KOOLAIR

series

HIDE

Linear slot diffusers

ISO 9001
BUREAU VERITAS
Certification
Sistema de Gestión

BUREAU VERITAS
1828

www.koolair.com

CONTENTS

HIDE linear diffuser

HIDE linear diffuser

Description
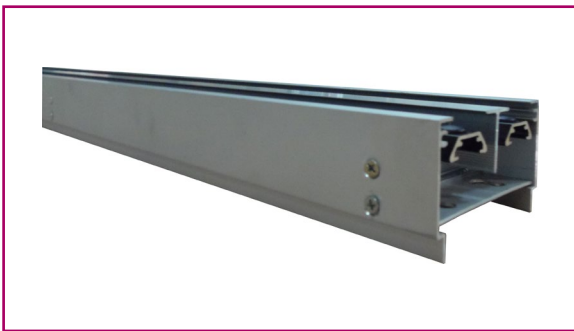
HIDE linear slot diffuser, air flow 21 mm, with no outer frames, thus offering excellent aesthetics. Its directional fin allows air flow to be adjusted from 0º to 180º. Includes supply plenum with volume control damper at the inlet.

Applicable for variable-volume and constant-volume systems, as it is designed to maintain the ceiling effect (Coanda effect), even with primary air flows reduced to 20% of nominal air flow rate.

Application

The HIDE linear slot diffusers are especially recommended for ceiling installation (both continuous and modular) with installation heights of 2.6 to 4 m. Due to its high induction levels, air-jet homogenization is achieved, stratifications and rapid compensation of thermal loads are avoided.

The air-jet direction can be modified even with the diffuser installed, allowing horizontal and vertical discharge.

The same diffuser can be used for return. High-quality aesthetics and performance are further enhanced by alternating the return diffusers with supply diffusers in the same continuous line.

Finishes

Made of anodized aluminium, natural or prelacquered in RAL-9010 glossy white, as standard finishes. Black directional fins with a matte finish. Includes supply plenum box of galvanized steel sheet and volume control damper at the inlet accessible from the room. The standard plenum box is fixed, with or without insulation.

Integration of the diffuser in a specially sized plate for installation in modular ceilings (1200x300, etc.) is possible upon request.

