DOĞU
İKLİMLENDİRME | HVAC SYSTEMS

DSU

Surface Mounted Adjustable Louvre

FOUR SEASONS®

Venues Breathe with DOGU HVAC Systems!

DOGU HVAC founded in 1999, and ever since has been manufacturing Energy-and Cost-Efficient products as Air Handling Units, Air Distribution & Management & Movement Systems [HVAC Components] and constantly enhancing to provide an integrated solution for well-being. DOGU HVAC's core business products which are subsumed under four major groups as Air Handling Units, Heat/Energy Recovery Units, Air Distribution & Management Products and Kitchen Ventilation Equipment are all produced under the compliance with EU standarts. Particularly AHU and HRU-ER units are entitled under the "FOUR SEASONS" brand name for domestic and foreign markets. DOGU HVAC's, headquarter in Izmir/Turkey, operates in a large-sized plant spread over two factories, in total area of 45.000 sqm in which 25.000 sqm indoor space that enables DOGU HVAC manufactures 140 various type of products. Additionally, DOGU HVAC has a powerful sales network with three sales offices located in Istanbul, Ankara and Antalya in Turkey as well as authorized dealers in many other countries for sales and after sales operations. DOGU HVAC has been exporting to more than 50 countries.

Thanks to our "Customer Satisfaction","Zero-Defect Policy" motto and reinforced by complete certified products, more than 250 employees. DOGU HVAC R&D center developed exclusive products, such as Double Skin Make-Up Kitchen Hood, Recirculated Laminar Airflow Unit, Single Piece Square Ceiling Diffuser and Ecology Units, for the first time have brought to the sector. DOGU HVAC R&D has the ability to make customized production which can meet the requirement of the customers by means of special software such as "ANSYS FLUENT". DOGU HVAC guaranteed its quality of management by having advantages of ISO 9001, ISO 14001, ISO 18001 certifications. Air Handling Units have EUROVENT, TUV Hygiene [in accordance with DIN1946-4, VDI 6022-1, DIN EN 13053 standarts], CE, TSEK, GOST-R certifications; Fire Dampers have EN 1366-2 and EN 13501-3 CE certifications; Smoke Control Dampers have EN 1366-10 and 12101-8 CE certifications; Kitchen Ventilation Products have TSE, CE and GOST-R quality certifications.

- DSU - Surface Mounted Adjustable Louvre allows its blades to be easily adjusted with the adjustment lever.
- It is an outdoor weather louvre preferred for surface mounted wall applications.
- If specified in the order code, expanded aluminum wire is mounted on the back of the louvre.

MATERIAL

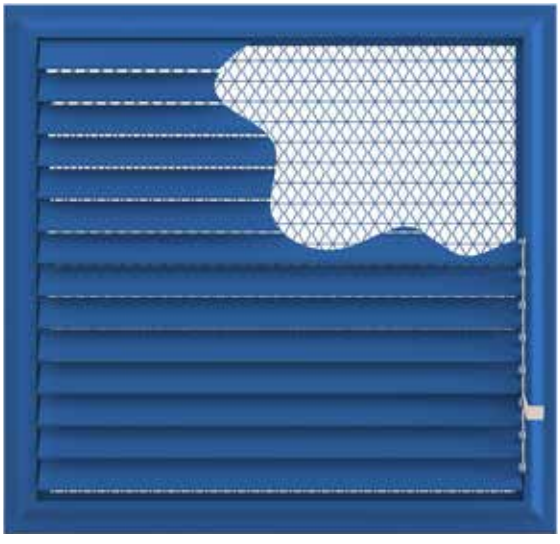
- Frame and blades made of aluminum 6063 extruded profile

SURFACE COATING

- RAL 9010 or RAL 9016 electrostatic powder paint as standard
- Optional
  - Different RAL color codes

