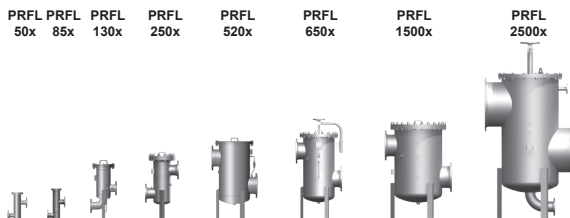


Process inline filter PRFL



Specifications	
Nominal size:	DN 50 – DN 700
$Q_{s \max}$:	3600 m³/h
$p_{s \max}$:	40 bar
Filtration ratings:	1 – 3000 µm

1. GENERAL

Product description

- Separation of solid contamination from water-based media
- Various filter materials with different filtration ratings can be used, depending on the cleanliness requirements
- Monitoring of the differential pressure via an optional clogging indicator

Filter element technology

- Inline filter element, flow from outside to inside
- Filtration materials:
 - Chemicon® wire mesh: 25 to 500 µm
 - Wedge wire: 50 to 3000 µm
 - Processmicron® polyester fleece: 1 to 90 µm (absolute)
 - Chemicon® metal fibre fleece: 1 to 20 µm (absolute)

Product advantages

- High filtration performance
- Simple handling
- Robust filter materials are ideally suited to long-term operation
- Cleanable or disposable filter elements possible as options
- Low operating costs
- Numerous equipment options

Technical data, filter housing										
Size	Port dimensions	Materials				P _S max [bar]	T _S max ¹⁾ [°C]	Weight [kg]	Volume [l]	
		Stainless steel	Carbon steel							
			Welded, corrosion protection internal	Spheroidal graphite iron, corrosion protection internal						
					without					with
50x	DN 50	•					PN 40	19	3.9	
85x	DN 80	•			•	•	PN 25	38	9.5	
130x	DN 50 / 65 / 80 / 100 / 125 / 150	•	•	•			PN 6 / 10 / 16	70	26	
250x	DN 100 / 125 / 150 / 200 / 250	•	•	•				115	46	
520x	DN 150 / 200 / 250	•	•	•				300	118	
650x	DN 200 / 250 / 300	•	•	•				360	213	
1500x	DN 250 / 300 / 400 / 500	•	•	•				460	433	
2500x	DN 350 / 400 / 500 / 600 / 700	•	•	•				990	1390	

Technical data, filter elements ²⁾									
Series	Number of filter elements	Filter element type	Overall surface [cm²]			Filter materials and filtration ratings ³⁾			
			Wedge wire	Chemicon® wire mesh and Processmicron® bonded	Chemicon® wire mesh and metal fleece; crimped	Processmicron polyester fleece	Chemicon® metal fibre fleece	Chemicon® wire mesh	Wedge wire
50x	1	L-50x-	667	5665	4353	1	3 (absolute)		50
85x	1	L-85x-	1300	11171	8918	3			100
130x	1	L-130x-	1890	16825	14314	5			150
250x	3	L-85x-	3900	33513	26754	10			200
520x	4	L-130x-	7560	67300	57256	20			250
650x	5	L-130x-	9450	84125	71570	30			300
1500x	10	L-130x-	18900	168250	143140	40			400
650x	5	L-130x-	9450	84125	71570	50			500
1500x	10	L-130x-	18900	168250	143140	70			1000
2500X	17	L-260x-	64426	572050	486676	90			2000
						(absolute)		500	3000

¹⁾ Internally coated housing $T_{s \max} +60$ °C – higher temperature on request

²⁾ All filter elements $\Delta p_{\max}$: 10 bar
Exception: $\Delta p_{\max}$ Chemicon® wire mesh and Processmicron® with bonded end caps: 3 bar (bypass cracking pressure); $\Delta p_{\max}$ wedge wire size 853 / 1303 / 2603: 6 bar

³⁾ Filter elements with bonded end caps
 $T_{s \max} +50$ °C

2. FUNCTION AND SPECIAL FEATURES

FUNCTION

- Flow through the filter element is from the outside to the inside
- Solid particles are separated at the filter material
- Particle deposition during filtration increases the pressure loss
- When the maximum pressure differential is reached, the filter elements are removed
- Processmicron® disposable polyester fleece elements must be exchanged
- Cleanable filter elements (wedge wire, Chemicron® wire mesh and Chemicron® metal fibre fleece) can be cleaned

CLEANING FILTER ELEMENTS

Wedge wire and wire mesh filter elements

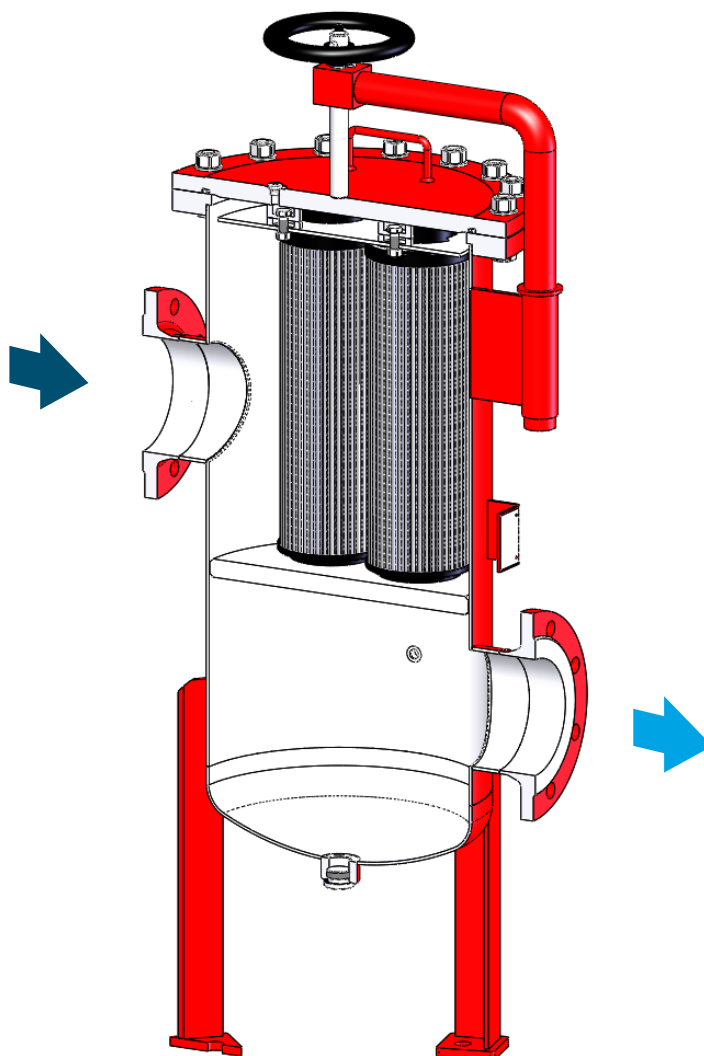
- Pressure washer in opposite direction to filtration
- Specific solvents
- Ultrasonic bath
- Rinse off with water hose