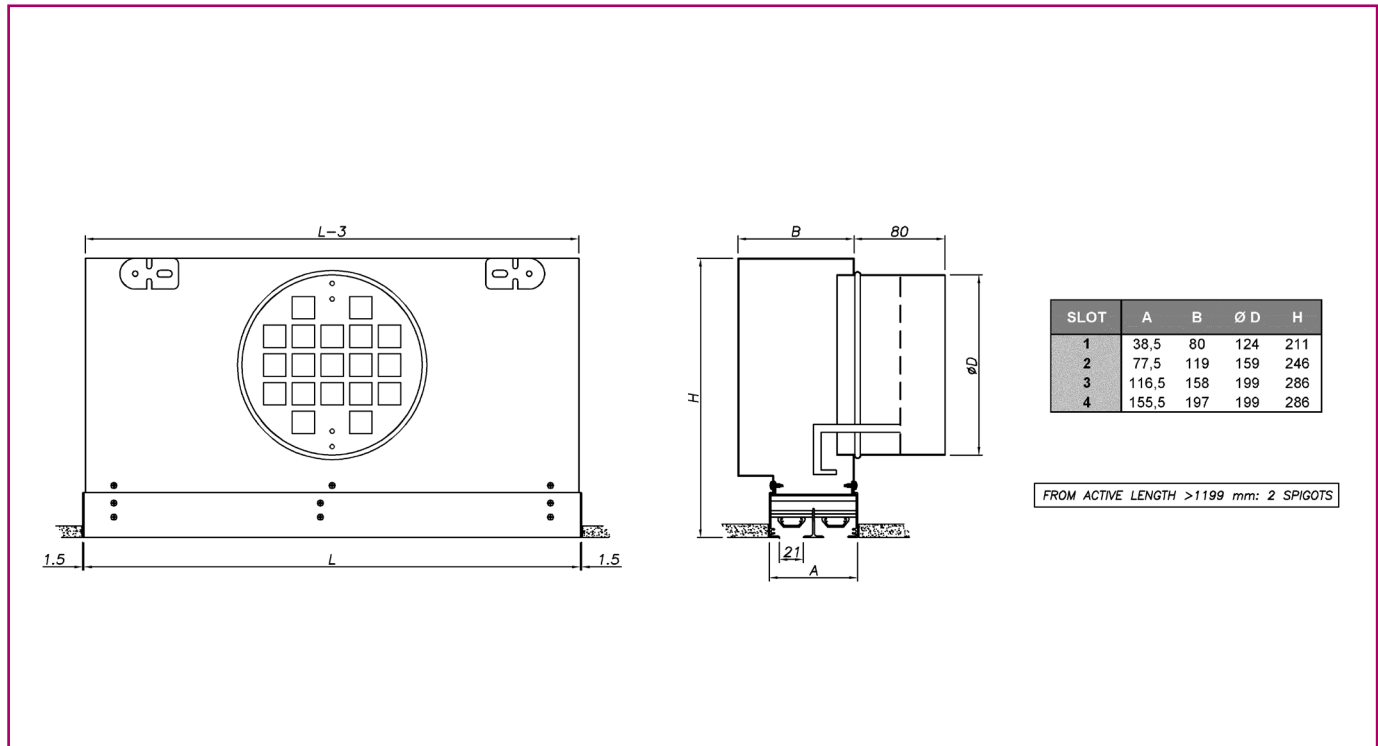| Code	Description
HIDE	*Linear slot diffuser 21mm.*
1, 2, 3, 4	*Number of ways.*
R1,5	*Final trim of 1,5 mm*
R8,7	*Final trim of 8.7 mm*
R17	*Final trim of 17 mm*
PM	*Mounting bridge.*
CL	*Mounting clips.*
PF	*Fixed plenum without insulation.*
PFA	*Fixed plenum with insulation.*
PD	*Removable plenum without insulation.*
PDA	*Removable plenum with insulation.*

Identification

The HIDE diffusers have directional fins and volume control damper. Models without a plenum include mounting bridges. For return air, it is possible to use the HIDE model, which does not include the volume control damper but does include the directional fins. The standard diffusers have 1,5 mm trim angles.

