

# DLIAA-0 MODEL



## EXTRUDED ALUMINUM HIGH AIR HANDLING CAPACITY SUPPLY LINEAR DIFFUSER SLOT BORDER TYPE-O

- Hidden frame.
- 1 or 2 slots of 1", 1.5", 2", 2.5" and 3".
- Diffuser and duct savings.
- Screw bases and supports not visible.
- STD length 6' and 9'.
- 26ga bonded steel plenum box option.
- Easy and economical installation compared to conventional linear diffusers.
- This model can also be curved.

### CONSTRUCTION:

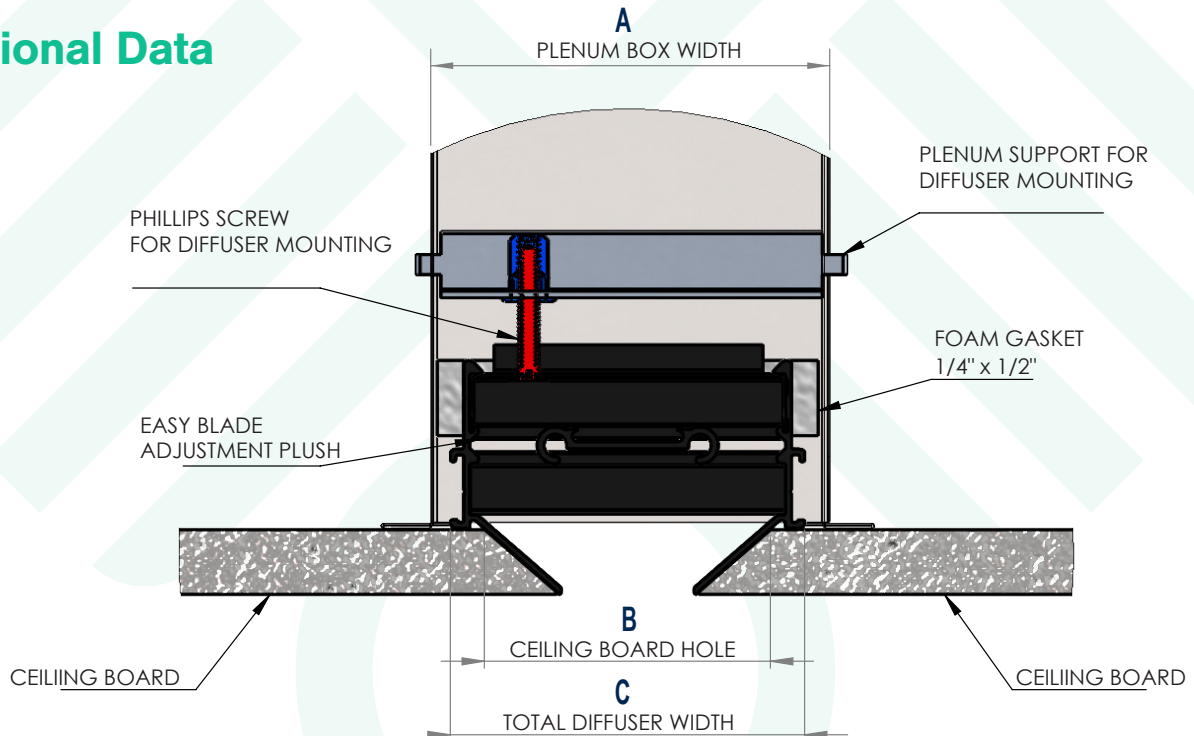
Extruded aluminum, lengths up to 9 feet in a single section piece.

Foam Gasket to prevent air leakage and condensation

### FINISH:

Standard white Anodic acrylic paint. Blades and separators painted in matt black. Other colors available.

