

GRC

Circular egg crate grille for transfer/extract air and wall/ceiling mounting



QUICK FACTS

- For exhaust air
- 91% free area
- Handles large airflows
- Cleanable
- Can be used with commissioning box ALS
- Standard colour White RAL 9003
 - 5 alternative standard colours
 - Other colours upon request

AIR FLOW - SOUND PRESSURE ROOM (Lp10A) *)								
GRC Size	25 dB(A)		30 dB(A)		35 dB(A)			
	l/s	m³/h	l/s	m³/h	l/s	m³/h		
100	25	90	29	104	34	122		
125	38	137	45	162	53	191		
160	60	216	68	245	80	288		
200	95	342	110	396	135	486		
250	140	504	165	594	190	684		
315	200	720	245	882	280	1008		
400	325	1170	380	1368	450	1620		
500	460	1656	560	2016	680	2448		
630	750	2700	895	3222	1100	3960		
GRC Size	ALS Size	25 dB(A)		30 dB(A)		35 dB(A)		
		l/s	m³/h	l/s	m³/h	l/s	m³/h	
100	80-100	11	40	18	65	24	86,4	
125	100-125	14	50	25	90	32	115	
160	125-160	23	83	34	122	51	184	
200	160-200	30*	108*	42	151	67	241	
250	200-250	50*	180*	63	227	120	432	
315	250-315	80**	288**	120	432	180	648	
400	315-400	145*	522*	195	702	301	1084	
500	400-500	270*	972*	318	1145	495	1782	
630	Size 630 does not have any commissioning box							

Table shows data for extract air, GRC in combination with ALS and a pressure drop of 50 Pa.

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

*GRC+ALS at 40 Pa.

**GRC+ALS at 30 Pa.

Technical description

Design

The GRC is supplied with push-in connection and without screw holes.

Materials and surface treatment

The raster grille is made of aluminium with an outer frame of cold-rolled sheet steel, these parts are finished. The duct connection sleeve is made of zinc plated sheet steel.

- 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.

Accessories

Commissioning box:

ALS. Manufactured in galvanized sheet steel. The commissioning box includes a removable damper, fixed measurement tapping and sound absorbent insulation covered by a reinforced surface layer, to Fire Resistance Class B-s1,d0 according to EN ISO 11925-2.

Project planning

The grille can be installed in a walls or ceilings. Stocked sizes according to table under the section Ordering key, see Standard range.

Free area

To obtain the free area, the inner area of the grille is multiplied by the factor $f = 0.91$.

Example:

Grille: GRL GRC 200

Inner area of grille ($\varnothing B$ -measurement):

$$A = (\varnothing B^2 \times 3,14) / 4$$

$$(0,18^2 \times 3,14) / 4 = 0,0254 \text{ m}^2$$

Free area of grille:

$$0,91 \times 0,0254 = 0,023 \text{ m}^2$$

Installation

The grille can be pressed directly into the duct. When commissioning box is used, secure it to the building structure with hangers or mounting brackets. The distance between the commissioning box and the air diffuser can be increased by as much as 500 mm using an ordinary circular duct without having to lengthen the measuring tube and damper adjustment cords. See figure 1.



Commissioning

Commissioning must be carried out with the grille installed. The transparent measurement tube and damper cords are pulled through the grille. Connect a manometer to the transparent measuring tube. The required commissioning pressure can be calculated by means of the K-factor of the air diffuser/register. Adjust the damper to the correct position and tie a commissioning knot on the damper cords to indicate the damper setting.

The k-factor is found in the product label and can also be found in the relevant k-factor guide which is to be found at www.swegon.com.

Maintenance

The grille can be cleaned when necessary using lukewarm water and detergent.

If the ALS commissioning box is used, the inside of this should be vacuum cleaned when needed.

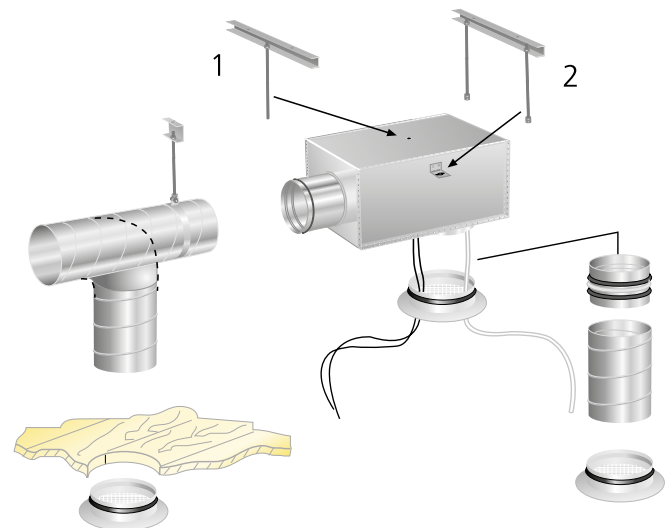


Figure 1. Installation.

