

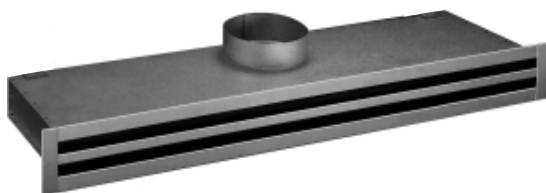
## S-70-1 linear slot diffusers

**S-74-18, S-72-18**

**S-74-25, S-72-25, S-72-25FF**

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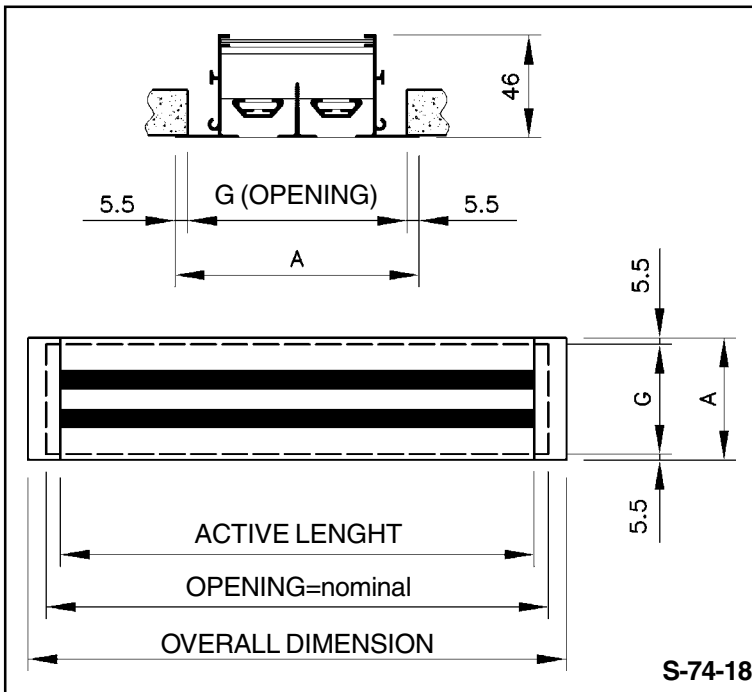
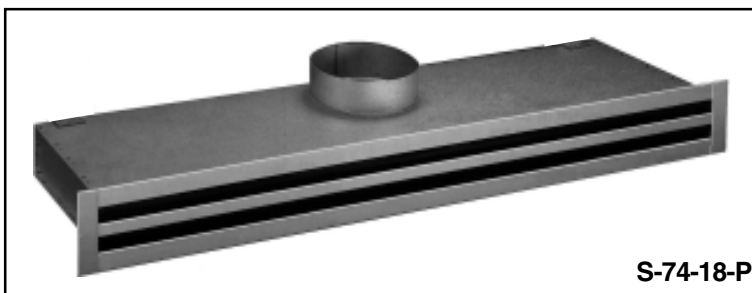
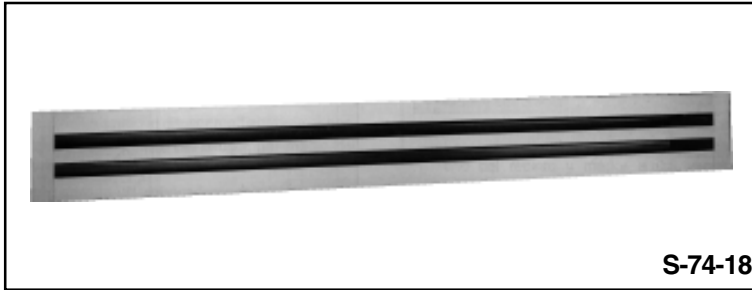
**S-74-25-FF**



**S-72-25-FF**

- The **70-1 SERIES** linear diffusers are designed for constant flow.
- For VARIABLE flow, **KFD** and **KLD** linear slot diffusers are available

## S-74-18 linear slot diffusers



### Description

**S-74-18** linear slot diffuser for supply air. Aluminium construction with standard natural anodized or standard glossy RAL-9010 white pre-lacquered finish. Black deflections vanes with a matte finish. The **S-74-18-P** model includes a inlet plenum made of galvanized steel sheet, with or without insulation. Three attachment systems are available for the plenum: screws, bridges or clips. The systems are described on pages 14 and 15.

### Application

**S-74-18** linear slot diffusers are specially recommended for ceiling installation, with the deflection vanes allowing air flow to be adjusted from 0° to 180°. The diffusers are equipped with a sliding volume control damper. For return air, it is possible to use the **S-72-18** model (which has no volume control damper). High-quality aesthetics and performance are further enhanced by alternating the return diffusers with supply diffusers in the same continuous line. To determine the return flow, refer to the respective instructions on page 23 (recommendations).

### Dimensions

The "L" dimension (length) is always active length. The nominal or OPENING dimension is equal to L+25 mm.

The "G" dimension is the width of the OPENING and is listed in the dimension tables. See overall dimensions, including frames and end caps, on pages 16 to 22.

### Identification

**S-74-18** diffusers are equipped with deflection vanes and volume control dampers. Models without a plenum include the mounting bridges. For return air, it is possible to use the **S-72-18** model, which does not include the volume control damper but does include the deflection vanes. All diffusers comes with end caps in the heads. In diffusers with plenum, one of the three systems for attaching the plenum to the diffuser must be defined.

**S-74-18** Linear slot diffuser, 18 mm, with regulation.  
**S-72-18** Linear slot diffuser, 18 mm, without regulation.

**PM** Mounting bridge.  
**CL** Mounting clips.

**1,2,3,4,5,6** Number of slots.

**PF** Fix plenum.  
**PD** Removable plenum.  
**PC** Plenum with clips.

**PFA**  
**PDA**  
**PCA** Insulated plenum.

## Selection table for S-74-18 (lateral discharge)

Q		LENGHT in mm and NUMBER OF SLOTS														
		Dim.	600-1	900-1	1200-1 600-2	1500-1	900-2 600-3	1200-2 600-4	900-3	1500-2	1200-3 900-4	1500-3	1200-4	1500-4		
(m <sup>3</sup> /h)	(l/s)	A <sub>k</sub> (m <sup>2</sup> )	0,00598	0,00897	0,01196	0,01495	0,01794	0,02391	0,02690	0,02989	0,03587	0,04484	0,04783	0,05978		
60	16,7	V <sub>k</sub> (m/s)	2,8	1,9	1,4	1,1										
		X (m)	1,5	1,2	1,0	0,9										
		P <sub>t</sub> (Pa)	19	8	5	3										
		dB(A)	27	<20	<20	<20										
80	22,2	V <sub>k</sub> (m/s)	3,7	2,5	1,9	1,5	1,2									
		X (m)	2,0	1,6	1,4	1,2	1,1									
		P <sub>t</sub> (Pa)	35	14	9	6	5									
		dB(A)	35	27	21	<20	<20									
100	27,8	V <sub>k</sub> (m/s)	4,6	3,1	2,3	1,9	1,5	1,2	1,0							
		X (m)	2,4	2,0	1,7	1,5	1,4	1,2	1,2							
		P <sub>t</sub> (Pa)	54	21	14	9	8	5	4							
		dB(A)	41	33	27	23	<20	<20	<20							
140	38,9	V <sub>k</sub> (m/s)	6,5	4,3	3,3	2,6	2,2	1,6	1,4	1,3	1,1					
		X (m)	3,4	2,8	2,4	2,2	2,0	1,7	1,6	1,5	1,4					
		P <sub>t</sub> (Pa)	106	41	28	18	15	11	8	7	4	4				
		dB(A)	51	42	37	32	29	23	21	<20	<20	<20				
180	50,0	V <sub>k</sub> (m/s)		5,6	4,2	3,3	2,8	2,1	1,9	1,7	1,4	1,1	1,0			
		X (m)		3,6	3,1	2,8	2,5	2,2	2,1	2,0	1,8	1,6	1,6			
		P <sub>t</sub> (Pa)		68	46	30	24	18	13	7	7	5	4			
		dB(A)		49	44	39	36	30	27	25	24	<20	<20	<20		
200	55,6	V <sub>k</sub> (m/s)		6,2	4,6	3,7	3,1	2,3	2,1	1,9	1,5	1,2	1,2			
		X (m)		4,0	3,5	3,1	2,8	2,4	2,3	2,2	2,0	1,8	1,7			
		P <sub>t</sub> (Pa)		84	57	36	30	22	16	9	8	6	5			
		dB(A)		52	47	42	38	33	30	28	27	22	21			
250	69,4	V <sub>k</sub> (m/s)			5,8	4,6	3,9	2,9	2,6	2,3	1,9	1,5	1,5	1,2		
		X (m)			4,3	3,9	3,5	3,1	2,9	2,7	2,5	2,2	2,2	1,9		
		P <sub>t</sub> (Pa)			89	57	47	34	24	14	13	9	8	5		
		dB(A)			53	48	45	39	37	34	33	28	27	23		
300	83,3	V <sub>k</sub> (m/s)				5,6	4,6	3,5	3,1	2,8	2,3	1,9	1,7	1,4		
		X (m)				4,6	4,2	3,7	3,5	3,3	3,0	2,7	2,6	2,3		
		P <sub>t</sub> (Pa)				82	68	49	35	20	19	13	11	7		
		dB(A)				53	50	44	42	40	38	33	32	28		
400	111,1	V <sub>k</sub> (m/s)						4,6	4,1	3,7	3,1	2,5	2,3	1,9		
		X (m)						4,9	4,6	4,4	4,0	3,6	3,5	3,1		
		P <sub>t</sub> (Pa)						87	62	35	34	23	20	13		
		dB(A)						52	50	47	46	41	40	36		
500	138,9	V <sub>k</sub> (m/s)								4,6	3,9	3,1	2,9	2,3		
		X (m)								5,5	5,0	4,5	4,3	3,9		
		P <sub>t</sub> (Pa)								55	53	36	32	20		
		dB(A)								54	52	48	46	42		
600	166,7	V <sub>k</sub> (m/s)										3,7	3,5	2,8		
		X (m)										5,4	5,2	4,6		
		P <sub>t</sub> (Pa)										52	45	29		
		dB(A)										53	51	47		
700	194,4	V <sub>k</sub> (m/s)											4,1	3,3		
		X (m)											6,1	5,4		
		P <sub>t</sub> (Pa)											62	40		
		dB(A)											56	51		
800	222,2	V <sub>k</sub> (m/s)												3,7		
		X (m)												6,2		
		P <sub>t</sub> (Pa)												52		
		dB(A)												55		

- This selection table is based on laboratory tests as per ISO 5219 (UNE 100.710) and ISO 5135 and 3741.

