

RDYa

Circular ceiling diffuser with disc's for supply air



FUNCTION

The RDY is a circular, ceiling mounted disc diffuser which is available in two versions. Version 1 has discs in the diffuser face where as version 2 has discs in both the top plate and diffuser face, this means that it has a considerably larger air capacity than version 1. It is suitable for constant or variable airflow. Air can be supplied at under- or over-temperature with horizontal and/or vertical spread patterns. The spread pattern can be changed after installation, without affecting the airflow, pressure drop or sound level.

QUICK FACTS

- 100% flexible spread pattern
- Rotation device, swirl function
- High induction
- Vertical spread pattern possible
- Simultaneous horizontal and vertical spread pattern possible
- Can be used with an ALS plenum box
- Available in alternative colours
- Included in the MagiCAD database

QUICK GUIDE

AIR FLOW - SOUND LEVEL				
RDYa 1 and 2		l/s		
Size		25 dB(A)	30 dB(A)	35 dB(A)
100		24 (34)	29 (38)	34 (44)
125		34 (42)	40 (49)	46 (58)
160		46 (60)	55 (70)	63 (79)
200		70 (95)	80 (115)	95 (130)
250		110 (140)	125 (160)	140 (185)
315		125 (170)	145 (195)	175 (235)
400		205	245	290
RDYa 1 and 2	ALSc	l/s		
Size	Size	25 dB(A)	30 dB(A)	35 dB(A)
100	80-100	16 (17)	22 (25)	27 (30)
125	100-125	24 (28)	30 (36)	38 (45)
160	125-160	37 (43)	45 (55)	52 (69)
200	160-200	59 (65)	70 (80)	85 (100)
250	200-250	88 (88)	105 (105)	125 (125)
315	250-315	110 (140)	125 (160)	150 (195)
400	315-400	180	220	260

Data for the RDY + ALS plenum box combination are shown with a total pressure drop of 50 Pa. The values for RDY 2 are shown within brackets.

DESIGN

The RDY is a circular diffuser unit for ceiling installation. It consists of two sections: the diffuser and a backing box. The removable diffuser face is equipped with aerodynamically designed discs. The backing box has a rubber seal on the connection spigot. RDY is available in two versions. Version 1 has discs in the diffuser face whereas Version 2 also has discs on the connection side.

MATERIALS AND SURFACE TREATMENT

The diffuser is manufactured in galvanised sheet steel and sheet steel. The whole unit is painted with our pure white standard paint, RAL 9010. The unit is also available in other standard colours: Dusty grey 7037, white aluminium RAL 9006, jet black RAL 9005, grey aluminium RAL 9007 and signal white RAL 9003 (NCS 0500).

SPECIAL VERSIONS

In addition to the standard diffuser sizes, this unit can be supplied with special dimensions, different numbers of discs, special disc patterns etc. RDY is also available in a galvanized version. Please contact your nearest sales office for further information.

ACCESSORIES

Plenum box:

ALS is manufactured in galvanised sheet steel. It includes a removable commissioning damper, fixed measurement unit and acoustic lining with a reinforced surface layer.

PLANNING

Each disc can be rotated through 360°, which provides an infinitely variable number of spread patterns without affecting the air flow, pressure drop or sound level. It is also possible to obtain both horizontal and vertical spread patterns simultaneously. When freely suspended, version 2 can be used to obtain an increased air flow capacity.

INSTALLATION (See Figure 1)

When freely suspended, the diffuser's inlet spigot is fastened to the connecting duct using blind rivets. When attached to a fixed ceiling, the diffuser is screwed into place through the top plate of the diffuser (applies to version 1 only).

The diffuser face is removed by slackening the visible screws on the diffuser face. When the plenum box ALSc is used, the sleeve between the ALS and RDY can be extended using ordinary circular duct by up to 500 mm long without having to extend the measuring tube or the damper cords.