## Dimensional Data



### DIMENSIONES DE MONTAJE EN PULGADAS

| SLOT QTY | SLOT 1" |         |         | SLOT 1.5" |        |        | SLOT 2" |        |        | SLOT 2.5" |        |        | SLOT 3" |        |         |
|----------|---------|---------|---------|-----------|--------|--------|---------|--------|--------|-----------|--------|--------|---------|--------|---------|
|          | A       | B       | C       | A         | B      | C      | A       | B      | C      | A         | B      | C      | A       | B      | C       |
| 1        | 211/16" | 231/16" | 211/16" | 33/4"     | 31/8"  | 33/4"  | 41/4"   | 35/8"  | 41/4"  | 43/4"     | 41/8"  | 43/4"  | 51/4"   | 45/8"  | 51/4"   |
| 2        | 51/8"   | 53/8"   | 6"      | 73/16"    | 69/16" | 73/16" | 83/16"  | 79/16" | 83/16" | 93/16"    | 89/16" | 93/16" | 103/16" | 99/16" | 103/16" |

# EXTRUDED ALUMINUM HIGH AIR HANDLING CAPACITY SUPPLY LINEAR DIFFUSER - SLOT BORDER TYPE-O

# DLIAA-O MODEL

## PERFORMANCE DATA

### SLOT WIDTH

| SLOT WIDTH                             |                                | CFM / 4FT in direction of throw | 90    | 125    | 160    | 195     | 230     | 265     | 300      |
|--|--------------------------------|---------------------------------|-------|--------|--------|---------|---------|---------|----------|
| <b>1"</b><br>INLET DUCT<br>8" DIAMETER | OUTLET VELOCITY - ( FT / MIN ) |                                 | 266   | 368    | 470    | 572     | 677     | 778     | 884      |
|  | THROW / FT                     |                                 | 3-5-8 | 5-7-12 | 6-9-15 | 7-11-17 | 8-13-19 | 9-15-21 | 10-17-23 |
|  | PRESSURE DROP (In H2O)         |                                 | 0.008 | 0.021  | 0.037  | 0.057   | 0.081   | 0.109   | 0.142    |
|  | NOISE CRITERIA (NC)            |                                 | <10   | <10    | <10    | <10     | 15      | 18      | 21       |

### SLOT WIDTH

| SLOT WIDTH                               |                                | CFM / 4FT in direction of throw | 150   | 200    | 250     | 300     | 350     | 400     | 450      |
|--|--------------------------------|---------------------------------|-------|--------|---------|---------|---------|---------|----------|
| <b>1.5"</b><br>INLET DUCT<br>8" DIAMETER | OUTLET VELOCITY - ( FT / MIN ) |                                 | 336   | 411    | 512     | 614     | 724     | 826     | 926      |
|  | THROW / FT                     |                                 | 4-6-9 | 5-8-13 | 6-10-16 | 7-12-18 | 8-14-21 | 9-16-23 | 11-18-25 |
|  | PRESSURE DROP (In H2O)         |                                 | 0.02  | 0.05   | 0.07    | 0.11    | 0.15    | 0.2     | 0.25     |
|  | NOISE CRITERIA (NC)            |                                 | <10   | <10    | <10     | <10     | 16      | 20      | 23       |

### SLOT WIDTH

| SLOT WIDTH                              |                                | CFM / 4FT in direction of throw | 180    | 230    | 280     | 330     | 380     | 430      | 480      |
|---|--------------------------------|---------------------------------|--------|--------|---------|---------|---------|----------|----------|
| <b>2"</b><br>INLET DUCT<br>10" DIAMETER | OUTLET VELOCITY - ( FT / MIN ) |                                 | 354    | 452    | 551     | 649     | 749     | 850      | 946      |
|   | THROW / FT                     |                                 | 5-7-10 | 6-9-14 | 7-11-17 | 8-13-19 | 9-15-21 | 10-17-23 | 12-19-26 |
|   | PRESSURE DROP (In H2O)         |                                 | 0.019  | 0.033  | 0.052   | 0.074   | 0.099   | 0.128    | 0.16     |
|   | NOISE CRITERIA (NC)            |                                 | <10    | <10    | <10     | 15      | 17      | 20       | 25       |

