



The ultimate solution to your filtration problems



**AI-128-V
AIR INTAKE SYSTEMS**

DOLLINGER-ISO 9001 ASSURED QUALITY AND SERVICE

AI-128-V

NEW

AI-128-V

AIR INTAKE SYSTEM

The Need

Contaminants at the intake of compressors, blowers and turbines dramatically affect the cost of supplying compressed air.

Inefficient intake filtration permits contaminants to corrode, erode and foul internals, effecting a reduction in performance and component service life. Contamination increases repair, maintenance and downtime of rotating equipment. Contaminants not effectively removed by the air intake filter will also migrate downstream in compressed air piping, to system controls, instrumentation, tools and other production processes.

Manufacturing facilities worldwide are experiencing escalating maintenance costs, increasing at an average rate of 10% to 17% annually. These increases are in addition to the related costs associated with downtime, rejects and rework of production processes.

For "world class" competitiveness, today's industrial strategies must include management of the high cost of process intake contamination.



AI-128 Air Intakes - 45,000 SCFM each



DOLLINGER UNDERSTANDS THE CHALLENGE

Dollinger was founded in 1921, introducing the "Protectomotor," an air intake filter designed to extend the life of tractor engines.

Since this beginning, Dollinger has continually lead the way in developmental technology and leading edge solutions for industry.

Dollinger's products and reputation for quality, reliability and low life-cycle costs are the result of over 70 years' experience in the field, supported by in-house R & D laboratories.

The Dollinger reputation for customer support is unsurpassed. Our engineers design filtration systems for virtually any compressed air or gas application. Talk with a Dollinger engineer – they understand the challenge.



1920 Ford Delivery Truck



Restored 1930's Vintage Portable Air Compressor with Dollinger *Protectomotor* filter

The Challenge

If not removed, dirt, moisture, oils, hydrocarbons, gases and bacteria will dramatically affect the service life, performance and cost of repair and maintenance of critical machinery such as compressors and blowers.

EFFECTS OF CONTAMINANTS

Corrosion Permanent damage to high speed internals through chemical reactions between moisture, gases and dirt.

Erosion Permanent damage to high speed internals due to large particles, 10 micron and greater, impacting on components and casings.

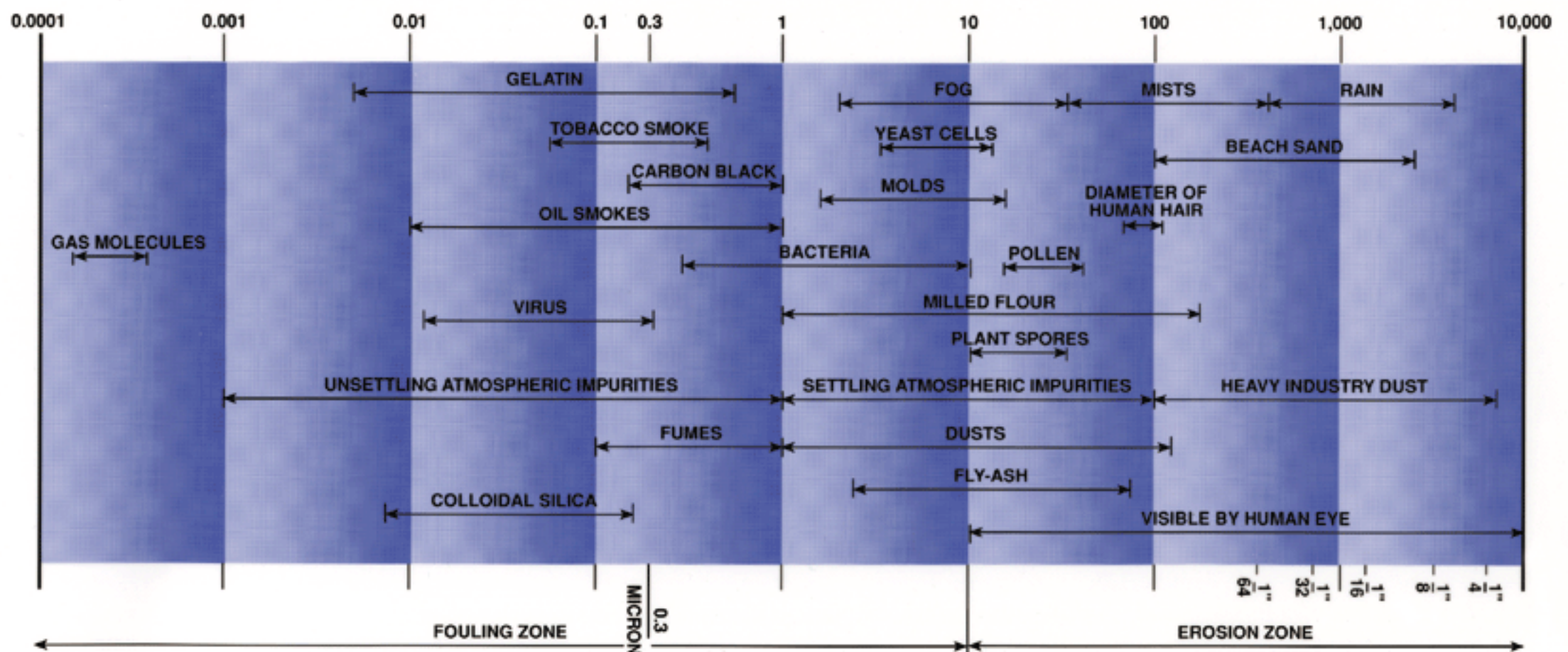
Fouling Loss of Power-Output - Intake contaminants will *foul* rotating parts. Contaminants will adhere and cake. When blade and rotor profiles are altered by contaminant build-up, mechanical efficiency and output are reduced. Eventually power decreases and rotating masses tend towards out of balance. Unplanned downtime, extensive cleaning and repair are the consequences.