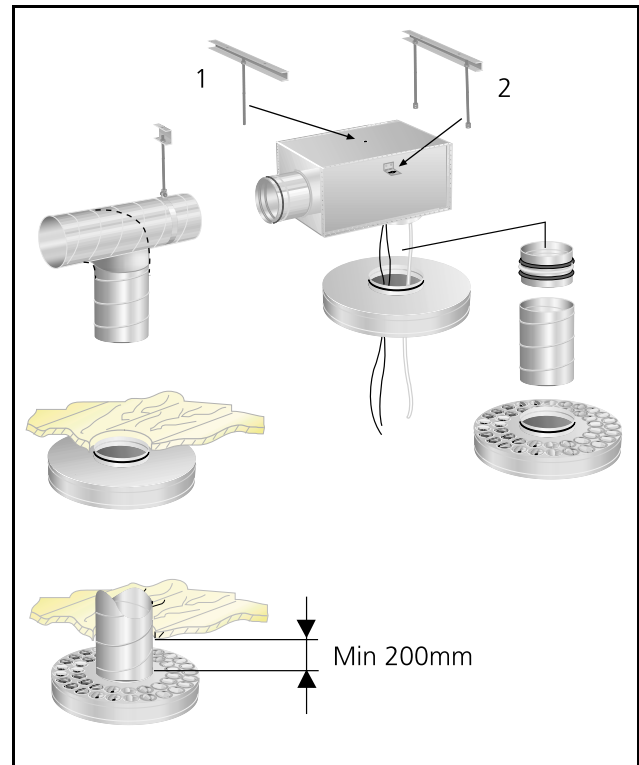


Figure 1. Installation. Commissioning.

COMMISSIONING WITH ALS (See Figure 1)

Commissioning must be carried out with the diffuser section in place. The measuring tubes and damper cords are pulled out of the diffuser through the discs. The damper setting can be locked. The K-factor is shown on the product label and is also indicated in the relevant k-factor guide which can be accessed on our website.

MAINTENANCE

The diffuser can be cleaned when necessary using lukewarm water and detergent. The duct system can be accessed without the use of tools. The diffuser is removed by undoing the screws on the diffuser face. If the ALSc plenum box is used, the distribution plate is hinged aside and the damper unit twisted from its mounting with a simple hand movement.

ENVIRONMENT

The declaration of construction materials is available on our website or may be ordered from one of our sales offices.

TECHNICAL DATA

- The sound level dB(A) applies to rooms of 10 m² equivalent absorption area, which gives 4 dB room attenuation.
- The throw $l_{0,2}$ is measured under isothermal flow conditions.
- The maximum recommended under temperature is 14 °C.
- For calculating the width of the throw, air velocities in the zone of occupation or sound levels in rooms with other dimensions, please refer to our selection software ProAir web and ProAc, which are both available on our website.
- All the technical data refers to a 360° spread pattern.

Sound data - RDY 1 and 2 - Supply air

Sound power level L_{W} (dB)

Table K_{OK}

Size RDYa	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
1-100	2	4	4	4	-1	-19	-28	-24
1-125	1	3	3	5	-2	-18	-30	-29
1-160	2	5	5	5	-4	-22	-32	-29
1-200	2	5	4	5	-5	-22	-32	-29
1-250	2	4	5	6	-7	-25	-32	-29
1-315	1	3	5	6	-7	-23	-32	-29
1-400	-1	5	8	4	-5	-17	-23	-19
2-100	4	8	2	3	0	-13	-22	-29
2-125	3	7	4	3	0	-13	-26	-29
2-160	2	5	4	4	-2	-17	-29	-29
2-200	3	6	6	4	-2	-16	-27	-29
2-250	3	6	6	5	-4	-20	-30	-29
2-315	2	5	6	5	-4	-22	-32	-29
Size RDYa + ALSc	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
1-100	7	12	6	4	-7	-20	-22	-24
1-125	5	10	7	4	-6	-20	-27	-25
1-160	5	10	7	5	-7	-21	-26	-24
1-200	3	8	6	4	-6	-17	-23	-22
1-250	5	10	6	5	-7	-18	-24	-23
1-315	2	7	4	6	-7	-24	-31	-27
1-400	4	6	8	3	-5	-12	-17	-17
2-100	8	13	6	2	-6	-17	-20	-23
2-125	7	12	8	2	-4	-14	-22	-23
2-160	8	13	-7	-3	-7	-16	-22	-22
2-200	6	11	8	2	-4	-12	-19	-20
2-250	7	12	7	3	-5	-13	-19	-21
2-315	5	10	5	4	-4	-17	-12	-22
Tol. ±	2	2	2	2	2	2	2	2

THROW LENGTHS

The throw length $l_{0,2}$ for the standard disc setting, rotation, is shown in the dimensioning graphs. The following table may be used if alternative disc settings are required.

Factors for disc settings

4-way	3-way	2-way	1-way
1.5	2.1	2.5	3.8

E.g.

