Jeven

Top ventilation for top chefs

TurboSwing ventilated ceiling

Table of Contents

We want to help you in design of ventilation by offering Jeven designer service to your disposal.
Design Service helps in design and makes unique proposal solution with Jeven products.

Contact us: jeven@jeven.fi
010 231 2030

TurboSwing Ventilated Ceiling

PRODUCT DESCRIPTION

Jeven TurboSwing ventilated ceiling is designed for professional kitchens to provide them with a spacious outlook and a high quality indoor climate.

TurboSwing ventilated ceiling is most suitable for institutional kitchens with limited grease producing equipment such as central kitchens, schools, hospitals and army facilities.

The air is supplied to the kitchen working area through low velocity units.
The air is exhausted through TurboSwing filters and fresh air is supplied to the kitchen working area through low velocity units.

Ventilated ceiling includes TurboSwing filters, light fixture units, stainless steel ceiling panels and low velocity units.

MATERIAL AND LIGHTS

All visible components are made of stainless steel, AISI 304.
Light fixtures are integrated into the ceiling IP 65 (2x36W or 2x58W).
Colour temperature 840 (Cool White).

ACCESSORIES

SwingControl unit.

PRODUCT CODE

Jeven Ventilated Ceiling JTA-Turbo - 10000 x 6000 - 8xDeco.L 2000 x 500 - 8 x 315 + 4300 m^3/h - 5200 m^3/h - SC

Turbo=TurboSwing
Length
Width

Supply units
-Number
-Type
-Size

Number and size of the exhaust air connection
Supply air flow, m^3/h
Exhaust air flow, m^3/h

Accessories
SC=SwingControl

TurboSwing Ventilated Ceiling

DESIGN

TurboSwing ventilated ceiling is intended for spaces where open and spacious appearance is needed, and free room height is min. 2,7m.

Above the grills, parillo and similiar devices we recommend Jeven hoods.

Dimensioning:
- The exhaust area shall be planned so that it removes convection flows. It should be possible to store a great amounts of steam for some seconds (which exist when the door of the oven is opened.)
  The size of the exhaust area is determined by the kitchen equipment. The overhang shall be at least 500 mm.
- The supply air shall be planned so that fresh air first meets the breathing zone and then is evacuated away with convection flow.
- The turboSwing filter lines shall be placed on the both sides of the kitchen equipment so that the convection flows shall rise into area between the filter lines.
- Lighting shall be about 500 Lux/m^2 and that can be reached by lighting effect over 20 W/m^2. The lighting shall evenly be placed over the ventilation ceiling.

Supply air flow:
Supply air flow should be 70-90% from total air flow.

Exhaust air flow:
Exhaust air flow rates depend on heat and impurity amounts of kitchen equipment.

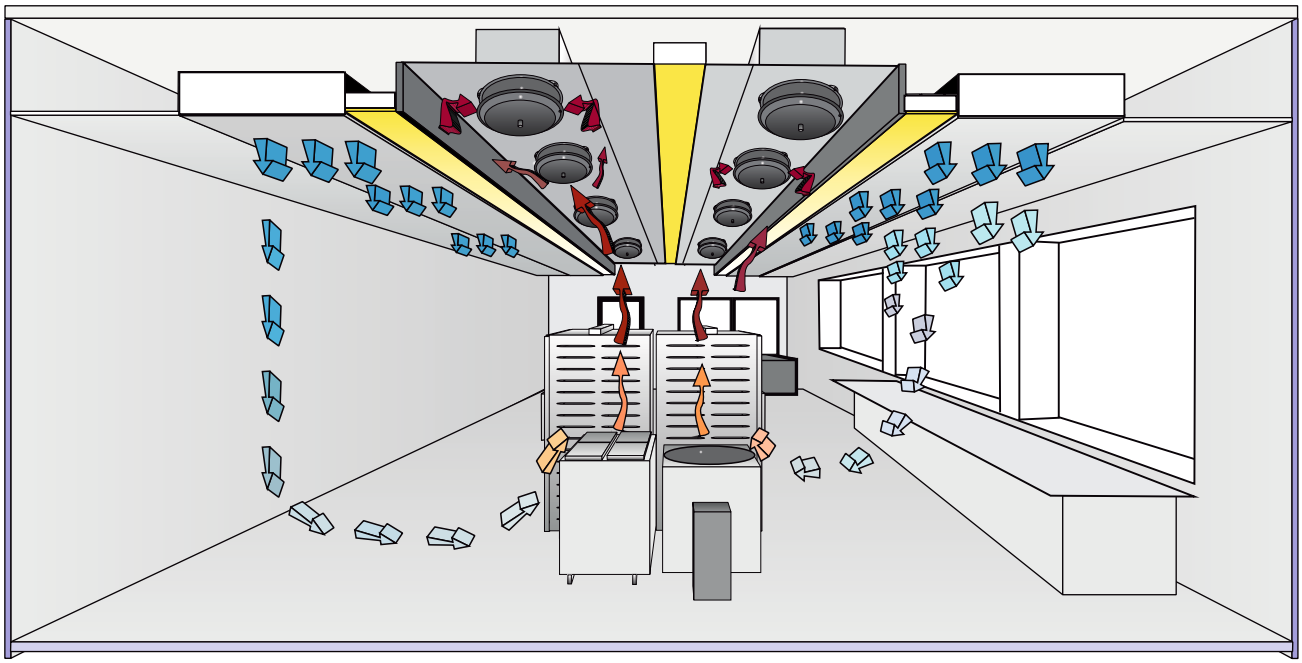
Kitchen equipment release heat and impurities different quantities.
The load factor depends on the power time.
The load factor is 1,0 if the kitchen equipment is fully powered all the time.
The exhaust flow rate Mp is obtained by multiplying the kitchen equipment factor Ke by connection power of the equipment P and by load factor S.

