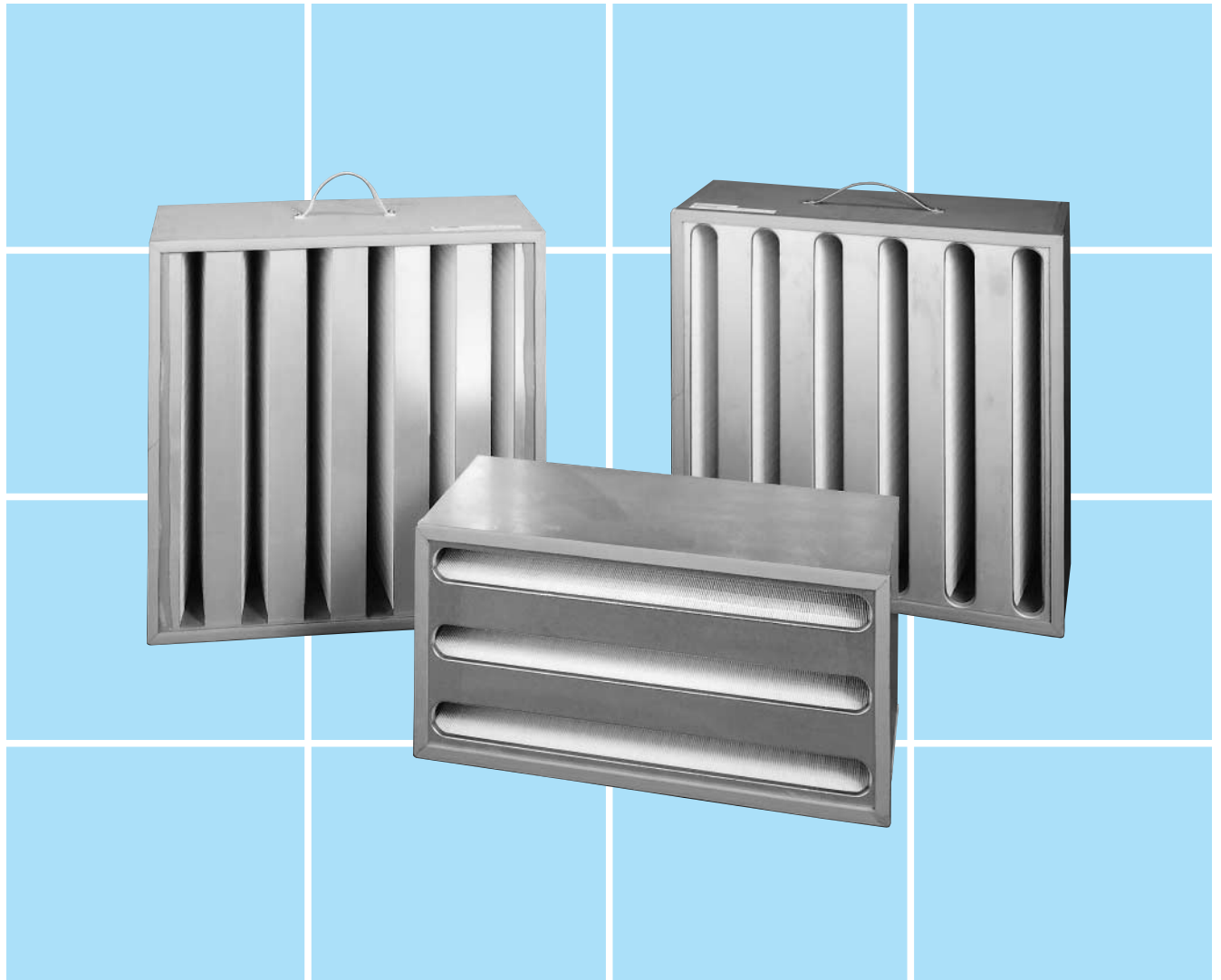


Luwa[®] N Ultrafilter



HEPA and ULPA Filters for Duct Installation

- Airflow up to 4000 m³/h – Efficiencies up to 99.9998 %
- Filter classes from F7 (EN 779) to U15 (EN 1822)
- Large filter medium area gives long life service – reduced maintenance and service cost
- Low pressure drop – reduced energy consumption
- Guaranteed leak-free
- Fully automatic Luwa ULPA-CATS test available – leaves nothing to chance
- Rigid metal frame, robust construction – minimum risk of damage
- Compact space saving design – lower cost for housing
- Integrated handle

Luwa

Luwa N Ultrafilter

Luwa N Ultrafilter are manufactured to international standard dimensions based on 609 x 609 x 292 mm. They are designed for the separation of suspended matter in supply and exhaust air systems in industry, clean room applications, medical and nuclear installations.

