

Industrial Air Diffusers Type LTB/LTC



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The Program for Room Air Technology

Components

Air diffusers for walls, floors and ceilings · LTG System clean[®] · linear diffusers Coandatrol[®] · ceiling air diffusers Coadavent[®] · displacement diffusers · LTG chilling fans cool wave[®] · induction units Klimavent[®] · fan coil units Raumluft · ceiling fan coil units Ventotel[®] · facade fan coil units · airflow control units · labair[®] system

Engineering services

Technical services for investors, architects, engineers and plant builders during design, construction and operation of buildings. Reliable and precise data relating to the ventilation of air conditioning system are given already before realization of the project, determined by measurements, calculations, building simulations and experiments.

Components for Process Air Technology

Japan

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The Program for Process Air Technology

Components

Axial-flow, centrifugal and tangential fans · Collector system for: coarse and fine particle filtration, separating and compacting, compressing and humidifying.

Engineering services

Technical services for construction engineers and plant designers during development and operation of assembly groups, machines and plants.

Industrial Air Diffusers Type LTB/LTC

Application

Our industrial air diffusers, type LTB and LTC, have been specially designed for airconditioning industrial facilities with heavy heat and dust loads. These diffusers ensure a thorough and draftfree ventilation of the production areas.

The two types are identical in shape, but differ in the hole pattern of the air outlets, thus determining the actual air volume range.

LTB is for larger and LTC for smaller air quantities.

The diffuser can be connected directly to the supply air ducts or mounted below a dropped ceiling and connected to the duct with a sliding connection piece.

Functional Principle

The hole pattern of the air diffuser, optimized by air flow tests, divides the supply air into numerous individual jets.

These jets are then reduced locally in areas of mixed air, all along the range of the jets.

The jet width has been chosen in a way to ensure that the temperature and speed differentials are reduced close to zero when reaching the occupied zone without producing any areas of rising air due to induction.

Thus, the air jets provide a steady flow pattern, even with high specific loads.

Advantages

- High capacity of the air diffuser ensuring a high specific cooling capacity.
- Low air speed in the occupied zone.
- Excellent ventilation of the occupied zone.
- No raising or circulating of dust.
- Diffuser with dust protection.
- Reduction of dust level.



Air diffusers type LTB directly connected to the supply air duct, with lateral air injection.



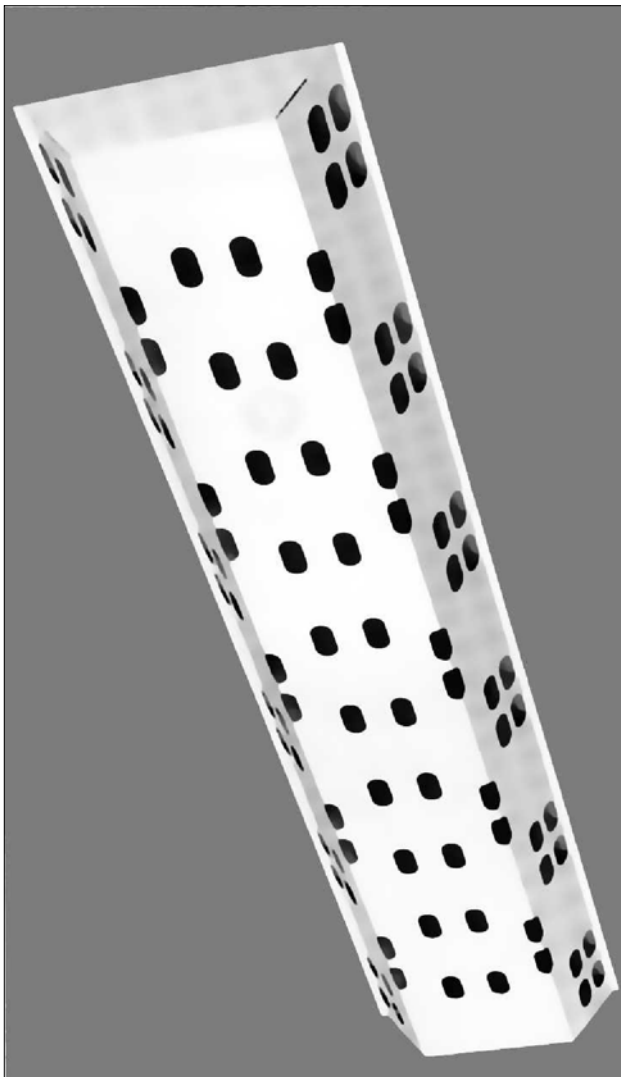
Air diffusers type LTB installed below the dropped ceiling with the supply air ducts above

Industrial Air Diffusers Type LTB/LTC

The Product Range

Diffuser type	Size	Volume flow rate [m ³ /h]	Installation height [m]	Temperature difference t _{ZU} - t _R [K]	Static duct pressure * [Pa]
LTB	900	1200 - 1800	4 - 6	-2 to -10	60 / 100
	1350	1800 - 2700			
	1800	2400 - 3600			
LTC	900	350 - 550	3 - 4	-2 to -10	20 / 40
	1350	500 - 800			
	1800	700 - 1100			

* A duct dimensioning program is available. The air speed inside the duct for type LTB is:
 $v_{LTBmax} = 10$ m/s, for the type LTC: $v_{LTCmax} = 8$ m/s.



