



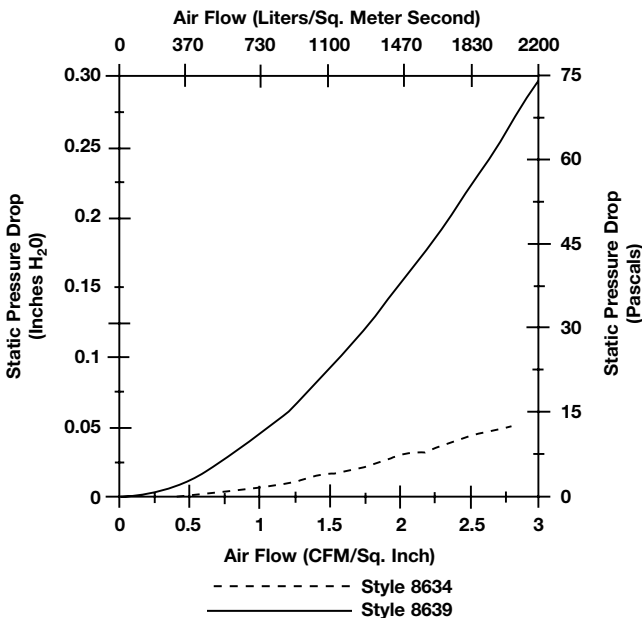
Maximum Protection/ Minimum Impedance

Laird Technologies has a proven solution to air filtration and EMI shielding in electronic enclosures. The Electro-Air EMI/Dust Filtration Panel, consisting of layered, woven, and crimped wire mesh plus filtering media (as needed), captures microscopic airborne contaminants while providing minimal air flow impedance. Better yet, the panel's specially designed EMI gasket prevents signal migration to the enclosed sensitive electronic equipment. In fact, when measured according to MIL-STD-285, the panel provides shielding effectiveness in excess of 60 dB for a range of 18 MHz to 1 GHz plane wave.

Advantages:

- **Universal applications**—ideal for small enclosures, large housings, high traffic areas, even room size facilities
- **Extensive service life**—built to outlast the equipment it protects
- **Variety of design specifications**—modular construction is available in assorted standard sizes (from 3 to 18 sq. in.) (19,35 to 116,13 sq. cm)
- **Easy installation**—pre-drilled through holes or captive fasteners allow for quick mounting and removal
- **Simple maintenance**—washing with mild soap solution, rinsing, and drying as often as necessary will not degrade performance
- **Design assistance**—Laird Technologies' engineering and EMC lab offers technical assistance and testing data to help solve the toughest application challenges

Figure 1. Air Flow vs. Resistance



All dimensions shown are in inches (millimeters) unless otherwise specified.

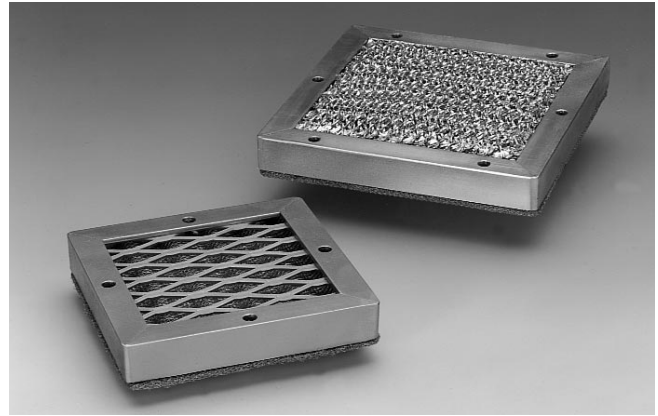
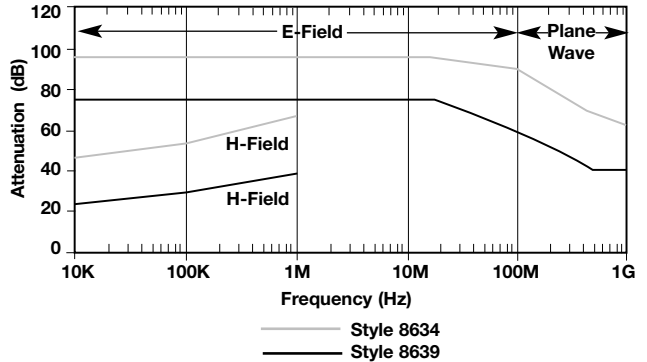


