

OLZ

Slot Diffuser With Plastic Blades [Large Type]

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 standards. 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 standards], 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.



- OLZ - Slot Diffuser With Plastic Blades [Large Type] is both decorative thanks to its cylindrical, moving blades and modular structure and is ideal for meeting comfort parameters in difficult climatic spaces.
- The blade and slot internal structure has been aerodynamically optimized and has a compact structure. It provides energy saving thanks to its low pressure loss and acoustic comfort with low sound level thanks to its wide blade structure.
- They are used in feed or return in ceiling and wall applications. Use for horizontal shot from the ceiling suitable. It creates effective throw geometry in cooling applications with the Coanda effect.
- It is used in spaces between 2-4 m high.



MATERIAL

- Aluminum 6063 extrusion profile production
- ABS plastic blades that provide air direction inside the case.

SURFACE COATING

- RAL 9010 or RAL 9016 electrostatic powder paint as standard
- Optional
 - Different RAL color codes
 - Unpainted manufacturing
 - Matt anodised aluminum

MOUNTING OPTIONS

- ☛ Mounting Bracket

PRODUCT SELECTION

STANDARD DIMENSIONS

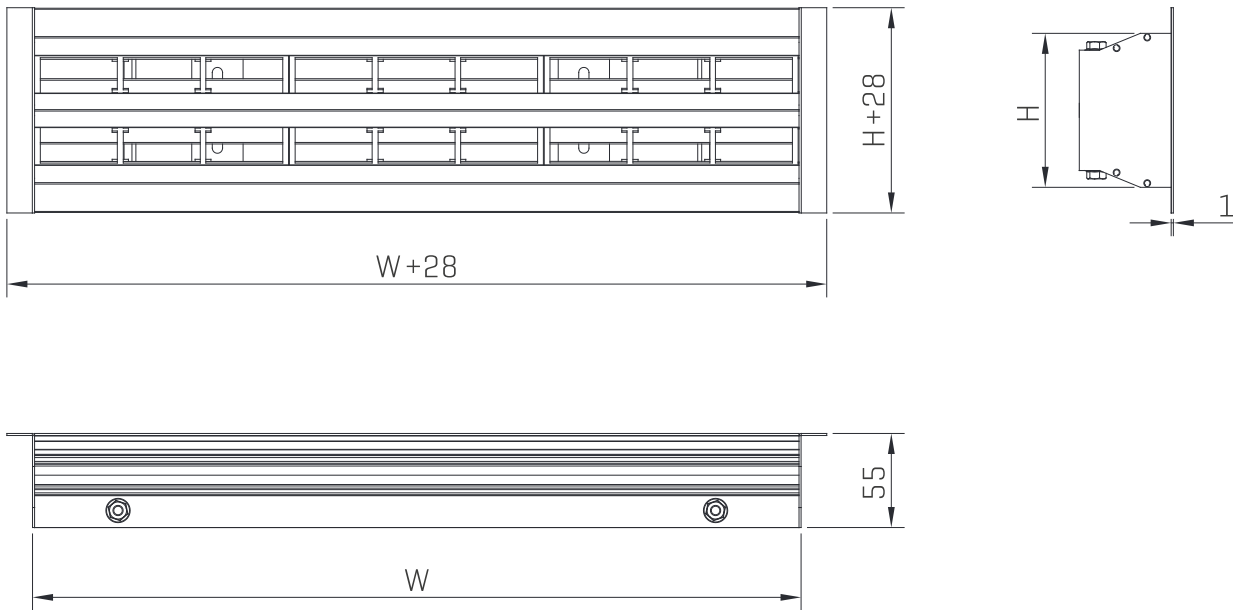


Table 1. Standard Sizes Table

Standard Sizes		H (Height) [mm]			
		1 Slot	2 Slots	3 Slots	4 Slots
		50	92	133	175
W (Width) [mm]	155	✓	✓	✓	✓
	300	✓	✓	✓	✓
	450	✓	✓	✓	✓
	600	✓	✓	✓	✓
	750	✓	✓	✓	✓
	900	✓	✓	✓	✓
	1050	✓	✓	✓	✓
	1200	✓	✓	✓	✓
	1345	✓	✓	✓	✓
	1495	✓	✓	✓	✓
	1645	✓	✓	✓	✓
	1800	✓	✓	✓	✓
1940	✓	✓	✓	✓	

