

WALL-MOUNTED ELECTROSTATIC FILTER



Characteristics:

A filter that uses an electrostatic field to purify the air from the smallest particles. Wall-mounted.

SL

RAL

LAB

version: 14/02/25

Intended use

NEF-900 is a wall-mounted electro-filter air purifier, designed for use in closed rooms to purify the air from unwanted and dangerous particles. The NEF-900 filter captures and destroys 99.99% of nano particles, such as viruses, bacteria, molds and fungi, but also allergens and smog.

Design

NEF-900 is made of galvanized steel powder-coated in white RAL 9016 or black RAL 9005. The device is designed to be hung on the wall.

Table 1. NEF-900 parameters.

Description	Parameters
Surface size	up to 90 m ²
Volume	up to 900 m ³ /h
Purification efficiency *	99.99% *
Dimensions mm (width x depth x height)	685 x 218 x 437
Weight	20 kg
Housing material / colour	Galvanized steel/ White, black
Power supply voltage	230 V , 50Hz
Power consumption	30-145 W
Noise level	20-71 dB
Type of installation	Wall-mounted
Signaling / operating status	White LED - ON / OFF / Green LED - correct system operation
Ozone production (standard for rooms: 0.1 ppm)	0,00 ppm

* - value obtained based on research carried out by the Lublin University of Technology

Dimensions

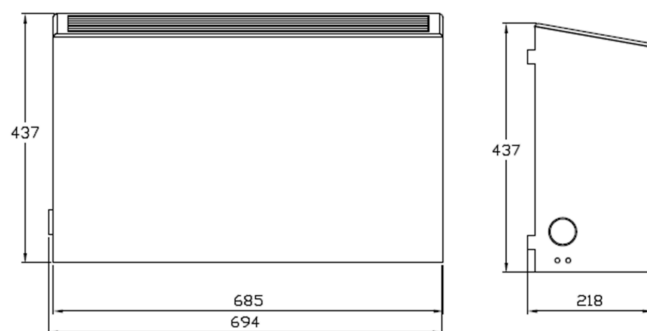


Figure 1. Dimensions of the NEF-900 wall electrostatic precipitator

Table 2. Dimensions of the NEF-900 wall electrostatic precipitator.

Size	A [mm]	B [mm]	H [mm]	m [kg]
NEF-900	685	218	437	20

Variants

The NEF filter is made in two colour variants of the housing:

- NEF-900-W with a white housing RAL 9016
- NEF-900-B with a black housing RAL 9005



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Figure 2. NEF-900-SL9016



Figure 3. NEF-900-SL9005

Principle of operation

NEF-900 is a device for removing unwanted particles from the air, without any replaceable mechanical filters, combining the action of two processes: ionization of particles and air and electrostatic attraction of charged particles to the collecting collector where they are retained and neutralized. Eliminated and neutralized particles remain in the collecting collector until it is washed (this treatment is performed every 3-6 months). The very fact of washing the inserts makes the device low-cost to maintain and does not require purchasing expensive filter inserts.

Installation

NEF-900 can be mounted on the wall of the room where the air purification (decontamination) process is to take place: Hospitals (rooms, operating theaters, corridors and patient rooms), kindergartens, schools, nurseries, offices, lecture halls, restaurants, apartments, houses and everywhere where clean air is required, i.e. without bacteria, viruses, allergens, smog, etc.

Equipment

A device with an integrated 2.5 m power cable and a speed controller with an on/off function. There are wall brackets on the rear part of the housing.

SMAY iNAC System

The NEF filter is based on the SMAY Intelligent Nano Air Cleaner (iNAC) technology. It is an electrostatic cleaning mechanism for removing even the smallest particles.

Table 3. Comparison of HEPA filter efficiency vs. Smay iNAC.

DESCRIPTION	SMAY iNAC	Filtr HEPA
Air purification efficiency (0.3 micron particles)	Excellent + 99.99% *	Excellent 99.97% *
Operating cost	Water during washing	Purchase of new filter insert
Maintenance cost	Reusable filter cartridge ecological for rinsing	Disposable filter insert repurchase necessary, generates waste
Ability to adapt in an environment with high humidity 70%	Very good No impact or decrease in purification efficiency	Poor Affects the life of the filter and promotes the growth of bacteria and mold
Lifespan	Excellent Only wash the filter every 6 months	Filter insert needs to be replaced every 3 months

* - value obtained based on research conducted by the Lublin University of Technology

Competitive Advantages - Characteristic Features

A wall-mounted electro-air filter designed for use in closed rooms to purify the air from nano-particles (viruses, bacteria, mold, fungi, allergens, smog, etc.)