Table 1. Material and Plating Codes

Code No.	Frame Material	Filter Media	EMI Gasket	Plating Finish
73	Aluminum Alloy 6063-T4	Grill: Aluminum Alloy 6063-T1 Media: Wire Fabric Aluminum RR-W-385 Type VII 18x14	Ground: Knit Monel Wire Per QQ-N-281 Class A Elastomer: Neoprene Sponge Per MIL-R-6130 Type II Medium	Chromate Coating Per MIL-C-5541 Class 3
74	Aluminum Alloy 6063-T4	Aluminum Alloy 1100-0 Per QQ-A-250/1, with Polyethylene Interlayer	Knit Monel Wire Per QQ-N-281 Class A	Chromate Coating Per MIL-C-5541 Class 3

If required, the panels can be supplied painted to match enclosure color.

Figure 2. Shielding Effectiveness



Filtration Panel Size Determination Style 8639

1. Customer determines fan size and velocity based on their calculated cooling requirements.
Example: Fan @ 240 CFM velocity with static pressure of 0.035 inches H₂O.
2. Determine panel opening size so as not to impede airflow
 - A. From Figure 1 graph intersect 0.035 inches on Y axis
 - B. Draw line to curve—this intersects at 2.3 CFM/in²
 - C. Required vent opening = (240 ÷ 2.3) = 104 in² opening
 - D. Choose vent size with 104 in² opening or larger



Figure 3. Channel Mount EMI Filtration Panel

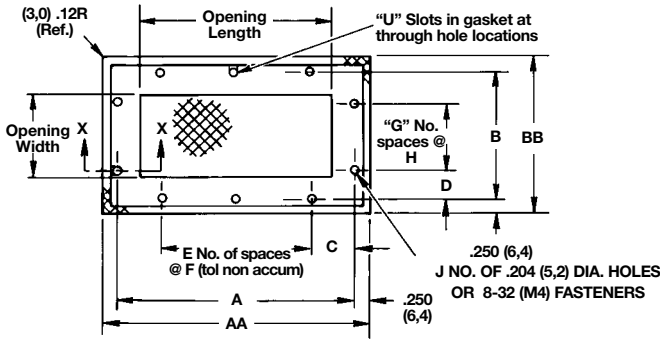
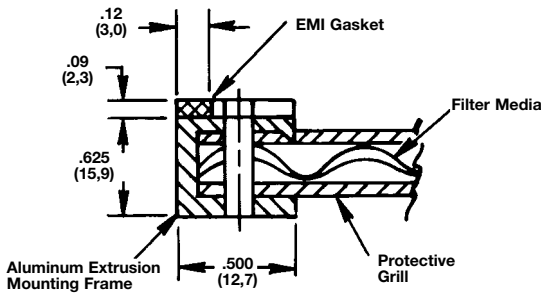


Table 2a. Tolerances

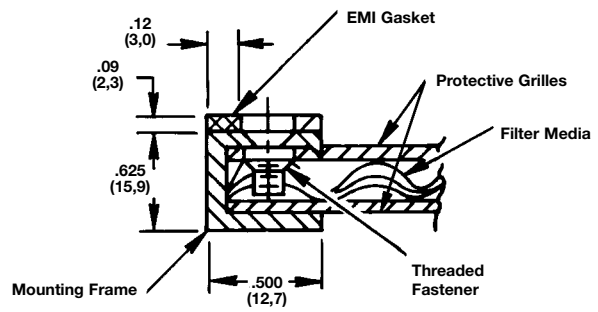
Dimensional Location	Size Range with Tolerance		
	0-4 (0-101,6)	4.1-12.0 (104,1-304,8)	12.1 to 24.0 (307,3-609,6)
Length and Width	±.020 (±,51)	±.031 (±,79)	±.040 (±1,02)
Hole Location	±.010 (±,25)	±.015 (±,38)	±.020 (±,51)
Square	±.007 (±,178)	±.015 (±,38)	±.040 (±1,02)