PERFORMANCE DATA

EFFECTIVE AREA TABLE

Table 2. Effective Area Table

Effective Area [mm ²]		H (Height) [mm]			
		1 Slot	2 Slots	3 Slots	4 Slots
		50	92	133	175
W (Width) [mm]	155	0.0018	0.0029	0.0041	0.0052
	300	0.0031	0.0053	0.0075	0.0098
	450	0.0044	0.0078	0.0111	0.0145
	600	0.0058	0.0103	0.0147	0.0193
	750	0.0071	0.0128	0.0183	0.0240
	900	0.0085	0.0153	0.0219	0.0287
	1050	0.0098	0.0178	0.0255	0.0334
	1200	0.0112	0.0202	0.0291	0.0382
	1345	0.0125	0.0226	0.0326	0.0427
	1495	0.0138	0.0251	0.0362	0.0475
	1645	0.0152	0.0276	0.0397	0.0522
	1800	0.0166	0.0302	0.0435	0.0571
1940	0.0178	0.0325	0.0468	0.0615	

SUPPLY AIR DATA

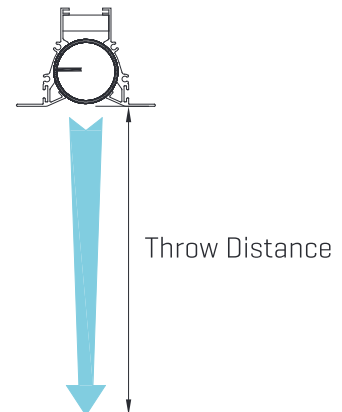
Table 3. Supply Air Data Table

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	7.0	8.0	9.0	10.0	
50	Effective Area [m²]	0.0278	0.0139	0.0093	0.0069	0.0056	0.0046	0.0040									
	Pressure Drop [Pa]	2	3	5	6	7	8	9									
	Throw Distance [m]	1	1	2	2	2	3	3									
	Sound Power Level [dB(A)]	<15	<15	<15	<15	<15	<15	<15									
100	Effective Area [m²]	0.056	0.028	0.0185	0.0139	0.0111	0.0093	0.0079	0.0069	0.0062	0.0056	0.0046	0.0040				
	Pressure Drop [Pa]	3	5	7	9	11	13	14	16	18	19	22	25				
	Throw Distance [m]	1	1	2	2	2	3	3	4	4	4	5	6				
	Sound Power Level [dB(A)]	<15	<15	<15	<15	<15	<15	16	18	19	20	23	25				
200	Effective Area [m²]		0.056	0.037	0.0278	0.0222	0.0185	0.0159	0.0139	0.0123	0.0111	0.0093	0.0079	0.0069	0.0062	0.0056	
	Pressure Drop [Pa]		8	11	14	17	20	23	25	28	30	35	39	44	48	52	
	Throw Distance [m]		1	2	2	2	3	3	4	4	4	5	6	6	7	8	
	Sound Power Level [dB(A)]		<15	<15	16	19	22	24	25	27	28	31	33	34	36	37	
300	Effective Area [m²]			0.0556	0.0417	0.0333	0.0278	0.0238	0.0208	0.0185	0.0167	0.0139	0.0119	0.0104	0.0093	0.0083	
	Pressure Drop [Pa]			15	19	22	26	29	32	36	39	45	51	57	62	68	
	Throw Distance [m]			2	2	2	3	3	4	4	4	5	6	6	7	8	
	Sound Power Level [dB(A)]			17	21	24	26	28	30	31	33	35	37	39	41	42	
400	Effective Area [m²]				0.0556	0.0444	0.0370	0.0317	0.0278	0.0247	0.0222	0.0185	0.0159	0.0139	0.0123	0.0111	
	Pressure Drop [Pa]				22	27	31	35	39	43	47	54	61	68	75	81	
	Throw Distance [m]				2	2	3	3	4	4	4	5	6	6	7	8	
	Sound Power Level [dB(A)]				24	27	29	31	33	35	36	38	40	42	44	45	
500	Effective Area [m²]					0.0556	0.0463	0.0397	0.0347	0.0309	0.0278	0.0231	0.0198	0.0174	0.0154	0.0139	
	Pressure Drop [Pa]					31	36	40	45	50	54	62	71	78	86	94	
	Throw Distance [m]					2	3	3	4	4	4	5	6	6	7	8	
	Sound Power Level [dB(A)]					30	32	34	36	37	39	41	43	45	46	48	
600	Effective Area [m²]						0.0556	0.0476	0.0417	0.0370	0.0333	0.0278	0.0238	0.0208	0.0185	0.0167	
	Pressure Drop [Pa]						40	45	51	56	61	70	79	88	97	105	
	Throw Distance [m]						3	3	4	4	4	5	6	6	7	8	
	Sound Power Level [dB(A)]						34	36	38	39	41	43	45	47	48	50	
700	Effective Area [m²]							0.0556	0.0486	0.0432	0.0389	0.0324	0.0278	0.0243	0.0216	0.0194	
	Pressure Drop [Pa]							50	56	61	67	77	87	97	107	116	
	Throw Distance [m]							3	4	4	4	5	6	6	7	8	
	Sound Power Level [dB(A)]							38	40	41	42	45	47	49	50	51	
800	Effective Area [m²]								0.0635	0.0556	0.0494	0.0444	0.0370	0.0317	0.0278	0.0247	0.0222
	Pressure Drop [Pa]								55	61	67	73	84	95	106	117	127
	Throw Distance [m]								3	4	4	4	5	6	6	7	8
	Sound Power Level [dB(A)]								39	41	43	44	46	48	50	52	53
900	Effective Area [m²]									0.0625	0.0556	0.0500	0.0417	0.0357	0.0313	0.0278	0.0250
	Pressure Drop [Pa]									66	72	78	91	103	114	126	137
	Throw Distance [m]									4	4	4	5	6	6	7	8
	Sound Power Level [dB(A)]									42	44	45	48	50	51	53	54
1000	Effective Area [m²]										0.0617	0.0556	0.0463	0.0397	0.0347	0.0309	0.0278
	Pressure Drop [Pa]										77	84	97	110	122	134	146
	Throw Distance [m]										4	4	5	6	6	7	8
	Sound Power Level [dB(A)]										45	46	49	51	53	54	55
1250	Effective Area [m²]												0.0579	0.0496	0.0434		
	Pressure Drop [Pa]												112	127	141		
	Throw Distance [m]												5	6	6		
	Sound Power Level [dB(A)]												51	53	55		
1500	Effective Area [m²]													0.0595			
	Pressure Drop [Pa]													142			
	Throw Distance [m]													6			
	Sound Power Level [dB(A)]													55			