Loss of Heat Exchanger Efficiency - Heat exchanger efficiency is reduced due to contaminated surface areas.

Pneumatic Production Process - Product spoilage processes such as controls, instruments, chemical mixing, spraying, painting, blanketing, and transporting are affected by contaminants that enter the compressor or blower intake.

RELATIVE SIZES OF COMMON AIR CONTAMINANTS

Particle Diameter, Microns-Logarithmic Scale



1 Micron = 1 Millionth of a Meter = 4×10^{-5} inches, (0.00004 inches)

The Solution

A DOLLINGER "SYSTEM" APPROACH

It is important to understand the types of contaminants and particulate distribution in order to determine efficient and effective intake filtration.

Selection of Filter Types: For good engineering design, this table provides a general guide to a selection when related to machine type.

This brochure is dedicated to centrifugal or axial compressors and blowers up to 72,000 SCFM.

It is important to furnish your Dollinger engineer with details specific to your compressor intake site. Any potential airborne contaminant should be reviewed and evaluated; dust, soot, fly-ash and rain, sleet, snow and other potential localized contam-

TYPE	FLOW CHARACTERISTICS	RECOMMENDED FILTRATION
<i>Centrifugal/Axial</i>	Smooth	0.3 - 2.0 Micron
<i>Rotary Screw</i>	Semi-Smooth	2.0 - 10 Micron
<i>Most Blowers</i>	Smooth	10 Micron

inants that may be industry related. Dollinger Engineering can assist with sampling, and conduct particle size and distribution testing in our R & D laboratories.

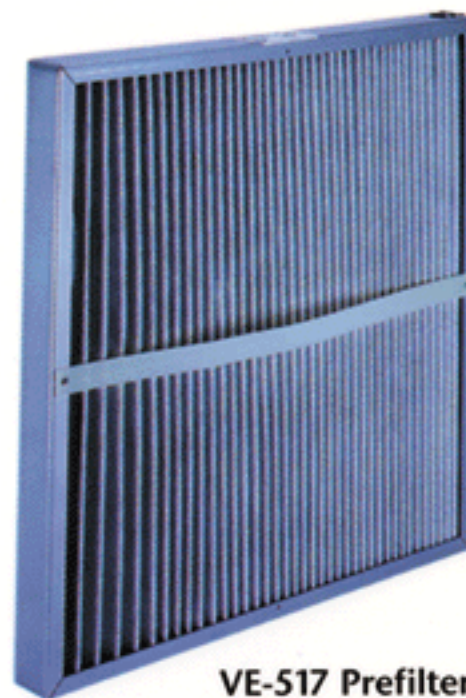
The System

PREFILTER ELEMENT

The prefilter is designed to remove the larger size and volume of particulate. The prefilter protects and extends the life of the more efficient final filter which is protecting the equipment internals.

Dollinger introduces the newest prefilter media, the **VE-517 Panel** which offers extended surface area, now 2" deep rather than 1-1/2" deep providing more than three times higher dirt loading and longer life.

The prefilter may be washed by low pressure water hose (<30 psi), properly dried and reused with good results.



VE-517 Prefilter



MVP™-502 Final Stage

FINAL STAGE ELEMENT

This *revolutionary* final stage MVP™-502 Multiple Vee Panel design uses a new concept to create eight (8) panels in a "Vee Formation" within a nominal 24"x24"x11-1/2" standard size.

A proprietary water resistant microglass media presents a "dual-layer" barrier to particles which penetrate the prefilters.

A rugged patented extruded aluminum frame encases the eight (8) panels which are totally sealed in the MVP™.

The features and benefits of this new technology are:

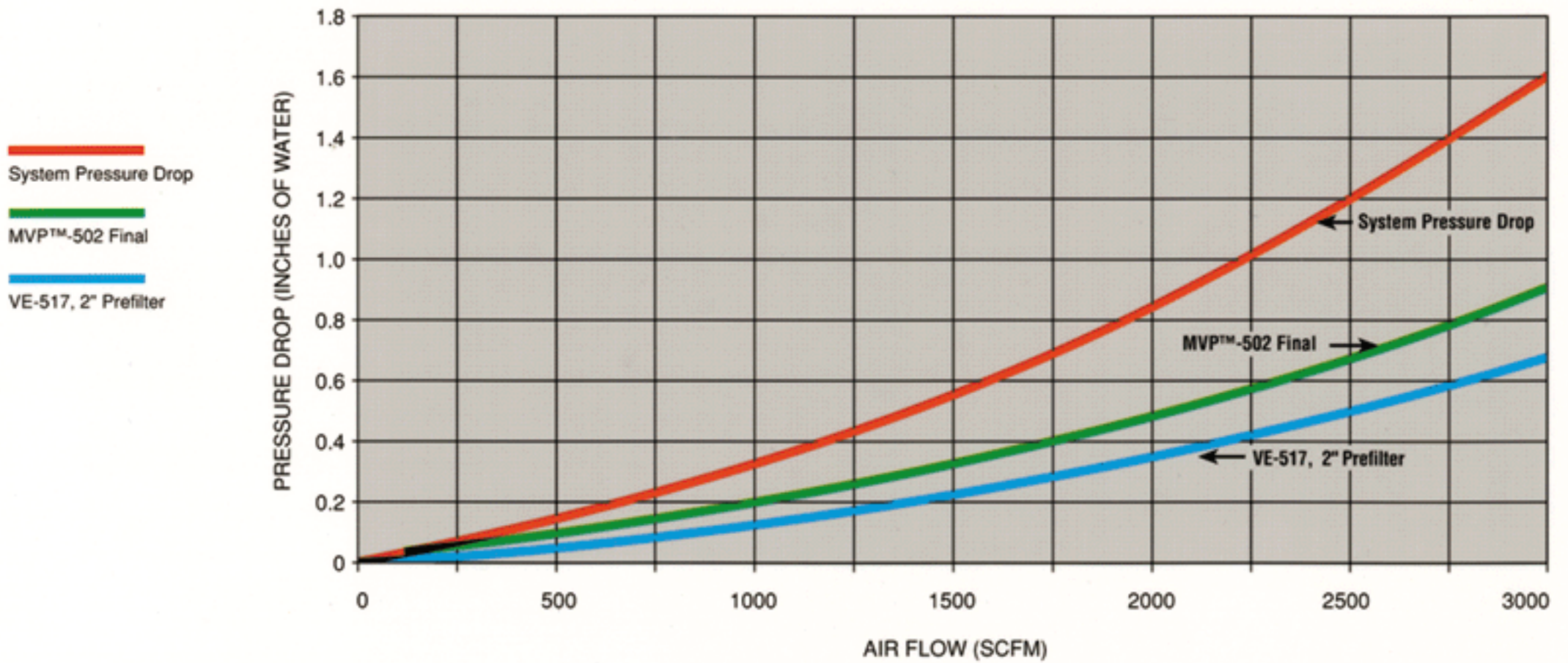
Superior Performance — 99.97% removal of 2 microns and over 90% removal of 0.4 microns protects the performance and life of rotating equipment.

Extended Element Life — More available surface area with the MVP™ design doubles dirt holding capability, extending element life and reducing element replacement costs.

Sizing Flexibility — The MVP™ is capable of flowing up to 3000 SCFM rather than the standard 2500 SCFM. That is a 20% increase in capacity without penalty of added pressure drop. This sizing flexibility allows for a smaller housing and lower first cost.