Section X-X



Type 8634

Section X-X



Type 8635

Table 2. Part No. and Dimension Tabulation

Base Part No.	Opening		Frame Dimensions										
	Width	Length	AA	BB	A	B	C	D	E	F	G	H	J
XXXX-0303-73	3.00 (76,2)	3.00 (76,2)	4.00 (101,6)	4.00 (101,6)	3.50 (88,9)	3.50 (88,9)	1.75 (44,5)	1.75 (44,5)	-	-	-	-	4
XXXX-0305-73	3.00 (76,2)	5.00 (127,0)	6.00 (152,4)	4.00 (101,6)	5.50 (139,7)	3.50 (88,9)	1.00 (25,4)	1.75 (44,5)	1	3.50 (88,9)	-	-	6
XXXX-0311-73	3.00 (76,2)	11.00 (279,4)	12.00 (304,8)	4.00 (101,6)	11.50 (292,1)	3.50 (88,9)	1.25 (31,8)	1.75 (44,5)	3	3.00 (76,2)	-	-	10
XXXX-0404-73	4.00 (101,6)	4.00 (101,6)	5.00 (127,0)	5.00 (127,0)	4.50 (114,3)	4.50 (114,3)	0.75 (19,1)	2.25 (57,2)	1	3.00 (76,2)	-	-	6
XXXX-0409-73	4.00 (101,6)	9.00 (228,6)	10.00 (254,0)	5.00 (127,0)	9.50 (241,3)	4.50 (114,3)	1.25 (31,8)	2.25 (57,2)	2	3.50 (88,9)	-	-	8
XXXX-0505-73	5.00 (127,0)	5.00 (127,0)	6.00 (152,4)	6.00 (152,4)	5.50 (139,7)	5.50 (139,7)	1.00 (25,4)	1.00 (25,4)	1	3.50 (88,9)	1	3.50 (88,9)	8
XXXX-0511-73	5.00 (127,0)	11.00 (279,4)	12.00 (304,8)	6.00 (152,4)	11.50 (292,1)	5.50 (139,7)	1.25 (31,8)	1.00 (25,4)	3	3.00 (76,2)	1	3.50 (88,9)	12
XXXX-0606-73	6.00 (152,4)	6.00 (152,4)	7.00 (177,8)	7.00 (177,8)	6.50 (165,1)	6.50 (165,1)	1.50 (38,1)	1.50 (38,1)	1	3.50 (88,9)	1	3.50 (88,9)	8
XXXX-0609-73	6.00 (152,4)	9.00 (228,6)	10.00 (254,0)	7.00 (177,8)	9.50 (241,3)	6.50 (165,1)	1.25 (31,8)	1.50 (38,1)	2	3.50 (88,9)	1	3.50 (88,9)	10
XXXX-0714-73	7.00 (177,8)	14.00 (355,6)	15.00 (381,0)	8.00 (203,2)	14.50 (368,3)	7.50 (190,5)	0.75 (19,1)	.75 (19,1)	4	3.25 (82,6)	2	3.00 (76,2)	16
XXXX-0909-73	9.00 (228,6)	9.00 (228,6)	10.00 (254,0)	10.00 (254,0)	9.50 (241,3)	9.50 (241,3)	1.25 (31,8)	1.25 (31,8)	2	3.50 (88,9)	2	3.50 (88,9)	12
XXXX-1111-73	11.00 (279,4)	11.00 (279,4)	12.00 (304,8)	12.00 (304,8)	11.50 (292,1)	11.50 (292,1)	1.25 (31,8)	1.25 (31,8)	3	3.00 (76,2)	3	3.00 (76,2)	16
XXXX-1414-73	14.00 (355,6)	14.00 (355,6)	15.00 (381,0)	15.00 (381,0)	14.50 (368,3)	14.50 (368,3)	1.25 (31,8)	1.25 (31,8)	4	3.00 (76,2)	4	3.00 (76,2)	20
XXXX-1818-73	18.00 (457,2)	18.00 (457,2)	19.00 (482,6)	19.00 (482,6)	18.50 (469,9)	18.50 (469,9)	1.75 (44,5)	1.75 (44,5)	5	3.00 (76,2)	5	3.00 (76,2)	24

Sizes and configurations not shown are available upon request.

