

Circular Ceiling Diffusers

Models OD-1, OD-2, OD-10 and DE

Features

- 4 Model Types
- Fixed or Adjustable Air Pattern
- Surface or Duct Mounting
- Steel and Aluminium Construction
- Extensive Size Range
- Supply or Extract applications
- Optional damper



Air Diffusion

Grilles Diffusers Louvres Chilled Beams

Ruskin Air Management Limited
www.ruskinuk.co.uk

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Introduction

Circular cone ceiling or duct mounted diffusers, are capable of a high aspiration rate and have the capacity to handle large volumes of air at relatively low sound levels for supply and extract applications, making these diffusers particularly useful for installation in open plan areas such as auditoriums, airport lobbies, supermarkets and factories.

Four separate model types are available, Model OD-1, Model OD-2, Model OD-10 and Model DE.

Model OD-1 is a fixed horizontal air pattern diffuser having flush inner cones. Model OD-2 is a fixed horizontal air pattern diffuser with projecting inner cones. Model OD-10 has an adjustable flat central disc for horizontal throw or vertical discharge.

Models OD-1, OD-2 are fabricated from steel whilst the Model OD-10 is constructed from a combination of both aluminium and steel. All model types are finished in White polyester powder as standard, other colours are available as an optional extra.

Model DE has a versatile inner cone providing 5 adjustment positions, where the air pattern can be altered from horizontal throw to vertical projection. In addition the inner cone is easily removed for access or cleaning.

To complement the usual Model DE circular diffuser format the assembly can be incorporated into a square ceiling panel, to act as a tile replacement and co-ordinate with a 600 x 600mm ceiling grid system.

Fabricated in steel as standard with aluminium available as an extra cost option. Finished in White polyester powder as standard. Other colours are available as an optional extra.



Model OD-1



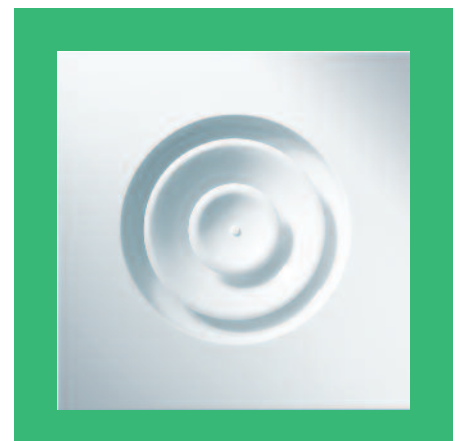
Model OD-2



Model OD-10

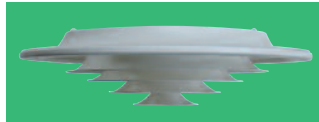
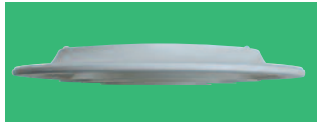


Model DE



Model DE100P Tile Replacement Panel

Models OD-1 and OD-2 Circular Ceiling Diffusers



Model OD-1

Model OD-2

Description

Models OD-1 and OD-2 circular ceiling diffusers are capable of handling greater air volumes and large temperature differentials due to the high induction rates (mixing of supply and room air) with relatively low noise levels.

Model OD-1 is a fixed horizontal air pattern diffuser having flush inner cones.

Model OD-2 is a fixed horizontal air pattern diffuser with projecting inner cones.

Optional butterfly and control deflectors are available.

Both Model types may be used for supply or extract systems and are suitable for installation in most commercial and residential applications.

Material

Steel as standard.

Construction

Fabricated from pressed steel having an outer flange conical section with inner cone assembly mechanically joined by rods.

Standard Installation

Method

Central screw fixing located in diffuser face using crossbar secured into duct above diffuser neck (Type 7).

Alternatively by using three screws for a peripheral fixing through the diffuser face directly into the ceiling (Type X).



Cross bar fixing Type 7

Installation Options

When using a damper or deflector unit, installation should be either by central screw fixing through the diffuser face into the damper with the damper fixed in position by angles (Type 8). Alternatively by using three screws for a peripheral fixing through the diffuser face directly into the ceiling (Type V) with the damper already secured into the duct.

Finish

Standard is White polyester powder to RAL 9010 (30% gloss) alternative finishes to RAL colours also available as an optional extra.

Standard Model Types

Model OD-1; Fixed horizontal air pattern circular diffuser with inner cones flush with outer flange.

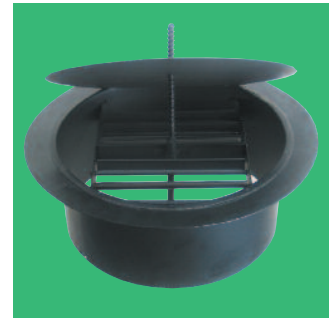
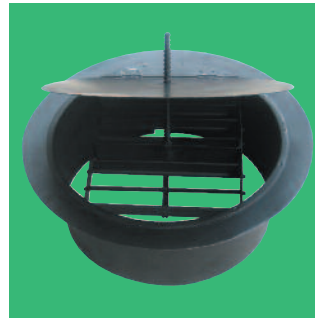
Model OD-2; Fixed horizontal air pattern circular diffuser with inner cones projecting below outer flange.

Accessories

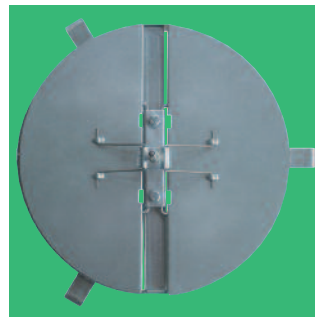
Deflector and single flap control damper with central teleflex screw operation, type E2. Butterfly damper having individual blade operation, Type J2.

Butterfly control damper having uniform blade operation with centrally located screw, Type J3.

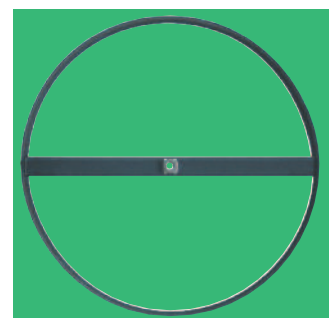
Spigot collar for installation using a cross member for central fixing type L2.



Deflector and Flap control damper Type E2



Butterfly and Deflector control damper Type J3



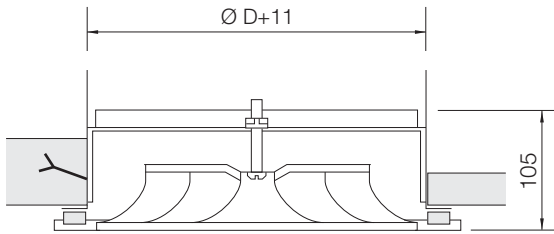
Butterfly damper Type J2

Spigot connection for installation incorporating a cross member for central fixing Type L2

Installation Guide

Installation 7

Installation with crossbar.
Designation: **OD-1/7, OD-2/7**

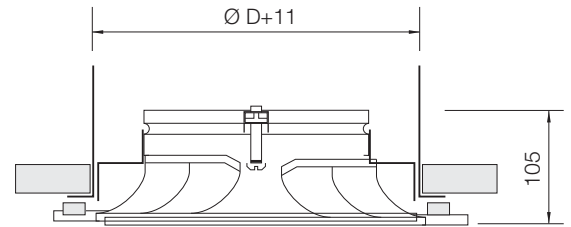


Built in Duct

Duct through the panel ceiling

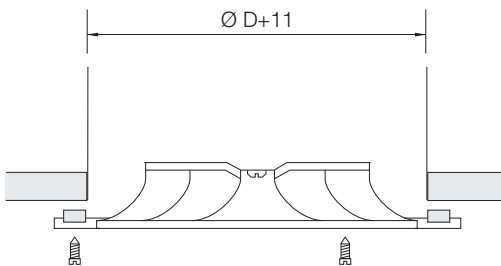
Installation 8

Installation on register fastened in the duct. Register has three fixing legs.
Designation: **OD-1/8 (L2, J2), OD-2/8 (L2, J2)**



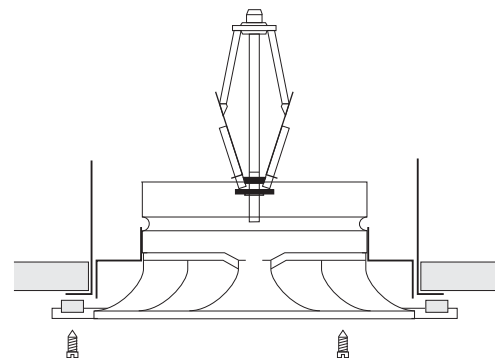
Installation X (without opening in the middle)

Direct installation in the ceiling with three screws
Designation: **OD-1/X, OD-2X**



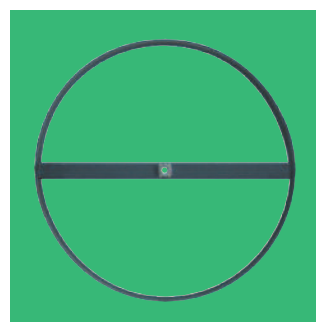
Installation V (with opening in the middle)

Direct installation in the ceiling with three screws, Register is previously fastened in the duct.
Designation: **OD-1/V (E2, J3), OD-2/V (E2, J3)**



Dimensions of volume control dampers L2, J2, J3, E2 for OD-1 and OD-2

Size	Ø D-52 (mm)	Ø D+24 (mm)	Ø D+11 (mm)
1	140	216	203
2	196	272	259
3	252	328	315
4	308	384	371
5	364	440	427
6	420	496	483
7	476	552	539
8	532	698	595



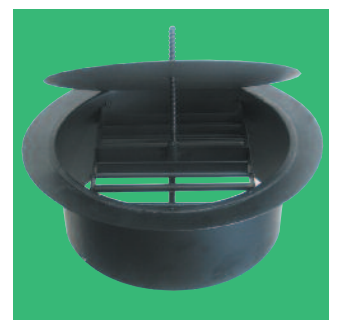
Model L2



Model J2

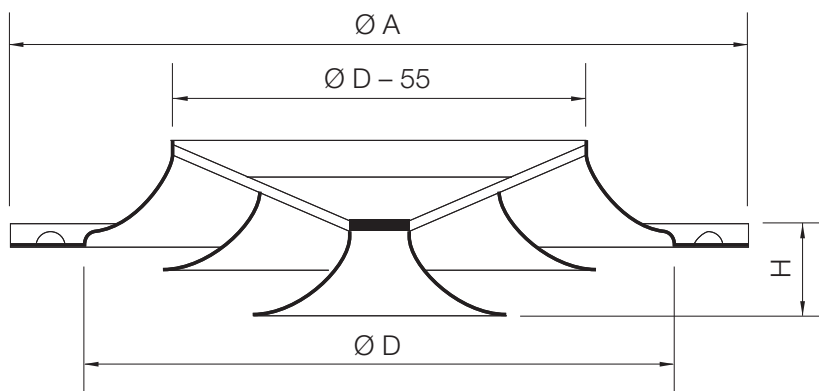
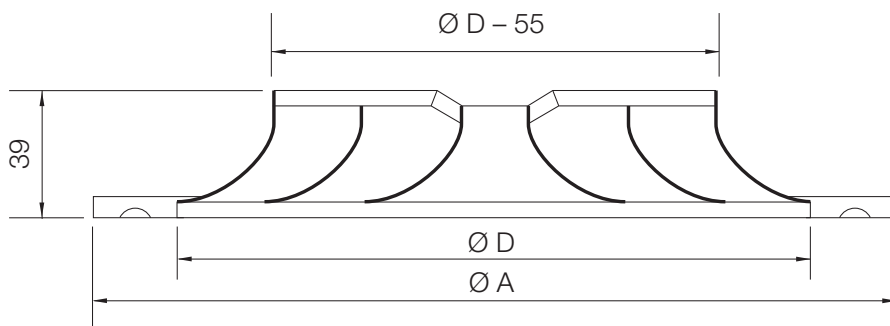