Specification items:

- up to 99.99% air filtration efficiency
- air purification and sterilization function thanks to the electrostatic process
- when working on the first setting does not exceed 20 dB
- designed to purify rooms up to 90m²
- electricity consumption from 30 W
- the filter cartridge washable, non-replaceable and lasts for about 10 years of use
- biological pollutants captured by the cartridge are neutralized using electricity

Selected research results from the Lublin University of Technology

NEF900 was tested by an accredited laboratory for air purification efficiency, conducted at the Department of Indoor and Outdoor Air Quality at the Lublin University of Technology, commissioned by Smay Sp. z o.o.

The tables present measurements of microbiological parameters (bacteria) and physical parameters (PM particles) in relation to quantitative and percentage efficiency over time.

Fan speeds:

- Setting N1 - 20% max fan speed
- Setting N2 - 40% max fan speed
- Setting N3 - 70% max fan speed
- Setting N4 - 100% max fan speed

Table 4. Test for the quantitative concentration of **Micrococcus luteus** in the test chamber during the operation of the NEF900 purifier.

Control point [cfu/m ³] – point 2	Purifier operation time [min]							
	0	30	60	90	120	150	180	210
Setting N1	1050	200	67	50	40	25	22	20
Setting N2	1324	89	50	48	17	8	8	0
Setting N3	1425	25	8	8	0	0	0	0
Setting N4	1075	8	0	0	0	0	0	0

Table 5. Test for the percentage of **Micrococcus luteus** in the test chamber during the operation of the purifier NEF900.

Reduction [%] - point 2	Purifier operation time [min]							
	0	30	60	90	120	150	180	210
Setting N1	x	80.9	93.6	95.2	96.2	97.6	97.9	98.1
Setting N2	x	93.3	96.2	96.4	98.7	99.4	100	x
Setting N3	x	98.2	99.4	99.4	100	x	x	x
Setting N4	x	99.2	100	x	x	x	x	x

Table 6. Test for the quantitative concentration of **Bacillus subtilis** in the test chamber during the operation of the NEF900 purifier.

Control point [cfu/m ³] – point 2	Purifier operation time [min]							
	0	30	60	90	120	150	180	210
Setting N1	375	117	0	0	0	0	0	0
Setting N2	508	0	0	0	0	0	0	0
Setting N3	475	0	0	0	0	0	0	0
Setting N4	688	0	0	0	0	0	0	0

Table 7. Test for the percentage concentration of **Bacillus subtilis** in the test chamber during the operation of the NEF900 purifier.

Reduction [%] - point 2	Purifier operation time [min]							
	0	30	60	90	120	150	180	210
Setting N1	x	68.8	100	x	x	x	x	x
Setting N2	x	100	x	x	x	x	x	x
Setting N3	x	100	x	x	x	x	x	x
Setting N4	x	100	x	x	x	x	x	x

Table 8. Test for the percentage concentration of **PM 0.3** particles in the test chamber during the operation of the NEF900 purifier.

Time [min]	Reduction rate [%]			
	N1	N2	N3	N4
25	77.5	97.5	99	99.9
40	89.4	99.5	99.9	100
55	95.2	99.9	100	100
135	99.9	99.9	100	100

Table 9. Test for the percentage concentration of **PM 0.5** particles in the test chamber during the operation of the NEF900 purifier.

Time [min]	Reduction rate [%]			
	N1	N2	N3	N4
25	72.7	95.8	99.1	99.9
35	83.8	98.8	99.9	100
55	94.4	99.9	100	100
135	99.9	100	100	100

Table 10. Test for the percentage concentration of **PM 2.5** particles in the test chamber during the operation of the NEF900 purifier.

Time [min]	Reduction rate [%]			
	N1	N2	N3	N4
20	61.9	92.4	97.8	99.9
35	84.5	98.8	99.9	100
55	94.7	99.9	100	100
130	99.9	100	100	100

Table 11. Test for the percentage concentration of **PM 5** particles in the test chamber during the operation of the NEF900 purifier.

Time [min]	Reduction rate [%]			
	N1	N2	N3	N4
20	61.9	93.1	98	99.9
35	84.5	98.9	99.9	100
55	94.7	99.9	100	100
130	99.9	100	100	100

Table 12. Test for the percentage concentration of **PM 10** particles in the test chamber during the operation of the NEF900 purifier.

Time [min]	Reduction rate [%]			
	N1	N2	N3	N4
20	63.1	91.2	98.2	99.9
35	85.2	98.6	99.9	100
60	96.3	99.9	100	100
130	99.9	99.9	100	100

NEF - Wall-mounted electrostatic filter

When ordering, please provide information in accordance with the following pattern:

NEF - <S> - SL<RAL>

Where:

S	device size
	900
SL	finish: painted steel
RAL	color according to the RAL palette (standard 9016, optionally 9005)*

* optional values, if not provided, default values will be used

Order example: **NEF-900-SL9016**