

LINEAR DIFFUSERS

BF.DUC



CONSTRUCTION FEATURES:

The single slot linear diffusers with concealed perimeter frame of the BF.DUC series are generally installed in spaces with a height of between 2.7 and 4.0 m and with ventilation systems operating within ± 10 K temperature differential between internal and supplied air. The most frequently used type of installation is flush with plasterboard, with ceiling installation (vertical throw) and on the wall (horizontal throw). In the wall installation, if the distance between the upper edge of the diffuser and the ceiling is less than 200 mm, a Coanda effect is obtained; otherwise, a free throw is achieved. The concealed perimeter frame, designed to facilitate positioning on plasterboard, makes the BF.DUC series highly appreciated by designers who find in it not only functionality but also furnishing motifs. They can be used for both supply and return and in systems with variable air flow rates in the range 50...100%. In the special execution, they can be mounted one after the other to make continuous lines which, with the use of particular inactive corner pieces, are able to follow the ideal line of the perimeter of the room.

FIXING

Based on plenum box choice.

MATERIALS

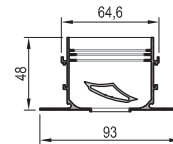
Perimeter frame, inverted T profiles, end caps, spacers and flow deviating blades in extruded aluminum painted in white, RAL 9016 or black, RAL 9005.

Equalising stretched sheet and slinding damper in galvanized steel.

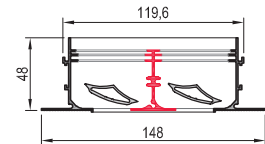
Plenum box in galvanized sheet steel; possible external insulation in polyethylene foam (fire reaction Euroclass, according to UNI EN 13501-1:2009, B-s2, d0).

n° of slots	lenght	n° of inlets	Ø inlet
	mm		mm
1 BF.DUC.1	1000	1	150
	1500	2	
	2000	3	
	2500	3	
	3000	4	
2 BF.DUC.2	1000	1	200
	1500	2	
	2000	3	
	2500	3	
	3000	4	

BF.DUC.1

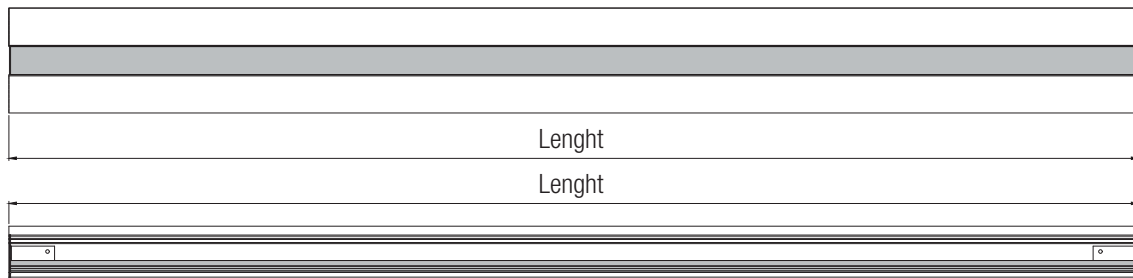


BF.DUC.2

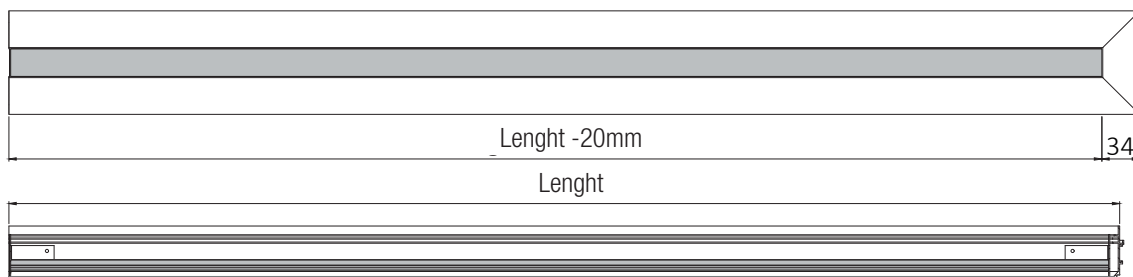


DIMENSIONS - customized lenght on request

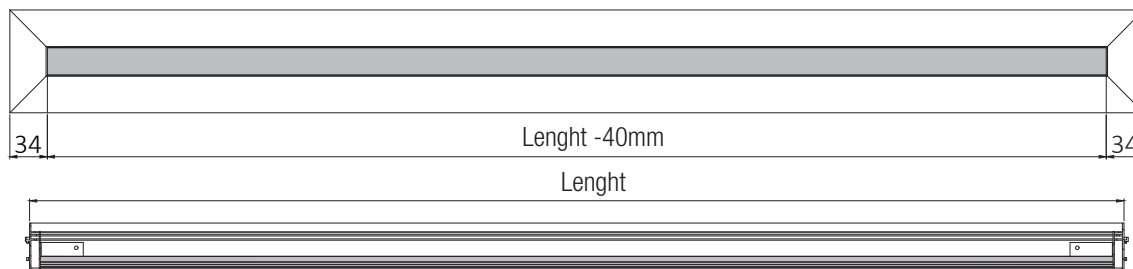
BF.DUC.1.NT



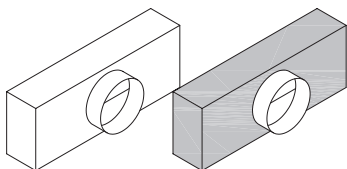
BF.DUC.1.T1



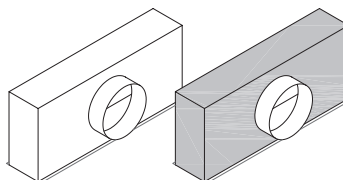
BF.DUC.1.T2



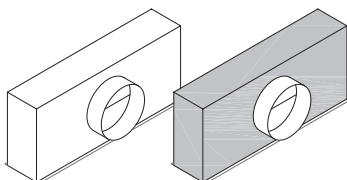
ACCESSORIES

**PL.BF and PL.BF.ISO**

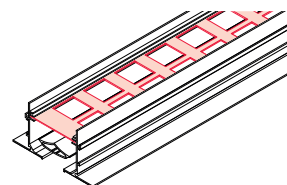
Plenum box, with or without external insulation, with lateral circular inlet, riveted in the factory to the diffuser.

**PL.BF.PE and PL.BF.PE.ISO**

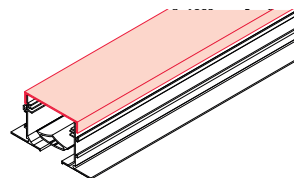
Plenum box, with or without external insulation, with lateral circular inlet and external perimeter flange with internal support brackets for diffuser installation.