RDY 1-250 has an $l_{0,2}$ of 2,3 m according to the graph

For 2M-way will be $l_{0,2} = 2,3 \times 2,5$

2M-way = 5,75m

Sound attenuation ΔL (dB)

Table ΔL

Size RDYa	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
1-100	23	17	10	6	14	9	3	4
1-125	22	16	9	4	9	10	6	5
1-160	19	13	5	3	10	9	5	4
1-200	19	13	4	5	5	7	5	5
1-250	16	10	2	6	5	5	5	4
1-315	16	10	4	2	4	4	5	5
1-400	10	9	5	3	4	4	4	4
2-100	23	17	12	5	8	9	4	4
2-125	22	16	11	4	6	9	6	4
2-160	20	14	8	3	7	9	5	4
2-200	19	13	7	3	4	6	5	4
2-250	16	10	4	3	4	5	4	4
2-315	16	10	4	2	4	4	5	5
Size RDYa + ALSc	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
1-100	22	15	16	13	30	25	17	17
1-125	21	14	14	14	27	24	18	20
1-160	21	14	10	11	26	21	16	17
1-200	19	12	9	14	21	19	16	16
1-250	17	10	7	18	19	15	15	15
1-315	12	5	6	20	17	17	15	15
1-400	10	5	8	14	11	10	11	12
2-100	21	14	16	15	29	24	17	19
2-125	22	15	15	16	25	23	17	18
2-160	21	14	11	13	25	21	15	18
2-200	18	11	10	17	20	19	16	16
2-250	16	9	8	18	19	15	15	15
2-315	12	5	7	18	17	16	14	14
Tol ±	2	2	2	2	2	2	2	2

RDYa

Engineering graphs - RDY - Supply air

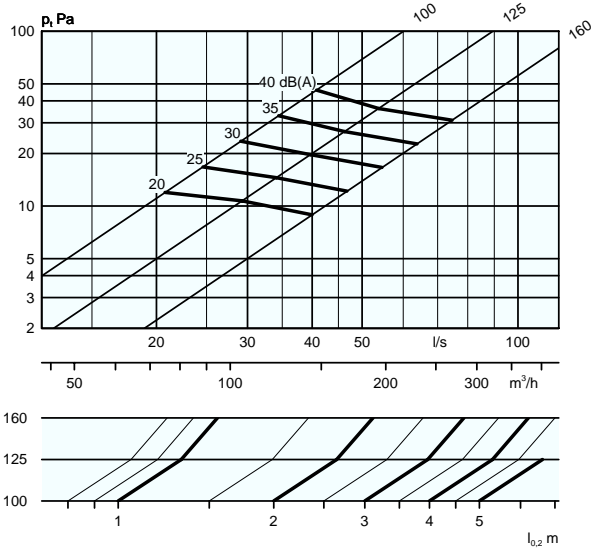
Air flow - Pressure drop - Sound level - Throw

- The graphs must not be used for commissioning.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.
- The dB(C) value is normally 6-9 dB's higher than the dB(A) value. For more accurate calculations, see the

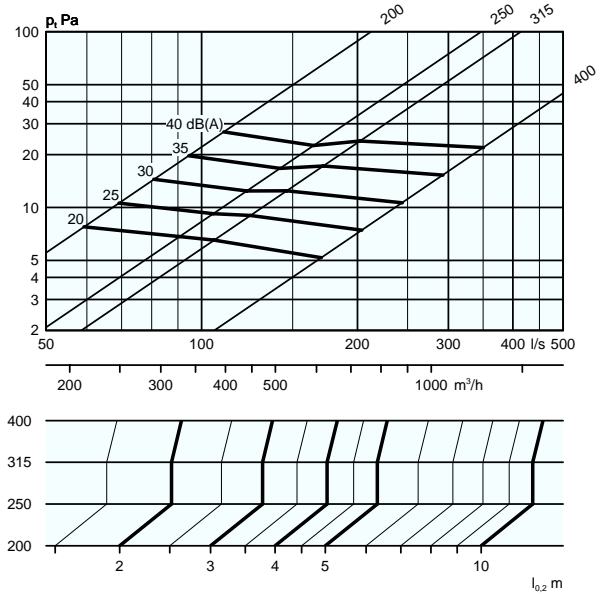
calculation template in the chapter on Acoustics in the Technical Information section of this catalogue.

- For other throw lengths, refer to table of throw lengths under technical data.