MOUNTING OPTIONS

- Screw System
- Without Mounting Hole



ACCESSORIES

- Optional
  - Expanded aluminum wire

PRODUCT SELECTION

STANDARD DIMENSIONS

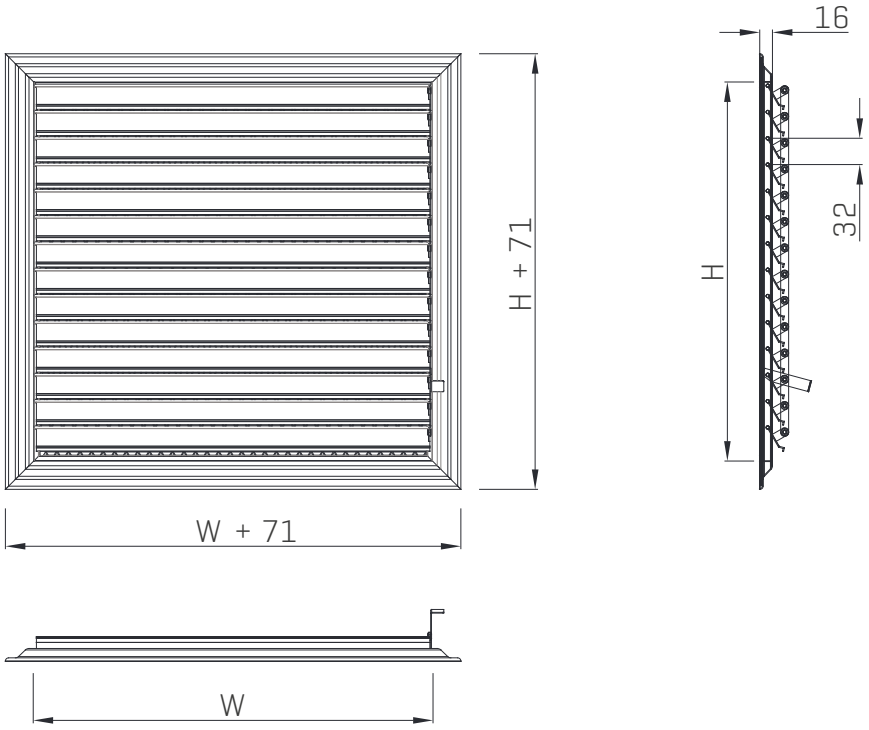
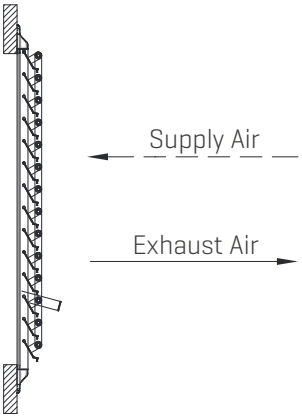


Table 1. Standard Dimensions

Standard Dimensions		H (Height) [mm]								
		100	200	300	400	500	600	700	800	900
W (Width) [mm]	100	✓	✓	✓	✓	✓				
	200	✓	✓	✓	✓	✓	✓	✓	✓	✓
	300	✓	✓	✓	✓	✓	✓	✓	✓	✓
	400	✓	✓	✓	✓	✓	✓	✓	✓	✓
	500	✓	✓	✓	✓	✓	✓	✓	✓	✓
	600	✓	✓	✓	✓	✓	✓	✓	✓	✓
	700	✓	✓	✓	✓	✓	✓	✓	✓	✓
	800	✓	✓	✓	✓	✓	✓	✓	✓	✓
	900	✓	✓	✓	✓	✓	✓	✓	✓	✓

PERFORMANCE DATA

Performance data are given below according to the fresh air supply into the space and the exhausted air from the space to the outside. Product dimensions are determined from the effective area provided according to the desired perform



EFFECTIVE AREA TABLE

Table 2. Effective Area

Effective Area [m²]		100	200	300	400	500	600	700	800	900
W (Width) [mm]	100	0.009	0.014	0.019	0.024	0.029				
	200	0.014	0.024	0.034	0.043	0.053	0.063	0.073	0.083	0.092
	300	0.019	0.034	0.048	0.063	0.078	0.092	0.107	0.122	0.137
	400	0.024	0.043	0.063	0.083	0.102	0.122	0.142	0.161	0.181
	500	0.029	0.053	0.078	0.102	0.127	0.151	0.176	0.200	0.225
	600	0.034	0.063	0.092	0.122	0.151	0.181	0.210	0.240	0.269
	700	0.038	0.073	0.107	0.142	0.176	0.210	0.245	0.279	0.313
	800	0.043	0.083	0.122	0.161	0.200	0.240	0.279	0.318	0.358
	900	0.048	0.092	0.137	0.181	0.225	0.269	0.313	0.358	0.402

