

# ExtractAire™

Grease Filters for Commercial Kitchen Ventilation Hoods



**100% Efficient  
@ 8 Microns\***

High Velocity Cartridge  
Multi-Stage (HVCMS)

US Patent No. 9,732,966



**50% Efficient  
@ 8 Microns\***

High Velocity Cartridge  
(HVC)

US Patent No. 6,394,083



**18% Efficient  
@ 8 Microns\***

Baffle

\*Grease Extraction

# Commercial Kitchen Ventilation (CKV) Grease Filter Requirements | Designs | Extraction Efficiencies

## Grease Filter Requirements

CKV Hoods used for capturing and removing grease and smoke produced from commercial cooking equipment require grease filters or extractors that provide:

1. A fire barrier which limits the projection of flames downstream of the filter face.
2. Drain any collected grease from the exhaust airstream in a manner such that the grease will not fall back onto the cooking surface.

## Grease Filter Designs

The most commonly used grease filters in CKV hoods are High Velocity Cartridge (HVC) and Baffle Filters.

HVC Filters provide the ultimate in fire protection and grease extraction efficiency. HVC Filters can take on the harshest CKV environments.

Baffle Filters provide reliable fire protection and grease extraction efficiency. Baffle Filters are a good choice for lighter duty CKV environments.

## Grease Filter Extraction Efficiencies

Grease filter extraction efficiency is calculated by measuring the total percentage of grease removed by the grease filter verses the total amount of grease exhausted through the grease filter.

Grease Filter Extraction Efficiency can vary greatly dependent on:

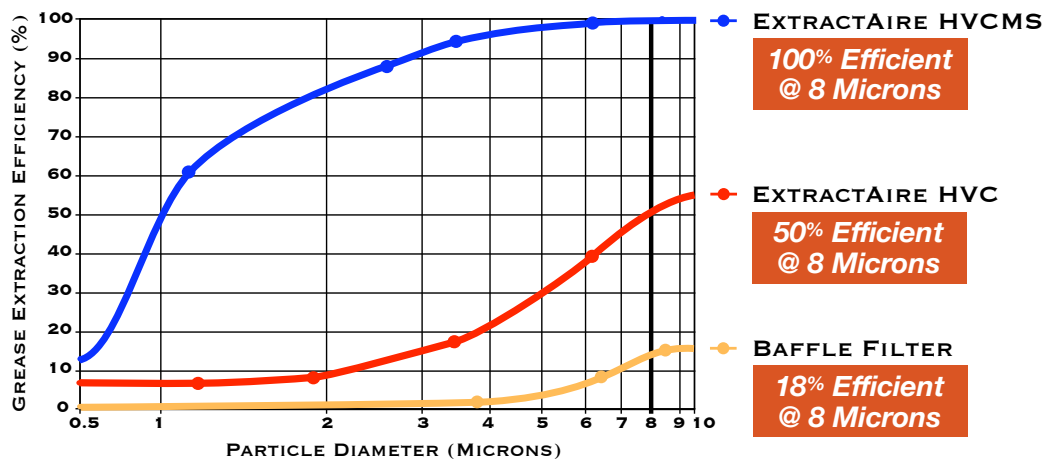
1. The design of the grease filter.
2. The size of the grease particles.

## Grease Particle Sizes and Categories

Grease particles are measured in microns and are catagorized into three distinct groups:

1. **Submicron:** 0.03 to 0.55 microns, visible as smoke and other small particles.
2. **Steam:** 0.55 to 6.2 microns, seen as grease covered moisture and air mixtures.
3. **Spatter:** 6.2 to 150 microns, manifesting as larger more visible particles.

