

COLIBRI Ceiling

Square ceiling diffuser with nozzles for supply air



QUICK FACTS

- Also available in the Extract air version
- Available with circular (COLIBRI Ceiling C) and rectangular (COLIBRI Ceiling R) nozzle pattern
- Suitable for VAV and DCV applications
- Fast and simple installation and commissioning through Swegon Quick Access
- Manages airflows substantially below room temperature (High ΔT)
- Designed for modular suspended ceilings
- ALS commissioning box with 1 or 2 changes in dimension between the inlet and outlet
- Available in a version with low installation height
- 100% flexible spread pattern
- Adapter for false ceilings
- Air diffuser size 250-500 and 315-500 adapted for ADAPTER
- Standard colour White RAL 9003
 - 5 alternative standard colours
 - Other colours upon request

AIR FLOW - SOUND PRESSURE ROOM (Lp10A) *)							
COLIBRI Ceiling R Size		25 dB(A)		30 dB(A)		35 dB(A)	
		l/s	m ³ /h	l/s	m ³ /h	l/s	m ³ /h
125-400		34	122	40	144	46	166
125-600		34	122	40	144	46	166
160-400		40	144	48	173	58	209
160-600		40	144	48	173	58	209
200-500		64	230	75	270	89	320
200-600		64	230	75	270	89	320
250-500		70	252	81	292	95	342
250-600		102	367	115	414	135	486
315-500		75	270	88	317	102	367
315-600		107	385	124	446	140	504
400-600		122	439	140	504	160	576
COLIBRI Ceiling R Size	ALS Size	25 dB(A)		30 dB(A)		35 dB(A)	
		l/s	m ³ /h	l/s	m ³ /h	l/s	m ³ /h
125-400	100-125	27	97	31	112	37	133
125-600	100-125	27	97	31	112	37	133
160-400	125-160	35	126	41	148	49	176
160-600	125-160	35	126	41	148	49	176
200-500	160-200	59	212	70	252	81	292
200-600	160-200	59	212	70	252	81	292
250-500	200-250	66	238	75	270	88	317
250-600	200-250	94	338	108	389	125	450
315-500	250-315	72	259	83	299	97	349
315-600	250-315	102	367	120	432	138	497
400-600	315-400	116	418	135	486	155	558

Data specified in the lower table applies to open damper when the commissioning box ALS is used.

*) Lp10A = Sound pressure incl. A-filter with 4 dB room attenuation and 10 m² room absorption area.

Contents

Technical description	3
Design	3
Materials and surface treatment.....	3
Accessories	3
Planning	3
Installation	3
Commissioning	3
Maintenance.....	3
Environment	3
Sizing	5
Sound data – COLIBRI CC – Supply air – Air diffuser only ...	5
Sound data – COLIBRI CC - Extract air – Air diffuser only	5
Sound data – COLIBRI CC + ALS – Supply air – One step....	6
Sound data – COLIBRI CC + ALS – Supply air – Two steps ..	6
COLIBRI CC + ALS – Extract Air	6
COLIBRI CC + ALS – supply air	8
COLIBRI CC + ALS – Extract air	11
Sound data – COLIBRI CR - Supply air – Air diffusers only.	12
Sound data - COLIBRI CR - Extract air – Air diffusers only.	12
Sound data – COLIBRI CR + ALS- Supply air – One step....	13
Sound data – COLIBRI CR + ALS – Supply air – Two steps.	13
COLIBRI CR + ALS – Extract air	13
COLIBRI CR + ALS – Extract air.....	20
Dimensions and weights	21
COLIBRI CC – Circular nozzle arrangement, examples.....	23
COLIBRI CR – Square nozzle arrangement, examples.....	24
Order key	25

Technical description

Design

The square supply air diffuser consists of a diffuser backing box and a diffuser face. The front is equipped with rotatable nozzles and is available in two designs, with a circular nozzle pattern (COLIBRI Ceiling Circular, called COLIBRI CC) as well as with a rectangular nozzle pattern (COLIBRI Ceiling Rectangular, called COLIBRI CR).

The diffuser face is hung on hinges on one side and secured by springs on the opposite side. This Quick Access fastening system makes it simpler and quicker to open and close the diffuser face for installation, commissioning and cleaning.

The air diffuser is also available in a low version for installation in a ceiling void where low installation height is required. The air diffuser is then supplied without sleeve coupling (not sizes 400-600).

Materials and surface treatment

The backing box and diffuser face are made of sheet steel. The connection branch is made of galvanized sheet steel. The interior and exterior of the air diffuser is painted.

- Standard colour:
 - White semi-gloss, lustre 40, RAL 9003/NCS S 0500-N
- Alternative standard colours:
 - Silver gloss, lustre 80, RAL 9006
 - Grey aluminium gloss, lustre 80, RAL 9007
 - White semi-gloss, lustre 40, RAL 9010
 - Black semi-gloss, lustre 35, RAL 9005
 - Grey semi-gloss, lustre 30, RAL 7037
- Non-painted finish and other colours available on request.

The nozzles are made of plastic (PP-polypropylene).

Accessories

Commissioning box:

ALS. Made of galvanized sheet steel. Contains removable commissioning damper, fixed measurement tappings and sound absorbing material with reinforced surface layer, to Fire Resistance Class B-s1,d0 according to EN ISO 11925-2. Tightness class C on the housing according to SS-EN 12237.

The commissioning box is also available in a low version for installation in a ceiling void where low installation height is required. The air diffuser is then supplied without sleeve coupling. The commissioning box is available with 1 or 2 changes in dimension between the inlet and outlet.

Frame:

SAR K. For aesthetic installation of a lowered diffuser.

Adapter:

ADAPTER, for adaptation to various variants and makes of systemized false ceilings: Ecophon, Gyproc, Dampa etc. Also used for adaptation to optional sizes of lay-in ceilings, for instance 625 x 625 or 675 x 675. Specification in separate product sheet for ADAPTER.

Planning

The COLIBRI Ceiling is available with square dimensions of 595 x 595 mm in all connection sizes. This makes COLIBRI Ceiling very easy to install in 600 x 600 suspended ceiling modules. Position these directly down in the T-bar framework, and then secure them to the duct system or to the commissioning box. COLIBRI Ceiling is also available in a low version for installation in ceiling void where low installation height is required. See Figure 2.



Installation

To dismantle the face (see Figure 1) prior to installing the air diffuser, insert a thin object, such as a Quick Access card or similar card, between the air diffuser face and backing box to release the springs. Then slide the card from the centre outward toward the corners.

The inlet spigot of the diffuser backing box can be secured to the connecting ducting by means of self-tapping screws or a blind rivets. For flush-mounting in fixed ceiling constructions, secure the diffuser by means of screws into place in the framework through either the sides or top of the diffuser backing box. The face and backing box in the version for low installation height must be centred and jointed together using the locking strip supplied. Secure the air diffuser in the correct position by means of self-tapping screws to the underside of commissioning box.

For mounting in modular suspended ceilings, it is advisable to select air diffusers with outer dimensions of 595 x 595 mm. Position these directly down in the T-bar framework, and then secure them to the duct system or to the commissioning box. If an ALS commissioning box is used, it must be secured to the building structure by means of hangers or mounting brackets.

The distance between the air diffuser and the commissioning box can be increased by as much as 500 mm with an ordinary circular duct without having to lengthen the measuring tubes and damper adjustment cords. See Figure 2.

Commissioning

Commissioning must be carried out with the diffuser face mounted. Pull out the measuring tubes and damper adjustment cords through the diffuser face nozzles. Connect a manometer to the measuring tubes. The desired commissioning pressure can be computed by applying the rated coefficient of performance of the air diffuser. Set the damper blade in the correct position and tie the damper adjustment cords in a commissioning knot to indicate the damper position.

Measurement accuracy and requirement on straight duct before the commissioning box, see Figure 2. The requirements of straight duct depends on the type of disturbance before the commissioning box. Figure 2 shows a bend, a dimensional change and a T-piece. Other types of disturbances requires at least 2xD straight (D = connection dimension) for measurement accuracy of $\pm 10\%$ of the flow.

The rated coefficient of performance (K-factor) is specified on the identification label of the product and the relevant commissioning instructions are also available at www.swegon.com.

Maintenance

The air diffuser can be cleaned, if necessary, using lukewarm water with dishwashing detergent added. The duct system can be accessed after opening the diffuser face. If an ALS commissioning box is used, pull the distributor plate aside and then grip and twist the damper unit from of its mounting.

Environment

The Declaration of construction materials is available at www.swegon.com.

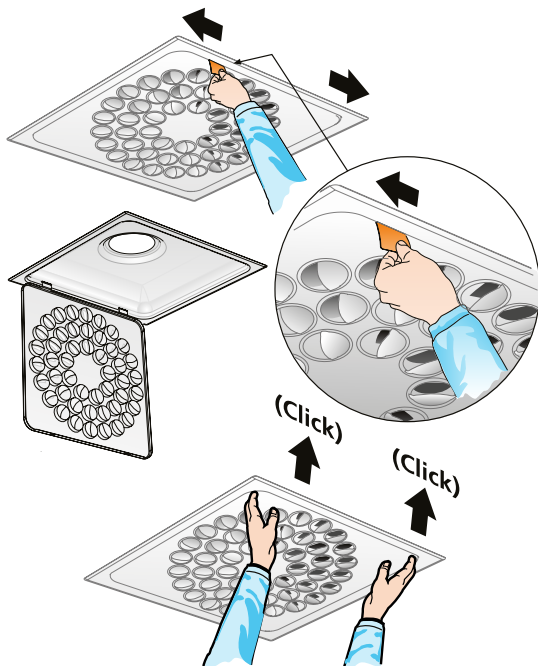


Figure 1. Quick Access, dismantling of the diffuser front.

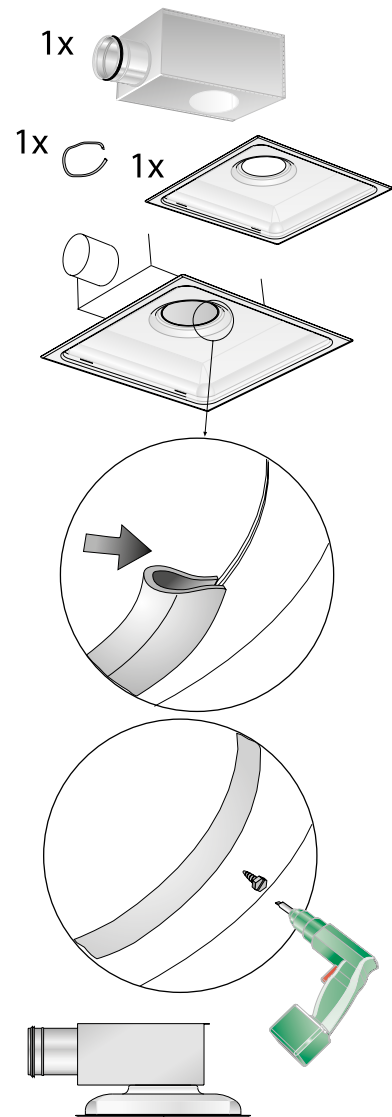


Figure 3. Installing air diffusers and commissioning box with low installation height.

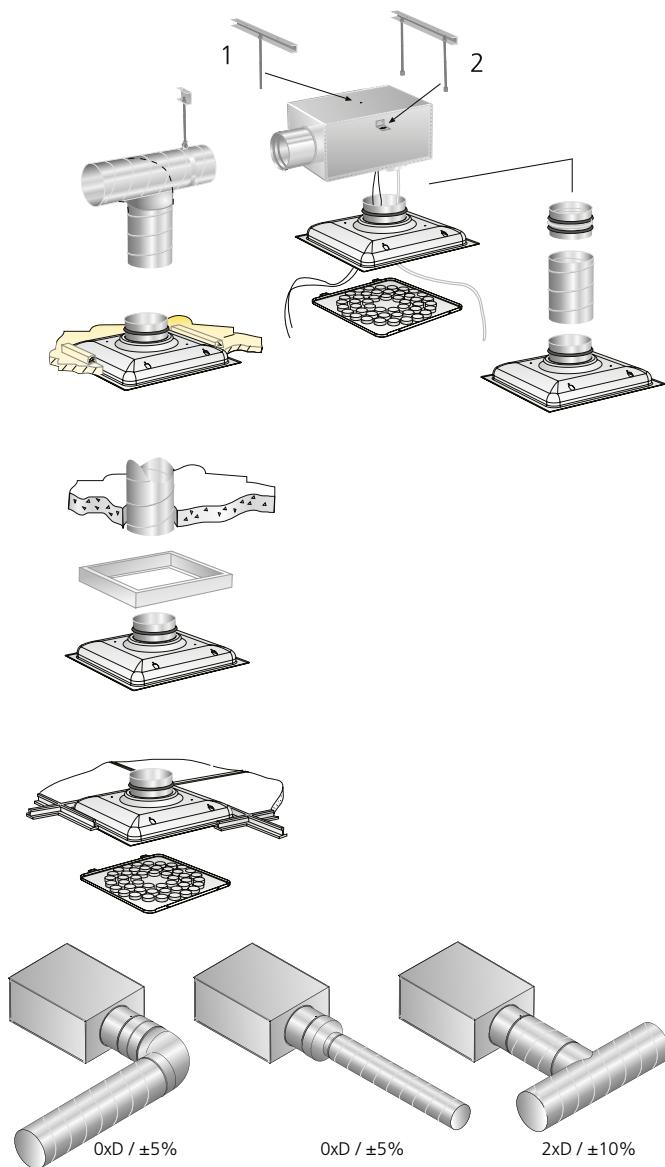


Figure 2. Installation.

