

SERIES



LMP 211 - 210

LDP DIN 24550



Maximum pressure 60 bar
Maximum flow to 330 l/min



Technical data

Filter housing (Materials)

- Head: Aluminium
- Bowl: Cataphoresis Painted Steel
- Bypass valve: AISI 304 - Nylon

Pressure

- Working pressure: 60 bar (6 MPa)
- Test pressure: 90 bar (9 MPa)
- Burst pressure: 210 bar (21 MPa)
- Pulse pressure fatigue test: 1.000.000 cycles with pressure from 0 to 60 bar (6 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 3.5 bar \pm 10%
- Other opening pressures on request.

Δp Elements type

- Microfibre filter elements series N: 20 bar
- Fluid flow through the filter element from OUT to IN.

Seals

- Standard NBR series A
- Optional FPM series V

LMP 210/211 - LDP FILTERS ARE PROVIDED FOR VERTICAL MOUNTING

Weights (kg)

Length	1	2	3
• LMP210-211	3.10	4.80	6.40
• LDP016	2.90		
• LDP025	3.10		
• LDP040	4.90		

Volumes (dm³)

Length	1	2	3
• LMP210-211	1.60	2.10	2.80
• LDP016	1.10		
• LDP025	1.60		
• LDP040	2.30		

Connections

- LMP 210/211 - LDP: Inlet/Outlet In-Line

Compatibility (to ISO 2943)

- Housings compatible with: Mineral oils, synthetic fluids, aqueous emulsions, water and glycol. (series W required)
- The filter elements are compatible with: Mineral oils, synthetic fluids. Aqueous emulsions, water and glycol. (series W required)
- NBR seals series A, compatible with: Mineral oils, synthetic fluids, aqueous emulsions and water and glycol.
- FPM seals series V, compatible with: Synthetic fluids type HS-HFDR-HFDS-HFDU

Recommended maximum flow rate

- Pressure drop of filter assembly equal to Δp 0.6 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0.86 kg/dm³.
- Connections of filter under test G 1 1/2" SAE 3000 PSI/M.

Filtration

Leng.	A03	A06	A10	A16	A25	P10	P25	M25
LMP 210	1	98	110	190	200	220	275	300
	2	140	155	225	235	260	275	290
	3	175	200	245	250	270	290	300

Flow rate l/min

Filtration

Leng.	A03	A06	A10	A16	A25	P10	P25	M25
LMP 211	1	100	110	190	210	230	275	320
	2	140	155	230	245	270	290	325
	3	175	210	250	260	285	310	330

Flow rate l/min

Filtration

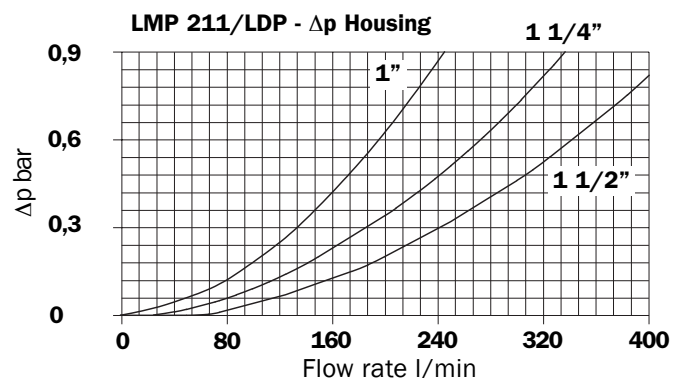
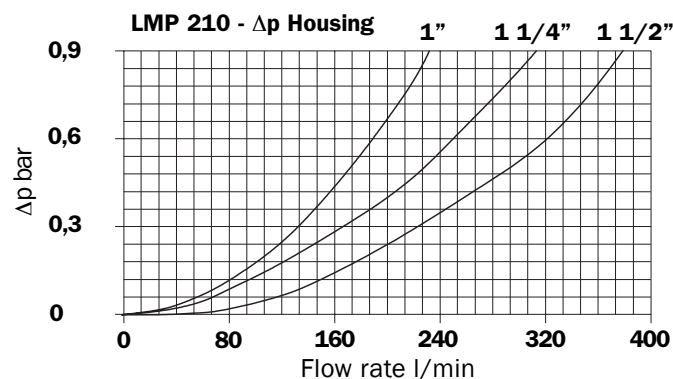
Leng.	A03	A06	A10	A16	A25	P10	P25	M25
LDP	016	70	75	150	165	200	255	300
	025	100	115	195	210	230	280	320
	040	150	165	235	250	275	295	330