- The ΔT is equal to -10°C, the temperature difference between the room and the supply air.

### Symbols

Q (m <sup>3</sup> /h)	=	Air flow
A <sub>k</sub> (m <sup>2</sup> )	=	Effective area
V <sub>k</sub> (m/s)	=	Effective supply velocity
X (m)	=	Throw of the air jet
P <sub>t</sub> (Pa)	=	Total pressure drop, in Pa
dB(A)	=	Sound power level

# Selection table for S-74-18 (vertical discharge)

Q		Dim.	LENGHT in mm and NUMBER OF SLOTS						
			600-1	900-1	1200-1 600-2	1500-1	900-2	1200-2	1500-2
(m <sup>3</sup> /h)	(l/s)	A <sub>k</sub> (m <sup>2</sup> )	0,00622	0,00933	0,01243	0,01554	0,01865	0,02487	0,03109
60	16,7	V <sub>k</sub> (m/s)	2,7	1,8					
		X (m)	1,1	0,9					
		P <sub>t</sub> (Pa)	31	12					
		dB(A)	20	<20					
80	22,2	V <sub>k</sub> (m/s)	3,6	2,4	1,8	1,4			
		X (m)	1,5	1,2	1,0	0,9			
		P <sub>t</sub> (Pa)	54	21	14	9			
		dB(A)	29	22	<20	<20			
100	27,8	V <sub>k</sub> (m/s)	4,5	3,0	2,2	1,8	1,5	1,1	
		X (m)	1,8	1,5	1,3	1,2	1,1	0,9	
		P <sub>t</sub> (Pa)	85	33	21	14	10	6	
		dB(A)	36	29	25	21	20	<20	
140	38,9	V <sub>k</sub> (m/s)	6,3	4,2	3,1	2,5	2,1	1,6	1,3
		X (m)	2,6	2,1	1,8	1,6	1,5	1,3	1,1
		P <sub>t</sub> (Pa)	166	65	42	27	20	12	7
		dB(A)	46	39	35	31	28	24	20
180	50,0	V <sub>k</sub> (m/s)		5,4	4,0	3,2	2,7	2,0	1,6
		X (m)		2,7	2,3	2,1	1,9	1,6	1,5
		P <sub>t</sub> (Pa)		108	69	44	32	20	11
		dB(A)		47	42	39	36	31	28
200	55,6	V <sub>k</sub> (m/s)		6,0	4,5	3,6	3,0	2,2	1,8
		X (m)		3,0	2,6	2,3	2,1	1,8	1,6
		P <sub>t</sub> (Pa)		133	85	54	40	24	14
		dB(A)		50	45	42	39	34	31
250	69,4	V <sub>k</sub> (m/s)			5,6	4,5	3,7	2,8	2,2
		X (m)			3,2	2,9	2,6	2,3	2,0
		P <sub>t</sub> (Pa)			133	85	62	38	21
		dB(A)			52	49	46	41	38
300	83,3	V <sub>k</sub> (m/s)				5,4	4,5	3,4	2,7
		X (m)				3,5	3,2	2,7	2,4
		P <sub>t</sub> (Pa)				122	90	54	31
		dB(A)				54	51	47	43
400	111,1	V <sub>k</sub> (m/s)						4,5	3,6
		X (m)						3,7	3,2
		P <sub>t</sub> (Pa)						97	54
		dB(A)						55	52
500	138,9	V <sub>k</sub> (m/s)							4,5
		X (m)							4,0
		P <sub>t</sub> (Pa)							85
		dB(A)							59

## Symbols

Q (m <sup>3</sup> /h)	=	Air flow
A <sub>k</sub> (m <sup>2</sup> )	=	Effective area
V <sub>k</sub> (m/s)	=	Effective supply velocity
X (m)	=	Throw of the air jet
P <sub>t</sub> (Pa)	=	Total pressure drop, in Pa
dB(A)	=	Sound power level

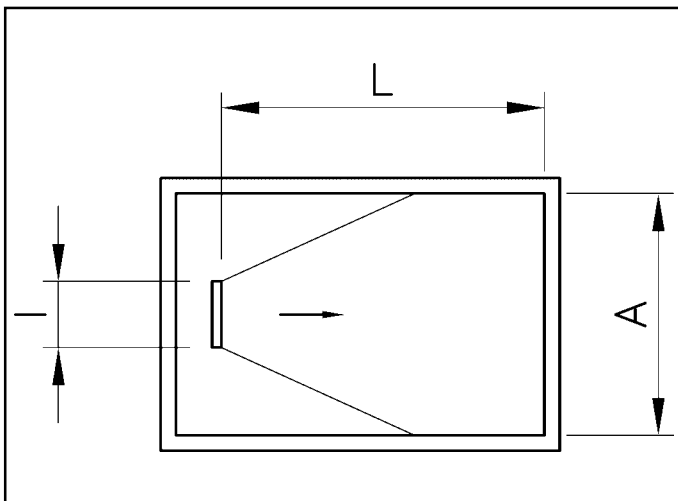
## NOTES ON SELECTION TABLES

### For the selection tables with lateral discharge:

- The diffuser is positioned along the longitudinal axis of the ceiling, next to the wall, in a room of the following size:

L=Length, A=Width and l=Length of the diffuser.

$$(A - l) / L = 0,5$$



- The air jet is adherent (Coanda effect), i.e., the diffuser is mounted flush with the ceiling.

### For the selection tables with vertical discharge:

- The diffuser is positioned in the middle of the ceiling in a square room.

- Positioning for vertical discharge, as non-adhering jet.

- The diffuser length is less than 0,5 times the width of the room and less than 0,5 times the throw.

- The pressure P<sub>t</sub> is measured in the duct upstream of the plenum.

- The height of the room is 3 ± 0,5 m.

- The ΔT is equal to -10°C, the temperature difference between the room and the supply air.

- The maximum velocity is 0,25 m/s in the occupied zone.

## Selection table for S-74-18 (lateral discharge)

**Example:**

**Requirements:**

Air flow \_\_\_\_\_ 200 m<sup>3</sup>/h  
 Throw \_\_\_\_\_ 2 to 2,5 m  
 Sound power level \_\_\_\_\_ Below 30 dB(A)  
 Required pressure loss \_\_\_\_\_ Below 15 Pa  
 Effective velocity \_\_\_\_\_ 2 m/s  
 Direction of air flow \_\_\_\_\_ Lateral

**Selection:**

Based on the selection table (page 5) for linear slot diffusers with lateral discharge and on the general criteria that, for HVAC facilities.

**S-74-18** diffuser, two-slots, length 1500 mm.

Q (Air flow) \_\_\_\_\_ 200 m<sup>3</sup>/h (or 55,6 l/s)  
 V<sub>k</sub> (Effective velocity) \_\_\_\_\_ 1,9 m/s  
 X<sub>k</sub> (Throw) \_\_\_\_\_ 2,2 m  
 P<sub>t</sub> (Pressure drop) \_\_\_\_\_ 9 Pa  
 dB(A)(Sound power level) \_\_\_\_\_ 28

Based on the results, the data fit the project requirements.

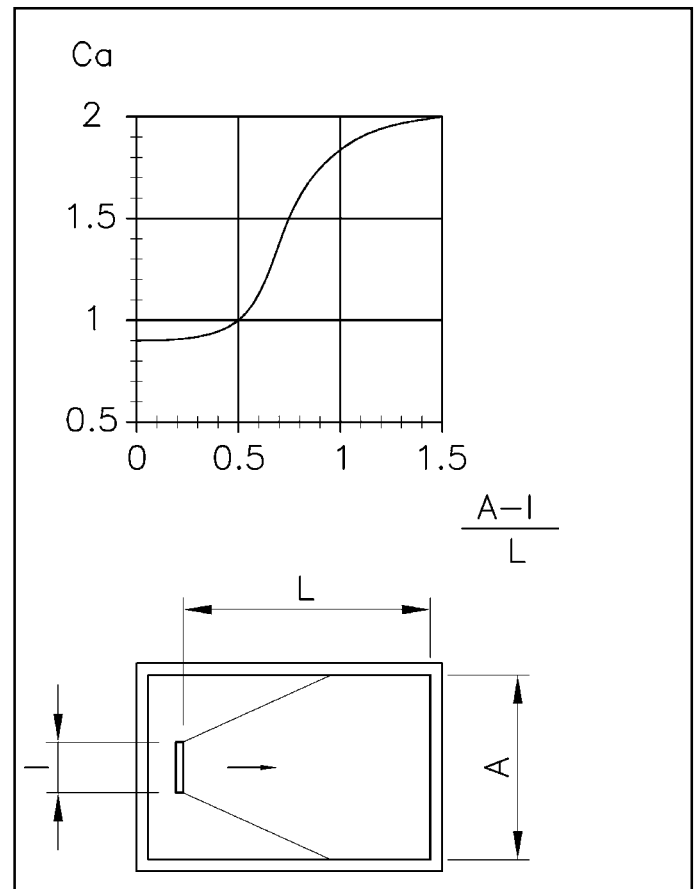
**Correction factor based on damper opening.**

The technical data listed in the **S-74-18** selection tables are for diffusers with 100% open sliding damper. When the percentage of opening is modified, there is very little change in the actual throw, although the noise level and pressure drop would vary as follows:

DAMPER	dB(A) NOISE LEVEL	ΔP PRESSURE DROP
100% open	table value	table value
75% open	+ 2 dB	x 1,33
50% open	+ 5 dB	x 1,67
25% open	+ 10 dB	x 5

**Correction factor for width-to-length ratio of the room.**

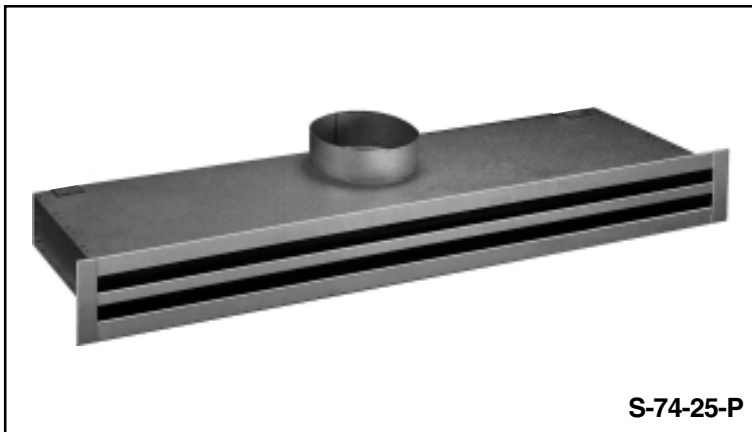
This factor is known as C<sub>a</sub>. To calculate, divide the diffuser width less length by the length of the room. This is applicable to linear slot diffusers with lateral discharge. In diffusers with vertical discharge, C<sub>a</sub> is equal to 1, since these diffusers have been tested in a square room (A/L = 1).



