

VARIABLE SWIRL DIFFUSER

MODEL: SW-V-E

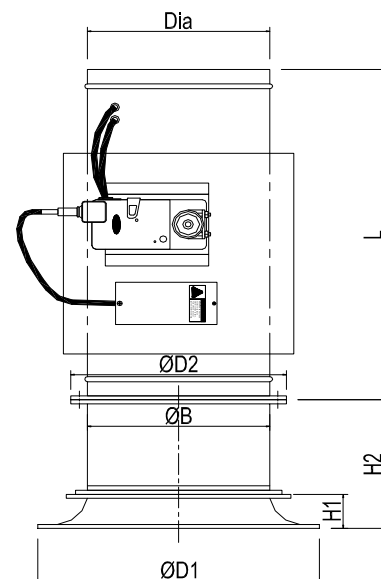
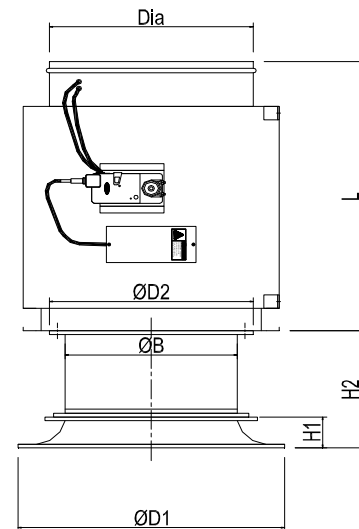
FEATURES:

- **KYODO** series **SW-V-E variable swirl diffusers** are applicable for spaces with a height of more than 3.8m, such as airport, theatre, stadium, hall, assembly rooms and etc.
- Space temperature control / air flow control.
- Control signal from a thermostat or Building Automation System (BAS).
- It can be used in a stand alone system or interfaced with BACnet / LonWorks system.
- SW-V-E adopts hydrokinetics principle for the design of its blade, by which the blade pushes the current by means of swirl with a certain initial velocity to achieve a larger throw distance and area, and more efficient convection current effect.
- The blade can change its quadrant angle to horizontal, slant and vertical directions to adapt to different conditions.
- Constructed of aluminium and steel sheet metal.



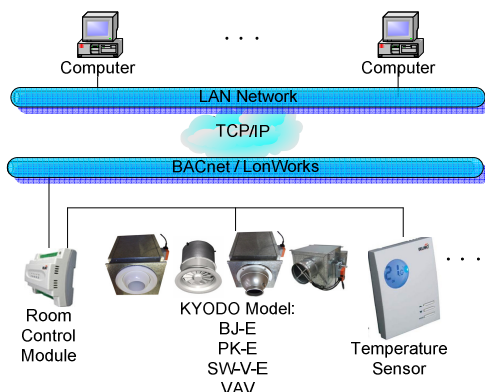
ACTUATOR:

Power Supply AC 24V, 50 / 60 Hz.
DC 24V



FINISH:

Standard finish in baked white enamel.
Other colours are available on request.



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VARIABLE SWIRL DIFFUSER

TECHNICAL PERFORMANCE DATA

MODEL: SW-V-E

(Condition C):

| | | | | | | |
|------|--------------------|------|------|------|------|-------|
| Φ315 | Air Volume CMH | 560 | 840 | 1120 | 1400 | 1680 |
| | Throw (m) | 3.0 | 5.5 | 7.5 | 9.0 | 11.3 |
| | Pressure Drop (Pa) | 14 | 26 | 42 | 64 | 92 |
| | NC | 36 | 46 | 52 | 58 | 62 |
| Φ400 | CMH | 900 | 1360 | 1810 | 2260 | 2715 |
| | Throw (m) | 4.0 | 5.6 | 7.8 | 10.0 | 13.0 |
| | Press Drop (Pa) | 14 | 25 | 40 | 61 | 88 |
| | NC | 35 | 47 | 52 | 56 | 61 |
| Φ630 | CMH | 2245 | 3365 | 4490 | 5610 | 6730 |
| | Throw (m) | 5.0 | 8.5 | 11.5 | 13.5 | 15.0 |
| | Press Drop (Pa) | 12 | 23 | 36 | 54 | 75 |
| | NC | 36 | 48 | 53 | 57 | 62 |
| Φ800 | CMH | 3620 | 5430 | 7240 | 9050 | 10860 |
| | Throw (m) | 11.0 | 19.0 | 22.0 | 24.0 | 25.0 |
| | Press Drop (Pa) | 13 | 25 | 43 | 61 | 90 |
| | NC | 35 | 48 | 54 | 58 | 62 |