Chemicron® metal fibre fleece

- Specific solvents
- Ultrasonic bath
- Rinse off with water hose
- Possibly pyrolysis or vacuum pyrolysis

ACCESSORIES (OPTIONAL)

- Cover plate lifting device
- Drain and vent ball valves
- Various clogging indicators



3. CLOGGING INDICATORS

Type Clogging indicator/differential pressure monitoring	Figure	Description
Visual PVD x B.x		• Visual display with green/red field • Automatic reset
Electrical PVD x C.x		• Electrical signal when differential pressure trigger point is reached • Switch type: normally closed or normally open • Automatic reset
Visual-electrical PVD x D.x /-L...		• Lamp for visual display • Electrical signal (normally closed or normally open) • Automatic reset
Differential pressure gauge DS11		• Two micro-switches (normally closed or normally open) • Switch points of the micro-switches can be adjusted from outside • Measuring cell made from aluminium or stainless steel

4. FILTER CALCULATION*

CHECKLIST FOR FILTER CALCULATION

STEP 1: REQUIRED OPERATING DATA

- Observe the Pressure Equipment Directive PED 2014/68/EU
- Type of operating medium
- Viscosity
- Operating pressure
- Operating temperature
- Flow rate
- Required filtration rating
- Type of solid substances to be separated
- Solid particle content

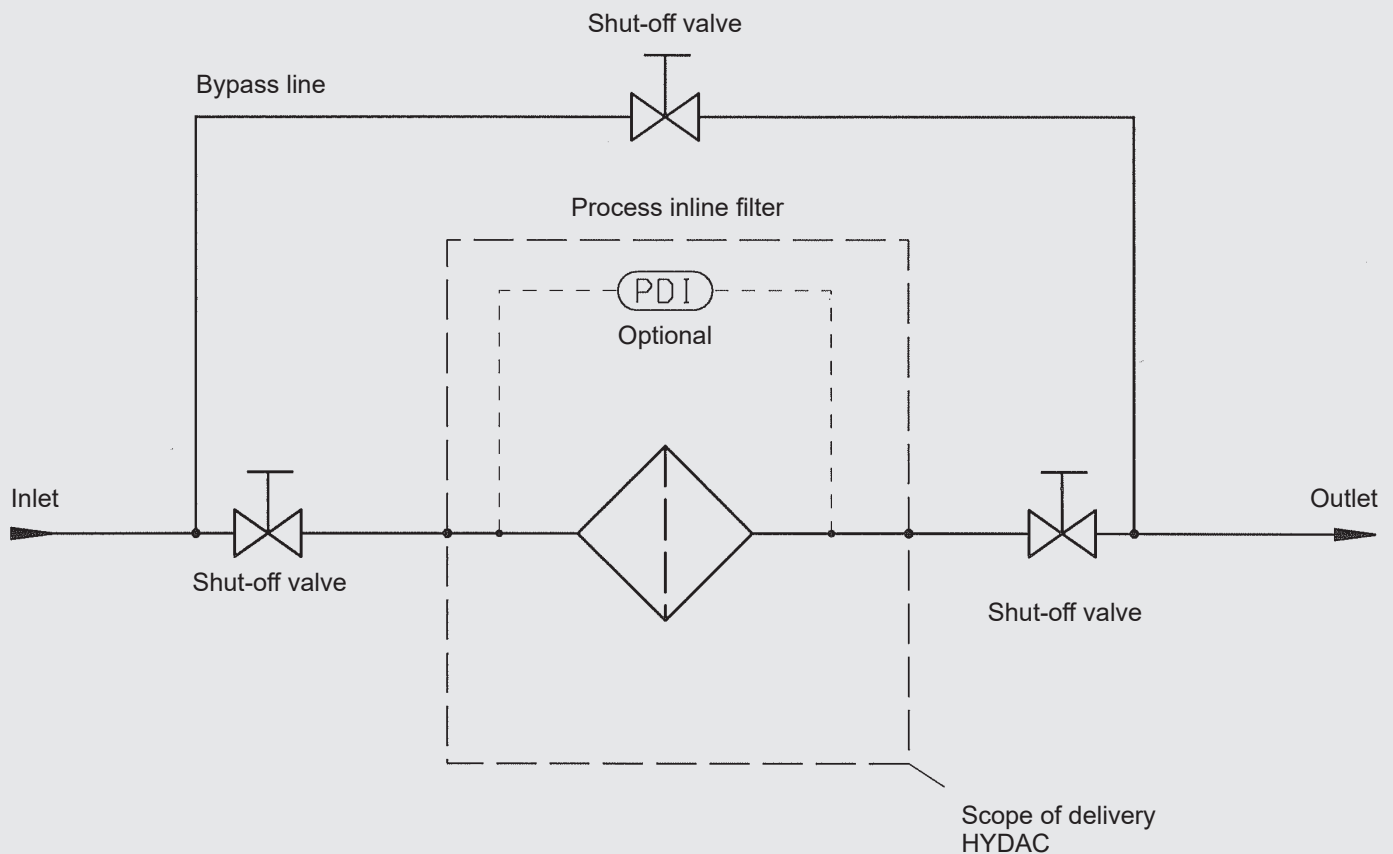
STEP 2: FILTER SIZING

- Hydraulic determination of size on basis of pressure drop curves
- The initial pressure difference for clean filter elements should not exceed the following values:
 - Operating pressure ≤ 6 bar; 0.2 bar
 - Operating pressure > 6 bar to 10 bar; 0.3 bar
- Housing material selected on basis of operating data and operating medium
- Sealing material selected on basis of operating data and operating medium
- Selection of nominal sizes for inlet and outlet flanges
- Different connection sizes can be selected for many sizes
- The flow velocity of 4 m/s at the flange inlet should not be exceeded

STEP 3: DETERMINING THE FILTRATION RATING

- **As a basic rule:**
as coarse as possible – as fine as necessary!

