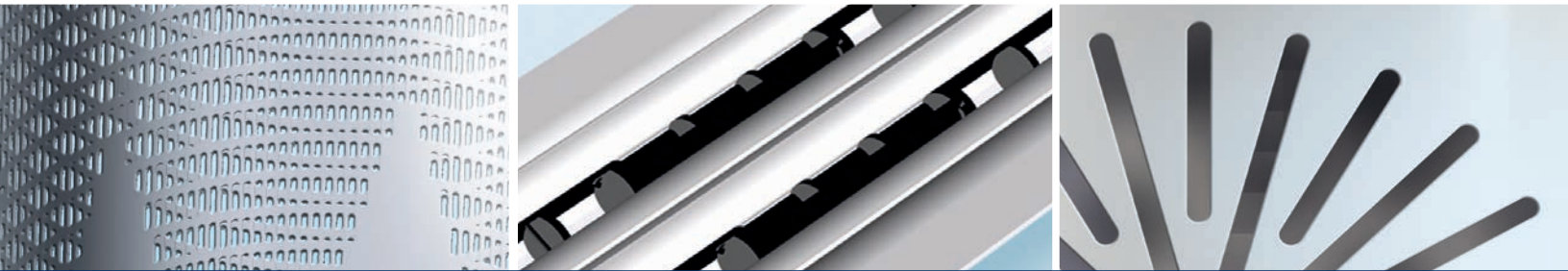




**AIR TECH
SYSTEMS**

Product Overview

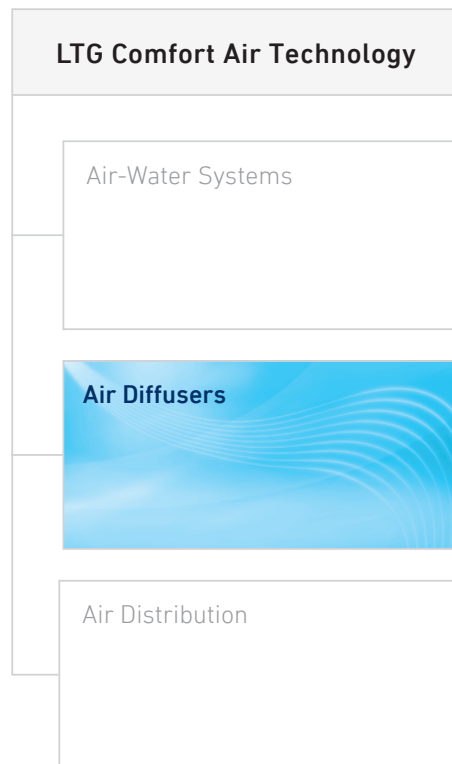
LTG Air Diffusers



Outstanding Technique for Highest Demands.
Unique in Comfort, Acoustics and Design.

LTG

Innovative Solutions for Humans and Products.



LTG Air Diffusers Meet Highest Standards for Quality and Efficiency

For almost 90 years, LTG has been a pioneer in air and air conditioning technology, always a step ahead with trailblazing innovations. When it is crucial to achieve ideal environmental conditions for people and products, LTG creates inspiring, tailor-made comfort air technology solutions, including air diffusers, air-water systems (such as induction and fan coil units) and products for air distribution (flow rate controllers and shut-off valves).






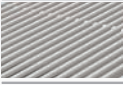

Air diffusers are most important for operation and efficiency of air conditioning and ventilation systems. They allow ideal distribution of conditioned air within a room, as well as effective removal of thermal loads – important criteria for health and well-being. Even under the most demanding conditions, LTG air diffusers meet all important requirements and set the benchmark in their class.

LTG Air Diffusers

Product Overview and Range of Applications

LTG air diffusers can be installed in ceilings, walls and floors. Special diffusers are available for specific applications. The choice of air diffuser depends on building type, building use and interior design specification.


LTG Air Diffusers for Ceiling, Wall and Floor

	Ceiling	Wall	Floor
Linear Diffusers	 LDB page 7	 LDK-B page 13	 LDU page 19
	 LDB LTG System clean* page 7	 LDK-B LTG System clean* page 13	 LDU-W page 19
Transfer air Devices	_____	 LDO-T page 16	_____

Special Diffusers

	LDR and LDB 12/M LTG System clean*	page 23
	Step Diffuser BLQ	page 24
	Displacement Air Diffuser DLD	page 25
	Displacement Air Diffuser DLQ	page 25

Engineering Services

	LTG Engineering Services Comfort Air Technology	page 26
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The optimal Air Conditioning Solution for any Room Situation

LTG is your reliable partner in the area of room air technology.

We lay the foundations for perfect room climate with innovative and unique solutions such as our patented LTG System clean® or our successful further development of proven LDB linear diffusers which are now also available completely made of metal. LTG will accompany you with special expertise from the first request to detailed engineering.



