



EXTERNAL INDUSTRIAL GRILLES
100 mm PITCH

OVERVIEW

GL
SERIES

OVERVIEW :

The GL series is represented by a range of grilles for injection and extraction with fixed blades angled at 49°. Used for the injection of air from the external environment and for the extraction of unwanted air to the outside. It is recommended that for the external use of these grilles, a mesh should be used to prevent birds from passing through the units.

CHARACTERISTICS :

Frame: in extruded aluminium, 50 mm wide, with rounded edges, built in four parts with the joints hidden under the frame during machine assembly.

Blades: In extruded aluminium with 100mm high blade, attached to the internal frame on four points of assembly.

Damper: optional accessory built entirely in aluminium with multiple blades with counter movement.

Counterframe : Made from galvanised steel sheet for mounting to walls of light structures. **Finishing :** The grilles are made in anodised natural aluminium.

RAL colours from table, on request.

SUPPLYABLE SIZES :

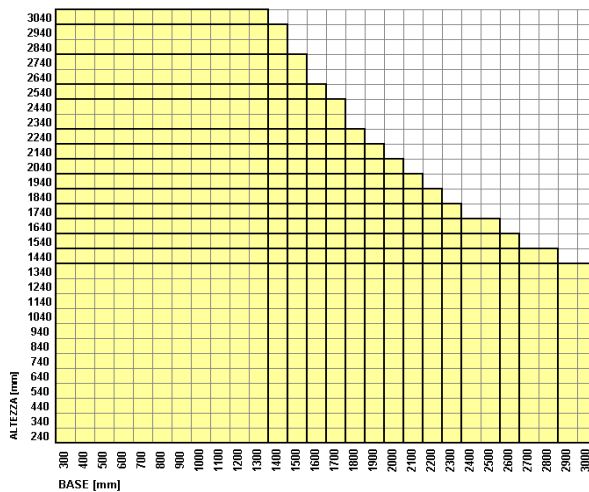
Minimum: 300 x 240

Maximum: 2.000 x 2.040

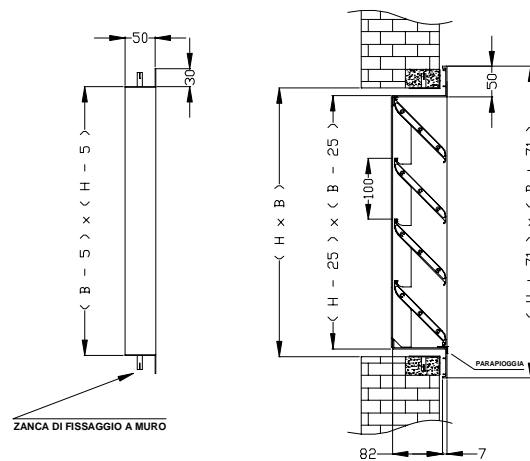
It is possible to supply grilles with one of the two sides (B or H) larger than the maximum sizes (up to 3000 mm) but no bigger than 4 m²

Please check availability and suppliability when requesting

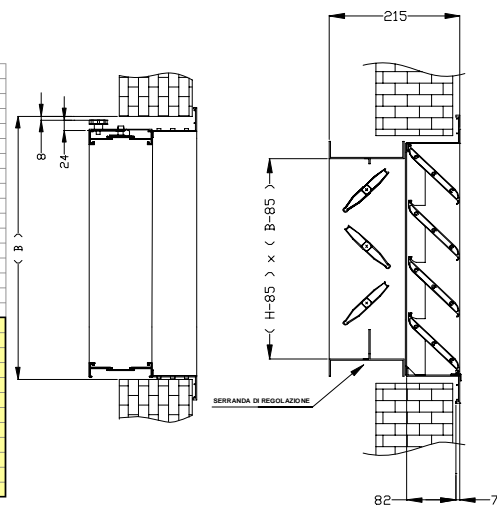
MAXIMUM COMBINATIONS :



DISEGNI COSTRUTTIVI :



SPECIAL ASSEMBLY WITH REGULATION DAMPER WITH 100 PITCH :





EXTERNAL INDUSTRIAL GRILLES
100 mm PITCH
GRILLE COMPOSITIONS

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CONSTRUCTION OF COMPOSED GRILLES :

The GL series are made from multiple panels depending both on the height and base where one of the two exceeds 2 metres in length and the section axed 4 mq (i.e. the measure are outside the standard measurements).

