

**Nederman**

# MCP SmartFilter

Future-Proof Fume and Dust Collection Solutions



# Complete Industrial Air Filtration Solution

The MCP SmartFilter cartridge dust collector is the latest industrial air filtration solution for providing clean air.



## Smarter industrial filtration

The Nederman MCP SmartFilter (MCP) is the latest industrial air filtration solution combining industry leading filtration technology in a smarter way. The MCP delivers improved air quality, reduced operating costs, improved processes and worker safety. But more importantly, it enables you to focus more time on your business by relying on Nederman to support your factory's clean air needs.

### Optimized filter technology

Optimized filter design, nanofiber filter media, intelligent controls, advanced filter cleaning and Insight IIoT services.

### Easy to use and maintain

Flexible design, modular, multiple filter media, accessories and more provides a solution to meet unique customer requirements.

### Future-proof technology and services

Product performance and technology for the demands of today and also ready for the future.

### Complete filtration solution

Nederman is uniquely positioned globally to support our customers through system design, installation, operation and service to maximize customer uptime.



## Designed for your application

Configurable to meet the filtration needs of dust and fumes during metalworking processes. The MCP is designed to meet your needs today and scale to meet your demands in the future.

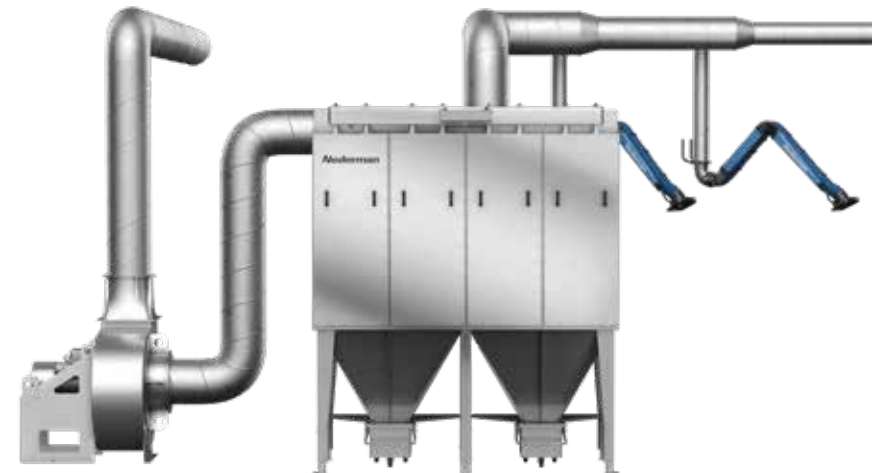
### Applications

- ✓ Welding Smoke / Fumes
- ✓ Plasma / Laser Cutting
- ✓ Thermal Spraying
- ✓ Metal Grinding
- ✓ Powder and Bulk Materials
- ✓ Powder Painting and Pigment
- ✓ Sand / Shot Blasting
- ✓ Grain / Agriculture
- ✓ Nuisance Dust Applications



## The Nederman difference

The MCP SmartFilter's revolutionary design is focused on more uptime, cleaner air, reduced maintenance when needed and lower operating costs. The MCP SmartFilter is your complete air filtration solution.



### Improved user experience

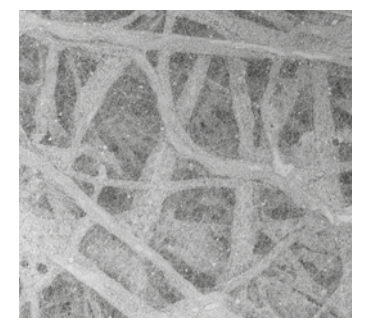
- **Sensors** - Monitor key performance indicators to improve operation and maintenance.
- **Galvanized Finish** - Improved durability and corrosion resistance.
- **Quick Release Dust Bins** - Manageable dust removal with casters.
- **System Fans** - Available in integral top mount or ducted ground mount.

### Enhanced filter performance

- **Vertical Filters** - Improved filter cleaning versus horizontal-style filters resulting in more dust in the bin and extended filter life.
- **Dust Separation Plates** - Impact and perforated plates direct dust laden air first towards the bin reducing filter load and abrasion.
- **Squirgle Filter Profile** - Unique filter shape allows for more open and stronger pleats for improved filter cleaning and durability.
- **Rear Vertical Inlet** - Reduces collector footprint versus horizontal inlet arrangements.
- **Immersion Valves** - Increased filter cleaning power and efficiency.

### Advanced Nanofiber filter media technology

- **Reduced Energy Consumption** - Lower filter pressure and reduced compressed air utilization.
- **Extended Filter Life** - Increased dust holding capacity and improved cleaning effectiveness result in reduced filter wear and tear.
- **Reduced Emissions** - Each time a filter is pulse cleaned, emissions occur. More effective cleaning results in fewer pulse cleaning cycles and substantially reduced emissions compared to commodity filters.
- **Smaller Footprint** - Nanofiber media's ability to handle fume applications more effectively means that fewer filters and smaller dust collectors are required saving money and valuable floor space.