Quick Selection: Safe Selection Design Upper Limit High Pressure Drop

Note: Data is obtained with blades in a straight position. If the throw is adjusted horizontally, the pressure drop and sound power level data in the table have acceptable variability.

Throw distance: The vertical distance of the air in the comfort zone leaving the air distribution equipment at a speed of 0.25 m/s.



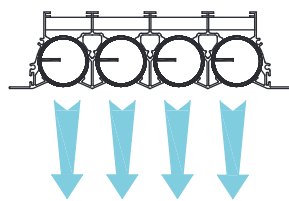
THROW DISTANCE CORRECTION TABLE

Table 4. Throw Distance Correction Table

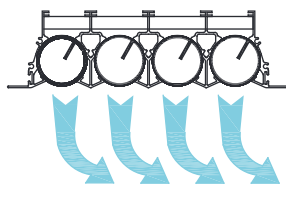
Heating Mode [ΔT]	4	6	8	10	12
Throw Distance Multiplier	1.07	1.02	1	0.90	0.83
Cooling Mode [ΔT]	4	6	8	10	12
Throw Distance Multiplier	1.31	1.36	1.42	1.48	1.54

AIR FLOW DIRECTION

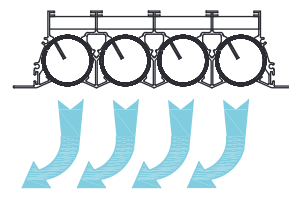
Below are sample application examples for air throw and air collector wing position.



