

NANOMAXTM

Commercial Ultra High-Performance HVAC Air Filter



Rivals HEPA Filter Performance Without the Pressure Drop

Key Features

- Provides very high filtration efficiency with virtually no reduction in HVAC airflow*
- Requires no modification to HVAC system*
- Removes up to 95% of harmful fine and ultra-fine particles from indoor air in buildings
- Certified ASHRAE 52.2 Efficiency: MERV 16
- Lasts up to 4x longer than pleated HVAC filters
- Wide range of standard and custom sizes available

*Compared to 2" MERV 8 panel filter

Technology Overview

- Unique nano and micro fiber filter media optimizes five filtration effects
- Advanced HEPA pleat design maximizes surface area
- Unique wedge seal helps eliminate filter bypass
- Biodegradable frame resists moisture and is environmentally-friendly

Turn Your HVAC System into a HEPA Filter System



IQAir NanoMax filter after 9 months of HVAC service life.

IQAir NanoMax filters are a new generation of ultra-high performance filters for commercial heating, ventilation and air conditioning (HVAC) systems. Designed to protect occupants from difficult to capture and harmful fine and ultra-fine particles, NanoMax filters are able to reduce exposure to viruses, bacteria, allergens and harmful traffic pollutants by up to 95%. This makes NanoMax filters the ideal choice for commercial buildings that require a high level of protection from airborne pollutants and microorganisms.

NanoMax filters provide the filtration benefits of HEPA filters while eliminating the need for costly upgrades to a building's HVAC system. While HEPA filters provide close to 100% removal efficiencies for fine and ultra-fine particles, they require pre-filtration, 6" to 12" filter bays and special air handling systems to overcome their high airflow resistance. In contrast, IQAir NanoMax filters require no pre-filters, fit into standard 2" filter slots and have pressure drops fully compatible with standard HVAC systems.

Proven Performance

Long-term, real-world performance of NanoMax filters has been demonstrated in numerous installations in hospitals, schools and administrative buildings. In a 2009 study by the South Coast Air Quality Management District (AQMD), the largest local environmental protection agency in the United States, IQAir NanoMax filters were found to reduce ultra-fine particles (particles less than 0.1 microns) and diesel soot (carbon black) in fully occupied classrooms by approx. 90%. In addition, NanoMax filters were found not to reduce airflow and extended filter replacement intervals from 3 months to up to 12 months.

Cost Effective

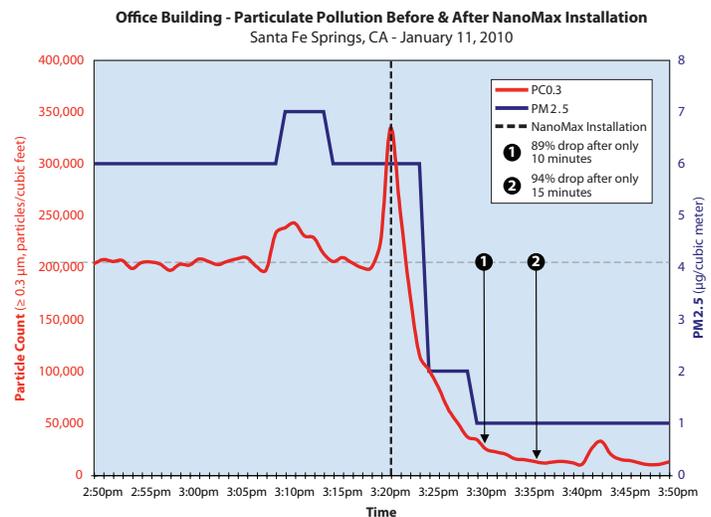
The air cleaning effectiveness provided by NanoMax filters is only exceeded by that of hospital and cleanroom-grade air handling systems with HEPA filters. Such an upgrade is not compatible with most existing buildings and costs tens of thousands of dollars for small buildings to millions of dollars for large buildings. NanoMax filters require no or minimal adaption of existing HVAC systems.

Studies suggest that there are significant financial savings due to improved indoor air quality. Increased productivity, lower infection rates, higher attendance, lower health care costs and higher employee retention have been associated with improved air quality. Therefore, NanoMax filters can actually add to the bottom line of schools, hospitals and other organizations.

Excellent Support

IQAir technical staff is able to assist you in creating customized performance reports that document the actual air quality improvement in your building. IQAir is able to carry out before and after on-site measurements of HVAC airflow and particle filter efficiency (ultra-fines, fines, PM 2.5, PM 10).

Where necessary, IQAir technical staff is able to assist with filter slot upgrades on older HVAC systems.



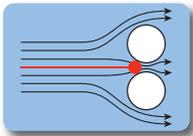
NanoMax filters provide immediate measurable reductions of air pollution particles.

How NanoMax™ Filters Work

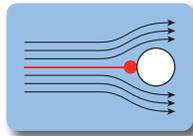
NanoMax filters utilize three major technological advancements to provide the highest possible particle filtration efficiency and the longest filter life at the lowest possible airflow resistance.