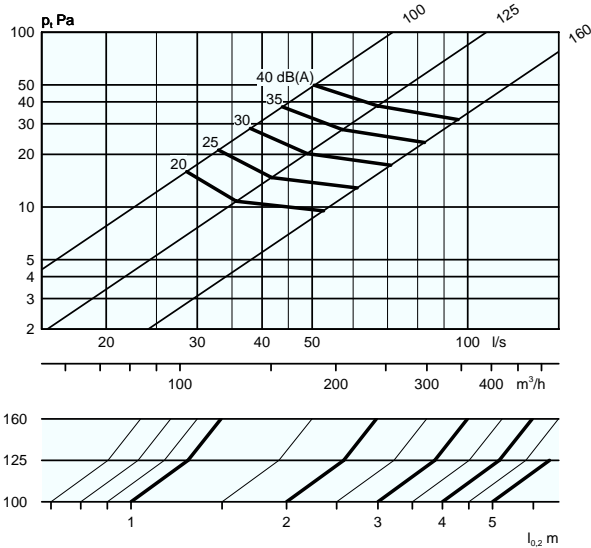
RDYa 1, 100, 125, 160 - Rotation



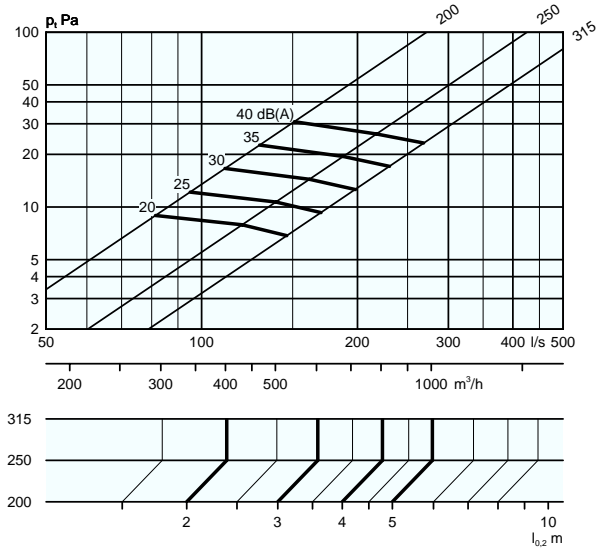
RDYa 1, 200, 250, 315, 400 - Rotation



RDYa 2, 100, 125, 160 - Rotation



RDYa 2, 200, 250, 315 - Rotation



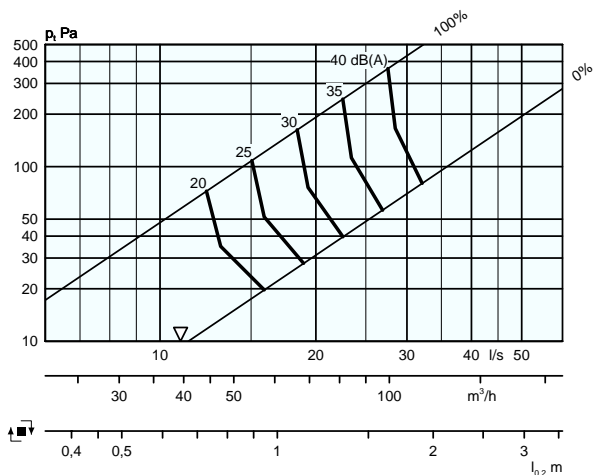
Engineering graphs - RDY with ALS - Supply air

Air flow - Pressure drop - Sound level - Throw

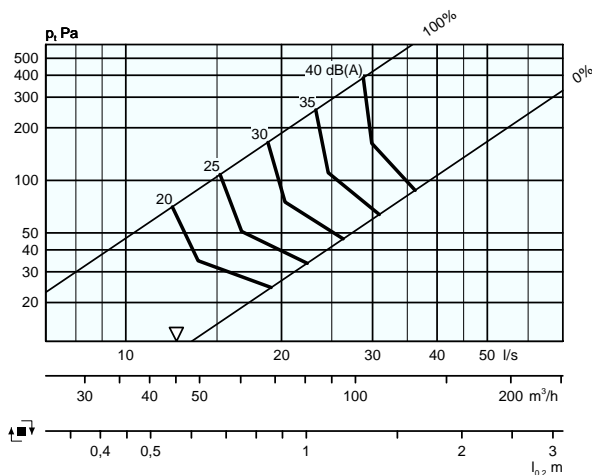
- The graphs must not be used for commissioning.
- ∇ = min. airflow to obtain sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.

- The dB(C) value is normally 6-9 dB's higher than the dB(A) value. For more accurate calculations, see the calculation template in the chapter on Acoustics in the Technical Information section of this catalogue.
- For other throw lengths, refer to table of throw lengths under technical data.