HIDE Overall dimensions

HIDE linear diffuser, fixed plenum, side entry

SLOT	A	B	Ø D	H
1	38,5	80	124	211
2	77,5	119	159	246
3	116,5	158	199	286
4	155,5	197	199	286

FROM ACTIVE LENGTH >1199 mm: 2 SPIGOTS

HIDE linear diffuser, fixed plenum, top entry

SLOT	A	B	Ø D
1	38,5	155	124
2	77,5	190	159
3	116,5	230	199
4	155,5	230	199

FROM ACTIVE LENGTH >1199 mm: 2 SPIGOTS
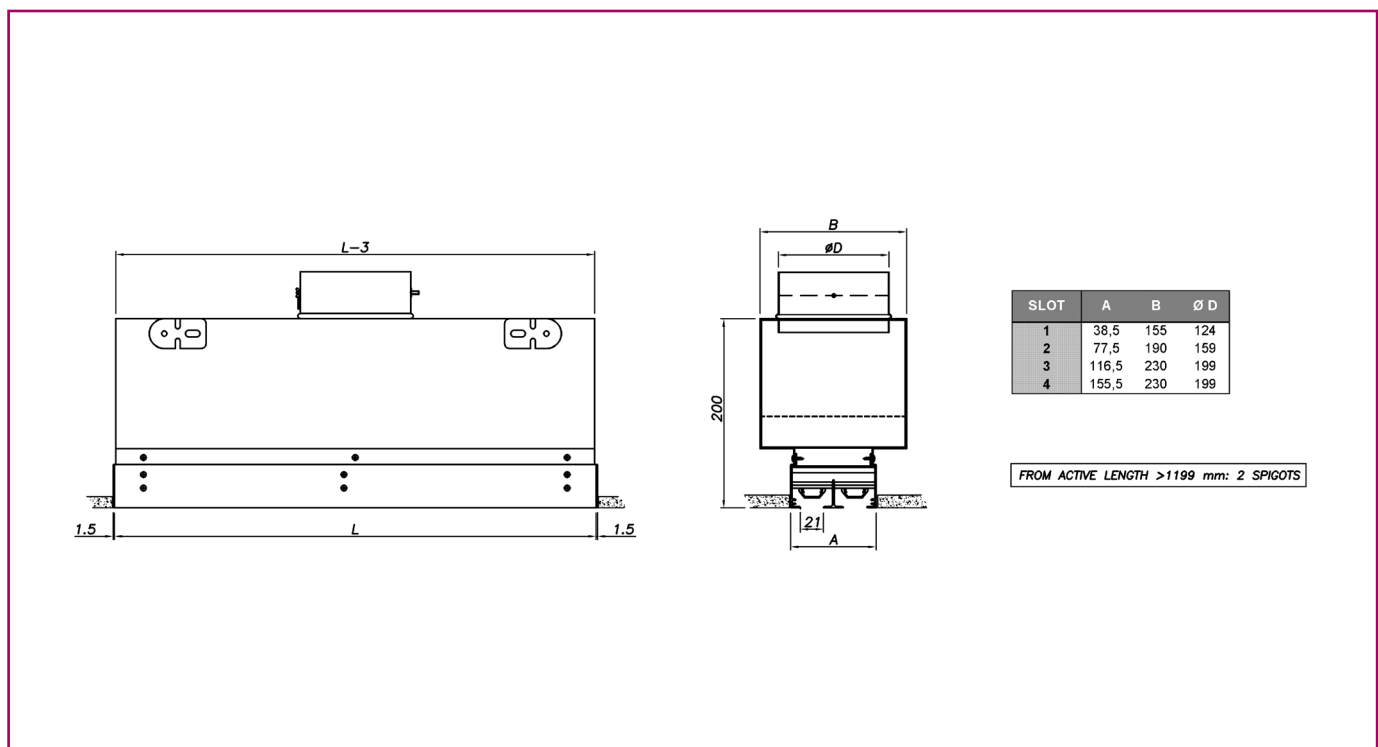
HIDE Overall dimensions