CIRCUIT DIAGRAM

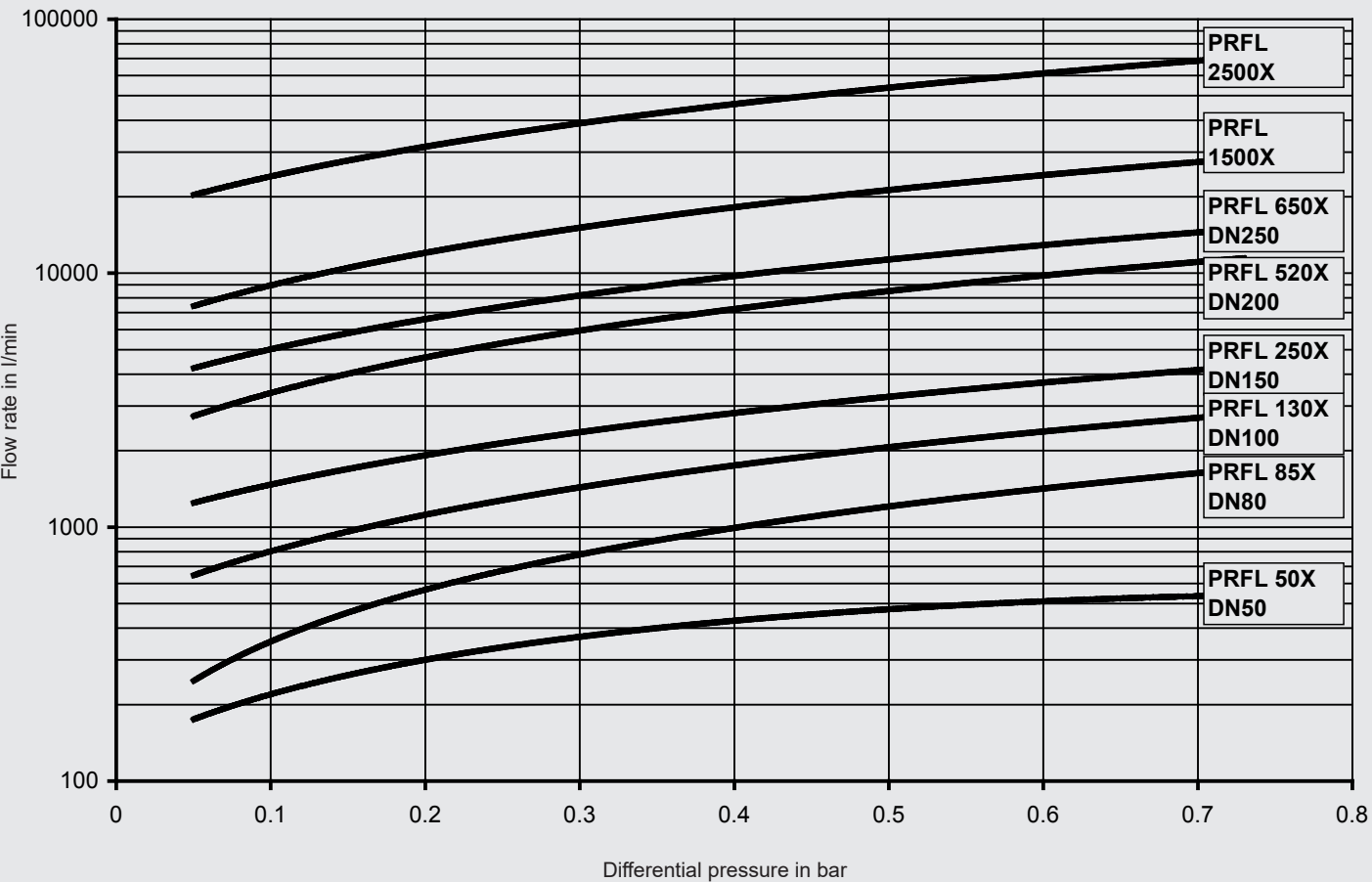


* Please contact our Head Office if you have any queries regarding filter sizing.

PRESSURE DROP CURVE, HOUSING

For filter elements made from Chemicon® wire mesh (all filtration ratings) and for wedge wire 100 µm, the housing performance curve applies to the total pressure drop. For 50 µm wedge wire, 30% must be added to the total pressure drop. The curves apply to water at 20 °C or fluids up to 15 mm²/s!

For filter elements < 20 µm (Processmicron® polyester fleece and Chemicon® metal fibre fleece), please contact the Head Office.



5. FILTER CONFIGURATION*

	Standard	Optional
Housing manufacture	AD technical data sheets 2014/68/EU	- ASME code design with or without U-stamp - EN 13445
Flange connections	- DIN EN - DN 50 to DN 700	- ASME - SAE
Housing materials	- Carbon steel - Stainless steel 1.4301 or similar (group 304) - Stainless steel 1.4571 or similar (group 316)	Others on request
Corrosion protection, external	2-layer epoxy coating (not applicable to stainless steel housings)	- PUR top coat (colour RAL 7040) - RAL/Munsell colours to customer specification (for carbon steel grades)
Corrosion protection, internal	2K internal epoxy coating (not applicable to stainless steel housings)	Various multi-layer coatings
Filtration materials:	- Processmicron® polyester fleece - Chemicon® metal fibre fleece - Chemicon® wire mesh - Wedge wire	
Sealing materials	- FPM/FKM - Asbestos-free gasket	Various sealing materials on request, depending on the resistance to the fluid
Cover plate lifting device		With cover plate lifting device (sizes 520x and above)
Differential pressure monitoring		- Visual - Electrical - Visual-electrical - Differential pressure gauge with two micro-switches
Documentation	Assembly and Operating Instructions	- Acceptance test certificate 3.1 according to DIN EN 10204 for design, pressure and functional testing - Material certificates according to DIN EN 10204, 3.1 for pressure-bearing media-contacting housing parts - Approvals: third parties (TÜV, ABS, Lloyd's, etc.) - Welding instructions (WPS) / test certificate (PQR / WPQ) - And more on request

* Other versions and customer-specific special solutions after consultation with our Head Office.