The nominal dimensions BxH of the standard composed grille are shown in the below table with the relative number of sections (2 or 3).

The standard composed grille is that where it is composed from single grilles with standard sizes. The assembly of the composed grilles is the responsibility of the supplier.

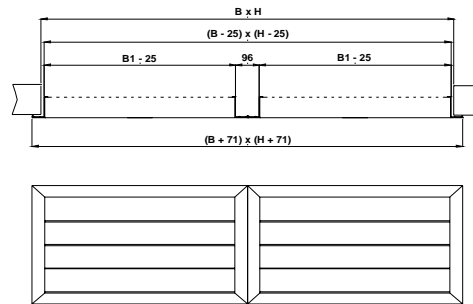
BASE DIMENSION:

B	n _B	B1
2070	2	1000
2270	2	1100
2470	2	1200
2670	2	1300
2870	2	1400
3070	2	1500
3270	2	1600
3470	2	1700
3670	2	1800
3870	2	1900
4070	2	2000
4041	3	1300
4341	3	1400
4641	3	1500
4941	3	1600
5241	3	1700
5541	3	1800
5841	3	1900
6141	3	2000

HEIGHT DIMENSION:

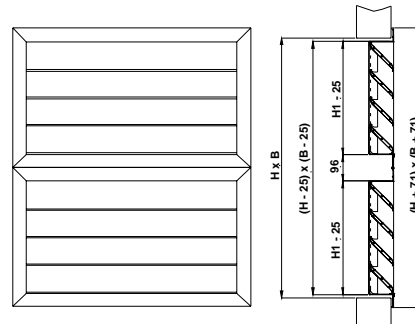
H	n _H	H1
2150	2	1040
2350	2	1140
2550	2	1240
2750	2	1340
2950	2	1440
3150	2	1540
3350	2	1640
3550	2	1740
3750	2	1840
3950	2	1940
4150	2	2040
4161	3	1340
4461	3	1440
4761	3	1540
5061	3	1640
5361	3	1740
5661	3	1840
5961	3	1940
6261	3	2040

GRILLE COMPOSITION IN 2 HORIZONTAL PARTS



The horizontal grille composition is done considering the nominal dimensions for B in the above table, to which corresponds the number of subdivisions of the base (n_B), the nominal dimension B1 of the single grille.

GRILLE COMPOSITION IN 2 VERTICAL PARTS



The vertical composition of the grille is done taking into account the nominal dimensions of H in the above table, that is in relation to the number of different subdivisions of the base (n_H), the nominal dimension H1 of the single grille. Differently to the base dimension B, that for H does not allow for dimensions different to those indicated due to construction restrictions dictated by the particular solution adopted.

LEGEND

- B x H Composed grille - nominal dimensions
- B-25 x H-25 Composed grille - P. A. dimensions
- B+71 x H+71 Composed grille - E. C. dimensions
- n_B n° of fields in the base B division
- n_H n° fields in the height H division
- B1 x H1 Single grille - nominal dimensions
- B1-25 x H1-25 Single grille - P. A. dimensions
- B1+71 x H1+71 Single grille - E. C. dimensions