All dimensions shown are in inches (millimeters) unless otherwise specified.



Figure 4. Groove Gasket Channel Mount

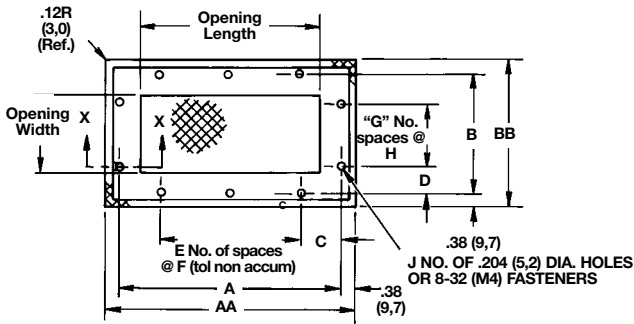
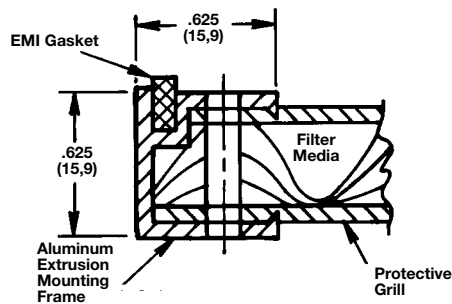


Table 3a. Tolerances

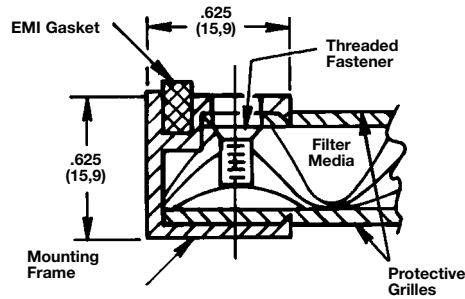
Dimensional Location	Size Range with Tolerance		
	0-4 (0-101,6)	4.1-12.0 (104,1-304,8)	12.1 to 24.0 (307,3-609,6)
Length and Width	±.020 (±,51)	±.031 (±,79)	±.040 (±1,02)
Hole Location	±.010 (±,25)	±.015 (±,38)	±.020 (±,51)
Square	±.007 (±,178)	±.015 (±,38)	±.040 (±1,02)

