

MIKRO-PULSAIRE® DUST COLLECTORS



MIKROPUL

DRY FILTRATION
WET SCRUBBERS
CYCLONES
WET ELECTROSTATIC
PRECIPITATORS

UNEQUALED EXPERIENCE • LEADING TECHNOLOGY

MikroPul invented the pulse-jet dust collector in 1956 and has since installed more than 200,000 systems worldwide. Many more innovations have ensued over the years, keeping MikroPul baghouses at the forefront in operating performance and value. Plus, our extensive worldwide experience has created a comprehensive application database, allowing us to recommend the best, proven solution for your dust control needs. *These are some of the reasons why Mikro-Pulsaire collectors keep running and running.*

Clean air plenum

- Bottom access
- Top access
- Top access walk-in style as shown

Pulse cleaning system

- Low pressure design available for use with expensive media
- Simple timers or sophisticated controls

Housing designs

- Bin vent
- Insertable
- Modular
- Cylindrical, with ASME code and tangential inlet options
- Large sectional

Filter bags

- We manufacture our own
- Cloth styles, with wide variety of media
- Pleated styles
- Long bag technology

Inlet technology

- Patented Cascadair™ (shown) is standard
- Patented Expandiffuse™ low velocity design
- Special designs for coal and other fuel dust

Shown with optional walk-in plenum, ladder, platform, and support legs

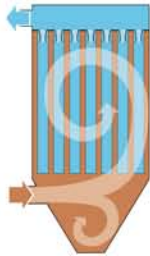


• LASTING VALUE • SUPERIOR PERFORMANCE

Advantaflow Inlet Technology Separates MikroPulsaire From The Rest

Eight years of field and laboratory research revealed that a major problem with dust collector performance is uneven air flow distribution to the filter elements. This uneven distribution is the result of ineffective inlet and diffuser device designs.

Several diffuser designs were investigated: Impingement Plate, Perforated Disc, and Perforated Mail-Box. In all cases the air stream formed two vortex motions. The primary vortex occurs in the filter housing causing very high localized dust laden velocities. A secondary vortex motion is created in the lower part of the hopper, causing high dust re-entrainment and uneven dust discharge.



This condition is the main reason for:

- Abrasion
- Short bag life
- Dust seepage
- High pressure drops
- Reduced air flow capacity
- High cleaning power consumption

Cascadair solves the double vortex problem that plagues other dust collectors.

Two Solutions

MikroPul R&D arrived at two patented solutions that effectively distribute air flow evenly to the filter bags: The Cascadair hopper inlet and Expandiffuse side inlet

Both the Cascadair and Expandiffuse can be retrofitted to improve the performance of any make of pulse-jet collector. The Cascadair can also be used to improve the performance of any dust collector with a hopper inlet including shaker or reverse-air type units.

The **Cascadair™** diffuser (shown in the illustration on the previous page) uses a succession of orifice plates to gradually divert portions of the incoming air in stages. The results achieved:

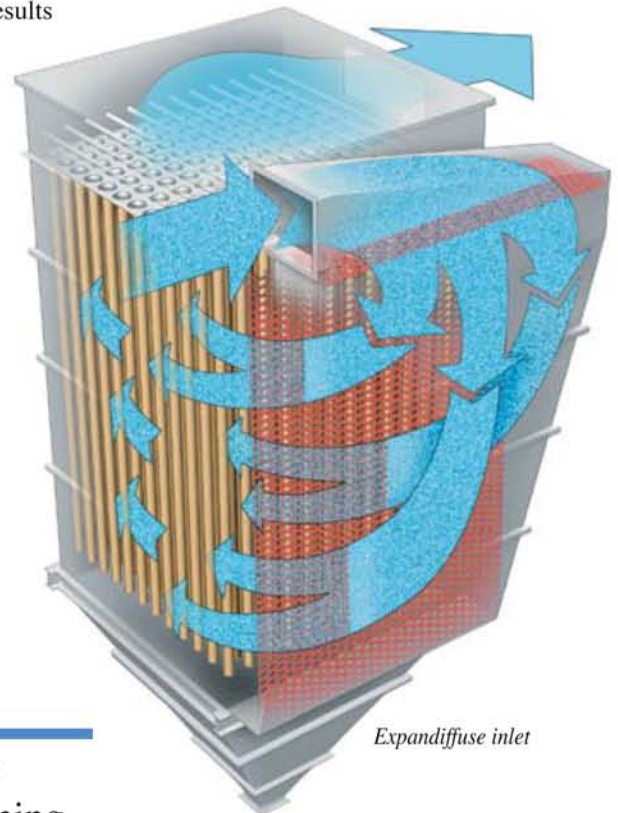
- Increased bag life
- Lower pressure drop or significantly increased air flow capacity
- Minimum dust re-entrainment
- Overall better filter performance

Cascadair is the standard inlet for most Palsaire models.

