



Architectural Diffusers

Kappa-NEXUS Hidden Flow Bar

Slot Diffuser



At Gerhman we are driven by a strong desire to continuously generate improvements. We do that by developing products and systems that are easy to use and energy efficient, together with industry-leading knowledge, support, logistics and efficient availability.



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Architectural Aesthetics and Perfect Air Distribution

EMINT

Ideas for Architects

Architectural Diffusers

Kappa-NEXUS Hidden Flow Bar

Slot Diffuser



Created for Architects and Interior Designers, our seamless slot diffusers are integrated seamlessly within the interior architecture. Installed directly into drywall or acoustical ceilings, these innovative air outlets give architects creative freedom by eliminating ugly air registers and vents. Minimal and sublime, Kappa-NEXUS is as discreet as it gets. It blends seamlessly into any ceiling or wall for a clean, modern look that complements the surrounding architecture.

Typical Applications

Aerodynamically designed blades provide a tight horizontal pattern that maintains stability even at low airflow rates. Excellent for architectural applications, the Kappa-NEXUS has many mounting styles and is available with multiple slot widths to meet a range of airflow requirements.

Key Features

- Frameless, flush mount installation
- Used for both SUPPLY & RETURN
- Designed for both heating and cooling applications
- Available in any length and slot opening
- Curved options are available
- Lower noise criteria
- Simple and swift installation
- Material: High-quality extruded aluminum



Architectural Diffusers

Kappa-NEXUS Hidden Flow Bar Slot Diffuser



Description:

Kappa-NEXUS is specially designed to suit the contemporary architectural demands of modern-day interior designers. The seamless blending of slot diffusers into the ceiling along with enhanced performance makes it a fine choice.



Application:

Kappa-NEXUS slot diffuser is designed to be flushed with ceiling tile and serve ceiling mounted applications. No flange is visible and the view of a black opening into the ceiling gives a high-class finish to the interior. Kappa-NEXUS can handle more air volume per length for the same opening as compared to regular slot diffuser.

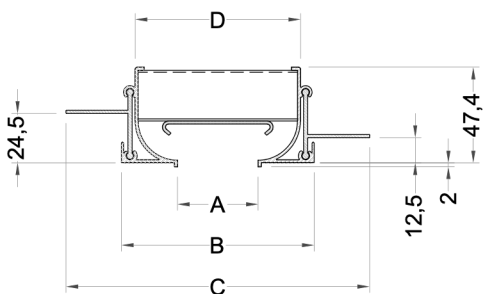
Accessories:



Plenum Box – Optimized Airflow Distribution

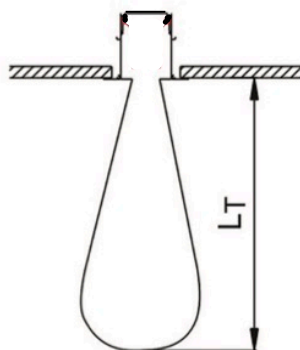
Designed for seamless integration with Kappa Nexus slot diffusers, the plenum box ensures balanced airflow and reduced noise levels. Its compact, modular design allows easy installation and adapts to various project needs. Made from galvanized steel or aluminum, it enhances system efficiency and ensures long-lasting performance.

Technical Sizes and Quick Selection



Types	A	B	C	D
NEXUS15	15	70,5	125,5	57
NEXUS20	20	75,5	130,5	62
NEXUS30	30	85,5	140,5	72
NEXUS40	40	95,5	150,5	82
NEXUS50	50	105,5	160,5	92

All dimensions are in millimeters (mm).



Types	Slot Dimension (mm)	Q (m3/h)	LwA [dB(A)]	ΔPt (Pa)	LT (m)
NEXUS15	15	100	22	10	3,2
		130	29	18	4,4
		180	40	32	5,9
NEXUS20	20	150	22	10	3,7
		200	30	21	5,1
		270	40	37	6,9
NEXUS30	30	180	24	10	3,2
		250	32	19	4,4
		330	40	38	6,3
NEXUS40	40	200	24	10	3,6
		270	32	17	4,9
		370	40	32	6,7
NEXUS50	50	230	24	9	3,3
		300	32	15	4,5
		400	40	26	6,1

The selection tables show the technical data per linear metre of diffuser.

