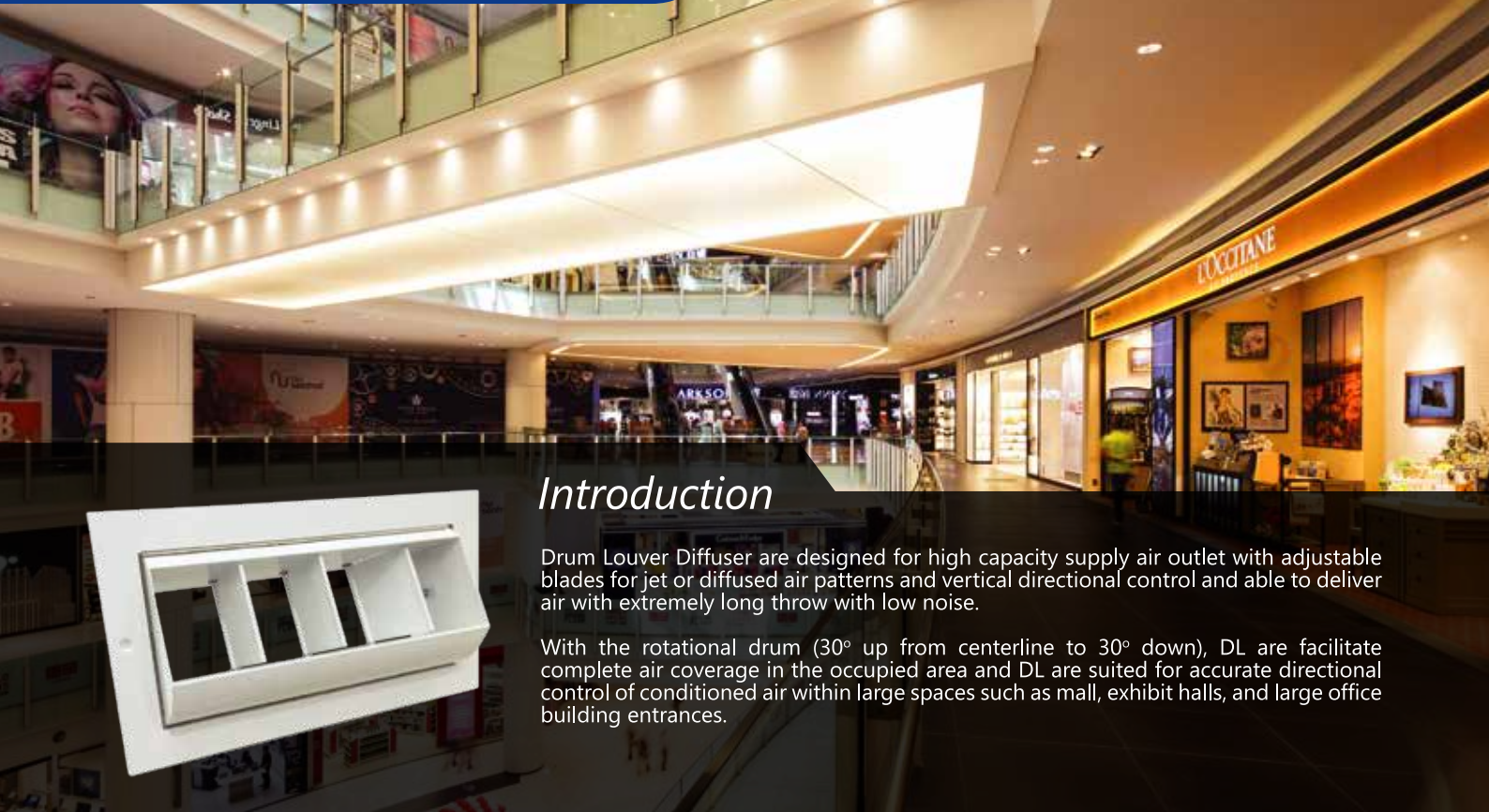




**DL** *Drum Louvre Diffuser*





## Introduction

Drum Louver Diffuser are designed for high capacity supply air outlet with adjustable blades for jet or diffused air patterns and vertical directional control and able to deliver air with extremely long throw with low noise.