**PL.BF.PC and PL.BF.PC.ISO**

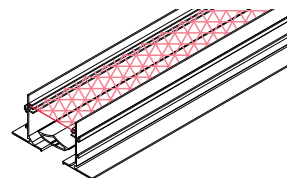
Plenum box, with or without external insulation, with lateral circular inlet and external perimeter flange with fixed and sliding u-brackets for diffuser installation.

**SER.BF**

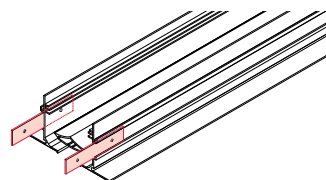
Sliding regulation damper, handling from the front of the diffuser.

**TEG.BF**

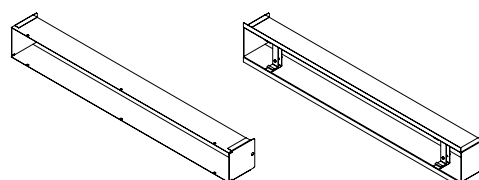
Closing plate for the air passage, suitable for making part of the diffuser inactive.

**LE.BF**

Equalising stretched sheet steel fitted on the back of the diffuser.

**PG.BF**

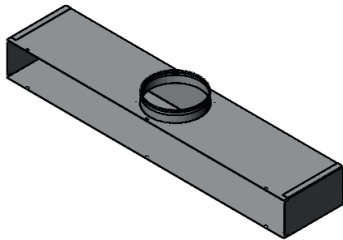
Steel junction plate for diffusers alignment.

**CM.BF**

Open end frame, riveted or screwed to the diffuser.

PLENUM BOX

PL.BF / PL.BF.ISO



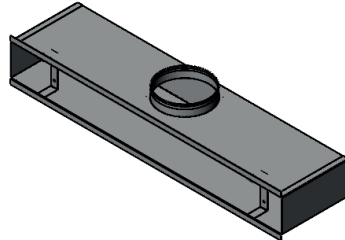
Galvanized steel plenum box

- riveted to the diffuser.
- standard inlet or with built-in damper on request.
- eyebolts for fixing.

PL.BF.ISO: external insulated version with CE marked polyethylene foam (Euroclass of reaction to fire, according to UNI EN 13501-1:2009, B-s2, d0).

Note that the insulation layer provides +6mm thickness on each covered side.

PL.BF.PE / PL.BF.PE.ISO



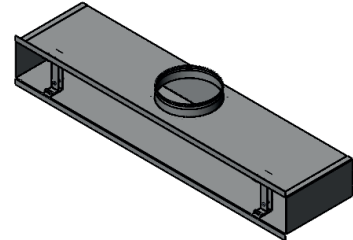
Galvanized steel plenum box

- diffuser to be installed on site.
- standard inlet or with built-in damper on request.
- outer perimeter flange (including inner support brackets for the diffuser frontal installation).
- eyebolts for fixing.

PL.BF.PE.ISO: external insulated version with CE marked polyethylene foam (Euroclass of reaction to fire, according to UNI EN 13501-1:2009, B-s2, d0).

Note that the insulation layer provides +6mm thickness on each covered side.

PL.BF.PC / PL.BF.PC.ISO



Galvanized steel plenum box

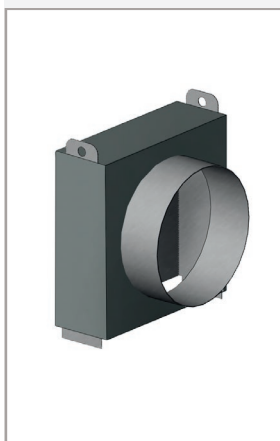
- diffuser to be installed on site.
- standard inlet or with built-in damper on request.
- outer perimeter flange (including u-brackets for the diffuser frontal installation).
- eyebolts for fixing.

PL.BF.PC.ISO: external insulated version with CE marked polyethylene foam (Euroclass of reaction to fire, according to UNI EN 13501-1:2009, B-s2, d0).

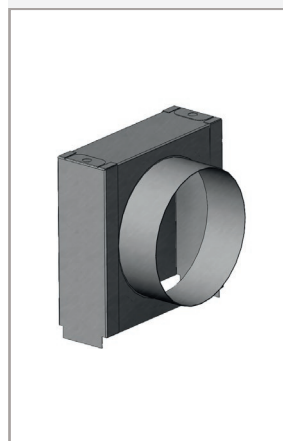
Note that the insulation layer provides +6mm thickness on each covered side.

PARTS IN DETAIL

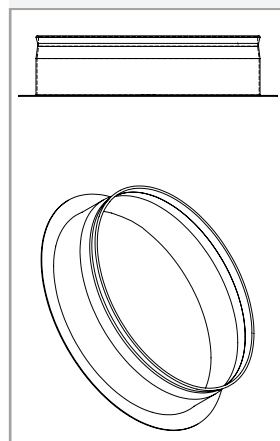
Straight eyebolts for fixing in a PL.ISO (insulated)



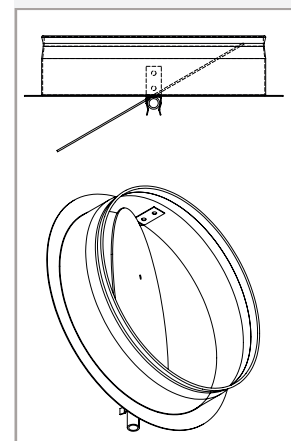
Folded eyebolts for fixing in a PL. (non insulated)