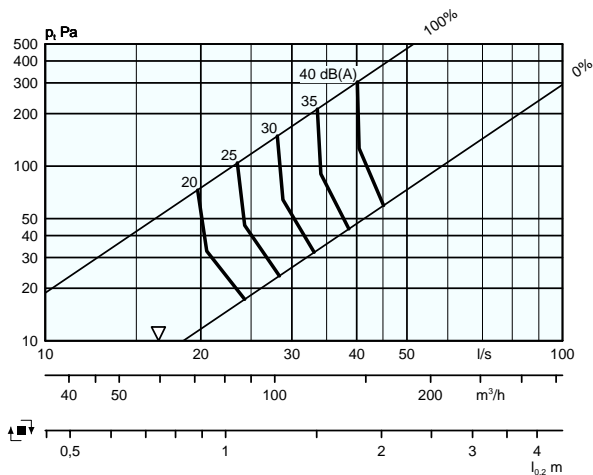
RDYa 1-100 + ALSc 80-100



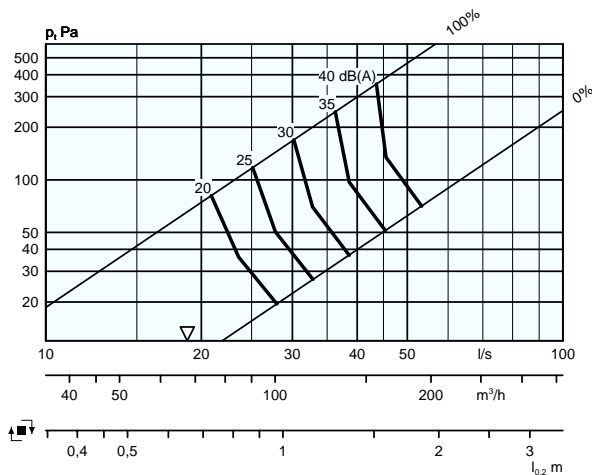
RDYa 2-100 + ALSc 80-100



RDYa 1-125 + ALSc 100-125



RDYa 2-125 + ALSc 100-125



RDYa

RDYa

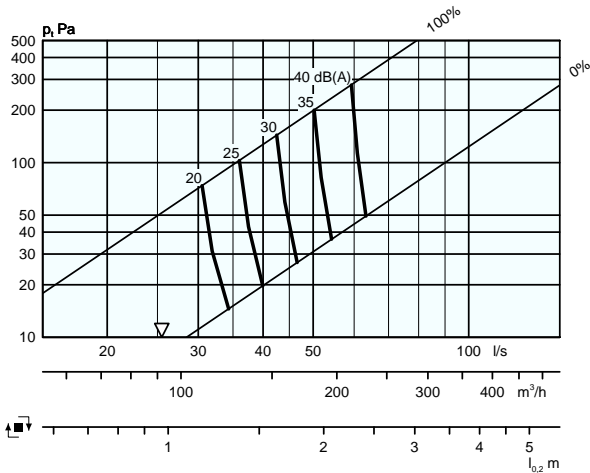
Engineering graphs - RDY with ALS - Supply air

Air flow - Pressure drop - Sound level - Throw

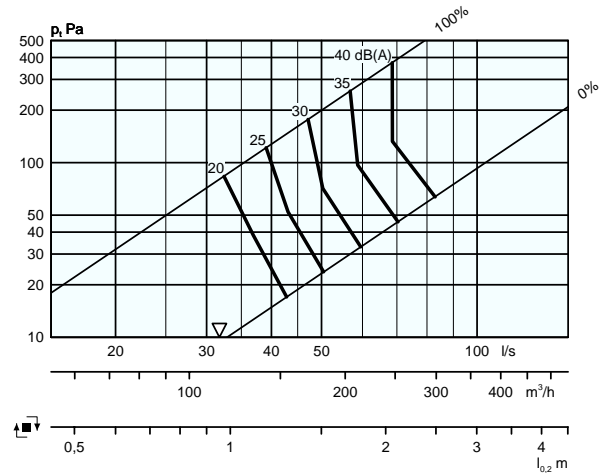
- The graphs must not be used for commissioning.
- ∇ = min. airflow to obtain sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.

- The dB(C) value is normally 6-9 dB's higher than the dB(A) value. For more accurate calculations, see the calculation template in the chapter on Acoustics in the Technical Information section of this catalogue.
- For other throw lengths, refer to table of throw lengths under technical data.

