



1300 ENTERPRISE ROAD GENEVA, ALABAMA 36340-0580 800-239-4621 FAX 1-800-508-1469 www.reliablelouvers.com

## 5FHDA FEMA LOUVER (ALUMINUM) CHEVRON BLADE FEMA 361 GRILLE

### STANDARD CONSTRUCTION

**FRAME**

2" x 5" x 2" (51 x 127 x 51) channel 1/4" (6) Thick Formed Aluminum.

**BLADES**

3" x 3" x 1/4" (75 x 75 x 6) Thick Chevron Style Formed Aluminum.

**BIRD SCREEN**

5/8" x .040" (16 x 1.) expanded flattened aluminum bird screen in removable frame. Screen adds approximately 1/2" (13) to louver depth.

**FINISH**

Mill.

**MINIMUM SIZE**

12"w x 12"h (305 x 305).

**APPROXIMATE SHIPPING WEIGHT**

13 lbs. per sq. ft. (193.5 kg/m<sup>2</sup>)

**MAXIMUM SHIPPING SECTION SIZE**

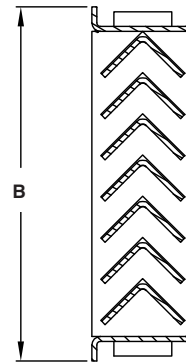
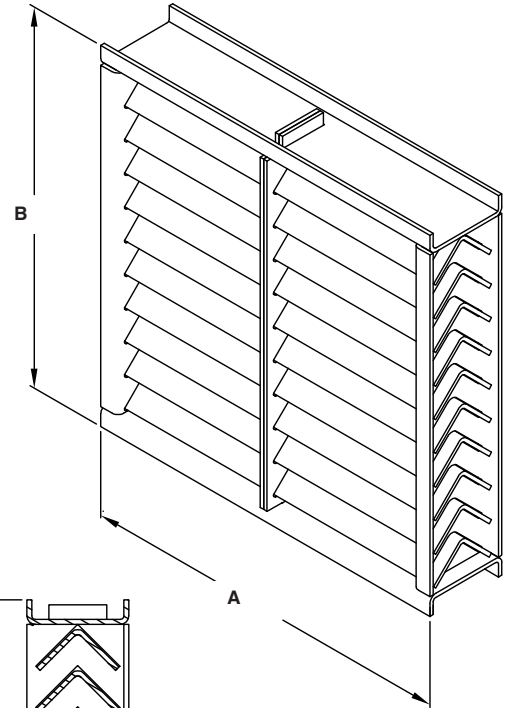
For 300 PSF 78"w x 90"h (1982 x 2286)

For 250 PSF 90"w x 90"h (2286 x 2286)

For 200 PSF 96"w x 90"h (2439 x 2286)

**MAXIMUM OVERALL ASSEMBLY SIZE**

Unlimited width x one section tall.



### FEATURES

- Louver complies with FEMA 361 Design and Construction for Community Shelters, Zone IV criteria, 250 MPH wind, 15 lb. 2x4 impact at 100 mph.
- Louver design to withstand 266 psf.
- Louver mounted externally in combination with wall louver or by itself internally (See attached).
- 53% Free Area.
- Optional finishes available at additional cost: prime coat, 50% and PVDF (modified fluoropolymer), epoxy, Acrodize, 70% PVDF.

#### WIND PRESSURE EXAMPLES PER ICC500 AND ASCE7

Wind Speed	Building Height	Pressure
250 MPH	20 Ft	223 PSF
250 MPH	80 Ft	300 PSF
200 MPH	20 Ft	143 PSF
200 MPH	80 Ft	192 PSF

**NOTES**

1. Louver assumed to be in a corner zone.
2. Building assumed to be enclosed.
3. Importance Factor, 1 = 1.15.
4. This table to provide for example purposes only. It is not to be used for design. Consult structural drawing notes for site special requirements.

Dimensions in inches, parenthesis ( ) indicate millimeters.

\*Units furnished 1/4" (6) smaller than given opening.