Standard inlet



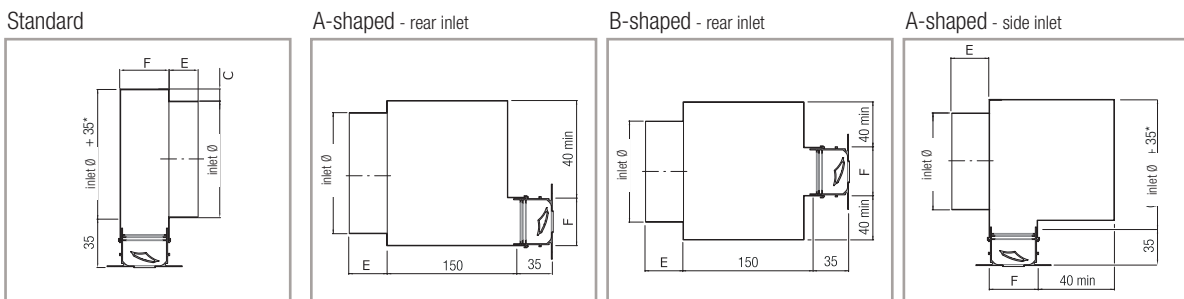
Inlet with built-in damper



DIMENSIONS

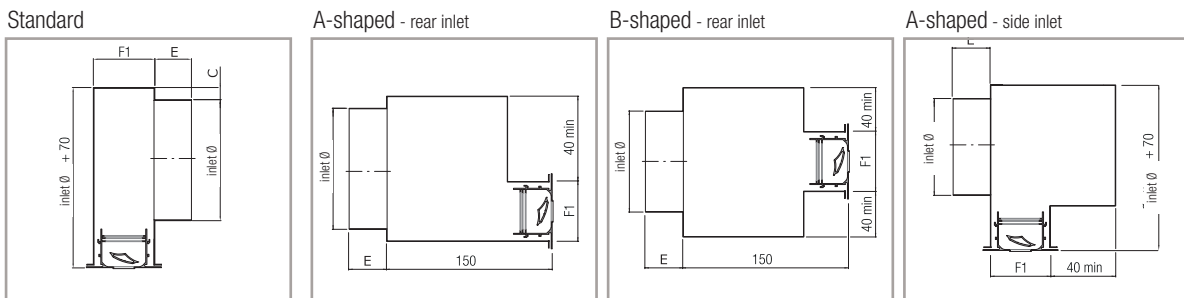
N° of slots	Inlet Ø	F	F1	C	E
	mm	mm	mm	mm	mm
1 - BF.DUC.1	150	63	75	15	40
2 - BF.DUC.2	200	118	130	15	40

POSSIBLE SHAPES FOR PLENUM PL.BF / PL.BF.ISO



*Ø + 50 with inlet with built-in damper

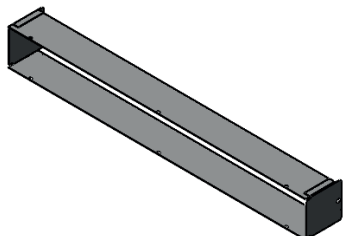
POSSIBLE SHAPES FOR PLENUM PL.BF.PC / PL.BF.PC.ISO / PL.BF.PE / PL.BF.PE.ISO



The air flow damper is not the same product (SER.BF) mentioned in the accessories page. SER.BF is located in the diffuser.

FRAMES

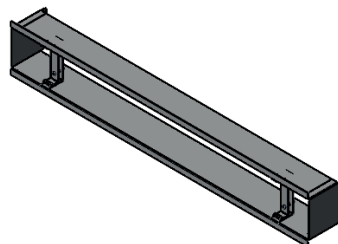
CM.BF



Galvanized steel frame

- riveted to the diffuser.
- eyebolts for fixing.

CM.BF.PC



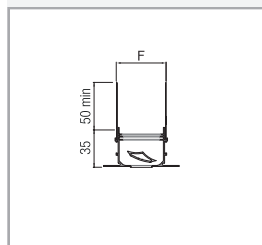
Galvanized steel frame

- diffuser to be installed on site.
- outer perimeter flange (including u-brackets for the diffuser frontal installation).
- eyebolts for fixing.

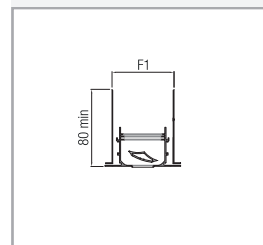
DIMENSIONS

N° of slots	F	F1
	mm	mm
1 - BF.DUC.1	63	75
2 - BF.DUC.2	118	130

CM.BF

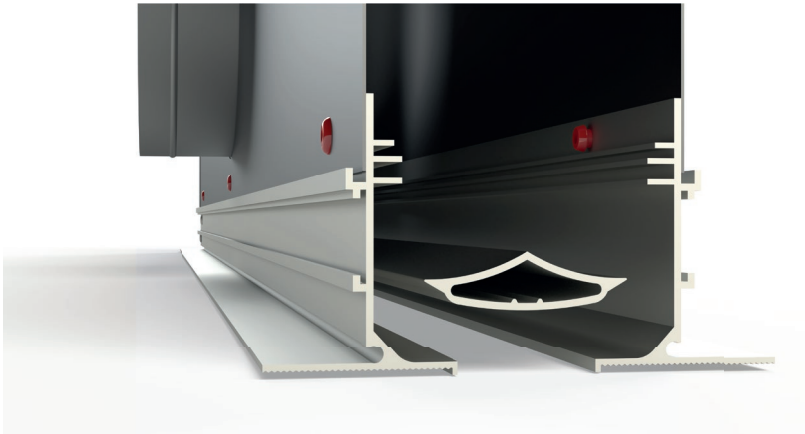


CM.BF.PC

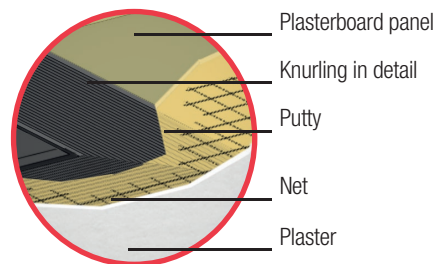
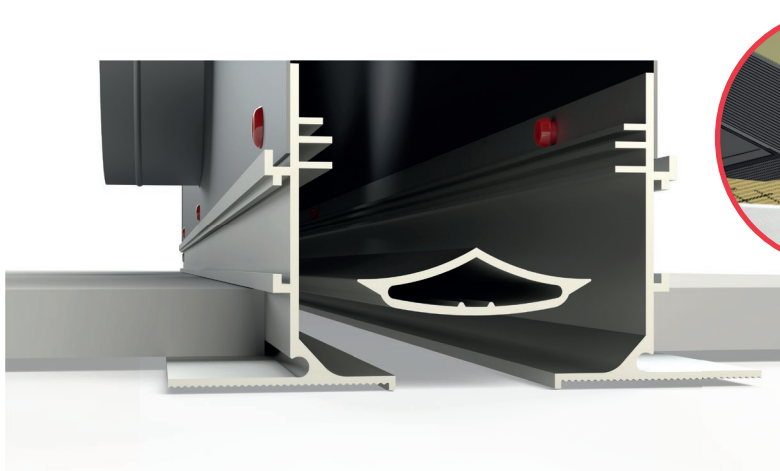