HIDE linear diffuser, removable plenum, side entry

SLOT	A	B	Ø D	H
1	38,5	80	124	211
2	77,5	119	159	246
3	116,5	158	199	286
4	155,5	197	199	286

FROM ACTIVE LENGTH >1199 mm: 2 SPIGOTS
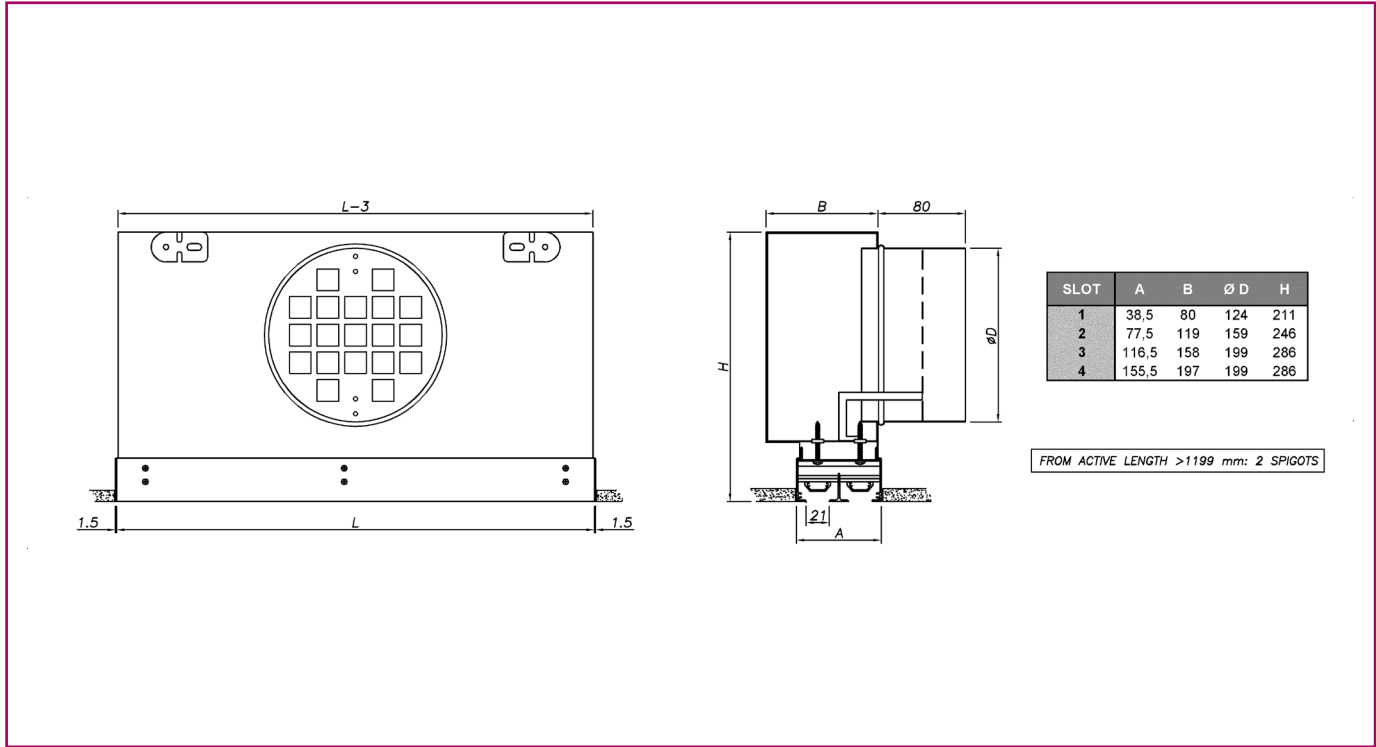
HIDE linear diffuser, removable plenum, top entry

SLOT	A	B	Ø D
1	38,5	155	124
2	77,5	190	159
3	116,5	230	199
4	155,5	230	199

FROM ACTIVE LENGTH >1199 mm: 2 SPIGOTS
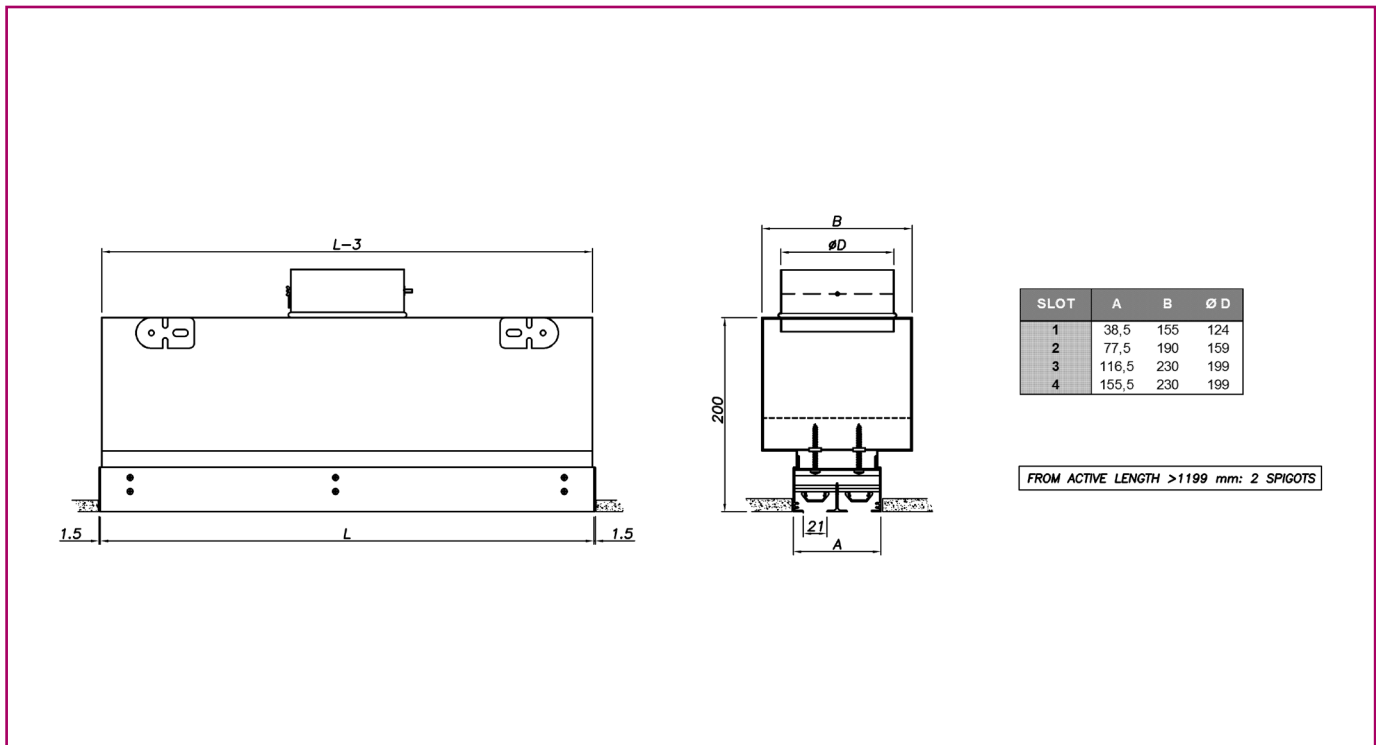
HIDE Selection Table