FRESH AIR DATA

Table 3. Fresh Air Data

Flow Rate (m3/h)		Effective Velocity (m/s)										
		0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.0
50	Effective Area [m²]	0.0278	0.0139	0.0093								
	Pressure Drop [Pa]	<1	<1	2								
	Sound Power Level [dB(A)]	<15	<15	<15								
100	Effective Area [m²]	0.0556	0.278	0.019	0.014	0.011	0.009					
	Pressure Drop [Pa]	<1	<1	2	4	8	14					
	Sound Power Level [dB(A)]	<15	<15	<15	<15	<15	15					
200	Effective Area [m²]	0.111	0.056	0.037	0.028	0.022	0.019	0.016	0.014	0.012	0.011	0.009
	Pressure Drop [Pa]	<1	<1	2	4	8	14	23	34	49	68	118
	Sound Power Level [dB(A)]	<15	<15	<15	<15	<15	18	24	29	33	37	44
300	Effective Area [m²]	0.167	0.083	0.056	0.042	0.033	0.028	0.024	0.021	0.019	0.017	0.014
	Pressure Drop [Pa]	<1	<1	2	4	8	14	22	34	48	67	117
	Sound Power Level [dB(A)]	<15	<15	<15	<15	<15	19	25	30	35	39	46
400	Effective Area [m²]	0.222	0.111	0.074	0.056	0.044	0.037	0.032	0.028	0.025	0.022	0.019
	Pressure Drop [Pa]	<1	<1	2	4	8	14	22	33	48	66	115
	Sound Power Level [dB(A)]	<15	<15	<15	<15	<15	21	26	31	36	40	47
500	Effective Area [m²]	0.278	0.139	0.093	0.069	0.056	0.046	0.040	0.035	0.031	0.028	0.023
	Pressure Drop [Pa]	<1	<1	2	4	8	14	22	33	47	65	114
	Sound Power Level [dB(A)]	<15	<15	<15	<15	<15	21	27	32	37	41	48
600	Effective Area [m²]	0.333	0.167	0.111	0.083	0.067	0.056	0.048	0.042	0.037	0.0333	0.028
	Pressure Drop [Pa]	<1	<1	2	4	8	14	22	33	47	65	114
	Sound Power Level [dB(A)]	<15	<15	<15	<15	15	22	28	33	37	41	48
700	Effective Area [m²]	0.389	0.194	0.130	0.097	0.078	0.065	0.056	0.049	0.043	0.0389	0.032
	Pressure Drop [Pa]	<1	<1	2	4	8	13	22	33	47	65	113
	Sound Power Level [dB(A)]	<15	<15	<15	<15	16	23	29	34	38	42	49
800	Effective Area [m²]		0.222	0.148	0.111	0.089	0.074	0.063	0.056	0.049	0.0444	0.037
	Pressure Drop [Pa]		<1	2	4	8	13	22	32	47	64	113
	Sound Power Level [dB(A)]		<15	<15	<15	16	23	29	34	39	43	49
900	Effective Area [m²]		0.250	0.167	0.125	0.100	0.083	0.071	0.063	0.056	0.500	0.042
	Pressure Drop [Pa]		<1	2	4	8	13	21	32	46	64	112
	Sound Power Level [dB(A)]		<15	<15	<15	17	24	30	35	39	43	50
1000	Effective Area [m²]		0.278	0.185	0.139	0.111	0.093	0.079	0.069	0.062	0.556	0.046
	Pressure Drop [Pa]		<1	2	4	8	13	21	32	46	64	112
	Sound Power Level [dB(A)]		<15	<15	<15	17	24	30	35	39	43	50
1250	Effective Area [m²]		0.347	0.231	0.174	0.139	0.116	0.099	0.087	0.077	0.0694	0.58
	Pressure Drop [Pa]		<1	2	4	8	13	21	32	46	63	111
	Sound Power Level [dB(A)]		<15	<15	<15	18	25	31	36	40	44	51
1500	Effective Area [m²]			0.278	0.208	0.167	0.139	0.119	0.104	0.926	0.833	0.069
	Pressure Drop [Pa]			2	4	8	13	21	32	45	63	110
	Sound Power Level [dB(A)]			<15	<15	19	26	32	37	41	45	52
1750	Effective Area [m²]			0.324	0.243	0.194	0.162	0.139	0.122	0.1080	0.972	0.081
	Pressure Drop [Pa]			2	4	7	13	21	32	45	62	109
	Sound Power Level [dB(A)]			<15	<15	20	26	32	37	42	46	53
2000	Effective Area [m²]			0.370	0.278	0.222	0.185	0.159	0.139	0.1235	0.1111	0.093
	Pressure Drop [Pa]			2	4	7	13	21	31	45	62	109
	Sound Power Level [dB(A)]			<15	<15	20	27	33	38	42	46	53
2500	Effective Area [m²]				0.347	0.278	0.231	0.198	0.174	0.1543	0.1389	0.116
	Pressure Drop [Pa]				4	7	13	21	31	45	62	108
	Sound Power Level [dB(A)]				<15	21	28	34	39	43	47	54
3000	Effective Area [m²]					0.333	0.778	0.2381	0.2083	0.1852	0.1667	0.139
	Pressure Drop [Pa]					7	13	21	31	44	61	107
	Sound Power Level [dB(A)]					22	29	34	39	44	48	55
4000	Effective Area [m²]						0.370	0.3175	0.2778	0.2469	0.2222	0.185
	Pressure Drop [Pa]						13	20	31	44	61	106
	Sound Power Level [dB(A)]						30	36	41	45	49	56
5000	Effective Area [m²]							0.3968	0.3472	0.3086	0.2778	0.231
	Pressure Drop [Pa]							20	30	44	60	105
	Sound Power Level [dB(A)]							36	41	46	50	57
7500	Effective Area [m²]											0.347
	Pressure Drop [Pa]											104
	Sound Power Level [dB(A)]											58