PL.BF INSTALLATION

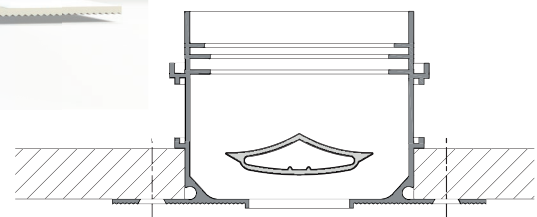
Riveted PL.BF on the diffuser



Before plastering



Assembly with screws
Screws at customer's expenses

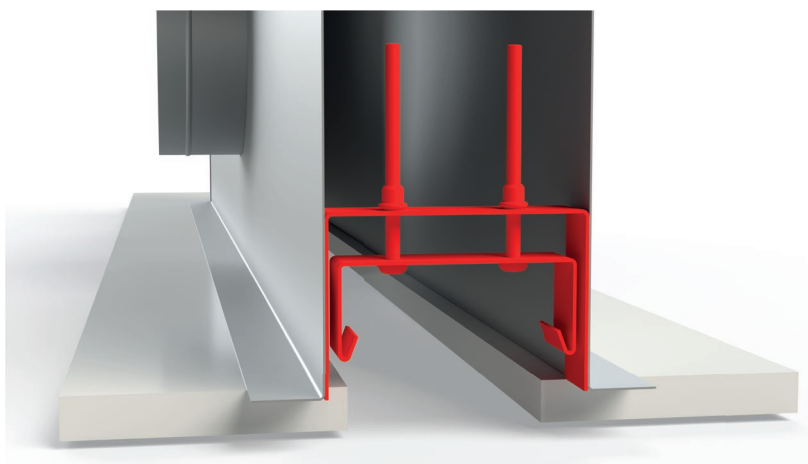


After plastering - Final result

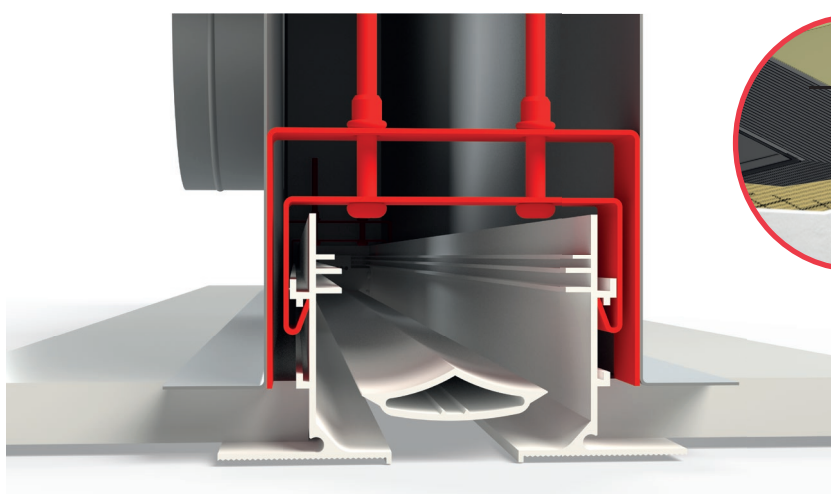


PL.BF.PC INSTALLATION

Plenum PL.BF.PC on plasterboard



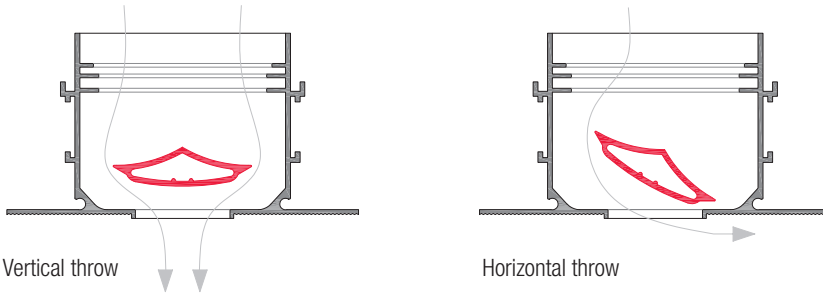
Before plastering



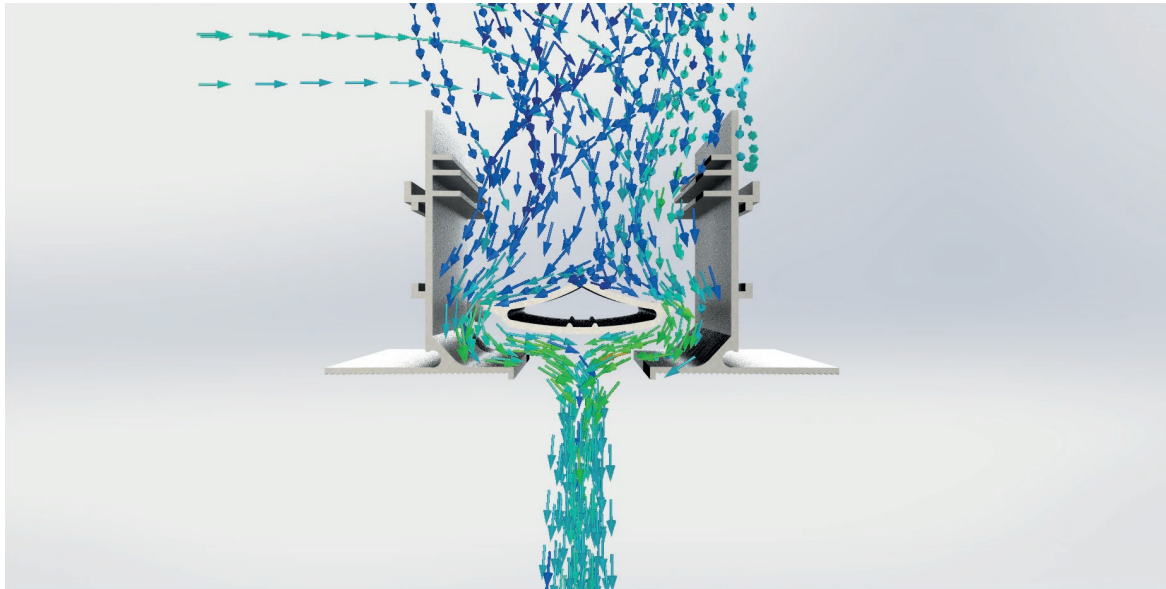
After plastering - Final result



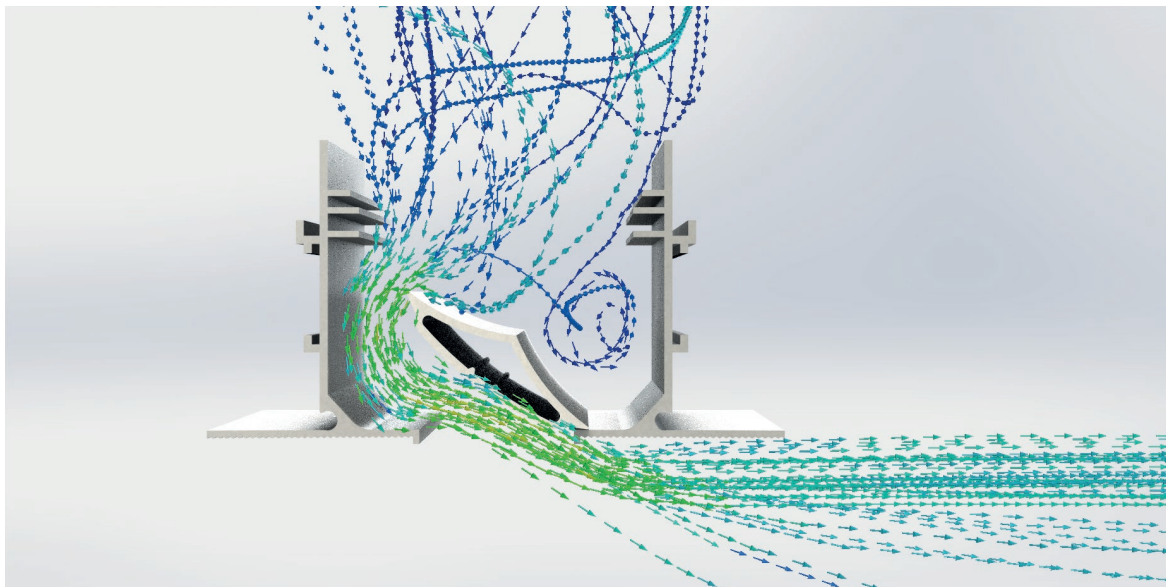
Throw direction



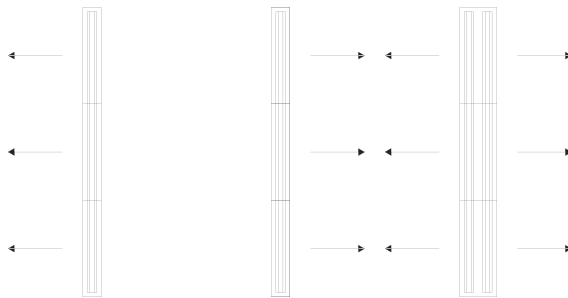
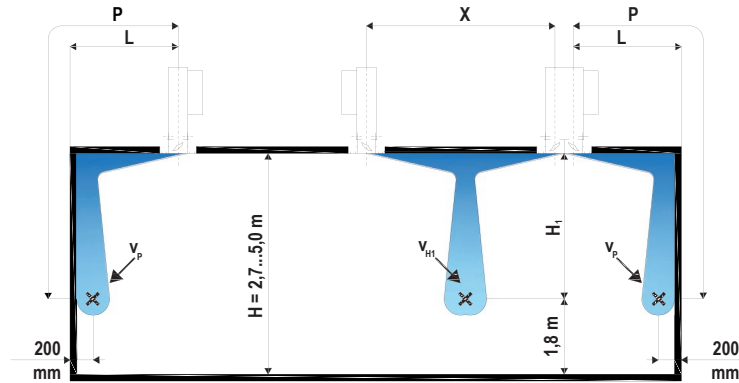
Vertical throw



Horizontal throw



TECHNICAL DATA

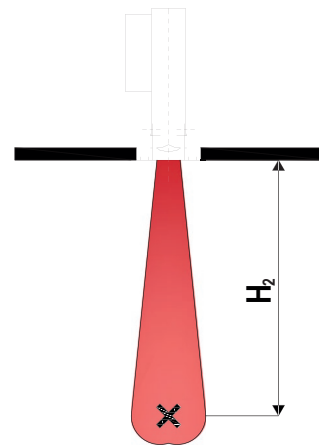


- Q flow rate per linear metre diffuser
- X or Y distance between two diffusers
- L distance between the center of the diffuser and the wall