Section X-X



Type 8636

Section X-X



Type 8637

Table 3. Part No. and Dimension Tabulation

Base Part No.	Opening		Frame Dimensions										
	Width	Length	AA	BB	A	B	C	D	E	F	G	H	J
XXXX-0303-73	3.00 (76,2)	3.00 (76,2)	4.25 (108,0)	4.25 (108,0)	3.50 (88,9)	3.50 (88,9)	1.75 (44,5)	1.75 (44,5)	-	-	-	-	4
XXXX-0305-73	3.00 (76,2)	5.00 (127,0)	6.25 (158,8)	4.25 (108,0)	5.50 (139,7)	3.50 (88,9)	1.00 (25,4)	1.75 (44,5)	1	3.50 (88,9)	-	-	6
XXXX-0311-73	3.00 (76,2)	11.00 (279,4)	12.25 (311,2)	4.25 (108,0)	11.50 (292,1)	3.50 (88,9)	1.25 (31,8)	1.75 (44,5)	3	3.00 (76,2)	-	-	10
XXXX-0404-73	4.00 (101,6)	4.00 (101,6)	5.25 (133,4)	5.25 (133,4)	4.50 (114,3)	4.50 (114,3)	0.75 (19,1)	2.25 (57,2)	1	3.00 (76,2)	-	-	6
XXXX-0409-73	4.00 (101,6)	9.00 (228,6)	10.25 (260,4)	5.25 (133,4)	9.50 (241,3)	4.50 (114,3)	1.25 (31,8)	2.25 (57,2)	2	3.50 (88,9)	-	-	8
XXXX-0505-73	5.00 (127,0)	5.00 (127,0)	6.25 (158,6)	6.25 (158,6)	5.50 (139,7)	5.50 (139,7)	1.00 (25,4)	1.00 (25,4)	1	3.50 (88,9)	1	3.50 (88,9)	8
XXXX-0511-73	5.00 (127,0)	11.00 (279,4)	12.25 (311,2)	6.25 (158,6)	11.50 (292,1)	5.50 (139,7)	1.25 (31,8)	1.00 (25,4)	3	3.00 (76,2)	1	3.50 (88,9)	12
XXXX-0606-73	6.00 (152,4)	6.00 (152,4)	7.25 (184,2)	7.25 (184,2)	6.50 (165,1)	6.50 (165,1)	1.50 (38,1)	1.50 (38,1)	1	3.50 (88,9)	1	3.50 (88,9)	8
XXXX-0609-73	6.00 (152,4)	9.00 (228,6)	10.25 (260,4)	7.25 (184,2)	9.50 (241,3)	6.50 (165,1)	1.25 (31,8)	1.50 (38,1)	2	3.50 (88,9)	1	3.50 (88,9)	10
XXXX-0714-73	7.00 (177,8)	14.00 (355,6)	15.25 (387,4)	8.25 (209,6)	14.50 (368,3)	7.50 (190,5)	0.75 (19,1)	.75 (19,1)	4	3.25 (82,6)	2	3.00 (76,2)	16
XXXX-0909-73	9.00 (228,6)	9.00 (228,6)	10.25 (260,4)	10.25 (260,4)	9.50 (241,3)	9.50 (241,3)	1.25 (31,8)	1.25 (31,8)	2	3.50 (88,9)	2	3.50 (88,9)	12
XXXX-1111-73	11.00 (279,4)	11.00 (279,4)	12.25 (311,2)	12.25 (311,2)	11.50 (292,1)	11.50 (292,1)	1.25 (31,8)	1.25 (31,8)	3	3.00 (76,2)	3	3.00 (76,2)	16
XXXX-1414-73	14.00 (355,6)	14.00 (355,6)	15.25 (387,4)	15.25 (387,4)	14.50 (368,3)	14.50 (368,3)	1.25 (31,8)	1.25 (31,8)	4	3.00 (76,2)	4	3.00 (76,2)	20
XXXX-1818-73	18.00 (457,2)	18.00 (457,2)	19.25 (489,0)	19.25 (489,0)	18.50 (469,9)	18.50 (469,9)	1.75 (44,5)	1.75 (44,5)	5	3.00 (76,2)	5	3.00 (76,2)	24

Sizes and configurations not shown are available upon request.

All dimensions shown are in inches (millimeters) unless otherwise specified.



Figure 5. Recess Mount EMI Filtration Panel

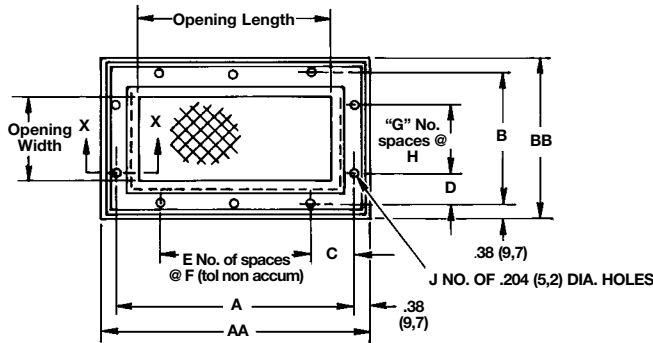
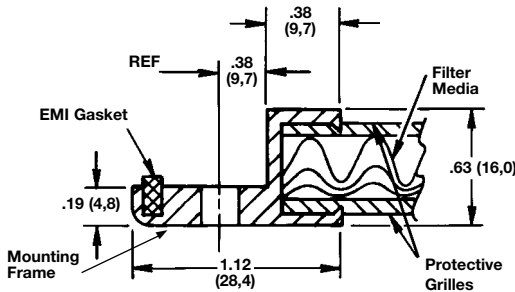


