Blast Protection Damper
BL-201 Series

Application
- The BL-201 Series damper is designed for protection against sudden blasts and instantaneous pressure changes.
- Vertical and horizontal mounting applications
- Max velocity: 20 m/s

Standard Construction
- Frame: 76x250x76mm, 10 ga. (3.4mm) carbon steel channel with 250mm wide x 6.35mm faceplate
- Blades: 3.4mm carbon steel double skin airfoil
- Blade Lock: Latch mechanism to lock blades in closed position after blast
- Axles: Ø 25.4mm solid HSLA steel (ASTM 588)
- Linkage: 6.35mm thick x 19mm wide bars
- Bearings: Two hole flange ball bearing (type II)
- Finish: Gray primer to prevent rust

Min. Size* 200mm x 200mm
Max. Single Section* 1220mm x 1524mm (see graph for blast pressure limitations).
Max. Multi-Section* 2440mm x 1524mm (subject to blast pressure limitations)

*as measured to inside frame dimensions

Options
- Stainless steel construction (ASTM-A240, SA240, AMS 5513)
- Powder coating, select color
- Blast deflector on jambs
- Equalizing/debris grid (-GR models)
- Omit blast plate (in duct mounting)
- Galvanized steel construction
- Combined damper assembly with MAT BD-200-HD fire resistant pressure relief damper

Models BL-201, BL-201-GR
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Blast Protection Damper
BL-201 Series

**Blast Arrangement #1**
Blast damper normally open

**Blast Arrangement #2**
Blast damper normally open

**Blast Arrangement #3** (Horizontal Mount)
Blast damper normally open

**Blast Arrangement #4** (Horizontal Mount)
Blast damper normally open
Blast Protection Damper
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Total Reflective Pressure vs. Blast Damper Width

<table>
<thead>
<tr>
<th>Test</th>
<th>Test Specimen</th>
<th>Applied Peak Pressure (psi)</th>
<th>Applied Positive Phase Impulse (psi-ms)</th>
<th>Positive Phase Duration (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>16.3</td>
<td>1477</td>
<td>312.4</td>
</tr>
<tr>
<td>2</td>
<td>**</td>
<td>3.2</td>
<td>128</td>
<td>77.1</td>
</tr>
<tr>
<td>3</td>
<td>**</td>
<td>5.8</td>
<td>229</td>
<td>83.2</td>
</tr>
<tr>
<td>4</td>
<td>**</td>
<td>8.7</td>
<td>370</td>
<td>103.4</td>
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<td>5</td>
<td>**</td>
<td>11.1</td>
<td>753</td>
<td>203.5</td>
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<td>6</td>
<td>**</td>
<td>16.2</td>
<td>1439</td>
<td>322.4</td>
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</table>

*Shock Testing of the 32"x32" Blast Damper was performed by Baker Risk Structural Component Testing Labs.

**Tests 2-6 were performed consecutively on the same test specimen.

***Shock Testing of the 48"x48" Blast Damper was performed by ATI-Intertek Architectural Testing Lab.

Note: Multi-section dampers may be required to meet high overpressure ratings.
Metropolitan Air Technology certifies that model BL-201 blast damper shown herein (or herein) is licensed to bear the AMCA Listing Label. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Rating Seal applies to Air Performance.
American Made. World Proven.

Blast Protection Damper
Model BL-201 Performance Data

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Tested per AMCA Standards 500-D fig. 5.2
At Standard Air Density

5.2 Exhaust

Face Velocity (m/s)
Pressure Drop (Pa)

<table>
<thead>
<tr>
<th>Face Velocity</th>
<th>Pressure Drop</th>
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</thead>
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<tr>
<td>m/s</td>
<td>in. H2O</td>
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<tr>
<td>3117</td>
<td>15.83436</td>
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<tr>
<td>2505</td>
<td>12.7254</td>
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<tr>
<td>1883</td>
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<td>1250</td>
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<tr>
<td>611</td>
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Figure 5.2- Test Device Setup with Inlet Duct
Exhaust Application

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Blast Protection Damper
BL-201 Series

### DAMPER FREE AREA CHART (sqm)

<table>
<thead>
<tr>
<th>HEIGHT (OUTSIDE FRAME DIMENSION)</th>
<th>350</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
<th>1100</th>
<th>1200</th>
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<td>0.022</td>
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<td>0.058</td>
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<td>0.093</td>
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<tr>
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<td>0.035</td>
<td>0.049</td>
<td>0.063</td>
<td>0.077</td>
<td>0.091</td>
<td>0.105</td>
<td>0.119</td>
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<td>0.147</td>
<td>0.161</td>
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<tr>
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<td>0.051</td>
<td>0.071</td>
<td>0.092</td>
<td>0.112</td>
<td>0.133</td>
<td>0.153</td>
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<tr>
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<td>0.848</td>
<td>0.885</td>
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</table>

Free Area Chart Not Certified by AMCA
Blast Protection Damper
Installation Instructions (BL-201 Series)

Installation Instructions
• Attachment is to be made on the same side as the blast
• Substrates may vary from above application; site specific engineering may be required.
Blast Protection Damper
BL-201 Series

Suggested Specification
Furnish at locations shown in plans or in accordance with schedules, industrial grade blast dampers meeting the following construction standards. Frame shall be minimum 250mm deep x 75mm flange 10 gage carbon steel channel. Sleeve with inner frame is not acceptable. Blades shall be maximum 175mm wide, minimum 10 ga. carbon steel airfoil shaped double-skin. A 250mm wide x 6.35mm thick steel blast plate to be bolted to front flange. Axles shall be continuous 25mm diameter HSLA steel (ASTM 588) welded to blades. Linkage shall be 6.35mm thick, 19mm wide bar located on side of damper outside of airstream.

Linkages shall include externally mounted release springs to keep damper open until blast pressure forces blades closed. Damper shall include blade locks for protection against a delayed exothermic reaction (a moving flame front) and the negative pressure wave. Damper shall be tested by an independent lab at equally spaced successive overpressures up to 1 bar, using the shock tube method. Dampers shall be pressure drop tested in accordance with AMCA Standard 500-D. Damper shall be Metropolitan Air Technology’s Model BL-201 blast damper. Add “-GR” suffix for equalizing grid.