Expandiffuse goes further by transforming the air stream from a 45 mph gale force wind to a 2 mph gentle breeze.

The **Expandiffuse™** (shown below) is a two stage inlet with diffusers at right angles to each other. Air enters the filter housing from the side of the unit at velocities reduced over 90%. This design improves pulse-jet performance by as much as 40% (or more when combined with MikroPul's Long Bag technology). Benefits include:

- Higher A/C ratio; i.e. greater flow capacity
- Longer bag life
- Reduced pressure drop
- Elimination of dust reentrainment
- Reduction of pulse air consumption
- Overall better filter performance
- Dramatically reduced maintenance costs



Expandiffuse inlet

STANDARD MODELS AND APPLICATIONS

Bin Vents

Bin Vent Collectors are used on top of silos and bins or where the bin loading system requires aspiration. MikroPul carries the most common bin vent sizes in stock for quick delivery.



Bin vent



Modular

Insertables

Insertable collectors are self-contained units which are integrated into an existing enclosure, allowing dust to be retained at the point at which it is generated.

Common applications: mechanical and pneumatic conveyors, conveyor feed silos, air slides, process machinery, and bins in which powders are fluidized.

Modular Units

Fully assembled Mikro-Pulsaires are ideal for applications requiring filter area generally between 76 and 4,500 ft² (7 and 420 m²) of cloth.

Common applications: size reduction machinery, spray dryers, separators, calciners, mixers, packaging machines, conveyors, chemical manufacturers, foundries, grinders, and many other industrial applications.



Large sectional

Large Sectional Units

For large applications, generally above 4,500 ft² (420 m²) cloth area, collectors are provided in prewired sections sized to suit shipping limitations. Subassemblies can be prepared for bolting and/or welding on site.

Common applications: kilns, boilers, dryers, mixers, coke pushing systems, sinter strand systems, furnaces, ladle casters, foundry sources, smelters, and many chemical applications.



Top removal

- Bottom removal—ideal for small baghouses or where headroom restraints prevent top removal
- Top removal—access doors on top of unit permit bag maintenance from the clean side, allowing quicker changeout. Leaking bags can be detected rapidly and easily.
- Top removal with walk-in plenum—also protects maintain-



Top removal with walk-in plenum

Bag Access Styles

Mikro-Pulsaires can be supplied with bag access from either the dirty or clean side of the filter. Choices include:

ance personnel, media, and valuable, recoverable product from the weather. Work platform and access door provide entry into the clean air plenum.

DESIGNS FOR SPECIAL APPLICATIONS

Cylindrical Units

MikroPul cylindrical collectors are for high vacuum or high pressure applications. Units can be supplied for bag replacement from either the clean or dirty side of the tubesheet. Special designs are available including:

- Housing diameters up to 30 ft (9 m).
- Abrasion resistant design.
- Quick changeout design where all bags are removed and installed as a unit.
- Heated filter housing by means of heating coils or vessel jacket.
- Explosion relief housing design.
- Housings built to pressure vessel code specifications.

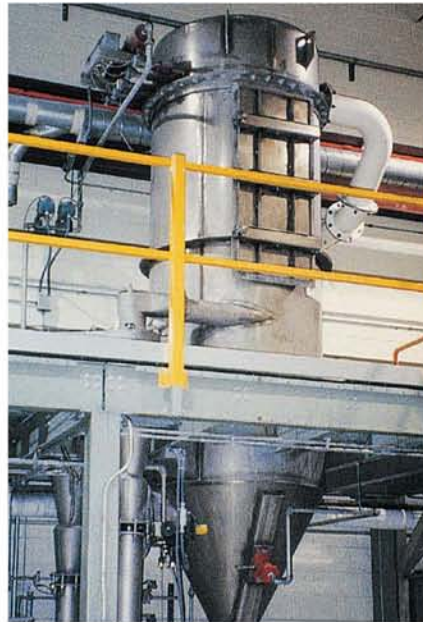
Common applications: spray drying, separating, coal grinding, mixing food manufacturing, car loading, and product receiving from process applications.

Tangential Inlet Model. The Mikro-Pulsaire tangential inlet collector can handle dust loads over 450 grains/ft³ (1 kg/m³) and air-to-cloth ratios of up to 20:1. The inlet acts as a cyclone, causing the air to spin and consequently throw the heavy particulate to the walls and then into the hopper. The fine particles are collected on the filter bags. This design can handle between 1,000 and 60,000+ CFM (1,700 and 100,000+ m³/hr).

Common applications: sander dust, fine lint, cellulose, and fiberglass.