Diffuser Type LTB

Selection

There is an upper and a lower limit for the air volume per diffuser. The maximum admissible speed in the occupied zone sets the upper limit. And in order to ensure a steady air flow pattern and a correct distribution of the air inside the duct, the minimum values per diffuser must not be beyond those given in the selection diagram.

Example in the selection diagram

Air Volume:

1600 m³/h for the diffuser size 900 or
 2400 m³/h for the diffuser size 1350 or
 3200 m³/h for the diffuser size 1800

Installation height:

(floor to upper edge outlet)
 = 5 m

Resulting in a
max. speed in the occupied zone
 of 33 cm/s.

This is the maximum value. The medium speed is lower.

Resulting from the air volume and the installation height,
the duct distance (center / center duct)
 is 7,5 m in order to still ensure a complete room ventilation.

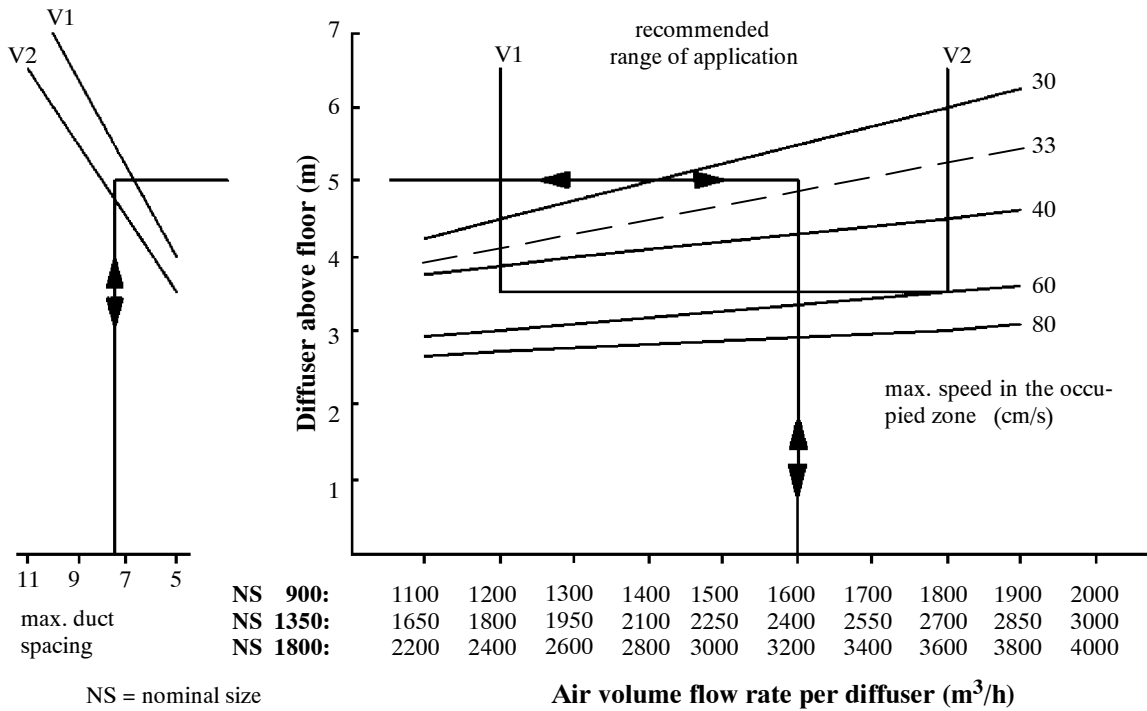
Resulting from the diffuser size, the
standard duct length is