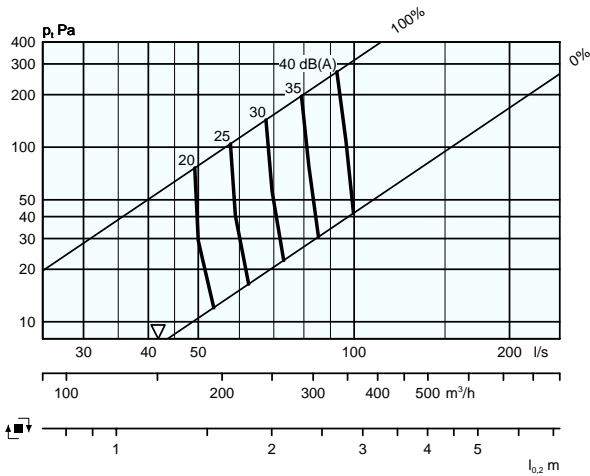
RDYa 1-160 + ALSc 125-160



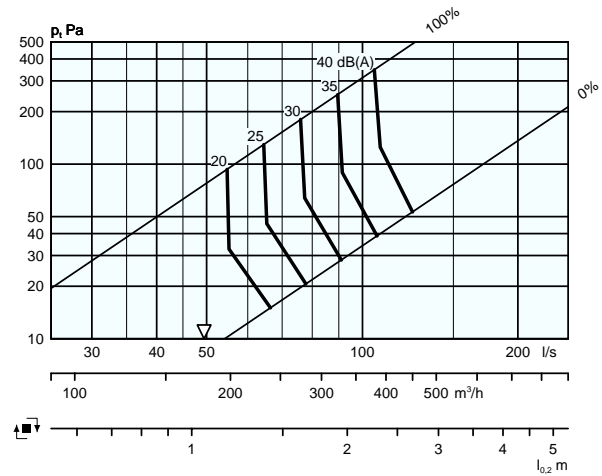
RDYa 2-160 + ALSc 125-160



RDYa 1-200 + ALSc 160-200



RDYa 2-200 + ALSc 160-200



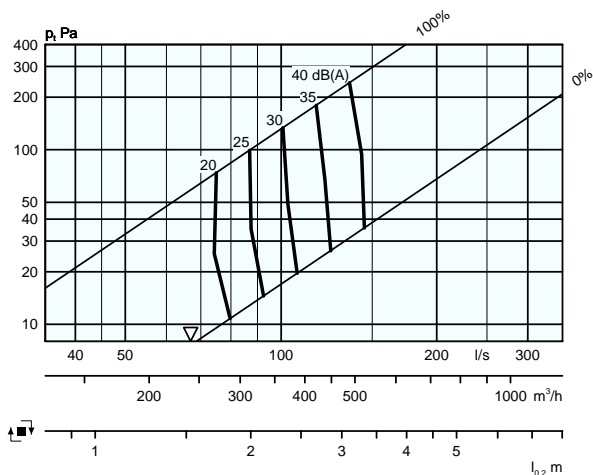
Engineering graphs - RDY with ALS - Supply air

Air flow - Pressure drop - Sound level - Throw

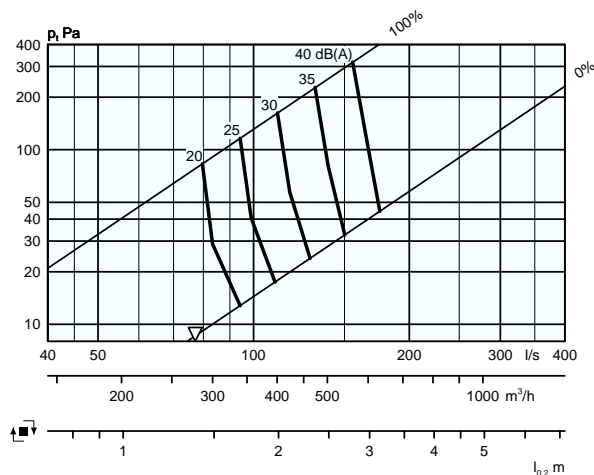
- The graphs must not be used for commissioning.
- ∇ = min. airflow to obtain sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.

- The dB(C) value is normally 6-9 dB's higher than the dB(A) value. For more accurate calculations, see the calculation template in the chapter on Acoustics in the Technical Information section of this catalogue.
- For other throw lengths, refer to table of throw lengths under technical data.