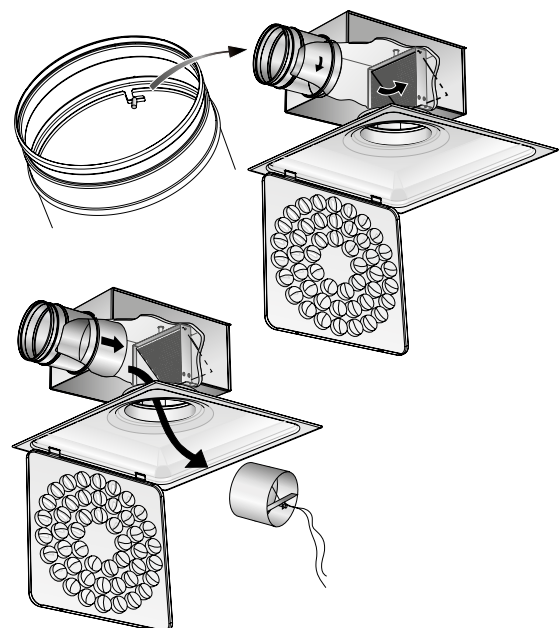


Figure 4. Damper removal.

Sizing

- Sound pressure level dB(A) applies to rooms with 10 m² equivalent sound absorption area.
- Sound attenuation (ΔL) below is shown in the octave band. Orifice attenuation is included in the values.
- Throw $I_{0,2}$ is measured under isothermal discharge conditions.
- Recommended max. permissible temperature below room temperature is 14 K.
- For calculating the width of the air stream, air velocities in the occupied zone or sound levels in rooms with other dimensions, please refer to our web calculation softwares available for download at www.swegon.com.

L_w = Sound power level

L_{p10A} = Sound pressure level dB (A)

K_{ok} = Correction for producing the L_w value in the octave band

$L_w = L_{p10A} + K_{OK}$ gives the frequency divided octave band

Sound data – COLIBRI CC – Supply air – Air diffuser only

Sound power level L_w (dB)

Table K_{ok}

Size COLIBRI CC	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125-400	1	1	2	5	5	-8	-22	-23
125-600	-6	-1	3	5	-2	-12	-26	-25
160-400	-7	-1	-2	0	2	-10	-27	-29
160-600	-2	0	2	5	-1	-11	-26	-28
200-500	-4	-3	-2	1	2	-12	-29	-26
200-600	-3	-2	0	4	0	-13	-28	-30
250-500	-4	-3	-1	1	2	-10	-27	-32
250-600	-5	-2	-1	3	1	-12	-27	-26
315-500	-7	-1	-1	0	2	-8	-25	-30
315-600	-3	0	0	2	1	-13	-27	-24
400-600	4	1	1	2	1	-10	-21	-21
Tol. \pm	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size COLIBRI CC	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125-400	20	15	10	5	3	5	5	4
125-600	20	15	10	5	3	5	5	4
160-400	19	14	9	4	3	5	5	4
160-600	19	14	9	4	3	5	5	4
200-500	19	14	8	3	3	4	5	5
200-600	19	14	8	3	3	4	5	5
250-500	16	11	5	4	2	3	4	4
250-600	16	11	5	4	2	3	4	4
315-500	14	9	4	2	2	2	3	3
315-600	14	9	4	2	2	2	3	3
400-600	13	8	4	1	0	0	0	0
Tol. \pm	2	2	2	2	2	2	2	2

Sound data – COLIBRI CC - Extract air – Air diffuser only

Sound power level L_w (dB)

Table K_{ok}

Size COLIBRI CC	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
250-600	0	9	7	5	2	-3	-9	-16
315-600	0	8	8	5	2	-3	-9	-14
400-600	-2	5	5	5	4	-4	-12	-16
Tol. \pm	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size COLIBRI CC	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
250-600	16	11	5	4	2	3	4	4
315-600	14	9	4	2	2	2	3	3
400-600	13	8	4	1	0	0	0	0
Tol. \pm	2	2	2	2	2	2	2	2

Sound data – COLIBRI CC + ALS – Supply air – One step

Sound power level L_w (dB)

Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125-400	1	7	6	2	-1	-11	-18	-21
125-600	1	7	6	2	-1	-11	-18	-21
160-400	1	4	4	2	1	-11	-20	-20
160-600	1	4	4	2	1	-11	-20	-20
200-500	-1	3	3	1	0	-9	-16	-14
200-600	-1	3	3	1	0	-9	-16	-14
250-500	-4	4	1	1	2	-9	-22	-25
250-600	-3	4	2	2	0	-10	-19	-19
315-500	-5	3	1	-1	2	-9	-24	-29
315-600	2	2	0	3	1	-13	-24	-22
400-600	0	5	1	1	2	-10	-25	-25
Tol. \pm	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125-400	21	16	9	17	23	16	11	13
125-600	21	16	9	17	23	16	11	13
160-400	19	14	10	17	19	12	10	12
160-600	19	14	10	17	19	12	10	12
200-500	16	11	8	16	18	12	11	11
200-600	16	11	8	16	18	12	11	11
250-500	13	8	8	16	17	12	12	13
250-600	13	8	8	16	17	12	12	13
315-500	11	6	7	19	14	10	10	13
315-600	11	6	7	19	14	10	10	13
400-600	14	5	8	14	11	10	11	12
Tol. \pm	2	2	2	2	2	2	2	2

Sound data – COLIBRI CC + ALS – Supply air – Two steps

Sound power level L_w (dB)

Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
160-400	0	8	6	2	-2	-11	-17	-17
160-600	0	8	6	2	-2	-11	-17	-17
200-500	0	9	6	1	-3	-9	-16	-17
200-600	0	9	6	1	-3	-9	-16	-17
250-600	2	8	4	0	-3	-8	-15	-16
315-500	-3	5	2	0	2	-9	-21	-23
315-600	0	7	2	2	-1	-10	-17	-18
Tol. \pm	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
160-400	19	14	11	17	24	15	13	15
160-600	19	14	11	17	24	15	13	15
200-500	18	14	10	16	23	15	14	15
200-600	18	14	10	16	23	15	14	15
250-600	15	9	9	20	19	15	16	14
315-500	13	8	10	19	16	13	16	16
315-600	13	8	10	19	16	13	16	16
Tol. \pm	2	2	2	2	2	2	2	2

COLIBRI CC + ALS – Extract Air

Sound power level L_w (dB)

Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
250-600	3	14	8	2	0	-4	-10	-15
315-600	5	11	6	2	3	-4	-14	-18
400-600	6	8	4	4	4	-4	-14	-18
Tol. \pm	2	2	2	2	2	2	2	2

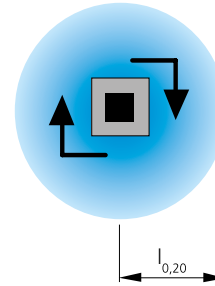
Sound attenuation ΔL (dB)

Table ΔL

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
250-600	16	11	5	4	2	3	4	4
315-600	14	9	4	2	2	2	3	3
400-600	13	8	4	1	0	0	0	0
Tol. \pm	2	2	2	2	2	2	2	2

Engineering graphs

- The graphs must not be used for commissioning.
- The dB(A) values are applicable to rooms with normal acoustic absorption of 4 dB.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.
- Air diffuser size 250-500, 315-500 adapted for ADAPTER

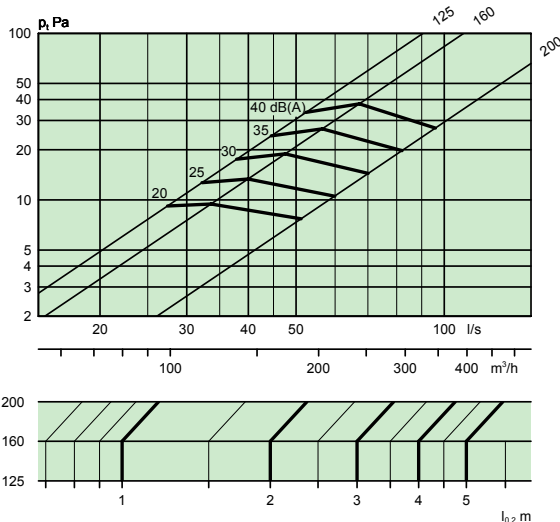


COLIBRI C - Circular nozzle pattern - Supply air Air diffuser only

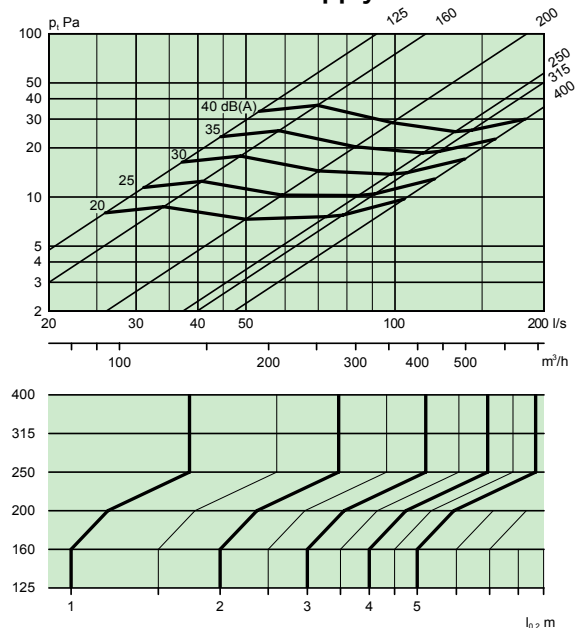
Airflow – Pressure drop – Sound level – Throw

- Throw $l_{0,2}$ is measured under isothermal discharge conditions.
- Recommended max. permissible temperature below room temperature is 14K.
- For calculating the width of the air stream, air velocities in the occupied zone or sound levels in rooms with other dimensions, please refer to our web calculation softwares available for download at www.swegon.com
- The graphs illustrate data for COLIBRI Ceiling recessed in the ceiling.
- Throw for adjusting the swirl. For other adjustments, see the graphs for diffusers with the ALS commissioning box.

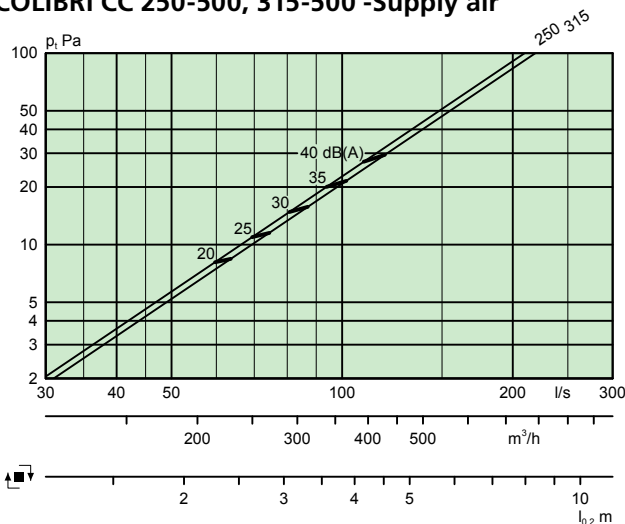
COLIBRI CC 125-400, 160-400 and 200-500 - Supply air



COLIBRI CC 125-600, 160-600, 200-600, 250-600, 315-600 and 400-600 - Supply air

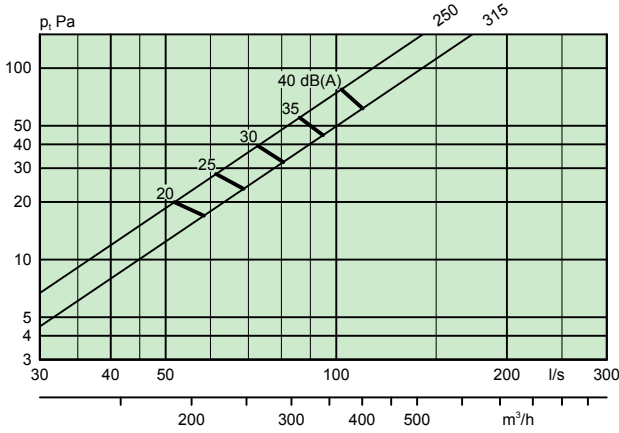


COLIBRI CC 250-500, 315-500 -Supply air

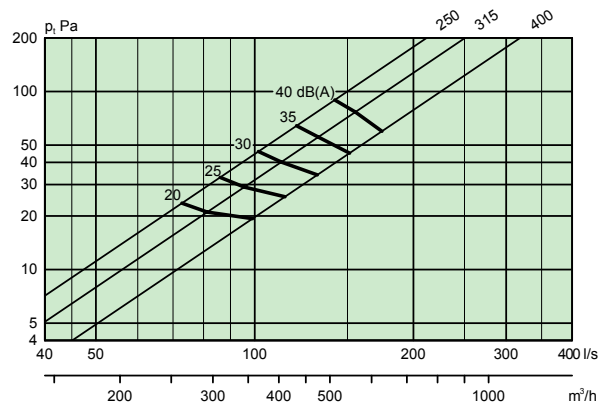


COLIBRI C – Circular nozzle pattern – Extract air
Air diffuser only

COLIBRI CC 250-500, 315-500 - Extract air



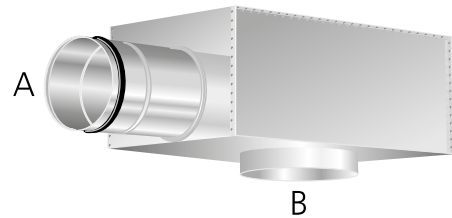
COLIBRI CC 250-600, 315-600 and 400-600 – Extract air



COLIBRI C - Circular nozzle pattern – Supply air
Air diffuser with commissioning box

Air flow – Pressure drop – Sound level – Throw

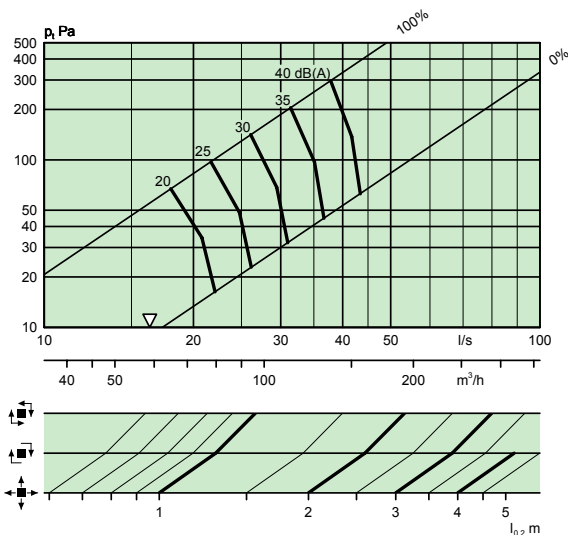
- The graphs illustrate data for air diffuser recessed in the ceiling
- Δ = Minimum airflow required for obtaining sufficient commissioning pressure
- The version for low installation height generates approx. 3 dB(A) higher sound level than the value plotted in the graph.



