



**ULTRA-WEB®
HIGH EFFICIENCY
NANOFIBRE FILTERS**



**CEP-Holland
Capital Equipment Partners BV**

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Longer Life, cleaner Air, Cost Savings

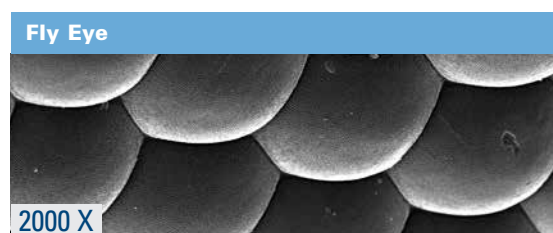
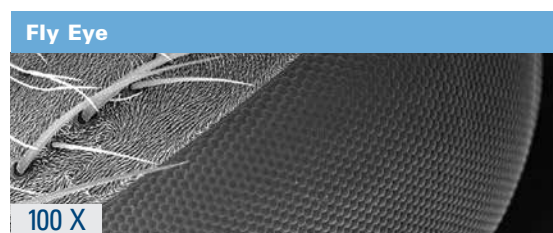
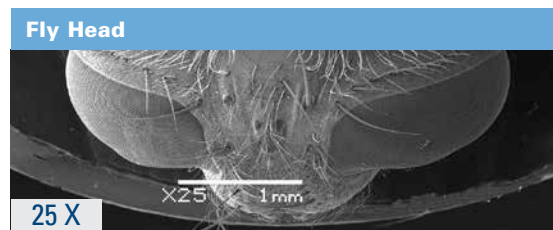
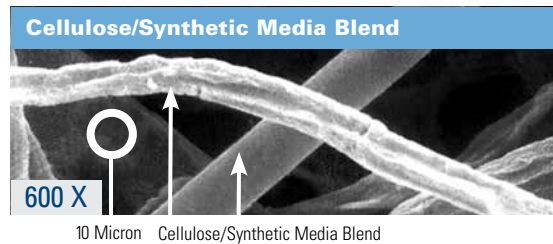
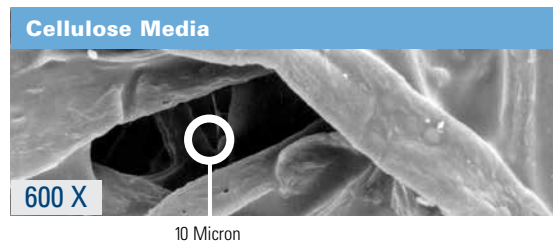
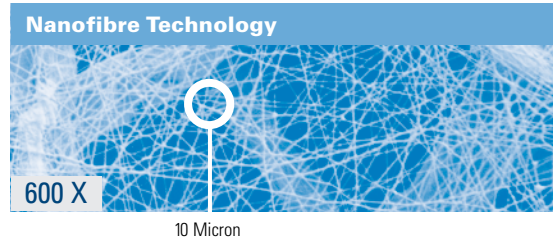
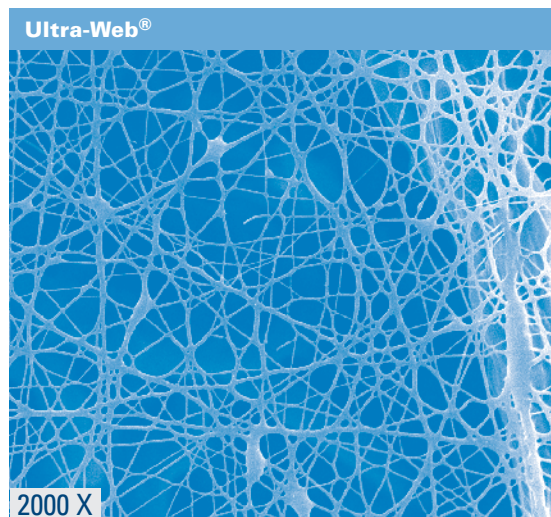
The Ultra-Web® Advantage is cleaner Air

Nanofibres are scientifically proven to have an advantage in efficiency and pressure drop. Ultra-Web® nanofibres contain Donaldson proprietary technology and are made with an electrospinning process that produces a very fine, continuous fibre of 0,2–0,3 micron in diameter to form a permanent web-like net with very fine interfibre spaces. This nanofibre “web” is constructed on a variety of media, resulting in:

- Advanced media that captures submicron and larger dust particles
- A media that traps dust on the surface and promotes self-cleaning
- Better pulse cleaning and lower stabilized pressure drop
- Cleaner air, longer filter life, and greater cost savings

Nanofibres are smaller than a Fly Eye!