High5™ Filter Media

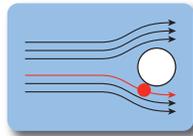
Conventional HVAC air filters derive most of their efficiency from only two or three filtration effects. NanoMax filters optimize five filtration effects: straining, impingement, interception, electrostatic attraction, and diffusion. The combination of these five filtration effects allows NanoMax filters to achieve maximum air cleaning efficiency and filter life while maintaining minimum air resistance.



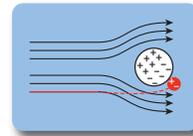
Straining Effect
Captures very large particles because they are simply too large to fit between fibers.



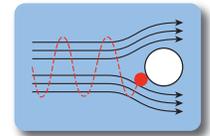
Impingement Effect
Larger particles cannot follow the airstream and collide with the fibers to which they become attached.



Interception Effect
Captures smaller particles as they follow the airstream whenever the airstream comes within a half particle diameter of the fiber.



Electrostatic Attraction Effect
The electrostatic charges of fibers help attract and capture particles less than 5 microns.



Diffusion Effect
Very small particles are bounced around by the motion of the air molecules, causing the particles to collide with filter fibers.

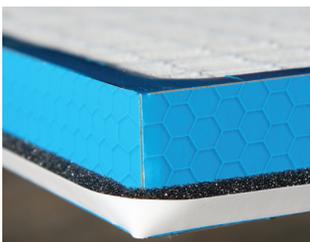
NanoMax Filtration Effects for Different Pollutants

Filtration Effects	Particle Size Capture Range	Typical Pollution Particles
1 Straining	Larger than 100 microns	Large fibers
2 Impingement	Larger than 10 microns	Mold spores, pollen
3 Interception	Smaller than 10 microns	Bacteria, cat allergens, smoke
4 Electrostatic Attraction	Smaller than 5 microns	Soot
5 Diffusion	Smaller than 0.1 microns	Viruses, combustion particles



HEPA Pleat Design

NanoMax filters use advanced HEPA pleat spacing technology to provide a surface area of 60 square feet for a 24 by 24 inch panel. This is five times more surface area than that of a conventional pleated HVAC filter. The three-dimensional pleat spacing pattern allows maximum airflow and even filter loading, thereby further increasing useful service life.



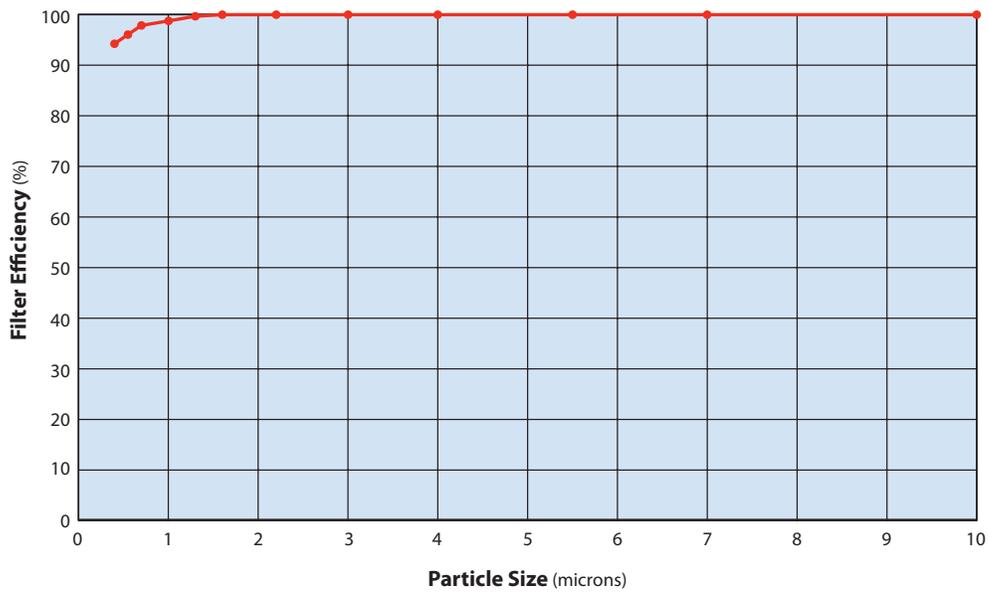
WedgeSeal™

While most HVAC filters contain no seals, allowing for up to 30% of air to bypass unfiltered, NanoMax filters features a unique wedge-shaped seal, that helps to ensure that all the air passes through the filter.

Performance Data

Air Velocity for ASHRAE Testing	492 fpm (2.5 m/s), 1968 cfm for 24" x 24" filter
Initial Resistance	0.38 inches of water (95 Pa)
Maximum Recommended Final Resistance	1.40 inches of water (350 Pa)
Minimum Efficiency Rating Value	MERV 16
Minimum Efficiency Rating Value per ASHRAE 52.2 (per particle size range)	E1 (0.3 - 1.0 μm): 96% E2 (1.0 - 3.0 μm): 99% E3 (3.0 - 10 μm): 100%
Average Dust Holding Capacity at 1.4 inches water (350 Pa)	67 g
Operating temperature range	-22°F to 122°F (-30°C to 50°C)

Filter Efficiency vs. Particle Size at 492 fpm (2.5 m/s) per ASHRAE 52.2



Initial Resistance vs. Air Velocity