Table 4a. Tolerances

Dimensional Location	Size Range with Tolerance		
	0-4 (0-101,6)	4.1-12.0 (104,1-304,8)	12.1 to 24.0 (307,3-609,6)
Length and Width	±.020 (±,51)	±.031 (±,79)	±.040 (±1,02)
Hole Location	±.010 (±,25)	±.015 (±,38)	±.020 (±,51)
Square	±.007 (±,178)	±.015 (±,38)	±.040 (±1,02)

Section X-X



Type 8638

Table 4. Part No. and Dimension Tabulation

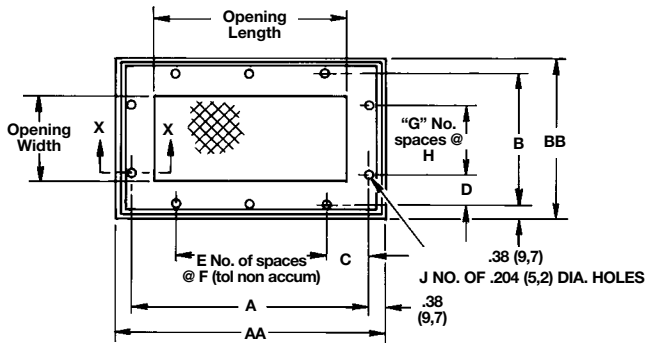
Base Part No.	Opening		Frame Dimensions										
	Width	Length	AA	BB	A	B	C	D	E	F	G	H	J
8638-0303-73	3.00 (76,2)	3.00 (76,2)	5.25 (133,4)	5.25 (133,4)	4.50 (114,3)	4.50 (114,3)	2.25 (57,2)	2.25 (57,2)	-	-	-	-	4
8638-0305-73	3.00 (76,2)	5.00 (127,0)	7.25 (184,2)	5.25 (133,4)	6.50 (165,2)	4.50 (114,3)	1.50 (38,1)	2.25 (57,2)	1	3.50 (88,9)	-	-	6
8638-0311-73	3.00 (76,2)	11.00 (279,4)	13.25 (336,6)	5.25 (133,4)	12.50 (317,5)	4.50 (114,3)	1.75 (44,5)	2.25 (57,2)	3	3.00 (76,2)	-	-	10
8638-0404-73	4.00 (101,6)	4.00 (101,6)	6.25 (158,8)	6.25 (158,8)	5.50 (139,7)	5.50 (139,7)	1.00 (25,4)	1.00 (25,4)	1	3.50 (88,9)	1	3.50 (88,9)	8
8638-0409-73	4.00 (101,6)	9.00 (228,6)	11.25 (336,6)	6.25 (158,8)	10.50 (266,7)	5.50 (139,7)	0.75 (19,1)	1.00 (25,4)	3	3.00 (76,2)	1	3.50 (88,9)	12
8638-0505-73	5.00 (127,0)	5.00 (127,0)	7.25 (184,2)	7.25 (184,2)	6.50 (165,2)	6.50 (165,2)	0.50 (12,7)	1.50 (38,1)	2	2.75 (69,9)	1	3.50 (88,9)	10
8638-0511-73	5.00 (127,0)	11.00 (279,4)	13.25 (336,6)	7.25 (184,2)	12.50 (317,2)	6.50 (165,2)	1.00 (25,4)	1.50 (38,1)	3	3.50 (88,9)	1	3.50 (88,9)	12
8638-0606-73	6.00 (152,4)	6.00 (152,4)	8.25 (209,6)	8.25 (209,6)	7.50 (190,5)	7.50 (190,5)	0.75 (19,1)	0.75 (19,1)	2	3.00 (76,2)	2	3.00 (76,2)	12
8638-0609-73	6.00 (152,4)	9.00 (228,6)	11.25 (285,7)	8.25 (209,6)	10.50 (266,7)	7.50 (190,5)	0.75 (19,1)	0.75 (19,1)	2	3.00 (76,2)	2	3.00 (76,2)	14
8638-0714-73	7.00 (177,8)	14.00 (355,6)	16.25 (412,8)	9.25 (234,9)	15.50 (393,7)	8.50 (215,9)	0.75 (19,1)	0.75 (19,1)	4	3.50 (88,9)	2	3.50 (88,9)	16
8638-0909-73	9.00 (228,6)	9.00 (228,6)	11.25 (285,7)	11.25 (285,7)	10.50 (266,7)	10.50 (266,7)	0.75 (19,1)	0.75 (19,1)	3	3.00 (76,2)	3	3.00 (76,2)	16
8638-1111-73	11.00 (279,4)	11.00 (279,4)	13.25 (336,6)	13.25 (336,6)	12.50 (317,5)	12.50 (317,5)	1.00 (25,4)	1.00 (25,4)	3	3.50 (88,9)	3	3.50 (88,9)	16
8638-1414-73	14.00 (355,6)	14.00 (355,6)	16.25 (412,8)	16.25 (412,8)	15.50 (393,7)	15.50 (393,7)	0.75 (19,1)	0.75 (19,1)	4	3.50 (88,9)	4	3.50 (88,9)	20
8638-1818-73	18.00 (457,2)	18.00 (457,2)	20.25 (514,4)	20.25 (514,4)	19.50 (495,3)	19.50 (495,3)	0.75 (19,1)	0.75 (19,1)	6	3.00 (76,2)	6	3.00 (76,2)	28