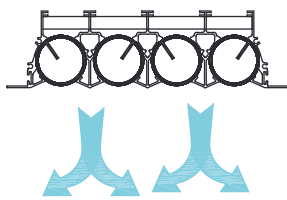
Blades in Straight Position



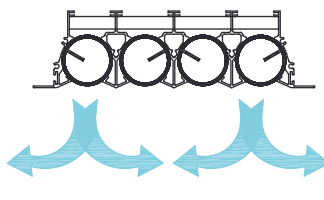
Blades in Right Position



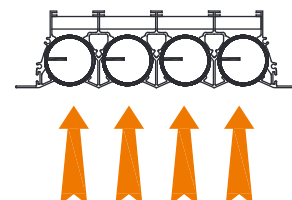
Blades in Left Position



Multi-Directional Distributor 30°



Multi-Directional Distributor 45°



Return Air

Note: OLZ - Slot Diffuser With Plastic Blades [Large Type] is suitable for use in variable flow rate systems and the air throw directing characteristic remains constant between 100% and 25% flow rate.

COVER OPTIONS

If specified in the order, the slot diffuser can be produced in the following ways, with a single cover or without covers on both sides. If the cover option is not specified in the order, standard cover production is made.

STANDARD CAP



SINGLE CAP

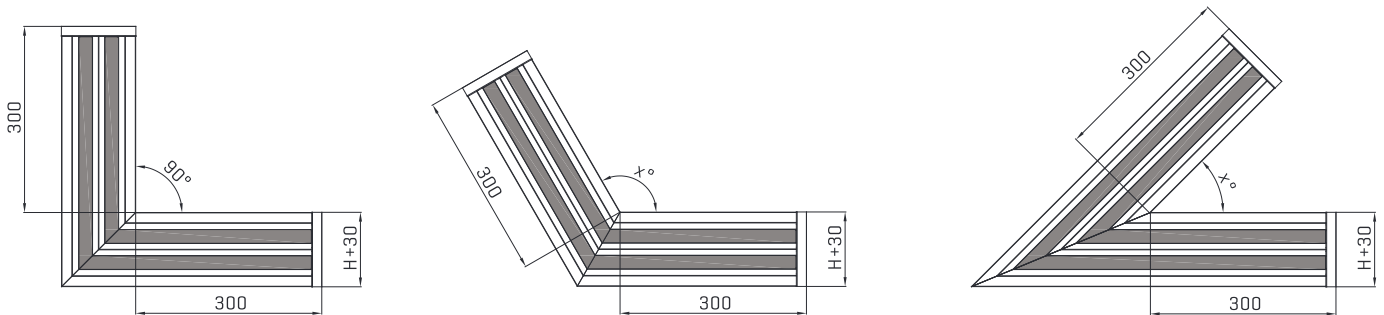


WITHOUT CAP



CORNER JOINING

In order to ensure the continuity of OLZ assembly in wall-to-wall applications, a stylish appearance is provided by the corner joining system that allows different angles of transitions.

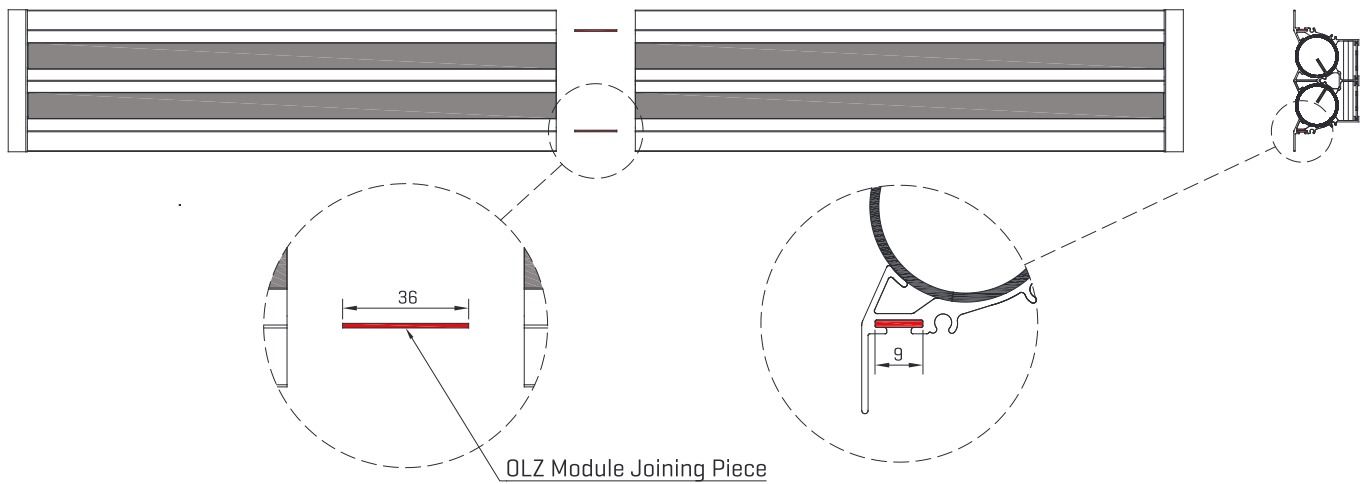


Standard corner joint length is 300 mm.

x: Corner piece angle. The standard corner joint is right angle [90 °]. The desired angle dimensions must be specified in the order. Corner piece angle is minimum 45°.