EXTERNAL INDUSTRIAL GRILLES
100 mm PITCH

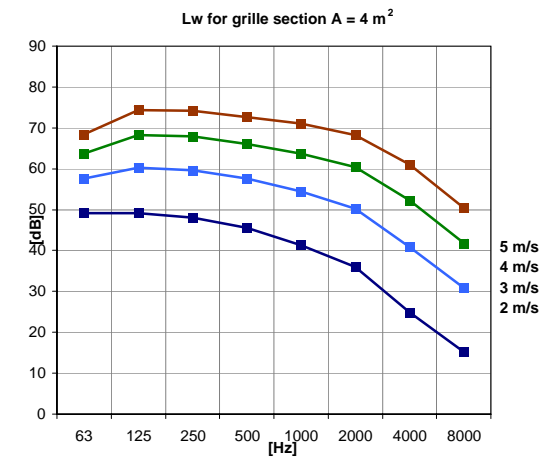
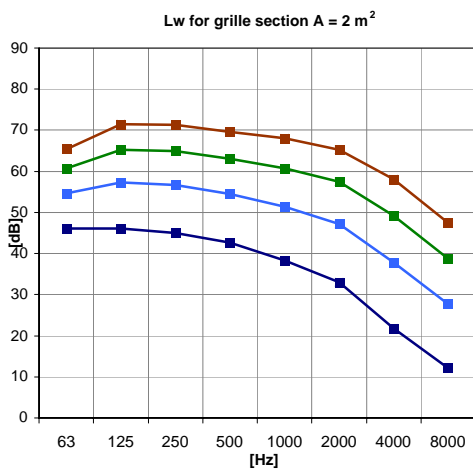
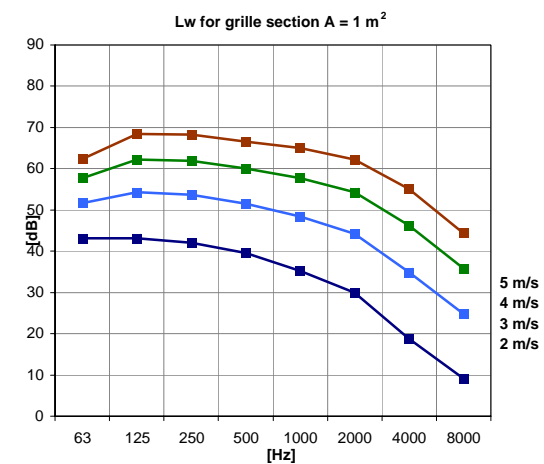
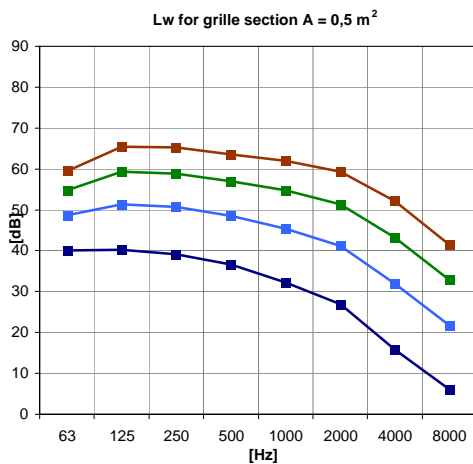
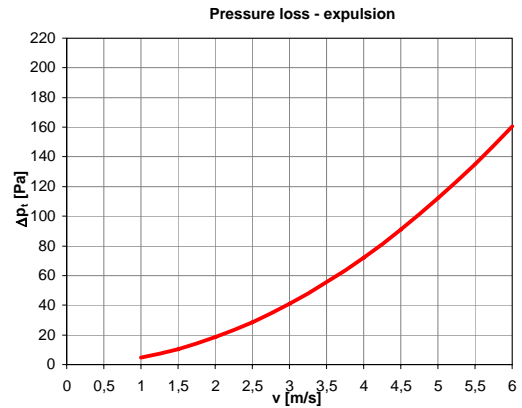
GL
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PERFORMANCE IN EXPULSION

The diagrams refer to function of the grille in expulsion. The graphs show the total pressure loss as a function of the speed of the air passing through the unit and the sound level as a result of the speed of the air flow through the unit.

LEGEND :

- v [m/s] Speed of the air flow through the unit.
- A [m²] Air flow section
- Δp_t [Pa] Total pressure loss
- L_w [dB] Noise power level