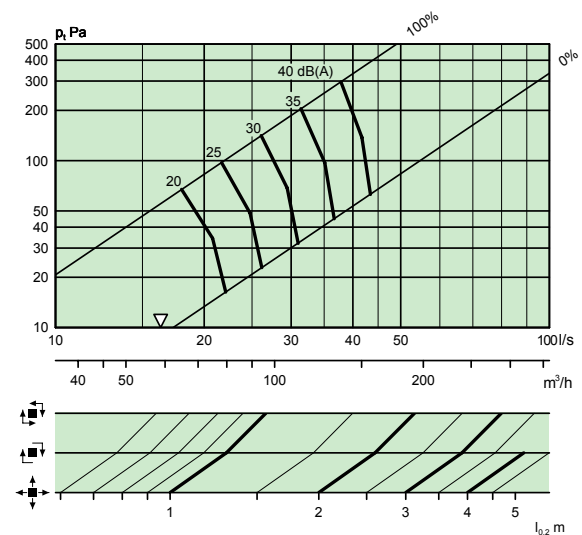
Explanation of the step model:

- One step = One dimensional change between A and B, for example, A = Ø160 mm and B = Ø200 mm.
- Two steps = Two dimensional changes between A and B, for example, A = Ø160 mm and B = Ø250 mm.

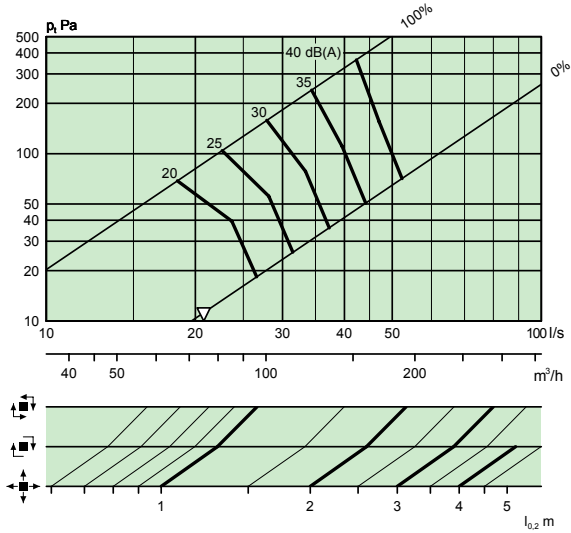
COLIBRI CC 125-400 + ALS 100-125 – One step



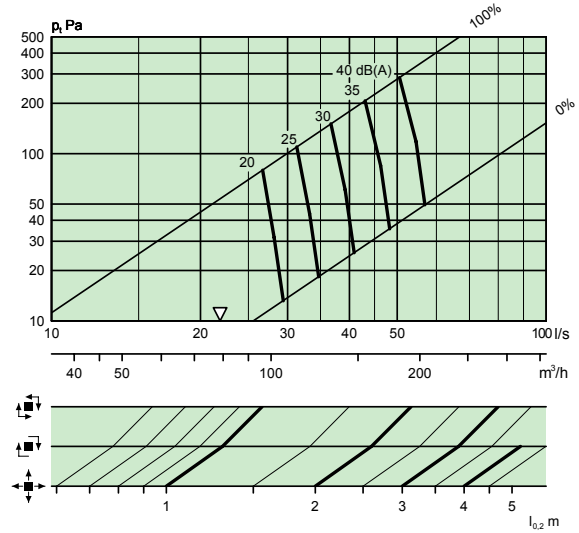
COLIBRI CC 125-600 + ALS 100-125 – One step



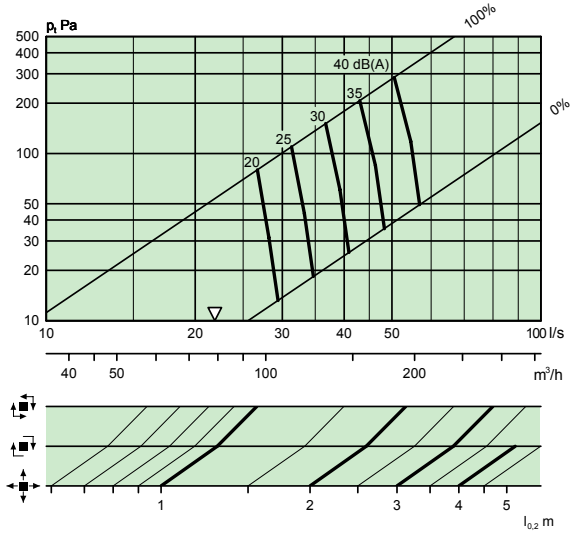
COLIBRI CC 160-400 + ALS 100-160 – Two steps



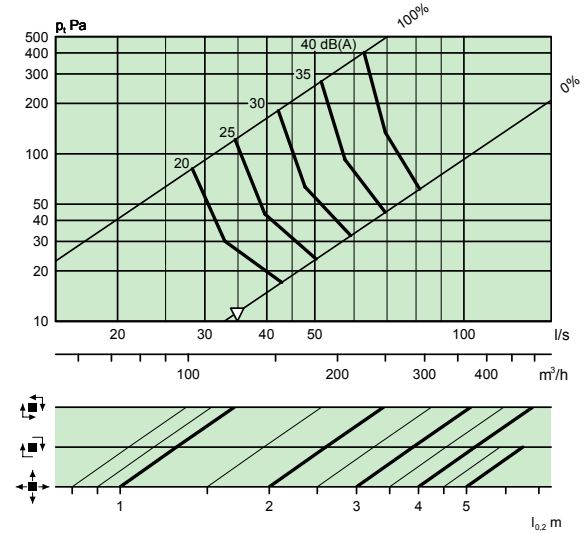
COLIBRI CC 160-600 + ALS 125-160 – One step



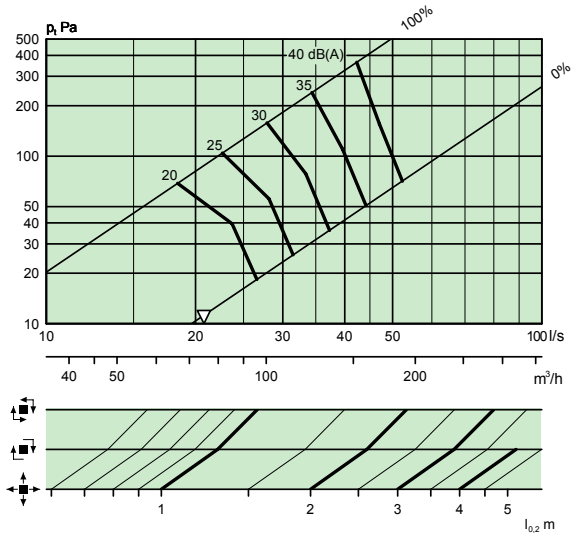
COLIBRI CC 160-400 + ALS 125-160 – One step



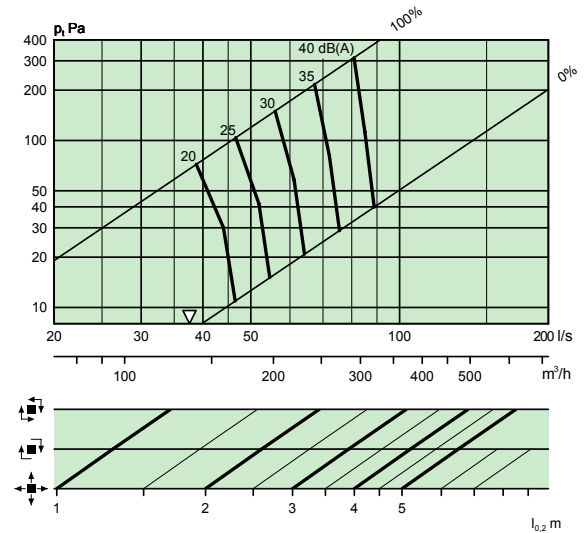
COLIBRI CC 200-500 + ALS 125-200 – Two steps



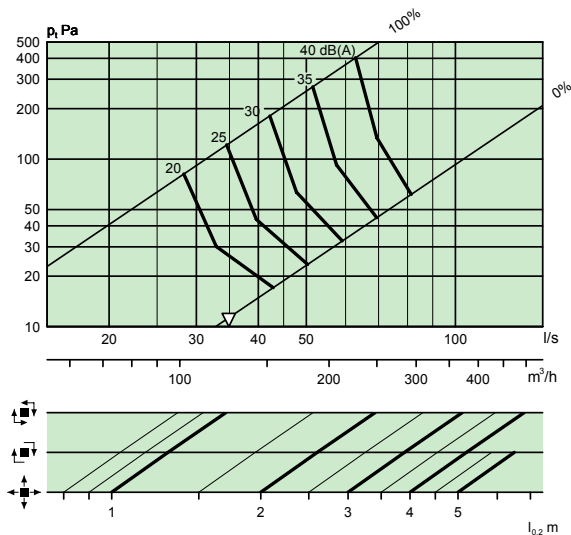
COLIBRI CC 160-600 + ALS 100-160 – Two steps



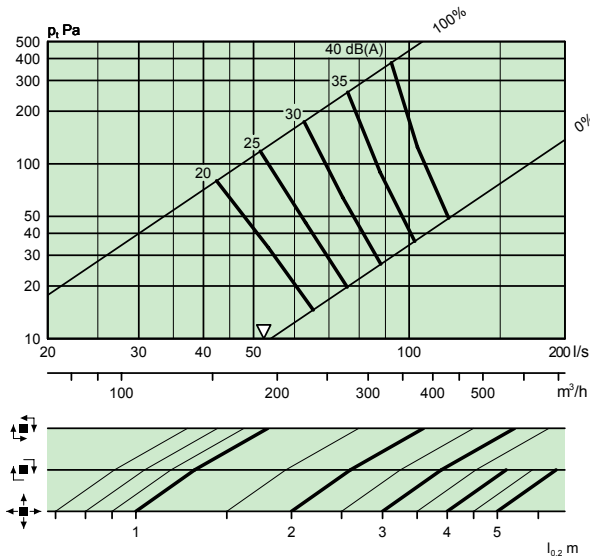
COLIBRI CC 200-500 + ALS 160-200 – One step



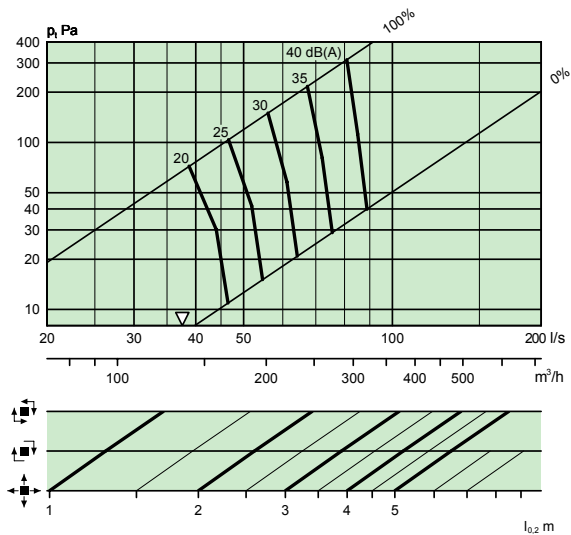
COLIBRI CC 200-600 + ALS 125-200 – Two steps