Q (m³/h)	(l/s)	Ak (m²)	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
		Dim.	0,00697	0,01046	0,01395	0,01744	0,02092	0,02790	0,03139	0,03487	0,04185	0,05231	0,05580	0,06975
60	16,7	V_k (m/s)	2,4	1,6	1,2									
		X (m)	1,4	1,1	1,0									
		P_t (Pa)	6	3	2									
		dB(A)	<20	<20	<20									
80	22,2	V_k (m/s)	3,2	2,1	1,6	1,3	1,1							
		X (m)	1,8	1,5	1,3	1,1	1,0							
		P_t (Pa)	11	5	3	2	1							
		dB(A)	24	<20	<20	<20	<20							
100	27,8	V_k (m/s)	4,0	2,7	2,0	1,6	1,3	1,0						
		X (m)	2,3	1,8	1,6	1,4	1,3	1,1						
		P_t (Pa)	17	8	4	3	2	1						
		dB(A)	30	22	<20	<20	<20	<20						
150	41,7	V_k (m/s)	6,0	4,0	3,0	2,4	2,0	1,5	1,3	1,2	1,0			
		X (m)	3,4	2,8	2,4	2,1	2,0	1,7	1,6	1,5	1,4			
		P_t (Pa)	39	17	10	6	4	2	2	2	1			
		dB(A)	41	33	28	23	<20	<20	<20	<20	<20			
200	55,6	V_k (m/s)	8,0	5,3	4,0	3,2	2,7	2,0	1,8	1,6	1,3	1,1	1,0	
		X (m)	4,5	3,7	3,2	2,9	2,6	2,3	2,1	2,0	1,8	1,7	1,6	
		P_t (Pa)	70	31	17	11	8	4	3	3	2	1	1	
		dB(A)	49	41	36	31	27	22	<20	<20	<20	<20	<20	
250	69,4	V_k (m/s)		6,6	5,0	4,0	3,3	2,5	2,2	2,0	1,7	1,3	1,2	1,0
		X (m)		4,6	4,0	3,6	3,3	2,8	2,7	2,5	2,3	2,1	2,0	1,8
		P_t (Pa)		48	27	17	12	7	5	4	3	2	2	1
		dB(A)		47	42	37	34	28	24	21	<20	<20	<20	<20
300	83,3	V_k (m/s)			6,0	4,8	4,0	3,0	2,7	2,4	2,0	1,6	1,5	1,2
		X (m)			4,8	4,3	3,9	3,4	3,2	3,0	2,8	2,5	2,4	2,1
		P_t (Pa)			39	25	17	10	8	6	4	3	2	2
		dB(A)			47	42	39	33	29	26	23	<20	<20	<20
400	111,1	V_k (m/s)				6,4	5,3	4,0	3,5	3,2	2,7	2,1	2,0	1,6
		X (m)				5,7	5,2	4,5	4,3	4,0	3,7	3,3	3,2	2,9
		P_t (Pa)				45	31	17	14	11	8	5	4	3
		dB(A)				50	47	41	37	34	31	26	25	21
500	138,9	V_k (m/s)					6,6	5,0	4,4	4,0	3,3	2,7	2,5	2,0
		X (m)					6,5	5,7	5,3	5,1	4,6	4,1	4,0	3,6
		P_t (Pa)					48	27	22	17	12	8	7	4
		dB(A)					53	47	43	41	37	33	31	27
600	166,7	V_k (m/s)					6,0	5,3	4,8	4,0	3,2	3,0	2,4	
		X (m)					6,8	6,4	6,1	5,5	5,0	4,8	4,3	
		P_t (Pa)					39	31	25	17	11	10	6	
		dB(A)					52	48	46	42	38	36	32	
700	194,4	V_k (m/s)							6,2	5,6	4,6	3,7	3,5	2,8
		X (m)							7,5	7,1	6,5	5,8	5,6	5,0
		P_t (Pa)							42	34	24	15	13	9
		dB(A)							52	50	46	42	41	36
800	222,2	V_k (m/s)							6,4	5,3	4,2	4,0	3,2	
		X (m)							8,1	7,4	6,6	6,4	5,7	
		P_t (Pa)							45	31	20	17	11	
		dB(A)							54	50	46	44	40	
900	250,0	V_k (m/s)									6,0	4,8	4,5	3,6
		X (m)									8,3	7,4	7,2	6,4
		P_t (Pa)									39	25	22	14
		dB(A)									53	49	47	43
1000	277,8	V_k (m/s)										5,3	5,0	4,0
		X (m)										8,3	8,0	7,2
		P_t (Pa)										31	27	17
		dB(A)										52	50	46

