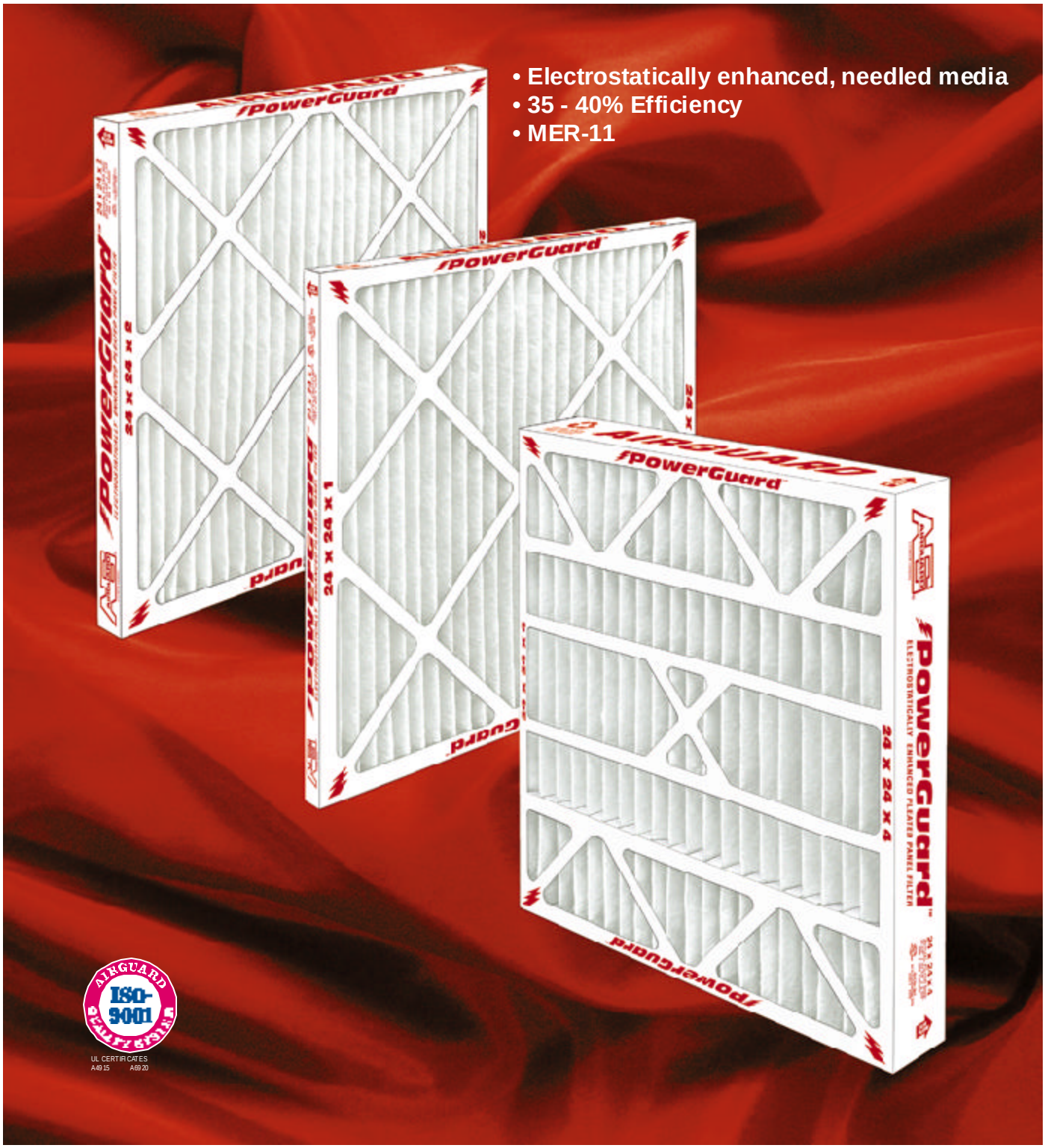
KA-302

PowerGuard™

Supercharged Pleated Panel Filters



PowerGuard™

Supercharged Pleated Panel Filters

Unique New Media Design Provides Higher Efficiency on Fine Particulate

PowerGuard filters are made with a totally new concept in media design consisting of 100% synthetic fibers that are needled, then electrostatically charged. The combined effect of these two processes sets a new standard in pleated filter performance - 70% minimum efficiency on 1 - 3 micron particles. PowerGuard filters are ideally suited for applications requiring higher efficiency on fine particulate compared to standard pleated filters.