Model J3



Model E2

Dimensions

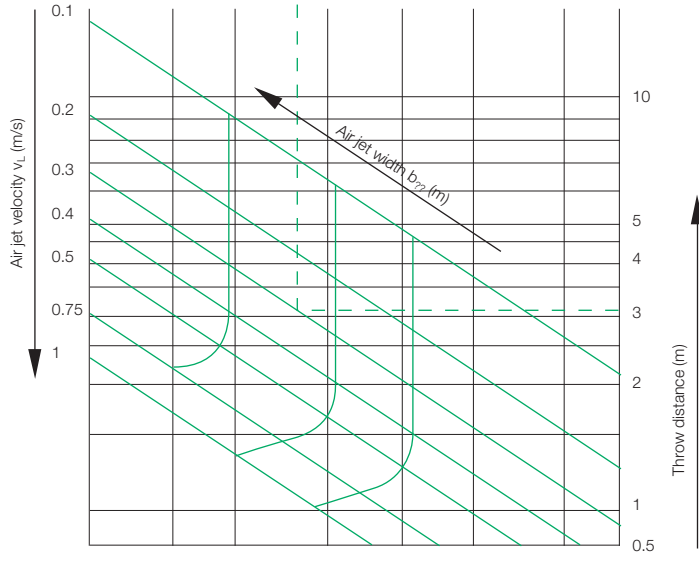
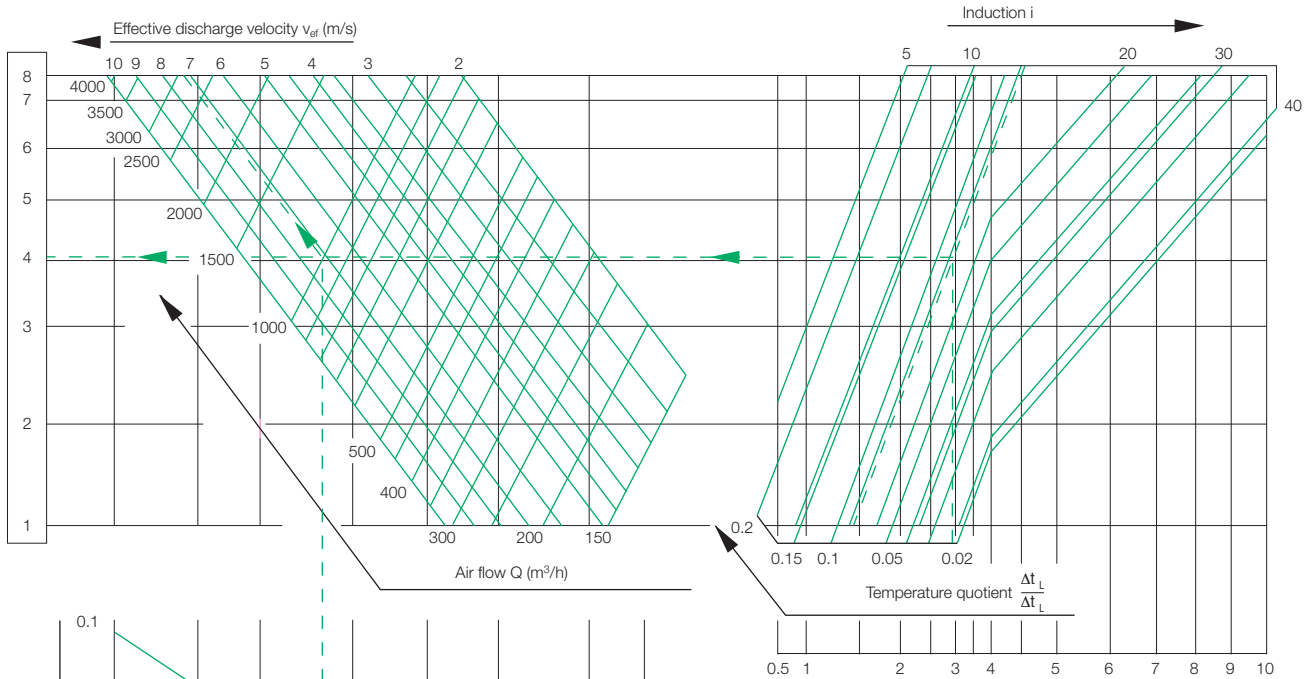


OD-1 and OD-2 dimensions

Size	D (mm)	A (mm)	H (mm)	OD-1 $A_{ef} (M^2)$	OD-2 $A_{ef} (M^2)$
1	192	244	30	0.0085	0.0090
2	248	300	45	0.0157	0.0167
3	304	356	60	0.0257	0.0282
4	360	412	75	0.0381	0.0422
5	416	468	90	0.0536	0.0618
6	472	542	98	0.0730	0.0812
7	528	598	112	0.0955	0.1037
8	584	654	126	0.1150	0.1235

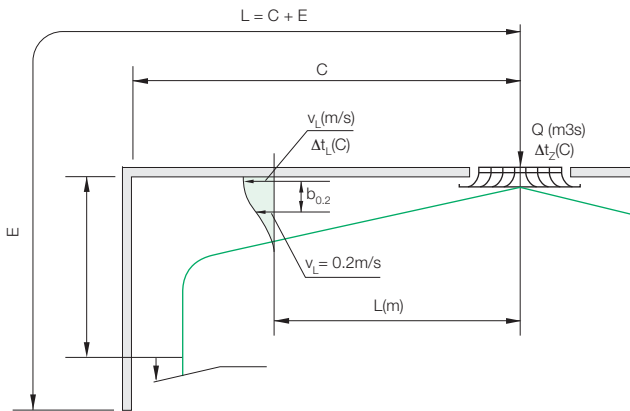
Performance Guide Model OD-1

Diagram for determining the size, induction and temperature of the air jet flow to the circular diffusers OD-1



- Q (m³/h)** Air flow
- L (m)** Throw distance
- v_{eff} (m/s)** Effective discharge air velocity
- V_L (m/s)** Max. air velocity at the throw distance L
- V_h (m/s)** Vertical velocity at distance h from ceiling by combining two counterdirectional air jets
- Δt_L (K)** Temperature difference between air jet and room temperature
- i** Induction ratio = total airstream volume flow/volume flow at diffuser discharge
- B_{0.2} (m)** Width of air jet is measured at a distance from ceiling where air flow velocity is 0.2 m/s

Performance Guide Model OD-1



Example

Given:

Air flow: $Q = 1000 \text{ m}^3/\text{h}$, $L = 3\text{m}$
 Air jet velocity: $V_L = 0.3 \text{ m/s}$
 Temperature difference: $\Delta t_z = 5 \text{ }^\circ\text{C}$

Solution:

From the diagram selected the diffuser OD-1 size 4.

effective outlet velocity $V_{ef} = 7.2 \text{ m/s}$
 temperature quotient $\Delta t_L / \Delta t_z = 0.08$
 temperature difference $\Delta t_L = 0.08 \times 5 = 0.4 \text{ }^\circ\text{C}$
 induction $i = 16$
 width of the air jet $b_{0.2} = 0.22\text{m}$

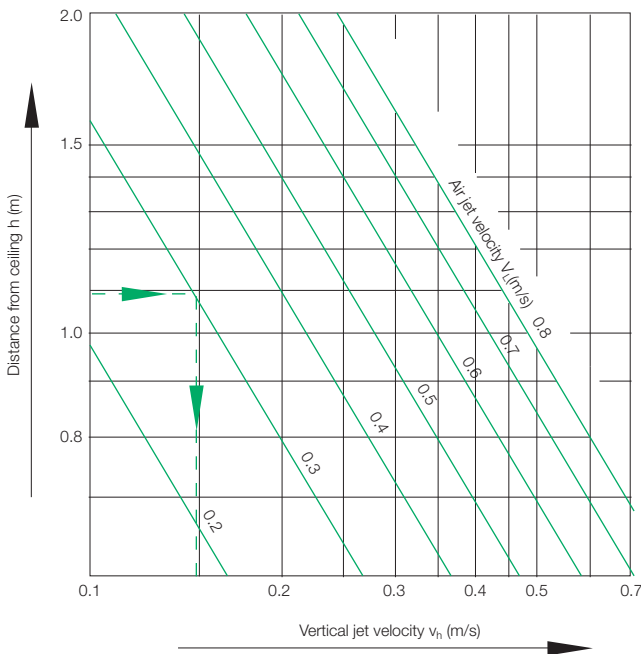
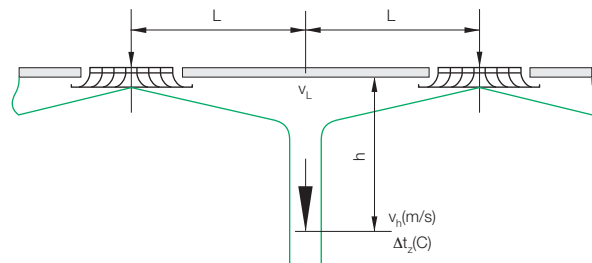


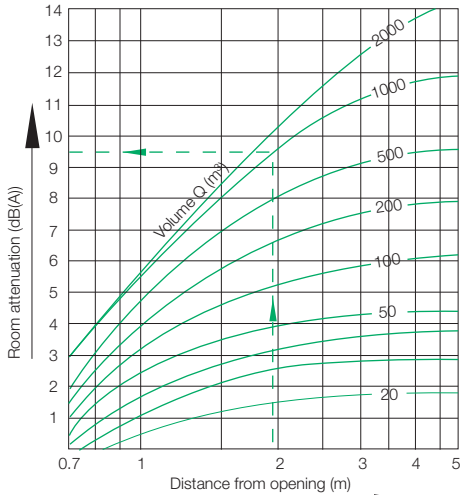
Diagram for determination of vertical velocity