TAG	QTY.	SIZE		VARIATIONS
		A*-WIDE	B*-HIGH	

**PROJECT**  
ARCH./ENGR.  
REPRESENTATIVE

WebREPS  
1-800-810-3280

**LOCATION**  
CONTRACTOR  
DATE



## FREE AREA GUIDE

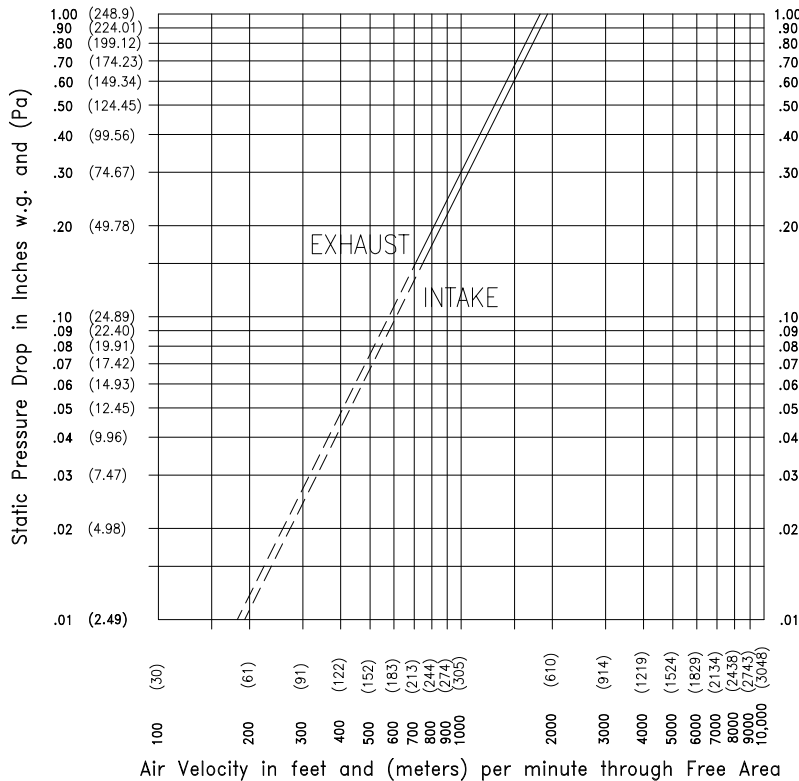
Free Area Guide shows free area in ft<sup>2</sup> and m<sup>2</sup> for various sizes of 5FHDA.