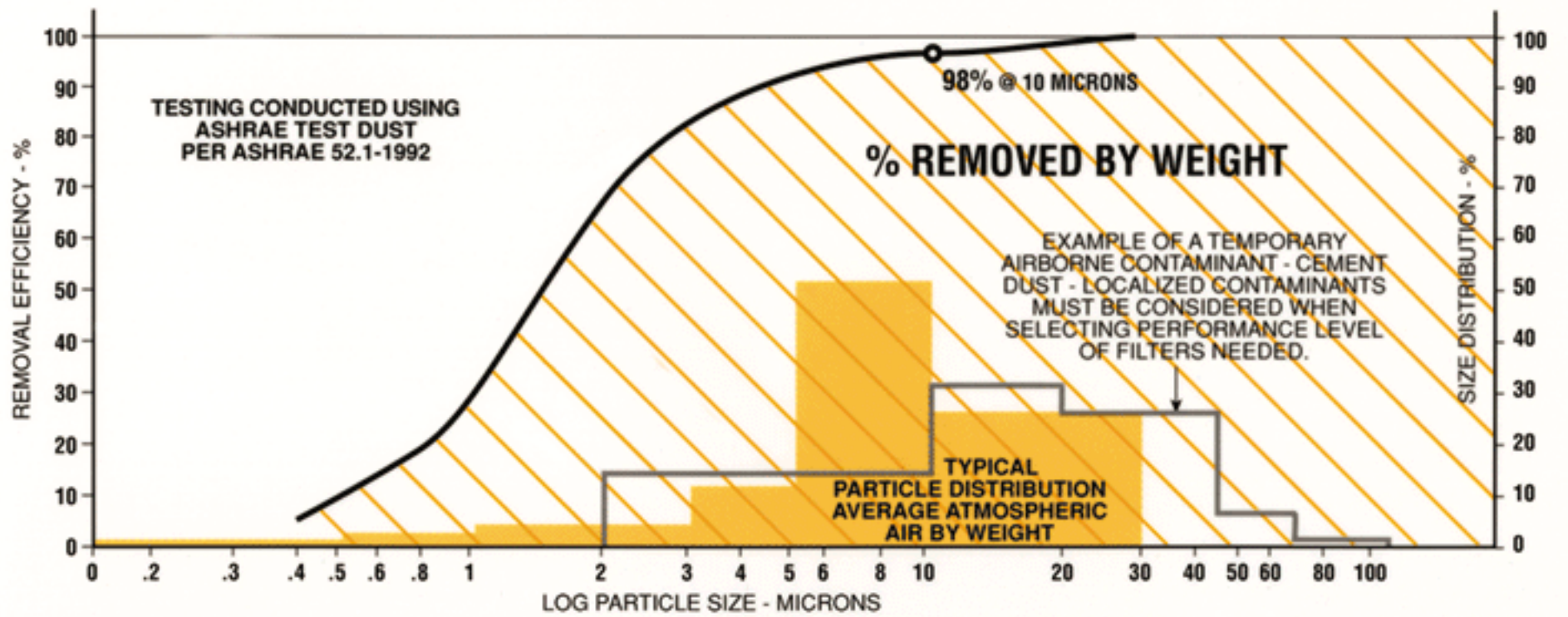
CAPACITY OF THE VE-517/MVP™-502 SYSTEM

Initial (Clean) Pressure Drop Characteristics

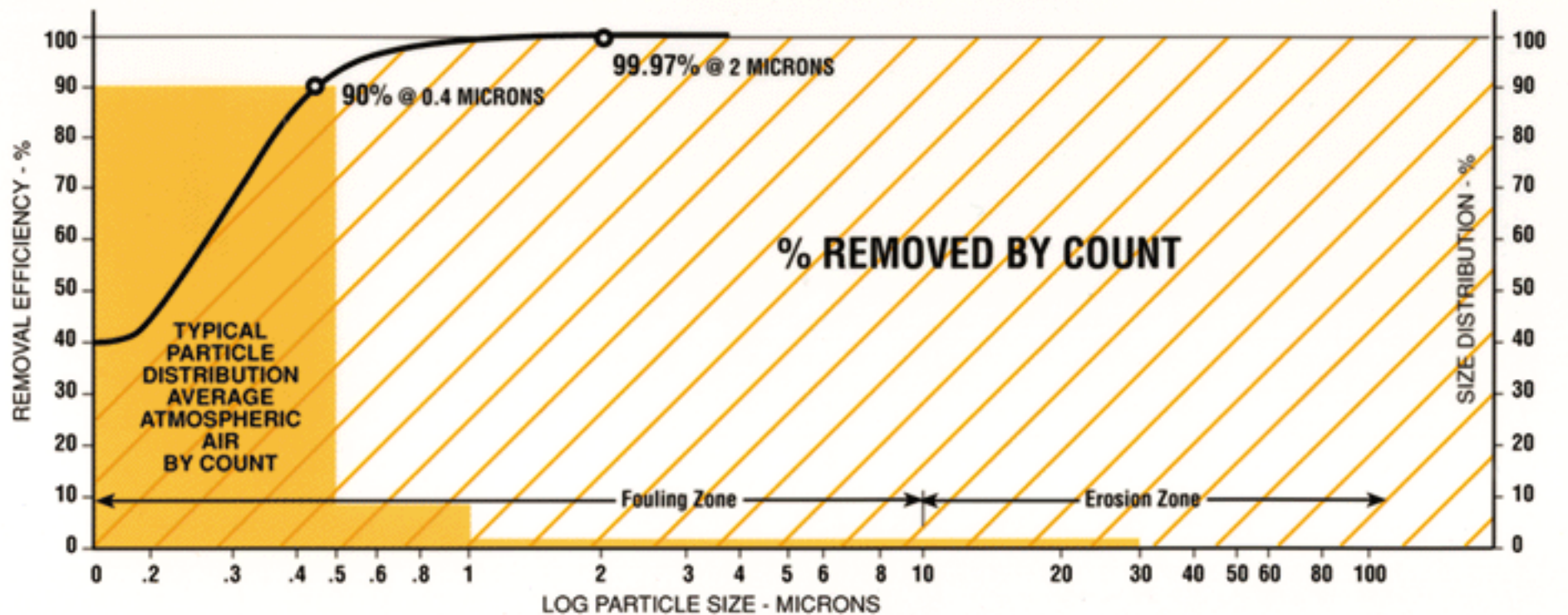


RELATIVE PARTICULATE REMOVAL BY FILTER TYPE

Dollinger VE-517 Prefilter



Dollinger MVP™-502 Multiple Vee Panel - Final Stage



This demonstrates the need for a 2-stage system approach and the need for a minimum of 2 micron removal efficiency. For 95%/99.97% removal against 0.3μ, consult your Dollinger engineer.

SELECTING YOUR SYSTEM

The new Dollinger VE-517 prefilters and the MVP™-502 Multiple Vee Panel system offers flexibility to the user.

Dollinger understands that different industries have different criteria for evaluating costs... from "first cost" to "total life cycle costs."

Now with the Dollinger Multiple Vee Panel design, flexibility is available to achieve a very low first cost, or a very low life cycle cost, or something in between... you decide.

FLOWS — 2000 SCFM - 2500 SCFM - 3000 SCFM

2000 SCFM

Sizing for 2000 SCFM per panel extends element life and reduces replacement element cost, labor, disposal and inventory. Less energy is used due to differential pressure across the air intake system. The mechanical efficiency of the compressor or blower is improved, providing more product yield. Benefits are more pronounced on Dollinger's VE-517/MVP™-502 system with more surface area than its predecessor, the Dollinger 093/164 system.

2500 SCFM

The standard rating for an industrial air intake was 2500 SCFM. The VE-517/MVP™-502 offers a reduction in initial resistance, (17%), over the old Dollinger 093/164 design and has 65% more dirt loading and life than the previous 093/164. This saves over 11% in total operating costs.