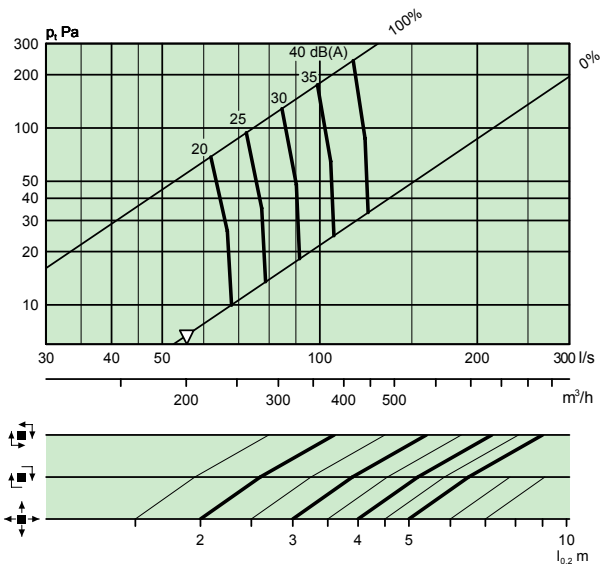
COLIBRI CC 250-600 + ALS 160-250 – Two steps



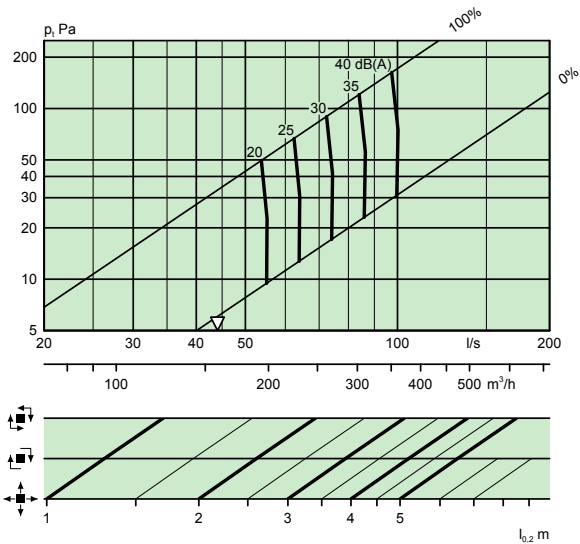
COLIBRI CC 200-600 + ALS 160-200 – One step



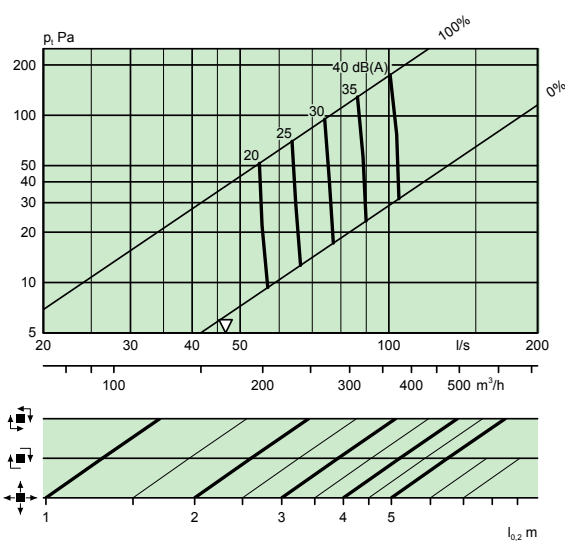
COLIBRI CC 250-600 + ALS 200-250 – One step



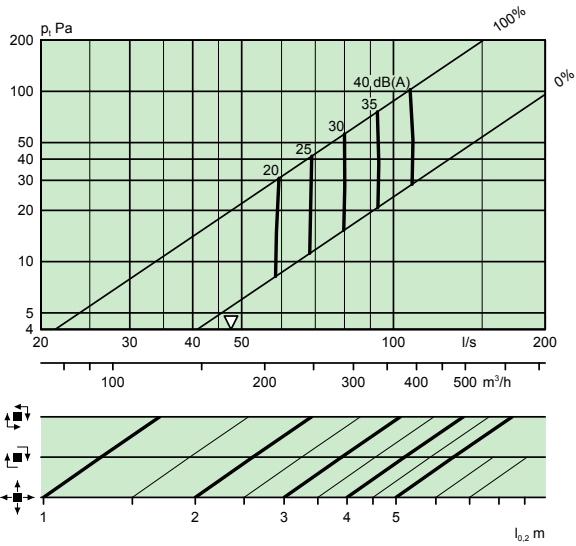
COLIBRI CC 250-500+ALS 200-250 – One step



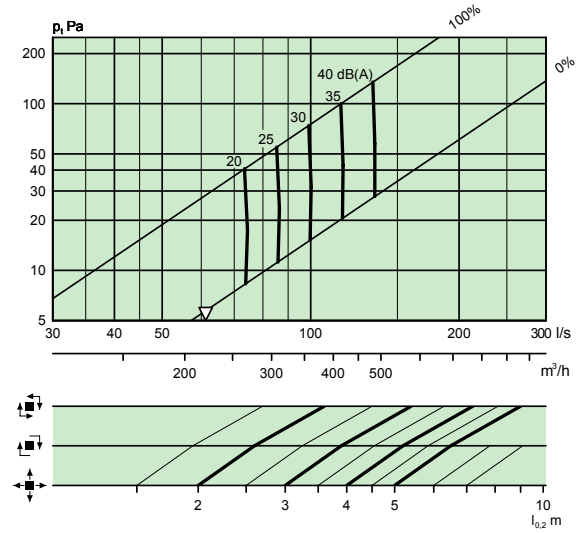
COLIBRI CC 315-500+ALS 200-315 – Two steps



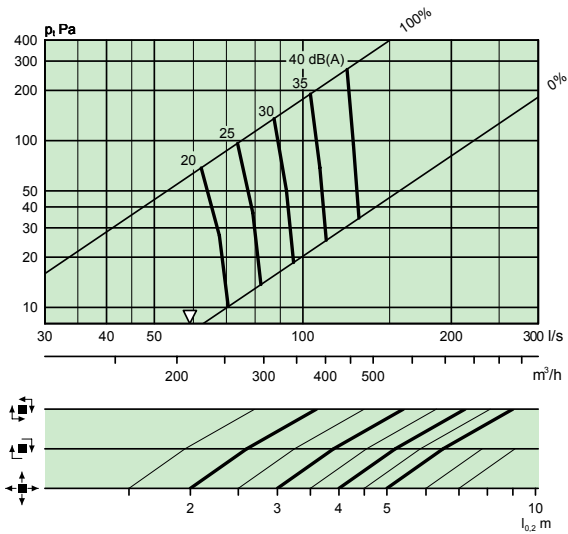
COLIBRI CC 315-500+ALS 250-315 – One step



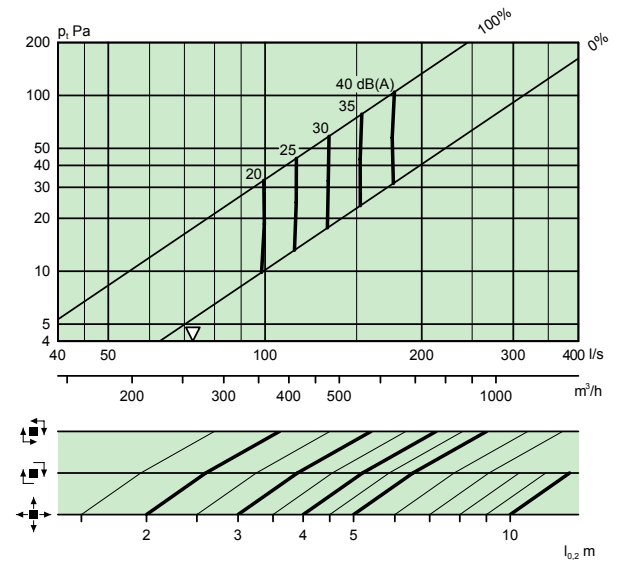
COLIBRI CC 315-600 + ALS 250-315 – One step



COLIBRI CC 315-600 + ALS 200-315 – Two steps



COLIBRI CC 400-600 + ALS 315-400 – One step

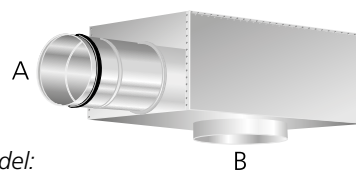


COLIBRI C – Circular nozzle pattern with ALS – Extract air

Air diffuser with commissioning box

Air flow – Pressure drop – Sound level

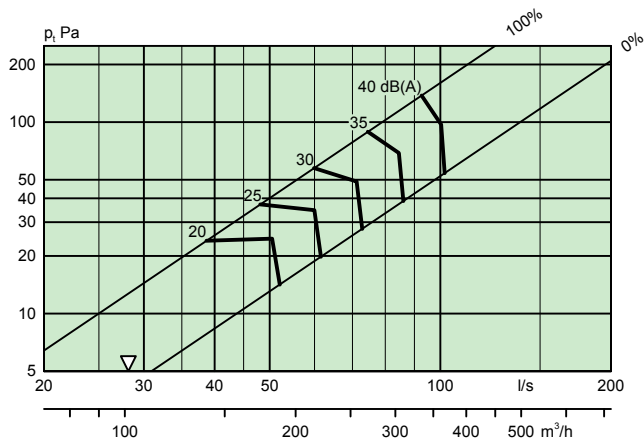
- The graphs illustrate data for air diffuser recessed in the ceiling.
- Δ = Minimum airflow required for obtaining sufficient commissioning pressure.



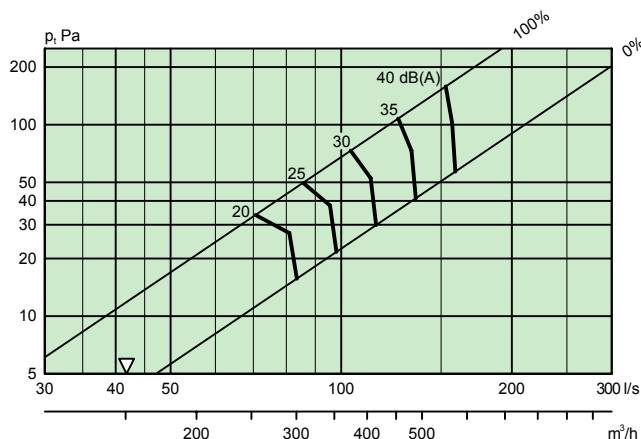
Explanation of the step model:

- One step = One dimensional change between A and B, for example, A = Ø160 mm and B = Ø200 mm.
- Two steps = Two dimensional changes between A and B, for example, A = Ø160 mm and B = Ø250 mm.

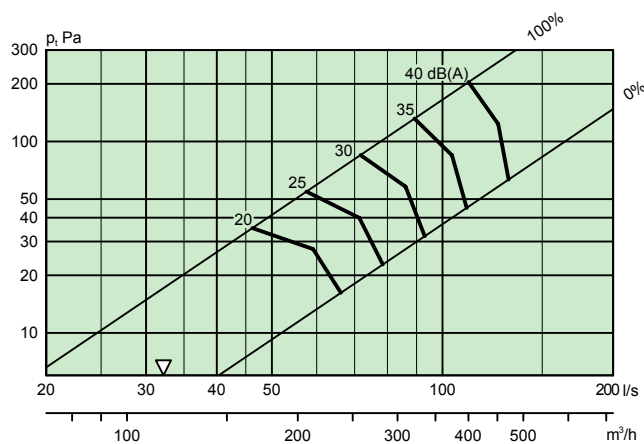
COLIBRI CC 250-500+ALS 200-250 – One step



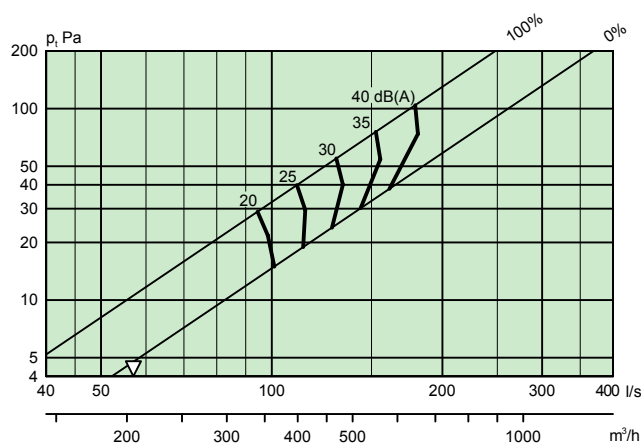
COLIBRI CC 315-600 + ALS 250-315 – One step



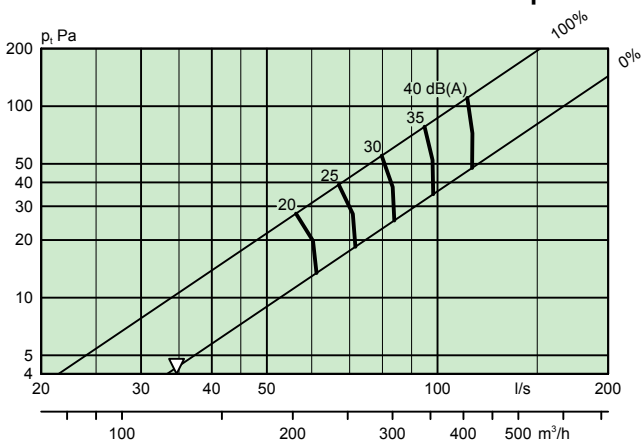
COLIBRI CC 250-600 + ALS 200-250 – One step



COLIBRI CC 400-600 + ALS 315-400 – One step



COLIBRI CC 315-500+ALS 250-315 – One step



Sizing

- Sound pressure level dB(A) applies to rooms with 10 m² equivalent sound absorption area.
- Sound attenuation (ΔL) below is shown in the octave band. Orifice attenuation is included in the values.
- Throw $I_{0,2}$ is measured under isothermal discharge conditions.
- Recommended max. permissible temperature below room temperature is 14 K.
- For calculating the width of the air stream, air velocities in the occupied zone or sound levels in rooms with other dimensions, please refer to our web calculation softwares available for download at www.swegon.com.