## S-74-25 high-capacity linear slot diffusers



S-74-25



S-74-25-P



S-72-25FF hinged filter holder

### Description

**S-74-25** high-capacity linear slot diffuser for supply air. Aluminium construction in standard natural anodized or standard glossy RAL-9010 white pre-enamelled finish. Black deflection vanes with a matte finish. The **S-74-25-P..** model includes a inlet plenum made of galvanized steel sheet, with or without insulation. Three attachment systems are available for the plenum: screws, bridges or clips. The systems and coding are described on pages 14 to 15.

### Application

**S-74-25** linear slot diffusers are specially recommended for ceiling installation and allow 25% more air flow (for the same length) than the **S-74-18** model, with the deflection vanes allowing the air flow to be adjusted from 0° to 180°. These diffusers are equipped with a sliding volume control damper. High-quality aesthetics and performance are further enhanced by alternating the return diffusers with supply diffusers in the same continuous line. For return air, it is possible to use the **S-72-25** or **S-72-25/18** models (which do not have a control damper) or the **S-72-25FF** hinged filter holder model. To determine the return flow, refer to the respective instructions on page 23 (recommendations).

### Dimensions

The "L" dimension (length) is always active length. The nominal or OPENING dimension is equal to L+25 mm. The "G" dimension is the width of the OPENING and is listed in the dimension tables (see general dimensions, including frames and end caps, on pages 19 to 22).

### Identification

**S-74-25** diffusers are equipped with deflection vanes and volume control damper. Models without a plenum include mounting bridges. For return air, it is possible to use the **S-72-25** or **S-72-25/18** models, which do not include volume control dampers but do include the deflection vanes, or the **S-72-25FF** filter holder model, hinged toward the outside for easy filter changes. All diffusers comes with end caps in the heads. In diffusers with plenum, one of the three systems for attaching the plenum to the diffuser must be defined (except **S-72-25FF**, which may only be **PF** or **PD**).

<b>S-74-25</b>	Linear slot diffuser, 25 mm, adjustable.
<b>S-72-25</b>	Linear slot diffuser, 25 mm, non-adjustable.
<b>S-72-25/18</b>	Linear slot diffuser, 25 mm, 18-mm vane, without regulation.
<b>S-72-25FF</b>	Linear slot diffuser, 25 mm, hinged filter holder.

**PM**  
**CL**

Mounting bridge.  
Mounting clips.

**1,2,3,4,5,6**

Number of slots.

**PF**  
**PD**  
**PC**

Fix plenum.  
Removable plenum.  
Plenum with clips.

**PFA**  
**PDA**  
**PCA**

Insulated plenum.

## Selection table for S-74-25, high-capacity (lateral discharge)

Q		LENGHT in mm and NUMBER OF SLOTS													
		Dim.	600-1	900-1	1200-1 600-2	1500-1	900-2 600-3	1200-2 600-4	900-3	1500-2	1200-3 900-4	1500-3	1200-4	1500-4	
(m <sup>3</sup> /h)	(l/s)	A <sub>e</sub> (m <sup>2</sup> )	0,00672	0,01007	0,01343	0,01679	0,02015	0,02687	0,03022	0,03358	0,04030	0,05037	0,05373	0,06716	
60	16,7	V <sub>k</sub> (m/s)	2,5	1,7	1,2	1,0									
		X (m)	1,3	1,1	0,9	0,8									
		P <sub>t</sub> (Pa)	13	6	3	2									
		dB(A)	27	<20	<20	<20									
80	22,2	V <sub>k</sub> (m/s)	3,3	2,2	1,7	1,3	1,1								
		X (m)	1,7	1,4	1,2	1,1	1,0								
		P <sub>t</sub> (Pa)	23	10	6	4	3								
		dB(A)	34	26	20	<20	<20								
100	27,8	V <sub>k</sub> (m/s)	4,1	2,8	2,1	1,7	1,4	1,0							
		X (m)	2,2	1,8	1,5	1,4	1,3	1,1							
		P <sub>t</sub> (Pa)	37	16	9	6	4	2							
		dB(A)	39	31	26	22	<20	<20							
140	38,9	V <sub>k</sub> (m/s)	5,8	3,9	2,9	2,3	1,9	1,4	1,3	1,2	1,0				
		X (m)	3,0	2,5	2,1	1,9	1,8	1,5	1,4	1,4	1,2				
		P <sub>t</sub> (Pa)	72	32	18	11	8	4	4	3	2				
		dB(A)	47	39	34	30	27	20	<20	<20	<20				
180	50,0	V <sub>k</sub> (m/s)		5,0	3,7	3,0	2,5	1,9	1,7	1,5	1,2	1,0			
		X (m)		3,2	2,8	2,5	2,3	2,0	1,8	1,7	1,6	1,4			
		P <sub>t</sub> (Pa)		53	30	19	13	7	6	5	3	2			
		dB(A)		45	40	36	33	27	24	22	<20	<20			
200	55,6	V <sub>k</sub> (m/s)		5,5	4,1	3,3	2,8	2,1	1,8	1,7	1,4	1,1	1,0		
		X (m)		3,5	3,1	2,7	2,5	2,2	2,0	1,9	1,8	1,6	1,5		
		P <sub>t</sub> (Pa)		65	37	23	16	9	7	6	4	3	2		
		dB(A)		48	43	39	35	29	26	24	20	<20	<20		
250	69,4	V <sub>k</sub> (m/s)		5,2	4,1	3,4	2,6	2,3	2,3	2,1	1,7	1,4	1,3	1,0	
		X (m)		3,8	3,4	3,1	2,7	2,6	2,4	2,2	2,0	1,9	1,9	1,7	
		P <sub>t</sub> (Pa)		57	37	25	14	11	9	6	4	4	4	2	
		dB(A)		48	44	41	34	32	29	25	21	<20	<20	<20	
300	83,3	V <sub>k</sub> (m/s)		6,2	5,0	4,1	3,1	2,8	2,5	2,1	1,7	1,6	1,2	1,2	
		X (m)		4,6	4,1	3,8	3,3	3,1	2,9	2,7	2,4	2,3	2,1	2,1	
		P <sub>t</sub> (Pa)		82	53	37	21	16	13	9	6	5	3	3	
		dB(A)		52	48	45	39	36	34	30	26	23	<20	<20	
400	111,1	V <sub>k</sub> (m/s)			6,6	5,5	4,1	3,7	3,3	3,3	2,8	2,2	2,1	1,7	
		X (m)			5,5	5,0	4,3	4,1	3,9	3,5	3,2	3,1	2,7	2,7	
		P <sub>t</sub> (Pa)			94	65	37	29	23	16	10	9	6	6	
		dB(A)			55	52	46	43	41	37	33	30	25	25	
500	138,9	V <sub>k</sub> (m/s)					5,2	4,6	4,1	3,4	2,8	2,6	2,1	2,1	
		X (m)					5,4	5,1	4,8	4,4	4,0	3,8	3,4	3,4	
		P <sub>t</sub> (Pa)					57	45	37	25	16	14	9	9	
		dB(A)					51	49	46	42	38	36	31	31	
600	166,7	V <sub>k</sub> (m/s)						5,5	5,0	4,1	3,3	3,1	2,5	2,5	
		X (m)						6,1	5,8	5,3	4,7	4,6	4,1	4,1	
		P <sub>t</sub> (Pa)						65	53	37	23	21	13	13	
		dB(A)						53	51	47	43	40	35	35	
700	194,4	V <sub>k</sub> (m/s)							5,8	4,8	3,9	3,6	2,9	2,9	
		X (m)						6,8	6,2	5,5	5,4	4,8	4,8		
		P <sub>t</sub> (Pa)						72	50	32	28	18	18		
		dB(A)						54	50	46	44	39	39		
800	222,2	V <sub>k</sub> (m/s)									5,5	4,4	4,1	3,3	
		X (m)									7,1	6,3	6,1	5,5	
		P <sub>t</sub> (Pa)									65	42	37	23	
		dB(A)									54	50	47	42	
900	250,0	V <sub>k</sub> (m/s)										5,0	4,7	3,7	
		X (m)										7,1	6,9	6,2	
		P <sub>t</sub> (Pa)										53	46	30	
		dB(A)										52	50	45	
1000	277,8	V <sub>k</sub> (m/s)											5,2	4,1	
		X (m)											7,7	6,9	
		P <sub>t</sub> (Pa)											57	37	
		dB(A)											53	48	
1200	333,3	V <sub>k</sub> (m/s)												5,0	
		X (m)												8,2	
		P <sub>t</sub> (Pa)												53	
		dB(A)												52	

### Symbols

- Q (m<sup>3</sup>/h) = Air flow
- A<sub>e</sub> (m<sup>2</sup>) = Effective area
- V<sub>k</sub> (m/s) = Effective supply velocity
- X (m) = Throw of the air jet
- P<sub>t</sub> (Pa) = Total pressure drop, in Pa
- dB(A) = Sound power level

- The ΔT is equal to -10°C, the temperature difference between the room and the supply air.

- The maximum velocity is 0,25 m/s in the occupied zone.

- This selection table is based on laboratory tests as per ISO 5219 (UNE 100.710) and ISO 5135 and 3741.

