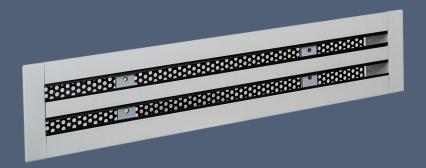


Linear slot diffuser SDL





These technical specifications will set all the produced sizes and types of "Linear slot diffusers." They shall apply for manufacturing, design, orders, supplies, mounting, operation and maintenance.

I. CONTENTS

II. G	GENERAL	3
	1. Description	3
	2. Design	3
	3. Sizes and weights	3
	4. Embedding and placement	5
III. T	FECHNICAL DATA	6
	5. Basic parameters	6
	6. Pressure losses	7
	7. Acoustic data	7
IV. N	MATERIAL AND SURFACE ADJUSTMENT	7
	8. Material	7
V. IN	NSPECTION AND TESTING	8
	9. Inspection	8
	10. Testing	8
VI. F	PACKING, TRANSPORT, TAKEOVER, STORAGE, WARRANTY	8
	11. Logistics data	8
	12. Warranty	8
VII.	MOUNTING, MANIPULATION, MAINTENANCE AND INSPECTION OF OPERATIONABILITY	8
	13. Mounting and assembly	8
VIII.	ORDER DATA	9
	14. Order code system.	9



II. GENERAL

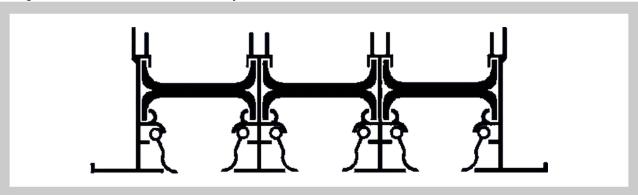
1. Description

- 1.1. The SDL Linear slot diffusers are used in ventilation systems for the purpose of air inlets and outlets.
- **1.2.** Supply of linear diffusers provides the option of various sizes ranging from 400mm (increasing gradually in sizes by 100mm) to 2000mm. Diffusers consist of a front panel with adjustable blades, a plenum box with nozzles, control flaps and clips for curtains. The advantage of this type of diffuser is a narrow, flat and equalized air flow over the entire size of the machine.
- **1.3.** Diffusers are designed for a specific environment, protected against weather conditions, with no condensation in an air temperature range from -15°C to +45°C, and in a range of relative air humidity up to a maximum of 95%. The air, conveyed by the diffuser, shall be free of abrasive, chemical and sticky additives.
- **1.4.** Unless stated otherwise, all the sizes and weight are stated in mm and kg.

2. Design

- **2.1.** The diffuser design varies according to the order code system, in chapter VIII.
- **2.2.** The plenum box design varies according to the number of connection flanges and the control flap in the nozzle.
- **2.3.** The design of the front plates varies according to their surface adjustment.
- **2.4.** The DSL diffuser cross-section with adjustable blades is on the picture 1.