Sizing

Sound level dB(A) applies to rooms with 10 m² equivalent sound absorption area.

Sound data

GRC – Extract air

Sound power level L_w (dB)

Table K_{OK}

Size	Mid-frequency (Octave band) Hz							
	GRC	63	125	250	500	1000	2000	4000
100	-11	-8	-8	-5	-3	-1	-5	-20
125	-6	-7	-6	-5	-2	-1	-6	-20
160	-8	-8	-5	-4	-1	-1	-8	-21
200	-2	-5	1	-3	-1	-1	-9	-17
250	-3	-4	5	-2	-1	-3	-14	-25
315	-5	-4	5	1	-1	-5	-12	-17
400	-5	-1	7	1	-2	-7	-18	-23
500	-2	2	6	2	-2	-8	-20	-20
630	5	5	5	2	-1	-8	-18	-18
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation L_w (dB)

Table ΔL

Size	Mid-frequency (Octave band) Hz							
	GRC	63	125	250	500	1000	2000	4000
100	21	15	11	7	4	3	0	0
125	20	14	10	5	3	2	0	0
160	20	13	8	4	3	1	1	0
200	18	11	6	3	2	1	0	0
250	17	10	5	2	1	1	0	0
315	17	8	4	1	1	0	0	0
400	13	8	4	1	1	0	0	0
500	9	4	3	1	1	1	0	0
630	7	3	2	1	1	1	0	0
Tol. ±	2	2	2	2	2	2	2	2

GRC + ALS – Extract air

Sound power level L_w (dB)

Table K_{OK}

Size	Mid-frequency (Octave band) Hz							
	GRC + ALS	63	125	250	500	1000	2000	4000
100	-4	4	6	1	-3	-5	-9	-21
125	-7	10	7	-2	-6	-7	-13	-22
160	-3	11	8	-1	-6	-8	-12	-19
200	0	10	6	-2	-5	-6	-11	-18
250	-1	11	5	-3	-5	-7	-12	-21
315	-1	9	2	-4	-2	-5	-14	-21
400	7	11	4	-1	-2	-5	-11	-21
500	9	8	0	0	-1	-4	-13	-21
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation L_w (dB)

Table ΔL

Size	Mid-frequency (Octave band) Hz							
	GRC + ALS	63	125	250	500	1000	2000	4000
100	14	14	13	16	26	16	10	11
125	18	16	9	17	23	16	11	13
160	22	14	10	17	19	12	10	12
200	19	11	8	16	18	12	11	11
250	16	8	8	16	17	12	12	13
315	14	6	7	19	14	10	10	13
400	14	5	8	14	11	10	11	12
500	8	4	6	12	10	9	10	10
Tol. ±	2	2	2	2	2	2	2	2

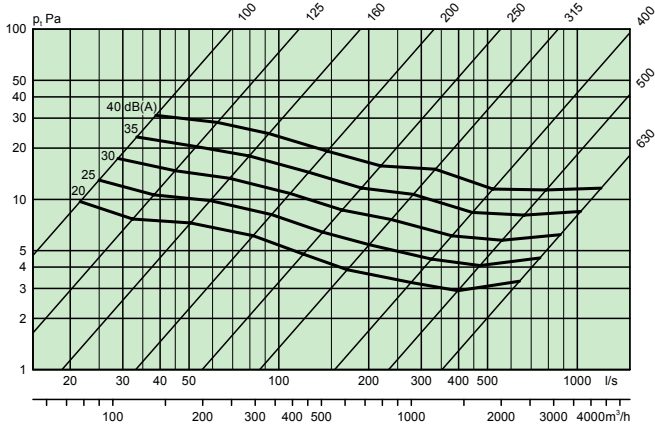
Sizing diagram

GRC – Extract air

Airflow – Pressure drop – Sound level

- The diagrams should not be used for commissioning.
- The dB(A) values are for rooms with normal acoustic absorption (4 dB room attenuation).
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.