Max temperature quotient $\Delta t_h / \Delta t_z$ determined using the diagram 1 for temperature quotient:

$$L_{\text{diagram}} = L + h$$

Performance Guide Model OD-1



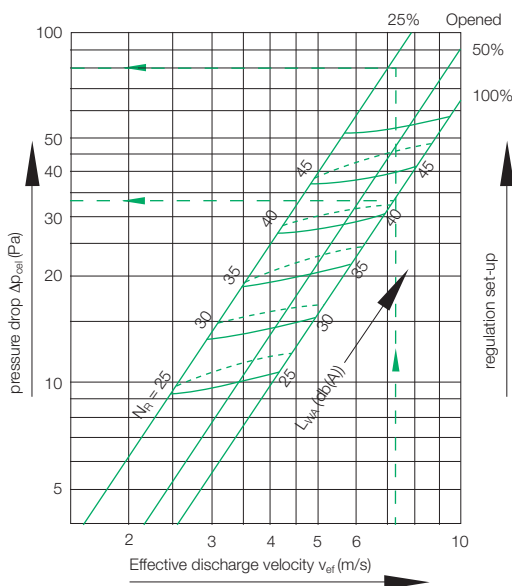
Room attenuation diagram

Q9 (m³) calculated volume, depending on room reflectance
 Q (m³) actual room volume

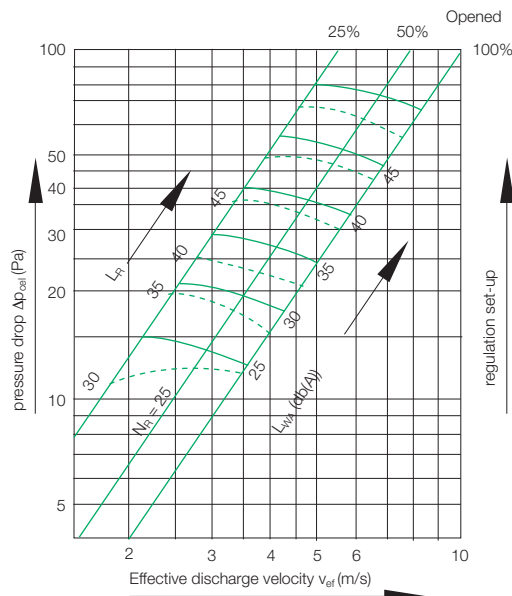
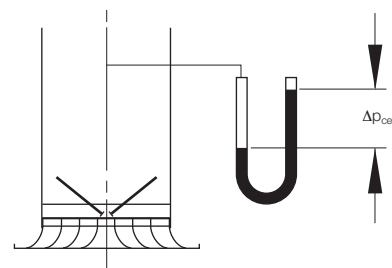
The following data are necessary to calculate the volume Q9.

1. Normal rooms Q9 = Q
2. Rooms with highly reflective walls Q9 = 0.5Q
3. Rooms with absorption walls Q9 = 2Q

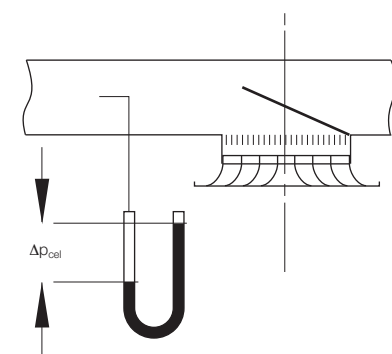
ΔP_{Cel} (Pa) Pressure drop
 L_{WA} (db(A)) Sound power level
 N_{R} Max. value according to ISO



Pressure drop diagram (Valid for volume control damper J2)

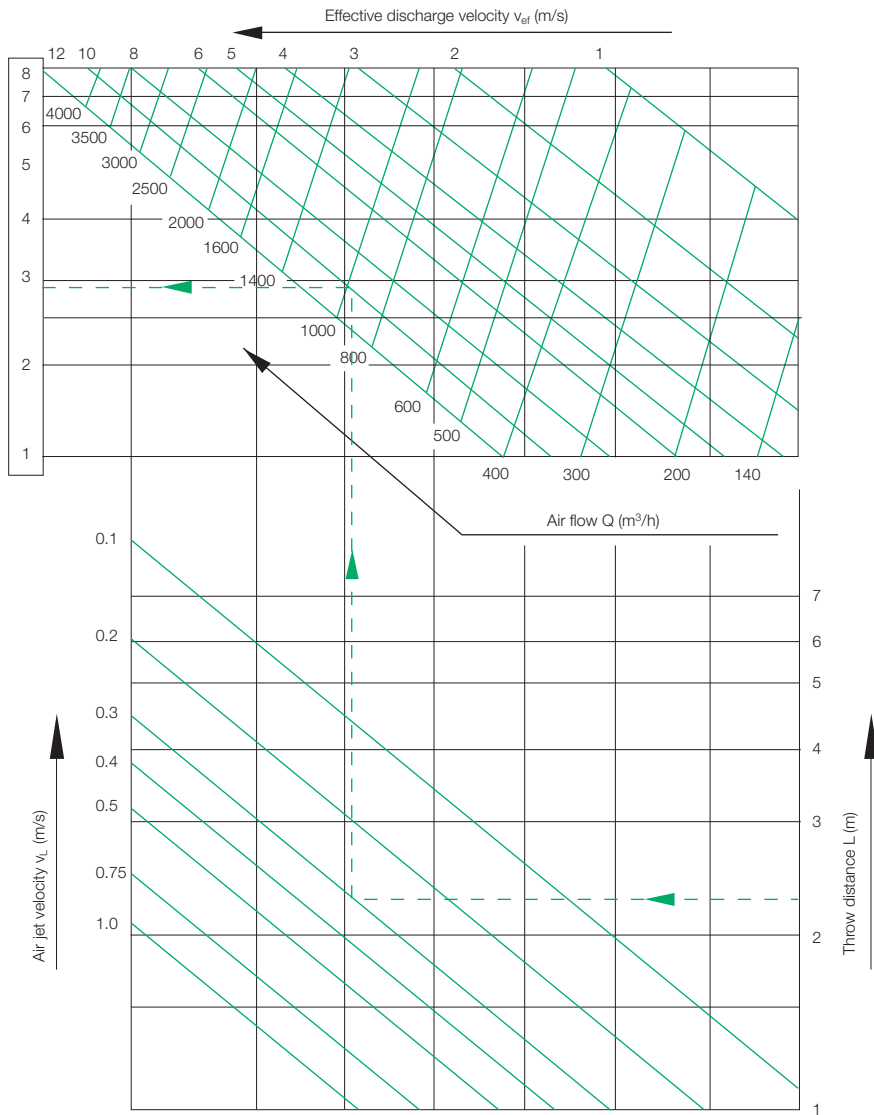


Pressure drop diagram (Valid for volume control damper E2)



Performance Guide Model OD-2

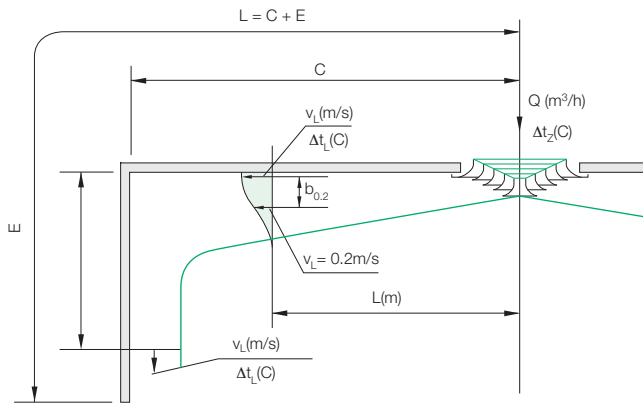
Sizing diagram for circular diffusers OD-2



Key to symbols

Q (m³/h)	Air flow
L (m)	Throw distance
v_{ef} (m/s)	Effective discharge air velocity Max. air velocity at
v_L (m/s)	The throw distance L vertical velocity at
v_h (m/s)	Distance h from ceiling by combining two counter directional air jets
Δt_z (K)	Temperature difference between supply and room air
Δt_L (K)	Temperature difference between air jet and room temperature
i	Induction ratio = total airstream volume flow/volume flow at diffuser discharge
$b_{0.2}$ (m)	Width of the air jet is measured at a distance from ceiling where air flow velocity is 0.2 m/s
ΔP_{cel} (Pa)	Pressure drop
L_{WA} (db(A))	Sound power level
N_R	Border value according to ISO

Performance Guide Model OD-2

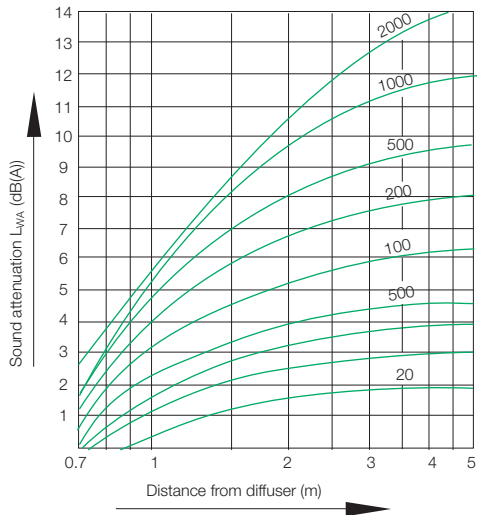


Example

Given:
 Air flow volume: $Q = 1000 \text{ m}^3/\text{h}$, $L = 2.4 \text{ m}$
 Air jet velocity: $V_L = 0.3 \text{ m/s}$
 Temperature difference: $\Delta t_z = 5 \text{ }^\circ\text{C}$

Solution:
 From the diagram selected the diffuser OD-2 size 3.