Width – Inches and Meters

Height – Inches and Meters

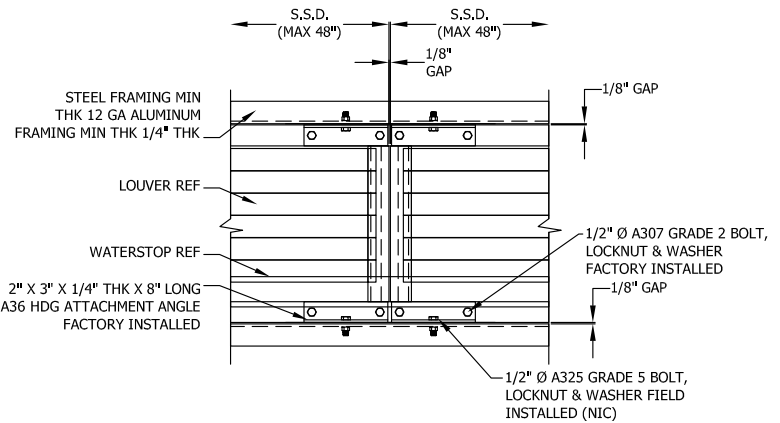
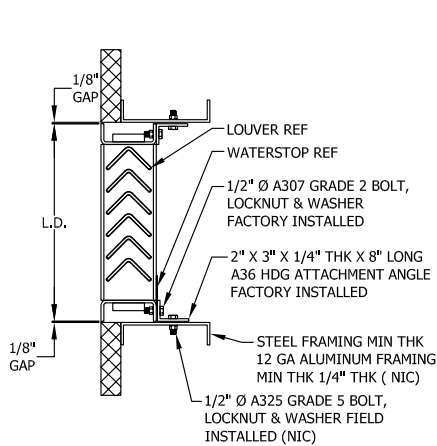
	12	18	24	30	36	42	48	54	60	66	72	78	84	90
	0.30	0.46	0.61	0.76	0.91	1.07	1.22	1.37	1.52	1.68	1.83	1.98	2.13	2.29
<b>12</b>	<b>0.38</b>	<b>0.60</b>	<b>0.82</b>	<b>1.05</b>	<b>1.27</b>	<b>1.49</b>	<b>1.72</b>	<b>1.94</b>	<b>2.17</b>	<b>2.39</b>	<b>2.62</b>	<b>2.84</b>	<b>3.06</b>	<b>3.29</b>
0.30	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.22	0.24	0.26	0.29	0.31
<b>18</b>	<b>0.63</b>	<b>1.00</b>	<b>1.38</b>	<b>1.76</b>	<b>2.13</b>	<b>2.51</b>	<b>2.88</b>	<b>3.26</b>	<b>3.64</b>	<b>4.01</b>	<b>4.39</b>	<b>4.76</b>	<b>5.14</b>	<b>5.52</b>
0.46	0.06	0.09	0.13	0.16	0.20	0.23	0.27	0.30	0.34	0.37	0.41	0.44	0.48	0.51
<b>24</b>	<b>0.88</b>	<b>1.41</b>	<b>1.93</b>	<b>2.46</b>	<b>2.99</b>	<b>3.51</b>	<b>4.04</b>	<b>4.57</b>	<b>5.10</b>	<b>5.62</b>	<b>6.15</b>	<b>6.68</b>	<b>7.21</b>	<b>7.73</b>
0.61	0.08	0.13	0.18	0.23	0.28	0.33	0.38	0.42	0.47	0.52	0.57	0.62	0.67	0.72
<b>30</b>	<b>1.13</b>	<b>1.81</b>	<b>2.49</b>	<b>3.17</b>	<b>3.85</b>	<b>4.52</b>	<b>5.20</b>	<b>5.88</b>	<b>6.56</b>	<b>7.24</b>	<b>7.92</b>	<b>8.60</b>	<b>9.28</b>	<b>9.95</b>
0.76	0.11	0.17	0.23	0.29	0.36	0.42	0.48	0.55	0.61	0.67	0.74	0.80	0.86	0.93
<b>36</b>	<b>1.54</b>	<b>2.46</b>	<b>3.38</b>	<b>4.30</b>	<b>5.22</b>	<b>6.14</b>	<b>7.06</b>	<b>7.98</b>	<b>8.90</b>	<b>9.83</b>	<b>10.75</b>	<b>11.67</b>	<b>12.59</b>	<b>13.51</b>
0.91	0.14	0.23	0.31	0.40	0.49	0.57	0.66	0.74	0.83	0.91	1.00	1.09	1.17	1.26
<b>42</b>	<b>1.69</b>	<b>2.70</b>	<b>3.72</b>	<b>4.73</b>	<b>5.75</b>	<b>6.76</b>	<b>7.78</b>	<b>8.79</b>	<b>9.80</b>	<b>10.82</b>	<b>11.83</b>	<b>12.85</b>	<b>13.86</b>	<b>14.88</b>
1.07	0.07	0.11	0.15	0.19	0.23	0.27	0.31	0.35	0.39	0.43	0.47	0.51	0.55	0.59
<b>48</b>	<b>1.94</b>	<b>3.11</b>	<b>4.27</b>	<b>5.44</b>	<b>6.61</b>	<b>7.77</b>	<b>8.94</b>	<b>10.10</b>	<b>11.27</b>	<b>12.44</b>	<b>13.60</b>	<b>14.77</b>	<b>15.93</b>	<b>17.10</b>
1.22	0.18	0.29	0.40	0.51	0.61	0.72	0.83	0.94	1.05	1.16	1.26	1.37	1.48	1.59
<b>54</b>	<b>2.19</b>	<b>3.51</b>	<b>4.83</b>	<b>6.15</b>	<b>7.46</b>	<b>8.78</b>	<b>10.10</b>	<b>11.41</b>	<b>12.73</b>	<b>14.05</b>	<b>15.36</b>	<b>16.68</b>	<b>18.00</b>	<b>19.31</b>
1.37	0.20	0.33	0.45	0.57	0.69	0.82	0.94	1.06	1.18	1.31	1.43	1.55	1.67	1.80
<b>60</b>	<b>2.45</b>	<b>3.92</b>	<b>5.39</b>	<b>6.85</b>	<b>8.32</b>	<b>9.79</b>	<b>11.26</b>	<b>12.73</b>	<b>14.20</b>	<b>15.67</b>	<b>17.14</b>	<b>18.61</b>	<b>20.07</b>	<b>21.54</b>
1.52	0.23	0.36	0.50	0.64	0.77	0.91	1.05	1.18	1.32	1.46	1.59	1.73	1.87	2.00
<b>66</b>	<b>2.70</b>	<b>4.32</b>	<b>5.94</b>	<b>7.56</b>	<b>9.18</b>	<b>10.80</b>	<b>12.42</b>	<b>14.04</b>	<b>15.66</b>	<b>17.28</b>	<b>18.90</b>	<b>20.52</b>	<b>22.14</b>	<b>23.76</b>
1.68	0.25	0.40	0.55	0.70	0.85	1.00	1.15	1.31	1.46	1.61	1.76	1.91	2.06	2.21
<b>72</b>	<b>3.01</b>	<b>4.81</b>	<b>6.62</b>	<b>8.42</b>	<b>10.22</b>	<b>12.03</b>	<b>13.83</b>	<b>15.64</b>	<b>17.44</b>	<b>19.25</b>	<b>21.05</b>	<b>22.86</b>	<b>24.66</b>	<b>26.46</b>
1.83	0.28	0.45	0.62	0.78	0.95	1.12	1.29	1.45	1.62	1.79	1.96	2.13	2.29	2.46
<b>78</b>	<b>3.26</b>	<b>5.22</b>	<b>7.17</b>	<b>9.13</b>	<b>11.08</b>	<b>13.04</b>	<b>14.99</b>	<b>16.95</b>	<b>18.90</b>	<b>20.86</b>	<b>22.82</b>	<b>24.77</b>	<b>26.73</b>	<b>28.68</b>
1.98	0.30	0.49	0.67	0.85	1.03	1.21	1.39	1.58	1.76	1.94	2.12	2.30	2.49	2.67
<b>84</b>	<b>3.51</b>	<b>5.62</b>	<b>7.73</b>	<b>9.83</b>	<b>11.94</b>	<b>14.05</b>	<b>16.15</b>	<b>18.26</b>	<b>20.37</b>	<b>22.47</b>	<b>24.58</b>	<b>26.69</b>	<b>28.79</b>	<b>30.90</b>
2.13	0.33	0.52	0.72	0.91	1.11	1.31	1.50	1.70	1.89	2.09	2.29	2.48	2.68	2.87
<b>90</b>	<b>3.76</b>	<b>6.02</b>	<b>8.28</b>	<b>10.54</b>	<b>12.80</b>	<b>15.06</b>	<b>17.31</b>	<b>19.57</b>	<b>21.83</b>	<b>24.09</b>	<b>26.35</b>	<b>28.60</b>	<b>30.86</b>	<b>33.12</b>
2.29	0.35	0.56	0.77	0.98	1.19	1.40	1.61	1.82	2.03	2.24	2.45	2.66	2.87	3.08

