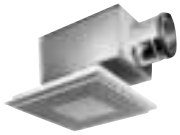
PMUb

Perforated ceiling diffuser for supply air



FUNCTION

Square perforated supply air diffuser for ceiling installation. Suitable for constant or variable flow. Can handle large under-temperatures.

QUICK FACTS

- Spreader plate can be raised and lowered
- Can be installed flush with suspended ceiling
- Short throw
- Used together with plenum box ALS
- Cleanable

QUICK GUIDE

AIR FLOW - SOUND LEVEL				
PMUb		l/s		
Size		25 dB(A)	30 dB(A)	35 dB(A)
100		30	35	40
125		44	50	58
160		63	72	82
200		88	98	110
250		108	125	142
315		140	160	185
PMUb	ALSc	l/s		
Size	Size	25 dB(A)	30 dB(A)	35 dB(A)
100	80-100	16	20	25
125	100-125	26	33	40
160	125-160	35	44	58
200	160-200	53	64	90
250	200-250	88	110	140
315	250-315	130	150	175

All data applies to supply air and a 4-way spread pattern. Data for PMU + ALS plenum box are at a total pressure of 50 Pa.

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DESIGN

The diffuser consists of two parts, the backing box and the perforated plate. The backing box has a connection spigot with a rubber sealing ring and a perforated measurement plate. The perforated front plate is equipped with a fixed shielding device.

MATERIALS AND SURFACE TREATMENT

The backing box is manufactured in galvanised sheet steel. The front plate is made of sheet steel. The whole diffuser is painted inside and outside 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).

ACCESSORIES

Plenum box:

ALS is manufactured in galvanised sheet steel. It includes a removable commissioning damper, fixed measurement outlet and acoustic damping material with a reinforced surface layer. It is unaffected by straight duct sections on connection.

Frame:

SAR K. For the aesthetic installation of the recessed diffuser.

Cassette panel:

KAS, which replaces the suspended ceiling cassette used with visible T-section framework. Standard size is 595 x 595 mm, but is also available with other dimensions.

PLANNING (See figur 1)

When the diffuser is used **without** the ALS plenum box, the measurement plate which is mounted in the inlet sleeve must not used and therefore be removed. This information is also marked on the diffuser.

The perforated front plate on the diffuser can be adjusted to either of two positions vertically: recessed in the backing box (flush with the ceiling) or in the lower position as illustrated in the photograph.

INSTALLATION (See Figure 1)

The ALS plenum box is mounted onto the building framework using pendulums or holey band.

The diffuser section is placed in the sleeve of the backing box and fixed using blind rivets. The diffuser section may also be screwed into place through its sides or top. When mounted in a cassette ceiling with module dimensions of 600 x 600, the diffuser section can be mounted in the KAS cassette plate. This completely replaces the usual suspended ceiling plate and can be mounted onto the T-profile framework. The sizes 250 and 315 mm can also be mounted onto T-profile framework without using the KAS cassette plate.

The distance between the diffuser and the plenum box can be extended by using ordinary circular duct up to 500 mm without necessitating the extension of either the measuring tube or the damper regulator.