Flow rate l/min

Filter housings Δp pressure drop

The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

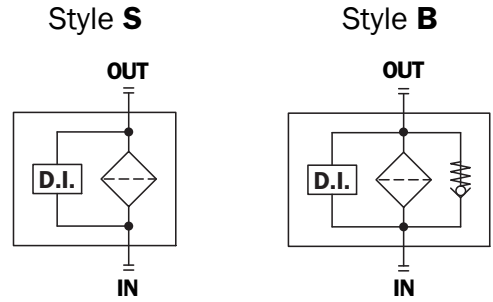
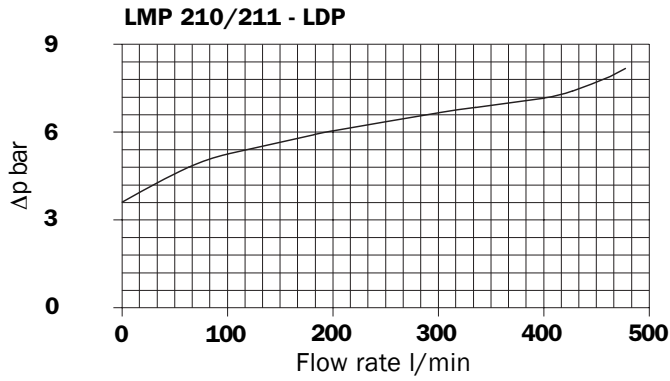
Δp varies proportionally with density.



Valves

Bypass valve pressure drop

Hydraulic symbols



Multiplication factor “Y” for definition of the pressure drop of filter elements.

Reference viscosity 30 mm²/s

Filter Element	Absolute Filtration					Nominal Filtration		Nominal Filtration
	N - W Series					N Series		N Series
Type	A 0 3	A 0 6	A 1 0	A 1 6	A 2 5	P 1 0	P 2 5	M 2 5
CU 210 1	5,3	4,8	2,0	1,66	1,32	0,56	0,43	0,12
2	3,44	2,95	1,24	1,09	0,7	0,42	0,35	0,09
3	2,4	1,7	0,94	0,84	0,54	0,33	0,23	0,05
DN 016	7,95	7,20	3,00	2,49	1,98	0,84	0,65	0,18
025	5,00	4,53	1,89	1,57	1,25	0,53	0,41	0,11
040	3,13	2,66	1,12	0,98	0,63	0,38	0,32	0,08

Filter sizing

Sizing data for single cartridge, head at top

- Δp Tot.
- Δpc Filter housing
- Δpe Filter element
- Y Multiplication factor (see above)
- Q l/min = flow rate
- V1 = reference viscosity 30 mm²/s (cSt)
- V2 = operating viscosity in mm²/s (cSt)
- Δp Tot. = Δpc + Δpe
- Δpe = Y : 1000 x Q x (V2/V1)

Δpc Filter housing = 0,24 bar

Δp Tot. max 0,6 bar = Δpc + Δpe
Δp Tot. = 0,29 + 0,24 = 0,53 bar

Sized filter type:
LMP 210 3 B A F6 A10 N P01

Calculation example with HLP Mineral Oil Variation in viscosity

- Data:
- Filter with in-line connections
- Pressure = 60 bar
- Flow rate = 200 l/min
- Viscosity = 46 mm²/s (cSt)
- Density = 0,86 Kg/dm³
- Filtration = 10 μ absolute
- With bypass valve