## PRESSURE DROP DATA

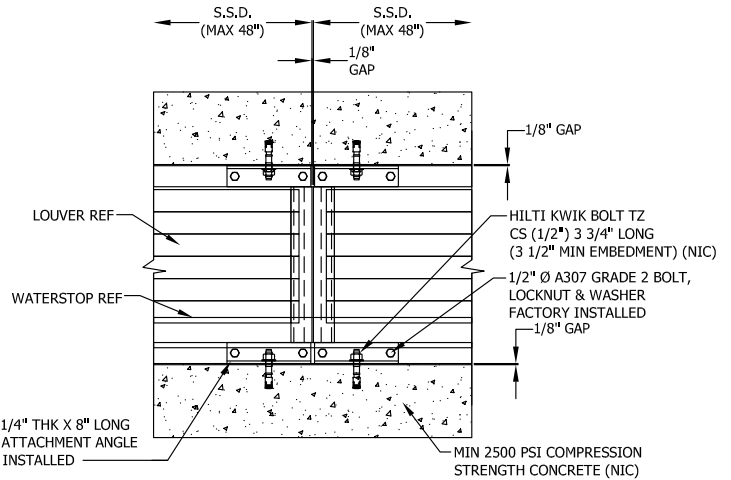
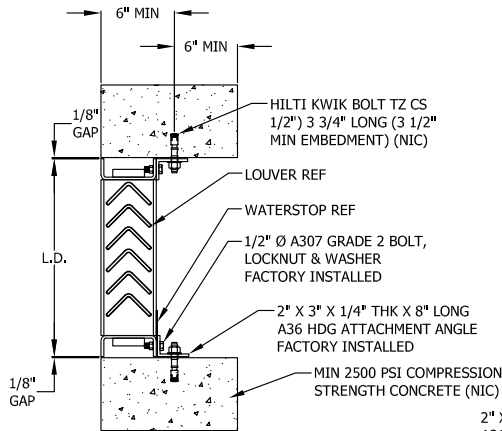


Air Velocity in feet (meters) per minute through Free Area

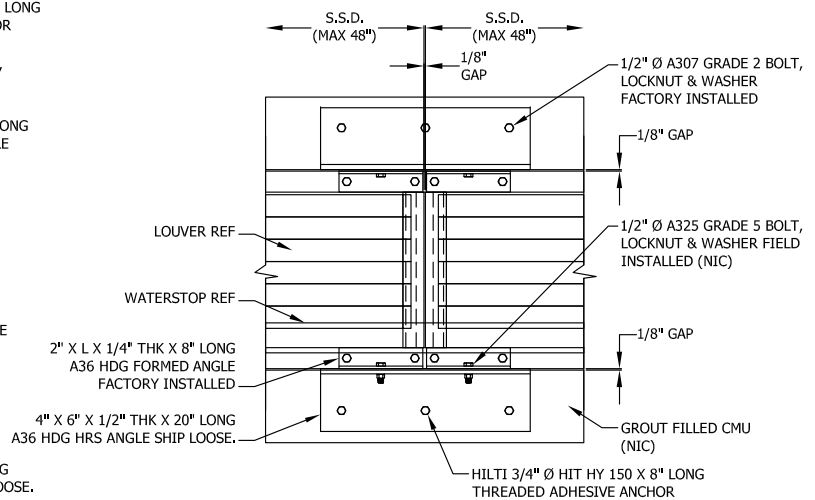
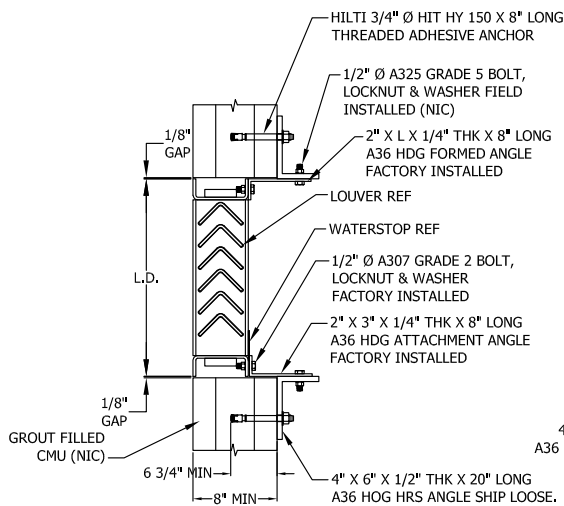
# INSTALLATION DETAILS