6. MODEL CODE

MODEL CODE, PROCESS INLINE FILTER PRFL

PRFL – SW – 2500E1 – A – AF12 – 3000 – 12 – 5 – 5 – 1234567

Filter type

PRFL = inline filter, single

Filter material

PES = Processmicron® polyester fleece (disposable)
D = Chemicron® wire mesh with bonded end caps (cleanable)
DG = Chemicron® wire mesh with crimped end caps (cleanable)
M = Chemicron® metal fibre fleece with bonded end caps (cleanable)
MG = Chemicron® metal fibre fleece with crimped end caps (cleanable)
S = wedge wire with bonded end caps (cleanable)
SW = wedge wire with welded end caps (cleanable)

Size

50x = DN 50
85x = DN 80
130x = DN 50 / 80 / 100 / 125 / 150
250x = DN 100 / 150 / 200
520x = DN 150 / 200 / 250
650x = DN 200 / 250 / 300
1500x = DN 250 / 300 / 400 / 450 / 500
2500x = DN 300 / 400 / 450 / 500 / 600 / 700

Final digit x

E1 = housing stainless steel 1.4541 or similar (group 304)
not possible for PRFL 50x or 85x
E2 = housing stainless steel 1.4571 or similar (group 316)
4 = housing carbon steel + internal epoxy coating
5 = housing carbon steel without coating

Housing pressure rating

A = 6 bar
B = 10 bar
C = 16 bar
D = 25 bar: PRFL 504 / 505 / 854 / 855 / 85E2 only in 25 bar
E = 40 bar: PRFL 50E2 only in 40 bar

Type of connection (see table)

F = flange according to DIN DN with nominal size afterwards, e.g. F100
AF = flange according to ASME with nominal size in inches afterwards
S = SAE port with nominal size in inches afterwards (only up to 3 inches)
SC = SAE port with counterflange and welding end

Filtration rating in µm

Processmicron® polyester fleece = 1 / 3 / 5 / 10 / 20 / 30 / 40 / 50 / 70 / 90 (absolute)
Chemicron® metal fibre fleece = 1 / 3 / 5 / 10 / 20 (absolute)
Chemicron® wire mesh = 25 / 40 / 60 / 100 / 150 / 200 / 250 / 500
Wedge wire = 50 / 100 / 200 / 300 / 500 / 1000 / 2000 / 3000

Equipment

0 = without additional equipment
1 = cover plate lifting device
2 = vent and drain ball valve

Type of clogging indicator

0 = without clogging indicator
1 = visual indicator (PVD 2 B.1)
2 = visual-electrical indicator (PVD 2 D.0)
4 = visual-analogue indicator in aluminium with two adjustable contacts (0–4 bar)
(only possible under certain circumstances with cast material, contact Head Office!)
5 = visual-analogue indicator in stainless steel with two adjustable contacts (0–4 bar)
(only possible under certain circumstances with cast material, contact Head Office!)
6 = electrical differential pressure switch (PVD 2 C.0)

Modification number

5 = specified by manufacturer

Supplementary details

Code number for special equipment

6. MODEL CODE

MODEL CODE, FILTER ELEMENT

L - 1303 - D - 100 - V

Filter element type

Inline filter element

Size

503 / 853 / 1303 / 2603

Filter material

PES = Processmicron® polyester fleece (disposable)
D = Chemicron® wire mesh with bonded end caps (cleanable)
DG = Chemicron® wire mesh with crimped end caps (cleanable)
M = Chemicron® metal fibre fleece with bonded end caps (cleanable)
MG = Chemicron® metal fibre fleece with crimped end caps (cleanable)
S = wedge wire with bonded end caps (cleanable)
SW = wedge wire with welded end caps (cleanable)

Filtration rating in µm

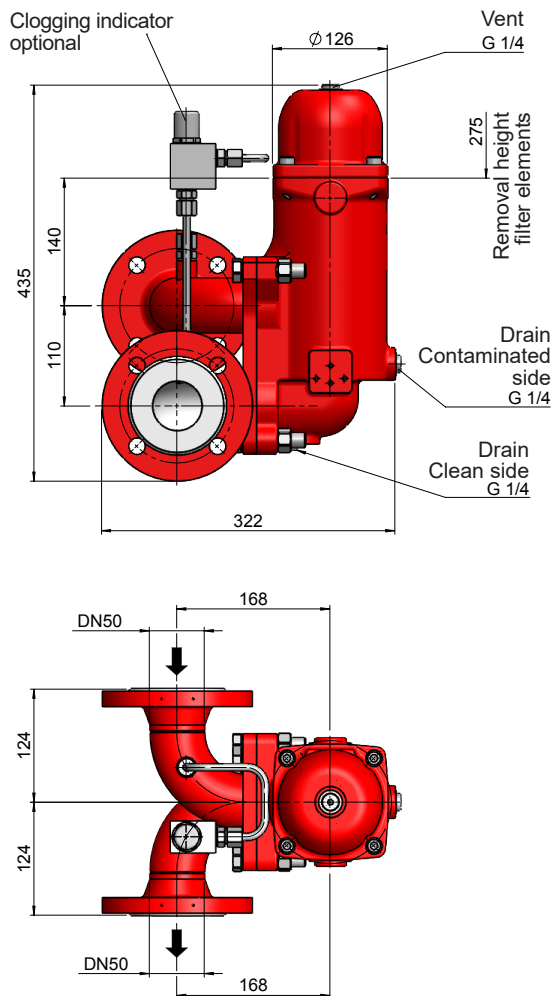
Processmicron® polyester fleece = 1 / 3 / 5 / 10 / 20 / 30 / 40 / 50 / 70 / 90 (absolute)
Chemicron® metal fibre fleece = 1 / 3 / 5 / 10 / 20 (absolute)
Chemicron® wire mesh = 25 / 40 / 60 / 100 / 150 / 200 / 250 / 500
Wedge wire = 50 / 100 / 200 / 300 / 500 / 1000 / 2000 / 3000