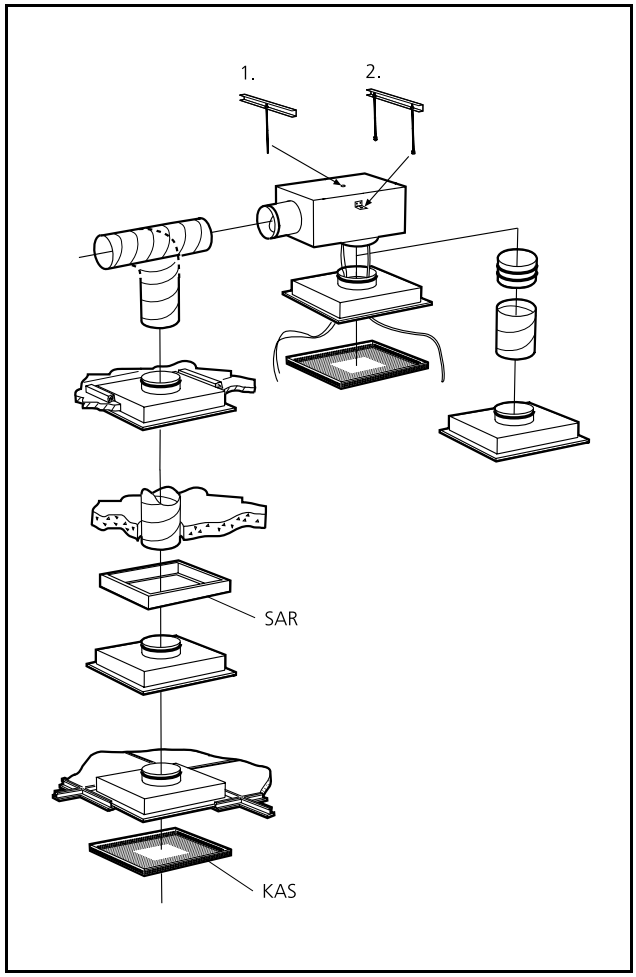

Figure 1. *PMU.*

COMMISSIONING (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 perforations. The damper setting can be locked. The k-factor is shown on the product marking and is also indicated in the relevant k-factor guide which can be accessed through on our website.

MAINTENANCE (See Figure 1)

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 front is removed by pulling it straight down out of its spring clip fixing. To change the height position of the perforated front, rotate ¼ revolution before refitting The measurement plate is removed by rotating through a ¼ revolution. If the ALS plenum box is used, the distribution plate is pulled 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 fromone of our sales offices.

TECHNICAL DATA

- The sound level dB(A) applies to rooms of 10 m^2 equivalent absorption area.
- All the data are measured with the front plate in the lower position.
- The throw $l_{0.2}$ is measured under isothermal flow conditions and front plate in the lower position.
- The maximum recommended under temperature is 12 °C.
- The sound data shown for the PMU are without the measuring plate in place.
- The sound data shown for the PMU + ALS are with the measuring plate in the PMU
- For calculating the width of the airstream, air velocities in the zone of occupation or sound levels in rooms with other dimensions, please refer to our calculation programmes ProAir web and ProAc, which are both available on our website.

Sound data - PMU - Supply air

Sound power level L_w(dB)
Table K_{OK}

Size	Mid-frequency (octave band) Hz							
PMUb	63	125	250	500	1000	2000	4000	8000
100	-1	2	-5	-3	2	-4	-26	-30
125	-2	0	-4	-2	2	-4	-27	-30
160	0	-3	-6	-2	2	-6	-27	-30
200	2	-4	-7	-1	2	-6	-28	-30
250	2	-6	-8	-1	2	-7	-28	-30
315	3	-3	-6	-1	2	-6	-27	-30
Size	Mid-frequency (octave band) Hz							
PMUb + ALSc	63	125	250	500	1000	2000	4000	8000
100	7	11	7	1	-2	-9	-19	-23
125	6	8	7	0	-3	-8	-17	-20
160	8	9	8	1	-2	-9	-20	-24
200	9	9	7	1	-1	-9	-19	-24
250	11	9	3	1	-1	-8	-20	-21
315	9	6	1	1	1	-9	-24	-25
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)
Table ΔL

Size	Mid-frequency (octave band) Hz							
PMUb	63	125	250	500	1000	2000	4000	8000
100	21	16	11	6	4	3	2	0
125	18	14	9	5	3	2	1	0
160	17	13	8	4	3	1	1	0
200	14	11	6	3	2	1	0	0
250	15	10	5	2	1	1	0	0
315	13	8	4	1	1	0	0	0
Size	Mid-frequency (octave band) Hz							
PMUb + ALSc	63	125	250	500	1000	2000	4000	8000
100	22	14	13	16	26	16	10	11
125	20	16	9	17	23	16	11	13
160	20	14	10	17	19	12	10	12
200	17	11	8	16	18	12	11	11
250	15	8	8	16	17	12	12	13
315	14	6	7	19	14	10	10	13
Tol. ±	2	2	2	2	2	2	2	2

