



PN16

## Filtration | CLEARPOINT® 3eco Flange Filter

# CLEARPOINT® 3eco: The new high-performance and increased energy efficiency flange filter generation

### Improved Oil Separation Performance

The latest generation of the CLEARPOINT® 3eco compressed air filter series has enabled us to improve our solutions for compressed air filtration and be able to increase the deposition rate for oil aerosols by up to 10 fold. The differential pressure can be simultaneously reduced by up to 50 % and the energy efficiency can therefore be considerably optimised. For these reasons we are very pleased to add our ECO-Label on this product.

### Energy efficient and safe compressed air filtration

Taking advantage of new material and production technologies as well as a flow-optimised, corrosion-protected housing design, CLEARPOINT® 3eco provides safe and reliable filtration and a qualitative improved compressed air with considerably reduced operating costs.

### Three filtration rates fulfil every requirement

The particularly high deposition performance makes it possible to fulfil every compressed air filtration requirement with just 3 filtration rates – C (Coarse), F (Fine) and S (Ultra-fine). The new 3eco-filter has of course also been validated by the independent IUTA Institute according to ISO 12500.

### › High-performance filtration

- › Up to 10-fold increased oil aerosol deposition rates
- › Increased process safety
- › Efficient filtration between 30 % and 111 % for the energyoptimised volume flows

### › Optimum energy efficiency

- › Extensively reduced differential pressure
- › Reductions in energy and operating costs

### › Application-based

- › Able to fulfil every compressed air filtration requirement with just 3 filtration rates
- › Simplified assembly, installation, service and maintenance
- › Reliable operation
- › Performance range from 1,420 up to 34,680 m³/h at 7 bar

### › Tried and tested filter housing

- › High qualitative, safe and durable
- › Corrosion protection by utilising high-temperature galvanising
- › Rapid exchange of filter elements from the top



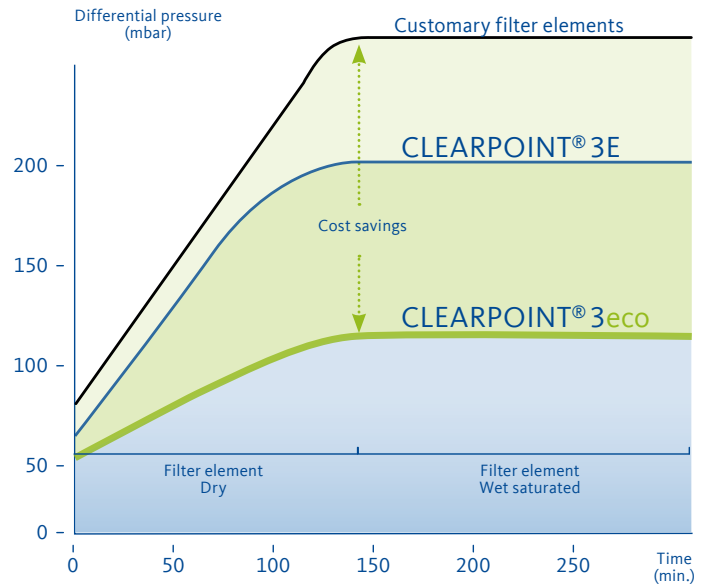
Better through Responsibility



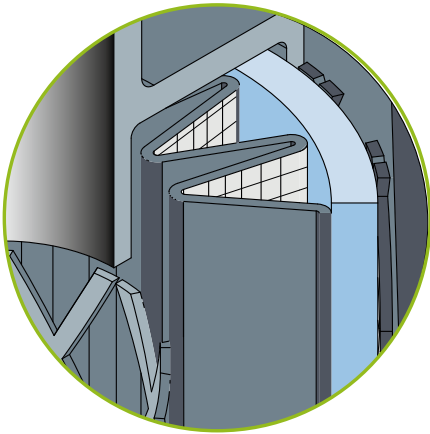
# CLEARPOINT® 3eco – Reduced Operating Costs by Utilising Optimised Differential Pressure

The decisive factor when evaluating the service life costs for compressed air filters is the energy consumption which occurs with differential pressure. This differential pressure is particularly low with the new CLEARPOINT® 3eco filter elements. The new CLEARPOINT® 3eco filter considerably lowers the operating costs even further when compared to the previous, CLEARPOINT® 3E filters.