For small airflows and low operating temperatures, Luwa N-...-P Ultrafilters with filter mats of panel-design are an economic solution.

For face velocities up to 3 m/s (air volumes up to 4000 m³/h) Luwa N-...-V Ultrafilters with V-design filter mats (Fig. 2) are available in various pack densities as well as in various case and gasket materials. Luwa N-...-V Ultrafilters are unique in regard to their compact and robust construction with a minimum risk of damage and their large active medium area (long service life).

Design

Luwa N Ultrafilters are manufactured by a process that provides for extremely careful treatment of the material. The basic element in all filter types is the filter mat (Fig. 1) which is manufactured from a high quality glass fibre filter medium.

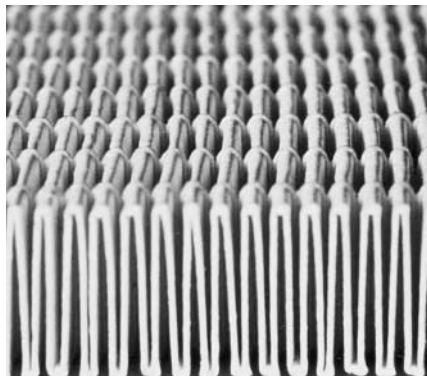
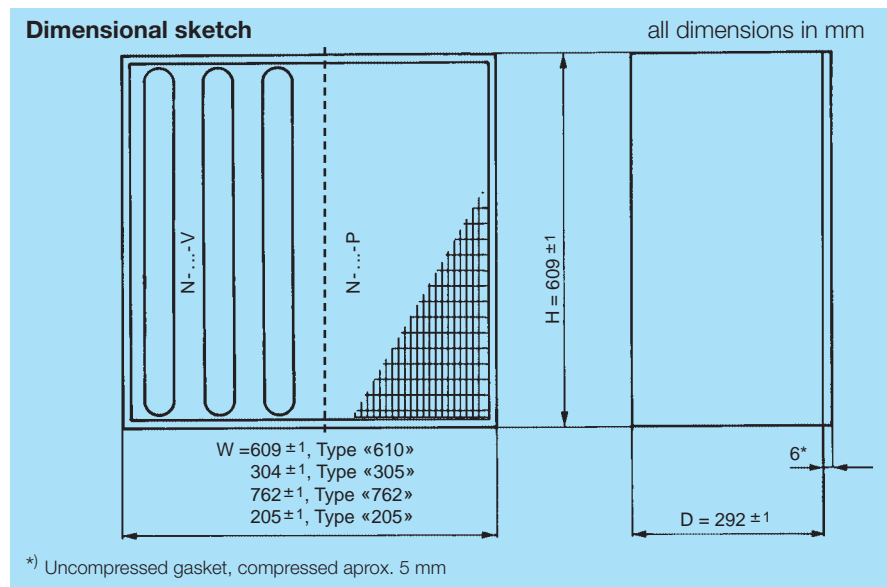


Fig. 1: Luwa filter mat

The pleats of the filter medium allow for a flow velocity at the filter mat that is approximately 100 times higher than for unfolded material. The number of stor-



age cells for trapping dust particles is also increased by the same factor. To keep the pleats uniformly spaced, special threads are inserted. Thus, the filter mat not only achieves high strength but also excellent elasticity. It is assembled as a self supporting element, insensitive to vibrations, into a solid wood or steel frame. The filter medium of the Luwa N Ultrafilter is sealed with its frame using a two-component Polyurethane compound.

EPDM is used as gasket material. It is particularly resistant to acids, brines, light and ageing. For high temperatures Silicone replaces Polyurethane or EPDM.