Sealing material

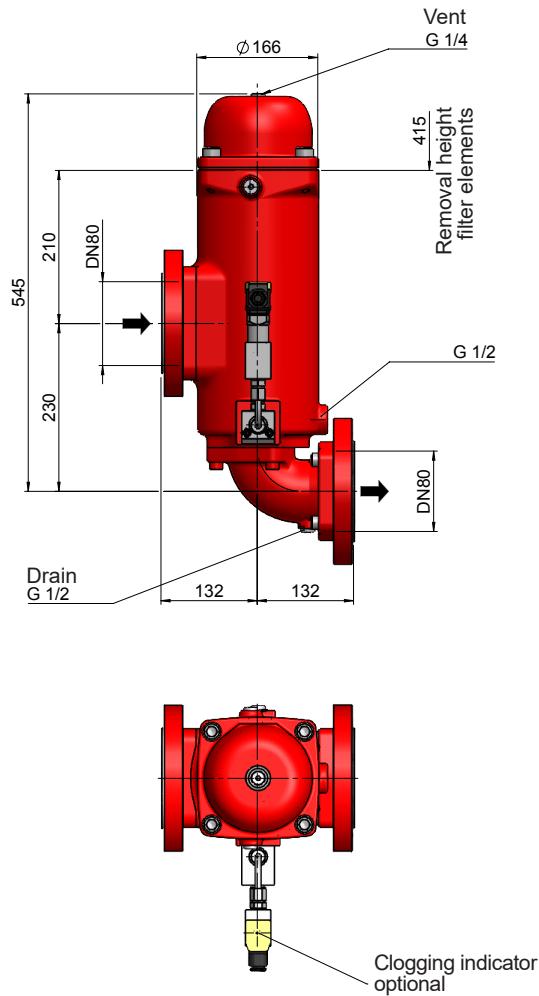
V = FPM / FKM
N = NBR
E = EPDM
S = silicone

7. DIMENSIONS

PRFL 504 / 505 SPHEROIDAL GRAPHITE IRON



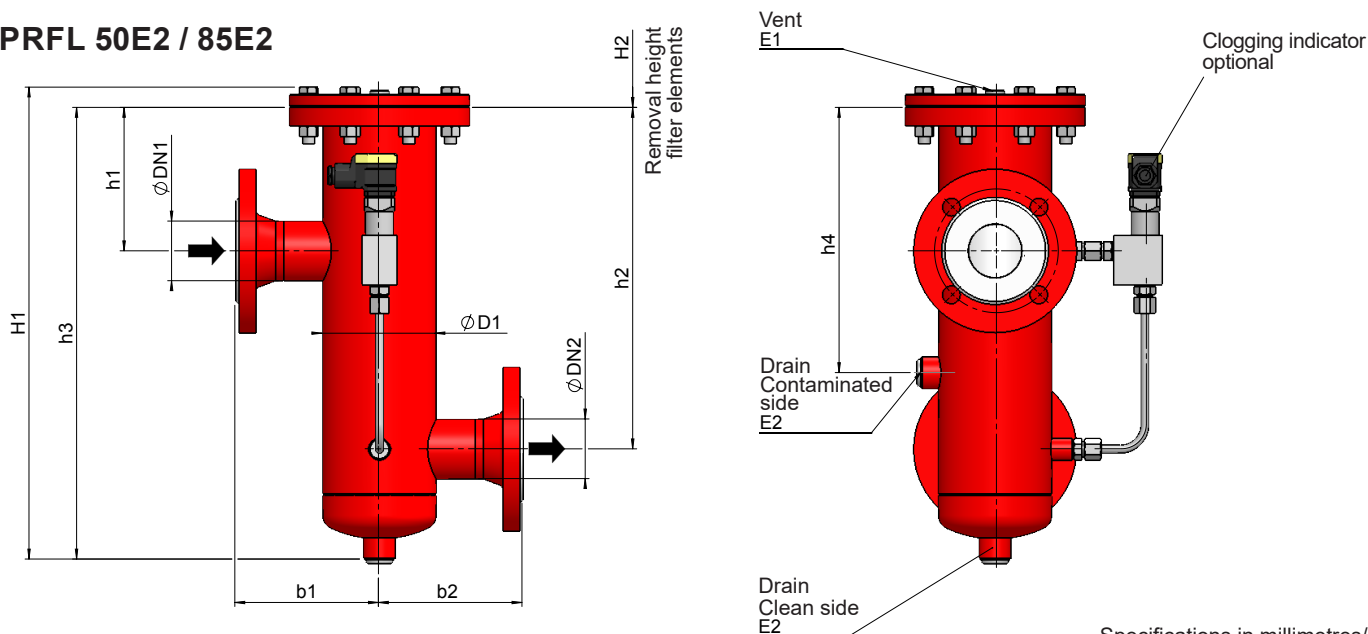
PRFL 854 / 855 SPHEROIDAL GRAPHITE IRON



Specifications in millimetres/inches.
Subject to technical modifications.