Low Pressure Kiln Design

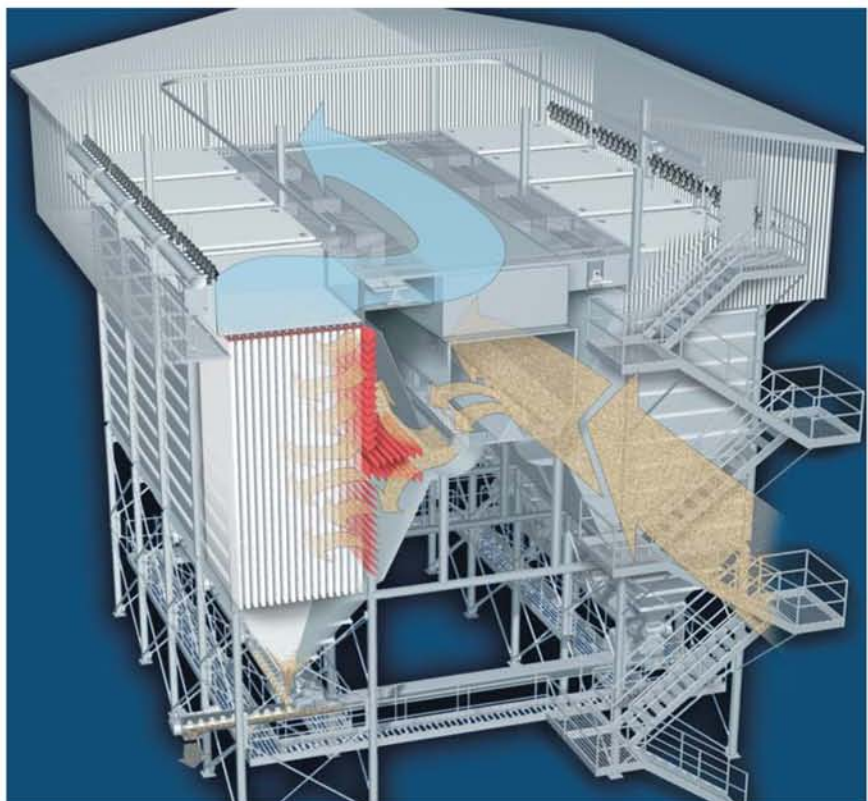
The Mikro-Pulsaire K/LP combines low pressure cleaning with the low velocity Expandiffuse inlet to provide the best performance and bag life available for high temperature applications. The unique design is very compact, making use of long bag technology, and maintenance personnel have an unobstructed



Typical custom built process filter



Tangential inlet design for low bulk density dust



K/LP low pressure kiln collector, shown with penthouse, monorail hoist system, and screw conveyor system

surface for servicing the bags and pulse valves. The K/LP is capable of handling very large capacities.

Common applications: cement kilns, boilers, or any application where high cost media is used or space is at a premium.

MEDIA ALTERNATIVES FOR ANY APPLICATION

When MikroPul invented the pulse-jet collector, we had to develop the fabric filter bag to make it succeed, and we've been innovating ever since. Filter bag choices include:

- Fabric material and type – an assortment of bag constructions and media fibers are available to suit practically any need.
- Fabric finishes – MikroPul offers a wide variety of finishes and treatments to enhance filtration performance or resist chemical attack.
- Bag length – from 2.5 to 26 feet (0.75 to 8 m).

Long-Bag™ Technology

The practical limit for bag length was 14 feet (4.3 m) until MikroPul developed Long Bag technology. Difficulties such as reentrainment, turbulence, unreliable gas distribution, and inability to clean filters continuously, among others, were successfully addressed. Benefits can include:

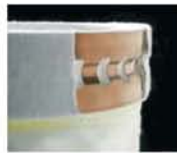
- Lower pressure drops
- Less pulse cleaning required to maintain a given pressure drop
- Higher filter rates
- Savings in capital, real estate, and maintenance costs

Filter Bag and Retainer Designs

MikroPul offers a variety of attachment styles to suit any need. Choices include:

Standard Twist Lock—utilizes separate venturi, retainer assembly, gasket and fold-over bag. A clamp around the outside of the bag, and gasket between the venturi and tubesheet provide a leak free seal.

ProSnap™ Snap-in—top removal design utilizes two pieces: the snap-in bag and the one-piece venturi/retainer assembly. Installation is done by snapping the bag firmly into the tubesheet and then placing the venturi/



ProSnap's slotted groove band makes our bags easy on the hands while providing exceptional sealing.

retainer assembly into the bag. ProSnap bags are much easier to install and remove than conventional snap-in bags due to the unique design of the snap band.