Effective discharge velocity $V_{ef} = 9.8 \text{ m/s}$



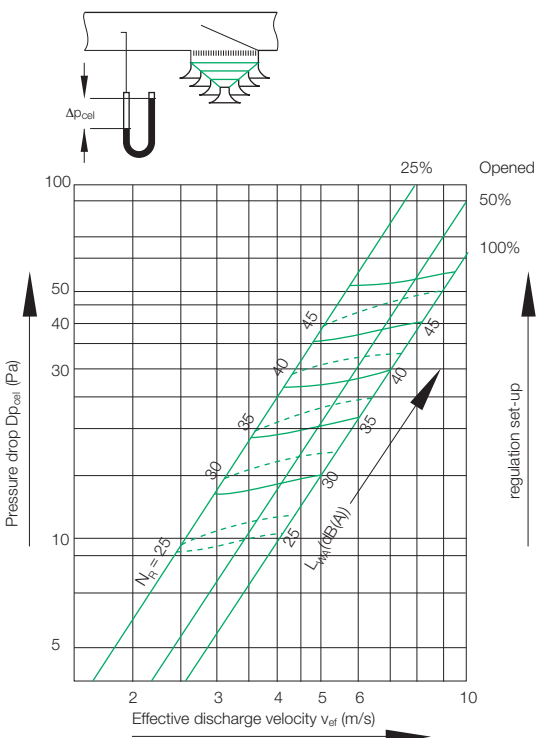
Pressure drop diagram (Valid for volume control damper J2)

$Q_9 \text{ (m}^3\text{)}$ calculated volume, depending on room reflectance
 $Q \text{ (m}^3\text{)}$ actual room volume

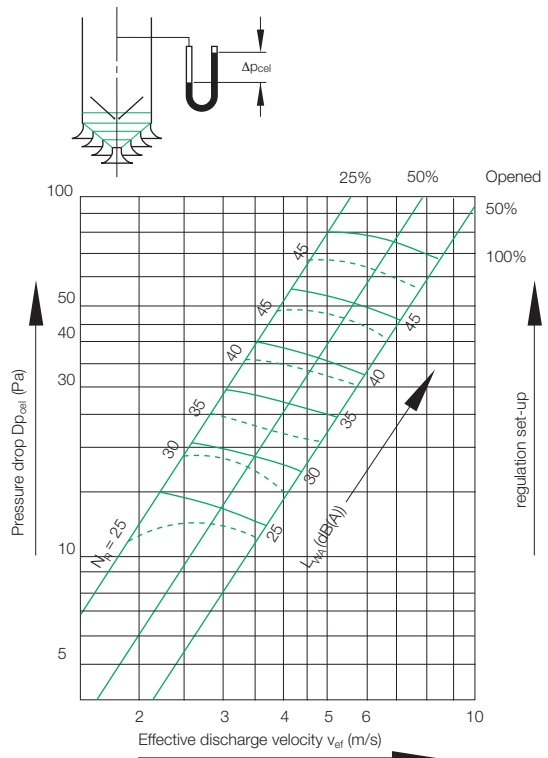
The following data are necessary to calculate the volume Q_9 .

- 1. Normal rooms $Q_9 = Q$
- 2. Rooms with highly reflective walls $Q_9 = 0.5Q$
- 3. Rooms with absorption walls $Q_9 = 2Q$

Pressure drop diagram (Valid for register J2)



Pressure drop diagram (Valid for register E2)



Model OD-10 Circular Ceiling Diffuser



Front



Back



Side



With Type 1 fixing

Description

Model OD-10 circular ceiling diffuser is designed for supply air temperature differences up to 10K and for mounting heights of 2.6m to 4m. Model OD-10 incorporates an adjustable flat inner disc section, by rotating the inner disc either horizontal throw or vertical projection is achieved.

Optional fixing methods are available.

Model OD-10 may be used for supply or extract systems and is suitable for installation in most commercial and residential applications.

Diffuser Specification

Material

Aluminium and Steel as standard.

Construction

Outer casing from aluminium with inner disc fabricated from steel.

Standard Installation Method

Surface mounting using location section (Type 1).

Installation Options

Direct screw fixing into ceiling through diffuser with inner disc removed (Type 2).

Accessories

Location section for installation.

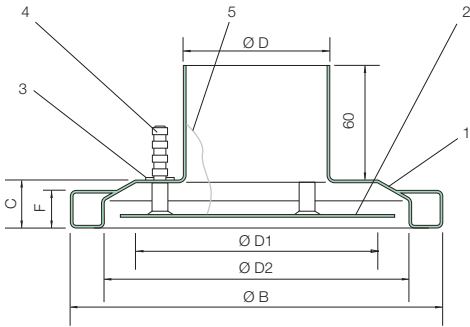
Finish

Standard is White polyester powder to RAL 9010 (30% gloss) alternative finishes to RAL colours also available as an optional extra.

Standard Model Types

Model OD-10 circular diffuser with adjustable inner disc.

Dimensions



Component parts:

- 1. Housing
- 2. Inner Disc
- 3. Holder
- 4. Spring
- 5. Retention Cord

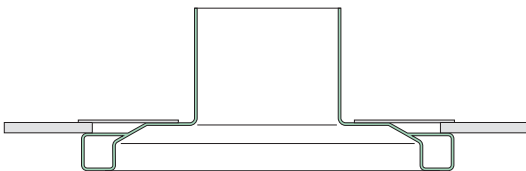
Size	ØB	ØD	ØD1	ØD2	C	F	A _{ef} s = -5	A _{ef} s = +5
80	197	78	128	163	25	20	0.00435	0.00498
100	215	98	146	181	25	20	0.00486	0.00556
125	249	123	180	215	25	20	0.00582	0.00666
160	308	158	204.5	264	35	25	0.01173	0.01236
200	364	198	260.5	320	35	25	0.01437	0.01514
250	444	248	306	390	45	30	0.02434	0.02507
315	535	313	397	481	45	30	0.03034	0.03119

A_{ef} Effective area (m²)

Installation Guide

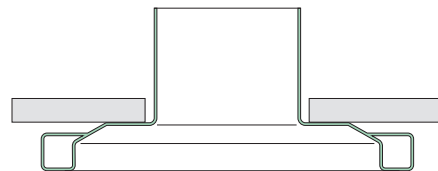
OD-10/1 Type 1

Installation with fastening section



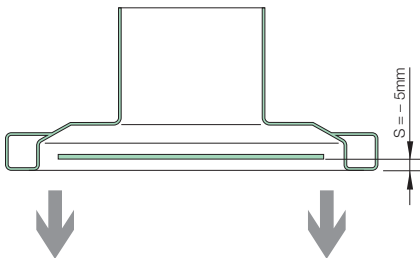
OD-10/2 Type 2

Direct installation to ceiling using screws



Inner Disc for Heating and Cooling

Vertical discharge for heating



Horizontal discharge for cooling

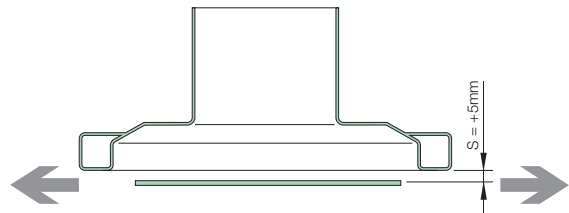
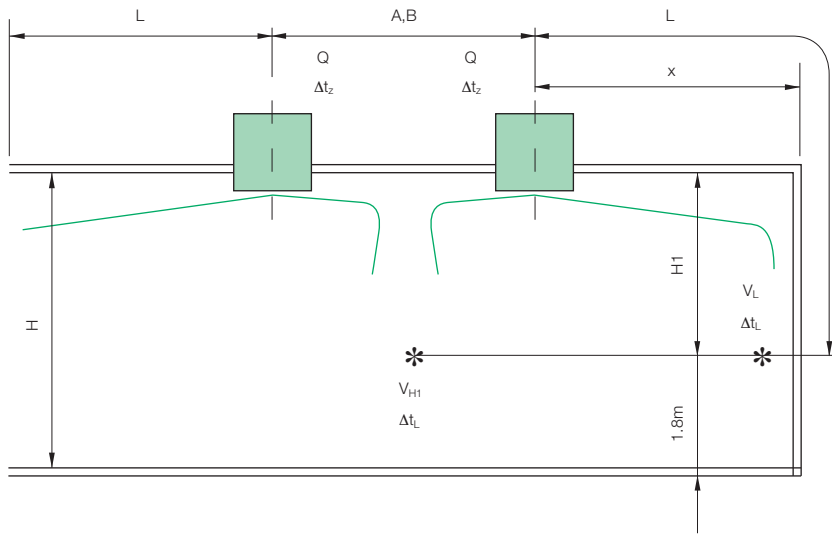


Chart A

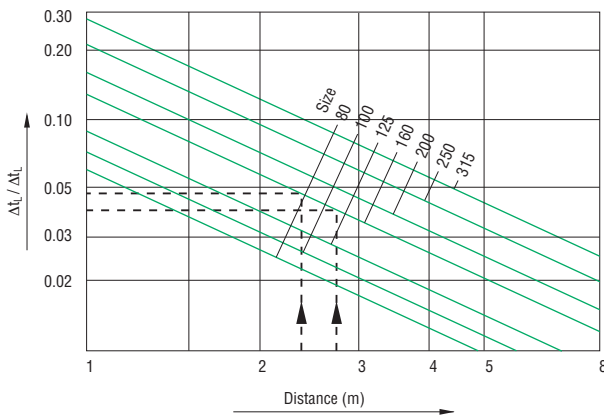
Dim.	Sizes	Sizes	Sizes	
S	80, 100, 125	160, 200	250, 315	
5	1.05	1.04	1.03	A
10	0.95	0.97	0.98	A
5	-6.0	-5.5	-5.0	B
10	2.0	1.5	1.5	B
5	1.17	1.11	1.08	C
10	0.90	0.92	0.94	C

Refer to Performance Guide for dimensions

Performance Guide



- Q (m³/h)** Air flow
- x (m)** Horizontal distance to the wall
- H (m)** Room height
- H1 (m)** Distance from ceiling to occupied zone
- L (m)** Throw distance ($L=H1 + x$)
- VL (m/s)** Air velocity at the throw distance L
- Δtz (K)** Temperature difference between the supply and room air
- ΔtL (K)** Difference between the core and room air temperature
- Δp (Pa)** Pressure drop
- LWA (db(A))** Sound power level
- VH1 (m/s)** Air velocity at the H1 distance
- A, B (m)** Distance between diffusers by length and by width



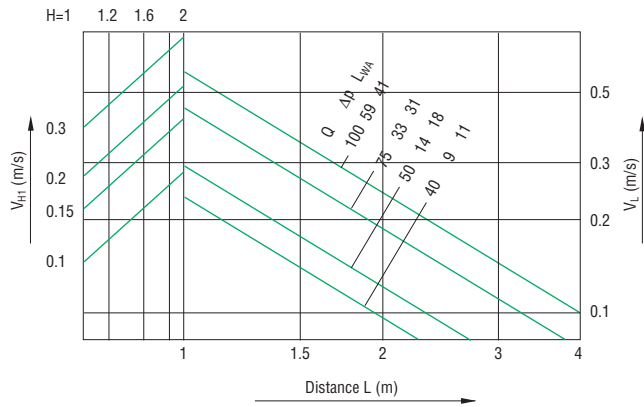
- A =** velocity corrections V_{H1} in V_L :
 $V_{H1} = (V_{H1} \text{ from diagram}) \times A$
 $V_L = (V_L \text{ from diagram}) \times A$
- B =** sound power corrections:
 $L_{WA} = (L_{WA} \text{ from diagram}) - B$
- C =** pressure drop corrections:
 $\Delta p = (\Delta p \text{ from diagram}) \times C$

For Details see Chart A

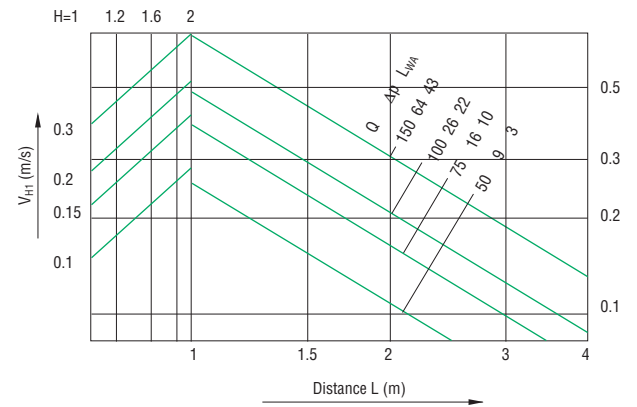
Performance Guide

Technical data for horizontal discharge (central disc adjustment $s = 10\text{mm}$)