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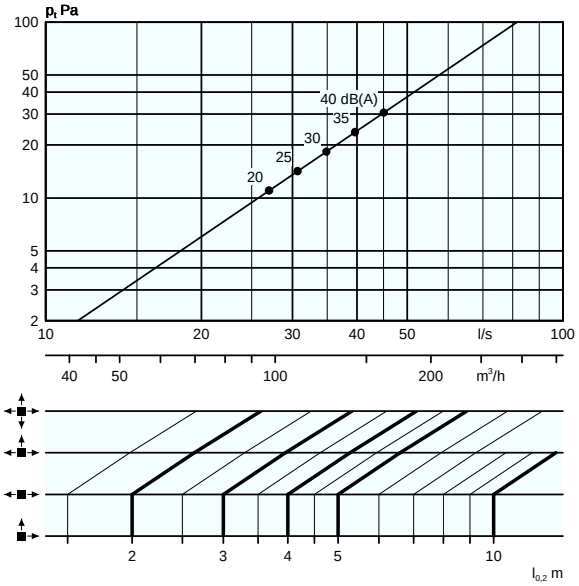
Engineering graphs - PMU - Supply air

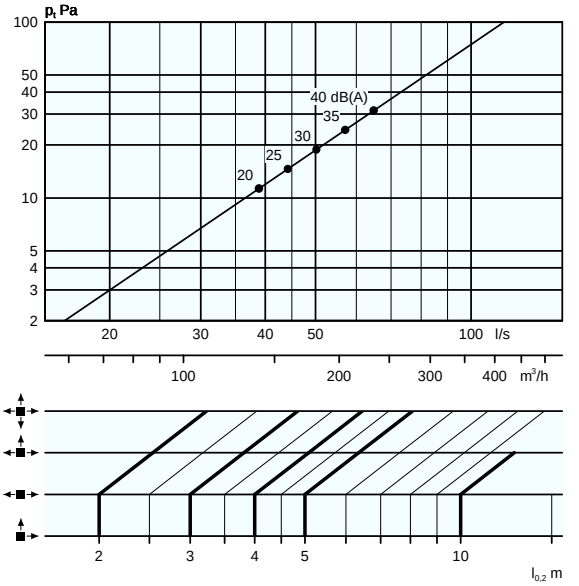
Air flow - Pressure drop - Sound level - Throw

- The graphs illustrate data for a ceiling-mounted diffuser.
- 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
- The graphs illustrate data for a 4-way spread pattern and the front plate in the lower position.