GRC 100-630, Extract air

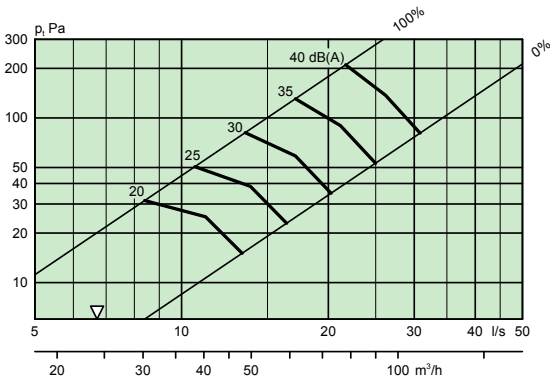


GRC + ALS – Extract air

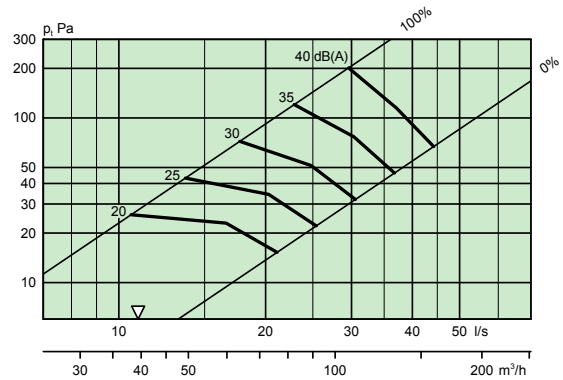
Airflow – Pressure drop – Sound level

- The diagrams should not be used for commissioning.
- ∇ = Min. airflow required for obtaining sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption (4 dB room attenuation).
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.