L_W = Sound power level

L_{p10A} = Sound pressure level dB (A)

K_{OK} = Correction for producing the L_W value in the octave band

$L_W = L_{p10A} + K_{OK}$ gives the frequency divided octave band

Sound data – COLIBRI CR - Supply air – Air diffusers only

Sound power level L_W (dB)

Table K_{OK}

Size COLIBRI CR	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125-400	-5	-2	-2	1	2	-10	-25	-26
125-600	-6	-1	2	5	-2	-11	-26	-25
160-400	0	-2	-3	0	3	-9	-25	-28
160-600	-4	-2	1	5	-2	-10	-25	-27
200-500	-4	-1	-1	-1	3	-9	-25	-28
200-600	4	-1	-1	3	1	-11	-25	-30
250-500	-12	-3	-1	-1	3	-10	-27	-30
250-600	0	1	2	3	5	-7	-24	-25
315-500	-12	-2	-1	-2	3	-9	-26	-29
315-600	-2	-1	-1	-1	3	-10	-27	-26
400-600	-5	-2	-1	-1	3	-10	-26	-22
Tol. \pm	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size COLIBRI CR	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125-400	20	15	10	5	3	5	5	4
125-600	20	15	10	5	3	5	5	4
160-400	19	14	9	4	3	5	5	4
160-600	19	14	9	4	3	5	5	4
200-500	19	14	8	3	3	4	5	5
200-600	19	14	8	3	3	4	5	5
250-500	16	11	5	4	2	3	4	4
250-600	16	11	5	4	2	3	4	4
315-500	14	9	4	2	2	2	3	3
315-600	14	9	4	2	2	2	3	3
400-600	13	8	4	1	0	0	0	0
Tol. \pm	2	2	2	2	2	2	2	2

Sound data - COLIBRI CR - Extract air – Air diffusers only

Sound power level L_W (dB)

Table K_{OK}

Size COLIBRI CR	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
250-600	2	8	5	4	3	-2	-10	-17
315-600	0	8	7	4	3	-3	-10	-18
400-600	2	4	4	3	3	-4	-11	-17
Tol. \pm	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size COLIBRI CR	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
250-600	16	11	5	4	2	3	4	4
315-600	14	9	4	2	2	2	3	3
400-600	13	8	4	1	0	0	0	0
Tol. \pm	2	2	2	2	2	2	2	2

Sound data – COLIBRI CR + ALS- Supply air – One step

Sound power level L_w (dB)

Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125-400	2	7	6	2	0	-11	-18	-22
125-600	2	7	6	2	0	-11	-18	-22
160-400	1	4	4	1	1	-11	-20	-20
160-600	1	4	4	1	1	-11	-20	-20
200-500	-2	4	4	0	0	-8	-16	-17
200-600	-2	4	4	0	0	-8	-16	-17
250-500	-4	4	1	0	2	-10	-22	-24
250-600	-3	6	3	-2	0	-8	-16	-17
315-500	-5	3	1	0	3	-9	-24	-28
315-600	0	4	1	0	2	-10	-22	-22
400-600	-1	4	0	-2	3	-11	-26	-25
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125-400	21	16	9	17	23	16	11	13
125-600	21	16	9	17	23	16	11	13
160-400	19	14	10	17	19	12	10	12
160-600	19	14	10	17	19	12	10	12
200-500	16	11	8	16	18	12	11	11
200-600	16	11	8	16	18	12	11	11
250-500	13	8	8	16	17	12	12	13
250-600	13	8	8	16	17	12	12	13
315-500	11	6	7	19	14	10	10	13
315-600	11	6	7	19	14	10	10	13
400-600	14	5	8	14	11	10	11	12
Tol. ±	2	2	2	2	2	2	2	2

Sound data – COLIBRI CR + ALS – Supply air – Two steps

Sound power level L_w (dB)

Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
160-400	-2	8	6	2	-2	-11	-17	-18
160-600	-2	8	6	2	-2	-11	-17	-18
200-500	1	8	7	0	-3	-8	-15	-17
200-600	0	8	7	0	-3	-8	-15	-17
250-600	1	9	5	-2	-3	-7	-14	-17
315-500	-2	5	2	-2	2	-8	-19	-23
315-600	3	8	3	-2	0	-7	-15	-18
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
160-400	19	14	11	17	24	15	13	15
160-600	19	14	11	17	24	15	13	15
200-500	18	14	10	16	23	15	14	15
200-600	18	14	10	16	23	15	14	15
250-600	15	9	9	20	19	15	16	14
315-500	13	8	10	19	16	13	16	16
315-600	13	8	10	19	16	13	16	16
Tol. ±	2	2	2	2	2	2	2	2

COLIBRI CR + ALS – Extract air

Sound power level L_w (dB)

Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
250-600	0	13	8	1	0	-4	-10	-16
315-600	4	12	6	1	3	-4	-13	-18
400-600	5	9	4	2	3	-4	-13	-20
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

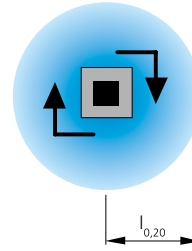
Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
250-600	13	8	8	16	17	12	12	13
315-600	11	6	7	19	14	10	10	13
400-600	14	5	8	14	11	10	11	12
Tol. ±	2	2	2	2	2	2	2	2

COLIBRI C – Rectangular nozzle pattern – Supply air

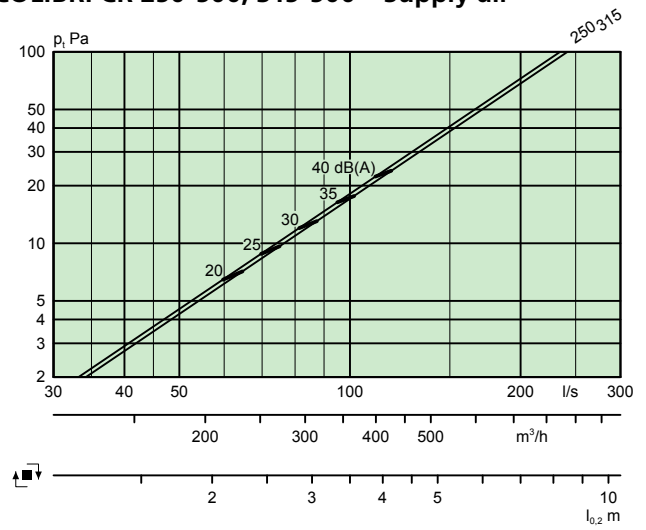
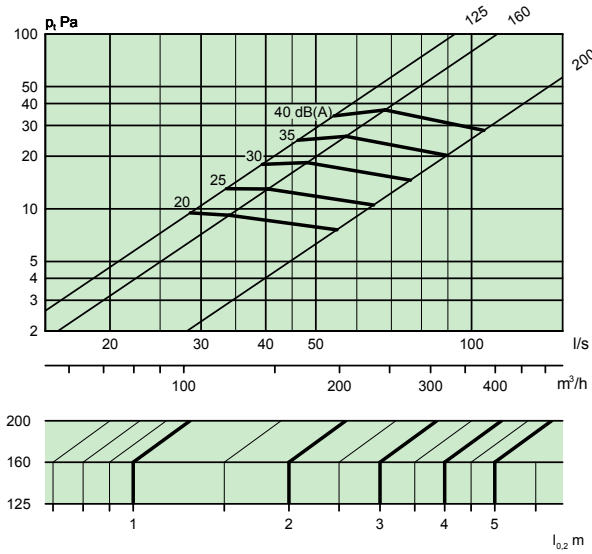
Air diffuser only

Airflow – Pressure drop – Sound level – Throw

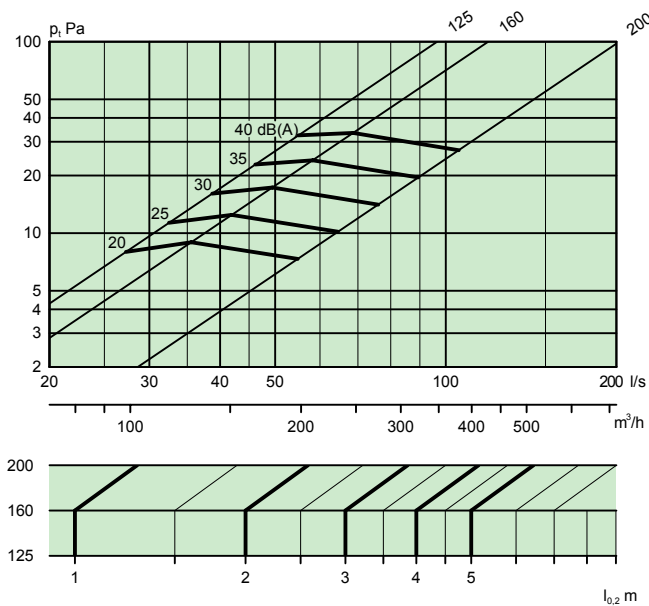
- The graphs illustrate data for air diffuser recessed in the ceiling.
- Throw for adjusting the swirl. For other adjustments, see the graphs for diffusers with the ALS commissioning box.
- Throw $l_{0,2}$ is measured under isothermal discharge conditions.
- Recommended max. permissible temperature below room temperature is 14 K.



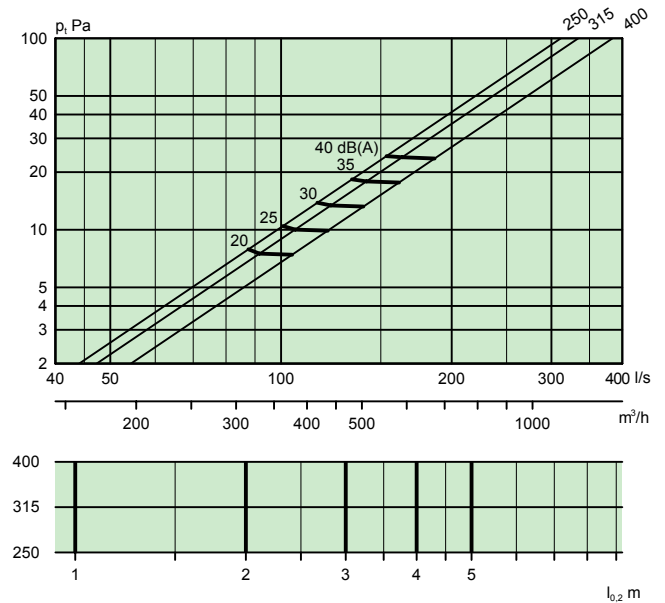
COLIBRI CR 125-400, 160-400 and 200-500 – Supply air COLIBRI CR 250-500, 315-500 – Supply air



COLIBRI CR 125-600, 160-600 and 200-600 – Supply air

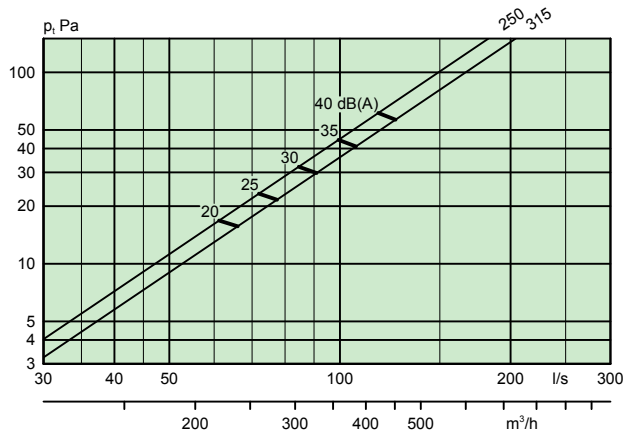


COLIBRI CR 250-600, 315-600 and 400-600 – Supply air

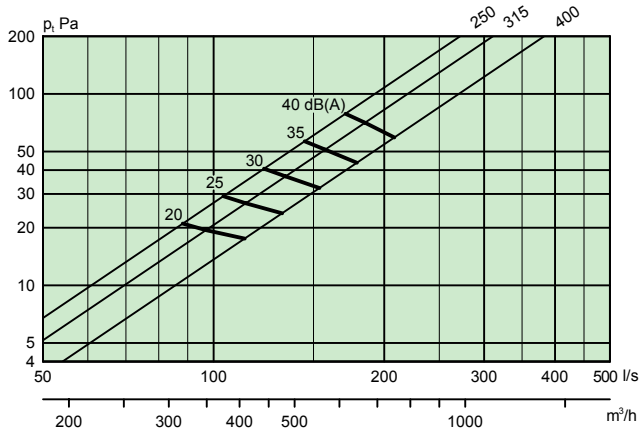


COLIBRI C – Rectangular nozzle pattern – Extract only
Air diffuser only

COLIBRI CR 250-500, 315-500 – Extract air



COLIBRI CR 250-600, 315-600 and 400-600 – Extract air

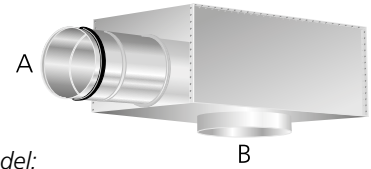


COLIBRI C – Rectangular nozzle pattern with ALS – Supply air

Air diffuser with commissioning box

Airflow – Pressure drop – Sound level – Throw

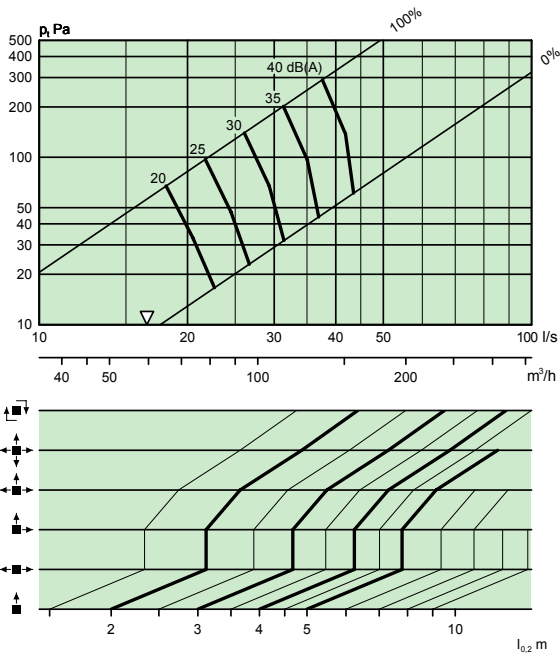
- The graphs illustrate data for air diffuser recessed in the ceiling.
- ∇ = Min. airflow required for obtaining sufficient commissioning pressure.
- The version for low installation height generates approx. 3 dB(A) higher sound level than the value plotted in the graph.