Fig. 1 DSL diffuser cross-section with adjustable blades



3. Sizes and weights

Fig. 2 Dimensions and weights of the separate SDL diffuser

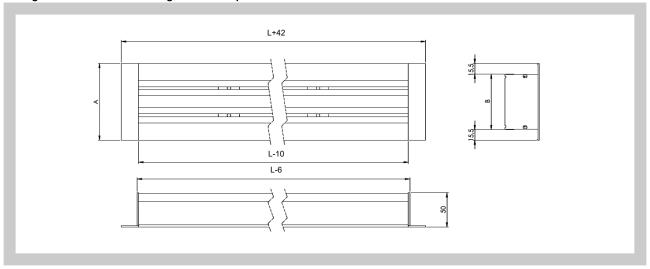




Fig. 3 Dimensions of the separate plenum box

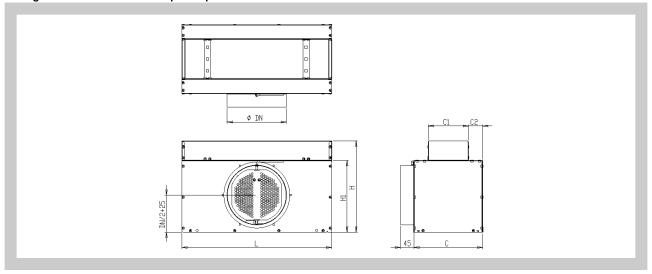
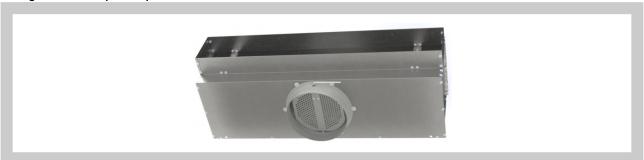


Fig. 4 An example of a plenum box



Tab. 1 Dimensions of slot diffusers

Туре	Number of slots	S _{ef} (m²/m)*	A (mm)	B (mm)	L (mm)	Weight (kg/m)
SDL 1	1	0,012	73	44		1
SDL 2	2	0,024	113	83	4002000	1,6
SDL 3	3	0,036	152	122		2,3
SDL 4	4	0,048	192	162		3,1
SDL 5	5	0,06	231	200		4
SDL 6	6	0,07	271	240		5,1

^{*} Free area of the outlet is given for the outlet length L=1m and fully open control blades without a diffuser plate.

Tab. 2 Dimensions of a plenum box

Туре	DN	H (mm)	H1 (mm)	C (mm)	C1 (mm)	C2 (mm)	Cn (mm)	L (mm)
SDL 1	125	230	165	155	55,5	49,8	105,3	
SDL 2	160	265	200	190	94,5	47,8	142,3	400-2000
SDL 3	200	305	240	230	133,5	48,3	181,8	
SDL 4	200	305	240	230	173,5	28,3	201,8	
SDL 5	250	355	290	280	211,5	34,3	245,8	
SDL 6	250	355	290	280	241,5	19,3	260,8	

Tab. 3 Number and size of nozzles according to the length of the SDL

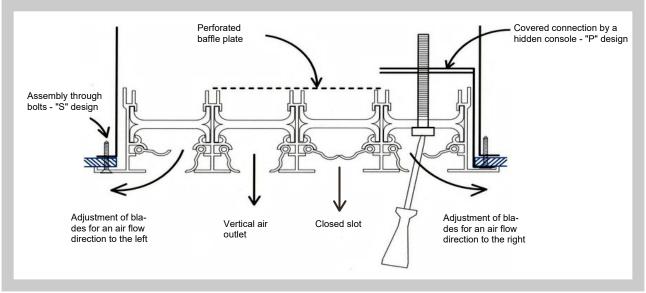
Туре	DN	Length L (mm)				
		400-950	1000-1450	1500-2000		
SDL 1	125		2			
SDL 2	160			2		
SDL 3	200	1				
SDL 4	200			3		
SDL 5	250			2		
SDL 6	250	7		2		



4. Embedding and placement

- **4.1.** Primarily, diffusers are designed for embedment into the ceiling. All the technical data and parameters below correspond to this manner of embedment.
- **4.2.** Embedment into a vertical wall, as well as the technical parameters, shall be consulted with the manufacturer MANDIK, a.s..

Fig. 5 Installation example and adjustment of the blades



4.3. Slot size within construction structure designed for a front plate connection:

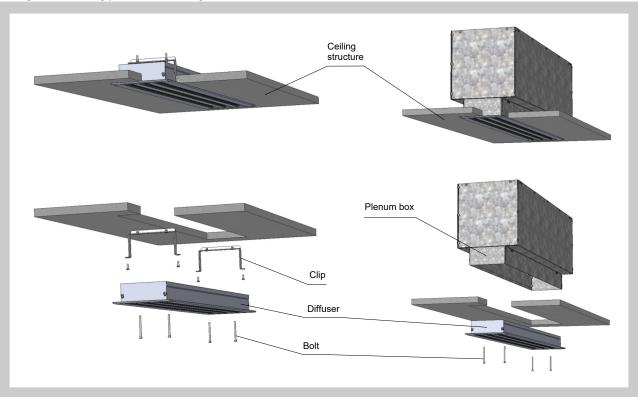
$$L1 \times B1 = (L+3) \times (B+4) \dots \times V$$
 mm