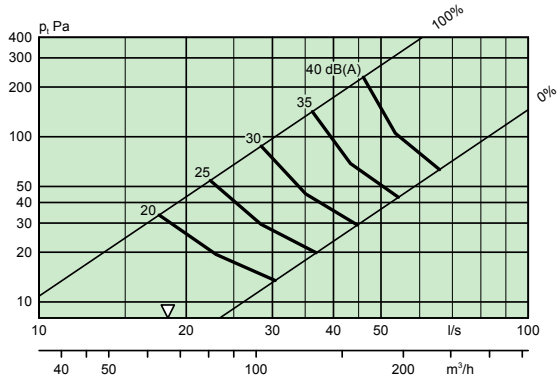
GRC 100 ALS 80-100, Extract air



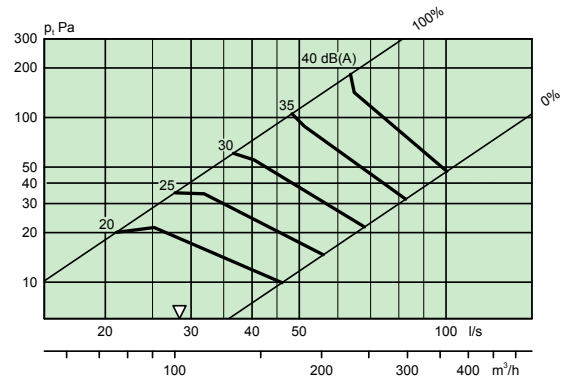
GRC 125 ALS 100-125, Extract air



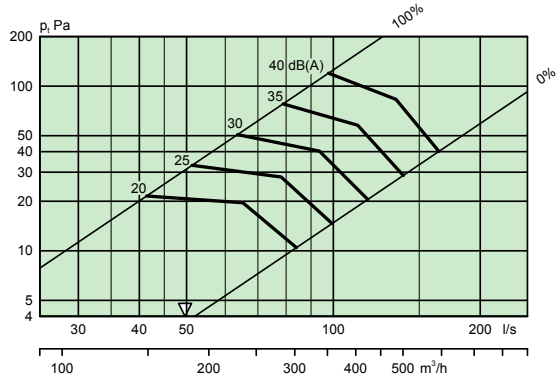
GRC 160 ALS 125-160, Extract air



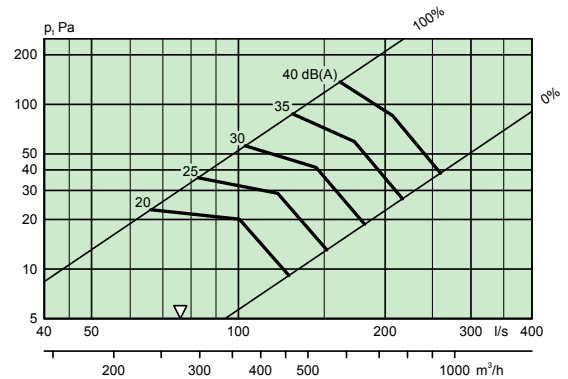
GRC 200 ALS 160-200, Extract air



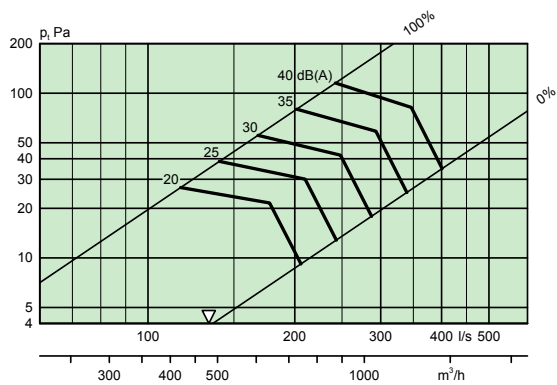
GRC 250 ALS 200-250, Extract air



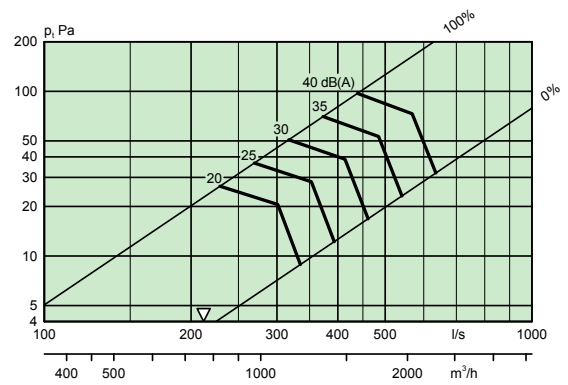
GRC 315 ALS 250-315, Extract air



GRC 400 ALS 315-400, Extract air



GRC 500 ALS 400-500, Extract air



Dimensions and weights

Table of dimensions – GRC

Size	ØA	ØB	ØC	L	Weight (kg)
100	130	85	99	36	0,2
125	155	110	124	53	0,2
160	195	140	159	53	0,3
200	235	180	199	53	0,4
250	285	230	249	53	0,5
315	350	295	314	70	0,7
400	440	380	399	75	0,9
500	540	480	499	75	1,6
630	670	610	629	75	2,1

Dimensions of opening = ØC + 11 mm

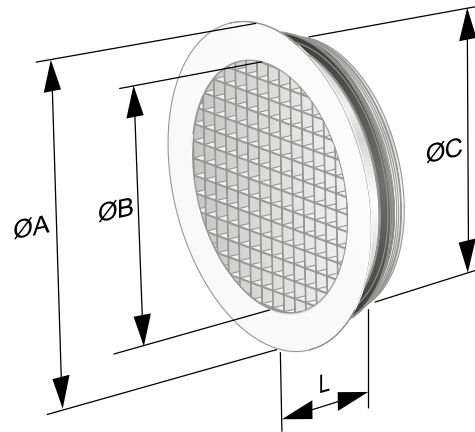


Figure 2. GRC.

Table of dimensions GRC + ALS

Size	ØA	B	C	ØD	Ød	E	F	G	H	K	Weight (kg)
100	130	227	192	79	100	162	40	90	200	50	1,5
125	155	282	217	99	125	182	40	100	270	80	2,2
160	195	342	252	124	160	204	40	112	315	80	3,0
200	235	404	288	159	200	239	40	130	375	100	3,9
250	285	504	332	199	250	279	40	150	465	115	5,7
315	350	622	388	249	315	340	40	175	575	140	8,7
400	440	767	488	314	400	400	40	212	712	175	11,3
500	540	887	588	399	500	510	60	280	795	50	12,1

CL = Center line

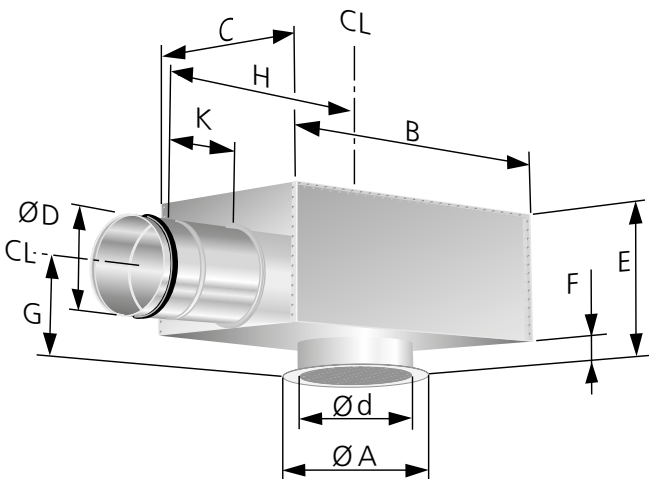


Figure 3. GRC with commissioning box ALS. CL = Centerline.

Ordering key

Product

Grille for wall and ceiling GRC a aaa

Version:

Size: 100, 125, 160, 200, 250, 315, 400, 500 and 630

Accessories

Commissioning box ALS d aaa -bbb

Version:

For GRC	ALS
100	80-100
125	100-125
160	125-160
200	160-200
250	200-250
315	250-315
400	315-400
500	400-500
630	500-630

Specification example

Swegon's circular grille for wall/ceiling mounting of the type GRC with the commissioning box ALS, having the following functions:

- Fixed circular egg crate core
- Powder-coated in white, RAL 9003/NCS S 0500-N
- Cleanable commissioning box ALS with removable commissioning damper including a lockable adjustment, measurement function with low method error and internal acoustic attenuation with reinforced surface layer.

Size: GRCa aaa with ALSd aaa - bbb xx items