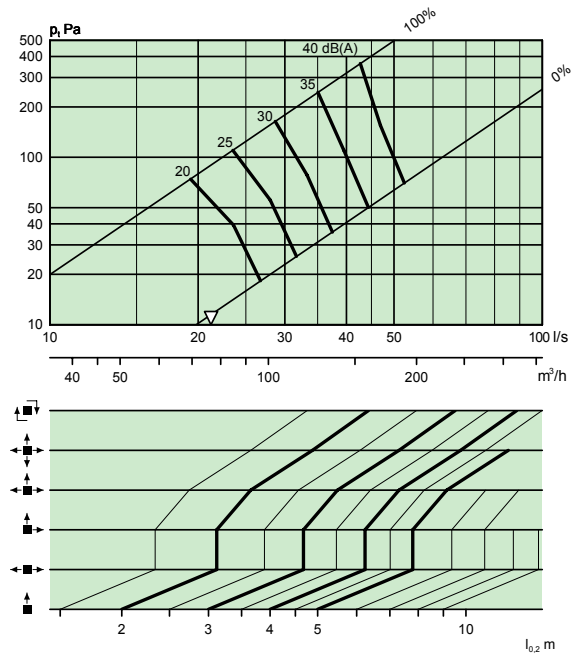
Explanation of the step model:

- One step = One dimensional change between A and B, for example, A = $\varnothing 160$ mm and B = $\varnothing 200$ mm.
- Two steps = Two dimensional changes between A and B, for example, A = $\varnothing 160$ mm and B = $\varnothing 250$ mm.

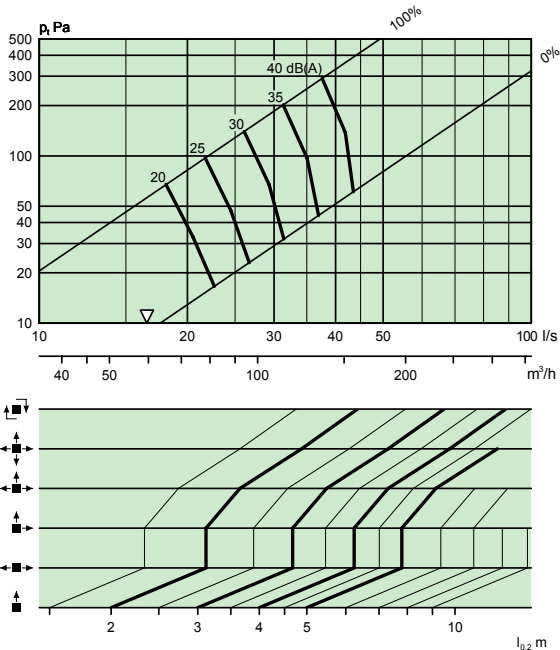
COLIBRI CR 125-400 + ALS 100-125 – One step



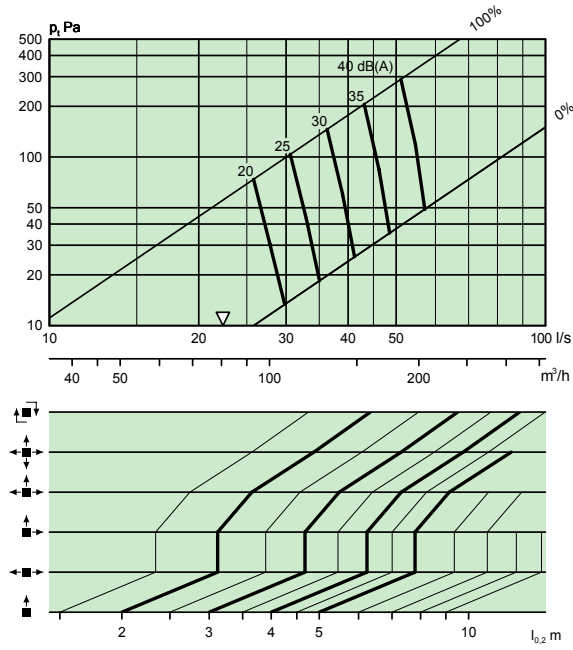
COLIBRI CR 160-400 + ALS 100-160 – Two steps



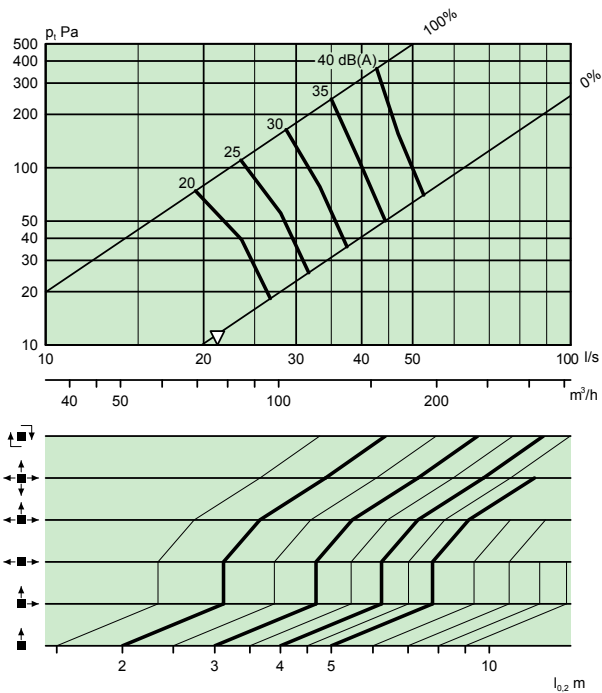
COLIBRI CR 125-600 + ALS 100-125 – One step



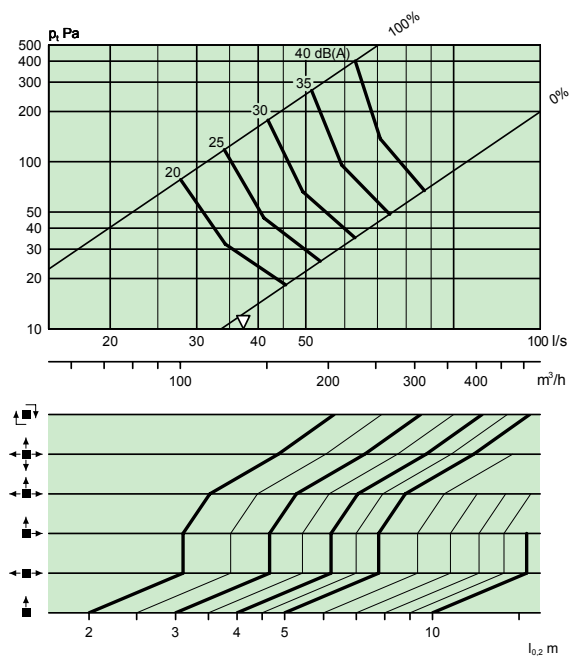
COLIBRI CR 160-400 + ALS 125-160 – One step



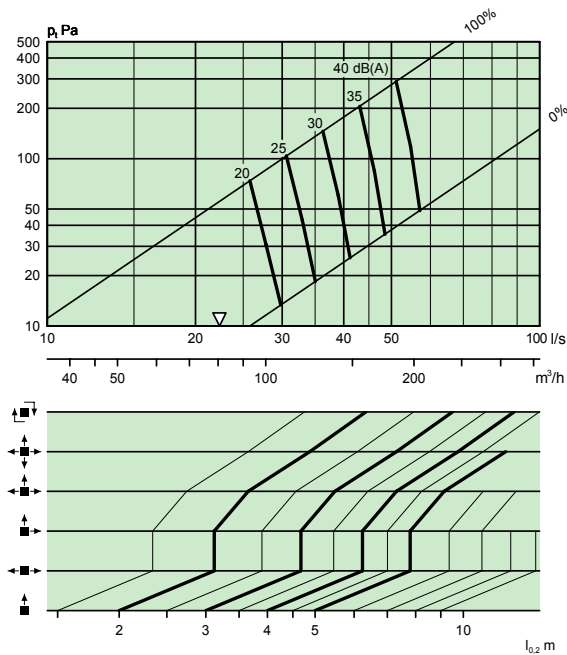
COLIBRI CR 160-600 + ALS 100-160 – Two steps



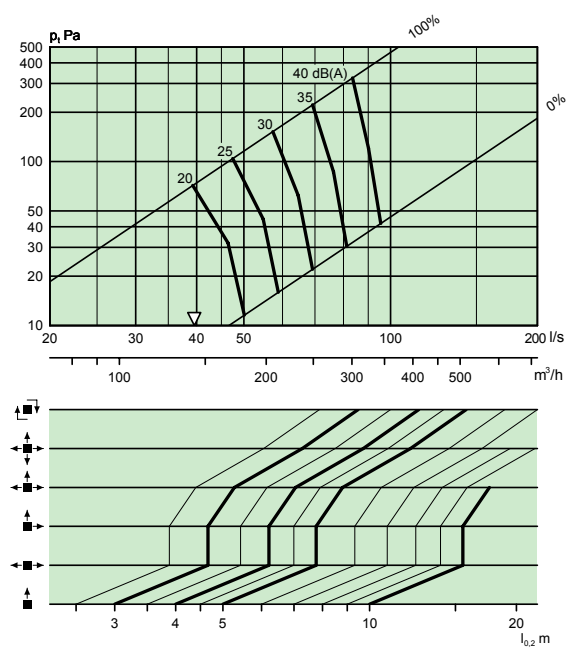
COLIBRI CR 200-500 + ALS 125-200 – Two steps



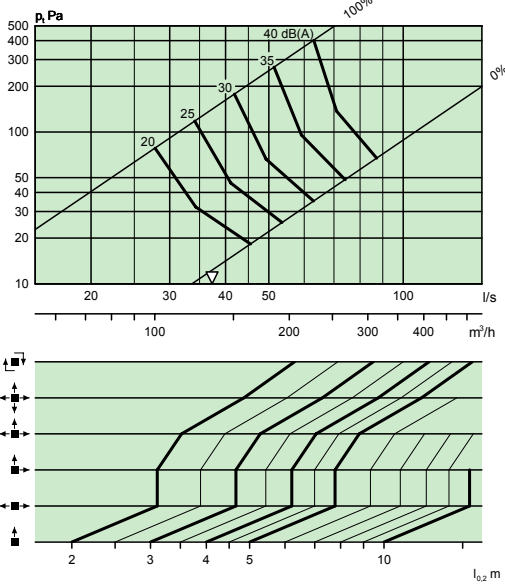
COLIBRI CR 160-600 + ALS 125-160 – One step



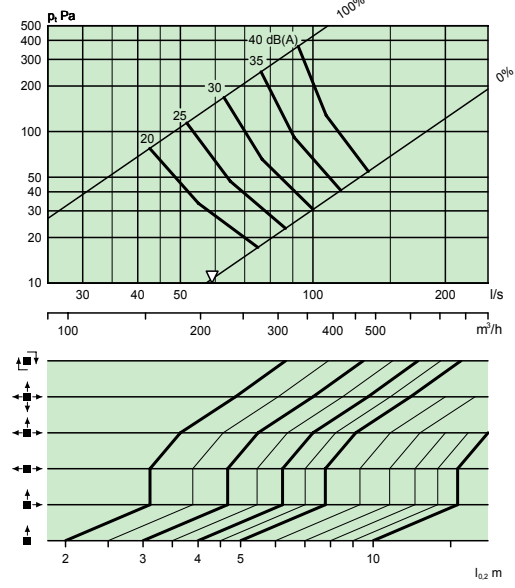
COLIBRI CR 200-500 + ALS 160-200 – One step