EXTERNAL INDUSTRIAL GRILLES
100 mm PITCH

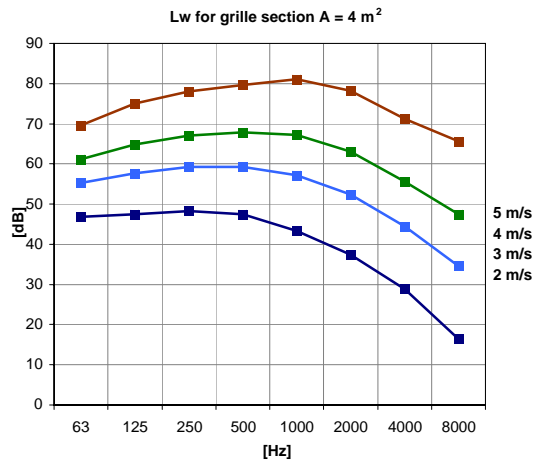
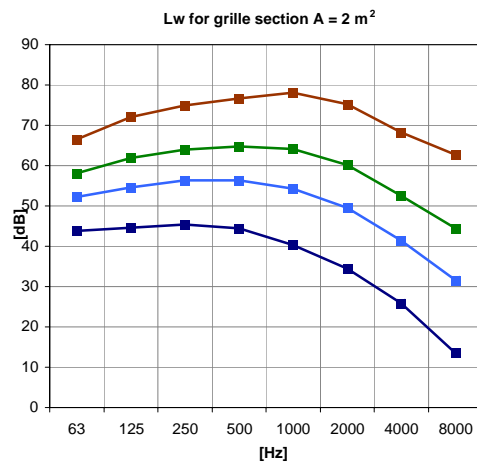
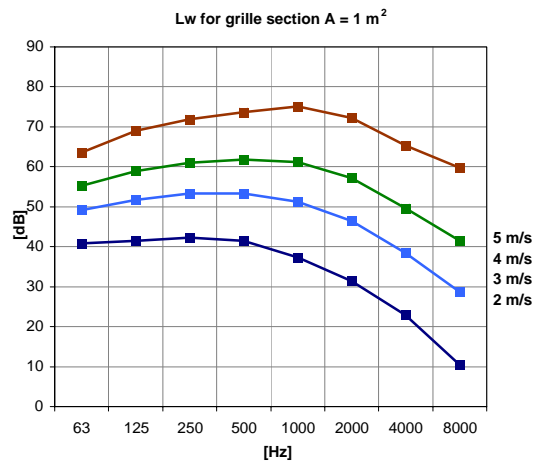
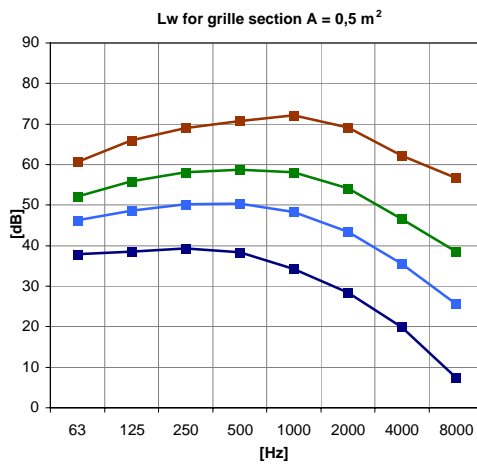
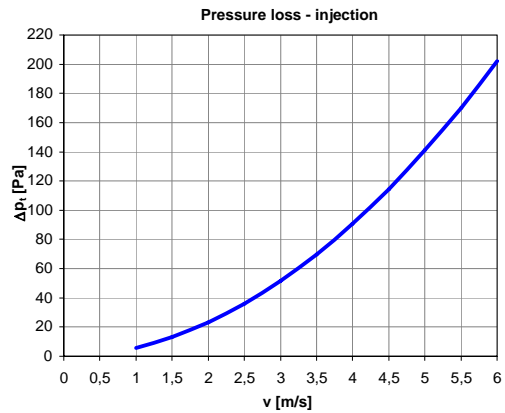
GL
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PERFORMANCE IN INJECTION

The diagrams refer to function of the grille in injection. The graphs show the total pressure loss as a function of the speed of the air passing through the unit and the sound level as a result of the speed of the air flow through the unit.

LEGEND :

- v [m/s] Speed of the air flow through the unit.
- A [m²] Air flow section
- Δp_t [Pa] Total pressure loss
- L_w [dB] Noise power level





**EXTERNAL INDUSTRIAL GRILLES
100 mm PITCH**

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EXAMPLE

EXAMPLE :

An expulsion grille with 100 pitch, 1.600 x 1.200 through which 20.000 m³/h of air transit.

Determine firstly:

- Pressure losses
- Octave sound power levels
- Sound power levels
- Sound power level compounded in A

Air flow section

$$A = B \times H = 1,6 \times 1,2 = 1,92 [m^2]$$

Speed of the air through the unit

$$v = \frac{Q}{A} = \frac{20.000 \left[\frac{m^3}{h} \right]}{1,92 [m^2]} = \frac{20.000 \left[\frac{m^3}{3.600 s} \right]}{1,92 [m^2]} = 2,89 \left[\frac{m}{s} \right]$$

Pressure loss

$$\Delta p_f = 41 [Pa]$$

Octave sound power level

f	63	125	250	500	1000	2000	4000	8000
L _{w,f}	55	57	57	55	51	47	38	28
L _{w,f,A}	28	41	48	51	51	48	39	27