4.4. Slot size within construction structure designed for a front plate connection with a box:

$$L1 \times B1 = (L+3) \times (C1+5) \dots v mm$$

4.5. Construction slot size tolerance: L1 → -0mm/+2mm; B1 → -0mm/+2mm.

Fig. 6 Mounting procedure - ceiling structure





III. TECHNICAL DATA

5. Basic parameters

Tab. 4 Maximal air flow

Diffuser type	V _{max} ((m³/h)/m)
SDL 1	250
SDL 2	430
SDL 3	610
SDL 4	780
SDL 5	950
SDL 6	1100

- **5.1.** Vertical air flow range (HEATING mode, $\Delta t_p = 15K$):
 - for $X < 0.3m \rightarrow YH = 0.6 \times B$
 - for $0.3 \le X \le 1.5m \rightarrow YH = 0.5 \times B$
 - for $X > 1.5m \rightarrow YH = 0.4 \times B$

Horizontal air flow range (isothermal flow) - B distance

Fig. 7 Vertical air flow range

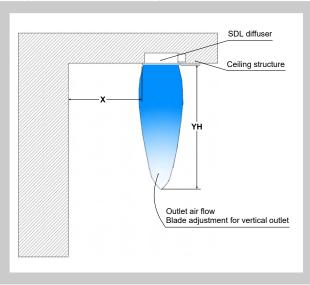


Fig. 8 Horizontal air flow range

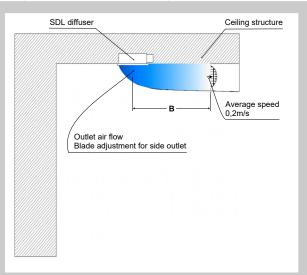
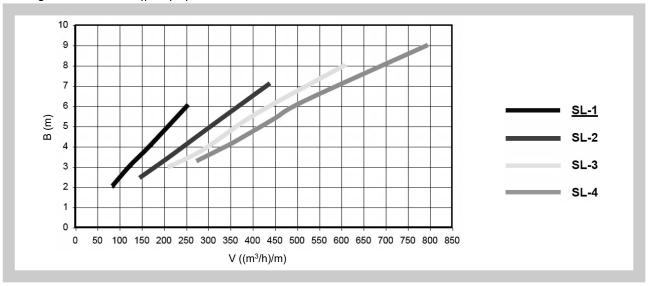


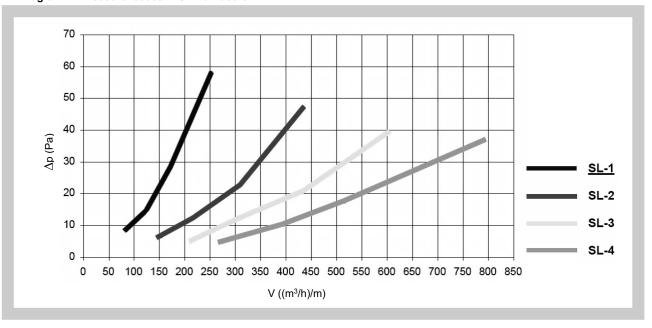
Diagram 1 Airflows in ((m³/h)/m)





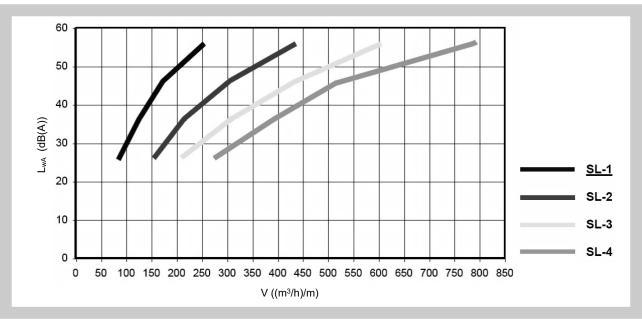
6. Pressure losses

Diagram 2 Pressure losses in SDL diffusers



7. Acoustic data

Diagram 3 Acoustic performance level LwA (dB(A)) of the SDL diffusers



IV. MATERIAL AND SURFACE ADJUSTMENT

8. Material

- **8.1.** A plenum box with a baffle is made with a galvanized steel plate.
- **8.2.** The front plate frame of the SDL diffuser is made of an aluminium profile with an anodized surface adjustment.
- **8.3.** The adjustable blades are made of a black or white plastic material.
- **8.4.** In the event of a special order, the plenum box and the front plate may be lacquered with any RAL shade. This design shall be consulted with the manufacturer MANDIK, a.s..