Needled Fibers - The needling process thoroughly entangles the fibers throughout the entire depth of the media creating a dense mat that produces higher mechanical efficiency. The intertwined fibers maximize mechanical efficiency at lower resistance than other pleated filters designed for higher MER Values. Depth loading provides high dust holding capacity.

Needling entangles the fibers throughout the entire depth of the media producing high mechanical efficiency.

Electrostatically Charged - After the media has been needled it is exposed to an extremely high voltage which supercharges the fibers throughout the entire depth of the media. The charged fibers attract fine particulate like dust on a TV screen.

Electrostatic Charge Enhances Efficiency on Fine Particulate - MER-

To qualify for an MER-11 Value per ASHRAE Standard 52.2P, the filter must achieve between 65 and 80% efficiency on 1 - 3 micron particles and greater than 85% on 3 - 10 micron particles. PowerGuard filters exceed these values; other filters fall short. The reason PowerGuard filters excel in efficiency on fine particulate is the unique media design - 100% synthetic fibers, needled, then supercharged.

ASHRAE dust spot efficiencies are also excellent.

Minimum Efficiency Test Results
ASHRAE Standard 52.2P

Particle Size (Microns)	Minimum Efficiency (Clean Filter @ 500 FPM)	Particle Size (Microns)	Minimum Efficiency (Clean Filter @ 500 FPM)
0.30 - 0.40	22.4%	1.60 - 2.20	73.0%
0.40 - 0.55	26.0%	2.20 - 3.00	80.2%
0.55 - 0.70	40.1%	3.00 - 4.00	85.4%
0.70 - 1.00	51.9%	4.00 - 5.50	87.4%
1.00 - 1.30	58.7%	5.50 - 7.00	90.7%
1.30 - 1.60	66.2%	7.00 - 10.0	96.3%

Dust Spot Efficiency
ASHRAE Standard 52.1

	1" (@ 300 FPM)	2" (@ 500 FPM)	4" (@ 500 FPM)
Initial Efficiency	21%	29%	30%
Average	34%	35%	40%

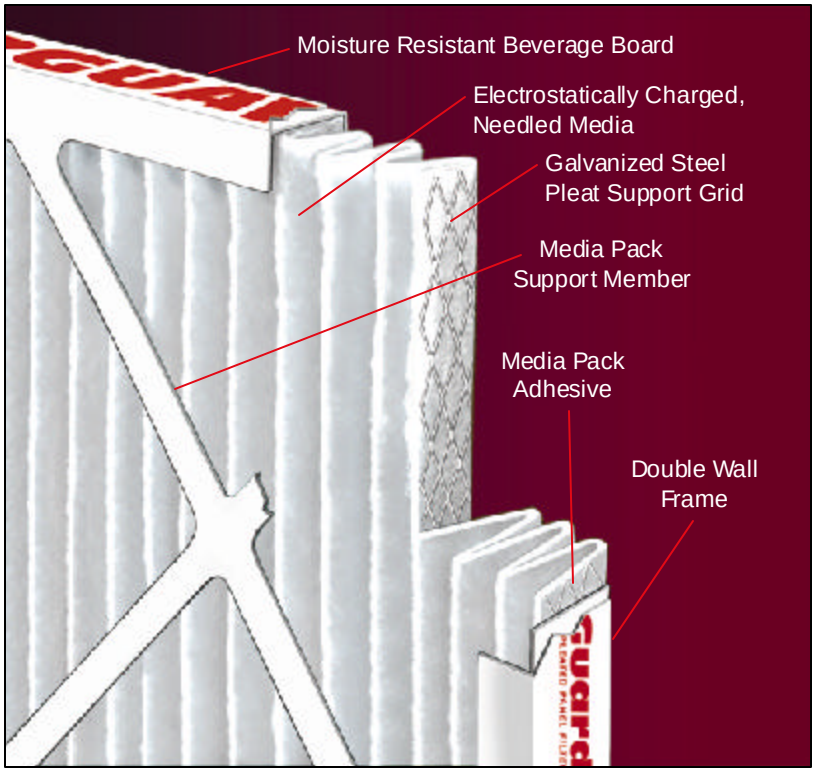
Consistent Pleat Alignment and Rigid Construction Assure Dependable Operation