- P horizontal distance L + vertical H_1 for throw towards the wall
- H_1 distance between ceiling and living area
- H_2 penetration depth during heating
- v_{H1} average velocity between two diffusers at distance X
- v_P average velocity at 200mm from the wall at distance P
- k Correction factor for v_{H1}

Free area of passage

A_{eff} in m^2 per $L = 1000mm$

	Throw from ceiling	
	horizontal	vertical
BF.DUC (per feritoia)	0,011	0,018



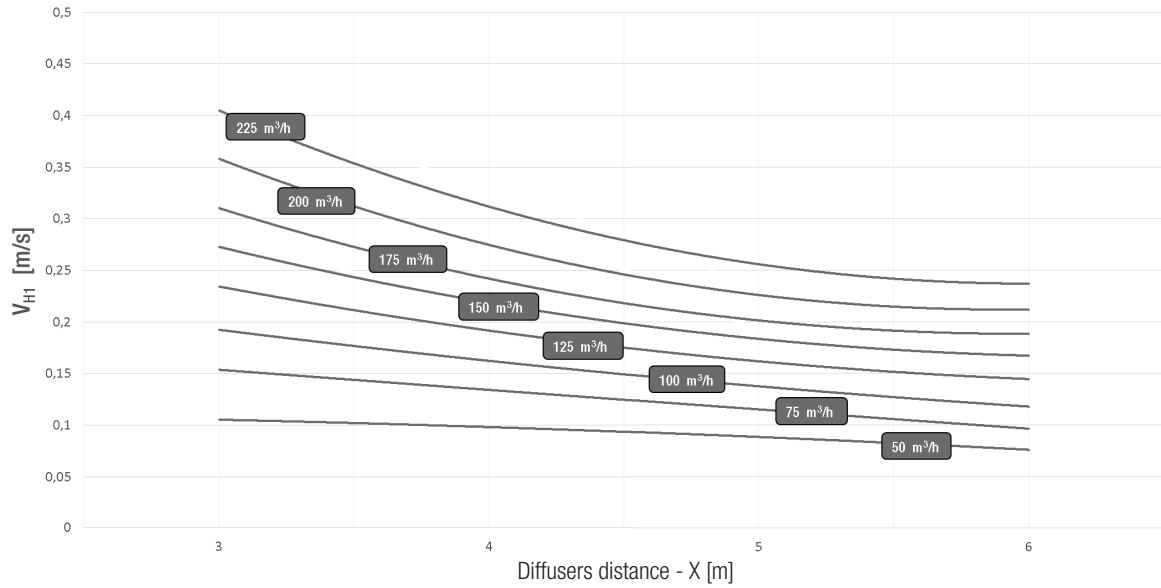
Quick selection chart

	L	Qmin		Qmax		$L_{WA}min$	$L_{WA}max$	$\Delta pmin$	$\Delta pmax$
	mm	l/s	m^3/h	l/s	m^3/h	dB(A)	dB(A)	Pa	Pa
BF.DUC.1	1.000	21	75	83	250	<20	46	7	50
BF.DUC.2	1.000	21	125	83	400	<20	46	7	50

- Q flow rate per linear metre diffuser
- L_{WA} "A" ponderated sound power level, correction according to UNI EN ISO 3741
- Δp static pressure drop