V. INSPECTION AND TESTING

9. Inspection

9.1. After final assembly the diffuser with a plenum box undertakes the final quality control, when the final design conformity is checked with the order requirements.

10. Testing

10.1. No functional tests are performed on the diffuser with a plenum box during the final inspection.

VI. PACKING, TRANSPORT, TAKEOVER, STORAGE, WARRANTY

11. Logistics data

- **11.1.** Diffusers are packed individually in paperboards, packed in shrink-wraps. Transport is secured with covered transportation when they are freely lying. In the event of an agreement with the customer, diffusers may be transported on pallets. In the event of manipulation during transport and storage, diffusers shall be protected against any mechanical damage.
- **11.2.** In the event that the takeover manner is not specified in the order, the handover shall mean handing the diffuser over to the transporter.
- **11.3.** Diffusers shall be stored in covered structures, free of aggressive vapors, gases and dust. Within the structure, a temperature range from -15°C to +45°C and a maximum relative moisture up to 85% shall be maintained.

12. Warranty

- **12.1.** The manufacturer provides a 24-month warranty for the diffusers, starting from the expedition date.
- **12.2.** This warranty shall be regarded as void in the event of using the diffuser for any other purpose, with any other equipment or in any working conditions than specified, or after any mechanical damage during manipulation.
- **12.3.** In the event of damage caused to the diffuser during transport, it is necessary to make a report during the takeover with the transporter for the purpose of any complaint later.

VII. MOUNTING, MANIPULATION, MAINTENANCE AND INSPECTION OF OPERATIONABILITY

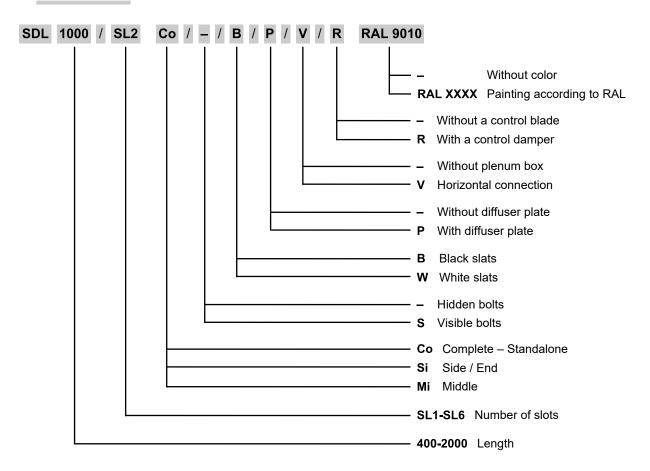
13. Mounting and assembly

- **13.1.** When mounting the SDL diffuser into the wall structure, it is necessary to make sure that the front plate do not form a crossover or are bent after its mounting into the ceiling structure.
- **13.2.** After the diffuser is mounted and construction works in the place where the diffuser is placed are finished, it is necessary to clean the diffuser and plenum box from any impurities that have settled there during construction works.
- **13.3.** Before the ventilation device is commissioned, it is necessary to adjust the plastic blades of the SDL diffuser into the right position for the required direction of the air flow outlet.
- 13.4. In the event that the plenum box is equipped with a control flap in the connecting nozzle, it is possible to control the required diffuser air flow by turning the flap and fixing its final position.



VIII. ORDER DATA

14. Ordering key



MANDÍK, a.s. Dobříšská 550 26724 Hostomice Czech Republic Tel.: +420 311 706 706 E-Mail: mandik@mandik.cz

www.mandik.com