Uniform Pleat Shape Enhances Dust Holding Capacity

PowerGuard pleats are formed by an expanded metal grid made of rust resistant galvanized steel laminated to the air leaving side of the supercharged media. The metal grid maintains pleat shape and prevents fluttering. Pleat stability in operation prevents dirt particles from shaking loose and blowing down stream. Consistent pleat shape also assures maximum air flow with minimum resistance and high dirt loading characteristics throughout the life of the filter.

Pleat Stabilizers

The 4" deep filters are equipped with individual die cut fingers that separate and stabilize each pleat. Consistent pleat alignment enhances dust holding capacity for longer service life.



Bonded Media Pack Prevents Bypass

The PowerGuard frame is made from two mating pieces of die cut beverage board that form a double wall around the entire perimeter of the filter. The entire inside surface of both pieces of the frame are coated with adhesive to bond with the media pack at all points of contact. This forms a totally unitized construction and prevents bypass.

The PowerGuard filters are unusually strong and rigid and will not rack, warp or bend under normal handling or operating conditions. Media pack support members on both sides of the filter add rigidity and help hold pleat shape as the dirt load builds and resistance rises. These cross members are an integral part of the die cut frame construction.

Side Access Model

For side access systems requiring a header style filter, PowerGuard SA filters are available.

Two mating pieces of die cut beverage board form a double wall frame around all four edges of the filter. PowerGuard filters will not rack or warp under normal operating conditions.

PowerGuard™ Product Information

35 - 40% Efficiency, MER-11

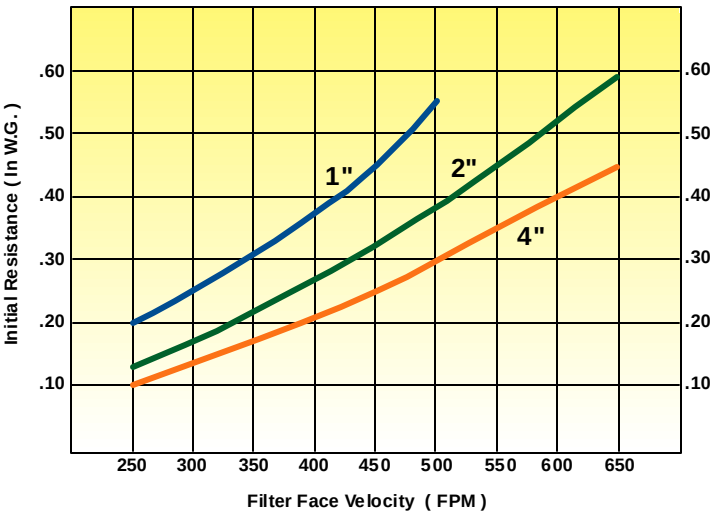
Nominal Size	Actual Size	Air Flow Capacity			Initial Resistance			Gross Media Area
		300	500	625	300	500	625	
10 x 20 x 1	9-7/8 x 19-7/8 x 7/8	425	700	N/R	.2	.5	N/R	3.
12 x 24 x 1	11-3/8 x 23-3/8 x 7/8	600	100	N/R	6	4	R	2
14 x 20 x 1	13-7/8 x 19-7/8 x 7/8	590	0	N/R	.2	.5	N/R	4.
14 x 25 x 1	13-7/8 x 24-7/8 x 7/8	730	980	R	6	4	R	6
15 x 20 x 1	14-7/8 x 19-7/8 x 7/8	630	122	N/R	.2	.5	N/R	4.
16 x 20 x 1	15-1/2 x 19-1/2 x 7/8	670	0	R	6	4	R	2
12 x 20 x 2	11-3/4 x 19-3/4 x 1-3/4	840	105	N/R	.2	.5	N/R	5.
12 x 24 x 2		900	0	R	6	4	R	3
14 x 20 x 2	11-3/8 x 23-3/8 x 1-3/4	840	112	N/R	.2	.5	N/R	4.
14 x 25 x 2		105	0	R	6	4	R	5
14-1/2 x 26-3/4 x 2	13-3/4 x 19-3/4 x 1-3/4	0	140	N/R	.2	.5	N/R	4.
15 x 20 x 2	13-3/4 x 24-3/4 x 1-3/4	500	840	105	.1	.3	.5	6.8
16 x 20 x 2		600	100	0	7	8	5	8.3
16 x 24 x 2	14-1/2 x 26-3/4 x 1-3/4	590	0	125	.1	.3	.5	8.0
16 x 25 x 2		730	980	0	7	8	5	10.
18 x 20 x 2	14-3/4 x 19-3/4 x 1-3/4	810	122	122	.1	.3	.5	0
18 x 24 x 2		630	0	0	7	8	5	11.
18 x 25 x 2	15-1/2 x 19-1/2 x 1-3/4	670	135	152	.1	.3	.5	8
20 x 20 x 2		800	0	5	7	8	5	8.5
20 x 24 x 2	15-1/2 x 23-1/2 x 1-3/4	840	105	169	.1	.3	.5	10.
20 x 25 x 2		750	0	0	7	8	5	1
24 x 24 x 2	15-1/2 x 24-1/2 x 1-	900	112	131	.1	.3	.5	11.
12 x 24 x 4	11-3/8 x 23-3/8 x 3-3/4	940	0	0	7	8	5	8
14-1/2 x 26-3/4 x 4	14-1/2 x 26-3/4 x 3-3/4	840	134	140	.1	.3	.5	12.
16 x 20 x 4		100	0	0	7	8	5	5
16 x 25 x 4	15-1/2 x 19-1/2 x 3-3/4	0	140	167	.1	.3	.5	10.
18 x 24 x 4		105	0	0	7	8	5	6
20 x 20 x 4	15-1/2 x 24-1/2 x 3-3/4	0	125	175	.1	.3	.5	12.
20 x 24 x 4		600	100	125	.1	.3	.4	14.
20 x 25 x 4	17-1/2 x 23-1/2 x 3-3/4	810	0	0	3	0	4	4
24 x 24 x 4		670	135	169	.1	.3	.4	19.
24-1/2 x 28-1/2 x	19-1/2 x 19-1/2 x 3-	840	0	0	3	0	4	4
		900	112	140	.1	.3	.4	15.
		840	0	0	3	0	4	0
		100	140	175	.1	.3	.4	18.
		0	0	0	3	0	4	6
		105	150	187	.1	.3	.4	20.
		0	0	5	3	0	4	4
		120	140	175	.1	.3	.4	19.