Size	DN1	DN2	b1	b2	h1	h2	l1	l2	H1	H3	L1	D1	E1	E2
PRFL 504 / 505 cast iron	50	50	124	124	110	140	168	168	429	210	322	124	G1/4	G1/4
PRFL 854 / 855 cast iron	80	80	132	132	230	210	—	—	540	350	—	166	G1/4	G1/2

PRFL 50E2 / 85E2

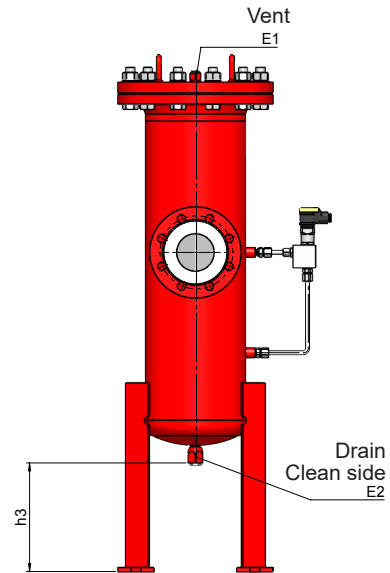
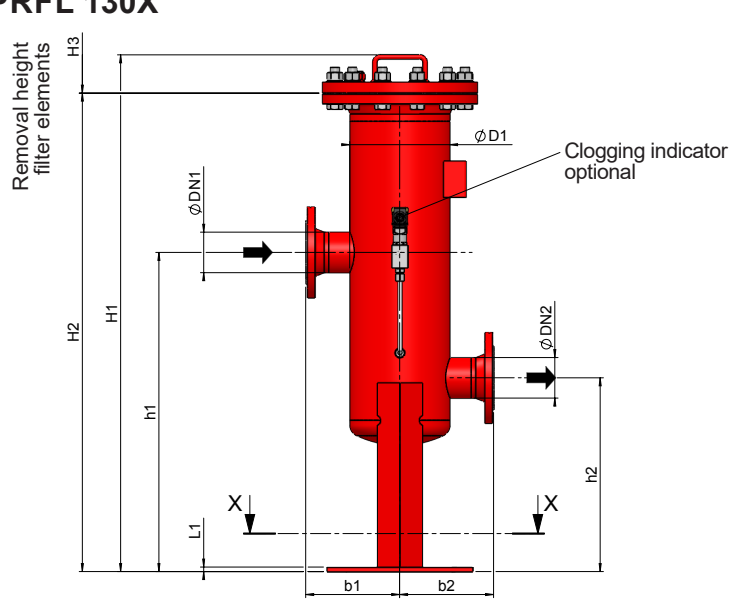


Specifications in millimetres/inches.
Subject to technical modifications.

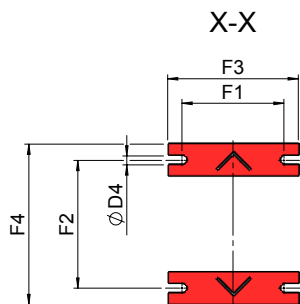
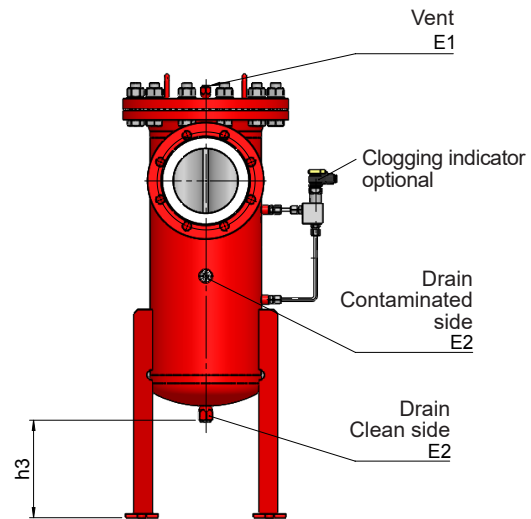
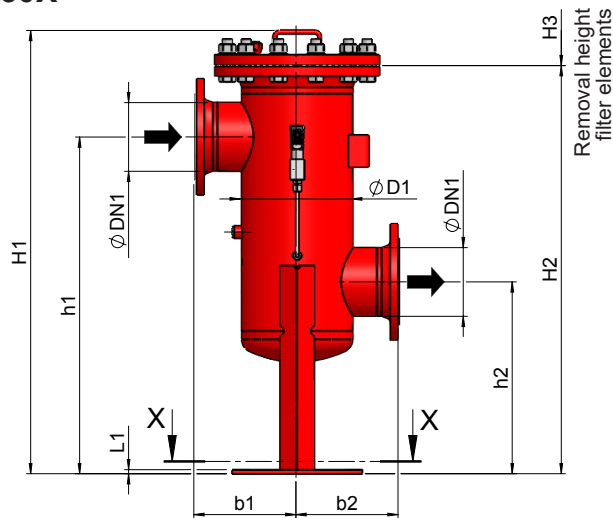
Size	DN1	DN2	b1	b2	h1	h2	h3	h4	H1	H2	D1	E1	E2
PRFL 50E2	50	50	145	145	145	345	456	285	471	300	114.3	G1/4	G1/2
PRFL 85E2	80	80	170	170	240	490	615	413	635	450	139.7	G1/4	G1/2