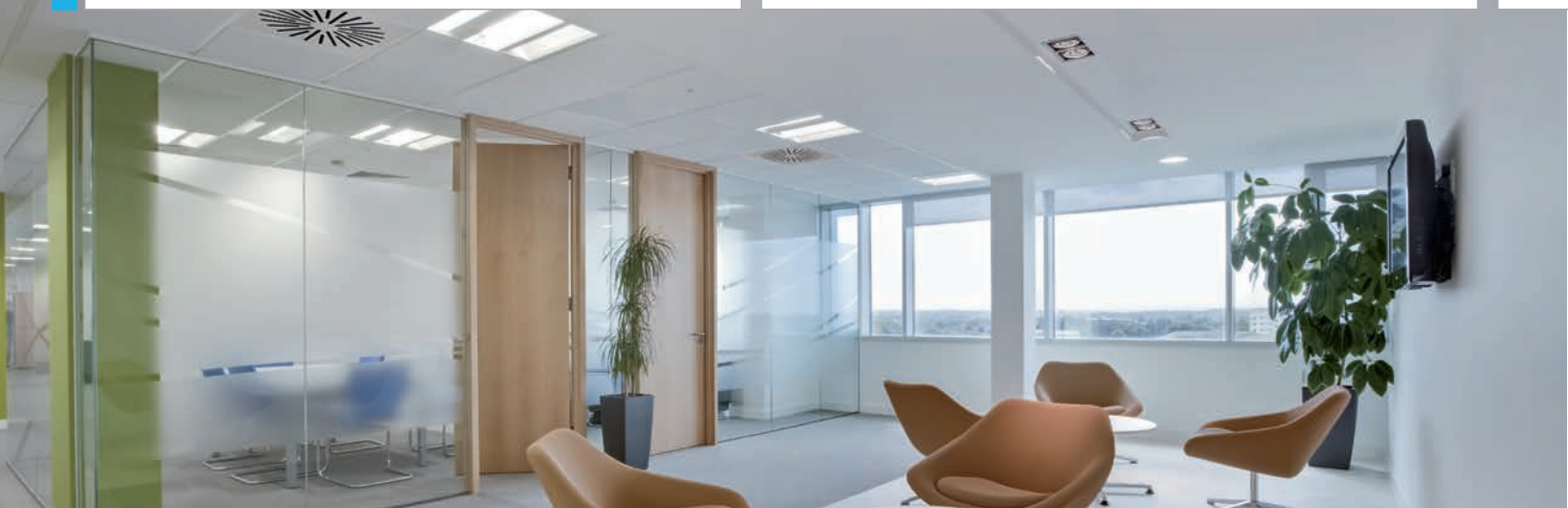
We offer high-performance products for any requirement and installation situation. These include air-water systems, air diffusers or air distribution components. LTG engineering services provide you with decades of expert know-how in comfort air and process air technology, as well as a state-of-the-art lab. We will gladly support you in selecting the right system. Contact us!

LTG Planning Tools – We Support You!

Ask for your own DVD with helpful tools, such as selection programs, air flow videos and product information! Also available: our product overviews of air diffusers and air distribution products.

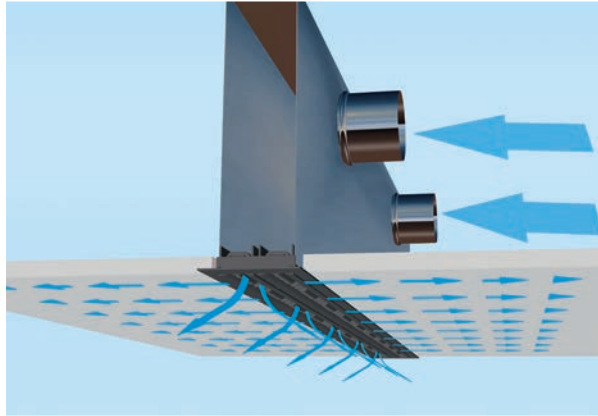
Visit us on www.LTG-INC.net and get detailed technical information as PDF files.





Air Diffusers for Ceiling Installation

LDB



LDB linear air diffusers with variable settings supply all rooms with fresh air in the optimum way and provide comfortable room conditions.

Advantages

Comfortable:

- High induction air diffusers ensure rapid mixing of supply and room air
- Uniform, optimal flushing of the room with fresh air
- Pleasant indoor conditions due to uniform temperature distribution

Quiet: Low-noise air distribution, due to aerodynamically optimized inner cylinder contours

Variable: Limitless options for design, color and surface appearance, can be perfectly integrated in all ceilings, due to a wide selection of border profiles

Flexible: Can be adjusted to individual room conditions without affecting performance (even retroactive)

LTG System clean® – Unique and Ingenious!

Contaminants of the room air like dust, tobacco smoke, carpet abrasions or grease deposit around the ceiling diffuser. The LTG System clean® prevents surface staining almost completely by providing a screen of clean supply air across the ceiling. Benefits: The costs of renovation and maintenance are considerably reduced.


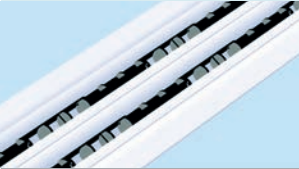
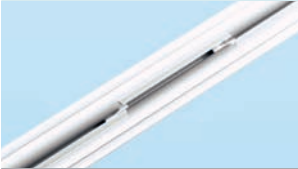
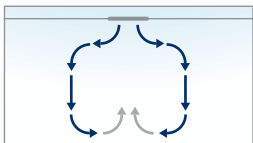
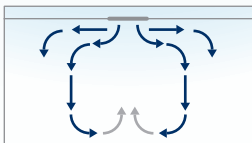
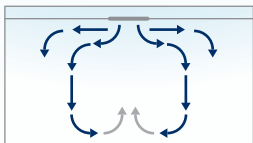
The LTG System clean® is available for the products **LDB, LDK-B and LDR** (see pages 8-9, 13-15 and 23).