## STEEL INSTALLATION



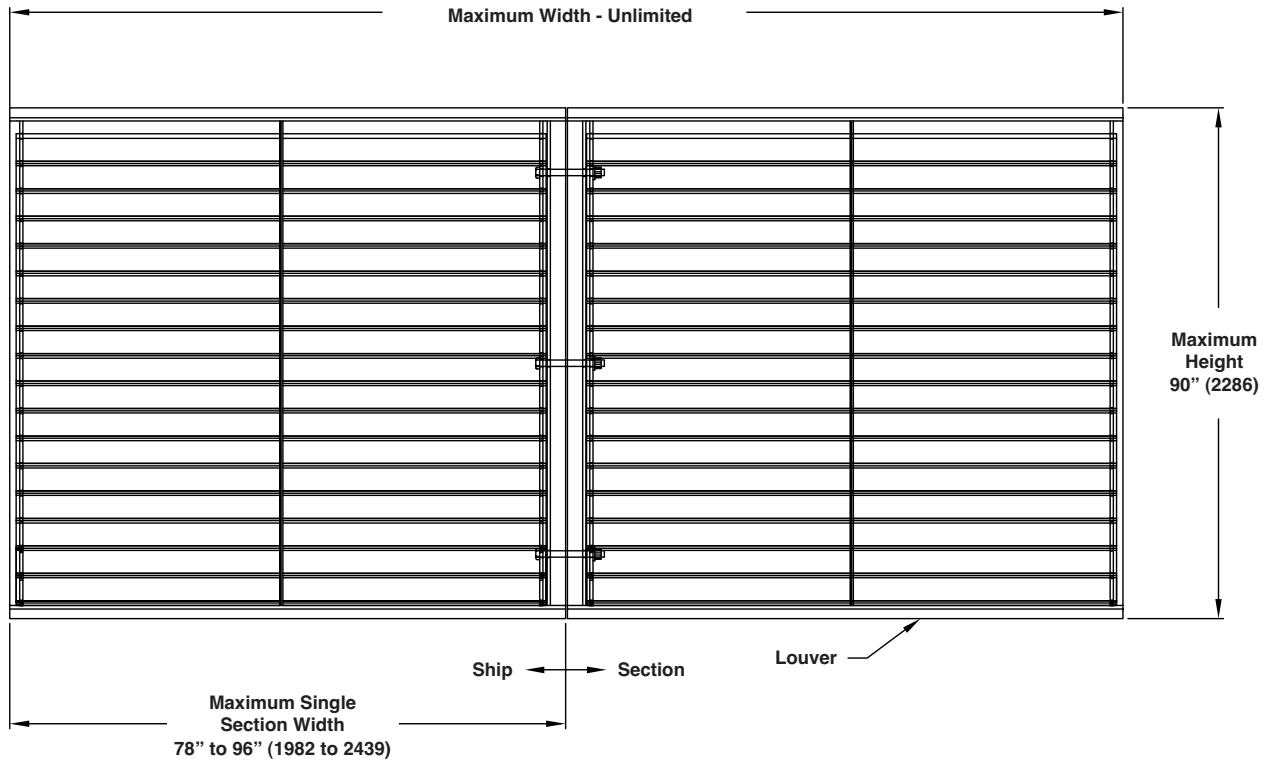
## CONCRETE INSTALLATION



## CMU INSTALLATION

## CONSTRUCTION INFORMATION

### SHIP SECTION INFORMATION



1. Reference separate installation instruction sheets for installation details. It is the responsibility of the installing contractor to properly install the louvers per the appropriate detail.
2. On special orders, Reliable may provide submittal and/or shop drawings. Reference these drawings for additional installation information.
3. Louvers wider than the maximum single section width will be shipped in multiple sections and will require field assembly. Field assembly is not by Reliable.



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## 8FHRSC FEMA LOUVER (STEEL) CHEVRON BLADE FEMA 361 GRILLE

### STANDARD CONSTRUCTION

**FRAME**

1" x 8" x 4" (25 x 203 x 102) channel 1/4" (6) Thick Hot Rolled Steel.

**BLADES**

3" x 3" x 1/4" (75 x 75 x 6) Thick Chevron Style Hot Rolled Steel.

**BIRD SCREEN**

5/8" x .040" (16 x 1) expanded flattened aluminum bird screen in removable frame. Screen adds approximately 1/2" (13) to louver depth.

**FINISH**

Mill.

**MINIMUM SIZE**

12"w x 12"h (305 x 305).

**APPROXIMATE SHIPPING WEIGHT**

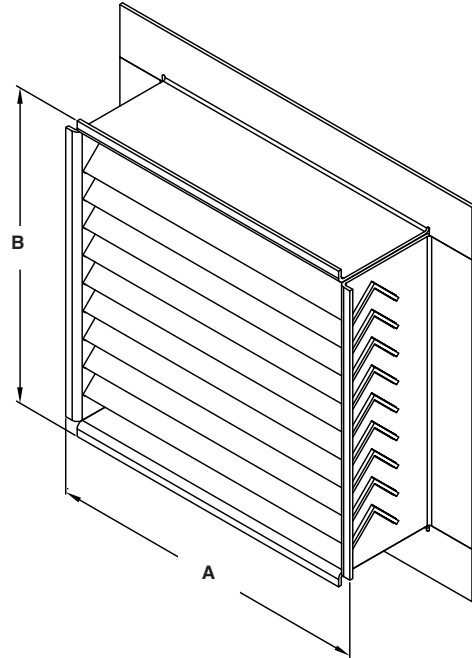
40 lbs. per sq. ft. (193.5 kg/m<sup>2</sup>)

**MAXIMUM SHIPPING SECTION SIZE**

80"w x 60"h or 60"w x 80"h (2032 x 1524 or 1524 x 2032).