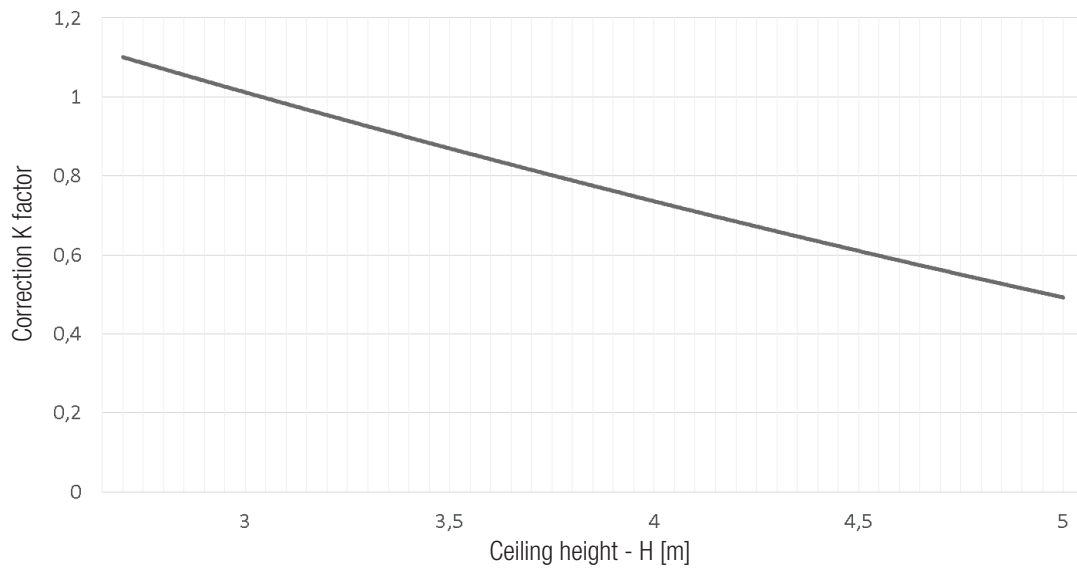
DUC 1 - AEREAULIC DATA - COOLING ($\Delta T = 10\text{ }^{\circ}\text{C}$)

Ceiling diffusers with opposite horizontal throw ($H = 3\text{ m}$)

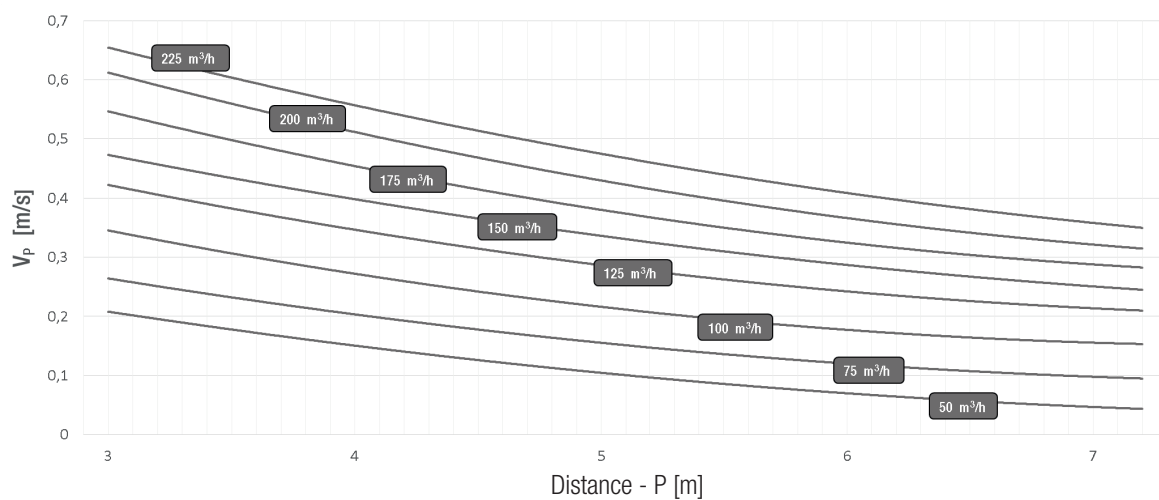


Correction for H different from 3 m

$$Vel V_{H1} (\text{ with height } H) = Vel V_{H1} (\text{ with 3m height }) * k$$