- Performance data are tested with blades fully open, which provides maximum vertical throw.
- NC - Based on room absorption of 10dB, re 10⁻¹² watts.
- Throw - Throw at 0.5m/s terminal velocity in metres.

(Condition A):

| | | | | | | | |
|------|--------------------|------|------|------|------|-------|------|
| Φ315 | Air Volume CMH | 560 | 840 | 1120 | 1400 | 1680 | |
| | Throw (m) | H | 1.2 | 1.5 | 1.6 | 1.8 | 2.0 |
| | | V | 0.4 | 0.9 | 1.3 | 2.7 | 3.3 |
| | Pressure Drop (Pa) | 21 | 42 | 70 | 108 | 150 | |
| NC | 38 | 49 | 55 | 60 | 65 | | |
| Φ400 | CMH | 900 | 1360 | 1810 | 2260 | 2715 | |
| | Throw (m) | H | 1.8 | 2.8 | 3.2 | 3.5 | 3.6 |
| | | V | 0.5 | 0.8 | 1.0 | 1.5 | 3.4 |
| | Press Drop (Pa) | 21 | 43 | 71 | 107 | 155 | |
| NC | 36 | 48 | 53 | 58 | 63 | | |
| Φ630 | CMH | 2245 | 3365 | 4490 | 5610 | 6730 | |
| | Throw (m) | H | 2.5 | 3.0 | 4.8 | 6.0 | 8.0 |
| | | V | 0.5 | 0.6 | 1.2 | 2.0 | 5.0 |
| | Press Drop (Pa) | 21 | 44 | 72 | 116 | 163 | |
| NC | 39 | 50 | 56 | 60 | 66 | | |
| Φ800 | CMH | 3620 | 5430 | 7240 | 9050 | 10860 | |
| | Throw (m) | H | 5.0 | 7.4 | 9.4 | 13.0 | 14.5 |
| | | V | 0.8 | 1.0 | 2.1 | 3.6 | 4.9 |
| | Press Drop (Pa) | 20 | 42 | 71 | 109 | 162 | |
| NC | 38 | 50 | 57 | 61 | 66 | | |

- NC - Based on room absorption of 10dB, re 10⁻¹² watts.
- Throw - Throw at 0.5m/s terminal velocity in metres.
H - Horizontal
V - Vertical



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VARIABLE SWIRL DIFFUSER

Condition A:



The blade could be adjusted to refrigeration mode to adapt to summer conditions. Cold air blows out by means of diffusing swirls to facilitate air convection.

Condition B:



The blade could be adjusted to normal temperature mode to adapt to the fresh wind conditions in spring and autumn to supply fresh wind into the indoors in large scale.

Condition C:



The blade could be adjusted to warming mode to adapt to winter condition. Warm jets are amassed vertically to be supplied to areas where there are human activities.