With the rotational drum (30° up from centerline to 30° down), DL are facilitate complete air coverage in the occupied area and DL are suited for accurate directional control of conditioned air within large spaces such as mall, exhibit halls, and large office building entrances.



## CONSTRUCTIONS & MATERIALS

- Adjustable vanes within a rotatable drum
- Drum is adjustable through 60°
- Felt seal between drum and frame to minimized leakage
- Optional Opposed blade damper available

### Frame



Extruded Aluminium

### Drum



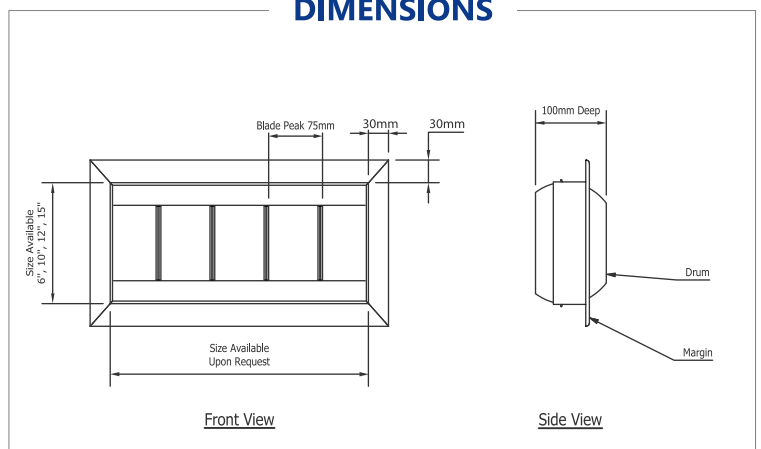
Extruded Aluminium

### Vaness



Extruded Aluminium

## DIMENSIONS



## STANDARD SIZE AVAILABLE

| 6"             | 10"        | 12"        | 15"        |
|----------------|------------|------------|------------|
| Width x Height |            |            |            |
| 250 x 150      | 500 x 250  | 500 x 300  | 375 x 375  |
| 300 x 150      | 650 x 250  | 650 x 300  | 500 x 375  |
| 450 x 150      | 750 x 250  | 750 x 300  | 650 x 375  |
| 600 x 150      | 900 x 250  | 900 x 300  | 750 x 375  |
| 750 x 150      | 1000 x 250 | 1000 x 300 | 1000 x 375 |
| 900 x 150      | 1200 x 250 | 1200 x 300 | 1250 x 375 |
| 1200 x 150     | 1500 x 250 | 1250 x 300 | 1500 x 375 |
| 1500 x 150     | 1500 x 250 | 1500 x 300 | 1750 x 375 |
| -              | 1750 x 250 | 1750 x 300 | -          |