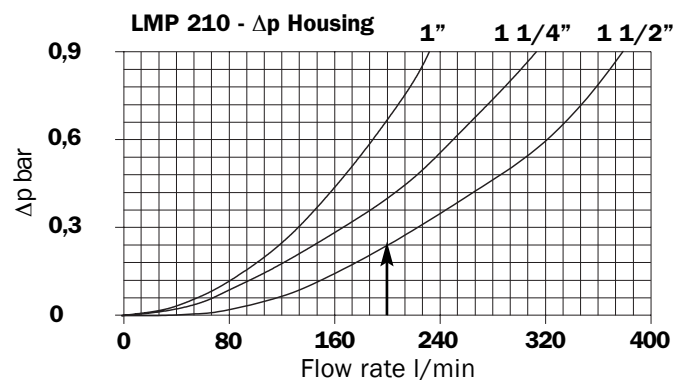
Practical example

- Δpe Filter housing
- Q = 200 l/min
- V₂ = 46 mm²/s (cSt)
- Pmax = 60 bar
- Filtration = 10 μ absolute
- Δp Tot. max = **0,6 bar** (max. recommended value)
- Δpe = (0,94 : 1000) x 200 x (46/30) = **0,29 bar**

Filter housings Δp pressure drop

The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

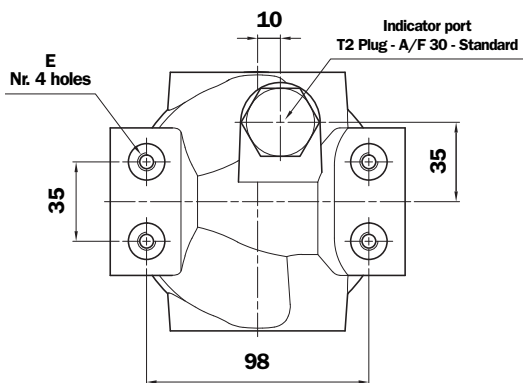
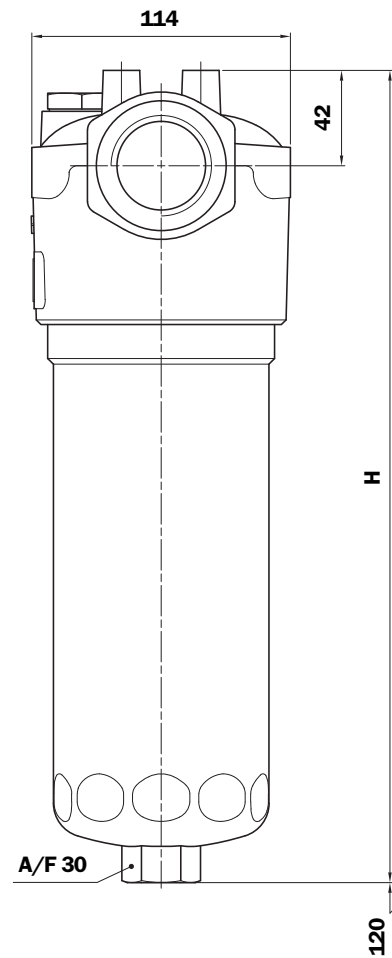
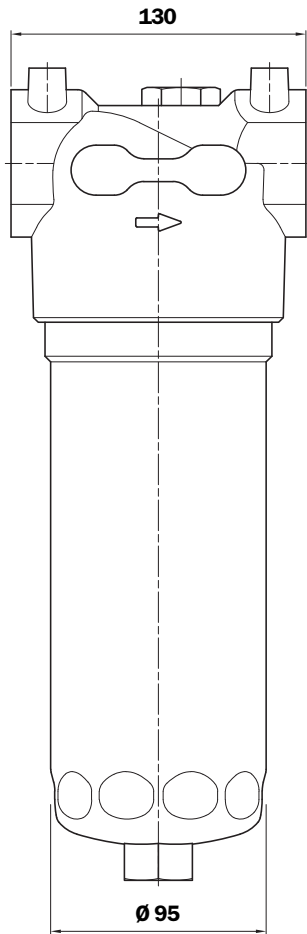
Δp varies proportionally with density.