7. DIMENSIONS

PRFL 130X



PRFL 250X

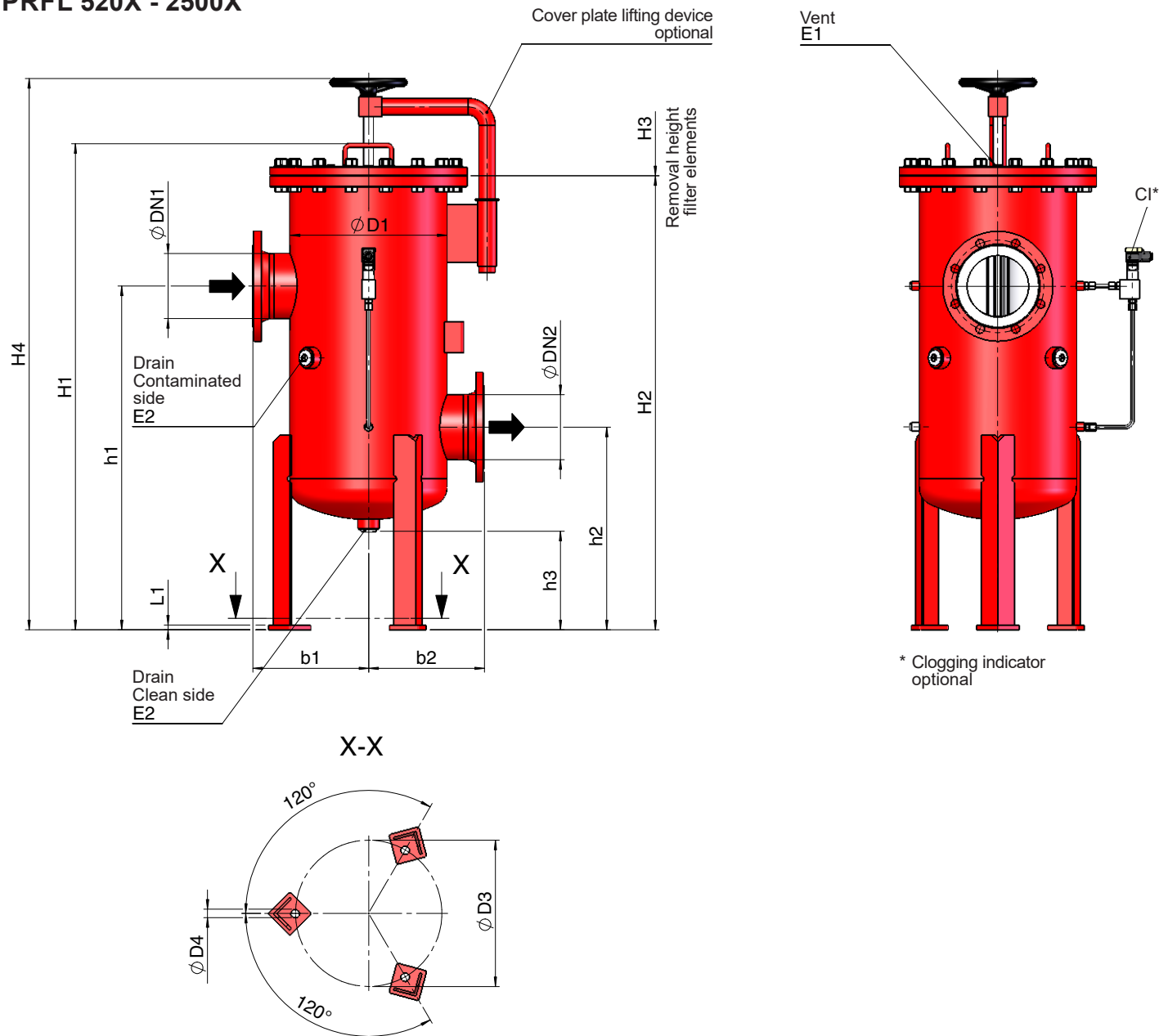


Specifications in millimetres/inches.
Subject to technical modifications.

Size	DN1	DN2	b1	b2	h1	h2	h3	H1	H2	H3	L1	D1	D4	E1	E2	F1	F2	F3	F4
PRFL 130x...F50	50	50	225	225	700	425	240	1135	1050	500	10	219.1	22	G1/4	G1/2	250	260	320	340
PRFL 130x...F65	65	65	225	225	700	425	240	1135	1050	500	10	219.1	22	G1/4	G1/2	250	260	320	340
PRFL 130x...F80	80	80	225	225	700	425	240	1135	1050	500	10	219.1	22	G1/4	G1/2	250	260	320	340
PRFL 130x...F100	100	100	225	225	700	425	240	1135	1050	500	10	219.1	22	G1/4	G1/2	250	260	320	340
PRFL 130x...F125	125	125	225	225	700	425	200	1135	1050	500	10	219.1	22	G1/4	G1/2	250	260	320	340
PRFL 130x...F150	150	150	225	225	700	425	200	1135	1050	500	10	219.1	22	G1/4	G1/2	250	260	320	340
PRFL 250x...F100	100	100	250	250	825	460	220	1140	1050	500	10	273	22	G1/4	G1/2	250	313	320	393
PRFL 250x...F125	125	125	250	250	825	460	220	1140	1050	500	10	273	22	G1/4	G1/2	250	313	320	393
PRFL 250x...F150	150	150	250	250	825	460	220	1140	1050	500	10	273	22	G1/4	G1/2	250	313	320	393
PRFL 250x...F200	200	200	250	250	825	460	180	1190	1100	500	10	273	22	G1/4	G1/2	250	313	320	393
PRFL 250x...F250	250	250	250	250	825	460	180	1190	1100	500	10	273	22	G1/4	G1/2	250	313	320	393

7. DIMENSIONS

PRFL 520X - 2500X

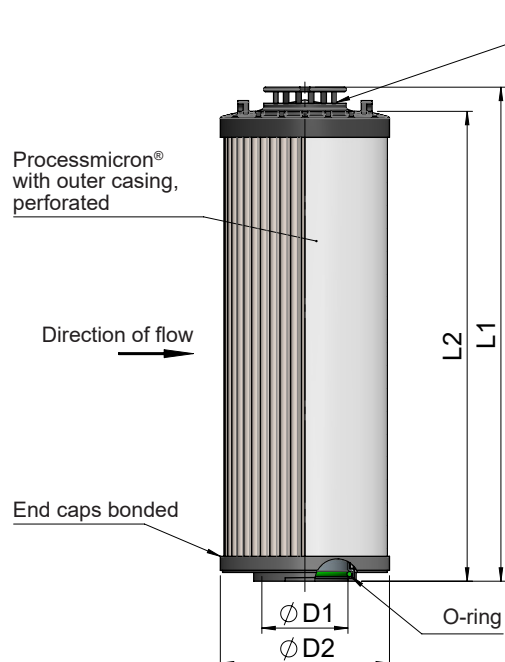


Specifications in millimetres/inches.
Subject to technical modifications.