MODULE ASSEMBLY

When the slot length [W] given in orders for OLZ - Slot Diffuser With Plastic Blades [Large Type] is over 2300 mm, the slot profiles are assembled with the module joining piece. In this way, the slot diffuser is seen in one piece as well as preserving its strength.

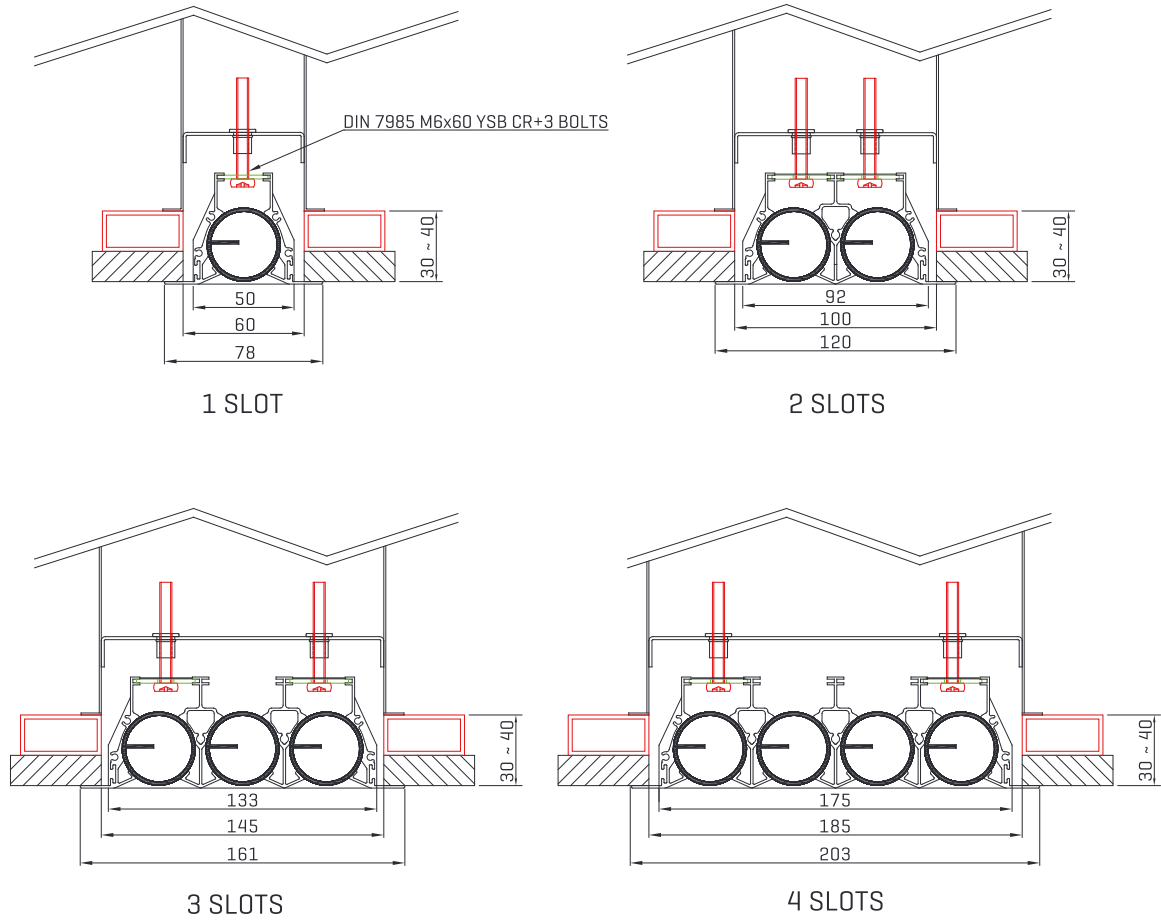


Number of Modules=Round Up [Order Size/2300]

ASSEMBLY

MOUNTING BRACKET

Bracket assembly is made as standard. For each slot module, there are 2 mounting plates on OLZ and 2 mounting plates [bracket] on the box. Bolt is screwed into the mounting plate on OLZ, a nut is screwed into the mounting plate and the assembly is completed by screwing the bolt with a screw driver.