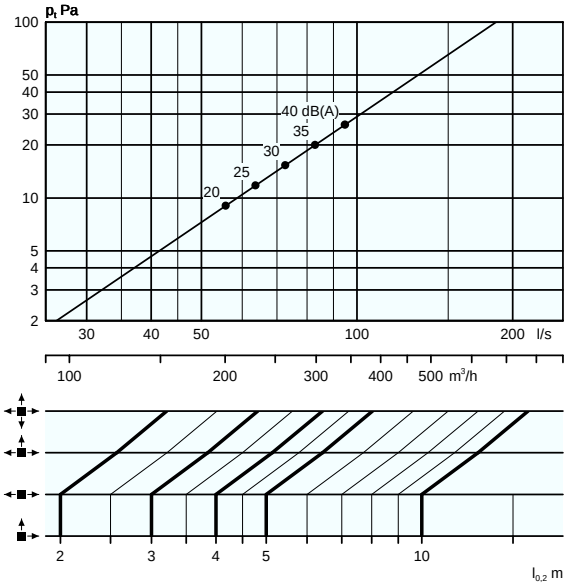
PMUb 100



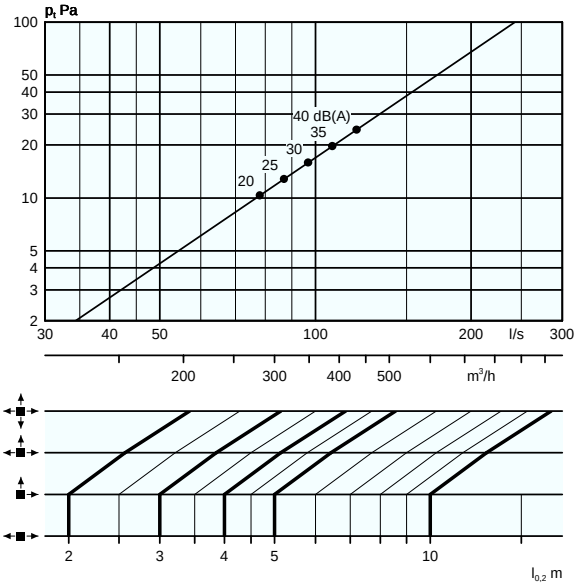
PMUb 125



PMUb 160



PMUb 200

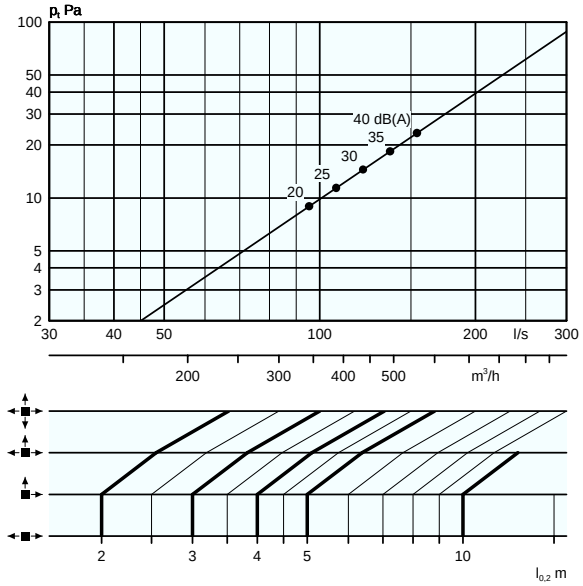


Engineering graphs - PMU - Supply air

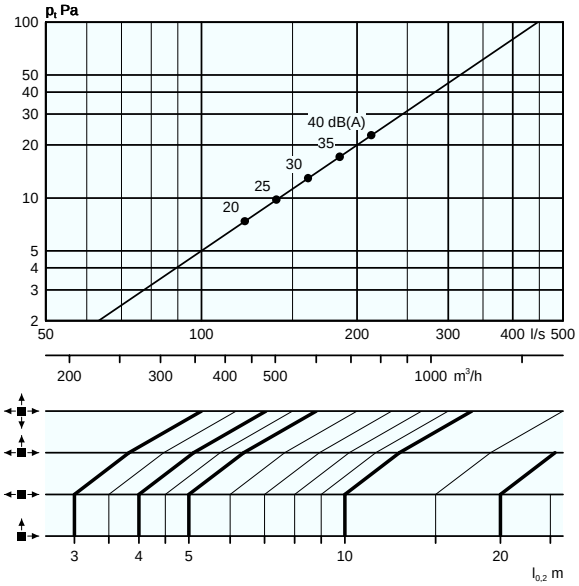
Air flow - Pressure drop - Sound level - Throw

- The graphs illustrate data for a ceiling-mounted diffuser.
- 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
- The graphs illustrate data for a 4-way spread pattern and the front plate in the lower position.