Profiles and cylinders are available in all color systems (e.g. RAL, Pantone...) and can be combined individually



Product Data

NEW

	LDB 12	LDB 12/8 LTG System clean®	LDB 12/M LTG System clean®
			
Features / Application	Inconspicuous installation in shaded joints and suspended ceilings	For high comfort, additional slot in the diffuser border profile to reduce staining around the diffuser	Completely made from metal, non-flammable. Inconspicuous installation in suspended ceilings. Meets highest architectural demands with its narrow & unobtrusive design. With LTG System clean®
Number of Slots	1	1 2 3 4	1 2 3
Recommended Air Volume per Linear Foot [cfm]	12	1 slot: 12.5 2 slots: 23 3 slots: 34 4 slots: 45	1 slot: 12.5 2 slots: 23 3 slots: 34
Sound Power Level L_{WA}	35 db(A)	30 db(A)	30 db(A)
NC	20*	16*	16*
Integrated Sound Absorber to Increase Cross-talk Sound Attenuation	■	■	■
Profile Width [inch]	0.6 resp. 1.1	1.2 to 9.4	1.6 to 5
Length [inch]	up to 60	up to 80	up to 100
Diffuser Elements Adjustable	■	■	■
Connection Box with Integrated Balancing Damper	—	■	■
Air Flow Pattern			

* based on 10 dB room absorption

Choice of Border Profiles

(can be combined with LDB 12/8 and LDB 20/8)



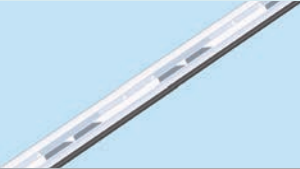
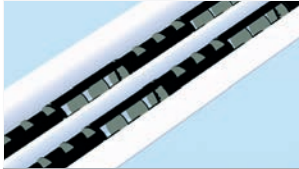
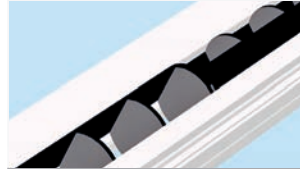







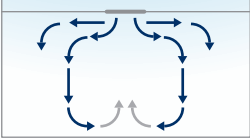
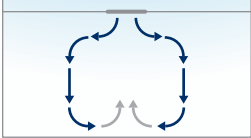
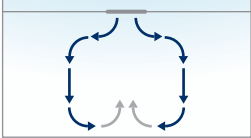
Type 5



Type 0



Type 8

LDB 15 LTG System clean®	LDB 20/8	LDB 50
		
Plug in elements, additional slot in the diffuser border profile to reduce staining around the diffuser	For high comfort	For high ceilings and large air volume
1	1 2 3 4	1 2 3
11	1 slot: 20 2 slots: 34 3 slots: 45 4 slots: 55	1 slot: 55 2 slots: 77 3 slots: 90
25 db(A)	35 db(A)	38 db(A)
< 15*	20*	25*
		