3000 SCFM

A flow option not available from any other manufacturer allows up to a 20% reduction in the size of the overall filter housing, providing first investment cost-conscious users a cost effective alternative.

DIRT LOAD COMPARISONS

New VE-517 Prefilter Dirt Load Comparison

Cost per Element ÷ Grams held @ 4" W.C. x 1000 Gram = Cost/1000 Grams

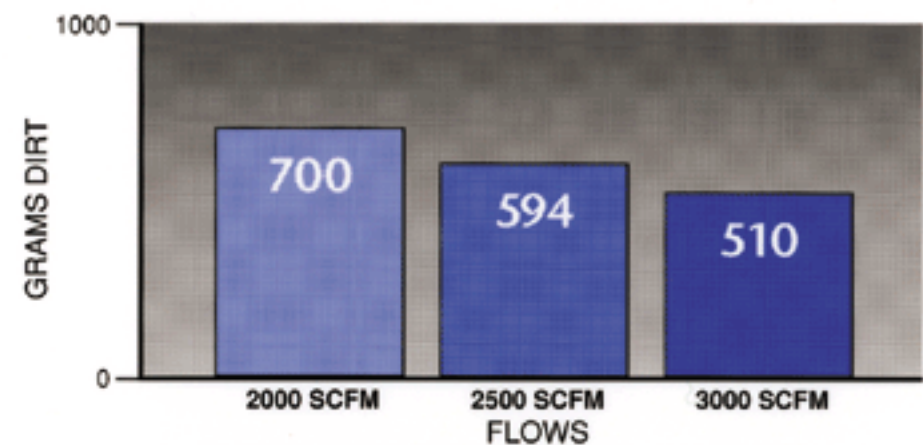
Examples:

\$80 ÷ 700 Grams x 1000 = \$115.00/1000 Grams

\$80 ÷ 594 Grams x 1000 = \$135.00/1000 Grams

\$80 ÷ 510 Grams x 1000 = \$157.00/1000 Grams

*Cleaning your prefilter will extend element life. These costs do not reflect extended life due to cleaning.



New MVP™-502 Final Filter Dirt Load Comparison

Cost per Element ÷ Grams held @ 4" W.C. x 1000 Gram = Cost/1000 Grams

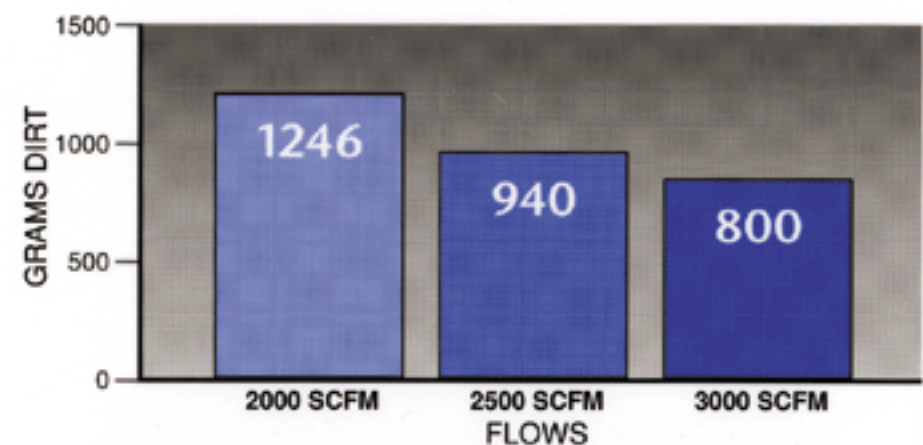
Examples:

\$380 ÷ 1246 Grams x 1000 = \$305.00/1000 Grams

\$380 ÷ 940 Grams x 1000 = \$404.00/1000 Grams

\$380 ÷ 800 Grams x 1000 = \$475.00/1000 Grams

*This graph illustrates the economies of the MVP™-502 Multiple Vee Panel at lower flows.



Combined VE-517/MVP™-502 System Dirt Load Comparison

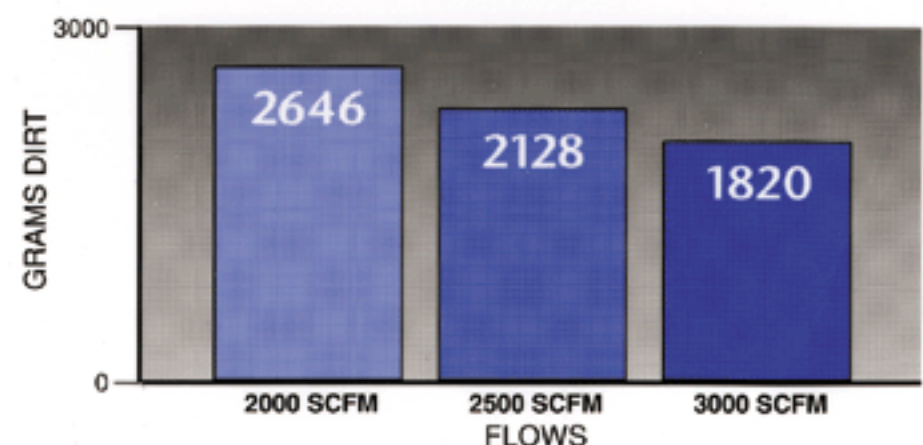
Based on 2 Prefilter changeouts for each Final Filter:

Examples:

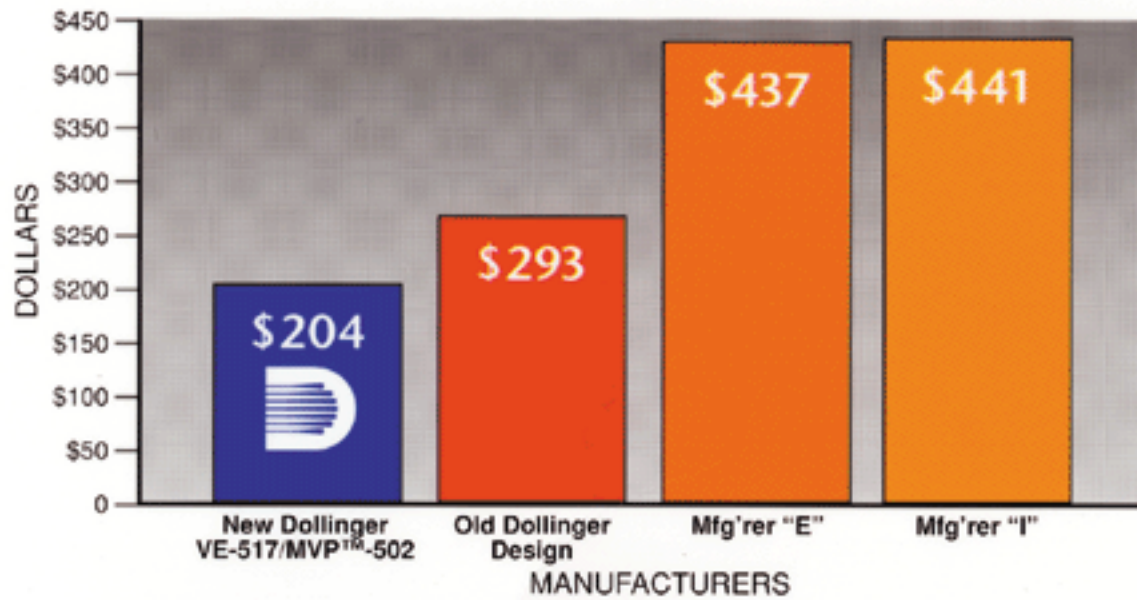
\$540 ÷ 2646 Grams x 1000 = \$204.00/1000 Grams