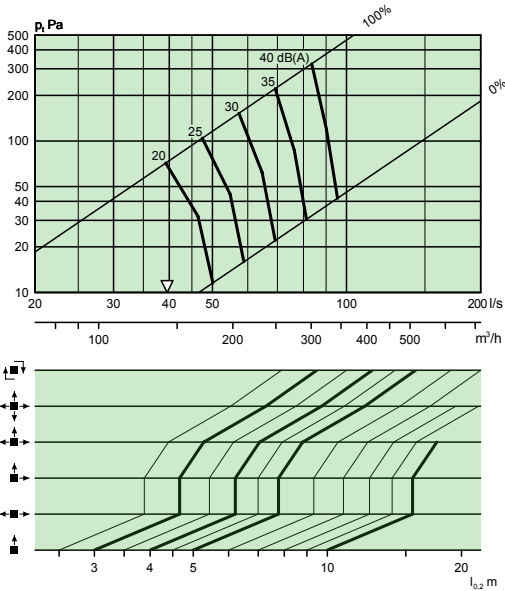
COLIBRI CR 200-600 + ALS 125-200 – Two steps



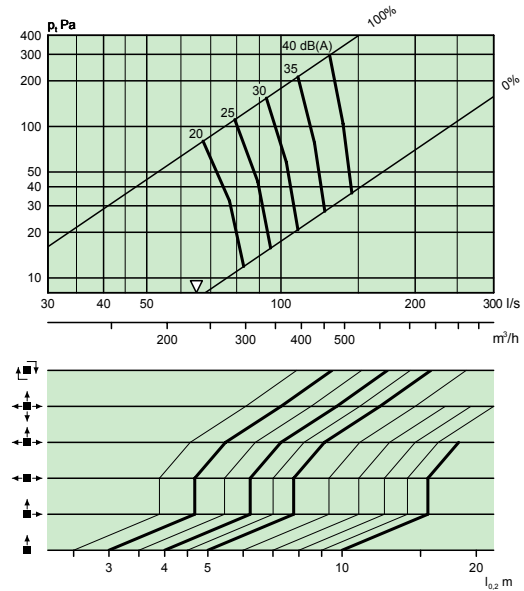
COLIBRI CR 250-600 + ALS 160-250 – Two steps



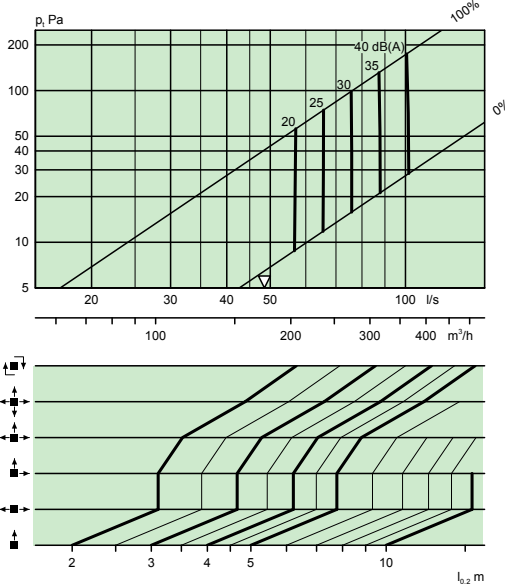
COLIBRI CR 200-600 + ALS 160-200 – One step



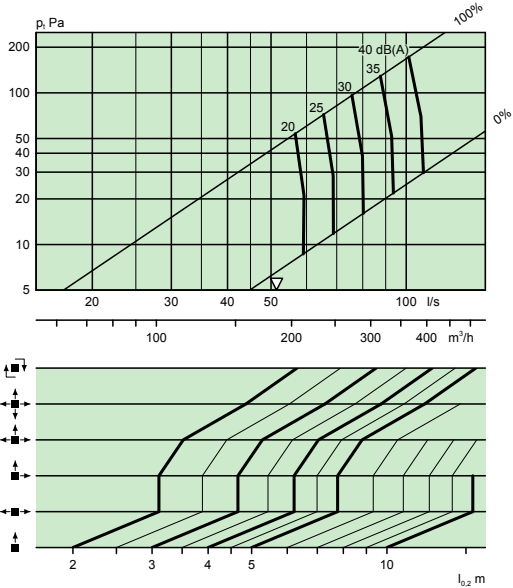
COLIBRI CR 250-600 + ALS 200-250 – One step



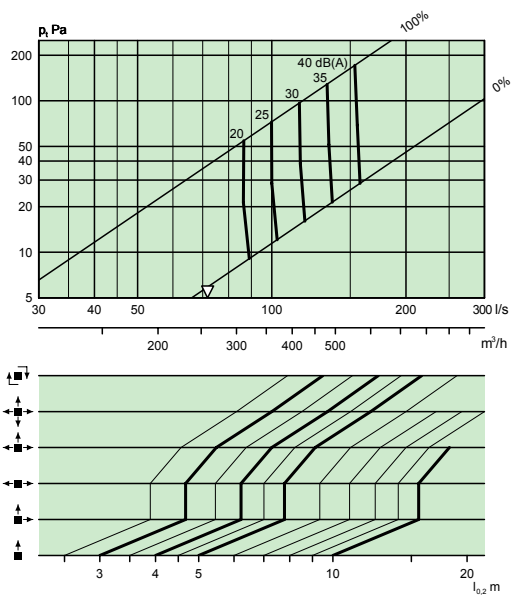
COLIBRI CR 250-500 + ALS 200-250



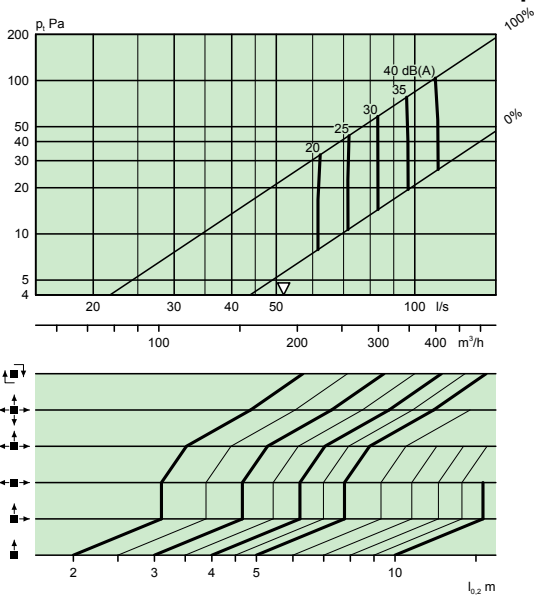
COLIBRI CR 315-500 + ALS 200-315 – Two steps



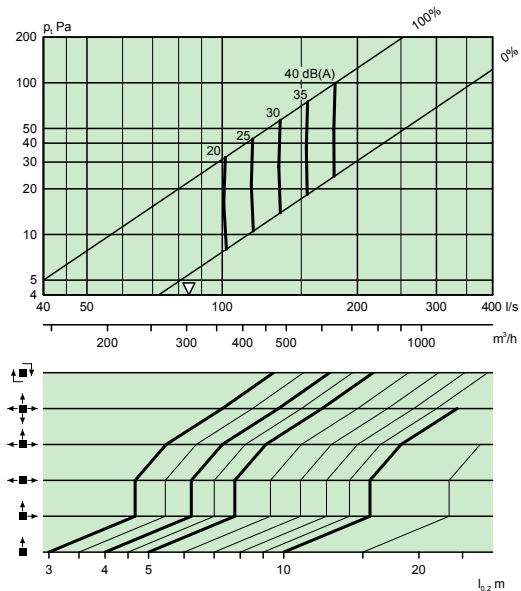
COLIBRI CR 315-600 + ALS 250-315 – One step



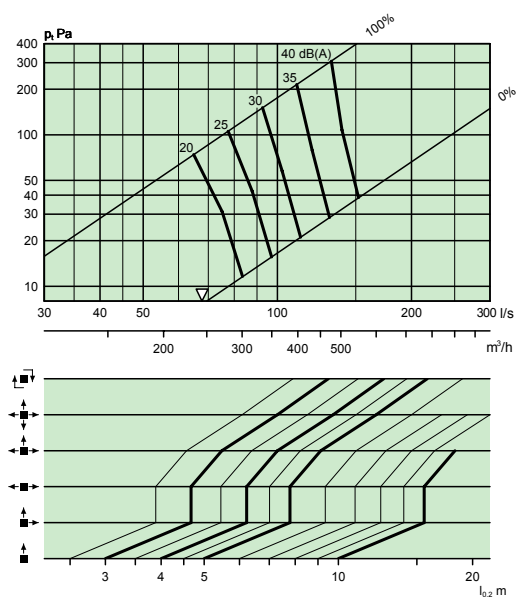
COLIBRI CR 315-500+ALS 250-315 – One step



COLIBRI CR 400-600 + ALS 315-400 – One step



COLIBRI CR 315-600 + ALS 200-315 – Two steps

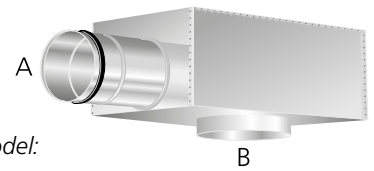


COLIBRI C – Rectangular nozzle pattern with ALS – Extract air

Air diffuser with commissioning box

Air flow – Pressure drop – Sound level

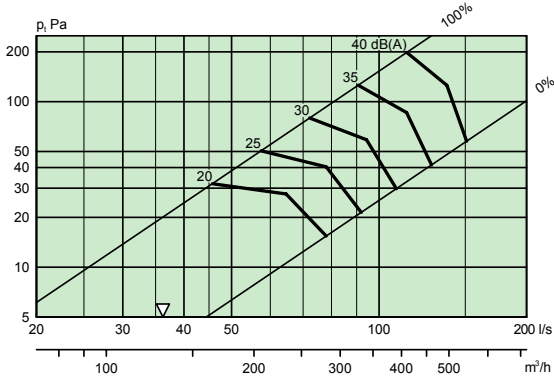
- The graphs illustrate data for air diffuser recessed in the ceiling.
- ▽ = Min. airflow required for obtaining sufficient commissioning pressure.



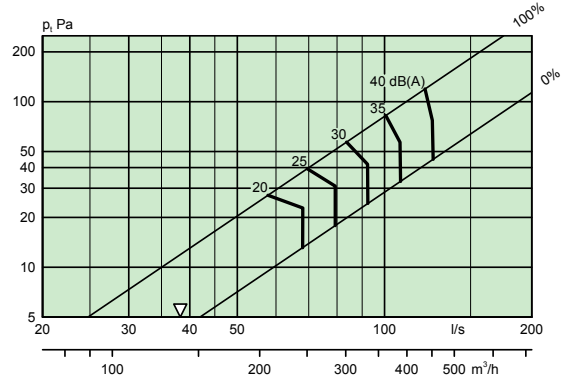
Explanation of the step model:

- One step = One dimensional change between A and B, for example, A = Ø160 mm and B = Ø200 mm.
- Two steps = Two dimensional changes between A and B, for example, A = Ø160 mm and B = Ø250 mm.

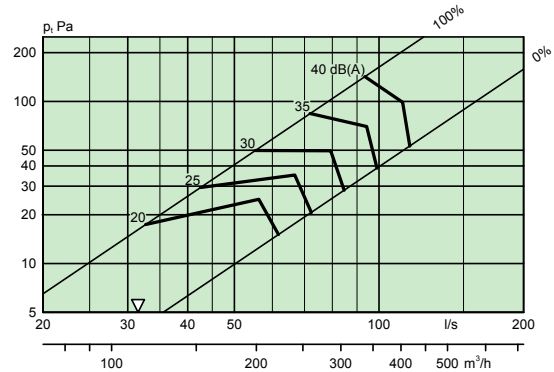
COLIBRI CR 250-600 + ALS 200-250 – One step



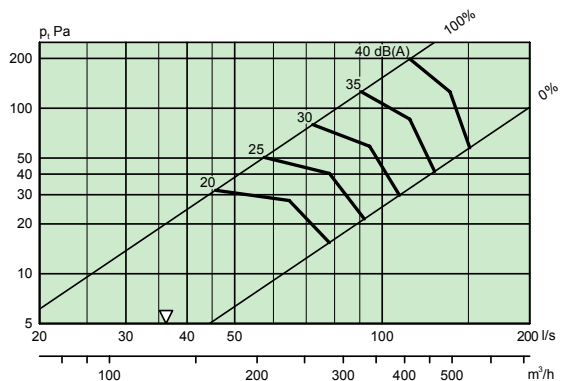
COLIBRI CR 315-500+ALS 250-315 – One step



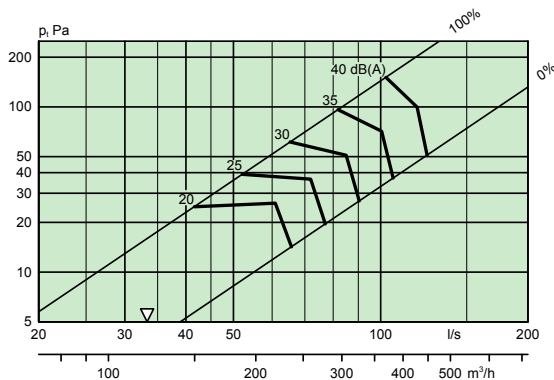
COLIBRI CR 250-500 + ALS 200-250 – One step