LMP 211

LDP DIN 24550

Threaded connections



LMP 211

Length Filter	H mm
1	357
2	487
3	625

LDP - DIN 24550

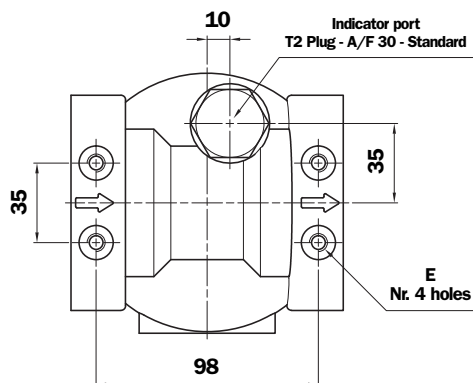
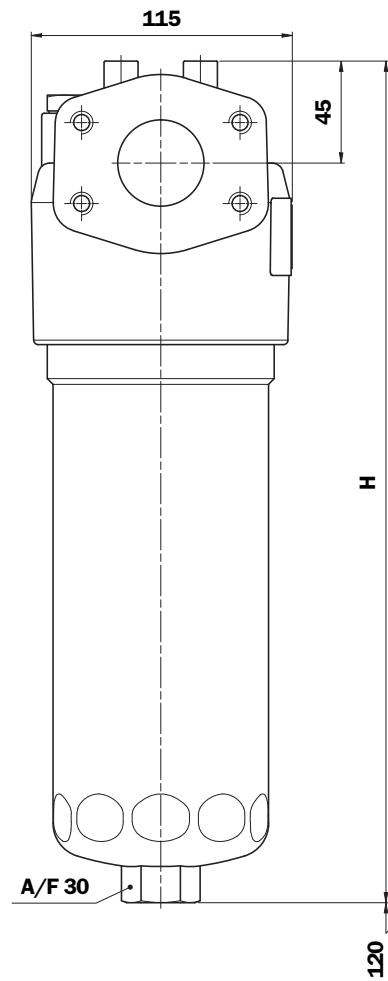
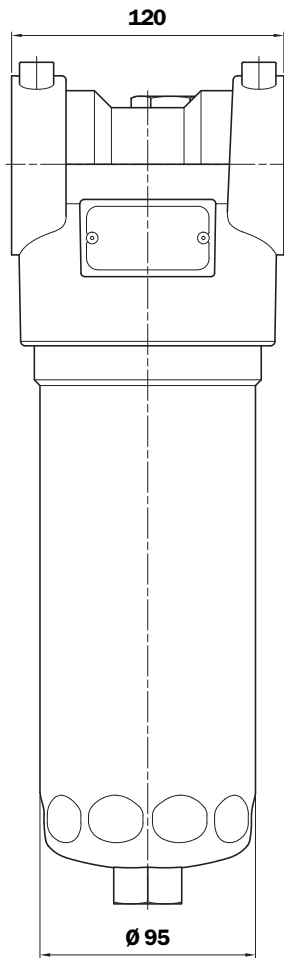
Length Filter	H mm
016	267
025	357
040	507

LMP 211 - LDP Thread connections

Type	Size	E Depth 12 mm
A	G 1"	M8
B	G 1 1/4"	M8
C	G 1 1/2"	M8
D	1" NPT	5/16" UNC
E	1 1/4" NPT	5/16" UNC
F	1 1/2" NPT	5/16" UNC
G	SAE 16 - 1 5/16" - 12 UN	5/16" UNC
H	SAE 20 - 1 5/8" - 12 UN	5/16" UNC
I	SAE 24 - 1 7/8" - 12 UN	5/16" UNC