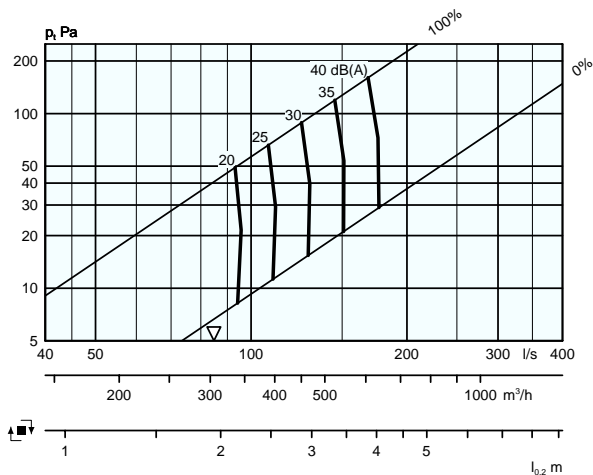
RDYa 1-250 + ALSc 200-250



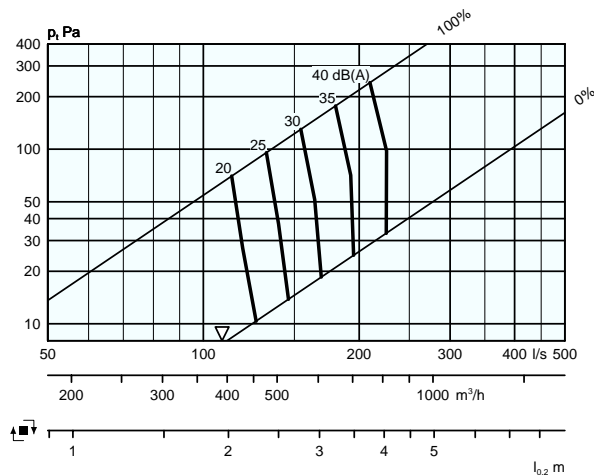
RDYa 2-250 + ALSc 200-250



RDYa 1-315 + ALSc 250-315



RDYa 2-315 + ALSc 250-315



RDYa

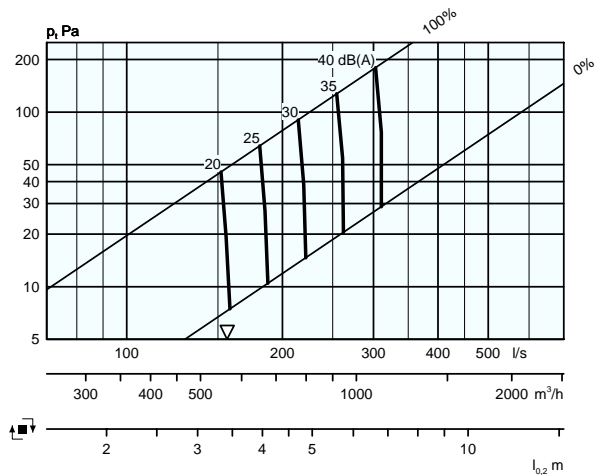
RDYa

Engineering graphs - RDY with ALS - Supply air

Air flow - Pressure drop - Sound level - Throw

- The graphs must not be used for commissioning.
- ∇ = min. airflow to obtain sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.
- The dB(C) value is normally 6-9 dB's higher than the dB(A) value. For more accurate calculations, see the calculation template in the chapter on Acoustics in the Technical Information section of this catalogue.
- For other throw lengths, refer to table of throw lengths under technical data.

RDYa 1-400 + ALSc 315-400



DIMENSIONS AND WEIGHT

RDYa 1 and 2

Size	ØA	B	Ød	Number of discs		Weight, kg
				1	2	
100	304	60	99	12	21	1.4
125	380	60	124	21	35	1.4
160	456	88	159	29	47	2.9
200	568	88	199	51	92	4.2
250	700	117	249	80	133	6.4
315	700	117	314	80	133	6.4
400	960	252	399	161	-	10.2

RDYa 1 and 2 with ALSc

Storlek	A	B	C	ØD	E	F
100	304	227	192	79	60	162
125	380	282	217	99	60	182
160	456	342	252	124	88	206
200	568	404	288	159	88	241
250	700	504	332	199	117	281
315	700	622	388	249	117	342
400	960	767	488	314	252	402

Storlek	G	H	ØJ	K	Weight,kg
100	90	200	105	50	2.9
125	100	270	130	80	3.5
160	112	315	165	80	5.8
200	130	375	205	100	8.3
250	150	465	255	115	12.1
315	175	575	320	140	14.9
400	210	712	405	175	22.0

ØJ = Dimension for hole cutting.

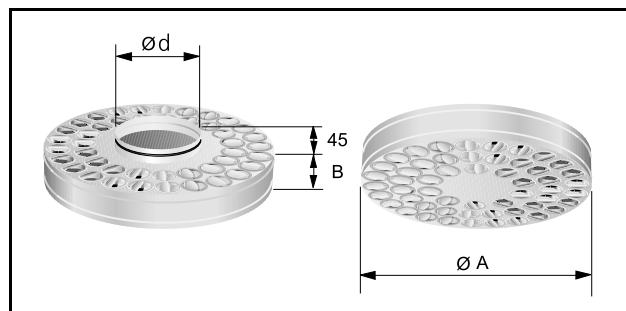


Figure 2. Disc diffuser RDY 1 and 2.