# Selection table for S-74-25, high-capacity (vertical discharge)

Q		Dim.	LENGHT in mm and NUMBER OF SLOTS												
			600-1	900-1	1200-1 600-2	1500-1	900-2 600-3	1200-2 600-4	900-3	1500-2	1200-3 900-4	1500-3	1200-4	1500-4	
(m <sup>3</sup> /h)	(l/s)	A <sub>k</sub> (m <sup>2</sup> )	0,00701	0,01052	0,01402	0,01753	0,02104	0,02805	0,03156	0,03506	0,04207	0,05259	0,05610	0,07012	
60	16,7	V <sub>k</sub> (m/s)	2,4	1,6	1,2	1,0									
		X (m)	1,1	0,9	0,7	0,7									
		P <sub>t</sub> (Pa)	13	6	3	2									
		dB(A)	26	<20	<20	<20									
80	22,2	V <sub>k</sub> (m/s)	3,2	2,1	1,6	1,3	1,1								
		X (m)	1,4	1,1	1,0	0,9	0,8								
		P <sub>t</sub> (Pa)	22	10	6	4	2								
		dB(A)	33	24	<20	<20	<20								
100	27,8	V <sub>k</sub> (m/s)	4,0	2,6	2,0	1,6	1,3	1,0							
		X (m)	1,8	1,4	1,2	1,1	1,0	0,9							
		P <sub>t</sub> (Pa)	35	16	9	6	4	2							
		dB(A)	38	29	23	<20	<20	<20							
140	38,9	V <sub>k</sub> (m/s)	5,5	3,7	2,8	2,2	1,8	1,4	1,2	1,1					
		X (m)	2,5	2,0	1,7	1,6	1,4	1,2	1,2	1,1					
		P <sub>t</sub> (Pa)	69	30	17	11	8	4	3	3					
		dB(A)	46	37	31	26	22	<20	<20	<20					
180	50,0	V <sub>k</sub> (m/s)		4,8	3,6	2,9	2,4	1,8	1,6	1,4	1,2	1,0			
		X (m)		2,6	2,2	2,0	1,8	1,6	1,5	1,4	1,3	1,2			
		P <sub>t</sub> (Pa)		50	28	18	13	7	6	5	3	2			
		dB(A)		43	37	32	28	21	<20	<20	<20	<20			
200	55,6	V <sub>k</sub> (m/s)		5,3	4,0	3,2	2,6	2,0	1,8	1,6	1,3	1,1	1,0		
		X (m)		2,9	2,5	2,2	2,0	1,8	1,7	1,6	1,4	1,3	1,2		
		P <sub>t</sub> (Pa)		62	35	22	16	9	7	6	4	2	2		
		dB(A)		46	40	34	30	24	21	<20	<20	<20	<20		
250	69,4	V <sub>k</sub> (m/s)			5,0	4,0	3,3	2,5	2,2	2,0	1,7	1,3	1,2		
		X (m)			3,1	2,8	2,5	2,2	2,1	2,0	1,8	1,6	1,5		
		P <sub>t</sub> (Pa)			55	35	24	14	11	9	6	4	3		
		dB(A)			45	40	36	29	27	24	20	<20	<20		
300	83,3	V <sub>k</sub> (m/s)			5,9	4,8	4,0	3,0	2,6	2,4	2,0	1,6	1,5	1,2	
		X (m)			3,7	3,3	3,0	2,6	2,5	2,3	2,1	1,9	1,9	1,7	
		P <sub>t</sub> (Pa)			79	50	35	20	16	13	9	6	5	3	
		dB(A)			49	44	40	34	31	29	25	20	<20	<20	
400	111,1	V <sub>k</sub> (m/s)				6,3	5,3	4,0	3,5	3,2	2,6	2,1	2,0	1,6	
		X (m)				4,4	4,0	3,5	3,3	3,1	2,9	2,6	2,5	2,2	
		P <sub>t</sub> (Pa)				90	62	35	28	22	16	10	9	6	
		dB(A)				51	47	41	38	36	32	27	25	20	
500	138,9	V <sub>k</sub> (m/s)						5,0	4,4	4,0	3,3	2,6	2,5	2,0	
		X (m)						4,4	4,1	3,9	3,6	3,2	3,1	2,8	
		P <sub>t</sub> (Pa)						55	43	35	24	16	14	9	
		dB(A)						46	44	41	37	32	31	26	
600	166,7	V <sub>k</sub> (m/s)							5,3	4,8	4,0	3,2	3,0	2,4	
		X (m)							5,0	4,7	4,3	3,8	3,7	3,3	
		P <sub>t</sub> (Pa)							62	50	35	22	20	13	
		dB(A)							48	46	42	37	35	30	
700	194,4	V <sub>k</sub> (m/s)								5,5	4,6	3,7	3,5	2,8	
		X (m)								5,5	5,0	4,5	4,3	3,9	
		P <sub>t</sub> (Pa)								69	48	30	27	17	
		dB(A)								50	45	40	39	34	
800	222,2	V <sub>k</sub> (m/s)									5,3	4,2	4,0	3,2	
		X (m)									5,7	5,1	5,0	4,4	
		P <sub>t</sub> (Pa)									62	40	35	22	
		dB(A)									49	44	42	37	
900	250,0	V <sub>k</sub> (m/s)										4,8	4,5	3,6	
		X (m)										5,8	5,6	5,0	
		P <sub>t</sub> (Pa)										50	44	28	
		dB(A)										47	48	40	
1000	277,8	V <sub>k</sub> (m/s)											5,0	4,0	
		X (m)											6,2	5,5	
		P <sub>t</sub> (Pa)											55	35	
		dB(A)											48	43	
1200	333,3	V <sub>k</sub> (m/s)												4,8	
		X (m)												6,6	
		P <sub>t</sub> (Pa)												50	
		dB(A)												47	

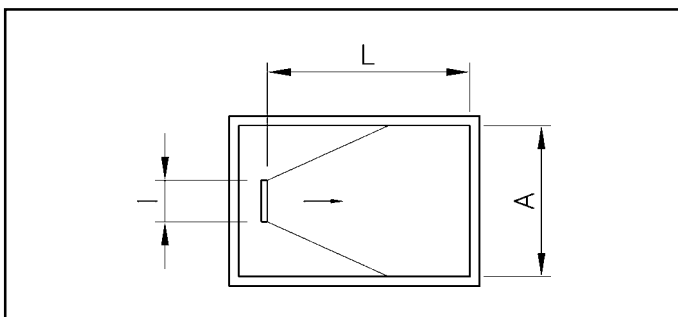
## NOTES ON SELECTION TABLES

### For the selection tables with lateral discharge:

- The diffuser is located along the longitudinal axis of the ceiling, next to the wall, in a room of the following size:

L=Length, A=Width and l=Length of the diffuser.

$$(A - l) / L = 0,5$$



- The air jet is adherent (Coanda effect), i.e., the diffuser is mounted flush with the ceiling.

### For the selection tables with vertical discharge:

- The diffuser is located in the middle of the ceiling in a square room.

- Positioning for vertical discharge, as non-adhering jet.

- The diffuser length is less than 0,5 times the width of the room and less than 0,5 times the throw.

- The pressure P<sub>t</sub> is measured inside the duct upstream of the plenum box.

- The height of the room is 3 ± 0.5 m.

- The ΔT is equal to -10°C, the temperature difference between the room and the supply air.

- The maximum velocity is 0,25 m/s in the occupied zone.



## Selection example S-74-25, high-capacity (lateral discharge)

### Example

### Requirements

Air flow \_\_\_\_\_ 600 m<sup>3</sup>/h  
 Throw \_\_\_\_\_ 4 m  
 Sound power level \_\_\_\_\_ Below 40 dB(A)  
 Required pressure loss \_\_\_\_\_ Below 15 Pa  
 Effective velocity \_\_\_\_\_ 2,5 to 3 m/s  
 Direction of air flow \_\_\_\_\_ Lateral

### Selection:

Based on the selection table (page 9) for linear slot diffusers with lateral discharge and on the general criteria that, for HVAC facilities.

**S-74-25** diffuser, four-slots, length 1600 mm

Q (Air flow) \_\_\_\_\_ 600 m<sup>3</sup>/h (or 166,7 l/s)  
 V<sub>e</sub> (Effective velocity) \_\_\_\_\_ 2,5 m/s  
 X<sup>k</sup> (Throw) \_\_\_\_\_ 4,1 m  
 P<sub>t</sub> (Pressure drop) \_\_\_\_\_ 13 Pa  
 dB(A)(Sound power level) \_\_\_\_\_ 35

Based on the results, the data fit the project requirements

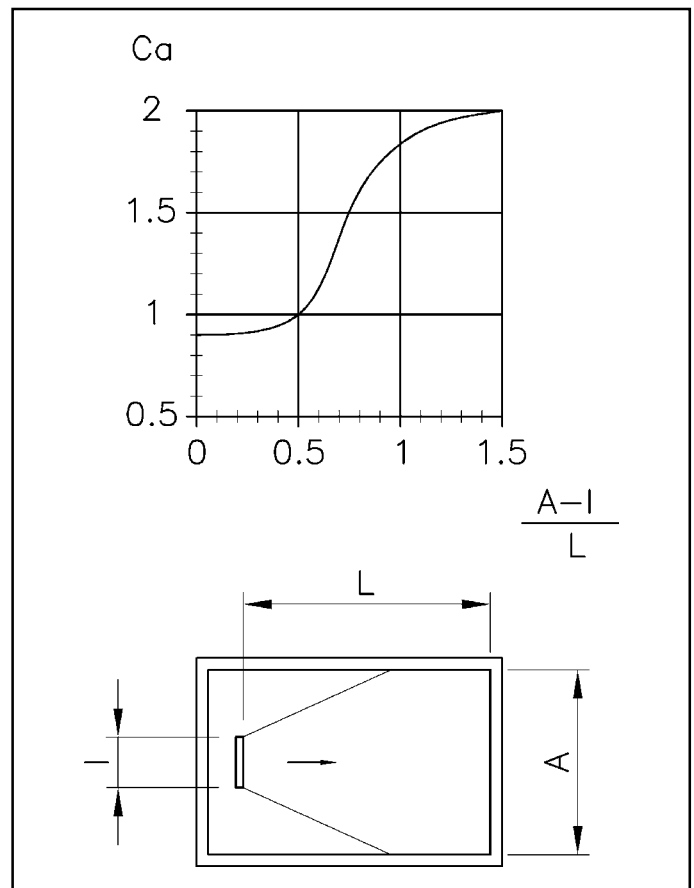
### Correction factor based on damper opening

The technical data listed in the selection tables for the **S-74-25** diffusers are for diffusers with 100% open sliding damper. When the percentage of opening is modified, there is very little change in the actual throw, although the noise level and pressure drop would vary as follows:

DAMPER	dB(A) NOISE LEVEL	ΔP PRESSURE DROP
100% open	table value	table value
75% open	+ 2 dB	x 1,33
50% open	+ 5 dB	x 1,67
25% open	+ 10 dB	x 5

### Correction factor for width-to-length ratio of the room.

This factor is known as C<sub>a</sub>. To calculate, divide the diffuser width less length by the length of the room. This is applicable to linear slot diffusers with lateral discharge. In diffusers with vertical discharge, C<sub>a</sub> is equal to 1, since these diffusers have been tested in a square room (A/L = 1).