The annual energy savings are sometimes even higher than the purchasing price for the filter elements. They also increase the process safety and efficiency accordingly.



The operating costs for the CLEARPOINT® 3eco filter can be considerably lowered. The graphic illustrates them on an example of the S040 filter with filter rating S with energy-optimised volume flow.



## New material and production processes make everything possible

The significant performance increase with the CLEARPOINT® 3eco filter is made possible by pioneering materials: An innovative open synthetic fleece (mesh) on the outside of the filter media ensures the required rigidity for the various filter positions, without thereby reducing the filter surface area.

The pioneering production processes by utilising Softpleat technology provide the optimum provide the optimum connection from many surfaces (important for particle deposition) and higher filter bed depths (ensures the deep filtration, especially for oil aerosols).

## The Tried and Tested Filter Housing with the Practice Oriented Details

Simple installation with two same-height compressed air connections



The optional differential pressure gauge indicates directly whether the filter unit must be changed – ideal to retain the energy costs at a low level.

High-quality surface protection by utilising high-temperature galvanising on the inside and paint on the outside



Service-friendly filter element interchange via the upper blank flange

The large surface area of the filter element reduces the air speed to energy-economic values

The flange filter can be anchored not only on the wall but also on the floor with the optional adjusting feet

# CLEARPOINT® 3eco PN 16: Flange Filter L080 – L304

Model:		L080	L100	L102	L150	L156	L200	L204	L254	L304	
PN16 DIN 2633		DN80	DN100	DN100	DN150	DN150	DN200	DN200	DN250	DN300	
Max. operating pressure (bar)		16					10 (16 bar as option)				
Energy-optimised	Volume flow 7 bar (m³/h),	1420	2840	4260	5680	9940	11360	14200	19880	31240	
	Differential pressure in mbar (wet saturated)	C-Degree	ø 50 mbar								
		F-Degree	ø 85 mbar								
S-Degree		ø 110 mbar									
Performance-oriented	Volume flow * 7 bar (m³/h),	1580	3160	4740	6320	11060	12640	15800	22120	34680	
	Differential pressure in mbar (wet saturated)	C-Degree	ø 70 mbar								
		F-Degree	ø 125 mbar								
S-Degree		ø 125 mbar									
Volume (l)		22	40	63	66	95	120	160	265	407	
Weight (kg)		58	68	93	120	130	160	175	260	365	
Category according to PED 2014/68/EU, Fluid Group 2		II	II	II	II	II	III	III	III	IV	

Filtration rate	Oil aerosol			Particle		Class according to ISO 8573-1
	Oil aerosol-deposition rate	Inlet concentration- (mg/m³)	Outlet concentration- (mg/m³)	Particle deposition	Particle size	
Coarse Filter C	84.00%	30	≤5	99.00%	2.0-5.0 µm	4.-.4
Fine Filter F	99.50%	10	0.05	99.83%	0.5-2.0 µm	2.-.2
Ultra-fine Filter S	99.95%	10	0.005	99.98%	0.1-0.5 µm	1.-.2*

Dimensions										
A (mm)	490	540	540	600	600	710	710	880	990	
B (mm)	173	200	208	233	238	273	273	246	312	
C1 (mm)	1350	1399	1420	1470	1478	1553	1570	1607	1750	
C2 (mm)	1134	1183	1204	1254	1262	1337	1354	1391	1534	
D (mm)	330	330	460	460	460	460	460	460	460	

\* In order to achieve Class 1.-.1, an additional active carbon filter and dust filter required as the coalescence filter cannot retain the oil vapour.