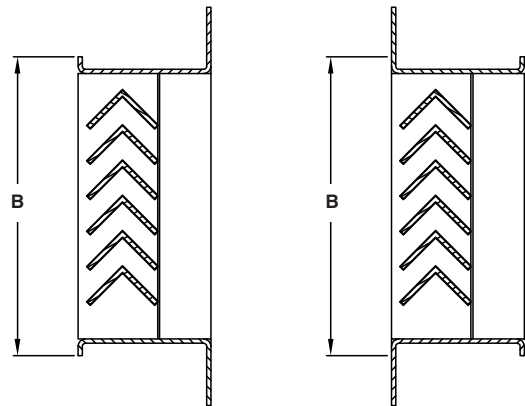
**MAXIMUM OVERALL ASSEMBLY SIZE**

Unlimited width x one section tall.



### FEATURES

- Louver complies with FEMA 361 Design and Construction for Community Shelters, Zone IV criteria, 250 MPH wind, 15 lb. 2x4 impact at 100 mph.
- Louver design to withstand 266 psf.
- Louver mounted externally in combination with wall louver or by itself internally (See attached).
- 53% Free Area.
- Optional finishes available at additional cost: prime coat, 50% and 70% PVDF (modified fluoropolymer), epoxy, Acrodize.



**EXTERNAL MOUNT**

**INTERNAL MOUNT**

Dimensions in inches, parenthesis ( ) indicate millimeters.

\*Units furnished 1/4" (6) smaller than given opening.

TAG	QTY.	SIZE		VARIATIONS
		A*-WIDE	B*-HIGH	
<b>PROJECT</b> <b>ARCH./ENGR.</b> <b>REPRESENTATIVE</b>		 <b>WebREPS</b> 1-800-810-3280		<b>LOCATION</b> <b>CONTRACTOR</b> <b>DATE</b>



## FREE AREA GUIDE

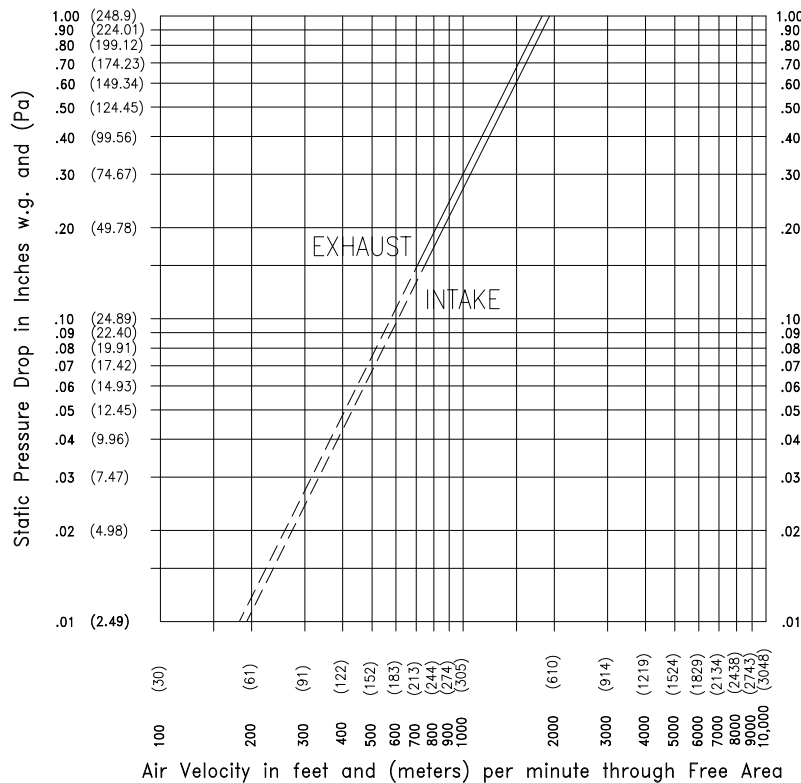
Free Area Guide shows free area in ft<sup>2</sup> and m<sup>2</sup> for various sizes of 8FHRSC.