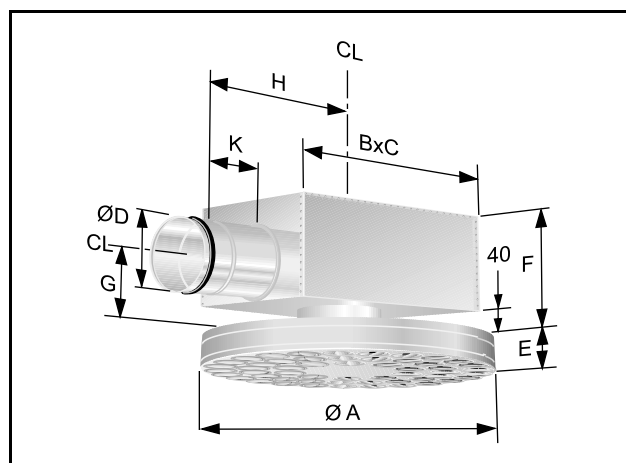


Figure 3. RDY 1 and 2 with ALS.



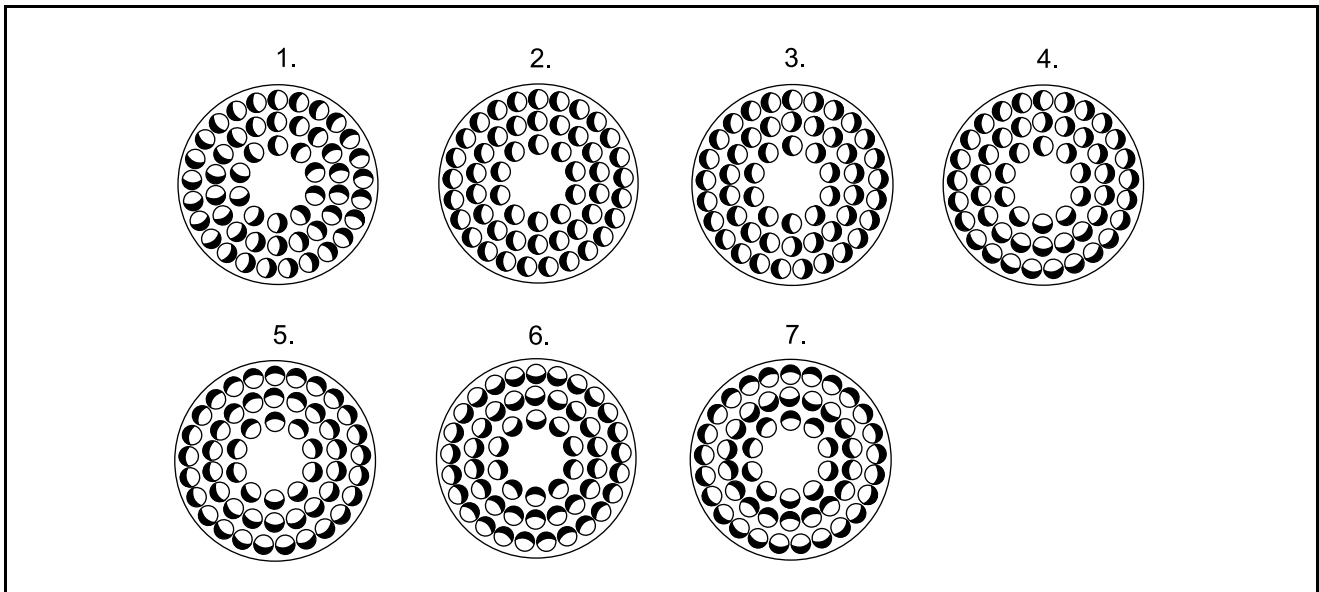


Figure 4. Disc setting rotation RDY 1 and 2.

- | | |
|----------------------|-----------------------------|
| 1. Rotation Standard | 5. 4-way |
| 2. 1-way | 6. V1 Vertical concentrated |
| 3. 2-way | 7. V2 Vertical diffused |
| 4. 3-way | |

ORDER KEY

Product designation

Circular disc diffuser RDYa -a -bbb

Version:

1: Discs in face only

2: Discs in face and connection side

Nominal connection dimension:

Size: 100, 125, 160, 200, 250, 315, 400

Standard range

Size: RDYa 1-100

1-160

1-200

1-250

1-315

1-400

2-100

2-125

2-160

2-200

2-250

2-315

Accessories

Plenum box ALSc -aaa - bbb

For RDYa

ALSc

100 80-100

125 100-125

160 125-160

200 160-200

250 200-250

315 250-315

400 315-400

SPECIFICATION EXAMPLE

SD XX

Swegons circular disc diffuser of type RDYa complete with the ALSc plenum box, and having the following functions:

- 100% flexible spread pattern
- Individually adjustable discs (55 mm) in recyclable plastic
- Cleanable
- Powder-coated in white
- Cleanable plenum box ALS with removable commissioning damper including a lockable adjustment, measurement function with low method error and internal acoustic lining with reinforced surface layer.

Size: RDYa a-bbb with
 ALSc aaa-bbb

xx items