$L_{\text{standard duct length}} = \text{size (in mm)} + 200 \text{ mm}$

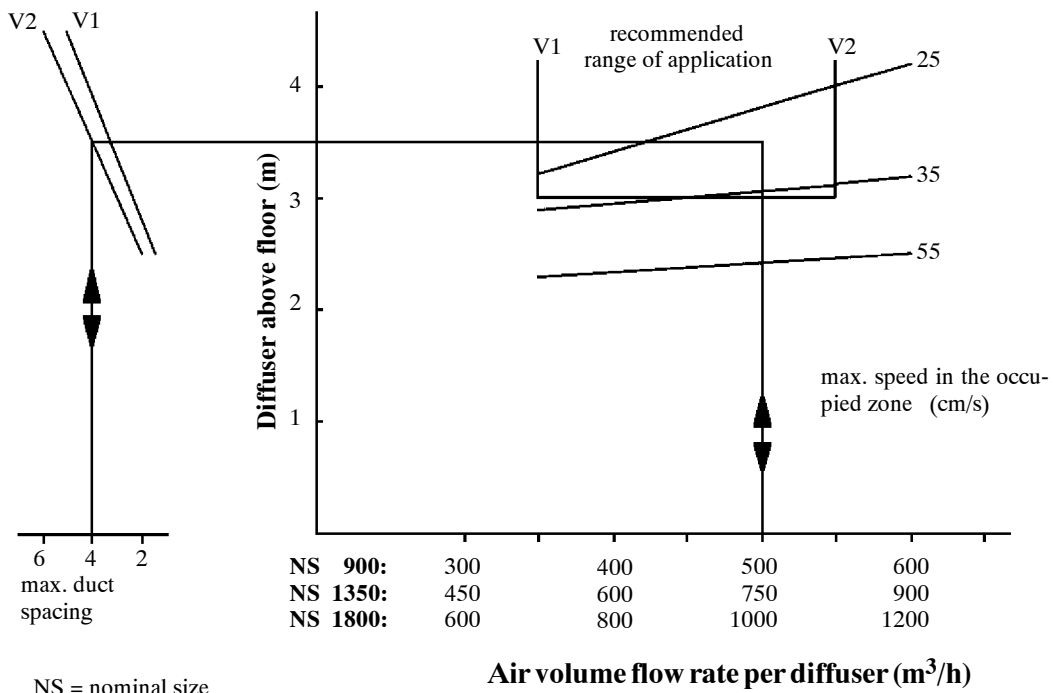
Selection for type LTC can be made in a similar way.

Industrial Air Diffusers Type LTB/LTC

Industrial air diffuser type LTB Selection diagram for temperature differences of -2K to -10K



Industrial air diffuser type LTC Selection diagram for temperature differences of -2K to -10K



Industrial Air Diffusers Type LTB/LTC

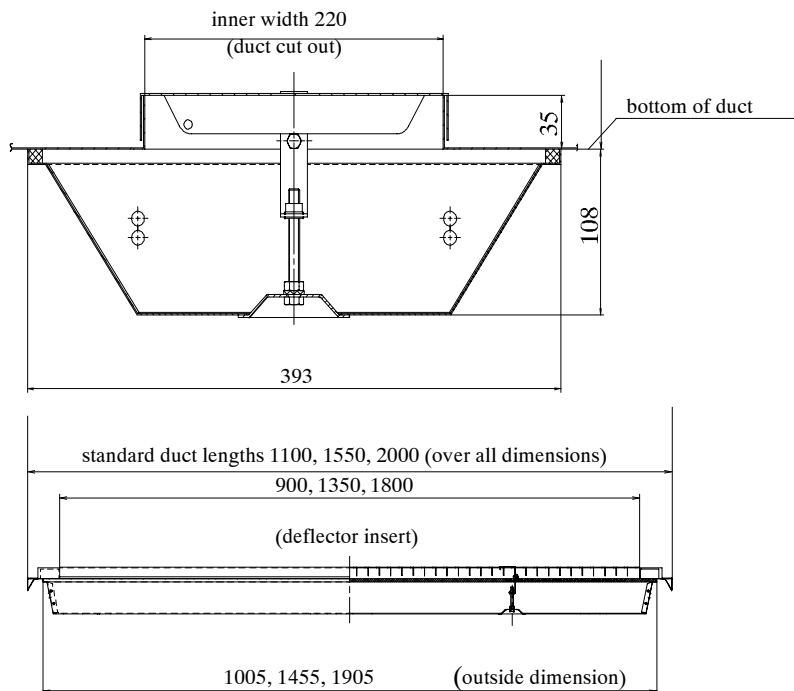
Installation example:

Direct connection to the duct

The delivery includes:

- Air outlet unit
- Deflector insert
- Suspension with safety loop

The duct with cutout and end cover is not included.



Installation example:

Installation below dropped ceilings, including adjustable connection piece

The delivery includes:

- Air outlet unit
- Deflector insert
- Suspension with safety loop
- Adjustable connection piece

The duct with cutout and end cover is not included.

The sliding connection piece comprises of two pieces:

- the lower part with the standard height of 130 mm
- the upper part with a standard height of 100 mm or 200 mm or 300 mm

Nominal height Setting range

170 mm	130...210 mm
270 mm	230...310 mm
300 mm	330...410 mm