Filter element temperature resistance: 100 °C wet saturated/ 120 °C dry  
Effective filtration at 30% of the nominal/ energy-efficient volume flows

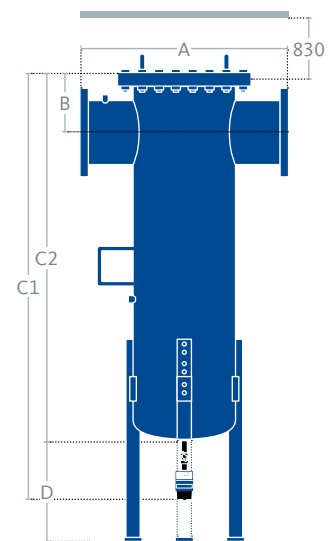
Filtration ratio	C (Coarse)	F (Fine)	S (Ultra-fine)
Initial-differential pressure Dry	30 mbar	50 mbar	60 mbar

## Example of calculation for required filter size when utilising ≠ 7 bar [ü]:

Volume flow rate: 4200 m³/h  
Operating pressure: 5 bar [g]  
Correction factor: 0.84  
> 4200 m³/h / 0.84 = 5000 m³/h (7 bar [ü])  
>> required filter size: L150

## Correction factors

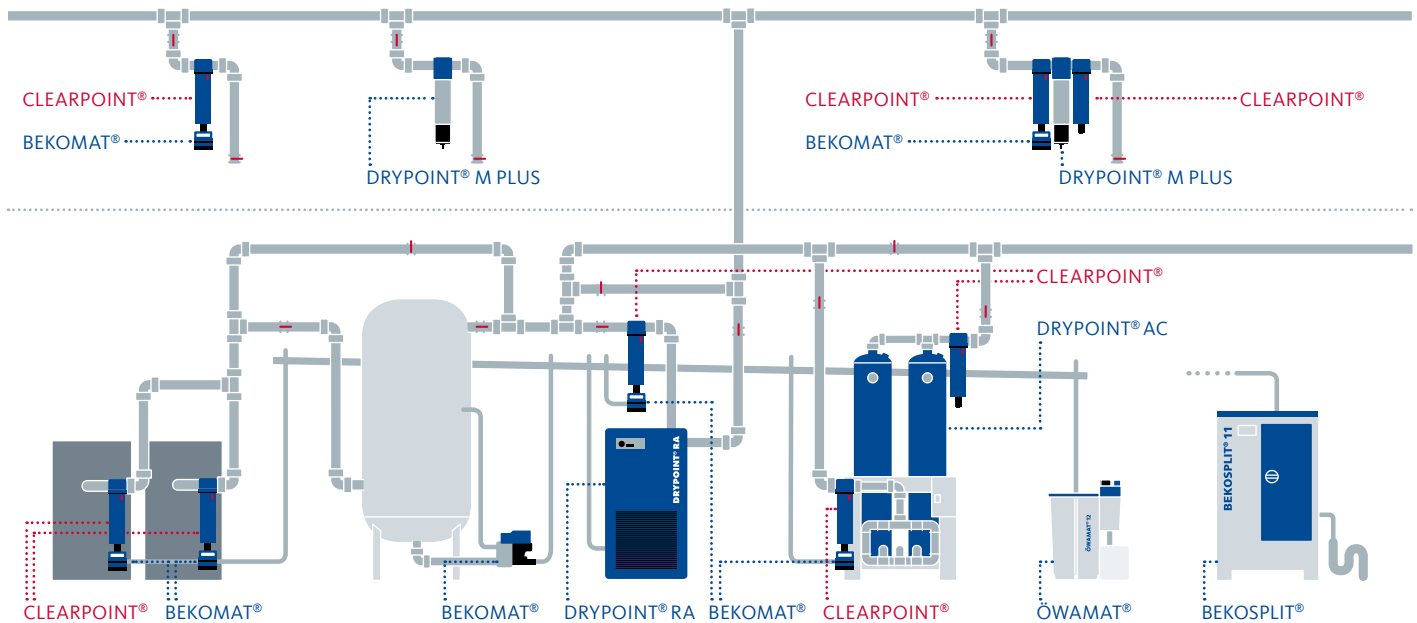
bar	0.3	0.6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction factor	0.21	0.29	0.38	0.53	0.65	0.76	0.84	0.92	1	1.07	1.13	1.19	1.25	1.31	1.36	1.41	1.46	1.51



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Since its founding, **BEKO TECHNOLOGIES** has continuously provided decisive solutions for compressed-air technology. Our ground breaking ideas have exerted considerable influence on development processes. So that this influence continues, over 10 % of our staff are active in the innovation field. With this potential and our personal commitment, we at **BEKO TECHNOLOGIES** represent trend-setting technologies, products and services.



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