### SLOT WIDTH

| SLOT WIDTH                                |                                | CFM / 4FT in direction of throw | 250    | 300    | 350     | 400     | 450     | 500      | 550      |
|---|--------------------------------|---------------------------------|--------|--------|---------|---------|---------|----------|----------|
| <b>2.5"</b><br>INLET DUCT<br>12" DIAMETER | OUTLET VELOCITY - ( FT / MIN ) |                                 | 412    | 499    | 575     | 668     | 753     | 835      | 909      |
|   | THROW / FT                     |                                 | 5-8-12 | 6-9-15 | 7-11-17 | 8-13-19 | 9-15-21 | 10-17-23 | 11-18-25 |
|   | PRESSURE DROP (In H2O)         |                                 | 0.02   | 0.03   | 0.043   | 0.057   | 0.074   | 0.092    | 0.112    |
|   | NOISE CRITERIA (NC)            |                                 | <10    | <10    | <10     | <10     | <10     | 15       | 17       |

### SLOT WIDTH

| SLOT WIDTH                              |                                | CFM / 4FT in direction of throw | 300    | 360    | 420     | 480     | 540     | 600      | 660      |
|---|--------------------------------|---------------------------------|--------|--------|---------|---------|---------|----------|----------|
| <b>3"</b><br>INLET DUCT<br>12" DIAMETER | OUTLET VELOCITY - ( FT / MIN ) |                                 | 418    | 502    | 587     | 672     | 758     | 841      | 926      |
|   | THROW / FT                     |                                 | 5-8-12 | 6-9-15 | 7-12-17 | 8-14-19 | 9-15-21 | 10-17-23 | 11-18-25 |
|   | PRESSURE DROP (In H2O)         |                                 | 0.016  | 0.025  | 0.036   | 0.048   | 0.062   | 0.079    | 0.096    |
|   | NOISE CRITERIA (NC)            |                                 | <10    | <10    | <10     | <10     | <10     | <10      | 16       |

\*NOTE: Volumes and outlet velocity are calculated by plenum 4 feet long.

**NOTES:** FOR APPLICATION OF PERFORMANCE DATA IN THESE TABLES PLEASE REFER TO ENGINEERING DATA.

1- THROW VALUES ARE BASED ON AN ACTIVE SECTION 4 FEET LONG, PLEASE CONSULT ENGINEERING DATA FOR LENGTHS OTHER THEN 4 FEET.

2- THROW VALUES ARE GIVEN FOR 150, 100 & 50 FPM TERMINAL VELOCITIES.

3- NC SOUND PRESSURE LEVEL NOISE CRITERIAL VALUES ARE BASED ON A 4 FEET ACTIVE LINEAR DIFFUSER LENGHT AND ROOM ABSORPTION OF 10db. FOR SOUND POWER LEVEL (Lw) Re: 10<sup>-12</sup> WATTS. CONSULT ENGINEERING DATA FOR LENGTHS OTHER THAN 4 FEET.

4- HORIZONTAL THROW IN FT. (ONE WAY) VALUES, BASED ON TEST WITH A COOLING TEMPERATURE DIFFERENTIAL ON 20°F. FOR TWO WAY HORIZONTAL THROW APPLICATION, PROPORTION CFM AND NUMBER OF SLOTS SUPPLYING AIR IN EACH OPPOSITE DIRECTION ON HORIZONTAL THROW AND SELECT FROM DATA IN THESE TABLES FOR EACH OPPOSITE ONE WAY DIRECTION THROW.

# EXTRUDED ALUMINUM HIGH AIR HANDLING CAPACITY SUPPLY LINEAR DIFFUSER - SLOT BORDER TYPE-O

# DLIAA-O MODEL

PERFORMANCE (RETURN)

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SLOT WIDTH

|   |  |           |            |            |            |
|---|--|-----------|------------|------------|------------|
| <b>1"</b><br>INLET DUCT<br>8" DIAMETER" | <b>CFM / 4FT in direction of throw</b> | <b>34</b> | <b>111</b> | <b>188</b> | <b>265</b> |
|   | OUTLET VELOCITY - ( FT / MIN )         | 100       | 300        | 500        | 800        |
|   | PRESSURE DROP (In H2O)                 | 0.006     | 0.019      | 0.043      | 0.08       |
|   | NOISE CRITERIA (NC)                    | <10       | <10        | 11         | 17         |
| SLOT WIDTH                              |  |           |            |            |            |