LEGEND

Q (m3/h): Air flow.

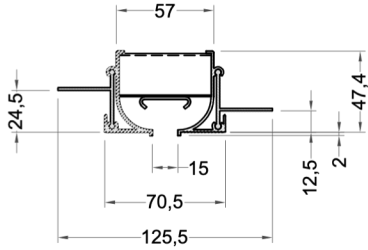
LwA [dB(A)]: Sound power level.

ΔPt (Pa): Total pressure loss.

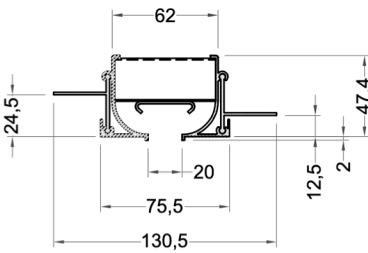
LT (m): Throw for a maximum velocity of 0.25 m/s at the occupied zone installed at 2.8 m of height.

Technical Sizes

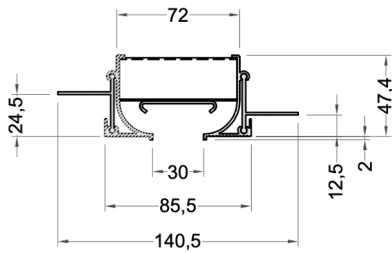
NEXUS15



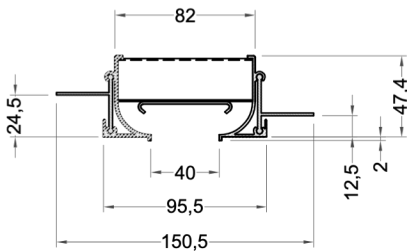
NEXUS20



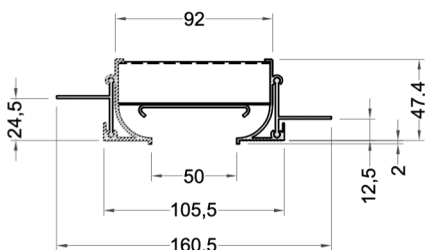
NEXUS30



NEXUS40

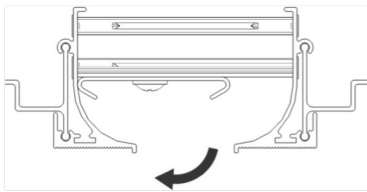


NEXUS50

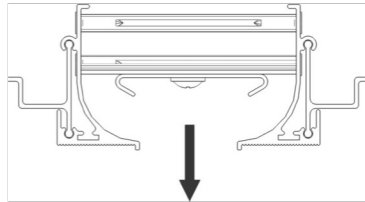


Blade Positions and Airflow Control

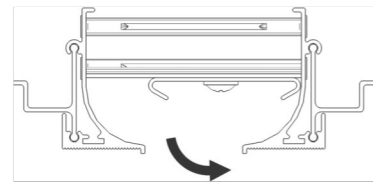
Dischage Position A



Dischage Position B



Dischage Position C



To optimize the diffuser's performance, the **blade position** plays a crucial role in controlling airflow direction and efficiency.

- When used for **return air**, it is recommended to turn the blade to one side, as this configuration minimizes **sound levels** and **pressure loss**.

- Left-positioned air deflection blade** directs airflow **horizontally** to the left.

- Right-positioned air deflection blade** directs airflow **horizontally** to the right.

- Vertically positioned air deflection blade** ensures **upward or downward air diffusion**, optimizing air circulation in the space.