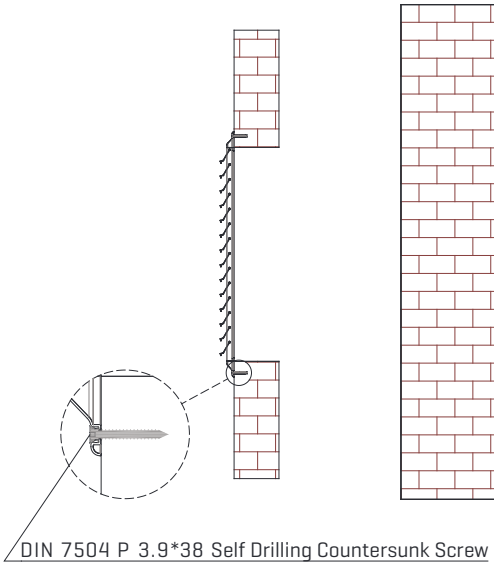
EXHAUST AIR DATA

Table 4. Exhaust Air Data

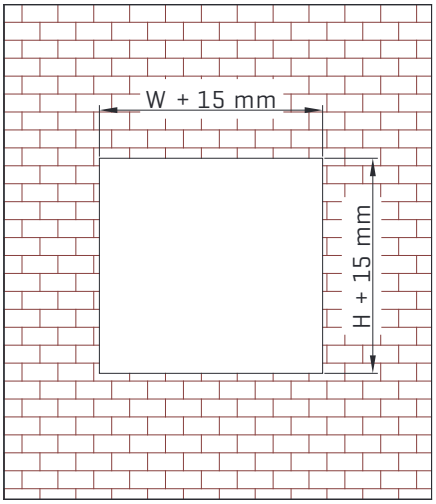
Flow Rate (m3/h)		Effective Velocity (m / s)										
		0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.0
50	Effective Area [m²]	0.0278	0.0139	0.0093								
	Pressure Drop [Pa]	<1	3	6								
	Sound Power Level [dB(A)]	<15	<15	<15								
100	Effective Area [m²]	0.0556	0.278	0.019	0.014	0.011	0.009					
	Pressure Drop [Pa]	<1	3	6	11	17	25					
	Sound Power Level [dB(A)]	<15	<15	<15	<15	16	21					
200	Effective Area [m²]	0.111	0.056	0.037	0.028	0.022	0.019	0.016	0.014	0.012	0.011	0.009
	Pressure Drop [Pa]	<1	3	6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]	<15	<15	<15	<15	19	24	28	31	34	37	42
300	Effective Area [m²]	0.167	0.083	0.056	0.042	0.033	0.028	0.024	0.021	0.019	0.017	0.014
	Pressure Drop [Pa]	<1	3	6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]	<15	<15	<15	15	21	26	30	33	36	39	44
400	Effective Area [m²]	0.222	0.111	0.074	0.056	0.044	0.037	0.032	0.028	0.025	0.022	0.019
	Pressure Drop [Pa]	<1	3	6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]	<15	<15	<15	16	22	27	31	34	37	40	45
500	Effective Area [m²]	0.278	0.139	0.093	0.069	0.056	0.046	0.040	0.035	0.031	0.028	0.023
	Pressure Drop [Pa]	<1	3	6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]	<15	<15	<15	17	23	28	32	35	38	41	46
600	Effective Area [m²]	0.333	0.167	0.111	0.083	0.067	0.056	0.048	0.042	0.037	0.0333	0.028
	Pressure Drop [Pa]	<1	3	6	1	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]	<15	<15	<15	18	24	29	33	36	39	42	47
700	Effective Area [m²]	0.389	0.194	0.130	0.097	0.078	0.065	0.056	0.049	0.043	0.0389	0.032
	Pressure Drop [Pa]	<1	3	6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]	<15	<15	<15	19	25	29	33	37	40	43	47
800	Effective Area [m²]		0.222	0.148	0.111	0.089	0.074	0.063	0.056	0.049	0.0444	0.037
	Pressure Drop [Pa]		3	6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]		<15	<15	19	25	30	34	37	40	43	48
900	Effective Area [m²]		0.250	0.167	0.125	0.100	0.083	0.071	0.063	0.056	0.500	0.042