## Selection table for S-72-25FF, for return (filter holder)

LENGHT in mm and NUMBER OF SLOTS											
Q		Dim.	600-3	600-4	900-3	600-5	900-4 1200-3	900-5 1500-3	1200-4	1200-5 1500-4	1500-5
(m <sup>3</sup> /h)	(l/s)										
80	22,2	dB(A) Ps <sub>t</sub> (Pa)	<20 4								
100	27,8	dB(A) Ps <sub>t</sub> (Pa)	<20 6	<20 3							
160	44,4	dB(A) Ps <sub>t</sub> (Pa)	24 15	20 8	<20 7						
200	55,6	dB(A) Ps <sub>t</sub> (Pa)	29 23	25 13	23 10	22 8	<20 6				
300	83,3	dB(A) Ps <sub>t</sub> (Pa)	38 52	33 29	32 23	30 19	22 13	20 8	<20 7		
400	111,1	dB(A) Ps <sub>t</sub> (Pa)	44 93	40 52	38 41	36 33	28 23	26 15	23 13	21 8	
500	138,9	dB(A) Ps <sub>t</sub> (Pa)	49 145	44 82	43 65	41 52	33 36	31 23	28 20	26 13	23 8
600	166,7	dB(A) Ps <sub>t</sub> (Pa)		48 118	46 93	45 75	36 52	34 33	32 29	30 19	27 12
700	194,4	dB(A) Ps <sub>t</sub> (Pa)			50 126	48 103	40 71	38 46	35 40	33 26	30 16
800	222,2	dB(A) Ps <sub>t</sub> (Pa)					43 93	41 60	38 52	36 33	33 21
900	250,0	dB(A) Ps <sub>t</sub> (Pa)					45 118	43 75	40 66	38 42	35 27
1000	277,8	dB(A) Ps <sub>t</sub> (Pa)						45 93	42 82	41 52	38 33
1200	333,3	dB(A) Ps <sub>t</sub> (Pa)						49 134	46 118	44 75	41 48
1400	388,9	dB(A) Ps <sub>t</sub> (Pa)								48 103	45 66
1600	444,4	dB(A) Ps <sub>t</sub> (Pa)								51 134	48 86
1800	500,0	dB(A) Ps <sub>t</sub> (Pa)									50 108
2000	555,6	dB(A) Ps <sub>t</sub> (Pa)									52 134

**NOTE:** The pressure drop (Pa) includes a Class **G-2** filter.

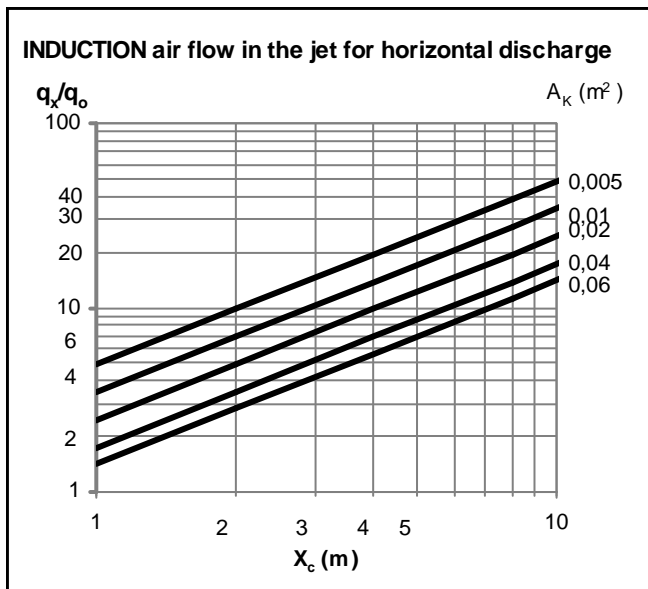
This selection table is based on laboratory tests according to ISO 5219 (UNE 100.710), ISO 5135 and ISO 3741 standards.

# Induction rate

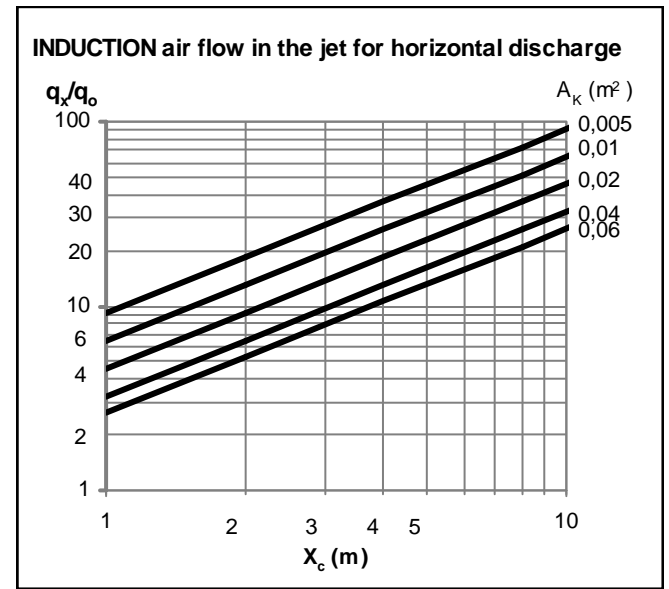
## Induction effect

The induced air flow in the room can be determined using the factor  $(q_x/q_o)$  with the parameters  $X_c$  in m (corrected throw) for lateral discharge diffusers,  $Y$  (throw in m) for vertical discharge diffusers, and the effective area in  $m^2$  ( $A_k$ ).

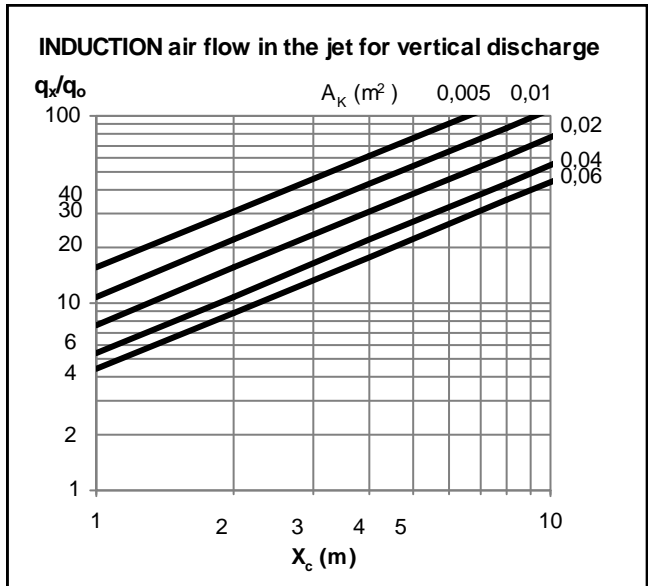
S-74-18



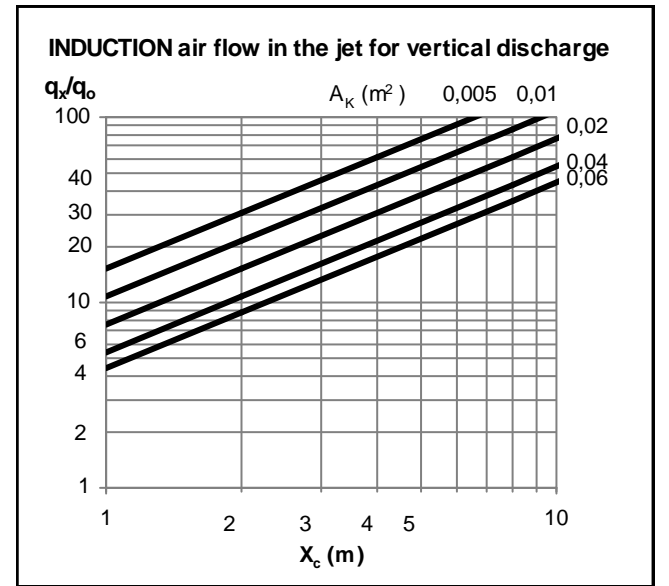
S-74-25



S-74-18



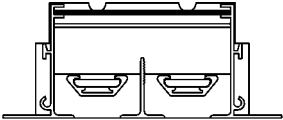
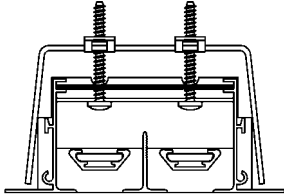
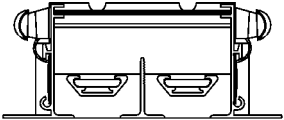
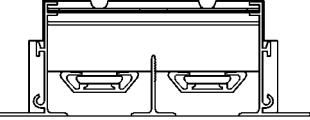
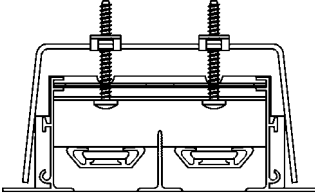
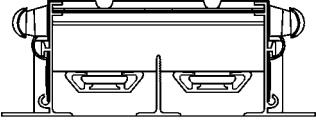
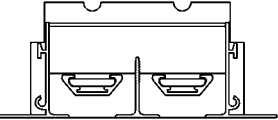
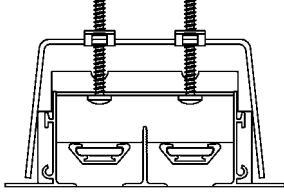
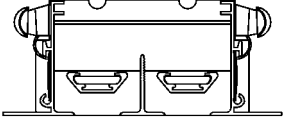
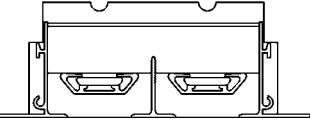
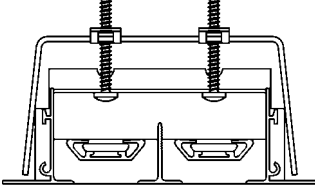
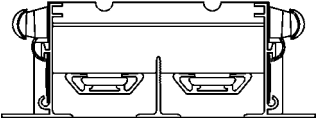
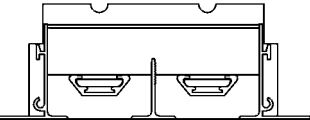
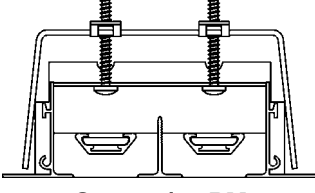
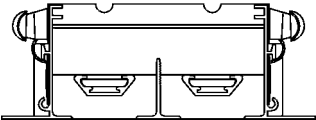
S-74-25