SW-V-E DIMENSIONS:

| SIZE | ΦB | ΦD1 | ΦD2 | H1 | H2 | L |
|------|------|-------|------|-----|-----|-----|
| 315 | Φ315 | Φ465 | Φ380 | 63 | 205 | 500 |
| 400 | Φ400 | Φ575 | Φ465 | 80 | 240 | 500 |
| 630 | Φ630 | Φ870 | Φ708 | 125 | 385 | 600 |
| 800 | Φ800 | Φ1075 | Φ870 | 160 | 570 | 600 |

SPOT LOUVRE/PUNKAH LOUVRE

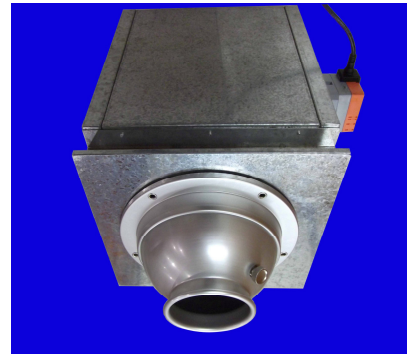
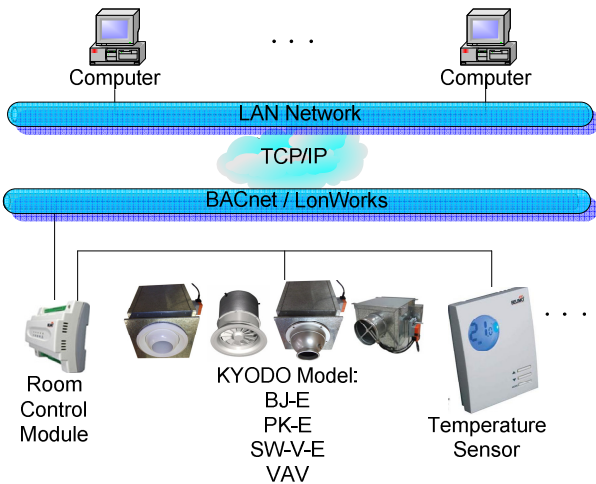
MODEL: PK-E

FEATURES:

- **KYODO PK-E** nozzle type outlet is most suitable for spot cooling, because its direction and volume of air can be adjusted easily to suit one's requirement.
- Space temperature control / air flow control.
- Control signal from a thermostat or Building Automation System (BAS).
- It can be used in a stand alone system or interfaced with BACnet / LonWorks system.
- Punkah Louvres are recommended in aircraft, electrical or electronic plants and telephone exchange.
- Constructed of aluminium alloy.

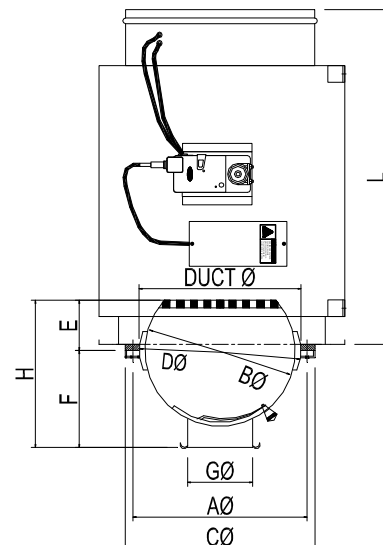
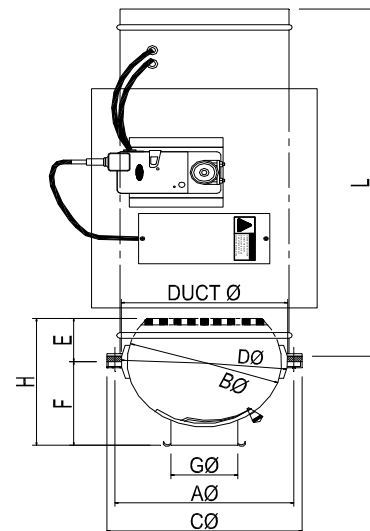
FINISH:

Standard finish in natural anodizing.
Other colours in baked enamel are available on request.