Performance data is based on the ASHRAE 52.1 and 52.2P Test Methods. Performance Tolerances conform to Section 7.4 of ARI Standard 850-93. Recommended final resistance is 1.0" W.G.

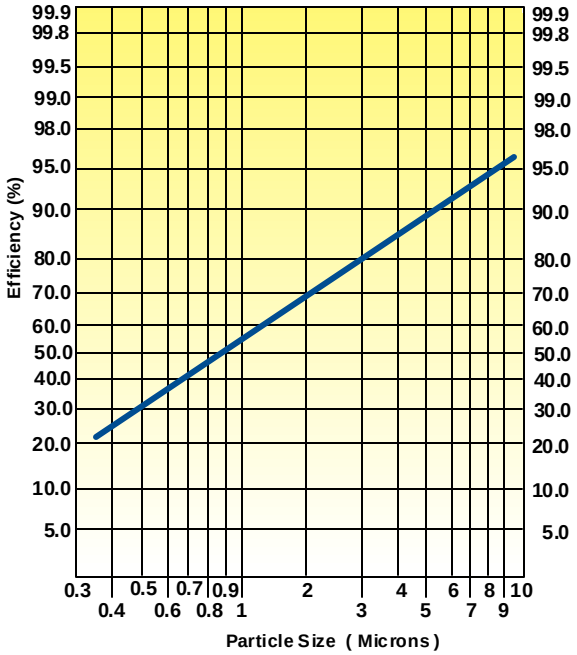
Continuous Operating Temperature Limit: 200° F (92° C)

Underwriters Laboratories, Inc. Classification: PowerGuard filters are classified Class 2 per U.L. Standard 900.

Initial Resistance vs. Filter Face Velocity



Efficiency by Particle Size



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