To assure a consistently high quality, Luwa has defined Quality levels for all N Ultrafilters (see table on page 3). They are further defined in detail in leaflet no. 49.12.31.

Prefilter for Ultrafilter type N

The service life of the Luwa Ultrafilters can be extended by pre-filtering larger particles. In general (depending on the application), the choice of a prefilter 3 classes lower than that of the final filter results in a service life of the final filter of approximately double.

We recommend the Luwa FS or FP Fine Dust Filters as pre-filters for N-filters groups H or U for any application.

Additional information can be found in the leaflets 42.11/12/13/15.01.

Built-in-housings

for Luwa N Ultrafilters:

- NF Front Withdrawal Frame, see leaflet no. 43.15.11.
- NG Filter Duct Housing, see leaflet no. 43.14.11.
- NSC Filter Duct Housing, see leaflet no. 43.13.11.

Special construction

Various N-Ultrafilters for special applications are available on request.

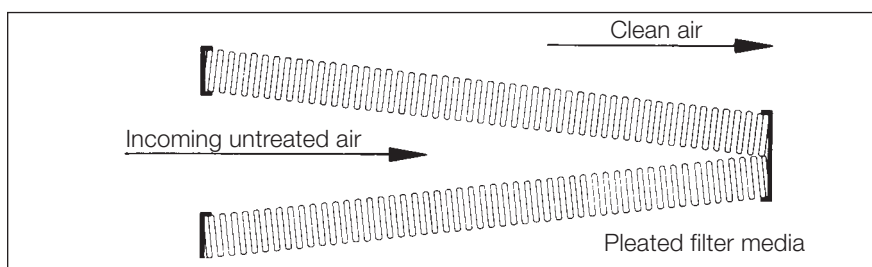


Fig. 2: V-shaped arrangement of filter mats in Luwa Ultrafilters N-...-V

Air efficiency	Filter type	N-	F7-V40	F8-V40	H-11 V35	H-13 P20	H13 V30	H-13 V34-T	H13-V40	H-14 V35	U-15 V30
Rated air flow ¹ (\dot{V}_N)	m ³ /h	4000	4000	3500	2000	3000	3400	4000	3500	3000	
Rated face velocity	m/s	3.0	3.0	2.6	1.5	2.25	2.55	3.0	2.6	2.25	
Initial pressure drop ² at \dot{V}_N	Pa	140	160	190	250	250	270	290	250	250	
Recommended final pressure drop ³	Pa	350	400	450	500	600	600	600	600	600	
Continuous operating temperature	°C	125	125	125	70	125	220	125/100 ⁸	125	125	

Typical efficiencies

EN 779 (average efficiency)	%	83	93	–	–	–	–	–	–	–
EN 1822 (typ. MPPS ⁴ integral value)	%	40	50	97	99.98	99.97	99.99	99.98	99.998	99.9998
EN 1822 (min. MPPS ⁴ integral value)	%	–	–	–	>99.95	>99.95	>99.95	>99.95	>99.995	>99.9995
EN 1822 (min. MPPS ⁴ local value ⁵)	%	–	–	–	>99.75	>99.75	>99.75	>99.75	>99.975	>99.9975
EUROVENT 4/4 ⁶ (typ. integral value)	%	–	–	99	99,997	99,996	99,999	99,997	99,9997	–

Filter classes

Filter class. acc. to EN 779 resp. EN 1822	F7	F8	H11	H13	H13	H13	H13	H13	H14	U15
Filter class. a.to EUROVENT 4/5 resp. 4/4	EU7	EU8	EU10	EU13	EU13	EU13	EU13	EU13	EU14	–
Fam. classification acc. to DIN 53438	K1/F1	K1/F1	K1/F1	K2/F2	K1/F1	K1/F1	K1/F1	K1/F1	K1/F1	K1/F1
Luwa quality level ⁷	A	A	A	B, D	B, D	B, D	B, D	B, D	B, D	D