ACTUATOR:

Power Supply AC 24V, 50 / 60 Hz.
DC 24V



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SPOT LOUVRE/PUNKAH LOUVRE

TECHNICAL PERFORMANCE DATA

MODEL: PK-E

| Size | Nozzle Velocity (m/s) | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---------|-----------------------|-----|-----|------|------|------|------|------|------|------|------|------|
| No. 3 | Air Volume (CMH) | 8 | 12 | 16 | 20 | 24 | 29 | 33 | 36 | 41 | 46 | 49 |
| | Throw (m) | 0.8 | 1.2 | 1.5 | 1.9 | 2.3 | 2.6 | 2.9 | 3.4 | 3.7 | 4.1 | 4.5 |
| | S.P. (Pa) | 8 | 12 | 18 | 27 | 33 | 47 | 55 | 69 | 86 | 96 | 113 |
| | NC | <20 | <20 | 20 | 25 | 28 | 31 | 34 | 36 | 38 | 40 | 42 |
| No. 3.5 | Air Volume (CMH) | 11 | 16 | 21 | 26 | 32 | 37 | 42 | 47 | 53 | 58 | 63 |
| | Throw (m) | 0.9 | 1.3 | 1.7 | 2.2 | 2.6 | 3.0 | 3.4 | 4.0 | 4.4 | 4.8 | 5.2 |
| | S.P. (Pa) | 8 | 12 | 19 | 28 | 35 | 49 | 59 | 75 | 92 | 105 | 127 |
| | NC | <20 | <20 | 20 | 26 | 28 | 32 | 34 | 36 | 39 | 41 | 43 |
| No. 4 | Air Volume (CMH) | 14 | 21 | 28 | 36 | 42 | 49 | 57 | 64 | 71 | 78 | 85 |
| | Throw (m) | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.4 | 3.9 | 4.6 | 5.0 | 5.5 | 6.0 |
| | S.P. (Pa) | 8 | 13 | 20 | 29 | 36 | 50 | 62 | 77 | 98 | 114 | 130 |
| | NC | <20 | <20 | 21 | 26 | 29 | 32 | 35 | 37 | 39 | 41 | 43 |
| No. 4.5 | Air Volume (CMH) | 19 | 29 | 38 | 48 | 57 | 67 | 76 | 86 | 95 | 105 | 115 |
| | Throw (m) | 1.1 | 1.5 | 2.2 | 2.8 | 3.3 | 3.8 | 4.4 | 5.0 | 5.6 | 6.2 | 6.7 |
| | S.P. (Pa) | 8 | 14 | 21 | 29 | 37 | 51 | 63 | 82 | 102 | 120 | 135 |
| | NC | <20 | <20 | 21 | 26 | 29 | 32 | 35 | 37 | 39 | 41 | 43 |
| No. 5 | Air Volume (CMH) | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 107 | 119 | 131 | 143 |
| | Throw (m) | 1.3 | 1.6 | 2.5 | 3.1 | 3.7 | 4.3 | 4.9 | 5.6 | 6.2 | 6.8 | 7.6 |
| | S.P. (Pa) | 9 | 15 | 21 | 30 | 38 | 53 | 65 | 87 | 108 | 125 | 140 |
| | NC | <20 | <20 | 22 | 27 | 30 | 33 | 36 | 38 | 40 | 42 | 44 |
| No. 6 | Air Volume (CMH) | 32 | 48 | 64 | 79 | 95 | 111 | 127 | 143 | 159 | 175 | 191 |
| | Throw (m) | 1.5 | 2.3 | 3.0 | 3.7 | 4.4 | 5.2 | 5.9 | 6.6 | 7.3 | 8.2 | 9.0 |
| | S.P. (Pa) | 9 | 15 | 22 | 30 | 39 | 56 | 73 | 90 | 112 | 128 | 143 |
| | NC | <20 | <20 | 23 | 28 | 31 | 34 | 37 | 39 | 41 | 43 | 46 |
| No. 7 | Air Volume (CMH) | 46 | 69 | 92 | 115 | 138 | 160 | 184 | 206 | 229 | 252 | 275 |
| | Throw (m) | 1.8 | 2.8 | 3.6 | 4.5 | 5.4 | 6.3 | 7.2 | 8.2 | 9.1 | 10.2 | 11.1 |