SYMBOLS:

Q   Air flow in m³/h
A_k   Effective area in m²
V_k   Effective supply velocity in m/s
X   Throw of the air jet
P_t   Total pressure drop, in Pa
dB(A)   Sound power level in dB(A)

HIDE Selection Graphs

Induction ratio

The induced air flow inside the room can be estimated from the factor (q_x/q_o) which is determined by the parameters X_c in m (throw) and the effective area in m^2 (A_k). Once the induction ratio is known, multiply by the supply air flow to obtain the total induced flow.
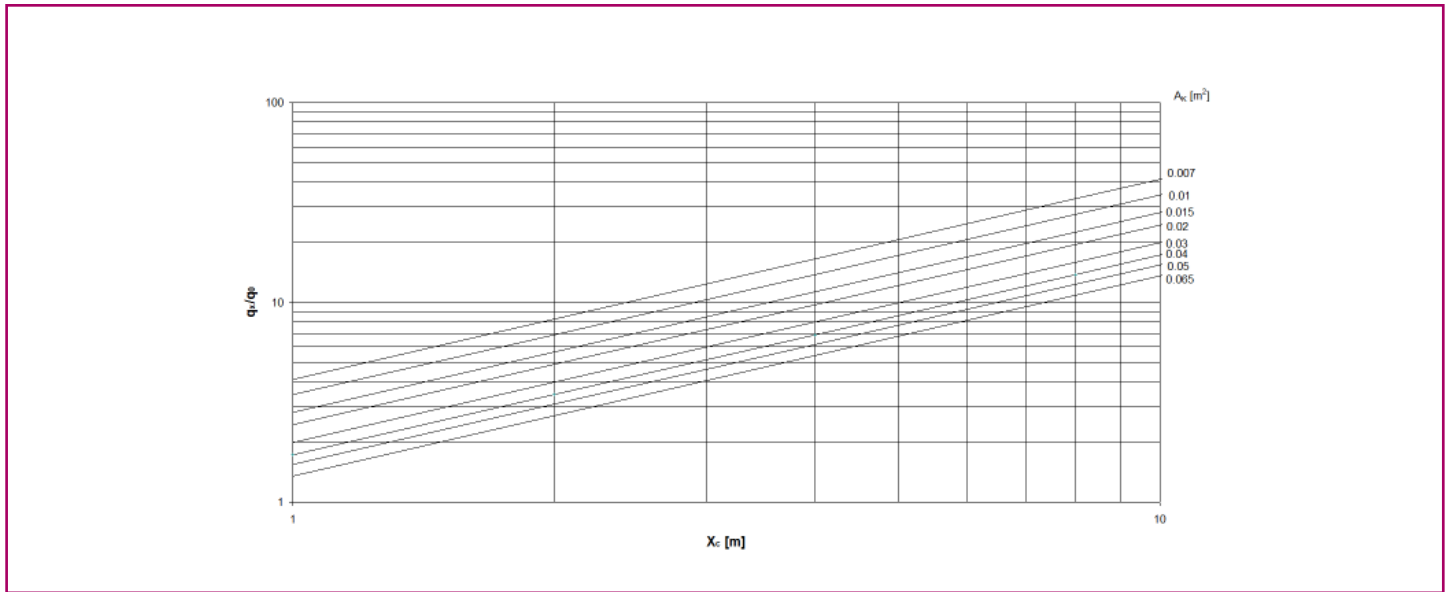
q_x/q_o: Induction ratio. Quotient between the air flow for a throw, X, and the air flow supplied in the room.