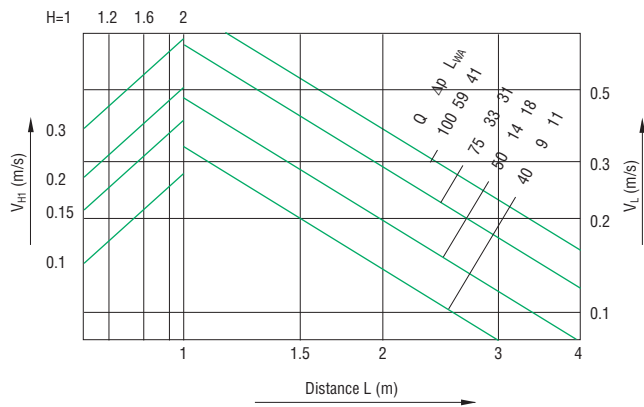
Size 80



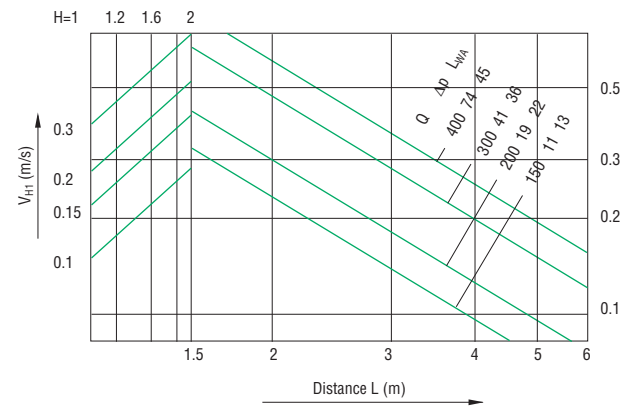
Size 100



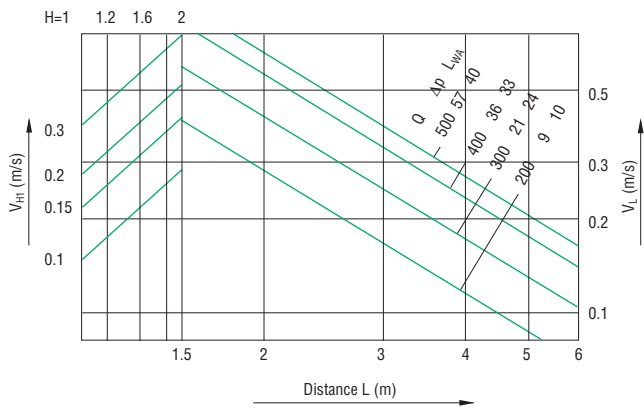
Size 125



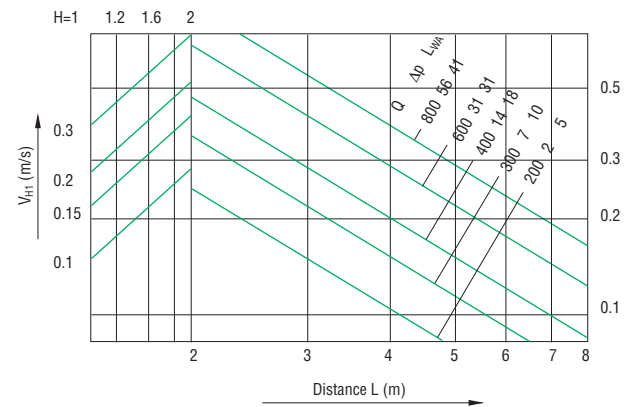
Size 160



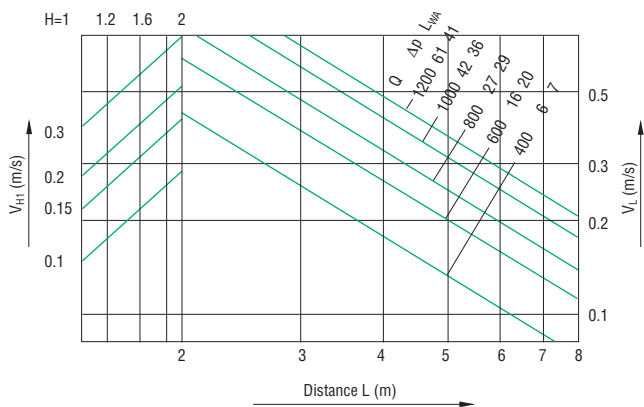
Size 200



Size 250



Size 315



Model DE Circular Ceiling Diffuser



Model DE

Description

Model DE has a versatile inner cone providing 5 adjustment positions, where the air pattern can be altered from horizontal throw to vertical projection. In addition the inner cone is easily removed for access or cleaning.

To compliment the usual Model DE circular diffuser format the assembly can be incorporated into a square ceiling panel, to act as a tile replacement and co-ordinate with a 600 x 600mm ceiling grid system.

Fabricated in steel as standard with aluminium available as an extra cost option. Finished in White polyester powder as standard. Other colours are available as an optional extra.



Model DE100P

Specification

Material

Steel as standard, Aluminium on special request.

Construction

Fabricated from pressed steel conical sections with inner cones joined by mechanical device located in diffuser neck.

Standard Installation Method

Using rigid duct, screw fix through diffuser neck direct to duct with inner core removed.

Installation Options

When using flexible duct, diffuser supports required (by others), with diffuser neck fixed and sealed to flexible duct.

An extension spigot required to allow clearance to ensure damper not obstructed when core in highest position using vertical projection.

Accessories

Optional radial opposed blade damper accessed through diffuser face, steel construction, painted black to (RAL 9005).

Finish

Standard is White polyester powder coat to RAL 9010 (20% gloss) alternative finishes to BS or RAL colours also available as an optional extra.

Standard Model Types

Model DE100 – Circular diffuser only

Model DE103 – Circular diffuser with radial opposed blade damper

Model DE100P – Circular diffuser only in square tile replacement panel

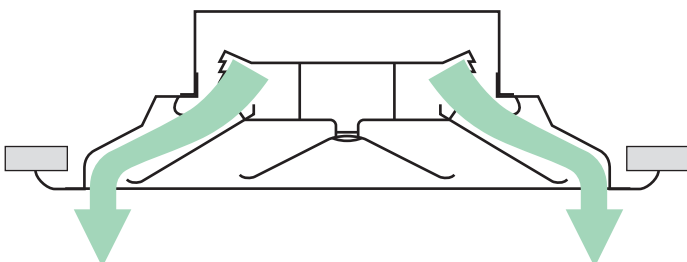
Model DE103P – Circular diffuser with radial opposed blade damper in square tile replacement panel

Size Range

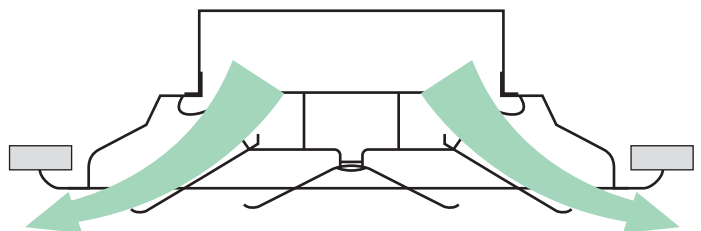
Model DE100	Model DE100P
Size 160	Size 160 - 594
Size 200	Size 200 - 594
Size 250	Size 250 - 594
Size 315	Size 315 - 594
Size 355	
Size 400	
Size 450	
Size 500	
Size 630	

Discharge Positions

Vertical Air Diffusion Pattern
(core in highest position)



Horizontal Air Diffusion Pattern
(core in lowest position)



Performance Guide

Model DE

Selection Procedure

Method

Selections are made by means of a straight read-off the tabulated data.

1. Determine the air volume flow rate per outlet.
2. Establish required throw.

See note (b) if ceiling effect is not being utilised.

Opposing diffusers: maximum throw for each diffuser should be no more than 75% of half of the distance between them.

Example

Select a diffuser to handle 0.4³/s with a throw of 4.1m when mounted in a 3.3m high ceiling.

From the selection table it can be seen that a 355mm neck diameter diffuser throws 4.5m when installed in a 2.7m high ceiling.

Applying the factor from the Ceiling Height Correction Factor chart: $4.5 \times 0.9 = 4.05\text{m}$, an acceptable throw figure is obtained, with a pressure drop of 14Pa and noise of NC40.

A 355mm DE diffuser therefore meets the duty required.

Notes to Selection Data

The selection data is based on the following parameters:

- a. Terminal velocity within occupied zone of 0.35m/s when influenced by ceiling effect.
- b. If ceiling effect is not being utilised in a particular application, throw data should be reduced by 40%. (The actual throw x 1.67 enables a direct selection to be made).
- c. Throw data is based on diffusers being mounted in a 2.743m high false ceiling. For other ceiling heights the following correction factors should be applied to the throws:
- d. Isothermal conditions – however, acceptable conditions within the occupied zone could be expected for heating and cooling temperature differentials up to 10k.
- e. Pressure drops indicated are for diffusers fitted with a damper (damper fully open).
- f. Sound ratings are given with fully open dampers and are based on an average room having a floor area approximately 96m².
- g. The NC values given in the Selection Data are based on an absorption of 9dB re 10⁻¹² Watts and diffuser fitted with a damper, fully open.