Width – Inches and Meters

Height – Inches and Meters

	12	18	24	30	36	42	48	54	60	66	72	78	84	90
	0.30	0.46	0.61	0.76	0.91	1.07	1.22	1.37	1.52	1.68	1.83	1.98	2.13	2.29
<b>12</b>	<b>0.38</b>	<b>0.60</b>	<b>0.82</b>	<b>1.05</b>	<b>1.27</b>	<b>1.49</b>	<b>1.72</b>	<b>1.94</b>	<b>2.17</b>	<b>2.39</b>	<b>2.62</b>	<b>2.84</b>	<b>3.06</b>	<b>3.29</b>
0.30	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.22	0.24	0.26	0.29	0.31
<b>18</b>	<b>0.63</b>	<b>1.00</b>	<b>1.38</b>	<b>1.76</b>	<b>2.13</b>	<b>2.51</b>	<b>2.88</b>	<b>3.26</b>	<b>3.64</b>	<b>4.01</b>	<b>4.39</b>	<b>4.76</b>	<b>5.14</b>	<b>5.52</b>
0.46	0.06	0.09	0.13	0.16	0.20	0.23	0.27	0.30	0.34	0.37	0.41	0.44	0.48	0.51
<b>24</b>	<b>0.88</b>	<b>1.41</b>	<b>1.93</b>	<b>2.46</b>	<b>2.99</b>	<b>3.51</b>	<b>4.04</b>	<b>4.57</b>	<b>5.10</b>	<b>5.62</b>	<b>6.15</b>	<b>6.68</b>	<b>7.21</b>	<b>7.73</b>
0.61	0.08	0.13	0.18	0.23	0.28	0.33	0.38	0.42	0.47	0.52	0.57	0.62	0.67	0.72
<b>30</b>	<b>1.13</b>	<b>1.81</b>	<b>2.49</b>	<b>3.17</b>	<b>3.85</b>	<b>4.52</b>	<b>5.20</b>	<b>5.88</b>	<b>6.56</b>	<b>7.24</b>	<b>7.92</b>	<b>8.60</b>	<b>9.28</b>	<b>9.95</b>
0.76	0.11	0.17	0.23	0.29	0.36	0.42	0.48	0.55	0.61	0.67	0.74	0.80	0.86	0.93
<b>36</b>	<b>1.54</b>	<b>2.46</b>	<b>3.38</b>	<b>4.30</b>	<b>5.22</b>	<b>6.14</b>	<b>7.06</b>	<b>7.98</b>	<b>8.90</b>	<b>9.83</b>	<b>10.75</b>	<b>11.67</b>	<b>12.59</b>	<b>13.51</b>
0.91	0.14	0.23	0.31	0.40	0.49	0.57	0.66	0.74	0.83	0.91	1.00	1.09	1.17	1.26
<b>42</b>	<b>1.69</b>	<b>2.70</b>	<b>3.72</b>	<b>4.73</b>	<b>5.75</b>	<b>6.76</b>	<b>7.78</b>	<b>8.79</b>	<b>9.80</b>	<b>10.82</b>	<b>11.83</b>	<b>12.85</b>	<b>13.86</b>	<b>14.88</b>
1.07	0.07	0.11	0.15	0.19	0.23	0.27	0.31	0.35	0.39	0.43	0.47	0.51	0.55	0.59
<b>48</b>	<b>1.94</b>	<b>3.11</b>	<b>4.27</b>	<b>5.44</b>	<b>6.61</b>	<b>7.77</b>	<b>8.94</b>	<b>10.10</b>	<b>11.27</b>	<b>12.44</b>	<b>13.60</b>	<b>14.77</b>	<b>15.93</b>	<b>17.10</b>
1.22	0.18	0.29	0.40	0.51	0.61	0.72	0.83	0.94	1.05	1.16	1.26	1.37	1.48	1.59
<b>54</b>	<b>2.19</b>	<b>3.51</b>	<b>4.83</b>	<b>6.15</b>	<b>7.46</b>	<b>8.78</b>	<b>10.10</b>	<b>11.41</b>	<b>12.73</b>	<b>14.05</b>	<b>15.36</b>	<b>16.68</b>	<b>18.00</b>	<b>19.31</b>
1.37	0.20	0.33	0.45	0.57	0.69	0.82	0.94	1.06	1.18	1.31	1.43	1.55	1.67	1.80
<b>60</b>	<b>2.45</b>	<b>3.92</b>	<b>5.39</b>	<b>6.85</b>	<b>8.32</b>	<b>9.79</b>	<b>11.26</b>	<b>12.73</b>	<b>14.20</b>	<b>15.67</b>	<b>17.14</b>	<b>18.61</b>	<b>20.07</b>	<b>21.54</b>
1.52	0.23	0.36	0.50	0.64	0.77	0.91	1.05	1.18	1.32	1.46	1.59	1.73	1.87	2.00
<b>66</b>	<b>2.70</b>	<b>4.32</b>	<b>5.94</b>	<b>7.56</b>	<b>9.18</b>	<b>10.80</b>	<b>12.42</b>	<b>14.04</b>	<b>15.66</b>	<b>17.28</b>	<b>18.90</b>	<b>20.52</b>	<b>22.14</b>	<b>23.76</b>
1.68	0.25	0.40	0.55	0.70	0.85	1.00	1.15	1.31	1.46	1.61	1.76	1.91	2.06	2.21
<b>72</b>	<b>3.01</b>	<b>4.81</b>	<b>6.62</b>	<b>8.42</b>	<b>10.22</b>	<b>12.03</b>	<b>13.83</b>	<b>15.64</b>	<b>17.44</b>	<b>19.25</b>	<b>21.05</b>	<b>22.86</b>	<b>24.66</b>	<b>26.46</b>
1.83	0.28	0.45	0.62	0.78	0.95	1.12	1.29	1.45	1.62	1.79	1.96	2.13	2.29	2.46
<b>78</b>	<b>3.26</b>	<b>5.22</b>	<b>7.17</b>	<b>9.13</b>	<b>11.08</b>	<b>13.04</b>	<b>14.99</b>	<b>16.95</b>	<b>18.90</b>	<b>20.86</b>	<b>22.82</b>	<b>24.77</b>	<b>26.73</b>	<b>28.68</b>
1.98	0.30	0.49	0.67	0.85	1.03	1.21	1.39	1.58	1.76	1.94	2.12	2.30	2.49	2.67
<b>84</b>	<b>3.51</b>	<b>5.62</b>	<b>7.73</b>	<b>9.83</b>	<b>11.94</b>	<b>14.05</b>	<b>16.15</b>	<b>18.26</b>	<b>20.37</b>	<b>22.47</b>	<b>24.58</b>	<b>26.69</b>	<b>28.79</b>	<b>30.90</b>
2.13	0.33	0.52	0.72	0.91	1.11	1.31	1.50	1.70	1.89	2.09	2.29	2.48	2.68	2.87
<b>90</b>	<b>3.76</b>	<b>6.02</b>	<b>8.28</b>	<b>10.54</b>	<b>12.80</b>	<b>15.06</b>	<b>17.31</b>	<b>19.57</b>	<b>21.83</b>	<b>24.09</b>	<b>26.35</b>	<b>28.60</b>	<b>30.86</b>	<b>33.12</b>
2.29	0.35	0.56	0.77	0.98	1.19	1.40	1.61	1.82	2.03	2.24	2.45	2.66	2.87	3.08