BOX DIMENSIONS

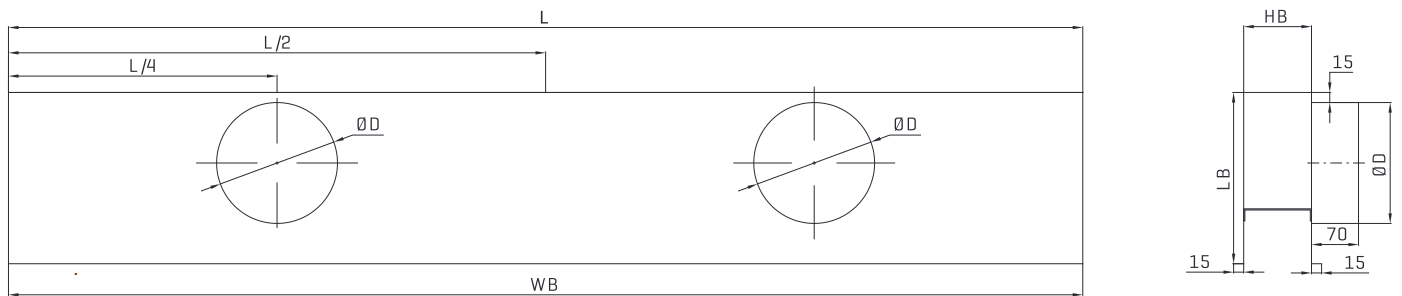


Table 5. Box Size Table

Number of Slots	Box Size Table									
	Property	Slot Length [mm]								
		400	600	800	1000	1200	1400	1600	1800	2000
1	Box Neck [ØD] [mm]	Ø100 - 1 Piece	Ø100 - 1 Piece	Ø100 - 1 Piece	Ø100 - 1 Piece	Ø150 - 1 Piece	Ø150 - 1 Piece	Ø150 - 2 Pieces	Ø150 - 2 Pieces	Ø200 - 2 Pieces
	Box Height [LB] [mm]	175	175	225	225	225	275	275	275	275
	Box 1st Size [WB] [mm]	410	610	810	1010	1210	1410	1610	1810	2010
	Box 2nd Size [HB] [mm]	60	60	60	60	60	60	60	60	60
2	Box Neck [ØD] [mm]	Ø100 - 1 Piece	Ø100 - 1 Piece	Ø150 - 1 Piece	Ø150 - 1 Piece	Ø150 - 1 Piece	Ø200 - 1 Piece	Ø200 - 2 Pieces	Ø200 - 2 Pieces	Ø200 - 2 Pieces
	Box Height [LB] [mm]	175	175	225	225	275	275	275	325	325
	Box 1st Size [WB] [mm]	410	610	810	1010	1210	1410	1610	1810	2010
	Box 2nd Size [HB] [mm]	100	100	100	100	100	100	100	100	100
3	Box Neck [ØD] [mm]	Ø100 - 1 Piece	Ø100 - 1 Piece	Ø150 - 1 Piece	Ø150 - 1 Piece	Ø200 - 1 Piece	Ø200 - 1 Piece	Ø200 - 2 Pieces	Ø250 - 2 Pieces	Ø250 - 2 Pieces
	Box Height [LB] [mm]	175	225	225	275	275	275	325	325	325
	Box 1st Size [WB] [mm]	410	610	810	1010	1210	1410	1610	1810	2010
	Box 2nd Size [HB] [mm]	145	145	145	145	145	145	145	145	145
4	Box Neck [ØD] [mm]	Ø100 - 1 Piece	Ø150 - 1 Piece	Ø150 - 1 Piece	Ø200 - 1 Piece	Ø200 - 1 Piece	Ø200 - 1 Piece	Ø250 - 2 Pieces	Ø250 - 2 Pieces	Ø250 - 2 Pieces
	Box Height [LB] [mm]	175	225	225	275	275	275	325	325	325
	Box 1st Size [WB] [mm]	410	610	810	1010	1210	1410	1610	1810	2010
	Box 2nd Size [HB] [mm]	185	185	185	185	185	185	185	185	185

PRODUCT SELECTION

Example: The air flow distributed in the space is determined as 400 m³/h and the temperature difference is -8K. 3 meter slot diffuser will be used in supply application. Make your product selection.