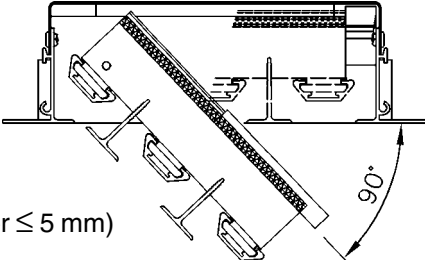
# VS-70-1 linear slot diffuser models

## Types of linear slot diffusers

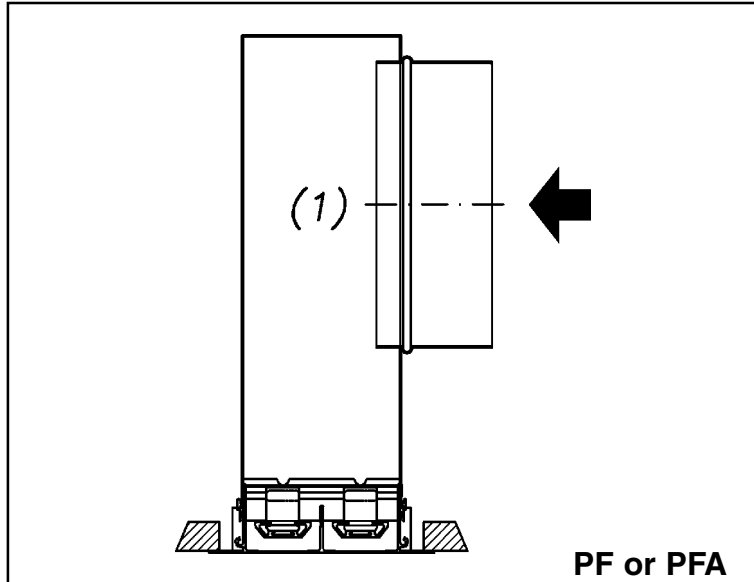
This page presents a schematic description of the linear slot diffusers, including an overview of the different versions and plenum attachment systems, as well as the filter holder model.

Diffusers screwed to plenum	Diffusers with mounting bridge	Diffusers with mounting clips
 <p style="text-align: center;"><b>S-74-18-PF</b></p>	 <p style="text-align: center;"><b>S-74-18-PM</b></p>	 <p style="text-align: center;"><b>S-74-18-CL</b></p>
 <p style="text-align: center;"><b>S-74-25-PF</b></p>	 <p style="text-align: center;"><b>S-74-25-PM</b></p>	 <p style="text-align: center;"><b>S-74-25-CL</b></p>
 <p style="text-align: center;"><b>S-72-18-PF</b></p>	 <p style="text-align: center;"><b>S-72-18-PM</b></p>	 <p style="text-align: center;"><b>S-72-18-CL</b></p>
 <p style="text-align: center;"><b>S-72-25-PF</b></p>	 <p style="text-align: center;"><b>S-72-25-PM</b></p>	 <p style="text-align: center;"><b>S-72-25-CL</b></p>
 <p style="text-align: center;"><b>S-72-25/18-PF</b></p>	 <p style="text-align: center;"><b>S-72-25/18-PM</b></p>	 <p style="text-align: center;"><b>S-72-25/18-PC</b></p>

**S-72-25FF**  
filter holder for return air (filter ≤ 5 mm)



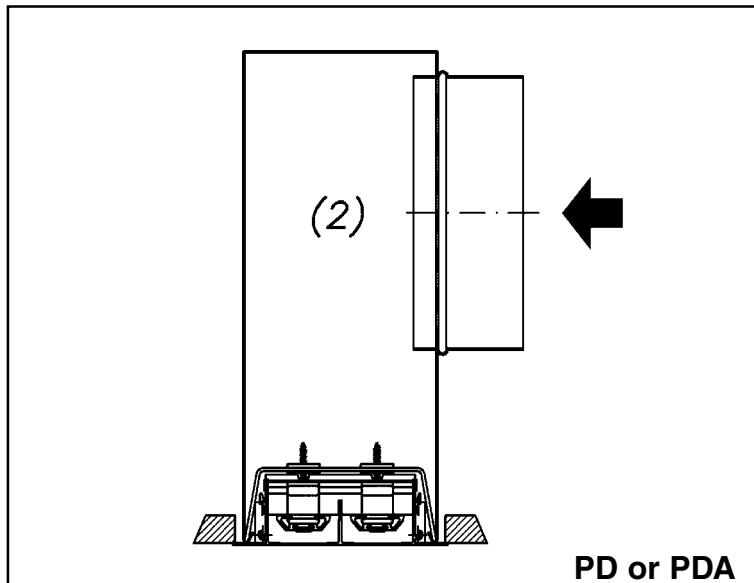
## Types of plenums (PF, PD, PC)



These three types of plenum are adaptable to all linear slot diffusers of the 70 SERIES, for both supply and return air. All models have hanging tabs, that are folded for easier transport.

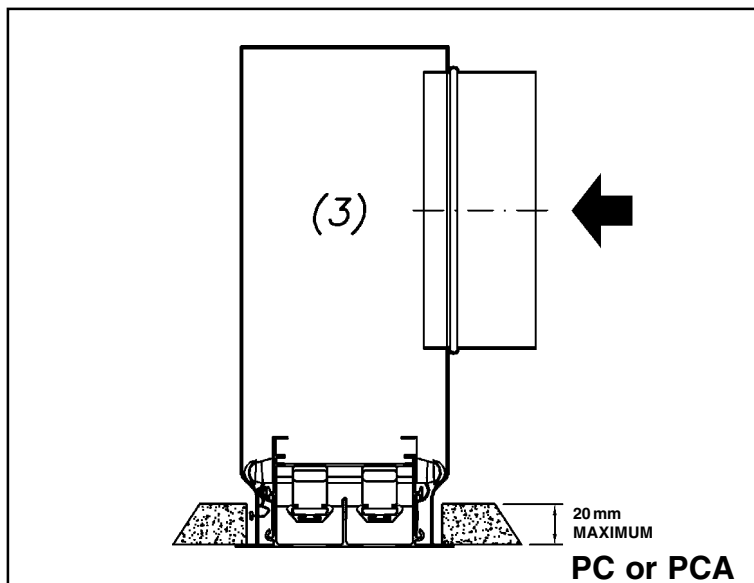
### PF or PFA plenum

The plenums are factory-mounted on the diffuser with screws (1).



### PD or PDA plenum

This model is equipped with a removable plenum, which is attached to the diffuser by bridges (2).



### Access to mounting bridges

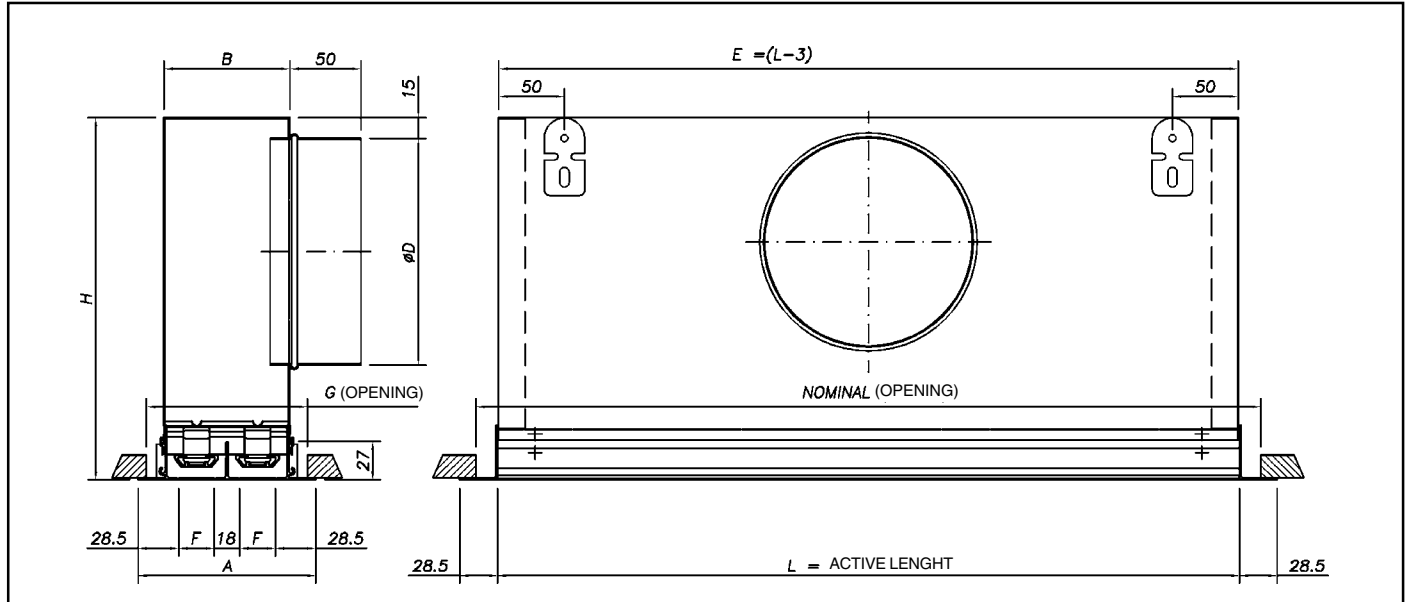
Use a screwdriver inserted in the holes in the deflection vanes, usually hidden with plastic caps.

### PC or PCA plenum

The plenum is mounted on the diffuser with pressure clips. This system is easy to use and allows the diffuser to be conveniently positioned after plenum mounting without the need for preliminary measurements or repositioning, except for the S-72-25FF model (3).