| | S.P. (Pa) | 9 | 14 | 22 | 30 | 40 | 58 | 75 | 92 | 115 | 135 | 152 |
| | NC | <20 | <20 | 24 | 29 | 32 | 36 | 38 | 40 | 42 | 44 | 47 |
| No. 8 | Air Volume (CMH) | 57 | 86 | 113 | 141 | 170 | 198 | 226 | 265 | 283 | 311 | 339 |
| | Throw (m) | 2.2 | 3.3 | 4.3 | 5.4 | 6.5 | 7.5 | 8.5 | 9.8 | 11.1 | 12.2 | 13.3 |
| | S.P. (Pa) | 9 | 15 | 22 | 31 | 42 | 62 | 75 | 94 | 118 | 140 | 162 |
| | NC | <20 | <20 | 25 | 30 | 34 | 38 | 40 | 42 | 44 | 46 | 48 |
| No. 10 | Air Volume (CMH) | 111 | 168 | 222 | 277 | 332 | 388 | 443 | 499 | 554 | 609 | 685 |
| | Throw (m) | 2.8 | 4.2 | 5.5 | 6.6 | 8.3 | 9.5 | 12.2 | 13.2 | 14.1 | 15.7 | 17.2 |
| | S.P. (Pa) | 9 | 16 | 23 | 32 | 44 | 65 | 76 | 98 | 124 | 149 | 173 |
| | NC | <20 | 20 | 27 | 33 | 37 | 40 | 42 | 44 | 47 | 49 | 52 |
| No. 12 | Air Volume (CMH) | 164 | 231 | 308 | 385 | 462 | 539 | 616 | 716 | 796 | 876 | 923 |
| | Throw (m) | 3.3 | 4.8 | 6.6 | 8.1 | 9.8 | 12.0 | 13.2 | 14.9 | 16.5 | 18.4 | 20.2 |
| | S.P. (Pa) | 9 | 17 | 23 | 34 | 46 | 66 | 80 | 100 | 128 | 151 | 172 |
| | NC | <20 | 21 | 28 | 34 | 38 | 42 | 44 | 46 | 49 | 54 | 59 |
| No. 14 | Air Volume (CMH) | 204 | 305 | 406 | 510 | 612 | 714 | 815 | 918 | 1020 | 1122 | 1224 |
| | Throw (m) | 4.0 | 6.2 | 8.2 | 10.0 | 12.0 | 14.0 | 16.5 | 18.5 | 20.5 | 22.9 | 25.2 |
| | S.P. (Pa) | 8 | 17 | 24 | 35 | 47 | 66 | 79 | 99 | 126 | 152 | 171 |
| | NC | <20 | 22 | 29 | 35 | 39 | 43 | 46 | 48 | 51 | 53 | 56 |
| No. 16 | Air Volume (CMH) | 299 | 448 | 598 | 747 | 897 | 1048 | 1198 | 1348 | 1495 | 1645 | 1794 |
| | Throw (m) | 4.4 | 6.7 | 9.0 | 11.0 | 13.0 | 16.2 | 18.1 | 20.2 | 22.3 | 24.9 | 27.5 |
| | S.P. (Pa) | 9 | 16 | 25 | 35 | 46 | 64 | 79 | 99 | 120 | 147 | 170 |
| | NC | <20 | 22 | 29 | 36 | 40 | 44 | 48 | 50 | 53 | 56 | 59 |
| No. 18 | Air Volume (CMH) | 382 | 573 | 764 | 956 | 1146 | 1331 | 1528 | 1719 | 1910 | 2101 | 2292 |
| | Throw (m) | 5.0 | 7.4 | 10.0 | 12.0 | 15.0 | 17.3 | 19.7 | 22.1 | 24.5 | 27.4 | 30.2 |
| | S.P. (Pa) | 10 | 16 | 24 | 34 | 45 | 63 | 78 | 98 | 119 | 145 | 170 |
| | NC | <20 | 23 | 30 | 36 | 41 | 45 | 49 | 52 | 55 | 58 | 61 |
| No. 20 | Air Volume (CMH) | 543 | 815 | 1086 | 1358 | 1629 | 1901 | 2173 | 2444 | 2716 | 2988 | 3259 |
| | Throw (m) | 6.0 | 9.0 | 12.1 | 15.0 | 18.0 | 21.5 | 24.5 | 27.3 | 30.0 | 33.3 | 35.5 |
| | S.P. (Pa) | 10 | 17 | 24 | 33 | 44 | 63 | 78 | 97 | 116 | 142 | 168 |
| | NC | <20 | 24 | 31 | 37 | 43 | 47 | 51 | 54 | 57 | 60 | 63 |