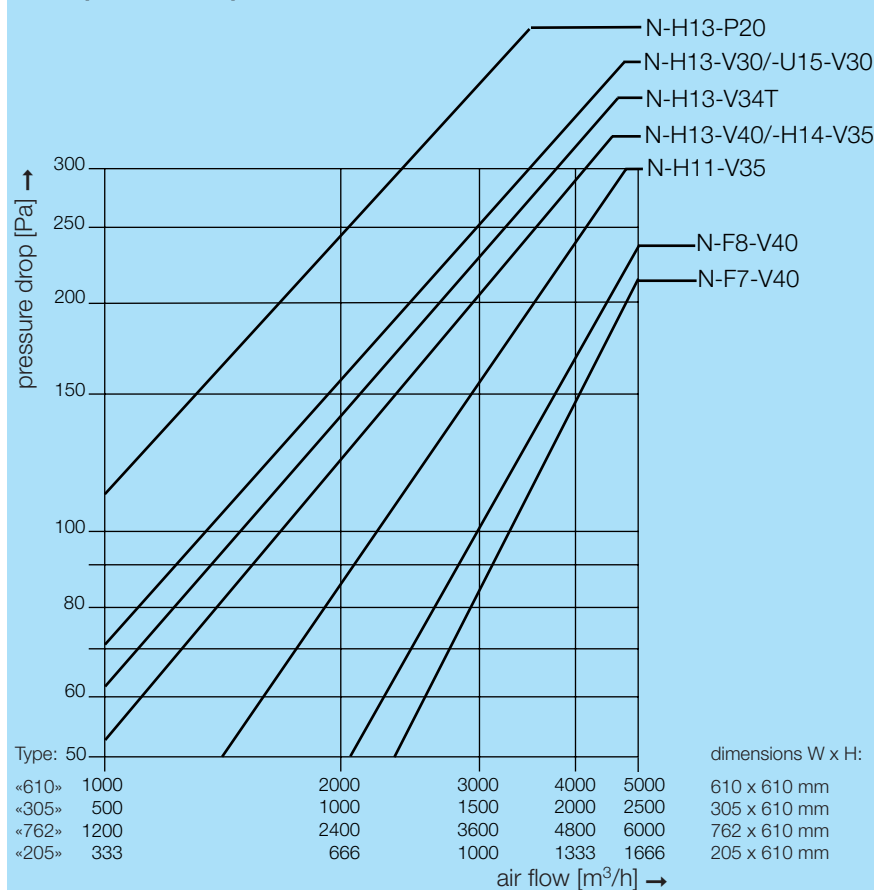
Operating limits

- The maximum relative humidity is 100 %, however, the air temperature must remain higher than the dew point.
- Continuous operating temperatures can be exceeded as follows:
 - type «...-P» to be avoided in general,
 - type «...-V» up to a max. of 1 hour and 15 °C.

Disposal

Filters contaminated with exterior air can be disposed of in the same way as normal **industrial refuse** in accordance with local regulations. Filters contaminated with bacterial, toxic and/or radioactive matter must be disposed of as **hazardous waste** in accordance with local regulations.

Initial pressure drop



Remarks

- 1) For cell size "610". Rated values for other filter sizes see page 4.
- 2) Tolerance ±10%.
- 3) Maximum final pressure drop <900 Pa.
- 4) MPPS = Most Penetrating Particle Size. Aerosol DEHS = Bis (2-ethyl-hexyl)-sebacate.
- 5) Local value = minimal value of efficiency at a leakage, tested with scanning.
- 6) "Sodium Flame Test" acc. to B.S. 3928, aerosol NaCl.
- 7) Bold printed = standard quality level. Normal printed = on request. All filters of quality level B and higher are tested for leakage and leakfree.
- 8) Exclusively for frame material chipboard (type "sp").

In view of continuous research and development we reserve the right to modify specifications and dimensions without prior notice.

Stated standards refer to the edition valid on the printing date of the leaflet.