Sizes and configurations not shown are available upon request.

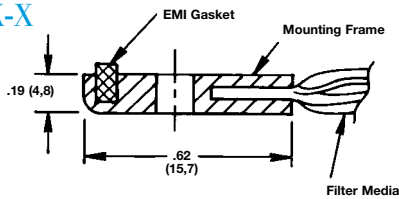
All dimensions shown are in inches (millimeters) unless otherwise specified.



Figure 6. Thin Line EMI Filtration Panel



Section X-X



Type 8639

Table 5a. Tolerances

Dimensional Location	Size Range with Tolerance		
	0-4 (0-101,6)	4.1-12.0 (104,1-304,8)	12.1 to 24.0 (307,3-609,6)
Length and Width	±.020 (±.51)	±.031 (±.79)	±.040 (±1.02)
Hole Location	±.010 (±.25)	±.015 (±.38)	±.020 (±.51)
Square	±.007 (±.178)	±.015 (±.38)	±.040 (±1.02)

Depending upon the manufacturing process, some parts will be supplied with holes for cleaning and plating purposes. These holes will not affect the overall performance of the product.

Table 5. Part No. and Dimension Tabulation

Base Part No.	Opening		Frame Dimensions										
	Width	Length	AA	BB	A	B	C	D	E	F	G	H	J
8639-0303-74	3.00 (76,2)	3.00 (76,2)	4.25 (108,0)	4.25 (108,0)	3.50 (88,9)	3.50 (88,9)	1.75 (44,5)	1.75 (44,5)	-	-	-	-	4
8639-0305-74	3.00 (76,2)	5.00 (127,0)	6.25 (158,8)	4.25 (108,0)	5.50 (139,7)	3.50 (88,9)	1.00 (25,4)	1.75 (44,5)	1	3.50 (88,9)	-	-	6
8639-0311-74	3.00 (76,2)	11.00 (279,4)	12.25 (311,2)	4.25 (108,0)	11.50 (292,1)	3.50 (88,9)	1.25 (31,8)	1.75 (44,5)	3	3.00 (76,2)	-	-	10
8639-0404-74	4.00 (101,6)	4.00 (101,6)	5.25 (133,4)	5.25 (133,4)	4.50 (114,3)	4.50 (114,3)	0.75 (19,1)	2.25 (57,2)	1	3.00 (76,2)	-	-	6
8639-0409-74	4.00 (101,6)	9.00 (228,6)	10.25 (260,4)	5.25 (133,4)	9.50 (241,3)	4.50 (114,3)	1.25 (31,8)	2.25 (57,2)	2	3.50 (88,9)	-	-	8
8639-0505-74	5.00 (127,0)	5.00 (127,0)	6.25 (158,6)	6.25 (158,6)	5.50 (139,7)	5.50 (139,7)	1.00 (25,4)	1.00 (25,4)	1	3.50 (88,9)	1	3.50 (88,9)	8
8639-0511-74	5.00 (127,0)	11.00 (279,4)	12.25 (311,2)	6.25 (158,6)	11.50 (292,1)	5.50 (139,7)	1.25 (31,8)	1.00 (25,4)	3	3.00 (76,2)	1	3.50 (88,9)	12
8639-0606-74	6.00 (152,4)	6.00 (152,4)	7.25 (184,2)	7.25 (184,2)	6.50 (165,1)	6.50 (165,1)	1.50 (38,1)	1.50 (38,1)	1	3.50 (88,9)	1	3.50 (88,9)	8