	Pressure Drop [Pa]		3	6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]		<15	<15	20	26	30	34	38	41	44	48
1000	Effective Area [m²]		0.278	0.185	0.139	0.111	0.093	0.079	0.069	0.062	0.556	0.046
	Pressure Drop [Pa]		3	6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]		<15	<15	20	26	31	35	385	41	44	49
1250	Effective Area [m²]		0.347	0.231	0.174	0.139	0.116	0.099	0.087	0.077	0.0694	0.58
	Pressure Drop [Pa]		3	6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]		<15	<15	21	27	32	36	39	42	45	50
1500	Effective Area [m²]			0.278	0.208	0.167	0.139	0.119	0.104	0.926	0.833	0.069
	Pressure Drop [Pa]			6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]			<15	22	28	33	37	40	43	46	51
1750	Effective Area [m²]			0.324	0.243	0.194	0.162	0.139	0.122	0.1080	0.972	0.081
	Pressure Drop [Pa]			6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]			15	23	29	33	37	41	44	47	51
2000	Effective Area [m²]			0.370	0.278	0.222	0.185	0.159	0.139	0.1235	0.1111	0.093
	Pressure Drop [Pa]			6	11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]			16	23	29	34	38	41	44	47	52
2500	Effective Area [m²]				0.347	0.278	0.231	0.198	0.174	0.1543	0.1389	0.116
	Pressure Drop [Pa]				11	17	25	33	44	55	68	97
	Sound Power Level [dB(A)]				24	30	35	39	42	45	48	53
3000	Effective Area [m²]					0.333	0.2778	0.2381	0.2083	0.1852	0.1667	0.139
	Pressure Drop [Pa]					17	25	33	44	55	68	97
	Sound Power Level [dB(A)]					31	36	40	43	46	49	54
4000	Effective Area [m²]						0.370	0.3175	0.2778	0.2469	0.2222	0.185
	Pressure Drop [Pa]						25	33	44	55	68	97
	Sound Power Level [dB(A)]						37	41	44	47	50	55
5000	Effective Area [m²]							0.3968	0.3472	0.3086	0.2778	0.231
	Pressure Drop [Pa]							33	44	55	68	97
	Sound Power Level [dB(A)]							42	45	48	51	56
7500	Effective Area [m²]											0.347
	Pressure Drop [Pa]											97
	Sound Power Level [dB(A)]											58

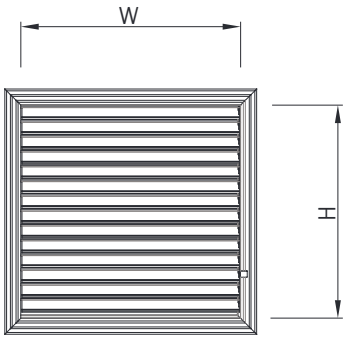
INSTALLATION

SCREW SYSTEM

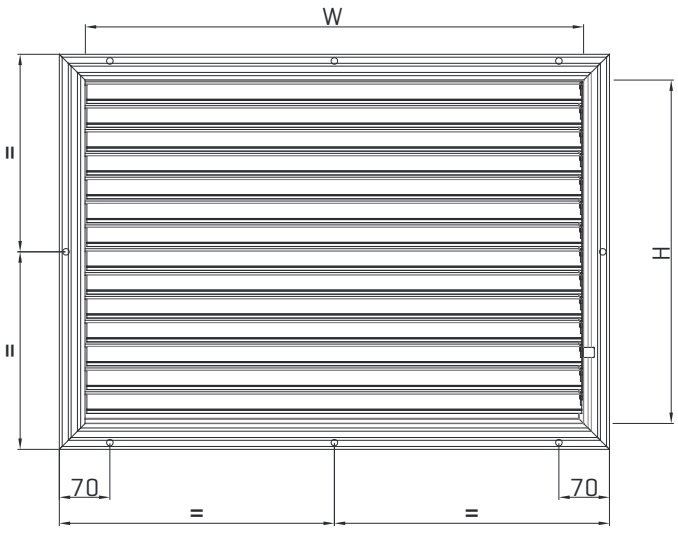


DIN 7504 P 3.9*38 Self Drilling Countersunk Screw





The assembly of the product is done with or without screw holes, as shown in the figure.