Solution: From the supply data table (Table 3), the effective areas corresponding to the appropriate pressure loss and flow rate values are selected. The method to be used for the desired lengths of performance data is made by calculating the number of modules. The result is reached by correcting the data found for 1 module.

Number of modules for 3 meters of slot diffuser: Round up (3000/2000)=2 modules.

1 module length=3000/2 (Module)=1500 mm (Length to be used in calculation)

Required flow rate for 1 module=400/2 (Module) 200 m³/h (Flow Rate Used in Calculation)

From the effective area table (Table 2), the effective areas of the 1500 mm wide slot diffusers are selected according to the number of slots. Accordingly, the effective area values are approximately 0.0139 m² (1 slot), 0.0252 m² (2 slot), 0.0363 m² (3 slot) and 0.0476 m² (4 slot) according to the number of slots.

Using the effective area value obtained from the supply data table (Table 3) and the required flow rate for 1 module, the appropriate effective area is determined. Performance data:

1 slot

Pressure Drop: 25 Pa
 Throw Distance: 3.5 m
 Sound Power Level: 25.3 dB(A)

2 slots

Pressure Drop: 15.5 Pa
 Throw Distance: 2.1 m
 Sound Power Level: 17.5 dB(A)

3 slots

Pressure Drop: 11.6 Pa
 Throw Distance: 1.5 m
 Sound Power Level: <15 dB(A)

4 slots

Pressure Drop: 9.32 Pa
 Throw Distance: 1.2 m
 Sound Power Level: <15 dB(A)

Throw Distance Correction Table

In the 2-module slot diffuser selection, the throw distance was found to be 1.9 m. For cooling mode -8 K, refer to the Throw Distance Correction Chart (Table 4). The multiplier value is 1.42.

Corrected throw distance=2.1 m x 1.42=2.98 m

PRODUCT ORDER CODE

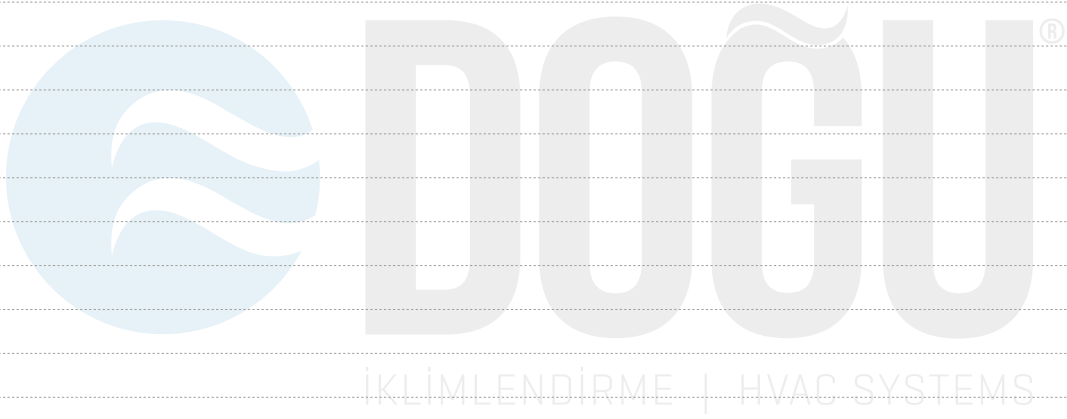
You can place your orders according to the following coding format.

OLZ.ALM.KP.< A > . < B > . < C >

A	Slot Width [W] [mm]	
	0000	Standard dimensions
B	Vertical Size [H] [mm] & Number of Slots	
	050-01	50 mm - 1 Slot
	092-02	92 mm - 2 Slots
	133-03	133 mm - 3 Slots
	175-04	175 mm - 4 Slots
C	Paint	
	00	Unpainted
	S1	Standard Painted - RAL 9010
	S2	Standard Painted - RAL 9016
	XX	Special Painted
	EK	Matt Anodized Coating

Sample Coding; OLZ.ALM.KP.01000.133-03.S1

NOTES





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