0.6 resp. 1.0	1.2 to 9.4	4 resp. 8 resp. 12
up to 80	up to 80	up to 80
		
—		—
		



Type 1



Type 4



Type 2

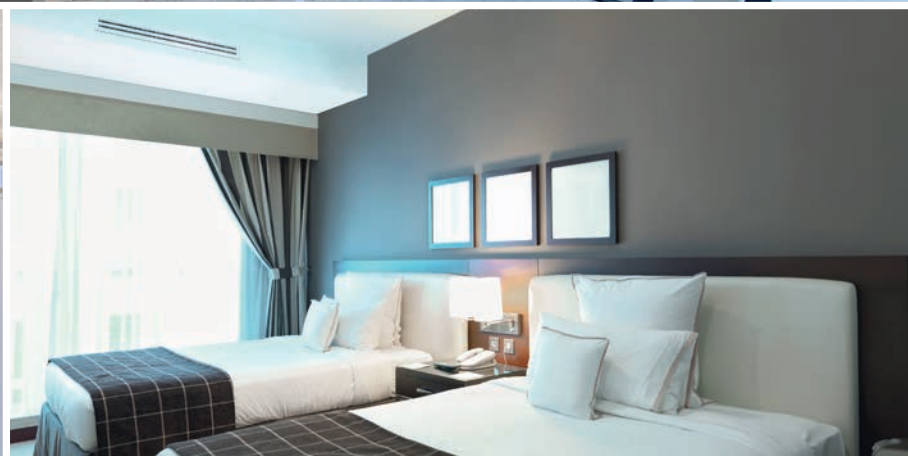
Ceiling Installation

Wall Installation

Floor Installation

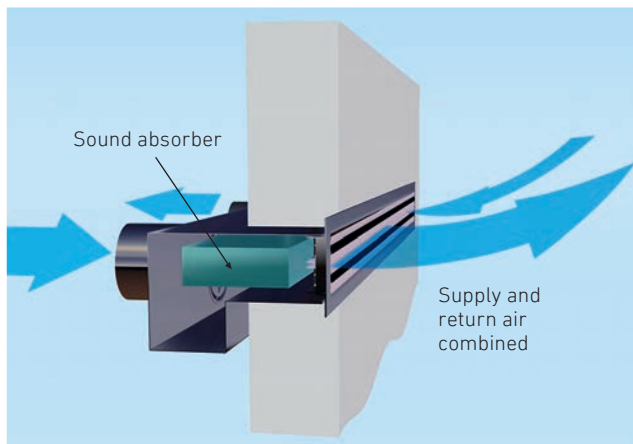
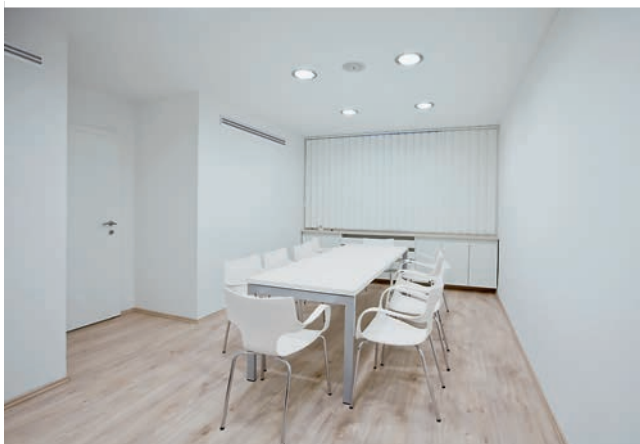
Special Diffusers

Engineering Services



Air Diffuser Combination for Wall Installation

LDK-B



LTG's LDK-B air diffuser combination provides both supply and return air diffuser in a single device. It is not only attractive in appearance, but also of outstanding performance.

Advantages

Effective: Always provides clean, fresh air through optimized ventilation effect

Quiet operation: Integrated sound absorber for high cross-talk sound attenuation

Flexible: Variable box shapes for different wall installation conditions – each one easy to mount and easy to maintain

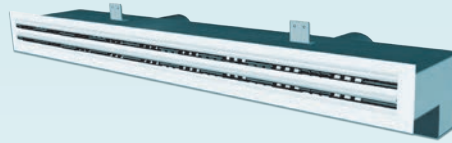
Individual: Tangential, mixed or displacement ventilation – completely based on individual needs and preferences



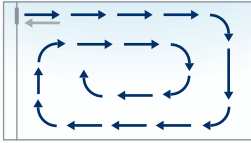
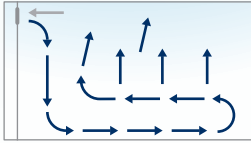
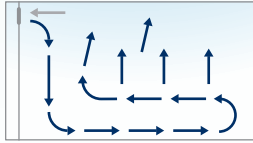
Low maintenance: Minimal staining of the adjacent surfaces, thanks to patented LTG System clean®

Also available in a custom design for supply or return air only.
Other lengths and widths as well as customized solutions available upon request.

Product Data

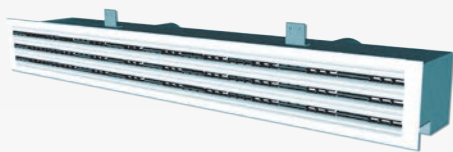
LDK-B 12/8 LTG System clean* 2 to 4 slots



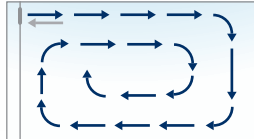
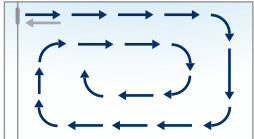
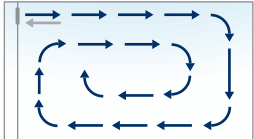


	12/8/2	12/8/3	12/8/4
LTG System clean*	■	■	■
Air Volume Supply and Return Air [cfm per linear foot] with Sound Power Level 35 dB(A) / NC = 22*	13.5	15	19
Integrated Sound Absorber to Increase Cross-talk Sound Attenuation	■	■	■
Lengths [inch]	Standard lengths 32, 35, 40 und 48. Other lengths on request.		
Standard Height with Border Profile 1 [inch]	3.85	5.1	6.3
			
Standard Height with Border Profile 8 [inch]	3.1	4.3	5.6
			
Air Flow Pattern			
	Tangential Air Flow	Mixed/Displacement Air Flow	Mixed/Displacement Air Flow

* NC based on 10 dB room absorption

LDK-B 20/8 2 to 4 slots



20/8/2	20/8/3	20/8/4	
—	—	—	LTG System clean®
16	19	21.5	Air Volume Supply and Return Air [cfm per linear foot] with Sound Power Level 35 dB(A) / NC = 22*
■	■	■	Integrated Sound Absorber to Increase Cross-talk Sound Attenuation
Standard lengths 32, 35, 40 und 48. Other lengths on request.			Lengths [inch]
3.85	5.1	6.3	Standard Height with Border Profile 1 [inch] 
3.1	4.3	5.6	Standard Height with Border Profile 8 [inch] 
			Air Flow Pattern
Tangential Air Flow	Tangential Air Flow	Tangential Air Flow	

Ceiling Installation

Wall Installation

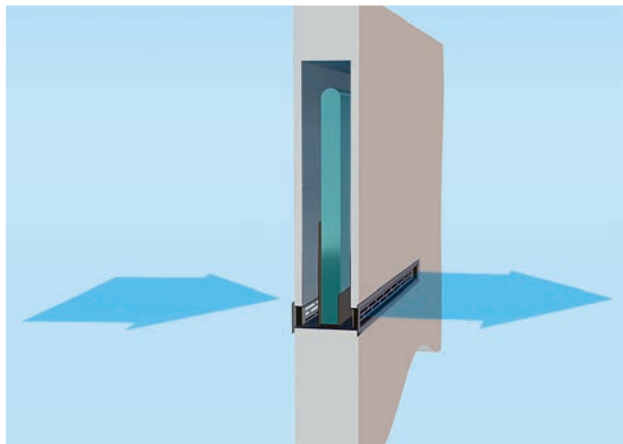
Floor Installation

Special Diffusers

Engineering Services

Air Transfer Device

LDO-T



LDO-T air transfer devices allow air to flow freely between two rooms, to balance pressure differences but also provides significant cross-talk attenuation.