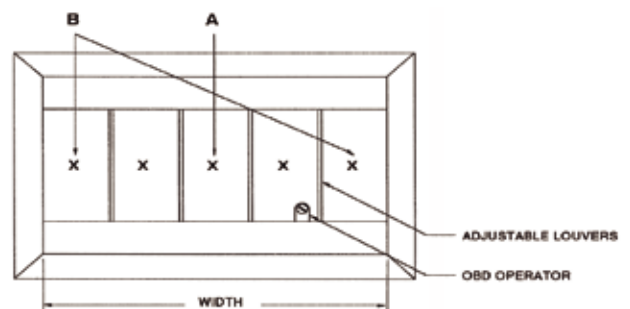
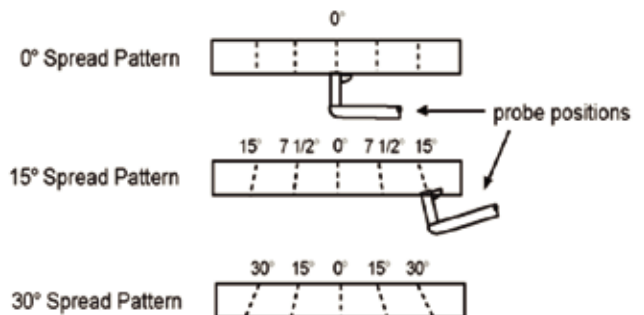
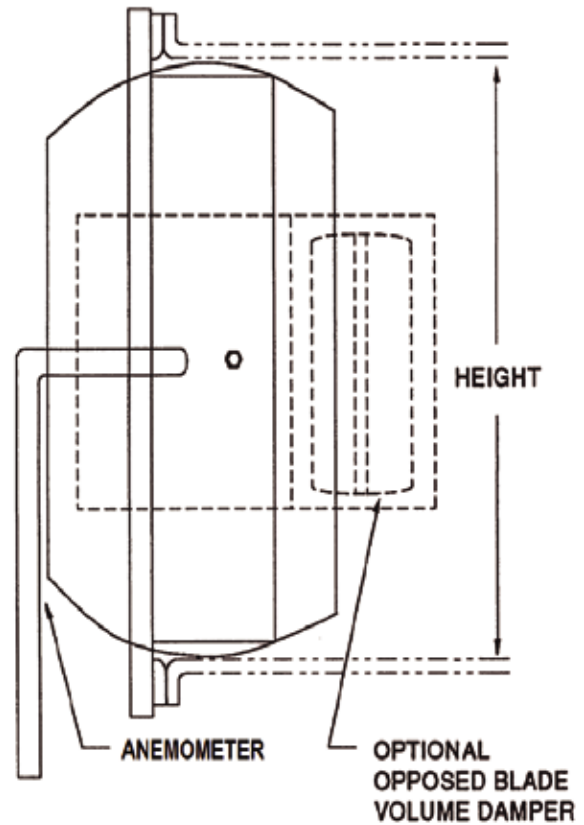


**AIR FLOW MEASUREMENTS**

1. An anemometer is required for balancing the Drum Louver.
2. Measure velocity at the center louver opening (A) and at the two end louver openings (B). Hold probe perpendicular and centered on the louver opening.
3. Use the maximum velocity measured at each probe location. If velocity measurements are within 5%, calculate the average face velocity using the three measurements. If velocity measurements are not within 5%, take additional measurements at each louver opening and calculate the average face velocity using all measurements.
4. From the table for the spread angle used, determined the balancing factor (Ak) using the size of the grille.
5. Calculate the air volume (CFM) by multiplying the average face velocity (Vk, ft/min) and the balancing factor (Ak, sq.ft).

**CFM = V<sub>k</sub> x A<sub>k</sub>**

| Size       | Spread Pattern (Degrees) |      |      |
|------------|--------------------------|------|------|
|            | 0°                       | 15°  | 30°  |
| 250 x 150  | 0.15                     | 0.15 | 0.13 |
| 300 x 150  | 0.20                     | 0.19 | 0.17 |
| 450 x 150  | 0.31                     | 0.29 | 0.25 |
| 600 x 150  | 0.41                     | 0.39 | 0.33 |
| 750 x 150  | 0.51                     | 0.48 | 0.42 |
| 900 x 150  | 0.61                     | 0.58 | 0.50 |
| 1200 x 150 | 0.81                     | 0.77 | 0.67 |
| 1500 x 150 | 1.02                     | 0.96 | 0.83 |
| 500 x 250  | 0.58                     | 0.55 | 0.48 |
| 650 x 250  | 0.72                     | 0.69 | 0.59 |
| 750 x 250  | 0.87                     | 0.83 | 0.71 |
| 900 x 250  | 1.01                     | 0.96 | 0.83 |
| 1000 x 250 | 1.16                     | 1.1  | 0.95 |
| 1250 x 250 | 1.45                     | 1.38 | 1.19 |
| 1500 x 250 | 1.74                     | 1.65 | 1.42 |
| 1750 x 250 | 2.03                     | 1.93 | 1.66 |
| 500 x 300  | 0.64                     | 0.61 | 0.53 |
| 650 x 300  | 0.80                     | 0.76 | 0.66 |
| 750 x 300  | 0.96                     | 0.91 | 0.79 |
| 900 x 300  | 1.12                     | 1.07 | 0.92 |
| 1000 x 300 | 1.28                     | 1.22 | 1.05 |
| 1250 x 300 | 1.60                     | 1.52 | 1.31 |
| 1500 x 300 | 1.92                     | 1.83 | 1.58 |
| 1750 x 300 | 2.24                     | 2.13 | 1.84 |