Ceiling Height Correction Factors

Height – m	Factors	Height – m	Factors
2.44	1.10	3.35	0.90
2.74	1.00	3.66	0.85
3.00	0.95		

Horizontal Supply

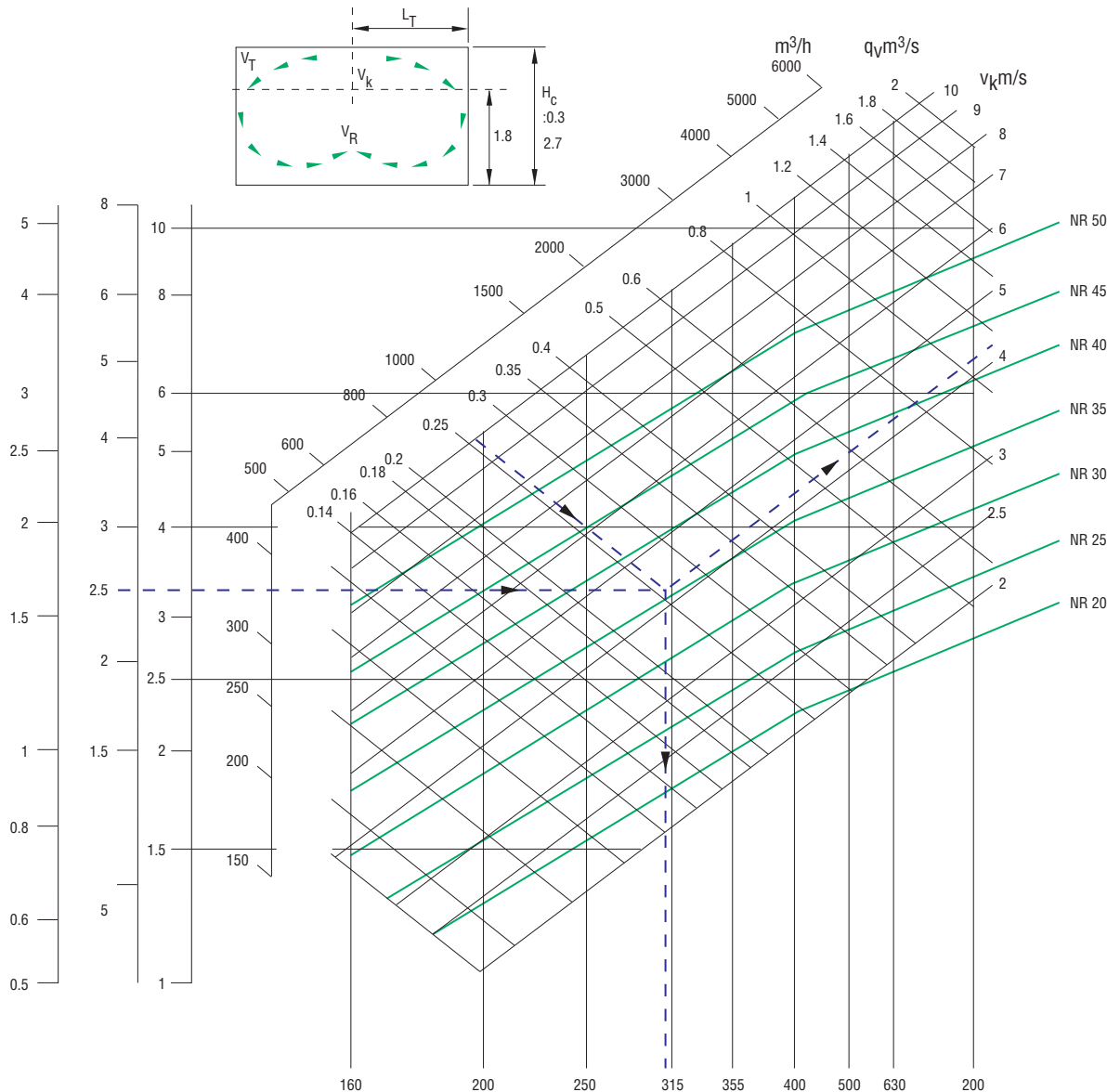
Air Volume m ³ /s	Neck Size mm	Neck Velocity m/s	Throw m	Pressure Drop Pa	Sound Level NC
0.04	160	2.16	1.10	4	–
0.06	160	3.24	1.50	7	–
0.07	160	3.78	1.90	14	36
0.08	160	4.32	2.20	16	40
	200	2.43	1.60	5	25
0.10	160	5.40	2.60	25	46
	200	3.04	2.00	8	32
0.125	200	3.79	2.60	13	37
	280	2.43	1.90	5	26
0.15	200	4.56	3.10	16	42
	250	2.92	2.60	8	32
0.175	200	5.32	3.40	24	46
	250	3.40	3.00	10	35
	315	2.35	2.20	5	27
0.20	250	3.89	3.20	13	37
	315	2.70	2.60	6	28
0.25	250	4.86	3.80	19	44
	315	3.37	3.20	10	35
	355	2.48	2.70	5	28
0.30	315	4.04	4.00	14	35
	400	2.27	3.00	5	26
0.35	315	4.72	4.50	19	44
	355	3.46	3.60	10	36
	400	2.65	3.20	6	31
0.40	315	5.39	5.00	25	47
	355	3.96	4.50	14	40
	400	3.03	3.70	8	34
0.45	355	4.45	4.80	17	42
	400	3.41	4.30	10	36
	450	2.69	3.80	6	27
0.50	355	4.95	5.40	20	46
	400	3.78	4.80	12	39
	450	2.99	3.90	8	34
0.60	400	4.53	5.50	18	38
	450	3.58	4.90	11	33
	500	2.68	4.50	7	34
0.75	450	4.49	6.50	16	45
	500	3.35	5.70	9	30
	630	2.53	4.90	6	34
1.00	500	4.47	7.90	17	48
	630	3.37	6.40	9	41
1.25	630	4.22	8.00	15	47
1.50	630	5.06	9.60	21	52

Performance Guide

Model DE

Horizontal Throw

- with ceiling effect
- damper fully open



V_T	0.75	0.50	0.37	m/s
v_T	0.25	0.17	0.12	m/s

Throw correction factor for exposed duct mounting: $L_T \times 0.7$

A_k and A_n - values (m²)

Size	160	200	250	315	355	400	450	500	630
$A_{k,hor.}$	0.014	0.026	0.042	0.062	0.085	0.112	0.143	0.177	0.257
$A_{k,vert.}$	0.011	0.019	0.027	0.043	0.058	0.080	0.087	0.112	0.158
A_n	0.020	0.031	0.049	0.078	0.099	0.126	0.159	0.196	0.312

Valid for cooling up to $\Delta t_s \times -16k$
Valid for heating up to $\Delta t_s \times +30k$

Key to symbols

- q_v = Supply air volume in $^3/s$, m^3/h
- ΔP_t = Total pressure loss in pascal (Pa)
- V_k = Supply air velocity in m/s (velometer reading)
- A_k = Area factor m^2 , relative to V_k
- A_n = Neck area (m^2)
- L_T = Throw in m
- V_T = Envelope velocity in m/s (terminal velocity)
- v_R = Room air velocity in m/s (residual velocity)
- NR = Noise level index according to ISO, based on L_{Ww} without room attenuation
- L_{Ww} = Sound power level index in dB (ref. 10^{-12} W)
- H_c = Ceiling height in m
- Δt_s = Temperature differential between supply air and room air temperature (K)
- t_R = Room air temperature in C
- D = Damper Throttling (% open)
- Δt_L = Maximum temperature differential between jet - and room air temperature (K)

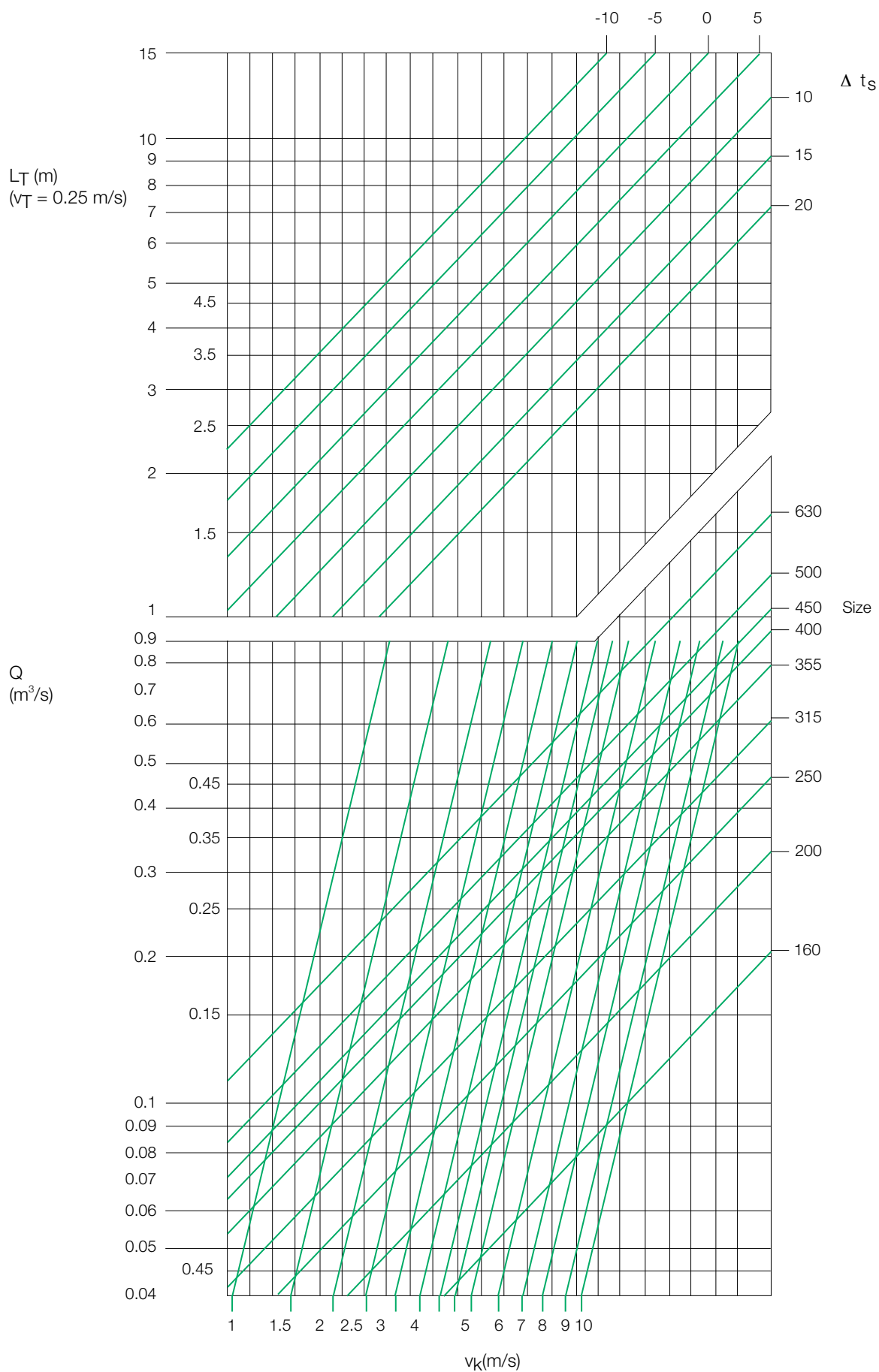
Air flow rate measurement

Supply

Velometer jet 2220A 05 6070

$q_v = V_k \times A_k$
 $(m^3/s) = (m/s) \times (m^2)$
 $q_v = V_k \times A_k \times 3600$
 $(m^3/h) = (m/s) \times (m^2) \times (s/h)$