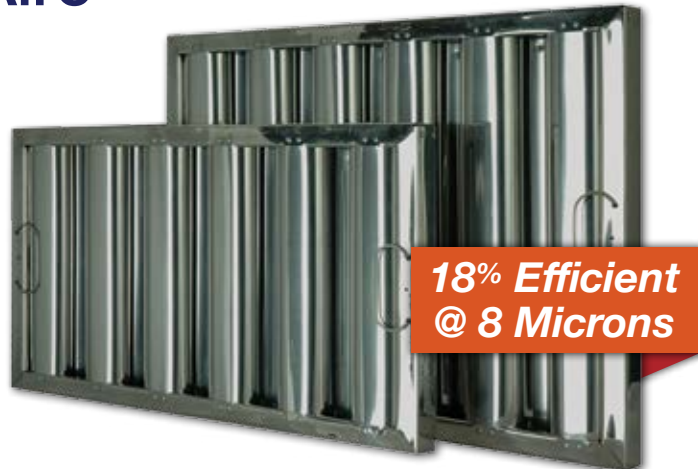
The chart below shows the grease extraction efficiency curves for Streivor's ExtractAire™ High Velocity Cartridge Multi-Stage (HVCMS), High Velocity Cartridge (HVC), and Baffle filters.



Testing was performed by the Department of Mechanical Engineering University of Minnesota, to the ASHRAE Standard 52.2-2007. Oleic Liquid particles were used instead of KCI Solid Particles in accordance with the ASTM Standard F2519-05 since grease filters were being characterized.

# Streivor ExtractAire™ Baffle Filter

ExtractAire™ Baffle Filters are engineered for use in Commercial Kitchen Ventilation hoods requiring a filter that is Listed to the UL 1046 Standard. The ExtractAire™ Baffle Filter design and construction provides reliable fire protection and grease extraction for lighter duty CKV environments.

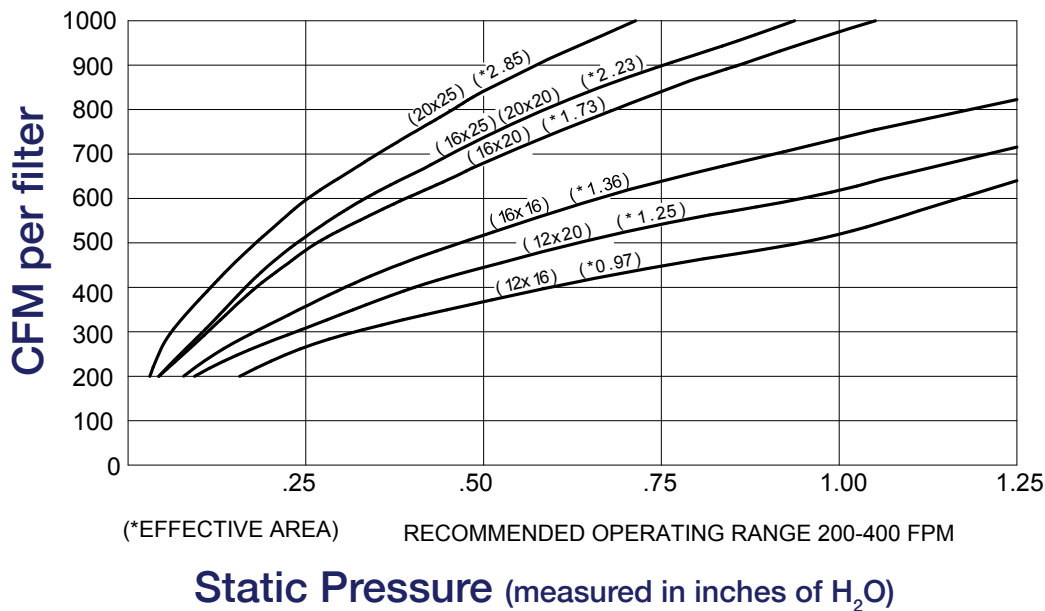


## Features / Benefits

ExtractAire™ Baffle Filter	<ul style="list-style-type: none"> <li>Grease extraction efficiency: 18% @ 8 microns</li> </ul>
Round Baffle Design	<ul style="list-style-type: none"> <li>Provides an effective fire barrier</li> <li>Sightly and easy to clean</li> </ul>
Aluminum Construction	<ul style="list-style-type: none"> <li>Corrosion resistant</li> <li>Economical</li> </ul>
Stainless Steel Construction	<ul style="list-style-type: none"> <li>Corrosion resistant</li> <li>Added durability</li> </ul>

ExtractAire™ Baffle Filters are available in various sizes ranging in heights from 12” to 20” and widths from 16” to 25”. The air flow characteristics for each filter size is shown in the chart below.