## TECHNICAL PERFORMANCE DATA

### PERFORMANCE DATA: DL 6" HEIGHT (150MM)

| Size       | Unit Air Volume (CFM)    | 200 | 400 | 600 | 800 | 1000 | 1500 | 2000 | 3000 | 4000 |
|------------|--------------------------|-----|-----|-----|-----|------|------|------|------|------|
| 250 x 150  | Face Velocity (m/s)      | 1.4 | 2.7 | 4.2 | 5.6 | -    | -    | -    | -    | -    |
|            | Diff. Pressure (Pa)      | 10  | 47  | 107 | 186 | -    | -    | -    | -    | -    |
|            | Throw Disc. @ 0.5m/s (m) | 1.1 | 3.7 | 5.6 | 7   | -    | -    | -    | -    | -    |
|            | Noise Rating (NR)        | 10  | 24  | 42  | 59  | -    | -    | -    | -    | -    |
| 450 x 150  | Face Velocity (m/s)      | -   | 1.4 | 2.1 | 2.8 | 3.6  | -    | -    | -    | -    |
|            | Diff. Pressure (Pa)      | -   | 11  | 29  | 51  | 79   | -    | -    | -    | -    |
|            | Throw Disc. @ 0.5m/s (m) | -   | 3.7 | 5.8 | 6.8 | 7.5  | -    | -    | -    | -    |
|            | Noise Rating (NR)        | -   | 12  | 15  | 28  | 38   | -    | -    | -    | -    |
| 750 x 150  | Face Velocity (m/s)      | -   | -   | 1.2 | 1.7 | 2.2  | 3.3  | 4.4  | -    | -    |
|            | Diff. Pressure (Pa)      | -   | -   | 8   | 18  | 29   | 65   | 116  | -    | -    |
|            | Throw Disc. @ 0.5m/s (m) | -   | -   | 6   | 6.9 | 7.6  | 9.2  | 10.6 | -    | -    |
|            | Noise Rating (NR)        | -   | -   | <10 | 11  | 15   | 32   | 45   | -    | -    |
| 1500 x 150 | Face Velocity (m/s)      | -   | -   | -   | -   | 1.1  | 1.6  | 2.2  | 3.3  | 4.4  |
|            | Diff. Pressure (Pa)      | -   | -   | -   | -   | 3    | 16   | 29   | 67   | 119  |
|            | Throw Disc. @ 0.5m/s (m) | -   | -   | -   | -   | 7.8  | 9.4  | 10.8 | 13   | 15.2 |
|            | Noise Rating (NR)        | -   | -   | -   | -   | <10  | 14   | 22   | 40   | 53   |