Pop-Top®—These innovative filter bag and cage assemblies save time and money. Changeout is easier (see sequence below) and quicker, yet in most cases they cost no more than standard designs.



Pop-Top bag and cage assemblies change out easily and quickly

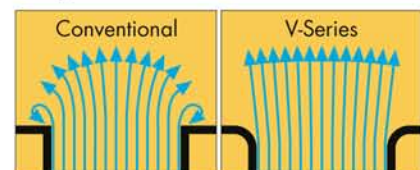


Pleated Filters

MikroPul's Mikro-Pleat™ pleated bags combine the advantages of traditional pulse-jet filter bags and cartridge filters. In many cases, they provide two or more times the cloth area of a conventional filter bag. Replacing existing bags with Mikro-Pleat bags can significantly increase baghouse performance without altering the size of the baghouse.



Mikro-Pleat V-Series includes an integral venturi



The Mikro-Pleat V-Series integral venturi's shape produces smoother air flow than the abrupt edge of other designs. Sharp edges produce eddies which disrupt air flow, increasing pressure drop.

MikroPul offers a variety of pleated bag styles, including our V-Series with integral venturi, which optimizes pulsing and reduces pressure drop during normal operation.

INDIVIDUAL PULSE CONTROLS AND SYSTEMS

Standard Timer

This all solid state sequential timer is supplied as standard equipment for all MikroPul pulse-jet collectors. It is capable of switching 10 independent outputs, allowing it to be used as a 10 position timer. It can also service up to 50 valves (five off each output), as it is supplied for handling more than one dust collector.

Pulse-By-Demand Timer System

Our Model 86 Controller uses pressure drop across the filter media to determine pulse timing. Unlike some other “clean-on-demand” timers, it senses even small changes in ΔP and responds by providing the precise amount of cleaning needed to control the pressure drop to the level you want.

The result is reduced operating costs and a constant gas flow rate and fan power consumption.

PulsePro™

PulsePro Controls set a new standard for dust collector control by seamlessly integrating pulse-jet timing, pressure gauging, leak detection, and other measurements into a single easy-to-use device.

Integration of control and sensing:

- Lowers installation and operating costs
- Reduces emissions
- Enables automatic diagnostics such as locating failed solenoids, diaphragms, and filter leaks.

Centralized Control System

Our FilterWare™ Central Control, Monitoring, and Reporting System provides process visualization, control, data logging, report generation, and remote services for process filtration, ventilation, and air pollution control systems. It can handle a plant-wide network of dust collectors, mist eliminators, stacks, scrubbers, and/or RTOs.



PulsePro control, monitoring, and diagnostic system



FilterWare central control station

COMMON OPTIONS

Every collector is customized for the application. Some of the most common options include:

- Materials of construction to suit your requirements
- Advantaflo inlet technology
- Rotary airlocks
- Screw conveyors
- Explosion proof electricals
- External catwalk
- High temperature design
- Explosion doors meeting NFPA standards
- Inspection windows
- Standlegs and bracing
- Ladder and cage
- Bag grid and/or man grid
- Weather hood over access door
- Pressure gage on header
- Special interior and exterior coatings to your specification
- Pulse-by-demand timers
- PulsePro control, monitoring, and diagnostic system
- Mikro-Charge™ leak detector
- PulsePro non-clogging differential pressure transmitter
- Factory installed insulation
- Gas tight construction
- High pressure construction
- Construction to meet code requirements
- Pulse isolation valves



Mikro-Charge Continuous Dust Gauge

PARTS AND SERVICE : TOTAL SUPPORT

MikroPul backs up our products with reliable and responsive customer support. Call us any time you need help.

Parts

We carry a full line of replacement parts, and keep most-used items on the shelf for immediate shipment. MikroPul's investment in total support includes approximately 1,000 different part numbers.

Services

MikroPul provides an array of services to help you select, install, operate, optimize, and upgrade your equipment. Services include:



- Clean air preparation program
- Inspections
- Collector refurbishing
- Collector rebuilding
- Converting old collectors to new technology
- Upgrades to increase capacity
- Preventive maintenance programs
- Bag testing
- Maintenance seminars
- Erection services

OTHER DRY FILTRATION SOLUTIONS



Paraflo® Cartridge Collector. Patented inlet and other unique features separate the Paraflo from other cartridge collectors. Offering compact size and quick filter changes, two designs are available.



RAF-IS Reverse Air Collector for Hazardous Dust. All electrical components are located outside the housing and no outside oxygen is introduced. These and many other features make the RAF-IS the world's safest dust collector. Ideal for PRB coal and other volatile particulate.



High Efficiency Cyclones. These are the most cost-effective solution for filtering particulate 5 microns or heavier. More than four decades of experience produce designs with low pressure drop and low operating costs.

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