Advantages

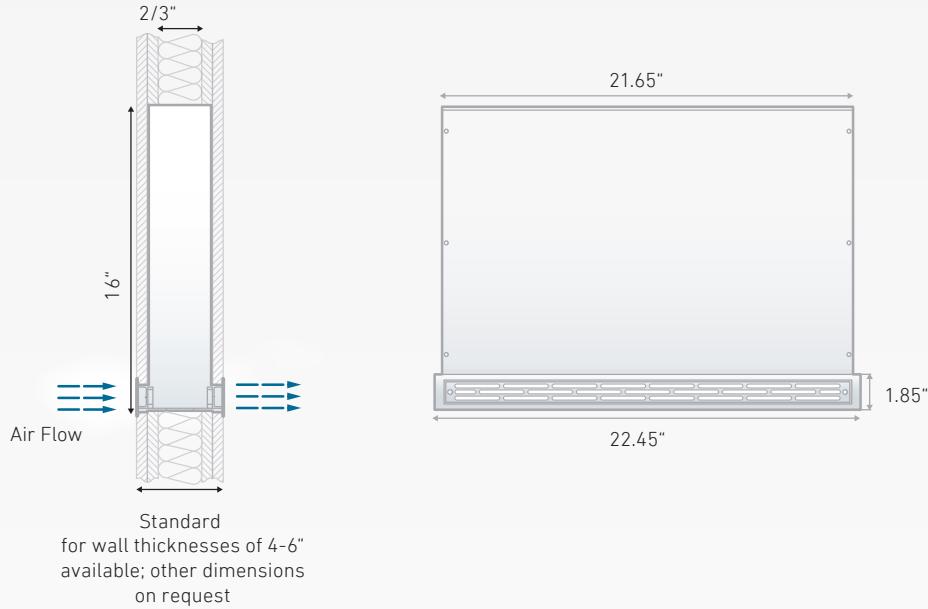
Quiet: Significant noise protection with low pressure loss

Aesthetics: Discrete and pleasing appearance in a range of anodized and coated colors

Easy installation and maintenance due to effortless removable front piece

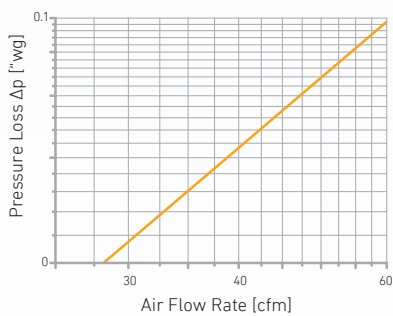
Safety: non-flammable

Installation



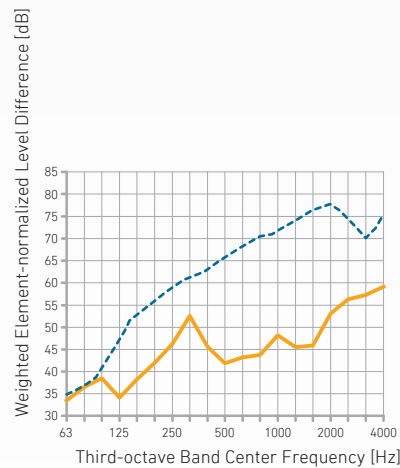
Selection Diagrams

Pressure Loss



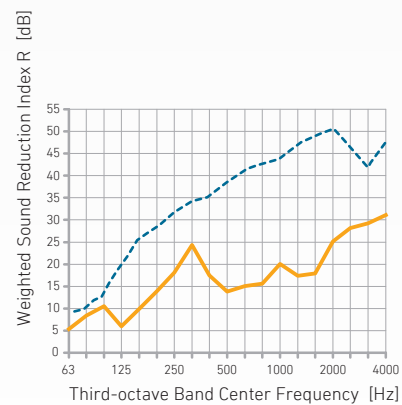
— LDO-T 550

Weighted Element-norm Sound Level Difference $D_{n,e}$



Weighted Element-normalized Sound Level $D_{n,e,w} = 47$ dB (Measurements acc. to DIN EN 20140/10)

Weighted Sound Reduction Index R



Weighted Sound Reduction Index $R_w = 19$ dB (Measurements acc. to DIN EN 20140/10)