PMUb 250



PMUb 315

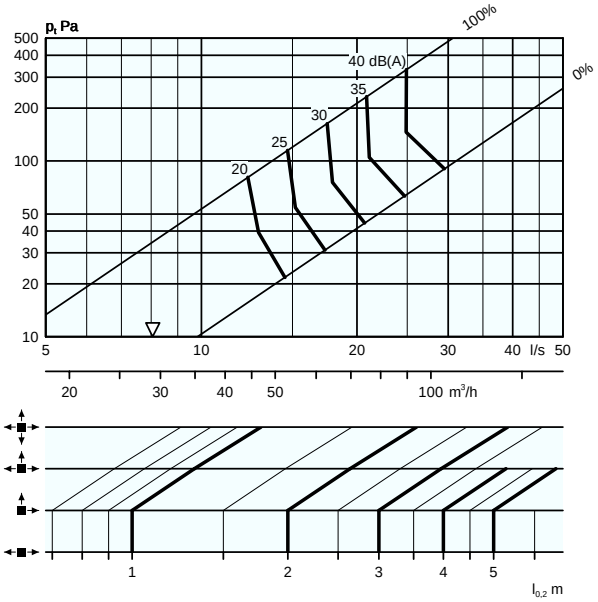


Engineering graphs - PMU + ALS - Supply air

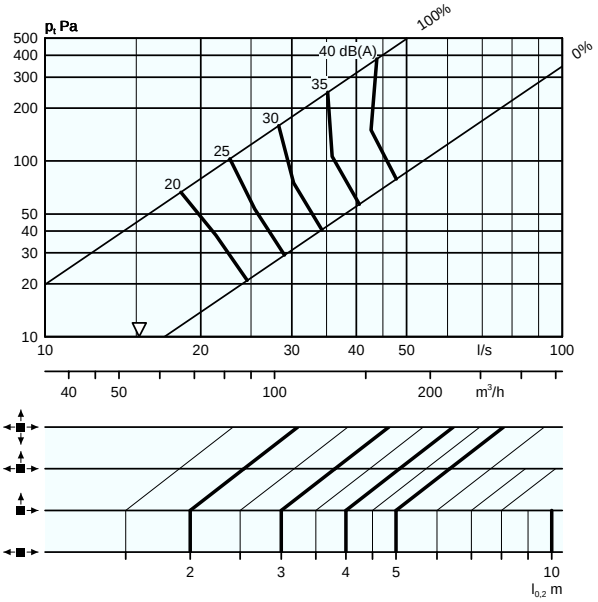
Air flow - Pressure drop - Sound level - Throw

- The graphs illustrate data for a ceiling-mounted diffuser.
- The graphs must not be used for commissioning.
- ∇= minimum flow 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.
- The graphs illustrate data for the diffuser with measurement plate in the inlet.