|  |  |           |            |            |            |
|--|--|-----------|------------|------------|------------|
| <b>1.5"</b><br>INLET DUCT<br>10" DIAMETER" | <b>CFM / 4FT in direction of throw</b> | <b>53</b> | <b>168</b> | <b>283</b> | <b>398</b> |
|  | OUTLET VELOCITY- ( FT / MIN )          | 100       | 300        | 500        | 800        |
|  | PRESSURE DROP (In H2O)                 | 0.006     | 0.021      | 0.049      | 0.094      |
|  | NOISE CRITERIA (NC)                    | <10       | <10        | 16         | 20         |
| SLOT WIDTH                                 |  |           |            |            |            |

|  |  |           |            |            |            |
|--|--|-----------|------------|------------|------------|
| <b>2"</b><br>INLET DUCT<br>12" DIAMETER" | <b>CFM / 4FT in direction of throw</b> | <b>66</b> | <b>221</b> | <b>376</b> | <b>531</b> |
|  | OUTLET VELOCITY- ( FT / MIN )          | 100       | 300        | 500        | 800        |
|  | PRESSURE DROP (In H2O)                 | 0.006     | 0.021      | 0.053      | 0.1        |
|  | NOISE CRITERIA (NC)                    | <10       | <10        | 16         | 20         |
| SLOT WIDTH                               |  |           |            |            |            |

|  |  |           |            |            |            |
|--|--|-----------|------------|------------|------------|
| <b>2.5"</b><br>INLET DUCT<br>12" DIAMETER" | <b>CFM / 4FT in direction of throw</b> | <b>84</b> | <b>277</b> | <b>470</b> | <b>663</b> |
|  | OUTLET VELOCITY- ( FT / MIN )          | 100       | 300        | 500        | 800        |
|  | PRESSURE DROP (In H2O)                 | 0.006     | 0.021      | 0.054      | 0.101      |
|  | NOISE CRITERIA (NC)                    | <10       | <10        | 14         | 25         |
| SLOT WIDTH                                 |  |           |            |            |            |

|  |  |            |            |            |            |
|--|--|------------|------------|------------|------------|
| <b>3"</b><br>INLET DUCT<br>12" DIAMETER" | <b>CFM / 4FT in direction of throw</b> | <b>100</b> | <b>332</b> | <b>564</b> | <b>796</b> |
|  | OUTLET VELOCITY- ( FT / MIN )          | 100        | 300        | 500        | 800        |
|  | PRESSURE DROP (In H2O)                 | 0.006      | 0.022      | 0.052      | 0.098      |
|  | NOISE CRITERIA (NC)                    | <10        | <10        | 17         | 28         |
| SLOT WIDTH                               |  |            |            |            |            |

\*NOTE1: RECOMENDED TO SELECT A RETURN DIFFUSER WITH A VELOCITY CLOSE TO 500 FT/MIN TO KEEP THE APPROPRIATE NC.

\*NOTE2: Volumes and outlet velocity are calculated by plenum 4 feet long.

**NOTES:** FOR APPLICATION OF PERFORMANCE DATA IN THESE TABLES PLEASE REFER TO ENGINEERING DATA.

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- 2- THROW VALUES ARE GIVEN FOR 150, 100 & 50 FPM TERMINAL VELOCITIES.
- 3- NC SOUND PRESSURE LEVEL NOISE CRITERIAL VALUES ARE BASED ON A 4 FEET ACTIVE LINEAR DIFFUSER LENGHT AND ROOM ABSORPTION OF 10db. FOR SOUND POWER LEVEL (Lw) Re: 10<sup>-12</sup> WATTS. CONSULT ENGINEERING DATA FOR LENGTHS OTHER THAN 4 FEET.
- 4- HORIZONTAL THROW IN FT. (ONE WAY) VALUES, BASED ON TEST WITH A COOLING TEMPERATURE DIFFERENTIAL ON 20°F. FOR TWO WAY HORIZONTAL THROW APPLICATION, PROPORTION CFM AND NUMBER OF SLOTS SUPPLYING AIR IN EACH OPPOSITE DIRECTION ON HORIZONTAL THROW AND SELECT FROM DATA IN THESE TABLES FOR EACH OPPOSITE ONE WAY DIRECTION THROW.