Filtertype (bold print. = in stock)	Rated dimens. W x H x D [mm]	Rated air flow	Filtering area	Frame material	Sealant material	Gasket material	Weight [kg]
N-F7-V40-610-vz	610x610x292	4000 m ³ /h	26 m ²	galv. steel	PU	EPDM	19 kg
N-F7-V40-305-vz	305x610x292	2000 m ³ /h	13 m ²	galv. steel	PU	EPDM	12 kg
N-F8-V40-610-vz	610x610x292	4000 m ³ /h	26 m ²	galv. steel	PU	EPDM	19 kg
N-F8-V40-305-vz	305x610x292	2000 m ³ /h	13 m ²	galv. steel	PU	EPDM	12 kg
N-H11-V35-610-vz	610x610x292	3500 m ³ /h	26 m ²	galv. steel	PU	EPDM	19 kg
N-H11-V35-305-vz	305x610x292	1750 m ³ /h	13 m ²	galv. steel	PU	EPDM	12 kg
N-H11-V35-762-vz	762x610x292	4100 m ³ /h	30 m ²	galv. steel	PU	EPDM	23 kg
N-H13-P20-610-sp	610x610x292	2000 m ³ /h	18 m ²	chipboard	PU	EPDM	13 kg
N-H13-P20-305-sp	305x610x292	1000 m ³ /h	9 m ²	chipboard	PU	EPDM	8 kg
N-H13-P20-610-vz	610x610x292	2000 m ³ /h	18 m ²	galv. steel	PU	EPDM	15 kg
N-H13-P20-305-vz	305x610x292	1000 m ³ /h	9 m ²	galv. steel	PU	EPDM	10 kg
N-H13-V30-610-vz	610x610x292	3000 m ³ /h	26 m ²	galv. steel	PU	EPDM	19 kg
N-H13-V30-305-vz	305x610x292	1500 m ³ /h	13 m ²	galv. steel	PU	EPDM	12 kg
N-H13-V34-T-610-rf	610x610x292	3400 m ³ /h	37 m ²	stainless steel	Silikon	Silikon	20 kg
N-H13-V34-T-305-rf	305x610x292	1700 m ³ /h	18,5m ²	stainless steel	Silikon	Silikon	13 kg
N-H13-V40-610-vz	610x610x292	4000 m ³ /h	37 m ²	galv. steel	PU	EPDM	20 kg
N-H13-V40-305-vz	305x610x292	2000 m ³ /h	18,5 m ²	galv. steel	PU	EPDM	13 kg
N-H13-V40-762-vz	762x610x292	4700 m ³ /h	43 m ²	galv. steel	PU	EPDM	24 kg
N-H13-V40-205-vz	205x610x292	1300 m ³ /h	13,5 m ²	galv. steel	PU	EPDM	10 kg
N-H13-V40-610-rf	610x610x292	4000 m ³ /h	37 m ²	stainless steel	PU	EPDM	20 kg
N-H13-V40-305-rf	305x610x292	2000 m ³ /h	18,5 m ²	stainless steel	PU	EPDM	13 kg
N-H13-V40-762-rf	762x610x292	4700 m ³ /h	43 m ²	stainless steel	PU	EPDM	24 kg
N-H13-V40-610-sp	610x610x292	4000 m ³ /h	37 m ²	chipboard	PU	EPDM	15 kg
N-H13-V40-305-sp	305x610x292	2000 m ³ /h	18,5 m ²	chipboard	PU	EPDM	10 kg
N-H13-V40-762-sp	762x610x292	4700 m ³ /h	43 m ²	chipboard	PU	EPDM	18 kg
N-H14-V35-610-vz	610x610x292	3500 m ³ /h	40 m ²	galv. steel	PU	EPDM	21 kg
N-H14-V35-305-vz	305x610x292	1750 m ³ /h	20 m ²	galv. steel	PU	EPDM	14 kg
N-H14-V35-762-vz	762x610x292	4100 m ³ /h	47 m ²	galv. steel	PU	EPDM	25 kg
N-H14-V35-610-rf	610x610x292	3500 m ³ /h	40 m ²	stainless steel	PU	EPDM	21 kg
N-H14-V35-305-rf	305x610x292	1750 m ³ /h	20 m ²	stainless steel	PU	EPDM	14 kg
N-H14-V35-762-rf	762x610x292	4100 m ³ /h	47 m ²	stainless steel	PU	EPDM	25 kg
N-U15-V30-610-rf	610x610x292	3000 m ³ /h	40 m ²	stainless steel	PU	EPDM	21 kg
N-U15-V30-305-rf	305x610x292	1500 m ³ /h	20 m ²	stainless steel	PU	EPDM	14 kg