Ultra-Web® nanofibres are the smallest synthetic fibres used in filtration today. To put it into perspective, compare Ultra-Web® nanofibres to the eye of a fly.



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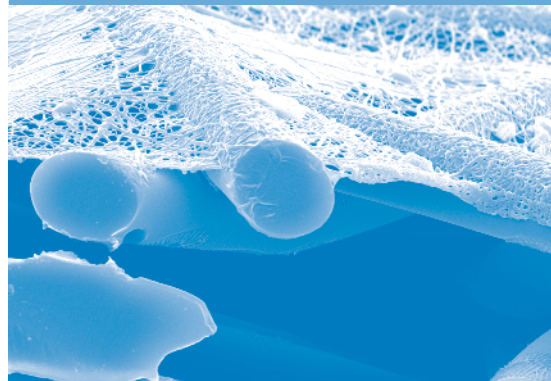
Lasts longer

Ultra-Web® Filters last up to 2 times longer

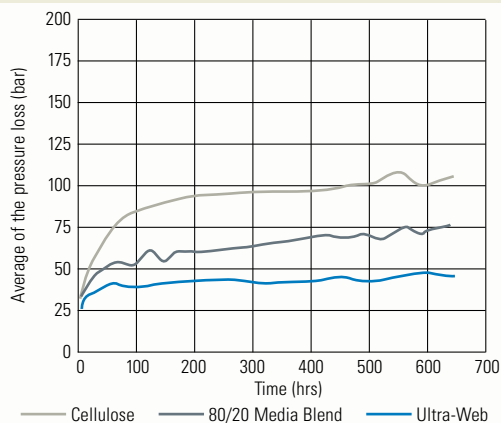
Pressure drop starts high and rises quickly with depth-loading commodity filters such as plain cellulose or cellulose/synthetic (80/20) media blends. Ultra-Web® nanofibre technology provides phenomenal surface loading ability and superior dust release capabilities due to its nano-fine interfibre spaces. Filtration scientists have long attributed surface loading with lower operating pressure drop over a much longer period of time. As a result, the web-like nanofibre technology allows Ultra-Web® filters to last up to 2 times longer than commodity filters.

Surface-Loading promotes Self Cleaning

Clean Ultra-Web® Filter



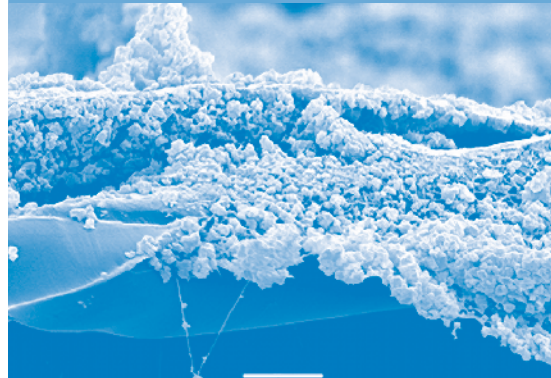
Lower Pressure Drop = Longer Filter Life



Filters with Ultra-Web® nanofibres lasts up to 2 x longer

Results were derived testing Atomite test dust in an 8-cartridge collector at 2,3 g/m³, 6,2 bar cleaning pressure, 100 ms on time 10 second off time. Airflow goal = 6.900 m³/hr

Surface-Loaded Ultra-Web® Filter (The substrate is still clean)



Ultra-Web® nanofibre media is loaded with ISO fine dust. Dust particles collect on the surface of the media and clean off easily while the substrate stays clean. A depth-loading filter would allow dust particles to penetrate deeply into the substrate where they build up and choke off the airflow.

Ultra-Web® captures what the Eye can't see

Only Ultra-Web® efficiently captures submicron dust particulate. Cellulose and 80/20 blend media are not efficient enough to rate on submicron dust particulate. Typical cellulose and 80/20 blend media are rated to capture 1–3 micron dust particles and some competitive 80/20 blend media is only rated to capture larger 3–10 micron particulate.