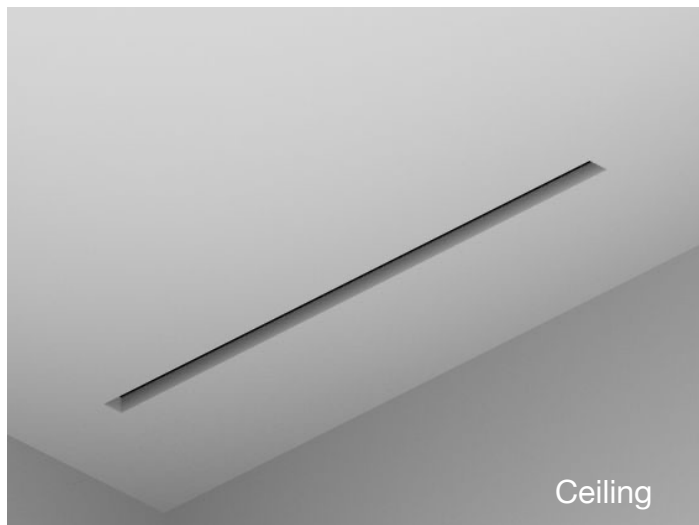
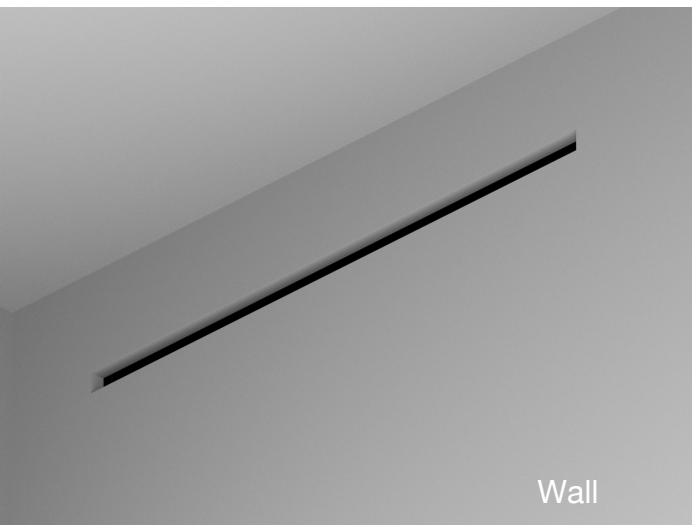
Proper blade positioning enhances both **thermal comfort** and **system efficiency**, making it adaptable for different ventilation requirements.



Ideas for Architects

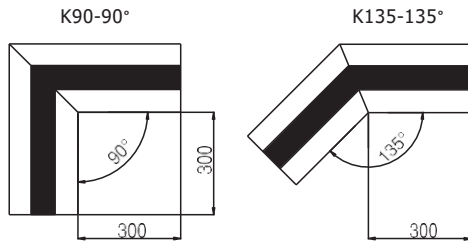
Application

Kappa-NEXUS is designed for seamlessly integrating into both walls and ceilings. Its adaptable structure ensures efficient airflow distribution in various architectural settings, making it an ideal choice for modern HVAC systems. Whether mounted horizontally on ceilings or vertically on walls, it maintains optimal performance and aesthetic appeal.