When the width is 300 mm or less, there is a screw hole in the middle of the horizontally positioned profiles.

When the width is greater than 300 mm, there are 2 screw holes with 70 mm margins on the right and left of the horizontally positioned profiles.

When the height is greater than 600 mm, there is a screw hole in the middle of the vertical position profiles.

W (Width) [mm]	Number of Holes in Horizontal
W ≤ 300	1
300 < W ≤ 900	2

H (Height) [mm]	Number of Holes in Vertical
600 < H ≤ 900	1

SIZE PARAMETERS

In the case of **W ≤ 900 - H> 900**, the louvres are divided from the H dimension and produced as modules. During the assembly, a profile should be placed at the module junction as shown in Figure.1.

You can use 30 mm x 60 mm profile in module assemblies.

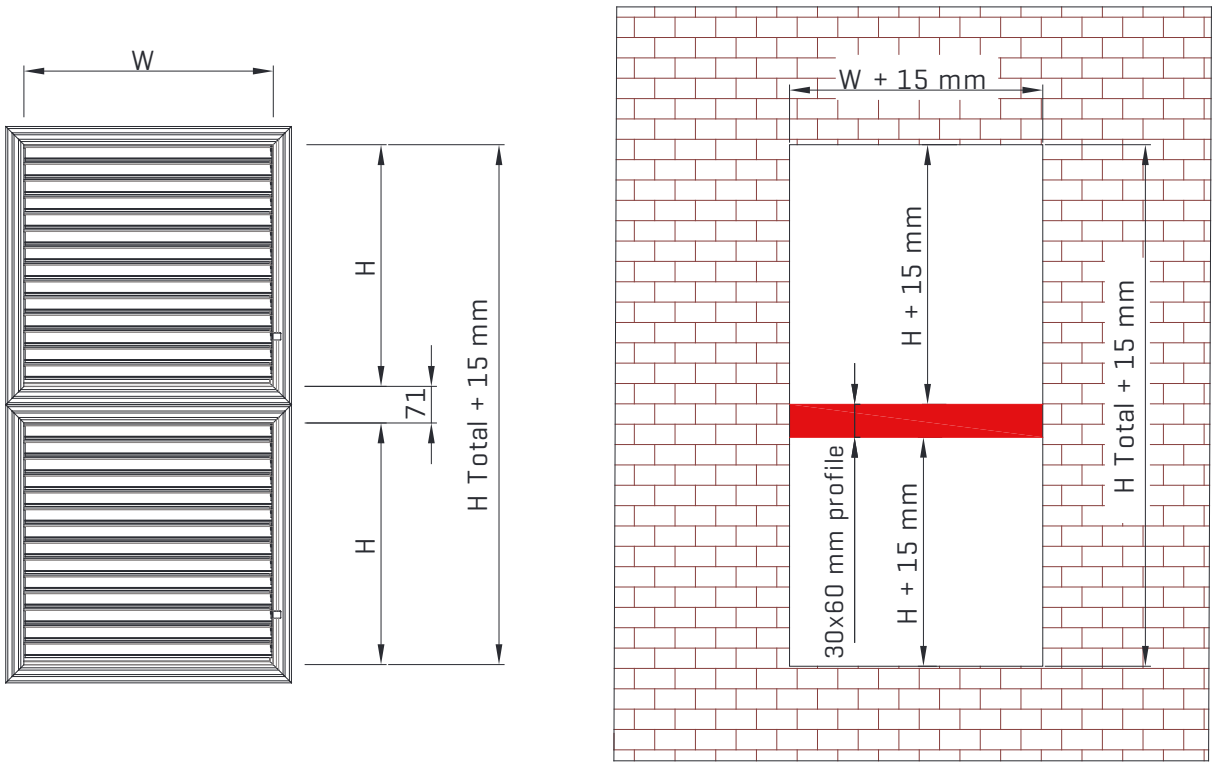


Figure 1

In the case of **W> 900 - H ≤ 900**, the louvers are divided into W dimensions and produced as modules. During the assembly, a profile should be placed at the module junction as shown in Figure.2.

You can use 30 mm x 60 mm profile in module assemblies.