- Throw - Throw at 0.5m/s terminal velocity in metres.
- SP - Static Pressure drops are in Pascals.
- NC - Noise Criterion based upon room absorption of 10 dB.



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SPOT LOUVRE/PUNKAH LOUVRE

PK-E DIMENSIONS:

| Size | L | A | B | C | D | E | F | G | H | Duct Φ | Screw Holes |
|--------|-----|-----|-----|-----|-----|----|-----|-----|-----|-------------|-------------|
| No.3 | 400 | 97 | 75 | 115 | 82 | 17 | 53 | 38 | 70 | 85 | 3 |
| No.3.5 | 400 | 107 | 85 | 125 | 92 | 21 | 58 | 43 | 79 | 95 | 3 |
| No.4 | 400 | 122 | 100 | 140 | 107 | 24 | 65 | 50 | 89 | 110 | 4 |
| No.4.5 | 400 | 137 | 115 | 155 | 122 | 29 | 73 | 58 | 102 | 125 | 4 |
| No.5 | 400 | 152 | 130 | 170 | 137 | 33 | 82 | 65 | 115 | 140 | 5 |
| No.6 | 500 | 172 | 150 | 190 | 158 | 38 | 94 | 75 | 132 | 160 | 5 |
| No.7 | 500 | 213 | 178 | 231 | 185 | 38 | 111 | 90 | 149 | 190 | 5 |
| No.8 | 500 | 232 | 200 | 250 | 204 | 44 | 120 | 100 | 164 | 200 | 5 |
| No.10 | 500 | 304 | 267 | 324 | 276 | 50 | 174 | 140 | 224 | 280 | 5 |
| No.12 | 600 | 342 | 305 | 363 | 314 | 63 | 200 | 165 | 263 | 318 | 5 |
| No.14 | 600 | 342 | 305 | 363 | 314 | 60 | 185 | 190 | 245 | 318 | 5 |
| No.16 | 600 | 451 | 410 | 470 | 419 | 92 | 248 | 230 | 340 | 425 | 8 |
| No.18 | 600 | 511 | 470 | 535 | 479 | 95 | 295 | 260 | 390 | 486 | 8 |
| No.20 | 600 | 511 | 470 | 535 | 479 | 95 | 295 | 310 | 390 | 486 | 8 |