# Take Control of Your Industrial Air Filtration

Take control of your industrial air filtration with the world's most advanced dust collection technology for easy access to the most critical operating data.



## The most advanced air filtration controls

The MCP SmartFilter offers the world's most advanced dust collection control panel that includes a vibrant, easy to use HMI, IntelliPULSE filter cleaning and an IoT gateway, allowing the system to be cloud-connected and monitored remotely on customizable dashboards. Sensors monitor key performance metrics, such as filter pressure drop, duct pressure, emission monitors and then visually displays the system status. Nederman also offers a full range of integrated variable frequency drives (VFDs) that maximize energy savings and reduces operating costs.

## IntelliPULSE™ Filter cleaning control system

Nederman IntelliPULSE cleaning module automatically varies and optimizes off time between pulses to maintain a constant differential pressure drop across the filter element while using the least amount of compressed air.

- **Lower Operating Emissions** - Lower emissions resulting from less filter pulse cleaning cycles.
- **Reduced Energy Consumption** - Decreased compressed air and energy requirement by up to 40% over set-point adjustment and 90% over continuous cleaning.
- **Maintain Airflow** - Keeping pressure drop low and consistent helps regulate airflow and associated transport velocity.

## Insight control HMI

The regular, daily interface with a dust collector is the control panel. The Insight Control HMI was designed with users in mind by including animated, graphical representations of the system operation and key operational information, including operating hours and maintenance times. The display is also designed in accordance with global industrial alarm standards ISA 18.2 and

## Nederman Insight

Insight is a cloud-based IIoT platform designed specifically for filtration systems that provides real time monitoring, visualization and tracking of system performance, including customized dashboards, alarms and reports. Real-time data is accessible via the web or mobile devices and also stored in the cloud for trending and performance analytics. Insight empowers users to operate and maintain their filtration system more effectively - improving plant productivity, worker safety, regulatory compliance and reduces operating costs.

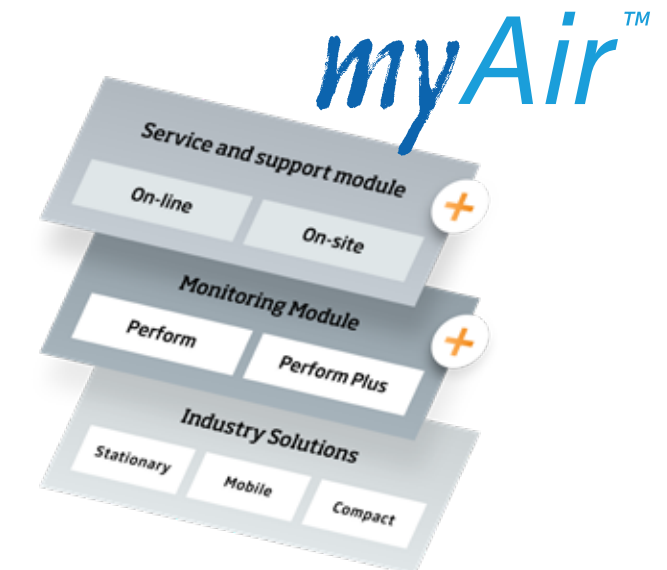


Insight control panel home screen



## Nederman myAir

Factories may not typically spend time thinking about the service or maintenance of fume extractors, but these systems that directly impact important operational areas, including worker and asset safety, energy consumption, worker productivity and sustainability. To assist our customers in better managing these systems, Nederman created the myAir platform, which is a scalable offering, including industry filter solutions, traditional on-site inspection and maintenance services and a connected, digital monitoring service called Nederman Insight.



## Importance of monitoring and maintaining dust collection systems

There are several important filter parameters to monitor to ensure your system is delivering the performance required for safe and healthy operation and reduce your total cost of ownership.

- **Filter pressure** - Monitoring filter differential pressure (dP) is used to evaluate filter life, filter cleaning effectiveness and as an indicator of proper airflow. High filter pressure means more energy to operate the system and higher level of emissions from increased cleaning cycles.
- **Duct pressure** - Sufficient airflow necessary to capture the contaminant and protect workers is the primary purpose of the dust collection system. Measuring the duct or hood pressure can be used to monitor airflow and ensure the system is effective.
- **Compressed air pressure** - If the cleaning pressure is too low, the filter will not be effectively cleaned resulting in reduced airflow, shortened filter life, increased energy consumption and higher operational emissions from increased cleaning frequency and added wear and tear. Pressure that is too high risks damaging the filters, increase noise levels and uses more energy than required.
- **Dust bin level** - One of the routine maintenance activities for a fume extractor is to empty the dust bin to make sure it does not overflow or accumulate and blind the filters. Monitoring the level reduces time spent checking the level, emptying when it is not full and avoiding the bin overflows.
- **Fan performance** - The fan consumes the majority of energy required to operate the system, so ensuring that the motor is operating properly and the fan is not experiencing excessive vibration that might cause a failure or shorten motor life saves money overtime by avoiding unplanned outages. Many fans today are operated by Variable Frequency Drives (VFDs), which can also provide useful information about motor life and performance.