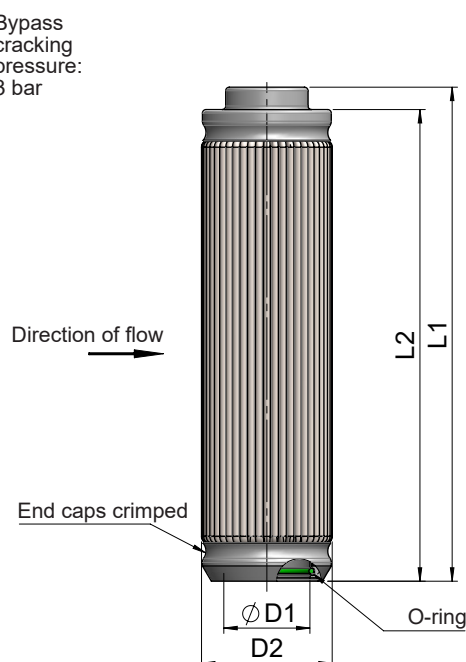
Size	DN1	DN2	b1	b2	h1	h2	h3	h4	H1	H2	H3	H4	L1	D1	D3	D4	E1	E2
PRFL 520x...F150	150	150	325	325	890	525	240	300	1285	1200	500	1525	12	406.4	380	22	G1/4	G3/4
PRFL 520x...F200	200	200	325	325	890	525	240	300	1285	1200	500	1525	12	406.4	380	22	G1/4	G3/4
PRFL 520x...F250	250	250	325	325	890	525	200	300	1335	1250	500	1525	12	406.4	380	22	G1/4	G3/4
PRFL 650x...F200	200	200	400	400	1050	600	275	300	1405	1300	500	1645	12	508	481	22	G1/4	G3/4
PRFL 650x...F250	250	250	400	400	1050	600	275	300	1405	1300	500	1645	12	508	481	22	G1/4	G3/4
PRFL 650x...F300	300	300	400	400	1050	600	220	300	1455	1350	500	1695	12	508	481	22	G1/4	G3/4
PRFL 1500x...F250	250	250	500	500	1185	670	250	300	1630	1510	500	1870	12	711	690	22	G1/4	G1
PRFL 1500x...F300	300	300	500	500	1185	670	250	300	1630	1510	500	1870	12	711	690	22	G1/4	G1
PRFL 1500x...F350	350	350	500	500	1185	670	200	300	1630	1510	500	1870	12	711	690	22	G1/4	G1
PRFL 1500x...F400	400	400	500	500	1185	670	200	300	1730	1610	500	1970	12	711	690	22	G1/4	G1
PRFL 1500x...F500	500	500	500	500	1185	670	170	300	1820	1700	500	2060	12	711	690	22	G1/4	G1
PRFL 2500x...F350	350	350	700	700	1800	950	350	300	2325	2200	1000	2565	12	914	858	22	G1/4	G1
PRFL 2500x...F400	400	400	700	700	1800	950	350	300	2400	2275	1000	2640	12	914	858	22	G1/4	G1
PRFL 2500x...F500	500	500	700	700	1800	950	350	300	2400	2275	1000	2640	12	914	858	22	G1/4	G1
PRFL 2500x...F600	600	600	700	700	1800	950	300	300	2500	2375	1000	2740	12	914	858	22	G1/4	G1
PRFL 2500x...F700	700	700	700	700	1800	950	250	300	2570	2450	1000	2810	12	914	858	22	G1/4	G1

8. DIMENSIONS, FILTER ELEMENTS

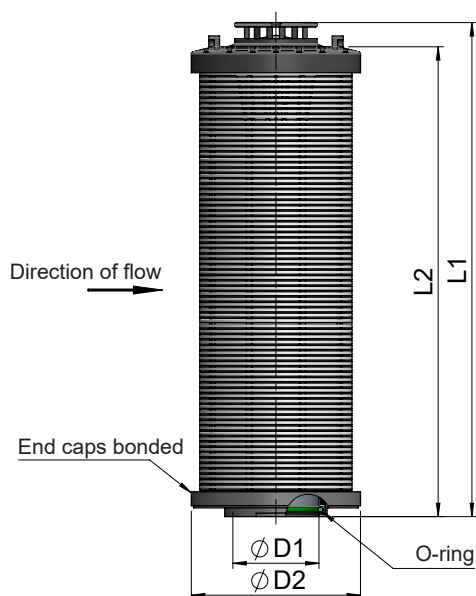
Chemicon® wire mesh "D"
Chemicon® metal fibre fleece
"M"
Processmicron® PES



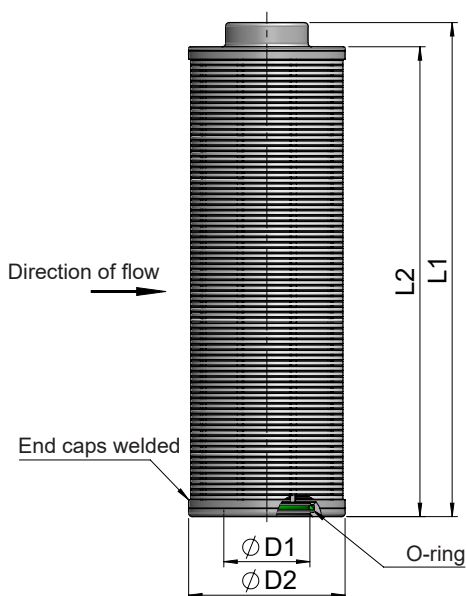
Chemicon® wire mesh "DG"
Chemicon® metal fibre fleece
"MG"



Wedge wire "S"



Wedge wire "SW"



Specifications in millimetres.
 Subject to technical modifications.

Size	D1	D2	L1	L2
L-503-D/M/PES/S	48.1	95	276	263
L-853-D/M/PES/S	68.1	114	414	394
L-1303-D/M/PES/S	96.1	143	483	458
L-2603-D/M/PES/S	96.1	143	922	897

Size	D1	D2	L1	L2
L-503-DG/MG	48.1	76	276	263
L-853-DG/MG	68.1	91	414	394
L-1303-DG/MG	96.1	125	483	458
L-2603-DG/MG	96.1	125	922	897

Size	D1	D2	L1	L2
L-503-SW	48.1	87.4	276	263
L-853-SW	68.1	113	414	394
L-1303-SW	96.1	143	483	458
L-2603-SW	96.1	143	922	897

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin black lines. There are no margins, text, or other markings on the page.

The information in this brochure relates to the operating conditions and applications described.
For applications and/or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

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