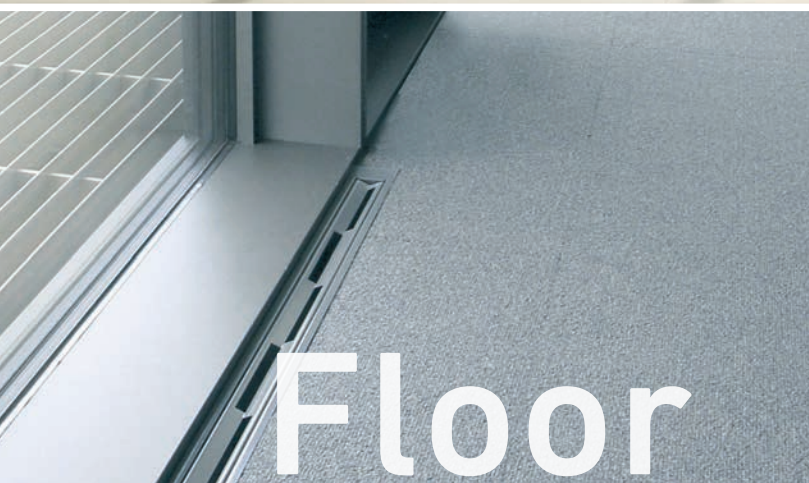
Ceiling Installation

Wall Installation

Floor Installation

Special Diffusers

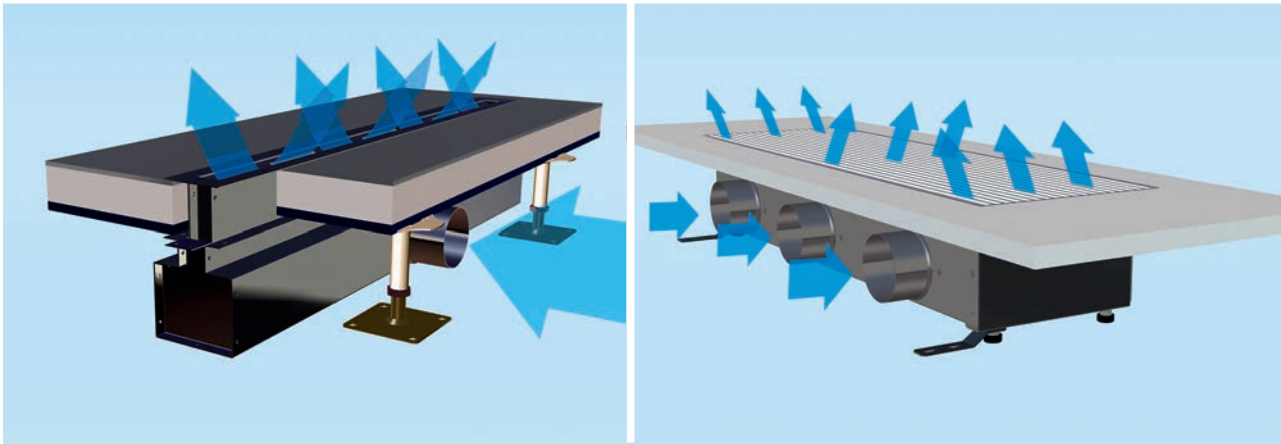
Engineering Services



Floor-mounted Linear Air Diffusers



LDU and LDU-W



From the office to the living room: Highly inductive LDU and LDU-W floor-mounted linear diffusers heat and cool rooms comfortably and draft-free.

Advantages LDU and LDU-W

Quiet and draft-free with highly efficient ventilation

Energy efficient: Thermal shielding of glass façades

A unified look meets highest demands for attractive design

Ideal for raised and pressurized floors, easy to install

Advantages LDU

Easy to clean and maintain thanks to flexible exhaust grille design, removable dirt trap and air distribution plates

Advantages LDU-W

Flexible design of exhaust grille

Height-adjustable feet, easy to align

Visual continuity with other LTG floor units

Ceiling Installation

Wall Installation

Floor Installation


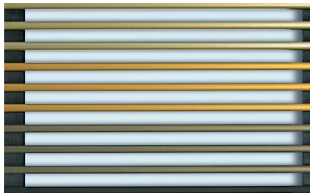


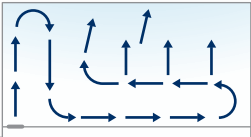
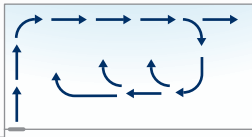
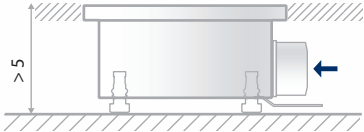
Special Diffusers

Engineering Services

Product Data

	LDU		
	LDU 30/.../S	LDU 30/.../U	LDU 30/.../-
Features	Linear air diffuser with lateral air connection socket		
Volume Flow Rate [cfm] with Sound Power Level $L_{WA} = 35 \text{ dB(A)} / NC = 22^*$ Size 800 Size 1000	45 50	70 80	50 60
Number of Slots	1 2	1	1
Integrated Sound Absorber to Increase Cross-talk Sound Attenuation	■	■	—
Air Connection Incl. Balancing Damper	■	■	—
Height-adjustable Feet	—	■	—
Air Grille	—		
Special Features	—		
Air Flow Pattern			
Side Views (not to scale, in inch)			

* NC based on 10 dB room absorption

LDU-W (with tray)			
LDU-W	LDU-W/H		
Linear air diffuser with foot traffic resistant grille	Linear air diffuser with foot traffic resistant grille and integrated reheater	Features	Choice of Grades and Grilles for LDU-W and LDU-W/H
up to 140 up to 180 up to 205 up to 235	115 140 190 235	Volume Flow Rate [cfm] with Sound Power Level $L_{WA} = 35 \text{ dB(A)} / NC = 22^*$ Size 850 Size 1050 Size 1250 Size 1450	 <p>Aluminum Linear Grille in All Anodized and Color Shades</p>
1 to 5 slots	5	Number of Slots	
—	—	Integrated Sound Absorber to Increase Cross-talk Sound Attenuation	 <p>Aluminum Roller Grille in All Anodized Shades and Custom Look</p>
■	■	Air Connection incl. Balancing Damper	
■	■	Height-adjustable Feet	 <p>Stainless Steel Linear Grille</p>
Foot traffic resistant roller grille or linear grille		Air Grille	
Can be combined with LTG floor fan coil units within the LTG system design		Special Features	 <p>Wooden Roller Grille in Various Wood Varieties</p>
 		Air Flow Pattern	
		Side Views (not to scale, in inch)	