## ExtractAire™ Baffle Filter Air Flow Characteristics



Streivor ExtractAire™ Baffle Filter

# Streivor ExtractAire™ High Velocity Cartridge (HVC) Filter

## Fire Barrier

ExtractAire™ HVC Filters provide the ultimate fire barrier which prevents against a cooking fire spreading from the hood canopy into the exhaust system.

## Grease Extraction Process

Grease laden air generated by commercial cooking equipment rises and is captured by the ventilation hood canopy. The air is then drawn into the top of the HVC Filter by an exhaust system where the air is forced around a 180° change of direction into and through a tunnel ram. The air passing through the tunnel ram accelerates by 4 times the entrance speed. At the bottom of the tunnel ram, the grease laden air is forced around a second 180° change in direction where, by means of centrifugal force and gravity, the grease particles are thrown out the open bottom of the HVC and impact with and collect in the pitched grease drip tray of the hood. Up to 50% of the grease laden air effluents larger than 8 microns are removed from the exhaust air stream by Streivor's HVC Filter.



## Adjustable Air Flow Control

The ExtractAire™ HVC Filter provides total air flow control within each individual filter. The operator can increase or decrease the airflow through each filter by simply moving the adjustable diverter choke up or down. This feature gives the installer the ability to customize the air flow into segments within a hood that contains ExtractAire™ HVC Filters. For example, the installer may want to increase the airflow through the filter(s) over high temperature equipment, such as broilers, or decrease air flow through the filter(s) over low temperature equipment, such as ranges. The result is the most efficient and versatile control of airflow through CKV filters ever designed.

## Durability

The ExtractAire™ HVC is built to last indefinitely. It is constructed from heavy gauge type 304 Stainless Steel with a strong "all welded" body. Under normal use the HVC Filter should never need to be replaced.

# Streivor ExtractAire™ High Velocity Cartridge (HVC) Filter

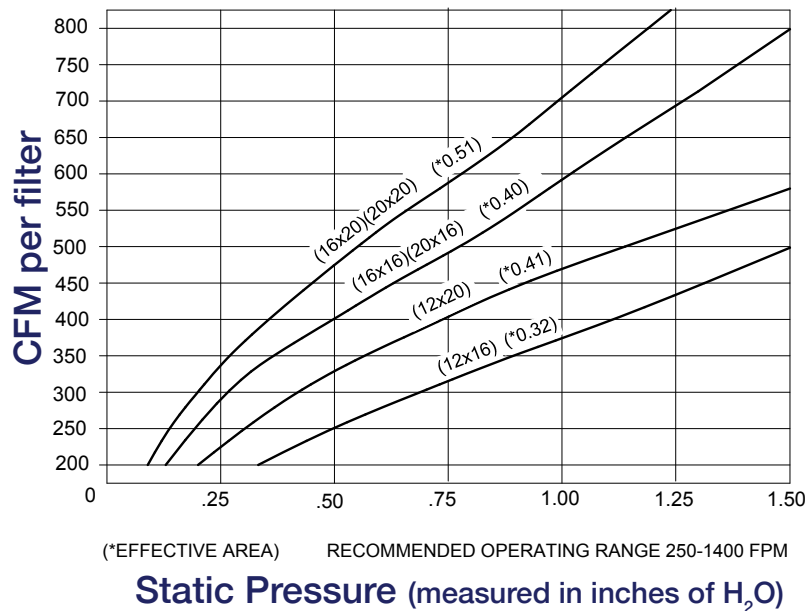
ExtractAire™ HVC Filters are engineered for use in CKV hoods requiring a filter that is Listed to the UL 1046 Standard. The ExtractAire™ HVC Filter design and construction provides the ultimate fire protection and grease extraction for heavy duty CKV environments.