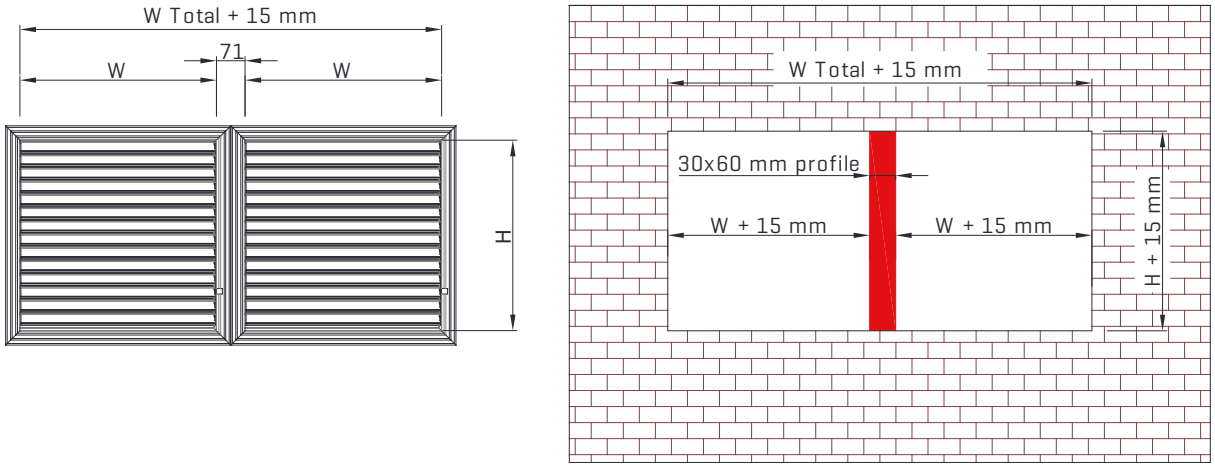


Figure 2

In the case of **W> 900 - H> 900**, the shutters are produced as modules by dividing both W and H dimensions. During the assembly, a profile should be placed at the module junction as shown in Figure.3.

You can use 30 mm x 60 mm profile in module assemblies.

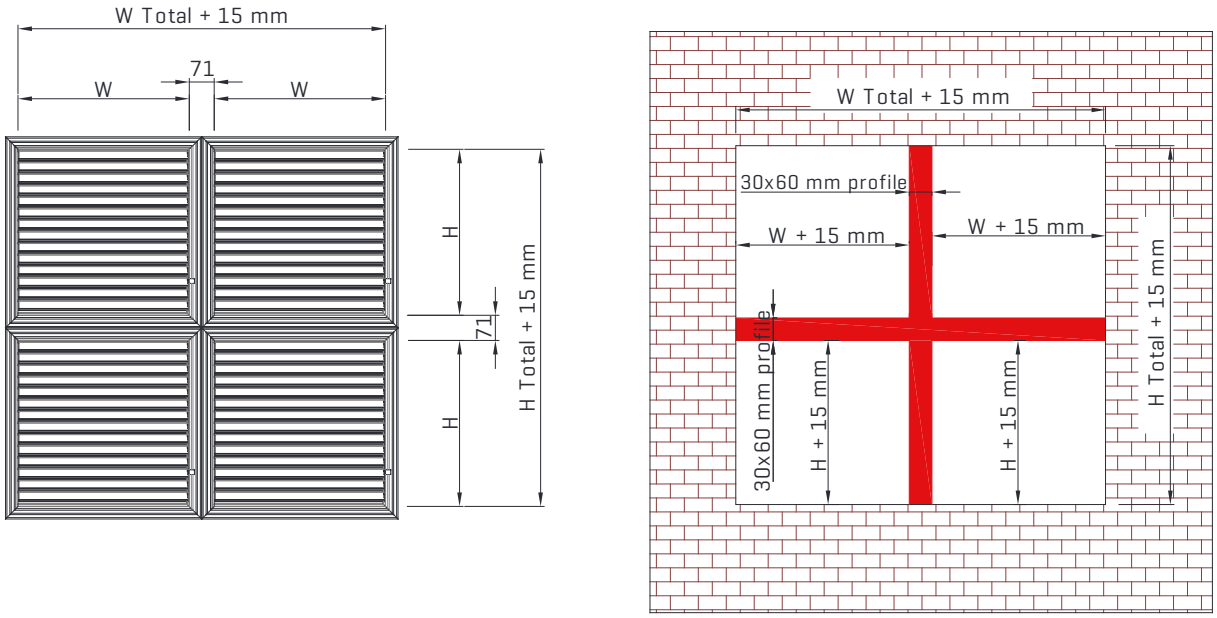


Figure 3

Module and Hole Size Calculation

W Total=W x n+(n-1)x71 mm

W Total (mm): Module louvre throat size

W (mm): Horizontal size for 1 module (indicated in the offer)

n: Number of modules (indicated in the offer)

Example: What is the module size and mounting hole size of the 1600 mm x 1000 mm Surface Mounted Louvre?