Ceiling Installation

Wall Installation

Floor Installation

Special Diffusers

Engineering Services



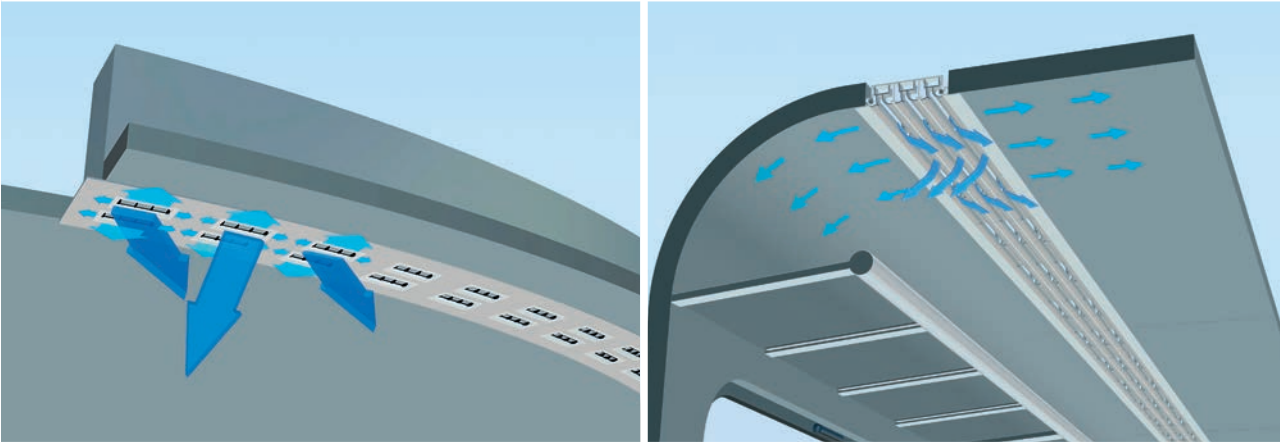
Special Diffusers

LTG's special diffusers are developed to suit requirements of production industry and other applications like railway technology. Flexibility in appearance combined with unparalleled performance.



Circular and Metal Air Diffuser

LDR and LDB 12/M LTG System clean®



The right diffuser for every requirement – in an attractive look and with highest thermal comfort.

Advantages

Comfortable:

- rapid mixing of fresh air and room air through highly inductive multi-single-jet technology
- uniform, ideal flushing of the room with fresh air

Flexible: Individually configurable air flow pattern depending on usage area – from the entrance area to the passenger cabin, from museum to show-room

Low maintenance: minimum surface staining near the diffuser thanks to patented LTG System clean®

Advantages LDR

Limitless design options – whether as a visible design element with straight or curved lines, or almost invisible: any requested shape and color available

Different flow configurations through adjustable elements

A safe investment: Easy to adjust later on to changed room conditions

Advantages LDB 12/M LTG System clean®

Vandalism-proof and non-flammable: the successful LDB-series now also available **made entirely from metal**

Quiet: Low-noise air distribution through aerodynamically optimized inner cylinder contours

Narrow and unobtrusive – perfectly integrable into train ceilings

Customized solutions on request.

Ceiling Installation

Wall Installation

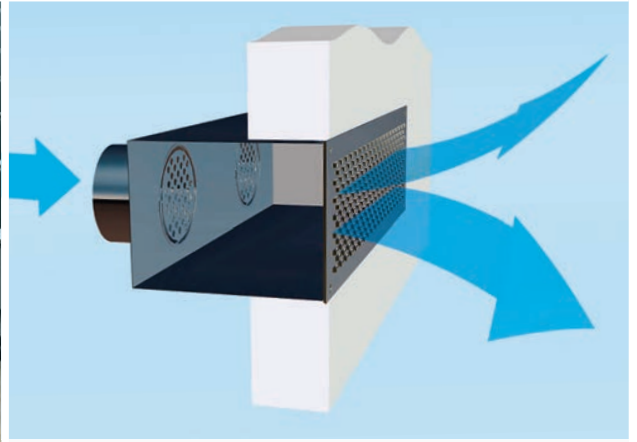
Floor Installation

Special Diffusers

Engineering Services

Step Diffuser

BLQ



The BLQ step diffuser ensures effective ventilation of large rooms and is especially suitable for cinemas, theatres or concert halls.

Advantages

Uniform air distribution, without draft, at **large temperature differences**

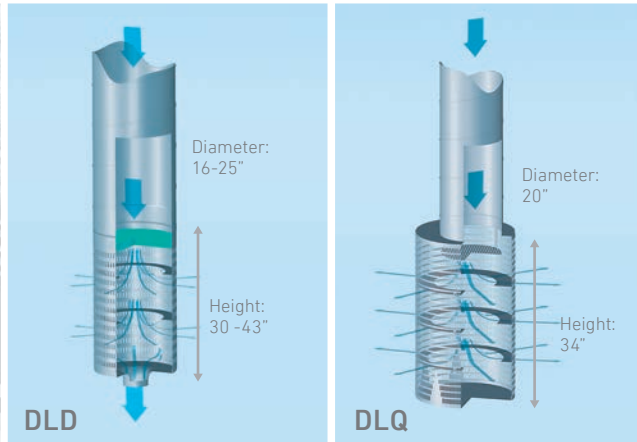
Discrete: Installation into steps allows the outlet to blend in with existing architecture

Color scheme based on customer's individual choice, and available in any color system, such as RAL, Pantone and many more. Custom designs (such as anodized or stainless steel) upon request.