- Ultra-Web® provides 40 % lower emissions on 1micron dust particles
- Ultra-Web® provides 58 % lower emissions on 0,5 micron dust particles
- BIA dust class M efficiency
- Start up efficiency – 99,9 % on 0,2–2 micron dust particles
- Reflects highest industry standard
- High operational efficiency

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Saves Money

Ultra-Web® improves the Bottom Line

Count on significant savings with the most powerful filtration media available. Cartridge and panel filters made with Ultra-Web® nanofibre technology last longer, resulting in fewer filter changes, lower replacement and labor costs, and less production downtime. Extraordinary surface loading performance provides lowest pressure drop and significant annual energy savings.

Lower Pressure Drop saves Energy

| | Standard media | Ultra-Web® media |
|--------------------------|----------------|------------------|
| Filter elements (No.) | 24 | 24 |
| Airflow (m³/h) | 10,600 | 10,600 |
| Operating Delta P (daPa) | 125 | 75 |
| Installed fan power (kW) | 15 | 15 |
| Power consumption (kW)* | 5.05 | 3.03 |
| Annual energy use (Euro) | EUR 1,616 | EUR 970 |

Reduces Energy Costs by 25 to 50%

* Consumed kW to overcome the filter operating pressure

This is one example of energy savings due to lower pressure drop. Energy savings can further increase with larger collectors. These energy savings are calculated based on the following assumptions. Cartridge collector running 4,000 h per year and energy costs are 0.08 Euro per kWh.

See the Savings add up with Ultra-Web®

Cellulose or 80/20 commodity filters cost less than Ultra-Web®, but Ultra-Web® nanofibre filters save you more money in the long run, particularly with energy savings that can't be beat. No other filtration

technology provides the powerful combination of higher efficiency and cleaner air, lowest pressure drop and longer life, plus high energy savings.

Fewer Changeouts save Energy, Maintenance & Filter Costs

Annual total Savings up to € 3,016

| No. of Ultra-Web® filter elements | Annual maintenance & filter cost savings | Annual energy savings | Total annual savings |
|-----------------------------------|--|-----------------------|----------------------|
| 8 | EUR 85 | EUR 216 | EUR 301 |
| 12 | EUR 54 | EUR 232 | EUR 286 |
| 24 | EUR 108 | EUR 646 | EUR 754 |
| 36 | EUR 161 | EUR 970 | EUR 1,131 |
| 48 | EUR 215 | EUR 1,293 | EUR 1,508 |
| 72 | EUR 322 | EUR 1,939 | EUR 2,261 |
| 96 | EUR 430 | EUR 2,586 | EUR 3,016 |

Maintenance and filter replacements calculation are based on a comparison of standard media cartridges and Ultra-Web® cartridges. Standard media filters are replaced after 4,000 h, Ultra-Web filters after 6,000 h. Standard media is priced at 100 Euro, Ultra-Web® at 145 Euro. Labor rate equals 55 Euro per hour, filters are replaced at a rate of 16 filters per hour. Cartridge collector running 4,000 h per year.

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Proven Performance

Cleaner Air

- Captures submicron particles with innovative nano-fibre technology and pre-HEPA MERV 13 efficiency

Longer Filter Life

- Lasts up to 2 times longer than cellulose or blended media, depending on the application