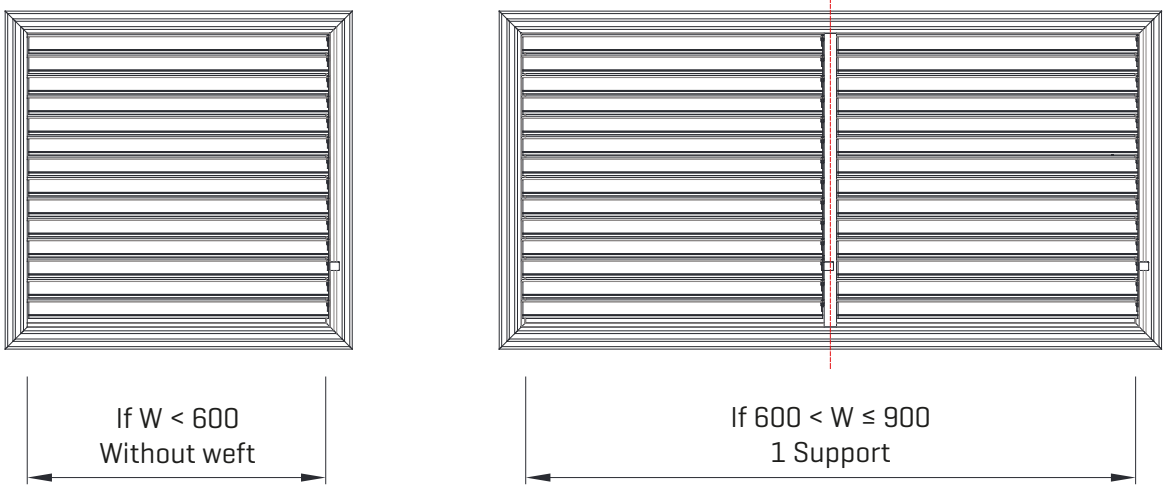
W Total=1600 mm
1600 mm=W x n+(n-1)x71 mm
n=2 (will be indicated in the offer)
It is found as W=765 mm.

H Total=1000 mm
1000 mm = H x n+(n-1)x71 mm
n=2 (will be indicated in the offer)
It is found as H=465 mm.

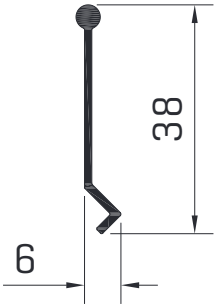
1 Module Size=765 mm x 465 mm (WxH)
Hole size=1615 mm x 1015 mm ((W total+15 mm)x(H total+15 mm))

SUPPORT COUNT PARAMETER

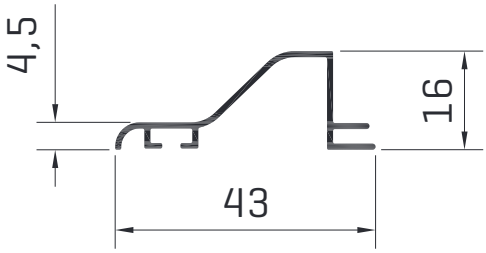
As the desired dimensions for the single module of the product increase, the product is produced with additional support and adjustment lever to increase strength.



FRAME AND BLADE TYPE



Louvre Blade



Surface Mounted Frame

PRODUCT ORDER CODES

You can place your orders according to the following coding format.

DSU.< A > . < B > . < C > . < D > . < E > . < F > . < G >

A	**Raw Material Type**	
	ALM	Aluminum
B	**Frame Type**	
	21	Surface Mounted Frame
C	**Mounting Type**	
	VD	Screw System
	MD	Without Mounting Hole
D	**Accessories**	
	AT	Aluminum Wire
	00	Without Accessories
E	**Horizontal Size (W) [mm]**	
	0000	You can look at standard sizes.
F	**Vertical Size (H) [mm]**	
	0000	You can look at standard sizes.
G	**Paint**	
	00	Unpainted
	S1	Standard Painted - RAL 9010
	S2	Standard Painted - RAL 9016
	XX	Special Painted

Sample Coding; DSU.ALM.21.VD.AT.0750.0550.S1

NOTES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