BALL JET DIFFUSER

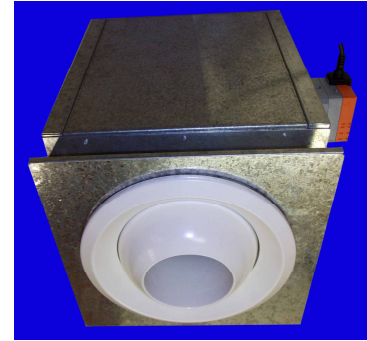
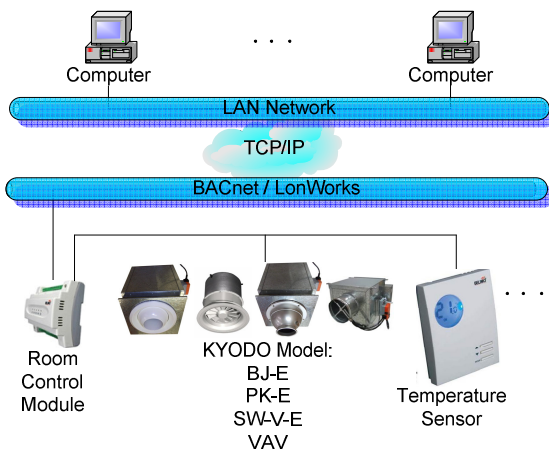
MODEL: BJ-E

FEATURES:

- **KYODO BJ-E** air jet diffuser provides aesthetically pleasing appearance for large open areas, such as concert hall, airport, theatre, museum & etc.
- Space temperature control / air flow control.
- Control signal from a thermostat or Building Automation System (BAS).
- It can be used in a stand alone system or interfaced with BACnet / LonWorks system.
- Its nozzle type outlet is most suitable for spot cooling or heating, because its direction of air can be adjusted easily to suit one's requirement.
- The maximum adjustment angle of the outlet is $\pm 30^\circ$ in any direction.
- Low noise level and low pressure drop.
- Constructed of aluminium / galvanized Steel.

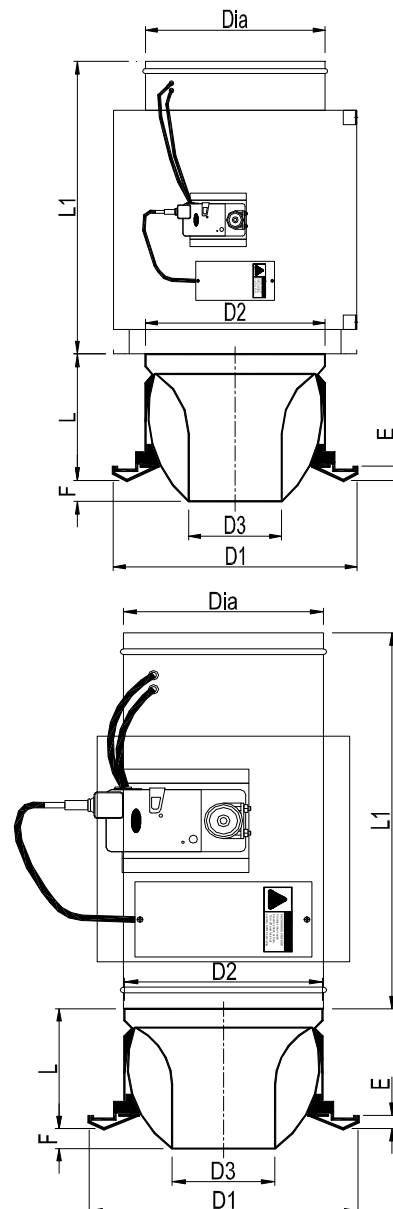
FINISH:

Standard finish in baked white enamel.
Other colours are available on request.



ACTUATOR:

Power Supply AC 24V, 50 / 60 Hz.
DC 24V



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BALL JET DIFFUSER

BJ-E DIMENSIONS:

| Size | Dia mm | D1 | D2 | D3 | E | F | L | L1 | Opening Size |
|---------|--------|-----|-----|-----|----|----|-----|-----|--------------|
| No.6.5 | Φ200 | 198 | 158 | 94 | 16 | 10 | 106 | 400 | Φ168 |
| No.8 | Φ250 | 260 | 198 | 104 | 16 | 20 | 130 | 400 | Φ218 |
| No.10 | Φ300 | 304 | 248 | 134 | 16 | 23 | 154 | 500 | Φ263 |
| No.12.5 | Φ350 | 386 | 314 | 182 | 23 | 28 | 190 | 500 | Φ330 |
| No.16 | Φ400 | 488 | 398 | 230 | 24 | 40 | 230 | 600 | Φ415 |
| No.20 | Φ400 | 596 | 498 | 286 | 28 | 60 | 290 | 600 | Φ520 |