8639-0609-74	6.00 (152,4)	9.00 (228,6)	10.25 (260,4)	7.25 (184,2)	9.50 (241,3)	6.50 (165,1)	1.25 (31,8)	1.50 (38,1)	2	3.50 (88,9)	1	3.50 (88,9)	10
8639-0714-74	7.00 (177,8)	14.00 (355,6)	15.25 (387,4)	8.25 (209,6)	14.50 (368,3)	7.50 (190,5)	0.75 (19,1)	0.75 (19,1)	4	3.25 (82,7)	2	3.00 (76,2)	16
8639-0909-74	9.00 (228,6)	9.00 (228,6)	10.25 (260,4)	10.25 (260,4)	9.50 (241,3)	9.50 (241,3)	1.25 (31,8)	1.25 (31,8)	4	3.50 (88,9)	2	3.50 (88,9)	12
8639-1111-74	11.00 (279,4)	11.00 (279,4)	12.25 (311,2)	12.25 (311,2)	11.50 (292,1)	11.50 (292,1)	1.25 (31,8)	1.25 (31,8)	4	3.00 (76,2)	2	3.00 (76,2)	16
8639-1414-74	14.00 (355,6)	14.00 (355,6)	15.25 (387,4)	15.25 (387,4)	14.50 (368,3)	14.50 (368,3)	1.25 (31,8)	1.25 (31,8)	4	3.00 (76,2)	2	3.00 (76,2)	20
8639-1818-74	18.00 (457,2)	18.00 (457,2)	19.25 (489,0)	19.25 (489,0)	18.50 (469,9)	18.50 (469,9)	1.75 (44,5)	1.75 (44,5)	4	3.00 (76,2)	2	3.00 (76,2)	24

Sizes and configurations not shown are available upon request.

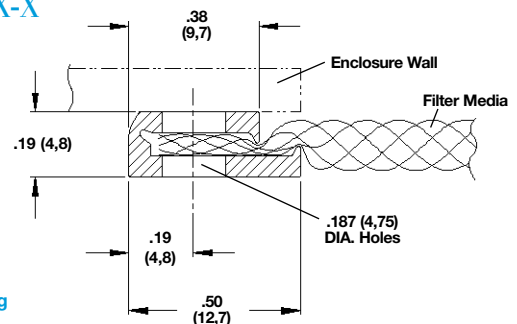
How to Specify:

Determine the mounting configuration that meets enclosure space and accessibility requirements from Figures 3, 4, 5, or 6. From the air flow data shown in Figure 1 on page 15, determine the panel opening size that best suits the system's air flow characteristics with a normal pressure drop. Insert the mounting type code in place of the XXXX (where applicable) in the Part No. code.

Example:

1. From Table 2 on page 16 for a panel opening size of 5.0 x 5.0, Base Part No. is XXXX-0505-73.
2. Mounting type 8635 is chosen from Section X-X (page 16).
3. Ordering part number is 8635-0505-73.

Section X-X



Type 8643 Self-Gasketing

Note:

To order filter panel Type 8643 supply drawing to inside sales for custom part number.

All dimensions shown are in inches (millimeters) unless otherwise specified.