Temperature coefficient

To estimate the air-jet temperature in the room, use the lower chart which is determined by the parameters X_c in M (throw) and the effective area in m^2 (A_k).
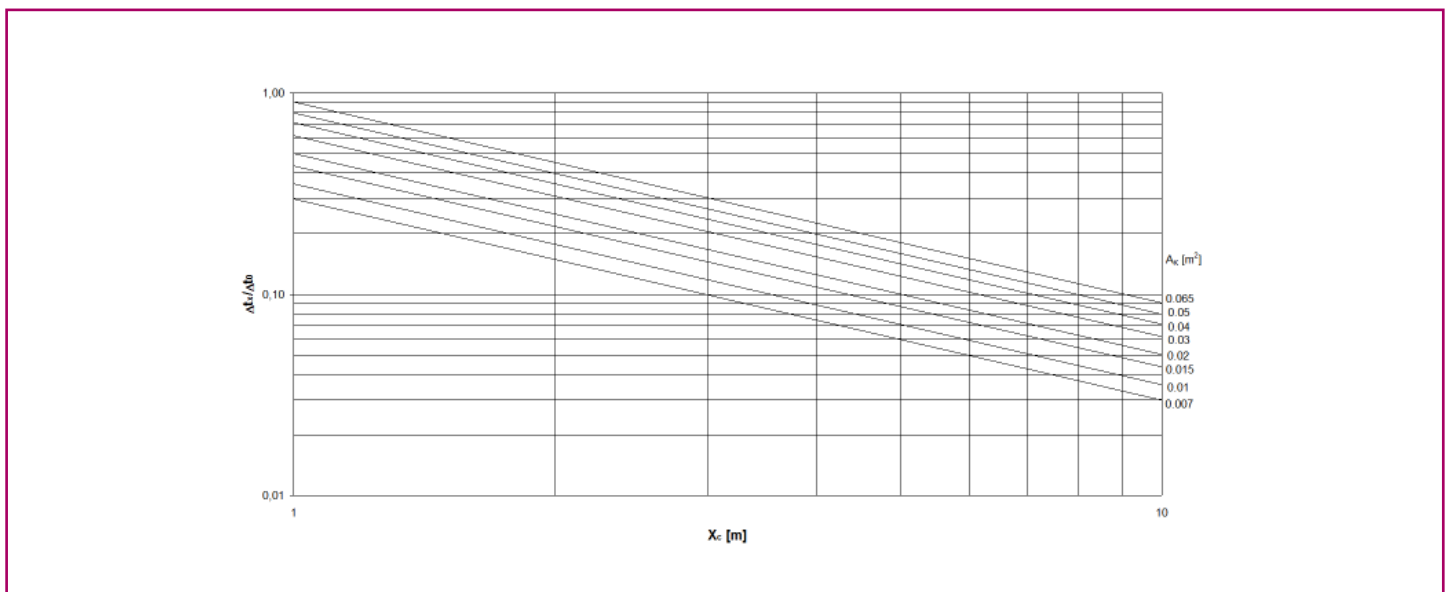
ΔT_o (C): Temperature difference between the supply air jet and the room to be air-conditioned.
ΔT_x (C): Temperature difference between the air jet (for throw, X) and the room to be air-conditioned.