\$540 ÷ 2128 Grams x 1000 = \$254.00/1000 Grams

\$540 ÷ 1820 Grams x 1000 = \$297.00/1000 Grams

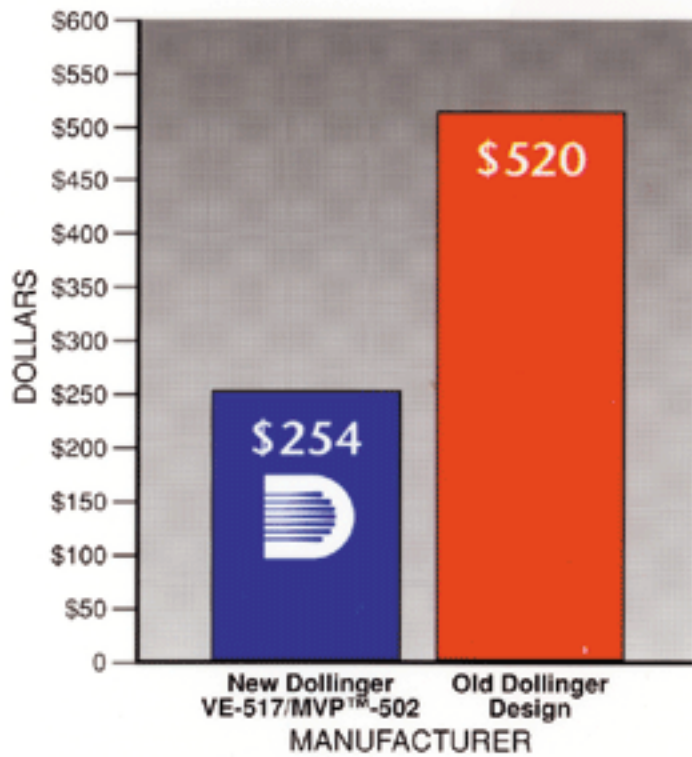


FILTER PANEL REPLACEMENT COST COMPARISONS



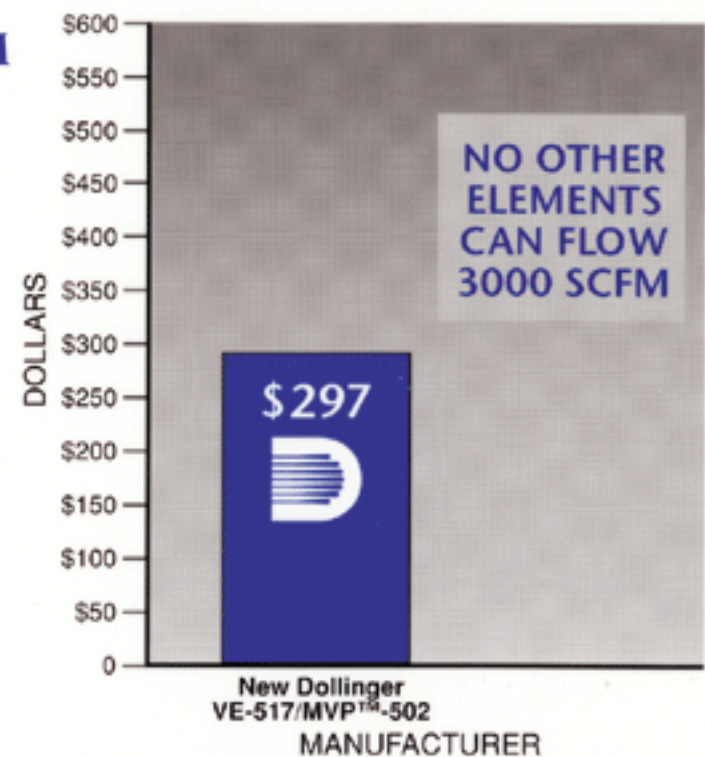
2000 SCFM APPLICATION

The new VE-517/MVP™-502 compared to Dollinger's previous product 093/164 and two other manufacturers of air intake filters. Relative operating costs are to hold 1000 grams of Ashrae test dust (replacement filter panels only.)



2500 SCFM DOLLINGER ONLY

3000 SCFM



NOTE: Data verified by Air Filter Testing Laboratories Inc. and Dollinger R & D Labs. Test data is available.

SUMMARY

VE-517/MVP™-502 SYSTEM	2000 SCFM	2500 SCFM
Initial Resistance Reduction	23%	17%
Dirt Holding Increase = Life (Ashrae 52.1-1992)	+96%	+65%

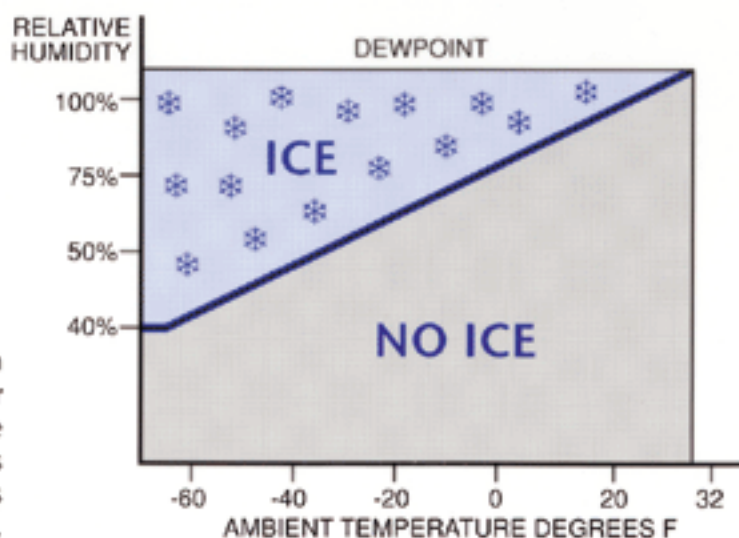
This comparison is for Dollinger's new VE-517/MVP™-502 design Vs. the previous 093/164 design. Comparisons based on panel changeouts at 4.0" W.C total.

NOTE: The new VE-517/MVP™-502 system can also be sized for 3000 SCFM per panel lowering first cost purchase price. Units will physically be smaller.

AVAILABLE DOLLINGER/ENGINEERED OPTIONS

- Inertial Spin Blocks
- Top Outlet Design
- Side Outlet Design
- Leg Supports
- Instrumentation (ΔP)
- Special Connections
- Extended Rain Hoods
- Epoxy or Other Special Topcoat Finishes
- Stainless Steel Construction/Aluminum Construction
- Low ΔP "Bell Shape Transition" Flange Adapters
- Silencing
- Blow In-door (Heat-Trace Optional)

CHECK SITE CONDITION/ANTI-ICE PACKAGE



NOTE: Ice will/can form when water vapor saturates the panel intake areas and temperature falls below 29°F (-2°C).

ANTI-ICING PACKAGE

OPTIONS

Steam — Hot Water — Electric Heat — Ethylene Glycol — Compressed Air Piccolo System..

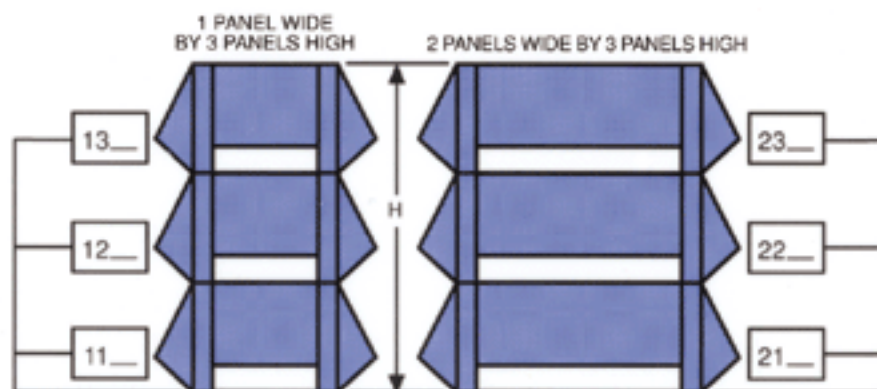
Air-in heat exchanger grids below the rain hoods - Consult your Dollinger engineer.