## PRESSURE DROP DATA

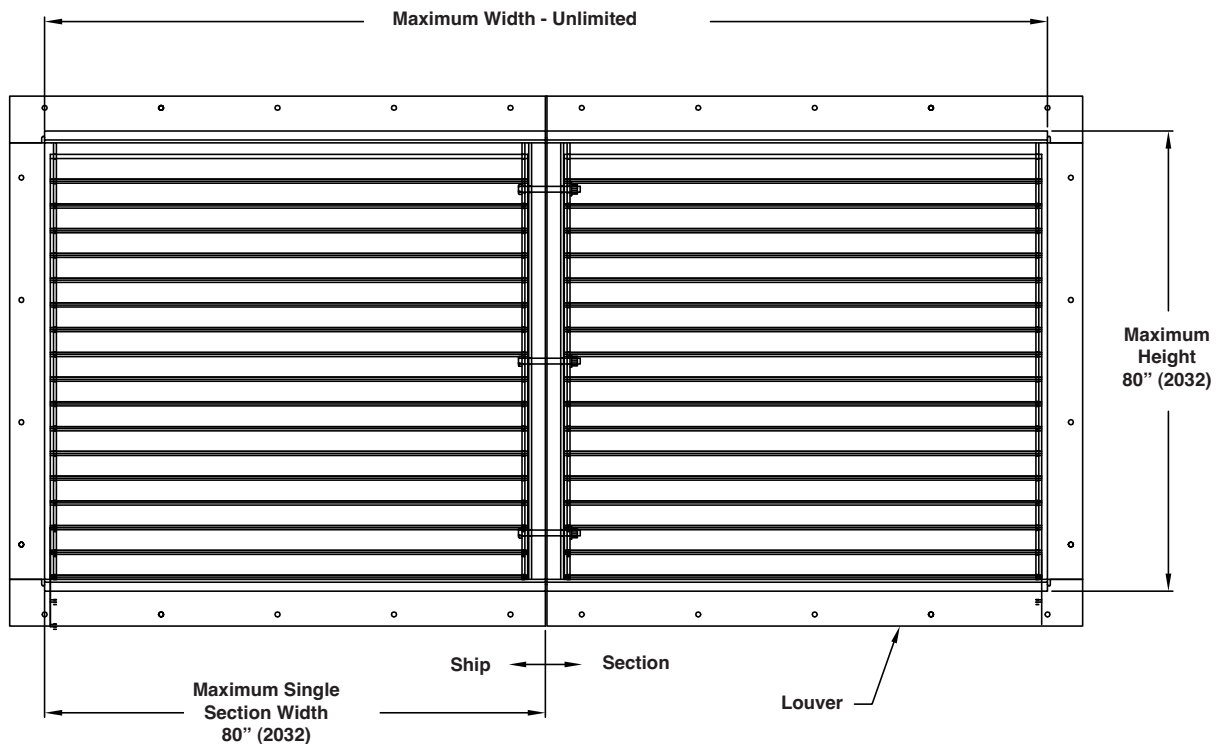


Air Velocity in feet (meters) per minute through Free Area

**STANDARD CONSTRUCTION DETAILS**

MATERIAL	ANCHOR TYPE	SPACING	EMBEDMENT	EDGE DISTANCE
CMU, Grout filled 1500 Min. PSI	3/4" (19) DIA Hilti Kwik Bolt III Expansion Anchor	8" (203) Max on center & 3" from ends	4 3/4" (121)	4" (102)
Concrete 3000 PSI Min	5/8" (16) DIA Hilti Kwik Bolt III	8" (203) Max on center & 3" from ends	4 3/4" (121)	4" (102)
Steel or Aluminum Frame	5/8" (16) DIA Kwik Bolt	8" (203) Max on center & 3" from ends	4" (102)	2" (51)

**SHIP SECTION INFORMATION**



1. Reference separate installation instruction sheets for installation details. It is the responsibility of the installing contractor to properly install the louvers per the appropriate detail.
2. On special orders, Reliable may provide submittal and/or shop drawings. Reference these drawings for additional installation information.
3. Louvers wider than the maximum single section width will be shipped in multiple sections and will require field assembly. Field assembly is not by Reliable.