### PERFORMANCE DATA: DL 10" HEIGHT (250MM)

| Size       | Unit Air Volume (CFM)    | 800 | 1000 | 1500 | 2000 | 3000 | 4000 | 5000 | 6000 | 8000 |
|------------|--------------------------|-----|------|------|------|------|------|------|------|------|
| 500 x 250  | Face Velocity (m/s)      | 1.6 | 2.0  | 3.0  | 4.1  | -    | -    | -    | -    | -    |
|            | Diff. Pressure (Pa)      | 12  | 17   | 38   | 67   | -    | -    | -    | -    | -    |
|            | Throw Disc. @ 0.5m/s (m) | 6.7 | 7.5  | 9.5  | 11   | -    | -    | -    | -    | -    |
|            | Noise Rating (NR)        | 13  | 16   | 32   | 45   | -    | -    | -    | -    | -    |
| 1000 x 250 | Face Velocity (m/s)      | -   | 1.2  | 1.8  | 2.4  | 3.7  | 5.0  | -    | -    | -    |
|            | Diff. Pressure (Pa)      | -   | <10  | 12   | 30   | 66   | 90   | -    | -    | -    |
|            | Throw Disc. @ 0.5m/s (m) | -   | 8.5  | 9.7  | 10.9 | 13.3 | 15.7 | -    | -    | -    |
|            | Noise Rating (NR)        | -   | <10  | 16   | 24   | 40   | 56   | -    | -    | -    |
| 1250 x 250 | Face Velocity (m/s)      | -   | -    | -    | 1.6  | 2.5  | 3.3  | 4.2  | 5.0  | -    |
|            | Diff. Pressure (Pa)      | -   | -    | -    | 12   | 26   | 46   | 71   | 103  | -    |
|            | Throw Disc. @ 0.5m/s (m) | -   | -    | -    | 10.9 | 13.5 | 15   | 16.7 | 18.3 | -    |
|            | Noise Rating (NR)        | -   | -    | -    | 14   | 28   | 40   | 51   | 59   | -    |
| 1750 x 250 | Face Velocity (m/s)      | -   | -    | -    | -    | 1.8  | 2.3  | 3.0  | 3.6  | 4.8  |
|            | Diff. Pressure (Pa)      | -   | -    | -    | -    | 14   | 23   | 38   | 52   | 94   |
|            | Throw Disc. @ 0.5m/s (m) | -   | -    | -    | -    | 13.1 | 15   | 17   | 18.5 | 21.5 |
|            | Noise Rating (NR)        | -   | -    | -    | -    | 17   | 28   | 38   | 45   | 58   |

**PERFORMANCE DATA: DL 12" HEIGHT (300MM)**

| Size       | Unit Air Volume (CFM)    | 1000 | 1500 | 2000 | 3000 | 4000 | 5000 | 6000 | 8000 | 10000 |
|------------|--------------------------|------|------|------|------|------|------|------|------|-------|
| 500 x 300  | Face Velocity (m/s)      | 1.7  | 2.5  | 3.4  | 5.2  | -    | -    | -    | -    | -     |
|            | Diff. Pressure (Pa)      | 11   | 26   | 45   | 100  | -    | -    | -    | -    | -     |
|            | Throw Disc. @ 0.5m/s (m) | 7.6  | 9.5  | 10.7 | 13.1 | -    | -    | -    | -    | -     |
|            | Noise Rating (NR)        | 13   | 25   | 38   | 57   | -    | -    | -    | -    | -     |
| 1000 x 300 | Face Velocity (m/s)      | -    | 1.2  | 1.7  | 2.6  | 3.5  | 4.4  | -    | -    | -     |
|            | Diff. Pressure (Pa)      | -    | 6    | 11   | 27   | 46   | 72   | -    | -    | -     |
|            | Throw Disc. @ 0.5m/s (m) | -    | 9.3  | 10.6 | 13.2 | 15.3 | 17.1 | -    | -    | -     |
|            | Noise Rating (NR)        | -    | <10  | 15   | 29   | 42   | 52   | -    | -    | -     |
| 1250 x 300 | Face Velocity (m/s)      | -    | -    | 1.4  | 2.2  | 3.0  | 3.8  | 4.6  | -    | -     |
|            | Diff. Pressure (Pa)      | -    | -    | 5    | 20   | 35   | 56   | 77   | -    | -     |
|            | Throw Disc. @ 0.5m/s (m) | -    | -    | 11.7 | 13.3 | 15.3 | 17   | 18.7 | -    | -     |
|            | Noise Rating (NR)        | -    | -    | 11   | 23   | 35   | 45   | 55   | -    | -     |
| 1750 x 300 | Face Velocity (m/s)      | -    | -    | -    | 1.5  | 2.0  | 2.5  | 2.9  | 4.0  | 5.0   |
|            | Diff. Pressure (Pa)      | -    | -    | -    | 8    | 15   | 24   | 47   | 61   | 95    |
|            | Throw Disc. @ 0.5m/s (m) | -    | -    | -    | 13.4 | 7.8  | 16.8 | 18.4 | 21.3 | 23.8  |
|            | Noise Rating (NR)        | -    | -    | -    | 11   | 22   | 31   | 39   | 51   | 61    |