# General dimensions of S-74-PF

## S-74-PF (fix plenum) or PFA (insulated fix plenum) linear slot diffusers



## S-74-PF or PFA linear slot diffusers

DIMENSIONS S-74-18-PF (mm)									
NOMINAL	L	E	SLOTS	A	B	$\varnothing D$	F	G	H
600	575	572	1	75	40	124	18	66	225
900	875	872	2	111	76	159		102	275
1200	1175	1172	3	147	112	199		138	325
1500	1475	1472	4	183	148	199		174	325
1800	1775	1772	5	219	184	249		210	375
2000	1975	1972	6	255	220	249		246	375
2025	2000	1997							

**-NUMBER OF SPIGOTS:**  
 FROM 1 TO 4 SLOTS AND ACTIVE LENGHT > 1475 mm: 2 SPIGOTS  
 FROM 5 TO 6 SLOTS AND ACTIVE LENGHT > 1174 mm: 2 SPIGOTS

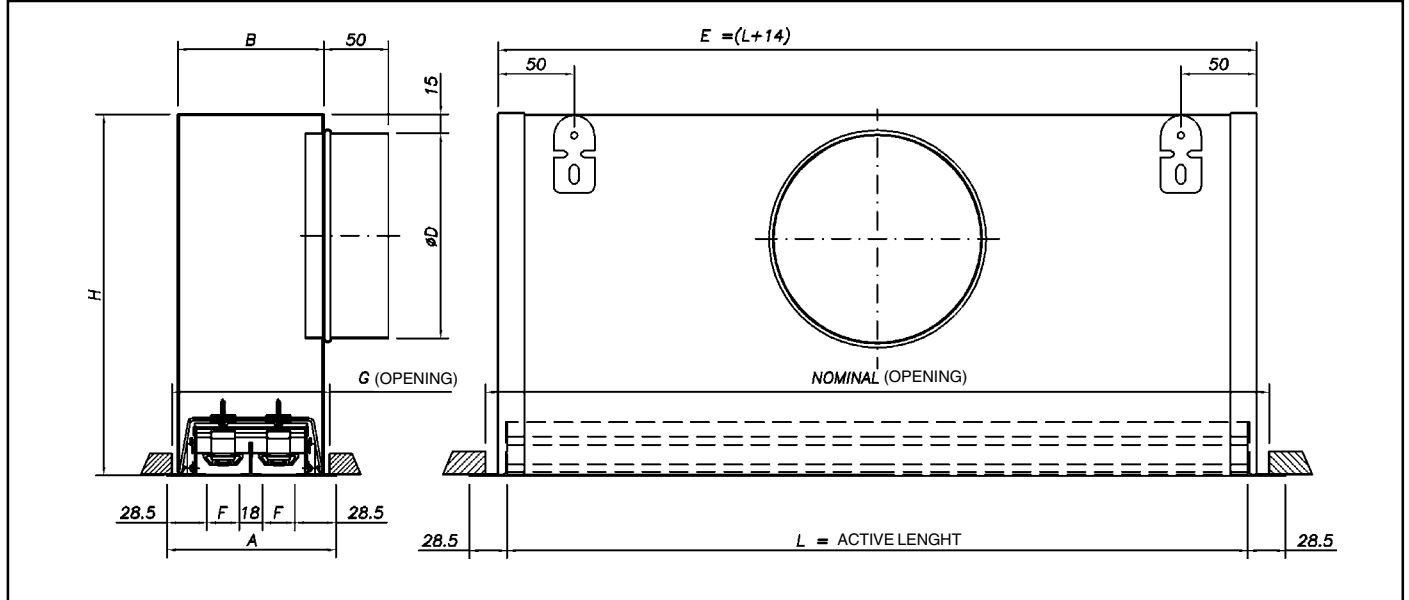
DIMENSIONS S-74-25-PF (mm)									
NOMINAL	L	E	SLOTS	A	B	$\varnothing D$	F	G	H
600	575	572	1	82	47	124	25	73	225
900	875	872	2	125	90	159		116	275
1200	1175	1172	3	168	133	199		159	325
1500	1475	1472	4	211	176	199		202	325
1800	1775	1772	5	254	219	249		245	375
2000	1975	1972	6	297	262	249		288	375
2025	2000	1997							

**-NUMBER OF SPIGOTS:**  
 ACTIVE LENGHT > 1174 mm: 2 SPIGOTS

**Note:** The S-72-18 diffusers without volume control damper have these same dimensions.

## General dimensions of S-74-PD

**S-74-PD (removable plenum) or PDA (insulated removable plenum) linear slot diffusers**



### S-74-PD or PDA linear slot diffusers

DIMENSIONS S-74-18-PD (mm)									
NOMINAL	L	E	SLOTS	A	B	ØD	F	G	H
600	575	589	1	75	63	124	18	66	225
900	875	889	2	111	99	159		102	275
1200	1175	1189	3	147	135	199		138	325
1500	1475	1489	4	183	171	199		174	325
1800	1775	1789	5	219	207	249		210	375
2000	1975	1989	6	255	243	249		246	375
2025	2000	2014							

**-NUMBER OF SPIGOTS:**  
**FROM 1 TO 4 SLOTS AND ACTIVE LENGHT > 1475 mm: 2 SPIGOTS**  
**FROM 5 TO 6 SLOTS AND ACTIVE LENGHT > 1174 mm: 2 SPIGOTS**

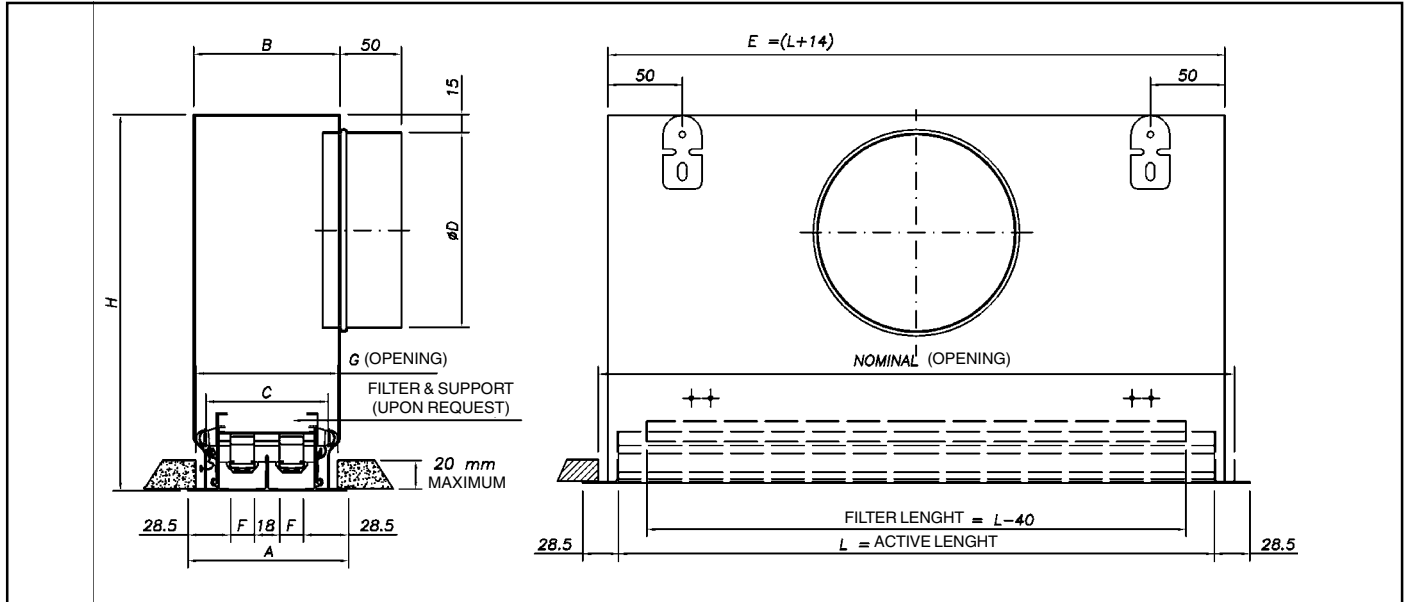
DIMENSIONS S-74-25-PD (mm)									
NOMINAL	L	E	SLOTS	A	B	ØD	F	G	H
600	575	589	1	82	70	124	25	73	225
900	875	889	2	125	113	159		116	275
1200	1175	1189	3	168	156	199		159	325
1500	1475	1489	4	211	199	199		202	325
1800	1775	1789	5	254	242	249		245	375
2000	1975	1989	6	297	285	249		288	375
2025	2000	2014							

**-NUMBER OF SPIGOTS:**  
**ACTIVE LENGHT > 1174 mm: 2 SPIGOTS**

**Note:** The S-72-18 diffusers without volume control damper have these same dimensions.

# General dimensions of S-74-PC

**S-74-PC (plenum with clips) or PCA (insulated plenum, with clips) linear slot diffusers**



## S-74-PC or PCA linear slot diffusers

DIMENSIONS S-74-18-PC (mm)										
NOMINAL	L	E	SLOTS	A	B	C	$\phi D$	F	G	H
600	575	589	1	75	76	54	124	18	66	225
900	875	889	2	111	112	90	159		102	275
1200	1175	1189	3	147	148	126	199		138	325
1500	1475	1489	4	183	184	162	199		174	325
1800	1775	1789	5	219	220	198	249		210	375
2000	1975	1989	6	255	256	234	249		246	375
2025	2000	2014								

**-NUMBER OF SPIGOTS:**  
 FROM 1 TO 4 SLOTS AND ACTIVE LENGTH > 1475 mm: 2 SPIGOTS  
 FROM 5 TO 6 SLOTS AND ACTIVE LENGTH > 1174 mm: 2 SPIGOTS

DIMENSIONS S-74-25-PC (mm)										
NOMINAL	L	E	SLOTS	A	B	C	$\phi D$	F	G	H
600	575	589	1	82	83	61	124	25	73	225
900	875	889	2	125	126	106	159		116	275
1200	1175	1189	3	168	169	147	199		159	325
1500	1475	1489	4	211	212	190	199		202	325
1800	1775	1789	5	254	255	233	249		245	375
2000	1975	1989	6	297	298	276	249		288	375
2025	2000	2014								