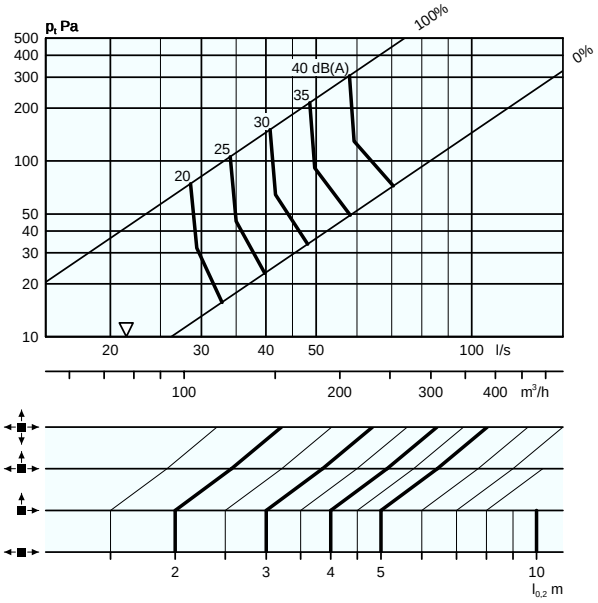
PMUb 100 + ALSc 80-100



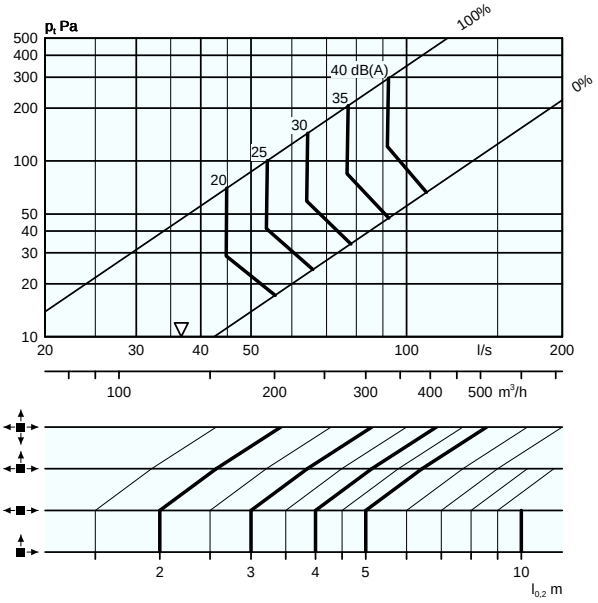
PMUb 125 + ALSc 100-125



PMUb 160 + ALSc 125-160



PMUb 200 + ALSc 160-200

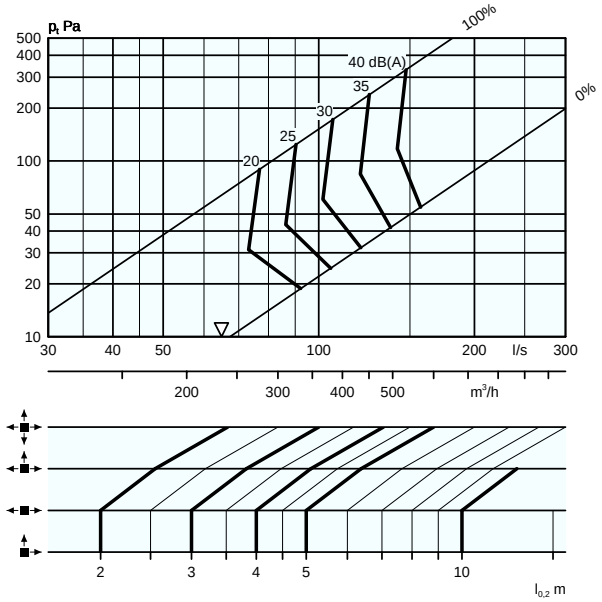


Engineering graphs - PMU + ALS - Supply air

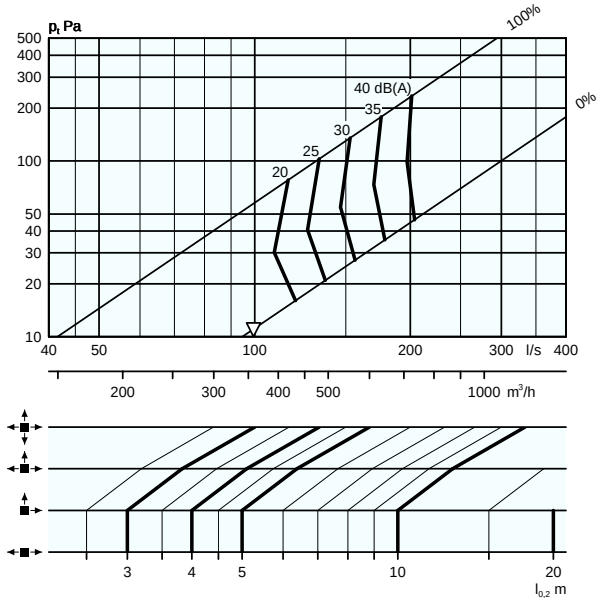
Air flow - Pressure drop - Sound level - Throw

- The graphs illustrate data for a ceiling-mounted diffuser.
- The graphs must not be used for commissioning.
- ∇= minimum flow 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.
- The graphs illustrate data for the diffuser with measurement plate in the inlet.

PMUb 250 + ALSc 200-250



PMUb 315 + ALSc 250-315



DIMENSIONS AND WEIGHT

PMUb + ALSc

Size	A	B	C	ØD	Ød	E
100	250	227	192	79	100	198
125	300	282	217	99	125	218
160	400	342	252	124	160	242
200	500	404	288	159	200	277
250	595	504	332	199	250	317
315	595	622	388	249	315	378

Size	F	G	H	I	K	Weight,kg
100	160	130	200	205	50	1.6
125	180	140	277	255	85	2.5
160	204	152	320	355	85	3.5
200	239	170	382	455	105	4.3
250	279	190	477	555	125	6.1
315	340	215	587	555	150	9.1