Greater Cost Savings

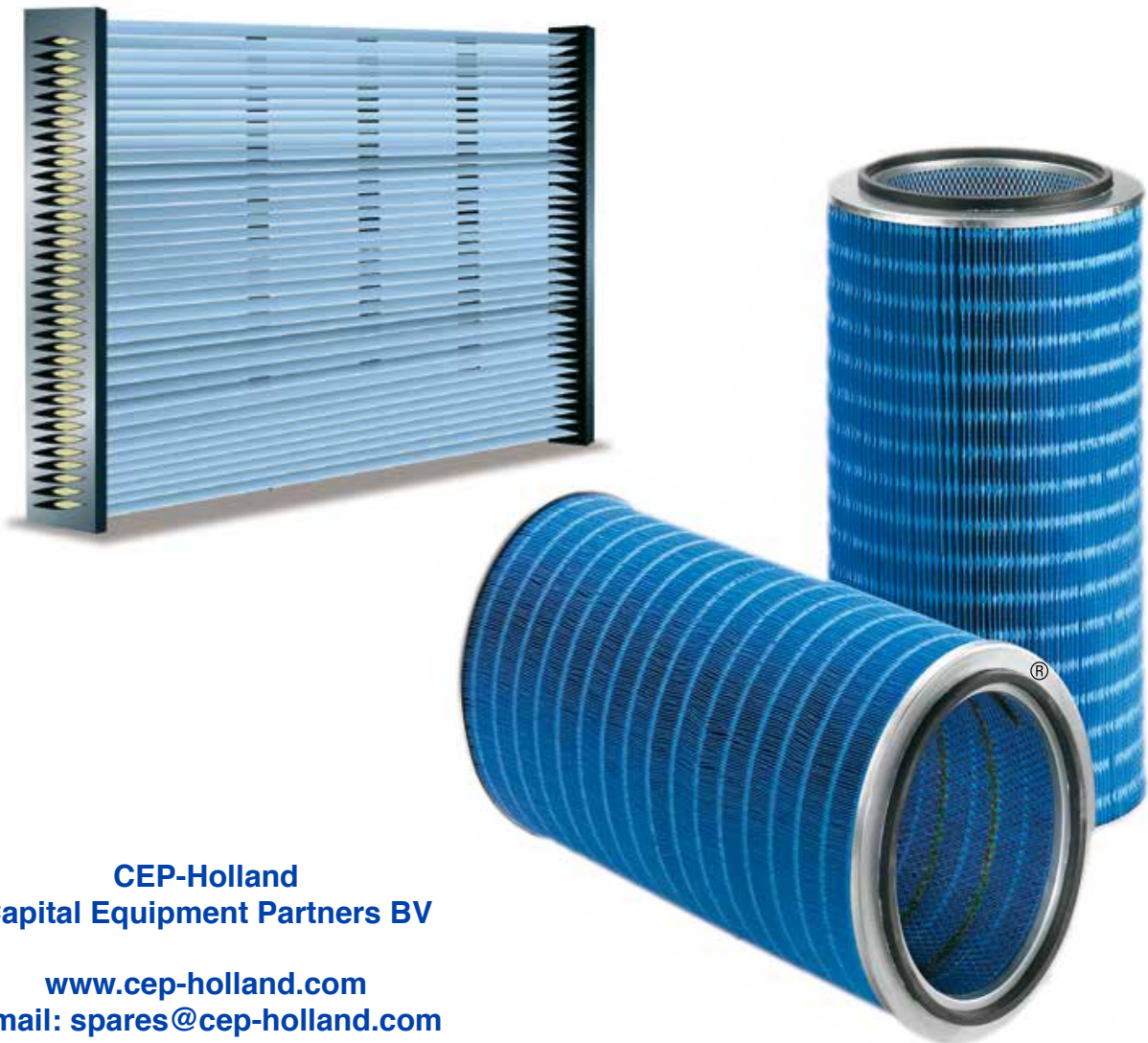
- Provides the best value and long-term savings

For all Collectors

- Ultra-Web® filter media is standard available on all Donaldson Torit® DCE® cartridge, panel and PowerCore® dust collectors.

- Ultra-Web filters are available for all popular collectors:

- | | |
|---------------|-------------|
| • AAF | • Kemper |
| • Camfil Farr | • MAC |
| • Coral | • Plymovent |
| • Delta Neu | • Sult |
| • Handte | • Tama |
| • Keller | • TDC |



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Dust Collection Technology

High-performing Dust Collectors

Donaldson offers a broad range of dust collectors and filters – from central, source and ambient systems to baghouse, envelope, panels and cartridge technologies. This allows us to create the ideal solution for virtually any application.

Donaldson Dust Collectors stand out thanks to:

- Lower energy consumption and hence reduction of CO₂ emissions
- Longer filter life time
- Ease of maintenance
- Efficient cleaning systems
- ATEX-compliant solutions



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Donaldson
Torit® DCE®

Dust and Fume Removal · Oil Mist Separation