Special dimensions upon request.

Displacement Air Diffusers

DLD and DLQ



Especially suited for industrial and production halls, lobbies, entrance and work areas, as well as sports facilities.

Advantages DLD

High-output: High cooling and heating performance possible (air volume 600-5500 cfm)

Space-saving: a single device for heating and cooling

Variable use: at ceiling heights from 10' to 35'

User-friendly, due to **individually adjustable air stream**

Pleasant, uniform temperature air distribution with no risk of draft, even when installed inside the occupied zone

Advantages DLQ

Especially well-suited for work areas **where overhead ventilation is not possible or where inductive mixed ventilation is not desired**

Very quiet with large air volumes:
NC 20 at 600 cfm

Flexible: Can be installed up to 14' high or on the floor

Pleasant and draft-free, but still extremely powerful (air volume up to 1100 cfm)

Ceiling Installation

Wall Installation

Floor Installation

Special Diffusers

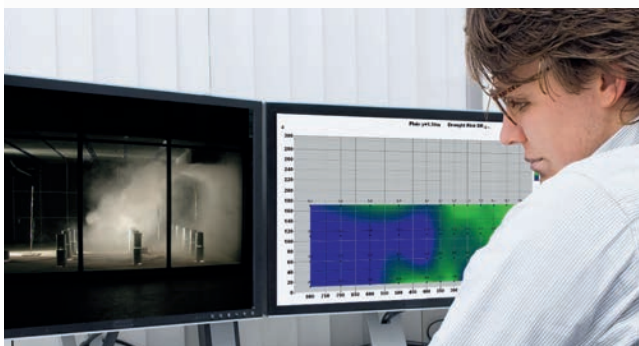
Engineering Services

LTG Engineering Services – more safety for your investments!

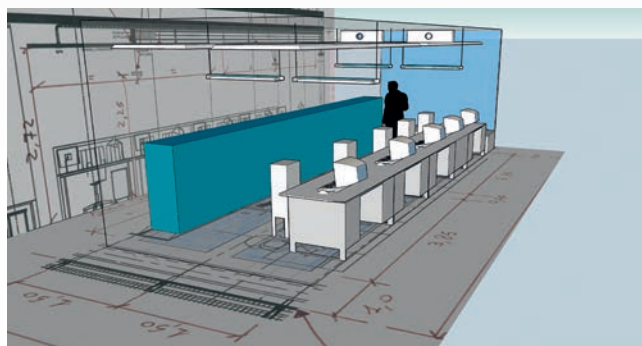
LTG Engineering Services offer reliable and detailed reports with recommendations regarding function and costs for comfort air technology installations prior to final design. As early as the initial design concept for a new building or a renovation, we determine facts and data precisely for you to secure your investment. Benefit from decades of experience and expertise!

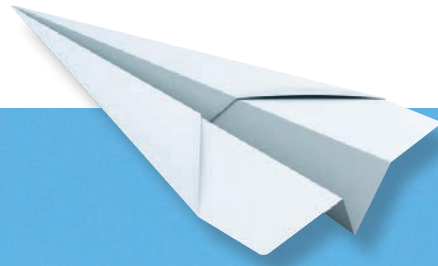
Your advantages

- **Cost optimized from the very beginning:** Investment cost, energy consumption and operating cost can be reliably calculated and specifically reduced in the planning stage.
- **Implementation risks** can be almost completely **eliminated**.
- **User-friendly and comfortable:** The greatest possible thermal and olfactory comfort through simulation and testing
- **Safety** when renovating air systems
- Reduced on site commissioning due to **factory presets**.
- **Choice of the best climate system design** to suit each building type
- Benefit from our **modern development center with various flow laboratories, reverberation chamber, a calorimetric test stand and simulation tools** for optimizing your project.



Air Flow Visualization





Our services

- **Realistic space flow tests** in various scales (model tests or full scale) for simulating and optimizing of ventilation and temperature systems
- **Comfort parameter measurements** according to DIN EN ISO 7730, and **room conditioning evaluation** in the lab and on site
- **Evaluation and optimization** of existing ventilation systems and devices
- Evaluation and **visualization of air flows**, and **calculation of pressure losses, heat flows, ventilation efficiency** and much more, including Computational Fluid Dynamics (CFD) simulation
- **Dynamic building simulation** for calculating room conditioning and energy consumption of free or mechanically ventilated buildings (daily temperature variation, heating and cooling loads)
- Acoustic and aerodynamic investigations – on site, if desired – **for assessing noise, sound level, attenuation characteristics, flow rate and pressure loss** of air flow products and devices
- Implementation and validation of your design ideas through **construction, measurement and cost optimization**
- **Comparative studies of various room conditioning systems** as to cost of investment, operation and life cycle cost

LTG Engineering Services provide sound, detailed answers to your design questions. Talk to us!



Reverberation Chamber



Air Flow Laboratory



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