Hole-making size = I x I

Frame SARa K

Size	L	Weight,jkg
100	245	1
125	295	1
160	395	1
200	495	1
250	595	1
315	595	1

Cassette panel KASa

Size	N
100	195
125	295
160	355
200	455

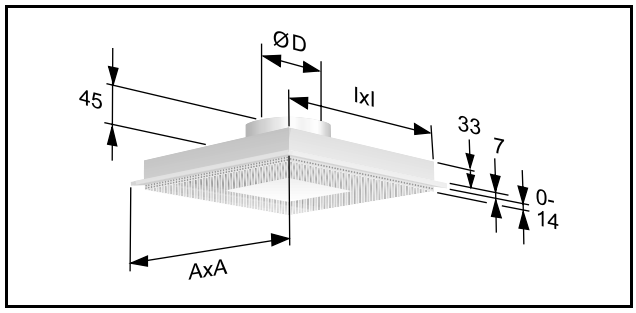


Figure 2. *PMU.*

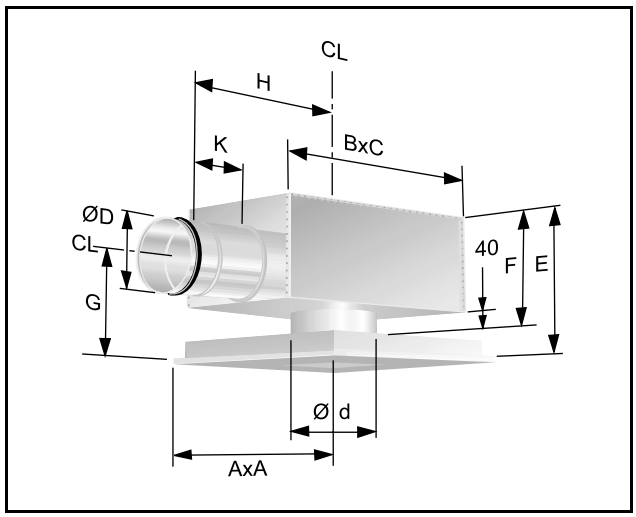


Figure 3. *PMU + ALS.*

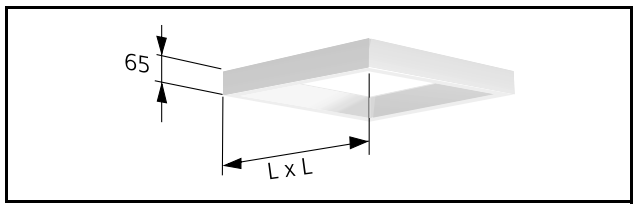


Figure 4. *Frame SAR K.*

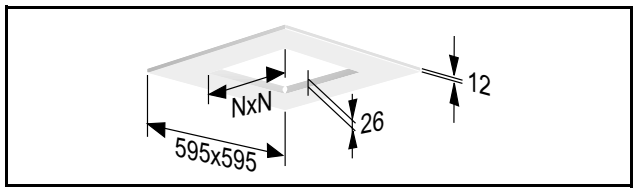


Figure 5. *Cassette panel KAS.*

ORDER KEY

Product designation

Perforated ceiling diffuser	PMUb	-aaa	-b

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

Spread pattern:
1-way
2M-way, centre
2H-way, corner
3-way
4-way

Accessories

Plenum box				ALSc	-aaa - bbb
For PMUb	100:	ALSc	80-100		
	125		100-125		
	160		125-160		
	200		160-200		
	250		200-250		
	315		250-315		

Frame			SARa K	-aaa
For size:	100:	245		
	125:	295		
	160:	395		
	200:	495		
	250:	595		
	315:	595		

Cassette panel			KASa	-aaa-bbb-ccc
For size:	100:	595-595-195		
	125	595-595-255		
	160:	595-595-355		
	200:	595-595-455		

SPECIFICATION EXAMPLE

SD XX
Swegons square perforated ceiling diffuser of type PMUb with plenum box ALSc having the following functions:

- Spread pattern can be shielded
- Cleanable
- Powder-coated in white
- Cleanable section box ALS with removable commissioning damper including a lockable adjustment, measurement function with low method error and internal acoustic damping with reinforced surface layer.

Accessories:

Frame:	SARa K aaa	xx items
Cassette panel:	KASa aaa - bbb - ccc	xx items
Size:	PMUb aaa with ALSc aaa-bbb	xx items