Performance Guide



Performance Guide

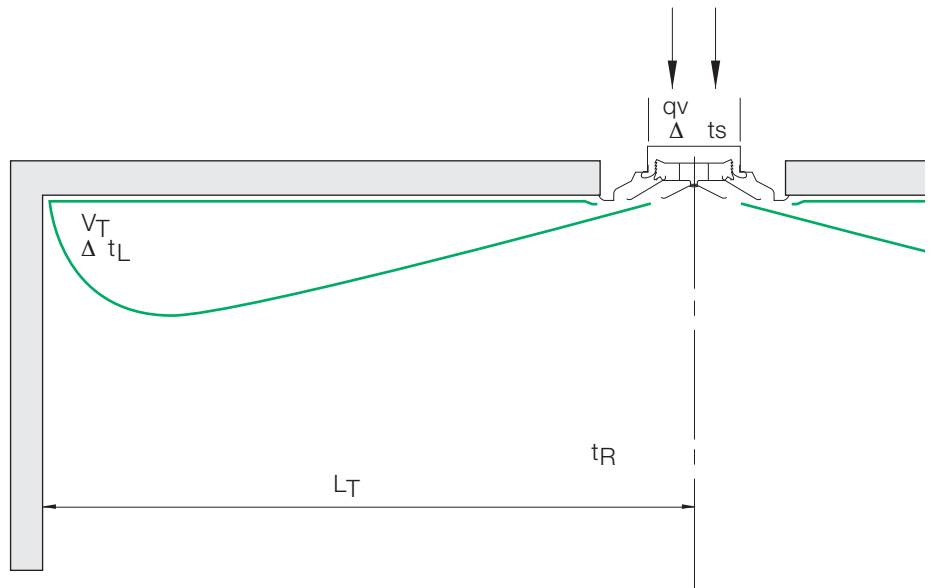
Example

Selection data:

Air flow rate $q_V = 0.25 \text{ m}^3/\text{s}$
 Throw $L_T = 2.5 \text{ m}$ at $V_T = 0.5 \text{ m/s}$

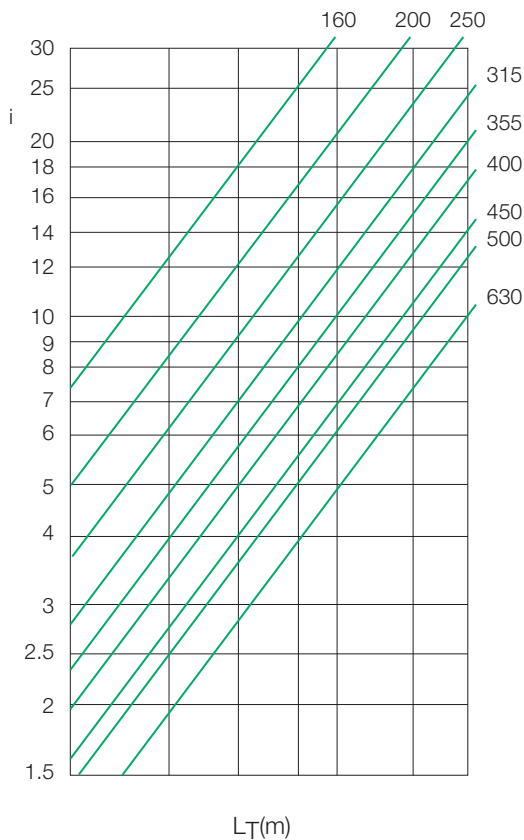
Selection

Size
 Supply air velocity $V_k = 4 \text{ m/s}$
 Noise level NR 35
 Total pressure loss with damper type DT003
 100% open: $\Delta P_t = 14 \text{ Pa}$

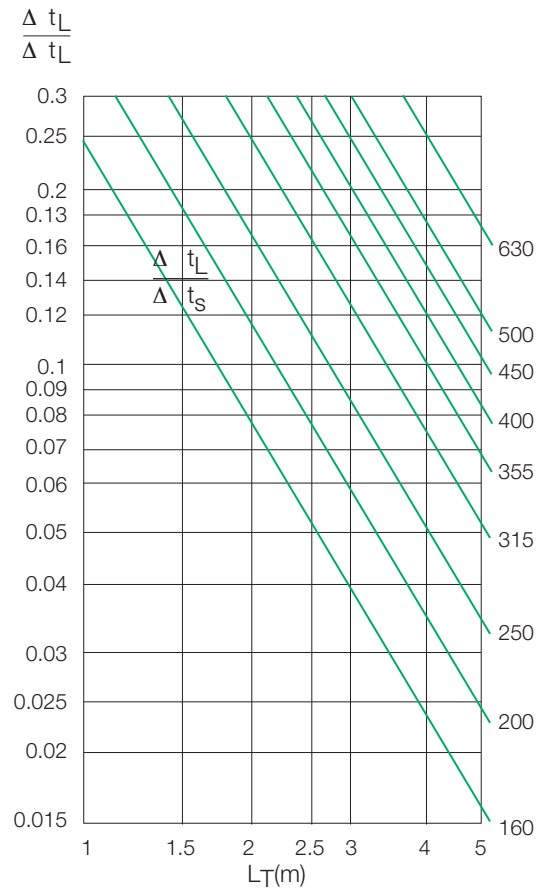


Induction and temperature quotient for diffusers with ceiling effect

Induction



Temperature Quotient



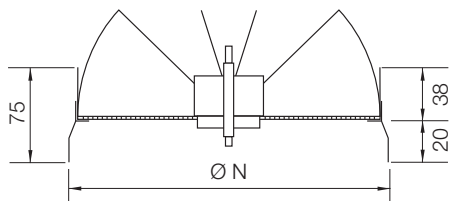
Performance Guide

Dampers

Damper type DT003

Radial opposed blade damper accessible the diffuser face.

Steel construction, finish black paint (RAL 9005).



Size	ØN	H
160	160	55
200	200	69
250	250	89
315	315	109
355	355	124
400	400	139
450	450	157
500	500	175
600	630	221

N = duct size

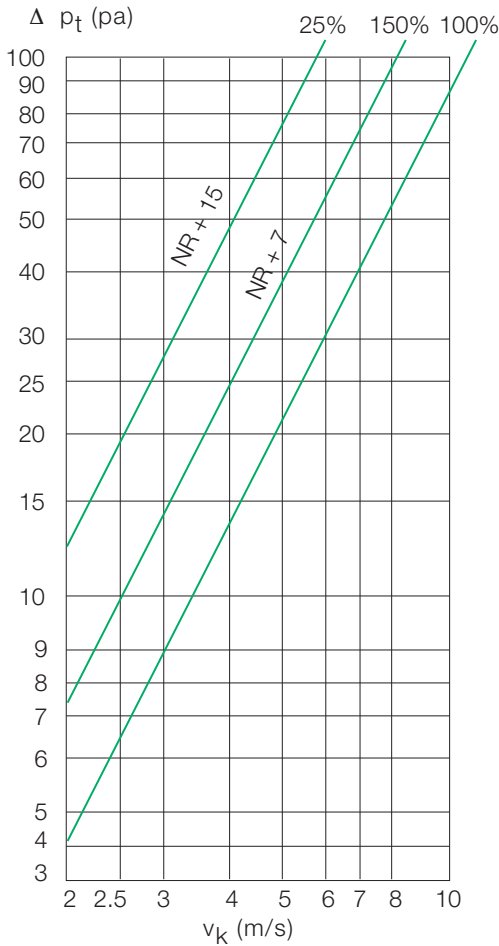
H = expected duct height

Pressure loss with damper type DT003

Example:

$V_k = 5$ m/s with damper 50% open

pressure loss = 40Pa, NR + 7

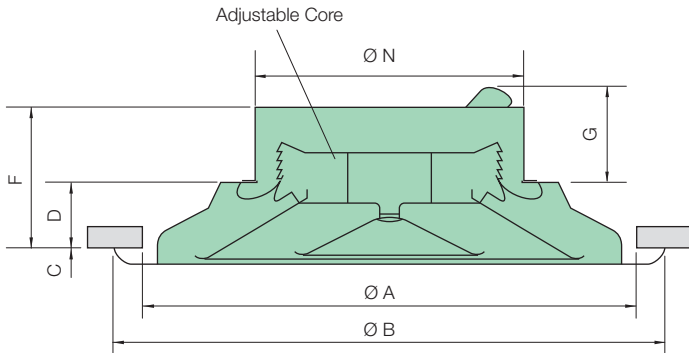


Dimensions

Details and Dimensions

DE100

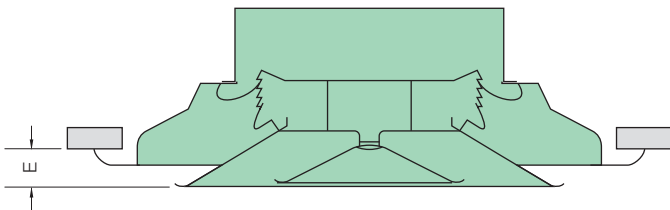
Vertical Air Diffusion Pattern
(core in highest position)



Nominal

Model DE100	ØA	ØB	C	D	E	F	G	ØN
Size 160	279	323	12	35	30	85	46	160
Size 200	375	428	10	51	35	101	55	200
Size 250	467	538	14	67	45	117	68	250
Size 315	557	635	10	85	50	138	80	315
Size 355	648	743	18	96	60	146	86	355
Size 400	740	856	14	116	60	166	92	400
Size 450	832	970	14	135	85	185	110	450
Size 500	924	1081	17	149	85	199	116	500
Size 630	1103	1286	18	182	85	232	116	630

Horizontal Air Diffusion Pattern
(core in lowest position)



N = Nominal size – duct size

G = Clearance for removal of centre core

E = Clearance for core in lowest position

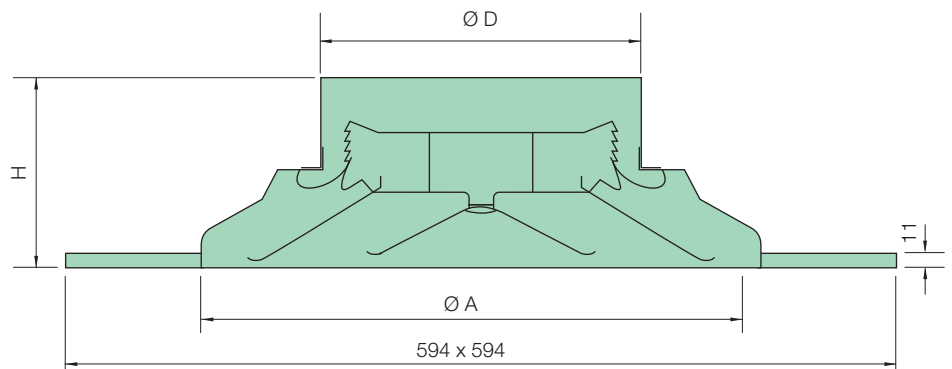
DE100P

Detail and Dimension
Circular Cone Diffuser in Panel

The DE100P is designed to fit in place of a ceiling tile in a 600 x 600 grid in one piece.

For other sizes contact Sales Office.