**PERFORMANCE DATA: DL 15" HEIGHT (375MM)**

| Size       | Unit Air Volume (CFM)    | 1000 | 1500 | 2000 | 3000 | 4000 | 6000 | 8000 | 10000 | 12000 |
|------------|--------------------------|------|------|------|------|------|------|------|-------|-------|
| 375 x 375  | Face Velocity (m/s)      | 1.8  | 2.7  | 4.3  | 5.5  | -    | -    | -    | -     | -     |
|            | Diff. Pressure (Pa)      | 1.0  | 24   | 57   | 94   | -    | -    | -    | -     | -     |
|            | Throw Disc. @ 0.5m/s (m) | 7.5  | 9.3  | 11.2 | 12.9 | -    | -    | -    | -     | -     |
|            | Noise Rating (NR)        | 14   | 27   | 48   | 60   | -    | -    | -    | -     | -     |
| 750 x 375  | Face Velocity (m/s)      | -    | 1.0  | 1.2  | 2.0  | 2.8  | 4.4  | -    | -     | -     |
|            | Diff. Pressure (Pa)      | -    | <10  | <10  | <10  | 24   | 55   | -    | -     | -     |
|            | Throw Disc. @ 0.5m/s (m) | -    | 10.1 | 11.1 | 12.9 | 14.7 | 18.3 | -    | -     | -     |
|            | Noise Rating (NR)        | -    | 18   | 22   | 30   | 38   | 54   | -    | -     | -     |
| 1250 x 375 | Face Velocity (m/s)      | -    | -    | 1.2  | 1.7  | 2.2  | 3.4  | 4.5  | -     | -     |
|            | Diff. Pressure (Pa)      | -    | -    | <10  | <10  | 16   | 37   | 37   | -     | -     |
|            | Throw Disc. @ 0.5m/s (m) | -    | -    | 11.2 | 13.1 | 15.0 | 18.4 | 18.4 | -     | -     |
|            | Noise Rating (NR)        | -    | -    | <10  | 15   | 26   | 42   | 55   | -     | -     |
| 1750 x 375 | Face Velocity (m/s)      | -    | -    | -    | -    | 1.6  | 2.4  | 3.2  | 4.1   | 4.8   |
|            | Diff. Pressure (Pa)      | -    | -    | -    | -    | <10  | 19   | 34   | 52    | 75    |
|            | Throw Disc. @ 0.5m/s (m) | -    | -    | -    | -    | 15.3 | 18.5 | 21.5 | 23.8  | 26.0  |
|            | Noise Rating (NR)        | -    | -    | -    | -    | 14   | 30   | 42   | 52    | 60    |

- All data is based on tests conducted in accordance with ANSI/ASHARE Standard 70-2006
- Throw distance is based on isothermal air 0.5 m/s terminal velocity.
- Listed size is slightly less than the minimum allowed duct dimensions.
- Each NR value represents the noise rating that will not be exceeded by the sound pressure in any of the octave bands, 2nd through 7th. Each NR value is based on a room absorption of 10dB, re 10-12 watts.
- Throw distance is based on a 15° upward deflection. For 0° upward deflection multiply throw values shown by 1.2. For 30° upward deflection multiply throw values shown by 0.8.

**Variable Air Volume Applications**

| Deflection | Throw Dis | Diff Pressure | NR |
|------------|-----------|---------------|----|
| 0°         | 1.2       | 0.8           | -4 |
| 30°        | 0.8       | 1.43          | +4 |

- All Prudent Aire supply grilles can be applied to variable air volume systems with excellent result. For detailed selection methods, consult your Prudent Aire representative.



# DL | Drum Louvre Diffuser

## Products Range

- Grilles 
- Diffusers 
- Dampers 
- Fire & Smoke Protection 
- VAV 
- Others 
- Accessories 



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