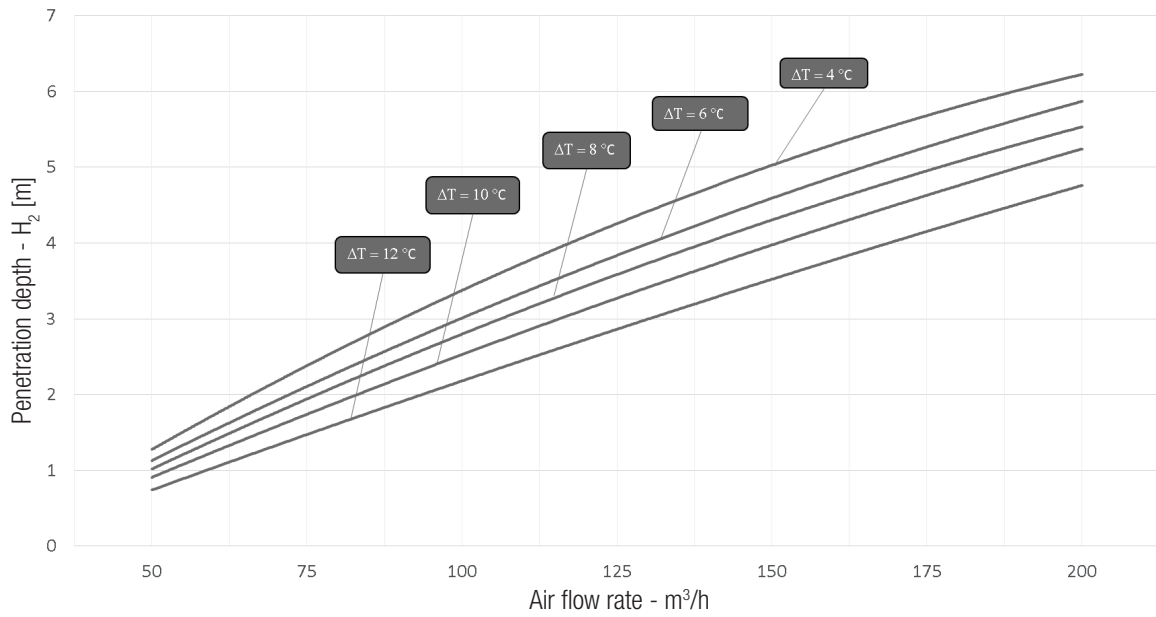


Ceiling diffuser with horizontal throw from wall



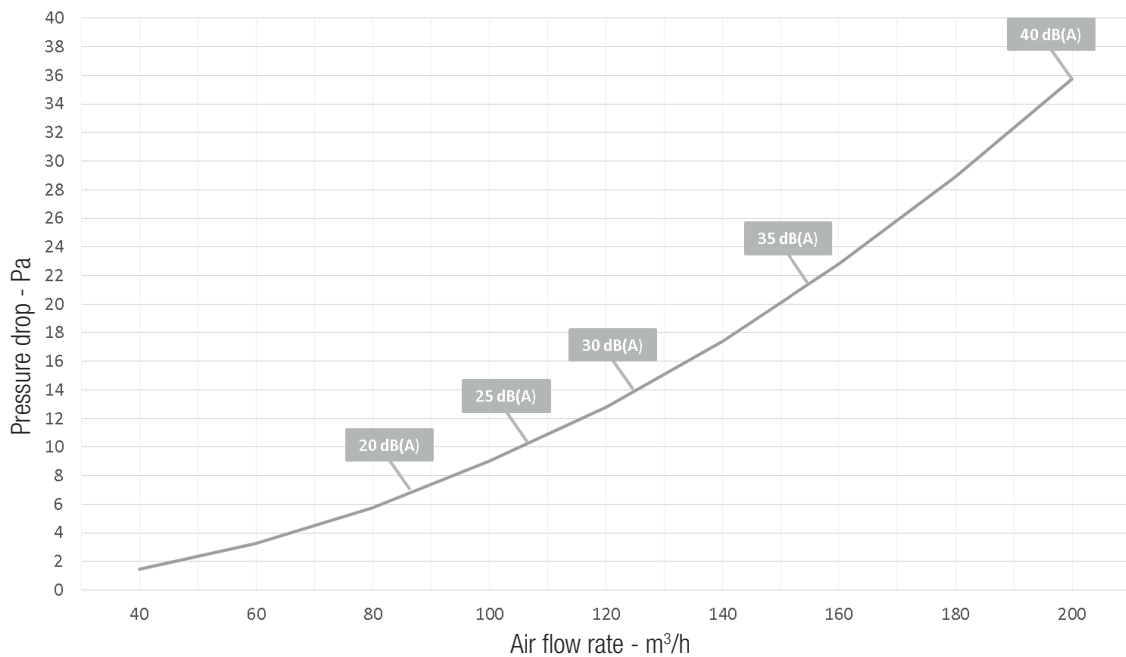
DUC 1 - AEREAULIC DATA - HEATING

Penetration depth



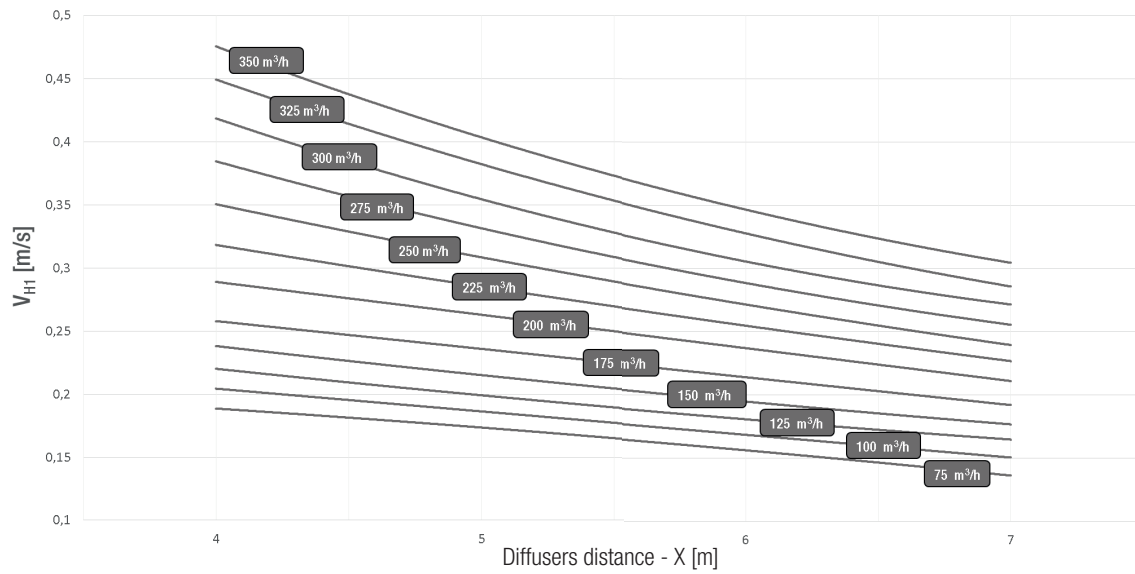
DUC 1 - AEREAULIC DATA

Pressure drop - Sound power level

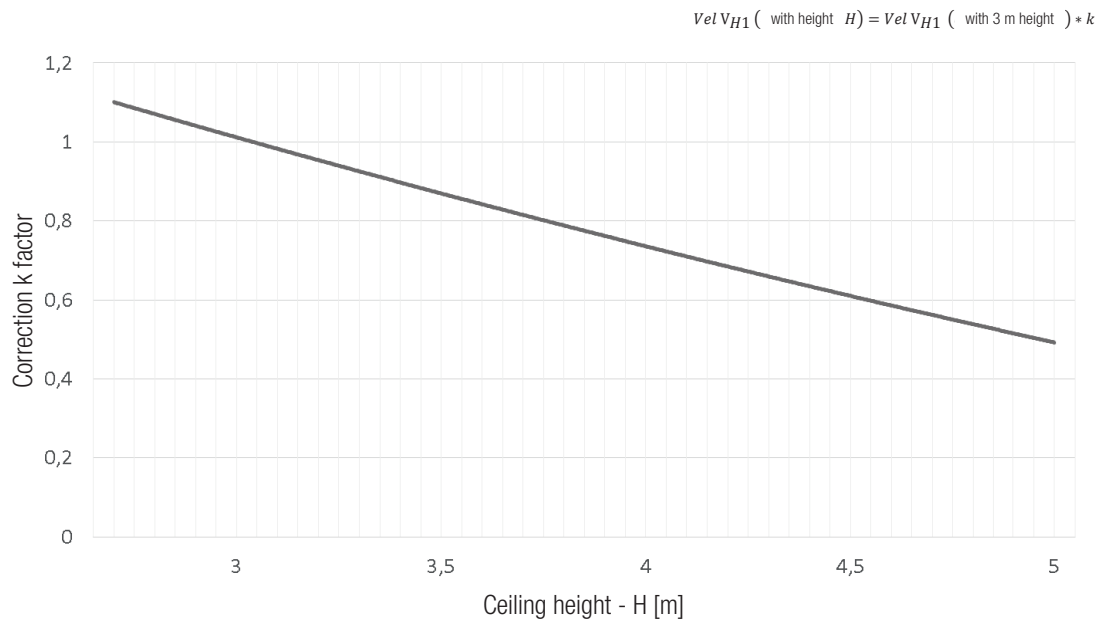


DUC 2 - AEREAULIC DATA - COOLING ($\Delta T = 10 \text{ }^\circ\text{C}$)