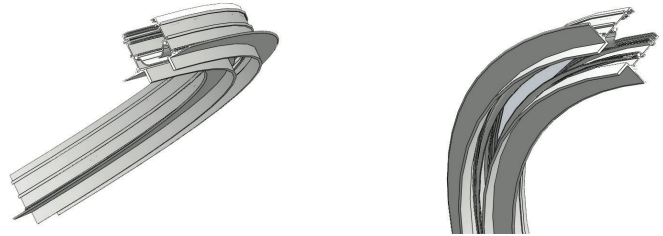


Applications

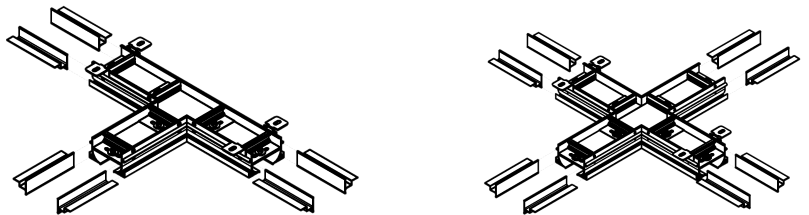
Corners



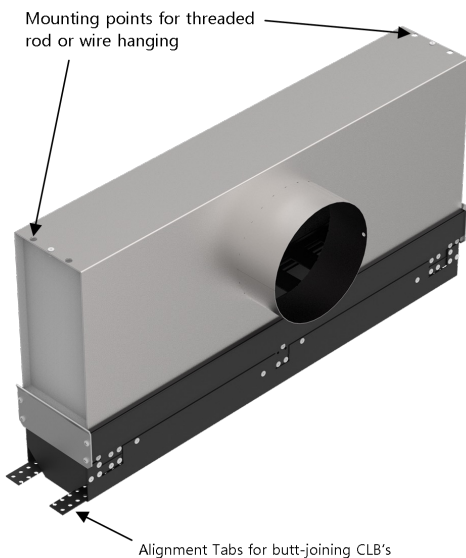
Curved



T module



Plenum box



Plenum Box – Optimized Airflow Distribution

Designed for seamless integration with Kappa Nexus slot diffusers, the plenum box ensures balanced airflow and reduced noise levels. Its compact, modular design allows easy installation and adapts to various project needs. Made from galvanized steel or aluminum, it enhances system efficiency and ensures long-lasting performance.

Selection Procedure

Method Slot Diffuser

1. Establish volume flow rate per metre by dividing total air volume by the active slot length to give litres/metre.
2. Using appropriate graph place a straight edge through the volume as calculated and position to pass through required throw value with satisfactory noise and pressure readings. Select suitable slot width and number of slots where straight edge passes through slot selection line. Finally realign straight edge through volume and slot selected points and read exact throw, sound and pressure figures.
3. Readings obtained from the above using horizontal ceiling graph are based on 1 metre active slot length. (See note on graph).
4. Readings obtained from the methods above using vertical projection graph are based on isothermal conditions. For vertical throw values for temperature differential see 'Vertical Throw Multipliers for Differential Temperatures' correction table to obtain throw multiplier for varying number of slots.

Exhaust

Procedure same as supply but with the anemometer probe reversed.

Plenum box drops and sound ratings

	Spigot velocity m/s					
	1.5	2.0	2.5	3.0	3.5	4.0
Pressure drop Pa*	2	4	6	8	12	16
Sound power level N*			25	30	35	40

*approximate - dependent upon entry conditions.

Pressure drops additional to slot diffuser.

Sound power level - use higher of slot or plenum value.