TECHNICAL PERFORMANCE DATA

MODEL: BJ-E

| Size | Nozzle Velocity (m/s) | 3 | 5 | 7 | 10 | 13 | 15 | 17 | 20 |
|-------------------|-----------------------|------|------|------|------|------|------|------|------|
| No. 6.5 Φ 160 | Air Volume (CMH) | 75 | 125 | 175 | 250 | 325 | 375 | 425 | 500 |
| | Throw (m) | 4.0 | 6.8 | 9.5 | 13.4 | 17.4 | 20.0 | 22.1 | 25.2 |
| | S.P. (Pa) | 15 | 27 | 42 | 70 | 93 | 107 | 124 | 148 |
| | NC | 10 | 12 | 14 | 21 | 29 | 33 | 37 | 41 |
| No. 8 Φ 200 | Air Volume (CMH) | 95 | 155 | 215 | 310 | 400 | 460 | 520 | 615 |
| | Throw (m) | 4.6 | 7.8 | 10.5 | 15.1 | 19.5 | 22.5 | 25.4 | 30.1 |
| | S.P. (Pa) | 14 | 26 | 40 | 64 | 89 | 104 | 117 | 140 |
| | NC | 10 | 12 | 14 | 23 | 30 | 35 | 39 | 43 |
| No. 10 Φ 250 | Air Volume (CMH) | 155 | 255 | 360 | 510 | 660 | 765 | 865 | 1015 |
| | Throw (m) | 5.8 | 9.7 | 13.5 | 19.1 | 24.8 | 28.8 | 32.7 | 36.5 |
| | S.P. (Pa) | 14 | 24 | 39 | 63 | 88 | 102 | 115 | 138 |
| | NC | 11 | 14 | 19 | 25 | 33 | 37 | 40 | 45 |
| No. 12.5 Φ 315 | Air Volume (CMH) | 285 | 470 | 660 | 940 | 1220 | 1405 | 1595 | 1875 |
| | Throw (m) | 8.2 | 12.0 | 16.9 | 24.2 | 31.4 | 36.2 | 41.0 | 45.5 |
| | S.P. (Pa) | 14 | 23 | 40 | 69 | 91 | 106 | 120 | 142 |
| | NC | 12 | 20 | 26 | 35 | 41 | 45 | 49 | 54 |
| No. 16 Φ 400 | Air Volume (CMH) | 450 | 750 | 1050 | 1500 | 1945 | 2245 | 2545 | 2990 |
| | Throw (m) | 9.5 | 14.3 | 22.2 | 32.0 | 40.5 | 46.0 | 50.0 | 56.5 |
| | S.P. (Pa) | 13 | 22 | 38 | 66 | 90 | 105 | 118 | 139 |
| | NC | 14 | 24 | 31 | 39 | 47 | 52 | 54 | 56 |
| No. 20 Φ 500 | Air Volume (CMH) | 695 | 1160 | 1620 | 2315 | 3010 | 3470 | 3935 | 4630 |
| | Throw (m) | 10.0 | 16.6 | 23.2 | 33.2 | 41.0 | 48.0 | 52.0 | 58.0 |
| | S.P. (Pa) | 13 | 23 | 37 | 63 | 88 | 104 | 119 | 137 |
| | NC | 19 | 28 | 34 | 43 | 50 | 54 | 58 | 60 |

- Result of performance is tested under NATA, in accordance with ASHRAE STANDARD 70-2006.
- All values are tested at 0° angle of air discharge.
- SP - Static Pressure drops are in Pascals.
- NC - Noise Criterion based upon room absorption of 10 dB.
- Throw - Throw at 0.5m/s terminal velocity in metres.



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