LMP 210

Flanged connections



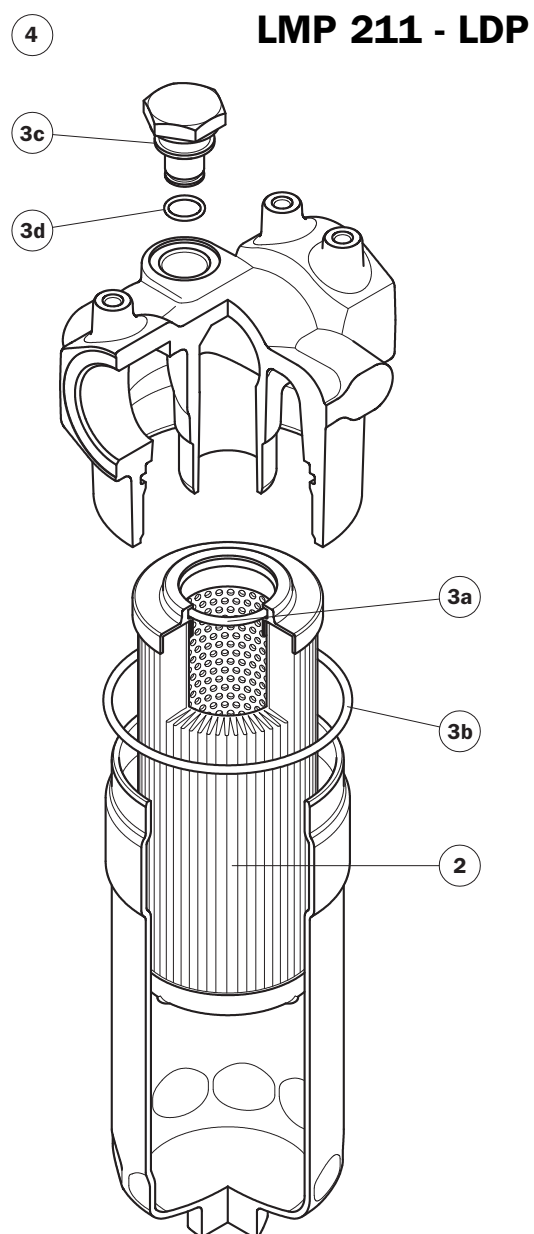
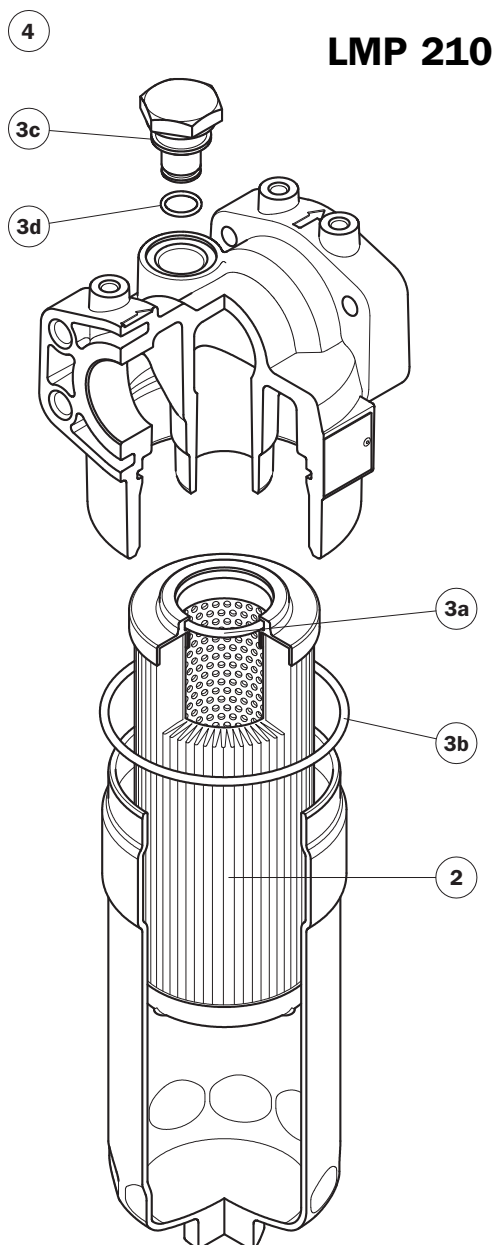
LMP 210

Length Filter	H mm
1	360
2	492
3	630

LMP 210 Flange connections

Type	Size	E Depth 12 mm
F1	1" SAE 3000 psi/M	M8
F2	1 1/4" SAE 3000 psi/M	M8
F3	1 1/2" SAE 3000 psi/M	M8
F4	1" SAE 3000 psi/UNC	5/16" UNC
F5	1 1/4" SAE 3000 psi/UNC	5/16" UNC
F6	1 1/2" SAE 3000 psi/UNC	5/16" UNC

Spare parts



Item	Description	Q.ty	FILTER Series LMP 210/211 - LDP	
1	Filter assembly	1	See order table	
2	Filter element	1	See order table	
3	Seal Kit	1	NBR 02050435	FPM 02050436
3a	O-Ring filter element	1	O-R 144 Ø 39,69 x 3,53	
3b	O-Ring housing	1	O-R 4375 Ø 94,84 x 3,53	
3c	Seal for indicator	1	NBR 01030058	FPM 01030046
3d	O-Ring for indicator	2	O-R 2050 Ø 12,42 x 1,78	
4	Indicator connection plug	1	T2H	T2V
-	Indicator	1	See order table	

A series of horizontal dotted lines for writing notes.