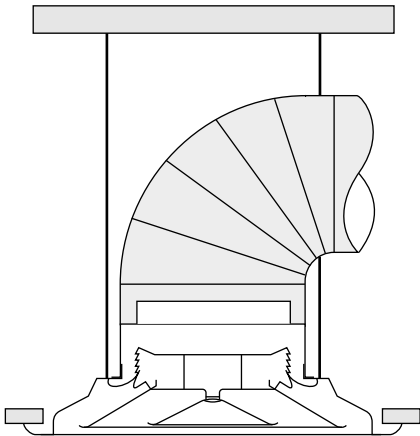
Model DE100P	ØA	ØD	H
Size 160 – 594	270	158	96
Size 200 – 594	365	198	111
Size 250 – 594	457	248	131
Size 315 – 594	548	313	145



Installation Guide

Installation arrangements

Installation with flexible duct connection. Damper requires extension spigot on neck if used behind DE to miss the core in highest position when used for vertical projection (DT003).



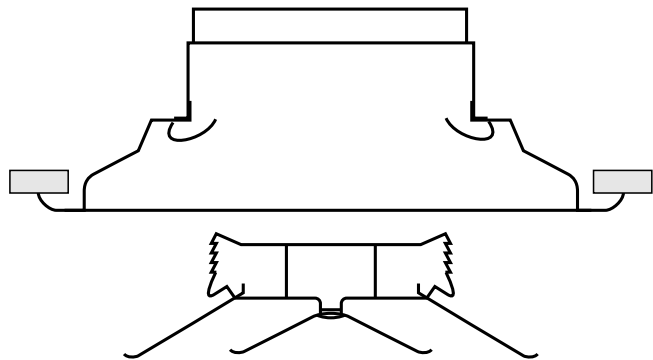
Installation instructions

Mount damper in duct or neck of diffuser.

Take out inner rings by pushing the rings inward, turn around and pull down.

Mount external cone.

Push inner rings again in external cone in one of 5 positions required.



Ordering Information: Models OD-1, OD-2 and OD-10

Example

Model OD-2	Installation Method 7	Damper J2	Size Size 3	Finish White																		
<p>Model OD-1 – Circular diffuser only having inner cones flush with outer casing flange.</p> <p>Model OD-2 – Circular diffuser with inner cones projecting below outer casing flange.</p> <p>Model OD-10 – Circular diffuser with adjustable inner disc.</p>	<p>Models OD-1 and OD-2</p> <p>7 – Central screw fixing through the diffuser face using crossbar (without damper).</p> <p>8 – Central screw fixing through the diffuser face into the damper.</p> <p>X – Three screws for a peripheral fixing through the diffuser face directly into the ceiling (without damper).</p> <p>V – Three screws for a peripheral fixing through the diffuser face directly into the ceiling with the damper already secured into the duct.</p> <p>Model OD-10</p> <p>1 – Surface mounting using location section.</p> <p>2 – Direct screw fixing into ceiling through diffuser.</p>	<p>Models OD1 and OD2 Only</p> <p>L2 – Spigot connection for installation incorporating a cross member for central fixing.</p> <p>J2 – Butterfly damper.</p> <p>J3 – Butterfly and Deflector control damper.</p> <p>E2 – Deflector and flap control damper.</p>	<p>Models OD-1 and OD-2</p> <table border="1"> <thead> <tr> <th>Size</th> <th>Nominal Neck Size</th> </tr> </thead> <tbody> <tr><td>Size 1</td><td>140mm</td></tr> <tr><td>Size 2</td><td>195mm</td></tr> <tr><td>Size 3</td><td>250mm</td></tr> <tr><td>Size 4</td><td>305mm</td></tr> <tr><td>Size 5</td><td>360mm</td></tr> <tr><td>Size 6</td><td>420mm</td></tr> <tr><td>Size 7</td><td>475mm</td></tr> <tr><td>Size 8</td><td>530mm</td></tr> </tbody> </table> <p>Models OD-10</p> <p>Size 80</p> <p>Size 100</p> <p>Size 125</p> <p>Size 160</p> <p>Size 200</p> <p>Size 250</p> <p>Size 315</p>	Size	Nominal Neck Size	Size 1	140mm	Size 2	195mm	Size 3	250mm	Size 4	305mm	Size 5	360mm	Size 6	420mm	Size 7	475mm	Size 8	530mm	<p>83 – White RAL9010 polyester powder (30% gloss).</p> <p>Other colours on request as optional extra please state separately full details of colour code and finish type required at time of ordering.</p>
Size	Nominal Neck Size																					
Size 1	140mm																					
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Size 8	530mm																					

Important Note: If the overall size is critical then it must be clearly stated on the order. All orders must be addressed to AIR DIFFUSION, Ruskin Air Management Limited.

Ordering Information: Models DE100 and DE100P

Example

Model DE100	Damper 3	Size 250	Finish 83
<p>Model DE100 - Circular Diffuser DE100P - Circular Diffuser in Square 600 x 600mm Ceiling Panel.</p>	<p>0 – No Damper 3 – With Radial Opposed Blade Damper.</p>	<p>Model DE - Neck Size 160mm Diameter 200mm Diameter 250mm Diameter 315mm Diameter 355mm Diameter 400mm Diameter 450mm Diameter 500mm Diameter 630mm Diameter</p> <p>Model DE100P - Neck Size Panel size 160mm Diameter 594 200mm Diameter 594 250mm Diameter 594 315mm Diameter 594</p>	<p>83 – White RAL 9010 polyester powder (20% gloss)</p> <p>6 – Special finish to customers order. Full details of colour code RAL Reference and finish type required at time of ordering.</p>

Important Note: If the overall size is critical then it must be clearly stated on the order. All orders must be addressed to AIR DIFFUSION, Ruskin Air Management Limited.

Ordering Information

Example

Model DT003	Size 250	Finish
<p>Model DT003 - Radial opposed Blade Damper only.</p>	<p>As diffuser neck size.</p>	<p>4 – Black paint to RAL 9005.</p>

Important Note: If the overall size is critical then it must be clearly stated on the order. All orders must be addressed to AIR DIFFUSION, Ruskin Air Management Limited.

Product Range

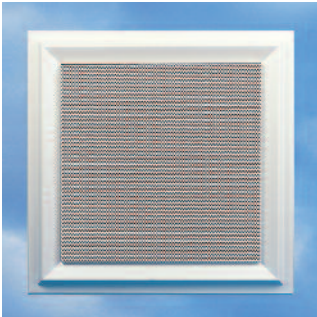
Swirl, Displacement and High Induction Diffusers



Circular Diffusers and Air Valves



Perforated and Louvre Face Ceiling Diffusers



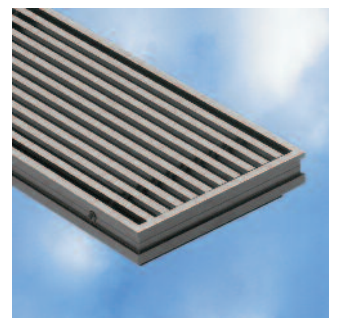
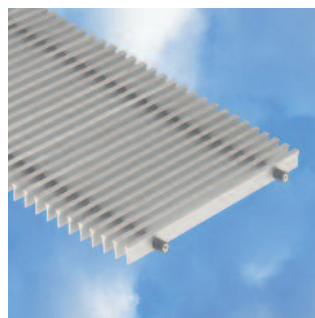
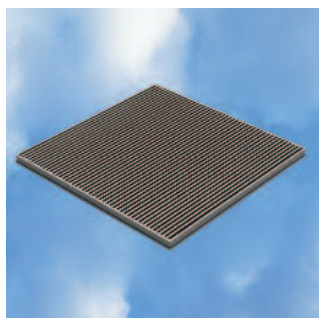
Slot and Fixed Blade Diffusers



Cylinder and Jet Nozzle Diffusers

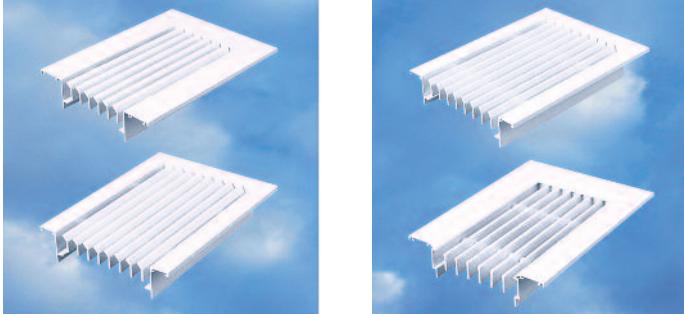


Floor Grilles



Product Range

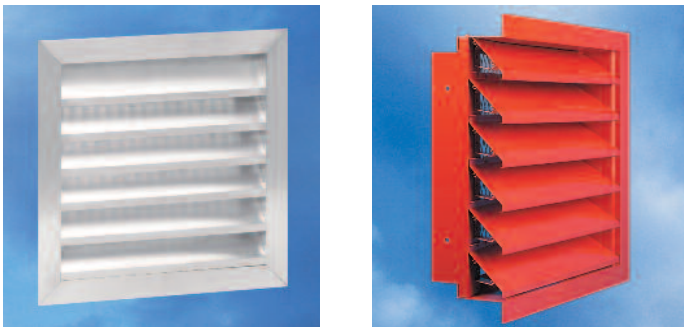
Linear Grilles



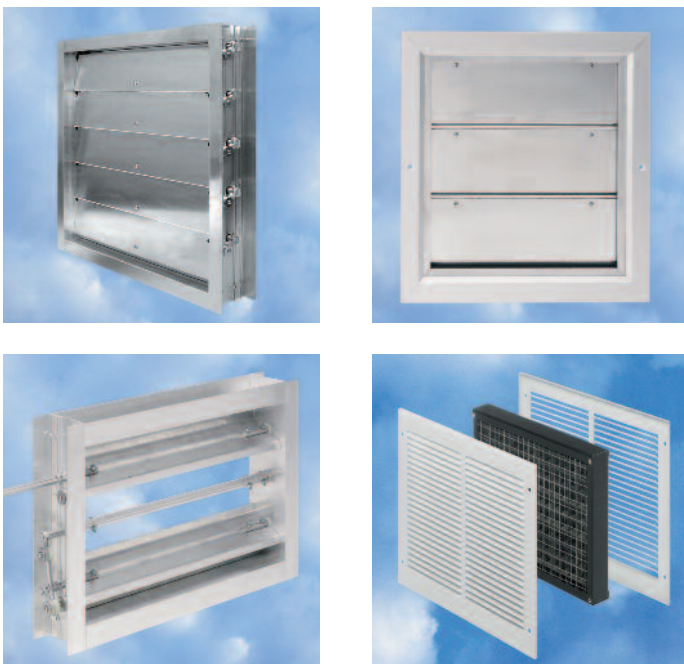
Wall and Ceiling Grilles



External Louvres



Miscellaneous



- Swirl, Displacement and High Induction Diffusers
- Perforated and Louvre Face Ceiling Diffusers
- Slot and Fixed Blade Linear Diffusers
- Cylinder and Jet Nozzle Diffusers
- Circular Diffusers and Air Valves
- Floor Grilles
- Linear Bar Grilles
- Grilles
- External Louvres
- Miscellaneous

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Air Diffusion

Grilles Diffusers Louvres Chilled Beams