Sound power level

$$L_w = 10 \times \log_{10} \left(\sum_f 10^{\frac{L_{w,f}}{10}} \right) = 63 [dB]$$

Sound powers levels compounded in A:

$$L_{wA} = 10 \times \log_{10} \left(\sum_f 10^{\frac{L_{w,f,A}}{10}} \right) = 56 [dB(A)]$$

100 pitch grille fixed to expulsion duct

A [m ²]	v [m/s]	Δp _f [Pa]	L _w [dB]	L _{wA} [dB(A)]	f [Hz]							
					63	125	250	500	1000	2000	4000	8000
0,5	2	18	46	38	40	40	39	37	32	27	16	6
0,5	3	41	57	50	49	51	51	49	45	41	32	22
0,5	4	72	65	59	55	59	59	57	55	51	43	33
0,5	5	112	71	67	59	65	65	64	62	59	52	41
1	2	18	49	41	43	43	42	40	35	30	19	9
1	3	41	60	53	52	54	54	52	48	44	35	25
1	4	72	68	62	58	62	62	60	58	54	46	36
1	5	112	74	70	62	68	68	67	65	62	55	44
2	2	18	52	44	46	46	45	43	38	33	22	12
2	3	41	63	56	55	57	57	55	51	47	38	28
2	4	72	71	65	61	65	65	63	61	57	49	39
2	5	112	77	73	65	71	71	70	68	65	58	47
4	2	18	54	47	49	49	48	46	41	36	25	15
4	3	41	66	59	58	60	60	58	54	50	41	31
4	4	72	74	68	64	68	68	66	64	60	52	42
4	5	112	80	76	68	74	74	73	71	68	61	50

100 pitch grille fixed to expulsion duct

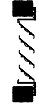

A [m ²]	v [m/s]	Δp _f [Pa]	L _w [dB]	L _{wA} [dB(A)]	f [Hz]							
					63	125	250	500	1000	2000	4000	8000
0,5	2	23	45	39	38	39	39	38	34	28	20	7
0,5	3	52	56	52	46	49	50	50	48	43	36	26
0,5	4	91	65	62	52	56	58	59	58	54	47	39
0,5	5	141	77	76	61	66	69	71	72	69	62	57
1	2	23	48	42	41	42	42	41	37	31	23	10
1	3	52	59	55	49	52	53	53	51	46	39	29
1	4	91	68	65	55	59	61	62	61	57	50	42
1	5	141	80	79	64	69	72	74	75	72	65	60
2	2	23	51	45	44	45	45	44	40	34	26	13
2	3	52	62	58	52	55	56	56	54	49	41	32
2	4	91	71	68	58	62	64	65	64	60	53	45
2	5	141	83	82	67	72	75	77	78	75	68	63
4	2	23	54	48	47	48	48	47	43	37	29	16
4	3	52	65	61	55	58	59	59	57	52	44	35
4	4	91	74	71	61	65	67	68	67	63	56	48
4	5	141	86	85	70	75	78	80	81	78	71	66

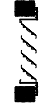
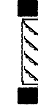


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100 mm PITCH

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CODES

Nominal dimension		
B x H	GL	GL R
600	X	X
800	X	X
1000	X	X
1200	X	X
1400	X	X
1600	X	X
1800	X	X
2000	X	X
600	X	X
800	X	X
1000	X	X
1200	X	X
1400	X	X
1600	X	X
1800	X	X
2000	X	X
600	X	X
800	X	X
1000	X	X
1200	X	X
1400	X	X
1600	X	X
1800	X	X
2000	X	X
600	X	X
800	X	X
1000	X	X
1200	X	X
1400	X	X
1600	X	X
1800	X	X
2000	X	X

Nominal dimensions		
B x H	GL	GL R
600	X	X
800	X	X
1000	X	X
1200	X	X
1400	X	X
1600	X	X
1800	X	X
2000	X	X
600	X	X
800	X	X
1000	X	X
1200	X	X
1400	X	X
1600	X	X
1800	X	X
2000	X	X
600	X	X
800	X	X
1000	X	X
1200	X	X
1400	X	X
1600	X	X
1800	X	X
2000	X	X
600	X	X
800	X	X
1000	X	X
1200	X	X
1400	X	X
1600	X	X
1800	X	X
2000	X	X

GL 100 mm pitch grille
R Net

Example: GL R 1000x640
100 mm pitch grill with net.
Nominal dimensions 1000x640.