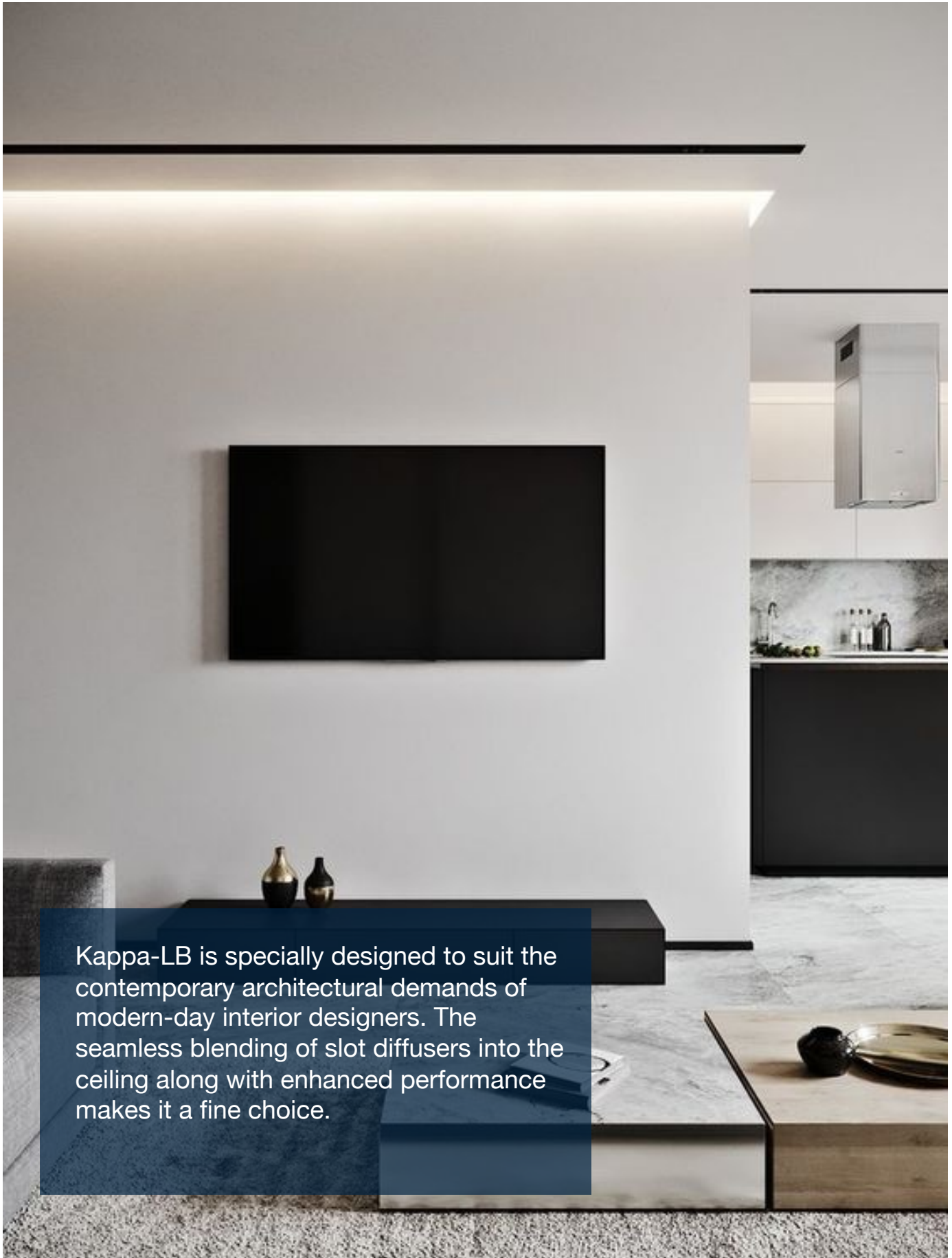


Plenum box spigot volumes (l/s)

Diameter mm	Spigot velocity m/s					
	1.5	2.0	2.5	3.0	3.5	4.0
100	10	15	19	22	26	30
125	18	24	30	35	41	47
150	25	34	42	51	60	68
175	35	46	58	70	82	94
200	45	60	75	91	109	121
225	58	77	96	117	137	151
250	71	95	120	142	170	191
275	86	115	145	172	205	230
300	103	139	172	208	240	275
325	120	160	200	240	280	320
350	140	188	235	280	328	375
400	185	245	310	370	430	495

Method Plenum Boxes

1. Determined volume of plenum box by multiply chosen length of box x volume/metre of slot. (A maximum box size of 2.0m long is recommended). Plenum boxes in excess of 1500mm long require 2 or more inlet spigots.
2. Select plenum spigot size from table. Maximum entry velocity of 3.5 m/sec is recommended. Velocities in excess of this may lead to noise generation.
3. From table of 'Plenum Box Pressure Drops and Sound Ratings' read off additional pressure drop to be added to slot diffuser pressure drop from graph. Ensure that plenum box sound power level is not more than slot diffuser reading if latter is design criteria.
4. Where it is not possible to accommodate standard plenum boxes, special configurations are available, but should always maintain an equivalent cross-sectional area to a standard box. Consideration should also be given to the inlet spigot in respect of positioning, sizing and inlet velocities. Consult our technical department for detailed advice



Kappa-LB is specially designed to suit the contemporary architectural demands of modern-day interior designers. The seamless blending of slot diffusers into the ceiling along with enhanced performance makes it a fine choice.



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