SPECIFICATIONS Model AI-128-V Two-Stage Filter/Silencer 2 micron

Model Number*	DWG Number	Width, Height & Panel Plan	@ Per Panel Capacity			Panel Number Req'd.	Outlet (Inches)		Approximate Dimensions (Inches)			Approx. Weight (lbs.)
			2000 SCFM	2500 SCFM	3000 SCFM		Std.	Max.	Length	Width	Height	
			Filter Capacity	Filter Capacity	Maximum Capacity SCFM							
AI-128-V-0100-080	37840	111	2000	2500	3000	1	8	12	44	25	30	162
AI-128-V-0200-120	37841	112	4000	5000	6000	2	12	20	78	32	25	384
AI-128-V-0300-140	37842	113	6000	7500	9000	3	14	20	78	55	25	471
AI-128-V-0400-160	37843	114	8000	10000	12000	4	16	20	78	78	25	563
AI-128-V-0500-200	37844	123	10000	12500	15000	5	20	20	78	55	49	735
AI-128-V-0600-200	37845	123	12000	15000	18000	6	20	20	78	55	49	817
AI-128-V-0700-240	37846	214	14000	17500	21000	7	24	36	110	110	32	919
AI-128-V-0800-240	37847	214	16000	20000	24000	8	24	36	110	110	32	1006
AI-128-V-0900-260	37848	223	18000	22500	27000	9	26	36	110	87	56	1183
AI-128-V-1000-260	37849	223	20000	25000	30000	10	26	36	110	87	56	1650
AI-128-V-1100-280	37850	223	22000	27500	33000	11	28	36	110	87	56	1752
AI-128-V-1200-280	37851	223	24000	30000	36000	12	28	36	110	87	56	1854
AI-128-V-1400-300	37852	224	28000	35000	42000	14	30	36	110	110	56	2048
AI-128-V-1600-360	37853	224	32000	40000	48000	16	36	48**	110	110	56	2222
AI-128-V-1800-360	37854	233	36000	45000	54000	18	36	48**	110	87	80	2596
AI-128-V-2000-360	37855	234	40000	50000	60000	20	36	48**	110	110	80	2820
AI-128-V-2200-360	37856	234	44000	55000	66000	22	36	48**	110	110	80	2964
AI-128-V-2400-360	37857	234	48000	60000	72000	24	36	48**	110	110	80	3158

*Specify required outlet size in model no. if other than standard. Example: AI-128-V-0200-160 (16" outlet)

**Where compressor intake demands permit greater than 36" diameter connections, flanged outlets, (40" or 48" dia.), can be supplied.



Example:

Model AI-128-V-0900-260 is Style 223-3 Panel Plan

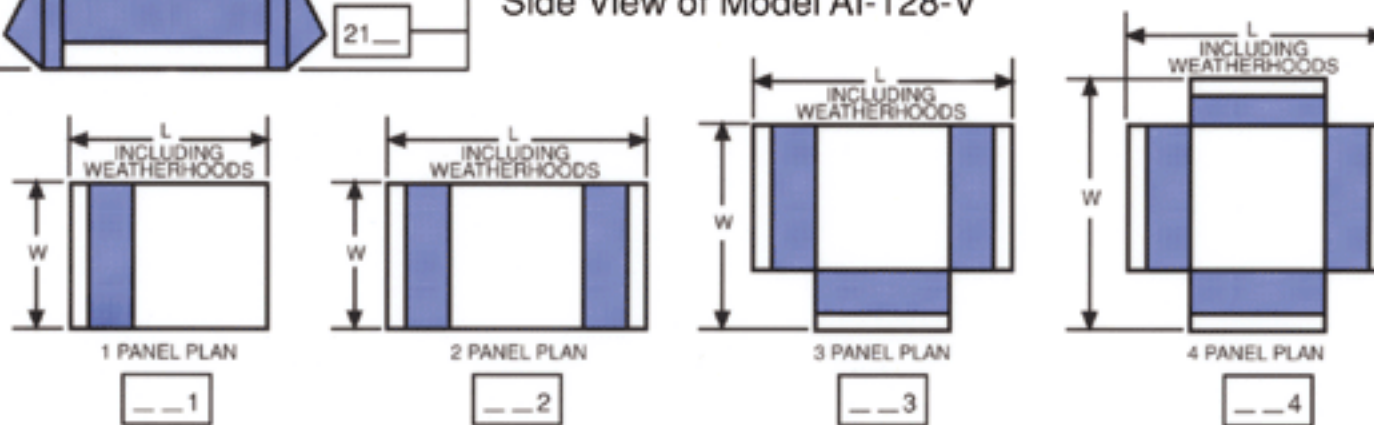


Housing Design Options
Width and Height Styles
Side View of Model AI-128-V

Panel Plans

Plan View of Model AI-128-V

PANEL



Dollinger Corporation
Ocala, FL 34474
Telephone: 352-861-7873
Toll Free: 800-344-2611
FAX: 800-628-4778
www.dollinger-usa.com
sales@dollinger-usa.com

Dollinger International
Ballycasheen, Killarney
County Kerry, Ireland
Telephone: +353-64-33322
FAX: +353-64-33371
sales.dollinger@airtreatment.spx.com

Manufacturing Facilities
Ocala, FL, U.S.A. □
Houston, TX, U.S.A. □
Killarney, Ireland □