# Configurable to Meet Your Air Filtration Needs

Unique factory needs require more than a one-size-fits all solution. The MCP is designed to handle a variety of dust and fume in metalworking and other industrial processes, including the safe handling of combustible dusts.



## Wide range of applications and configurations

The MCP SmartFilter is a modular, high performing dust collection solution that can address a variety of applications, including thermally generated fumes, metal grinding, bulk powders and combustible dusts. The modular design and available options allows the system to be configured for your factory's unique needs.



## Combustible dust experts

It is common for dust from metal fabrication and machining, to food and agriculture, to wood and plastic manufacturing, as well as other processes to generate dust that is combustible. Too often, a dust collector is sold and installed without taking into account the entire system, leading to false security and putting the facility and employees at risk. As a world leader in providing combustible dust compliant systems, not just dust collectors, Nederman can assist to ensure your dust collection system meets NFPA and ATEX compliance.



## Common combustible dust accessories



Explosion isolation flap valve CARZ



Rotary valve type NRSZ for emptying of combustible dust from the dust collector



Fans type COMBIFAB-FZ



ATEX designed combustible dust extraction arm NEX DX

## Product specifications

MCP Model	No. of Modules	No. of Filters	Nanofiber Filter Area		Maximum Airflow		Estimated Shipping Weight***		Approximate Dimensions*					
			m <sup>2</sup>	ft <sup>2</sup>	ft <sup>3</sup> /min	m <sup>3</sup> /hr	lbs	kg	Height**		Width		Depth	
									in	cm	in	cm	in	cm
MCP-2-8SL	2	8	67	723	2,649	4,500	800	363	110.5	281	25.6	65	45.0	114
MCP-2-8S	2	8	106	1,137	4,120	7,000	1,000	454	131.5	334	25.6	65	45.0	114
MCP-4-16SL	4	16	134	1,447	5,297	9,000	1,300	590	110.5	281	51.3	130	45.0	114
MCP-4-16S	4	16	211	2,273	8,240	14,000	1,500	680	131.5	334	51.3	130	45.0	114
MCP-6-24SL	6	24	202	2,170	7,946	13,500	2,000	907	110.5	281	76.9	195	45.0	114
MCP-6-24S	6	24	317	3,410	12,360	21,000	2,000	907	131.5	334	76.9	195	45.0	114
MCP-8-32SL	8	32	269	2,893	10,594	18,000	2,500	1,134	110.5	281	102.5	260	45.0	114
MCP-8-32S	8	32	422	4,546	16,480	28,000	3,200	1,451	131.5	334	102.5	260	45.0	114

\* Stated height is with a 26 gal (100 l) discharge bin. \*\* Height does not include the fan. \*\*\* Weight includes typical fan but will vary based upon order configuration.

## Options and accessories

Also available as envelope (bag) filter MEP SmartFilter for dust applications, with pulse jet filter cleaning and airflow up to 10.500m<sup>3</sup>/h. Nederman offers a wide range of options and accessories integrated with the MCP SmartFilter system to create a complete dust collection system for your unique application.

### Filter media and construction

- Nanofiber fire retardant
- Spunbond polyester
- Conductive media (ATEX)
- ePTFE membranes
- Wide pleat spacing

### Dust discharge

- 50 l quick release dust bin
- 100 l quick release dust bin
- 100 l with wheels quick release drum
- Rotary air locks
- Discharge dump valves

### Inlet and outlet accessories

- Extraction arms and hoods
- Safety after filters (HEPA)
- Broken bag detectors
- Emissions monitors
- Inlet duct elbow (vertical duct)
- Fan outlet transitions
- Discharge silencers
- Quick Fit (QF) duct

### Combustible dust accessories

- CARZ-N passive isolation valve
- Rupture panel
- Flameless explosion vents





**Nederman**

## The Clean Air Company

### Our Promise - Contributing to a Sustainable Future

Clean air is a cornerstone of sustainable production. Our customers want to boost profitability by making their operations as efficient as possible. They want to meet high environmental standards and keep employees safe from fumes and dust. Nederman can help them on all counts. That's how we create value.

### The Clean Air Company - Vision 2025

Nederman celebrated its 75th anniversary in 2019. From the very beginning, the business idea was clean air. Today, the environment and sustainability are more relevant than ever and the demands are increasing to contribute actively to more efficient production and reduced emissions in industry. The next generation of solutions for clean industrial airflows is under development. Nederman is at the forefront of this development.

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