Designs and finishes

Execution

Air flow orientation based on deflector slot position.
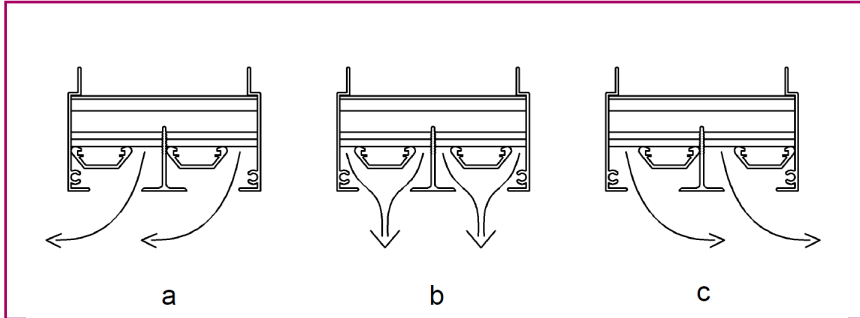
a)   Position of air deflector slots for horizontal diffusion toward the left.

b)   Position of air deflector slots for vertical diffusion.

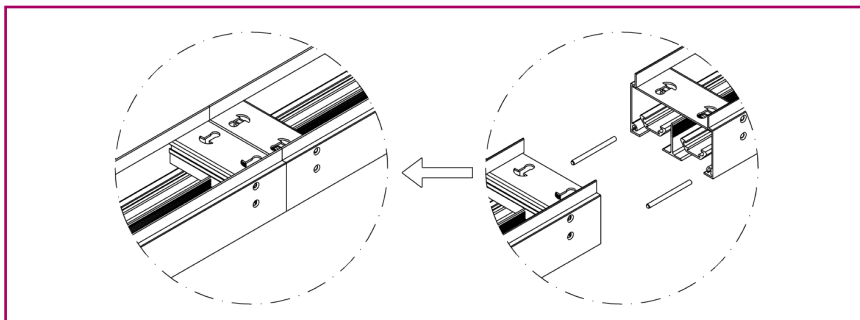c)   Position of air deflector slots for horizontal diffusion toward the right.

Finishes - Final trim

There are three final diffuser trim systems.
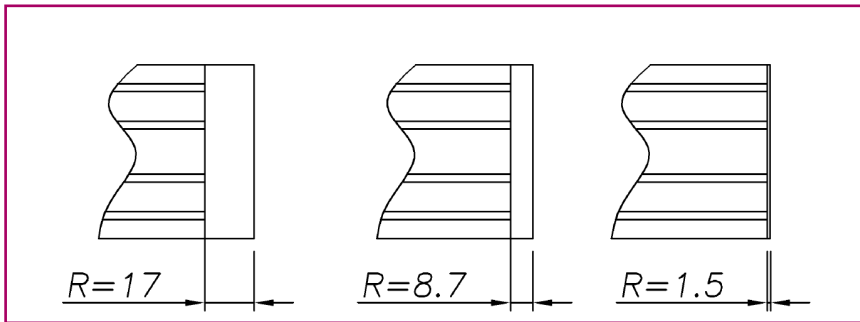
R15   Final trim of 17 mm.
R8,7   Final trim of 8,7 mm.
R1,5   Final trim of 1,5 mm. If not otherwise specified, the standard size is 1,5 mm.

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.

Technical specifications

Linear slot diffuser, HIDE model, of length L with number of ways A, for installation in modular or continuous drop ceilings, for horizontal air supply with Coanda effect. Final trim of 1,5 mm. Includes uninsulated supply plenum of galvanized steel sheet and volume control damper at the inlet accessible from the room. Standard finish of glossy paint (RAL9010). Other RAL colours upon request.

HIDE 1000 – 1,5 - R1 - PF