

Applications

Pharmaceutical

BioPharmaceutical

Cosmetics

Food and Beverage

Electronics

Chemicals

Table 1: Standard Housing Specifications		
Housing Type Specifications	12 IPB	16 IPB
Design Code	AD Merkblätter 95	AD Merkblätter 95
Housing Material (in contact)	316L (1.4404) Stainless Steel	316L (1.4404) Stainless Steel
Surface Finish	Mechanical Polish < 0.8 micron Ra	Mechanical Polish < 0.8 micron Ra
Closure	Bolted	Bolted
Diameter	12 inch	16 inch
Standard Gasket Material	Silicone (others on request)	Silicone (others on request)
Number of Cartridges	1, 2, 3 and 4 high	1, 2, 3 and 4 high
Connection Sizes	D2: Male DIN 11851 DN50 T2: Triclover 2.0" F2: DIN 2633/EN 1092-1 DN40 M2: Macon DN50	D2: Male DIN 11851 DN50 T2: Triclover 2.0" F2: DIN 2633/EN 1092-1 DN40 M2: Macon DN50
Vent Connections	½" TC	½" TC
Max. Operating Pressure	8 bar g	8 bar g
Max. Operating Temperature	150 °C	150 °C
PED 97/23/CE	Category I and III	Category I and III
ATEX 94/9/CE	II-2-G/D-T5	II-2-G/D-T5

3M Housings IP Series

For Lenticular Cartridge Filters

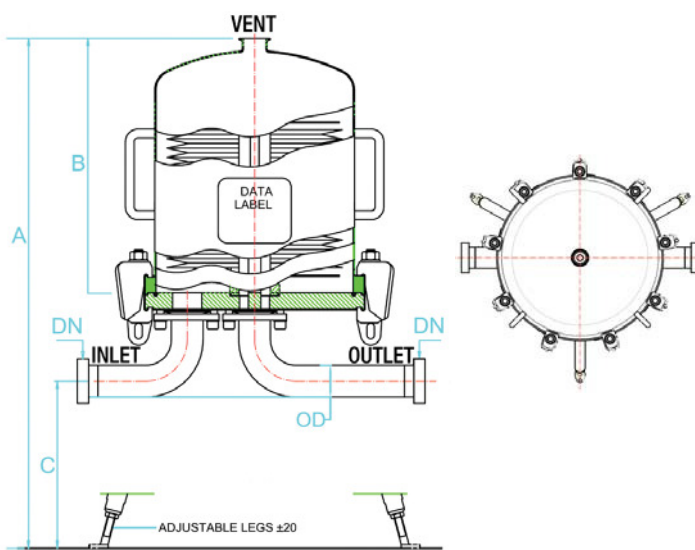
Table 2: Dimensions

Housing Model	No. of Modules	A (mm)		B (mm)		C - Inlet/outlet to floor (mm)		OD (mm)	Sump Weight (kg)	Total Nett Weight (kg)	Total Weight Packed (kg)	Packaging Size (cm) 63x64x	Total Volume (litre)
		Top to floor	Sump	D2/T2/F2/M2	D2/T2/F2/M2								
12 IP 1	1	980	430	345		50.8	12	45	50	90	32		
12 IP 2	2	1250	700	345		50.8	16	50	56	115	52		
12 IP 3	3	1530	970	345		50.8	20	58	65	140	74		
12 IP 4	4	1830	1250	345		50.8	25	63	70	165	96		
16 IP 1	1	980	440	345		50.8	16	70	76	100	63		
16 IP 2	2	1250	710	345		50.8	22	78	85	125	105		
16 IP 3	3	1550	980	345		50.8	28	87	95	150	147		
16 IP 4	4	1850	1260	345		50.8	35	96	104	175	191		