## HVC Features / Benefits

High Velocity Cartridge Filter	<ul style="list-style-type: none"> <li>Grease extraction efficiency: 50% @ 8 microns</li> <li>3x more efficient than a typical baffle filter</li> </ul>
Triple Wall Construction	<ul style="list-style-type: none"> <li>All welded stainless steel construction provides the ultimate fire barrier</li> </ul>
Tunnel Ram	<ul style="list-style-type: none"> <li>Increases the exhaust air speed inside of the filter to 4x the entrance speed</li> </ul>
Adjustable Choke	<ul style="list-style-type: none"> <li>Allows for airflow control within each filter</li> </ul>
Non-Loading	<ul style="list-style-type: none"> <li>Grease is not collected in the filter</li> </ul>
Open Bottom Design	<ul style="list-style-type: none"> <li>Allows access for thorough hand or machine cleaning</li> </ul>
Dishwasher Safe	<ul style="list-style-type: none"> <li>Fit 3 at a time into a commercial dish wash machine</li> </ul>

## HVC Air Flow Characteristics



US Patent No. 6,394,083



Streivor ExtractAire™ HVC Filter

# Streivor ExtractAire™ High Velocity Cartridge Multi-Stage (HVCMS) Filter

ExtractAire™ HVCMS Filters are engineered for use in CKV hoods requiring a filter that is Listed to the UL 1046 Standard. The ExtractAire™ HVCMS Filter design and construction provides the ultimate fire protection and the highest level of grease extraction available in CKV Grease Filters. ExtractAire™ HVCMS Filters can withstand the harshest CKV environments. The HVCMS Filter emply incorporates Streivor's sustainable, organic, replaceable, and biogradable **Absorb** Filters.



## HVCMS Features / Benefits

High Velocity Cartridge Multi-Stage Filter	<ul style="list-style-type: none"> <li>• Grease extraction efficiency: 100% @ 8 microns</li> <li>• 5x more efficient than a baffle filter</li> </ul>
Triple Wall Construction	<ul style="list-style-type: none"> <li>• All welded stainless steel construction provides the ultimate fire barrier</li> </ul>
Tunnel Ram	<ul style="list-style-type: none"> <li>• Increases the exhaust air speed inside of the filter to 4x the entrance speed</li> </ul>
Adjustable Choke	<ul style="list-style-type: none"> <li>• Allows for airflow control within each filter</li> </ul>
Non-Loading	<ul style="list-style-type: none"> <li>• Grease is not collected in the filter</li> </ul>
Open Bottom Design	<ul style="list-style-type: none"> <li>• Allows access for thorough hand or machine cleaning</li> </ul>
Dishwasher Safe	<ul style="list-style-type: none"> <li>• Fit 3 at a time into a commercial dish wash machine</li> </ul>
<b>Absorb</b> Filter*	<ul style="list-style-type: none"> <li>• Sustainable organic filter</li> <li>• Easily removable, biodegradable, landfill safe</li> <li>• Listed for use in CKV Grease Filters</li> </ul>
Spark Arrestor Filter**	<ul style="list-style-type: none"> <li>• Facilitates the code requirement for inclusion of a Spark Arrestor as part of a grease filter used in CKV hoods over solid fuel cooking equipment</li> <li>• Removable for easy cleaning or replacement of <b>Absorb</b> Filter</li> </ul>

\*May eliminate the need for a secondary pollution control unit.

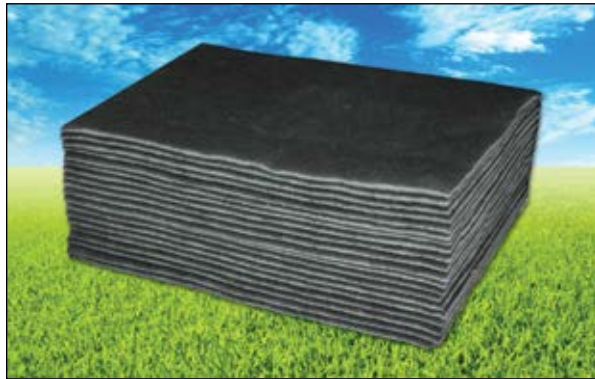
\*\*Spark Arrestor Filter may be used with or without the Absorb Filter.