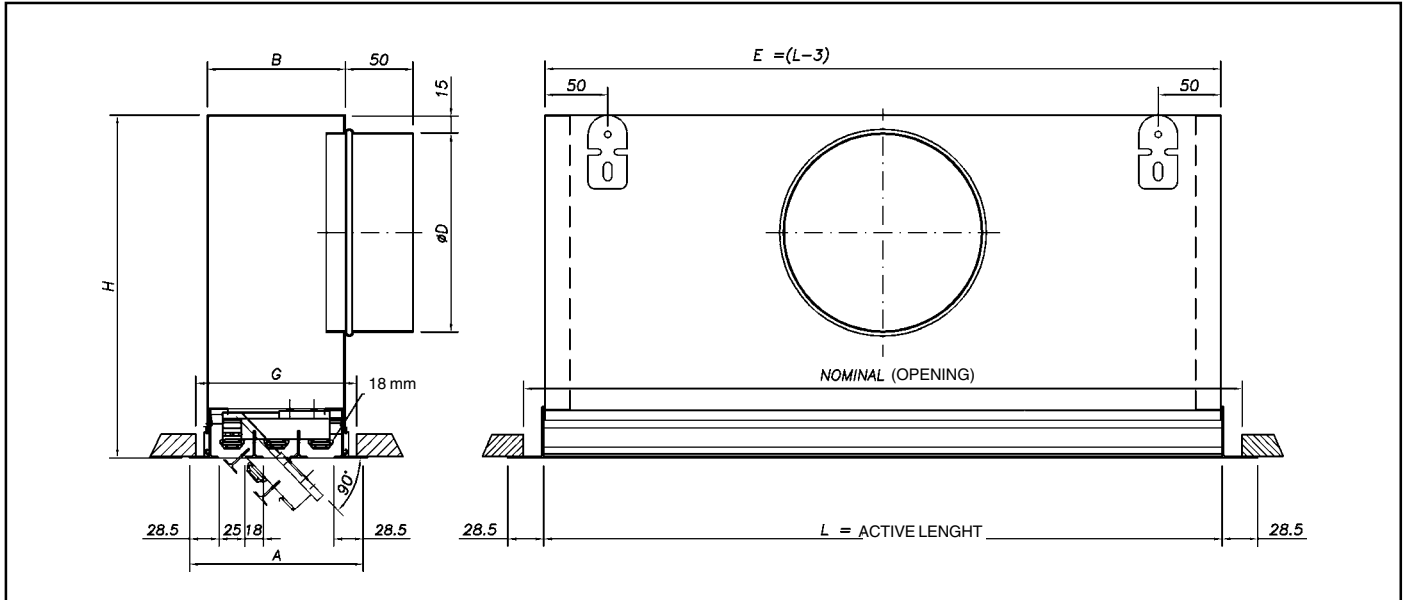
**-NUMBER OF SPIGOTS:**  
 ACTIVE LENGTH > 1174 mm: 2 SPIGOTS

**Note:** The S-72-18 diffusers without volume control damper have these same dimensions.



## Dimensions of S-72-25FF-PF

### S-72-25FF-PF (fix plenum) linear slot diffusers with hinged filter holder

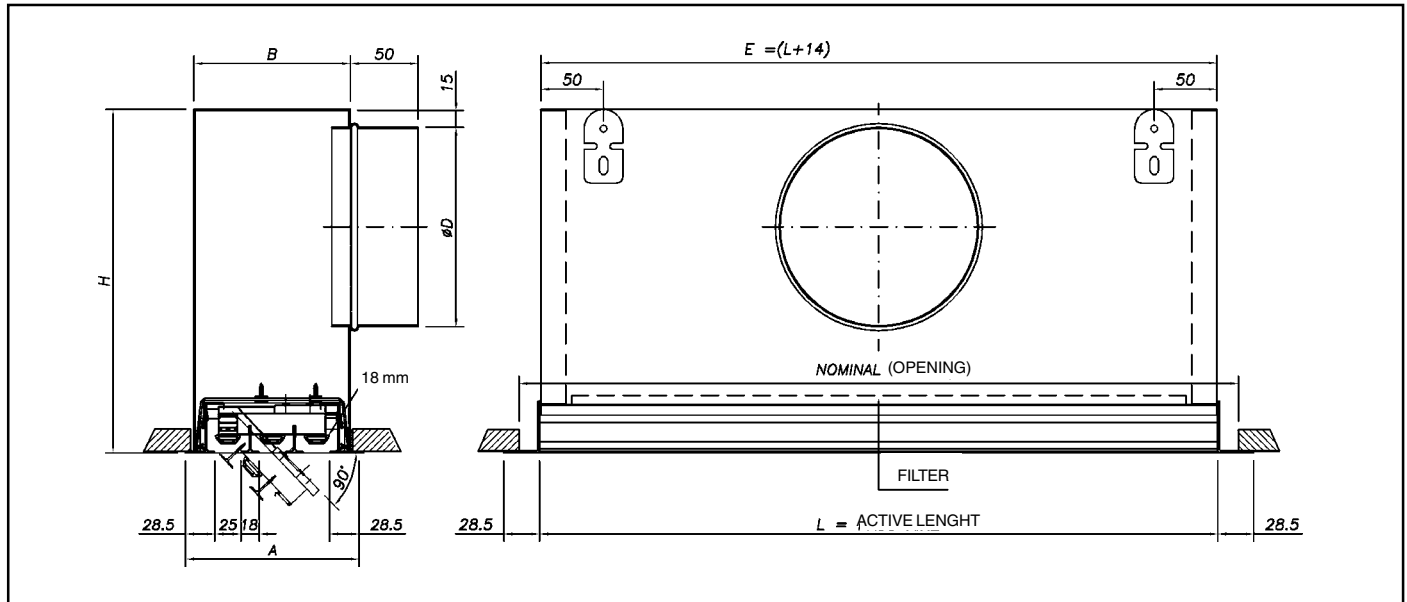


### S-72-25FF-PF (Fix plenum) linear slot diffusers

DIMENSIONS S-72-25-FF-PF (mm)								
NOMINAL	L	E	SLOTS	A	B	ØD	G	H
600	575	572	3	168	133	199	159	325
900	875	872	4	211	176	199	202	325
1200	1175	1172	5	254	219	249	245	375
1500	1475	1472	6	297	262	249	288	375
1800	1775	1772						
2000	1975	1972						
2025	2000	1997						

## Dimensions of S-72-25FF-PD

### S-72-25FF-PD (Removable plenum) linear slot diffusers with hinged filter holder



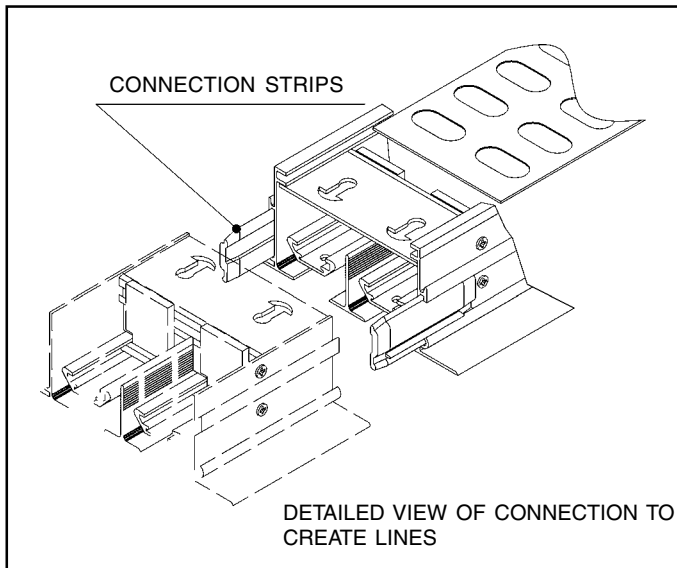
### S-72-25FF-PD (Removable plenum) linear slot diffusers

DIMENSIONS S-72-25-FF-PD (mm)								
NOMINAL	L	E	SLOTS	A	B	ØD	G	H
600	575	589	3	168	156	199	159	325
900	875	889	4	211	199	199	202	325
1200	1175	1189	5	254	242	249	245	375
1500	1475	1489	6	297	285	249	288	375
1800	1775	1789						
2000	1975	1989						
2025	2000	2014						

## Recommendations

### Diffusers with length above 2000 mm

Diffusers with a length above 2000 mm are supplied in separate sections that are assembled with **union pieces** for perfect alignment, with end caps in the head sections at the end.



### Application of S-70-1 diffusers for return or exhaust

For aesthetic reasons, the same components are usually installed for both air supply and return or exhaust. When a linear slot diffuser is used for exhaust, the effective cross-section for active length ( $A_k$ ) is reduced by about 25%, with respect to the same type of diffuser used for supply.

Since the pressure drop of the air and the sound power level are directly related to the velocity and the effective area, this should be taken into consideration when selecting a linear slot diffuser for return, decreasing the flow by the same percentage with respect to the model selected for supply air.

In **S-74-25** diffusers with a 25-mm slot, this cross-sectional loss can be offset by using the deflection vanes from the model with a 18-mm slot (**S-74-18**) to eliminate the above disadvantages. This diffuser is the **S-72-25/18** model.

### Minimum recommended velocity in occupied area $V_z$ .

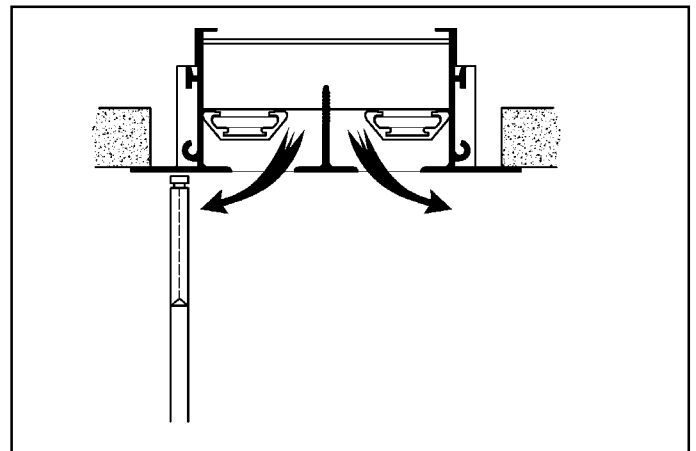
The temperature difference between cold supply air and the room air, provides the following  $V_z$  values, as the recommended velocity for the occupied zone to prevent the air jet falls to close, for lateral discharge diffusers:

Dt Cold supply air (°C)		0	6	9	12
$V_z$ (Minimum recommended velocity, in m/s)	Diffuser near exterior wall	0,15	0,20	0,25	0,30
	Diffuser near interior wall	0,15	0,25	0,30	0,35

### Air flow measurement

#### Diffusers with lateral discharge

The air flow rate  $q_v$  is obtained from the product of the effective area of the diffuser ( $A_k$ ) in  $m^2$  and the velocity at the discharge ( $V_k$ ), measured with a TSI-VELOCICALC hot wire anemometer located in the outer side frame.



#### Diffusers with vertical discharge

The air flow rate  $q_v$  is obtained from the product of the effective area of the diffuser ( $A_k$ ) in  $m^2$  and the velocity at the discharge ( $V_k$ ), measured with a TSI-VELOCICALC hot wire anemometer located in the discharge path.