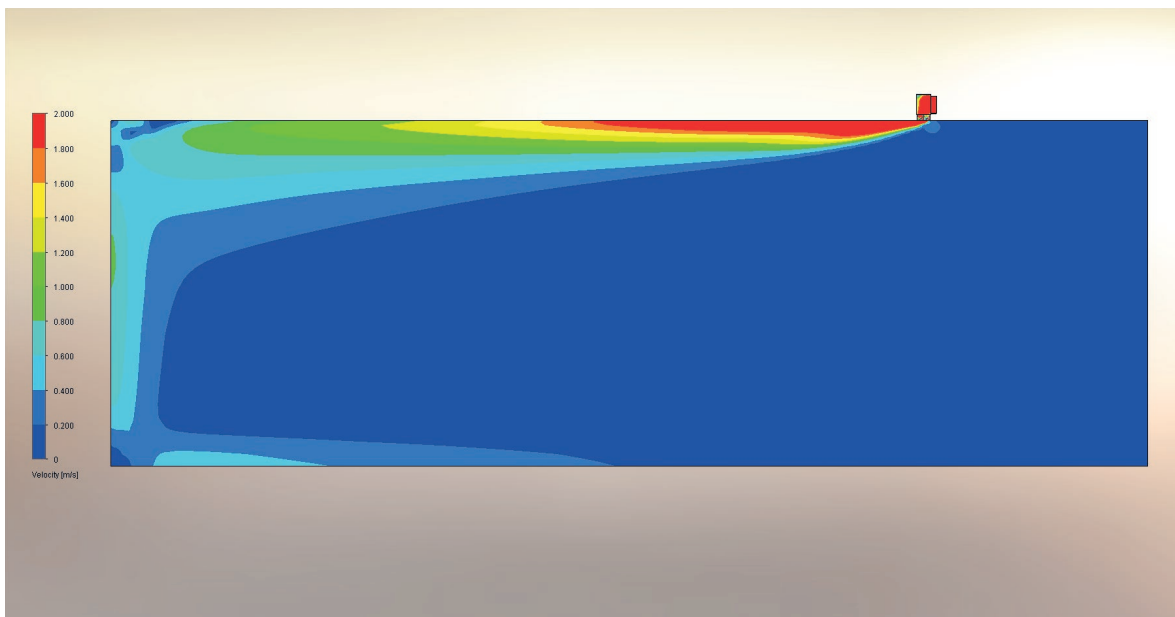
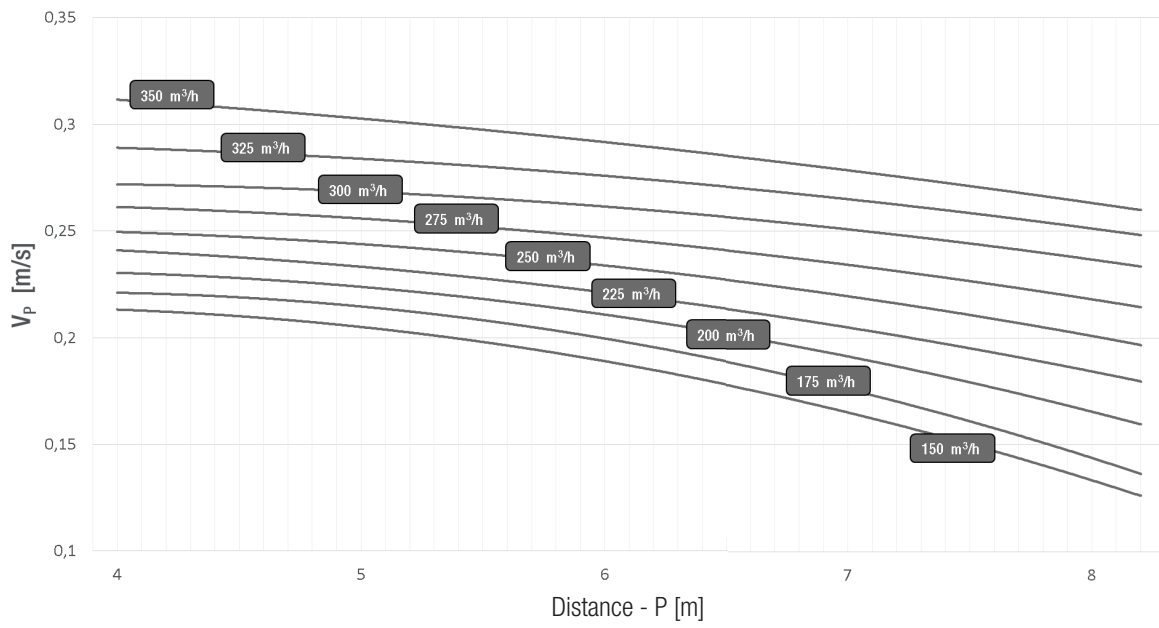
Ceiling diffusers with opposite horizontal throw ($H = 3 \text{ m}$)



Correction for H different from 3 m

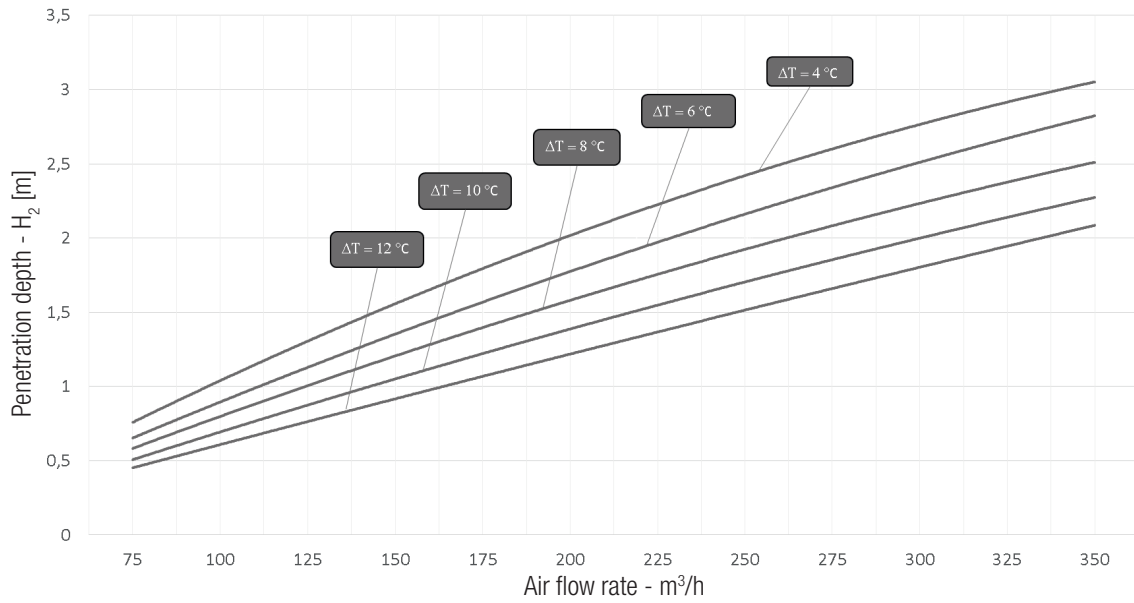


Ceiling diffuser with horizontal throw from wall



DUC 2 - AEREAULIC DATA - HEATING

Penetration depth



DUC 2 - AEREAULIC DATA

Pressure drop - Sound power level