Ordering information LMP 210-211

Filter assembly

LMP

	1	2	3	4	5	6	7	8	9
Example 1: LMP	210	2	B	A	F1	-	A10	N	P01
Example 2: LMP	211	2	B	A	A	6	A10	N	P01

Filter element

CU

	1	2	7	4	8	9
Example 1: CU	210	2	A10	A	N	P01
Example 2: CU	210	2	A10	A	N	P01

1 - Style

Filter	Filter element
210	210
211	210

2 - Filter length

210	1	2	3
211	1	2	3

3 - Valves

S	Without bypass
B	With bypass Opening pressure: 3,5 bar
<input type="checkbox"/>	With bypass Opening pressure: on request

4 - Filter seals

A	NBR
V	FPM
<input type="checkbox"/>	On request

5 - Connections

Flange		Threaded	
LMP 210		LMP 211	
Type	Size	Type	Size
F1	1" SAE 3000 psi/M	A	G 1"
F2	1 1/4" SAE 3000 psi/M	B	G 1 1/4"
F3	1 1/2" SAE 3000 psi/M	C	G 1 1/2"
F4	1" SAE 3000 psi/UNC	D	1" NPT
F5	1 1/4" SAE 3000 psi/UNC	E	1 1/4" NPT
F6	1 1/2" SAE 3000 psi/UNC	F	1 1/2" NPT
		G	SAE 16-1.5/16" - 12 UN
		H	SAE 20-1.5/8" - 12 UN
		I	SAE 24-1.7/8" - 12 UN

6 - Indicator port (only for LMP 211)

6	With plugged indicator port
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7 - Filter element

A03	Inorganic microfibre 3 μ	} Absolute filtration βx (c) ≥ 1000
A06	Inorganic microfibre 6 μ	
A10	Inorganic microfibre 10 μ	
A16	Inorganic microfibre 16 μ	
A25	Inorganic microfibre 25 μ	
M25	Wire mesh	} Nominal Filtration
M60	Wire mesh	
M90	Wire mesh	
P10	Resin impregnated paper	} Nominal Filtration
P25	Resin impregnated paper	

8 - Max filter element differential pressure

N	Δp 20 bar
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9 - Option

P01	MP Filtri standard
Pxx	Customer request

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Filter assembly LDP

Example: LDP

1	2	3	4	5	6	7	8
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
016	B	A	A	6	A10	N	P01

Filter element DN

Example: DN

1	6	3	7	8
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
016	A10	A	N	P01

1 - Style

Filter

016

025

040

Filter element

016 Filter element in according to:
DIN 24550 - T3 DN160

025 Filter element in according to:
DIN 24550 - T3 DN250

040 Filter element in according to:
DIN 24550 - T3 DN400

2 - Valves

S

Without bypass

B

With bypass
Opening pressure: 3,5 bar

With bypass
Opening pressure: on request

3 - Filter seals

A

NBR

V

FPM

On request

4 - Connections

Threaded

LDP

Type	Size
A	G 1"
B	G 1 1/4"
C	G 1 1/2"
D	1" NPT
E	1 1/4" NPT
F	1 1/2" NPT
G	SAE 16 - 1.5/16" - 12 UN
H	SAE 20 - 1.5/8" - 12 UN
I	SAE 24 - 1.7/8" - 12 UN

5 - Indicator port

6

With plugged indicator port

6 - Filter element

A03

Inorganic microfibre 3 μ

A06

Inorganic microfibre 6 μ

A10

Inorganic microfibre 10 μ

A16

Inorganic microfibre 16 μ

A25

Inorganic microfibre 25 μ

Absolute filtration

$\beta_X (c) \geq 1000$

M25

Wire mesh

M60

Wire mesh

M90

Wire mesh

Nominal Filtration

P10

Resin impregnated paper

P25

Resin impregnated paper

Nominal Filtration

7 - Max filter element differential pressure

N

Δp 20 bar

8 - Option

P01

MP Filtri standard

Pxx

Customer request



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