US Patent No. 9,732,966

# Streivor ExtractAire™ **Absorb**™ Filter

Streivor's **Absorb** Filters are engineered for use in Commercial Kitchen Ventilation Hoods to capture effluents produced during commercial cooking. The **Absorb** Filters can capture grease particles as small as .05 microns and can achieve 100% capture and containment of grease particles 8 microns and larger.



**Absorb** Filters are available by the case (20 filters per case)

**Absorb**™ Filters are:

- ✓ Sustainable
- ✓ Organic
- ✓ Replaceable
- ✓ Biodegradable

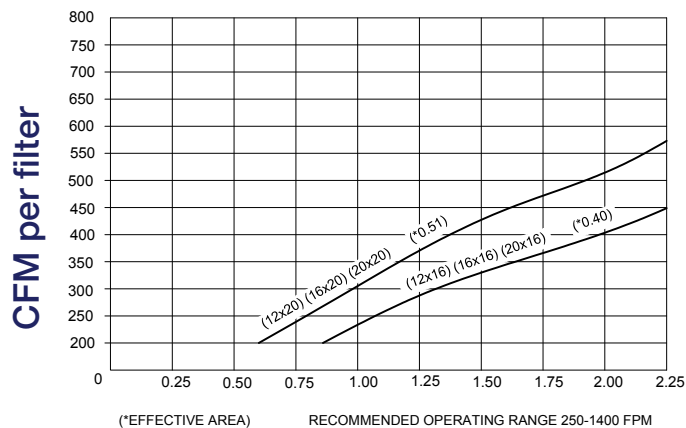
Airborne grease particles that come into contact with Streivor's **Absorb** Filters are absorbed and entrapped in the organic fiber. The entrapped grease particles remain in the **Absorb** Filter until the filter is removed and disposed. The **Absorb** Filters contain an antimicrobial and antibacterial agent for added health and sanitation security. The **Absorb** Filters are sustainable, biodegradable, and landfill safe.

Removing a high percentage of the grease particulates from the exhaust air stream is extremely beneficial. Reduced emissions improve air quality and protect the environment. Reduced grease particle emissions also decreases the amount of grease buildup on the hood, ductwork, exhaust fan, and rooftop surfaces. This reduces fire hazard potentials and the amount of service and cleaning required to maintain the kitchen exhaust system.

**100% Efficient  
@ 8 Microns**



## HVCMS Air Flow Characteristics



Static Pressure (measured in inches of H<sub>2</sub>O)



Streivor's **Absorb** Filters are ETL Listed for use in CKV hoods.

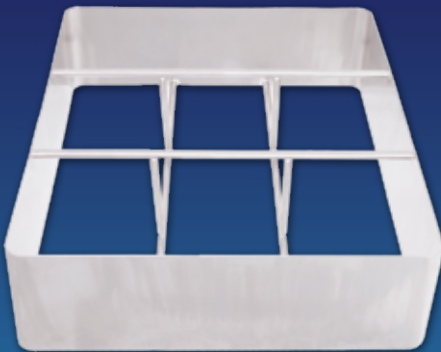
Streivor ExtractAire™ **Absorb**™ Filter

# Streivor ExtractAire™ Cartridge Wash Rack



## Designed for Easy Cleaning

The ExtractAire™ HVC and HVCMS Filters are easily removable for cleaning. The adjustable diverter choke is also removable, allowing total access for hand washing of both the inside and outside of the cartridge. There are no sharp edges or tight openings for fingers to become trapped or injured as in the typical baffle or other types of filters. The ExtractAire™ HVC and HVCMS Filters have been designed to fit into most commercial dishwashers. When the ExtractAire™ HVC or HVCMS filters are removed from a Streivor exhaust hood, the entire hood plenum is accessible for easy cleaning.



Streivor™ Air Systems manufactures a heavy duty ExtractAire™ Cartridge Wash Rack (CWR) that fits into most commercial dishwashers. The ExtractAire™ CWR is fabricated from 16 gauge stainless steel and 5/16 type 304 round bar. The CWR measures approximately 20" x 16" x 4". The CWR accommodates up to three 20" long ExtractAire™ Cartridges at one time. This protects the environment by reducing water usage, energy consumption, and the use of harmful chemicals.

US Patent No. 6,394,083

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