Table 3: PED Specification Data

PED 97/23/CE Data - 12IPB Vessel Series							
PED97/23/CE Category I							
Fluid Group	State	Temperature °C		Maximum Pressure bar g			
		Min	Max	12IPB1	12IPB2	12IPB3	12IPB4
Group 1 (Hazardous)	Liquid	0	40	8,0	8,0	8,0	8,0
Group 1 (Hazardous)	Liquid	0	150	6,2	6,2	6,2	6,2
Group 2 (Other)	Liquid	0	40	8,0	8,0	8,0	8,0
Group 2 (Other)	Liquid	0	150	6,2	6,2	6,2	6,2
Group 2 (Other)	Gas / Vapour	0	150	5,9	3,6	2,6	2,0
Vessel Volumes (Litres)				32	53	74	96
PED97/23/CE Category III							
Fluid Group	State	Temperature °C		Maximum Pressure bar g			
		Min	Max	12IPB1	12IPB2	12IPB3	12IPB4
Group 1 (Hazardous)	Liquid	0	40	8,0	8,0	8,0	8,0
Group 1 (Hazardous)	Liquid	0	150	6,2	6,2	6,2	6,2
Group 2 (Other)	Liquid	0	40	8,0	8,0	8,0	8,0
Group 2 (Other)	Liquid	0	150	6,2	6,2	6,2	6,2
Group 2 (Other)	Gas / Vapour	0	40	8,0	8,0	8,0	8,0
Group 2 (Other)	Gas / Vapour	0	150	6,2	6,2	6,2	6,2
Vessel Volumes (Litres)				32	53	74	96
PED 97/23/CE Data - 16IPB Vessel Series							
PED97/23/CE Category I							
Fluid Group	State	Temperature °C		Maximum Pressure bar g			
		Min	Max	16IPB1	16IPB2	16IPB3	16IPB4
Group 1 (Hazardous)	Liquid	0	40	8,0	8,0	8,0	8,0
Group 1 (Hazardous)	Liquid	0	150	6,2	6,2	6,2	6,2
Group 2 (Other)	Liquid	0	40	8,0	8,0	8,0	8,0
Group 2 (Other)	Liquid	0	150	6,2	6,2	6,2	6,2
Group 2 (Other)	Gas / Vapour	0	150	3,1	1,8	1,3	1,0
Vessel Volumes (Litres)				63	105	147	191
PED97/23/CE Category III							
Fluid Group	State	Temperature °C		Maximum Pressure bar g			
		Min	Max	16IPB1	16IPB2	16IPB3	16IPB4
Group 1 (Hazardous)	Liquid	0	40	8,0	8,0	8,0	8,0
Group 1 (Hazardous)	Liquid	0	150	6,2	6,2	6,2	6,2
Group 2 (Other)	Liquid	0	40	8,0	8,0	8,0	8,0
Group 2 (Other)	Liquid	0	150	6,2	6,2	6,2	6,2
Group 2 (Other)	Gas / Vapour	0	40	8,0	8,0	8,0	8,0
Group 2 (Other)	Gas / Vapour	0	150	6,2	6,2	6,2	6,2
Vessel Volumes (Litres)				63	105	147	191

Note: The PED97/23/CE defines a Gas/Vapour application as being where gas or vapour is present in the process fluid (at the temperature it is being processed at) at 0.5 bar above atmospheric pressure and NOT at the actual processing pressure. If in any doubt please ask your local 3M purification representative for confirmation of your process classification.



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Ordering Guide IP Range

Modular Diameter	Product Type	Closure Type	Modular Quantity	Inlet/Outlet	PED	Surface Finish
12 (12" / 320 mm)	IP	B (Bolted)	1	D2 (DIN 11851 Male DN 50)	1 (Category I)	F3 (Mechanical Polished <0.8 µm Ra)
16 (16" / 420 mm)			2	T2 (Triclover DN 2.0")	3 (Category III)	
			3	F2 (DIN 2633/EN 1092-1 DN40)		
			4	M2 (MACON DN 50)		

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12-IPB-1 D2	16-IPB-1 D2
12-IPB-1 D2	16-IPB-1 D2
12-IPB-1 T2	16-IPB-1 T2
12-IPB-1 T2	16-IPB-1 T2
12-IPB-1 F2	16-IPB-1 F2
12-IPB-1 F2	16-IPB-1 F2
12-IPB-1 M2	16-IPB-1 M2
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12-IPB-4 M2	16-IPB-4 M2
12-IPB-4 M2	16-IPB-4 M2
12 IPB 4 M2	16 IPB 4 M2