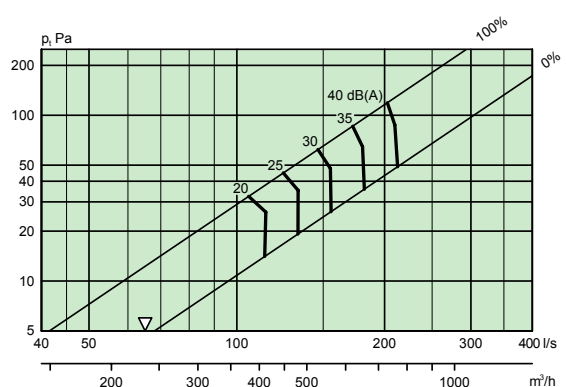
COLIBRI CR 315-600 + ALS 250-315 – One step



COLIBRI CR 315-500 + ALS 200-315 – One step



COLIBRI CR 400-600 + ALS 315-400 – One step



Dimensions and weights

COLIBRI Ceiling

Size	A	Ød1	I	M	Weight, kg	Nr. of nozzles	
						CC	CR
125-400	395	124	375	70	1,5	47	49
125-600	595	124	575	70	3,6	47	49
160-400	395	159	375	70	1,5	47	49
160-600	595	159	575	70	3,6	47	49
200-500	495	199	475	70	2,5	90	100
200-600	595	199	575	70	3,5	90	100
250-600	595	249	575	70	3,4	130	169
315-600	595	314	575	50	3,4	130	169
400-600	595	399	575	50	3,2	130	169

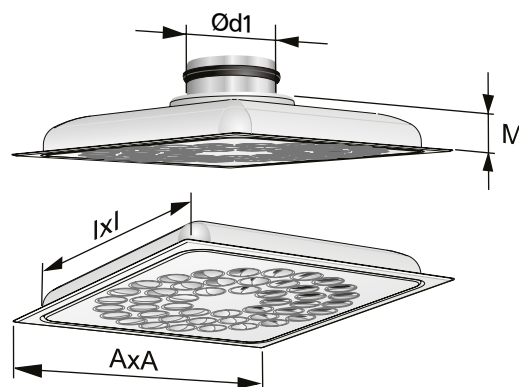


Figure 5. COLIBRI Ceiling.

Dimensions of opening I x I

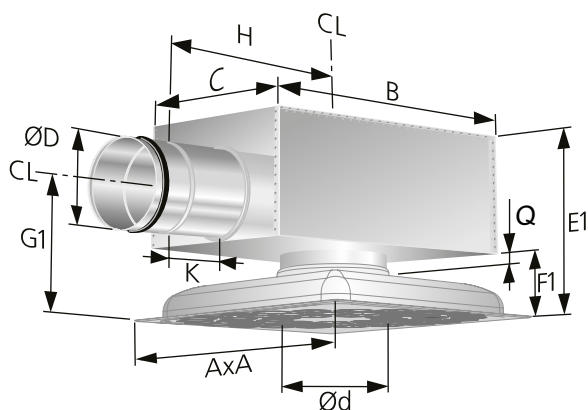
COLIBRI Ceiling with ALS, 1-step

Size	A	B	C	ØD	Ød	E1	E2	F1	F2	G1	G2	H	K	Weight, kg
125-400	395	282	217	99	125	255	212	113	70	175	132	270	80	3,5
125-600	595	282	217	99	125	255	212	113	70	175	132	270	80	5,5
160-400	395	342	252	124	160	279	236	113	70	188	145	315	80	4,2
160-600	595	342	252	124	160	279	236	113	70	188	145	315	80	6,2
200-500	495	404	288	159	200	314	271	113	70	205	162	375	100	6,0
200-600	595	404	288	159	200	314	271	113	70	205	162	375	100	7,0
250-600	595	504	332	199	250	354	311	113	70	225	182	465	115	8,7
315-600	595	622	388	249	315	395	352	93	50	230	187	575	140	11,8
400-600	595	767	488	314	400	455	-	93	-	262	-	712	175	15,0

COLIBRI Ceiling with ALS, 2-steps

Size	A	B	C	ØD	Ød	E1	E2	F1	F2	G1	G2	H	K	Weight, kg
160-400	395	342	252	99	160	255	212	113	70	175	132	315	80	3,5
160-600	595	342	252	99	160	255	212	113	70	175	132	315	80	5,5
200-500	495	404	288	124	200	279	236	113	70	188	145	355	80	3,2
200-600	595	404	288	124	200	279	236	113	70	188	145	355	80	4,2
250-600	595	504	332	159	250	314	271	113	70	205	162	450	100	7,0
315-600	595	622	388	199	315	334	291	93	50	205	162	550	115	8,7

CL = Center line



Figur 6. COLIBRI Ceiling with ALS.
CL = Centerline.

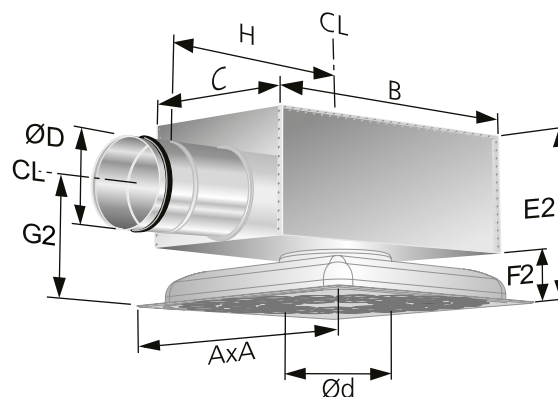


Figure 7. COLIBRI Ceiling with ALS. Low installation height.

Sarg – SAR K

Size	Measurement (mm)		Weight (kg)
	L	N	
400	395	75	1,0
500	495	75	1,0
600	595	75	1,0

When installing sizes 315-600 and 400-600 terminals, position the ALS box so that its branch extends 20 mm below the ceiling surface.

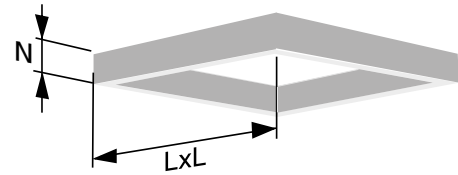


Figure 8. Frame, SAR K.

Nozzle pattern and nozzle settings

Standard and alternative nozzle settings for various diffusion patterns.

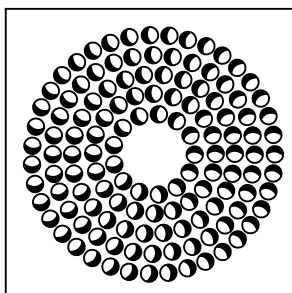
NOTE: Air direction in the figure.



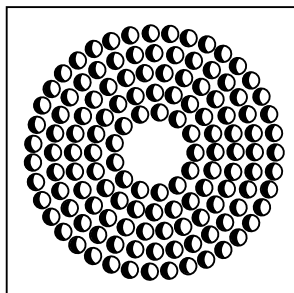
AIR DIRECTION IN THE FIGURES

Examples, circular nozzle arrangement:

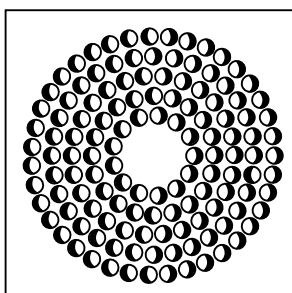
Clock-wise swirl
(standard)



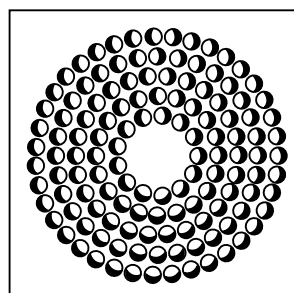
1-way



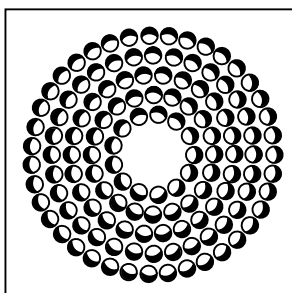
2-way



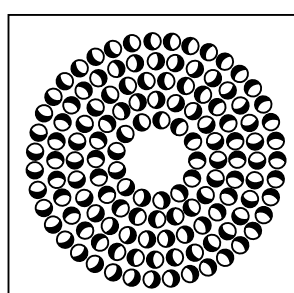
3-way



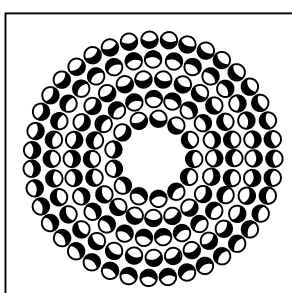
4way



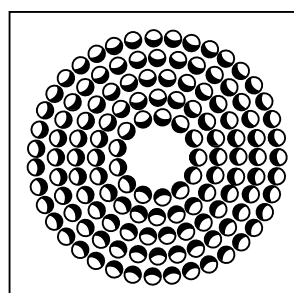
Counter-flow
distribution pattern



VD Vertical, diffused

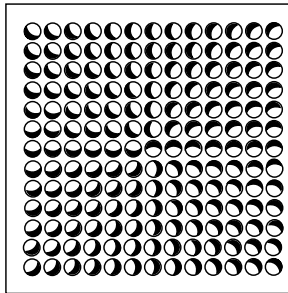


VK Vertical, concentrated

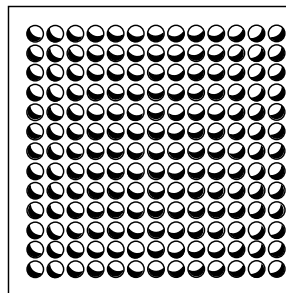


Examples, square nozzle arrangement:

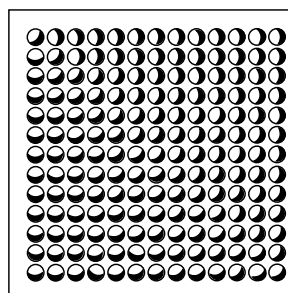
Clock-wise swirl
(standard)



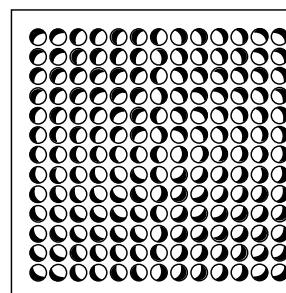
1-way



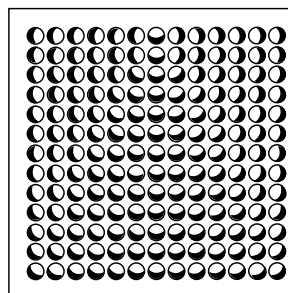
2H-way



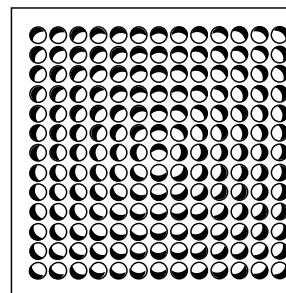
2M-way



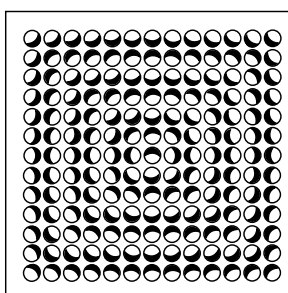
3-way



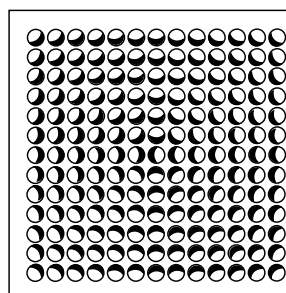
4way



VD Vertical, diffused



VK Vertical, concentrated



Order key

Product

Square ceiling diffusers for supply air COLIBRI XX b -aaa -bbb -c

Variant:

CC: Circular nozzle arrangement

CR: Square arrangement

Version:

Nom. connection size, mm:

125, 160, 200, 250, 315, 400

Nom. square dimensions, mm: 400, 500, 600

Low version: L

To be specified only if low installation height is desirable (all sizes except 400-600)

Standard range:

Size	125-400
	125-600
	160-400
	160-600
	200-500
	200-600
	250-600
	315-600
	400-600

Accessories

Commissioning box ALS d -aaa-bbb -c

Version:

For COLIBRI Ceiling	ALS
125-400 and 125-600	100-125
160-400 and 160-600	100-160
160-400 and 160-600	125-160
200-500 and 200-600	125-200
200-500 and 200-600	160-200
250-600	160-250
250-600	200-250
315-600	200-315
315-600	250-315
400-600	315-400

Low installation height: L

Low installation height should only be specified if a diffuser in the low version is selected.

Frame

Frame SAR b K -aaa

Version

K = square

For size:	125-400	400
	160-400	400
	200-500	500
	125-600	600
	160-600	600
	200-600	600
	250-600	600
	315-600	600
	400-600	600

Specification example

Swegon's complete square type COLIBRI Ceiling nozzle diffuser with circular nozzle arrangement and ALS commissioning box and the following features:

- Designed for modular suspended ceilings (600x600 mm)
- 100% flexible spread pattern
- Individually adjustable nozzles
- Quick Access diffuser face opening/closing action for quick access to the commissioning box and duct system
- Powder painted in white, RAL 9003/NCS S 0500-N
- Cleanable ALS commissioning box with removable adjustment damper, measuring method with low systematic error and lined inside with sound absorbing material covered with woven surface layer that prevents fibre migration

Size: COLIBRI CCb -aaa-bbb-c with ALSd -aaa-bbb-c xx items

Accessories

Frame: SARb K -aaa xx items