Example:

	P	Ke	S	Exhaust flow rate, Mp
1. Combi oven	350kW	12	0,5	350kW x 12 l/s/kW x 0,5 = 2100l/s ~ 7600 m^3/h
2. Kettle	200kW	12	0,75	200kW x 12 l/s/kW x 0,75 = 1800l/s ~ 6500 m^3/h
3. Range	50kW	36	0,5	50kW x 36 l/s/kW x 0,5 = 900l/s ~ 3200 m^3/h
				Total = 4800l/s ~ 17300 m^3/h
				Supply air flow:0,9x4800l/s=4320l/s ~ 15570 m^3/h

TurboSwing Ventilated Ceiling

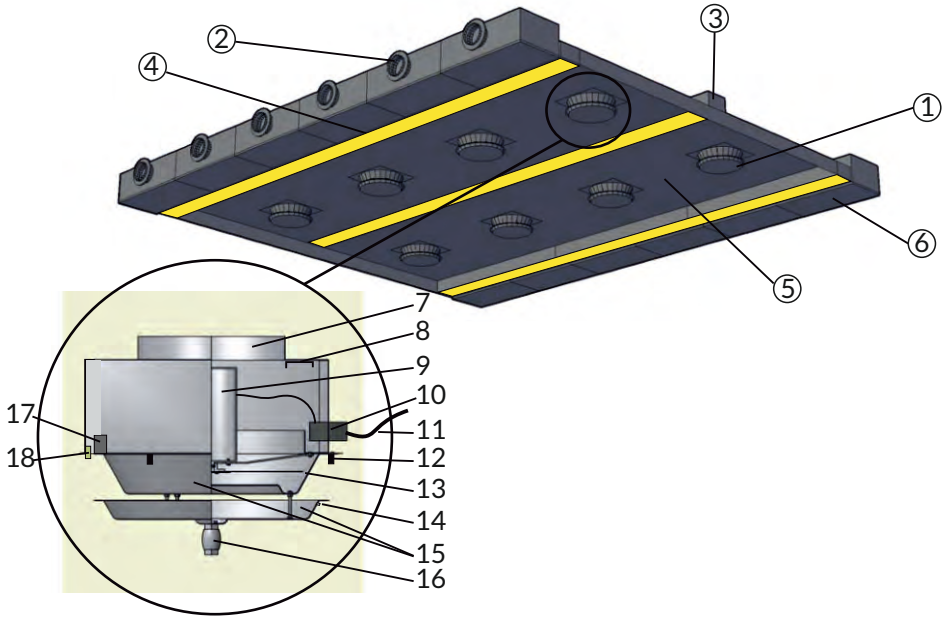
FUNCTIONING PRINCIPLE



Impurities and heat that rise up are filtered by the TurboSwing filters.
The embedded exhaustion area functions as a reservoir that simultaneously keeps air impurities away from the fresh air of the breathing zone.
Low velocity units are placed outside of the exhaustion area.
The low velocity units bring fresh air smoothly and draught-free to breathing zone where it combines with the convection flow.

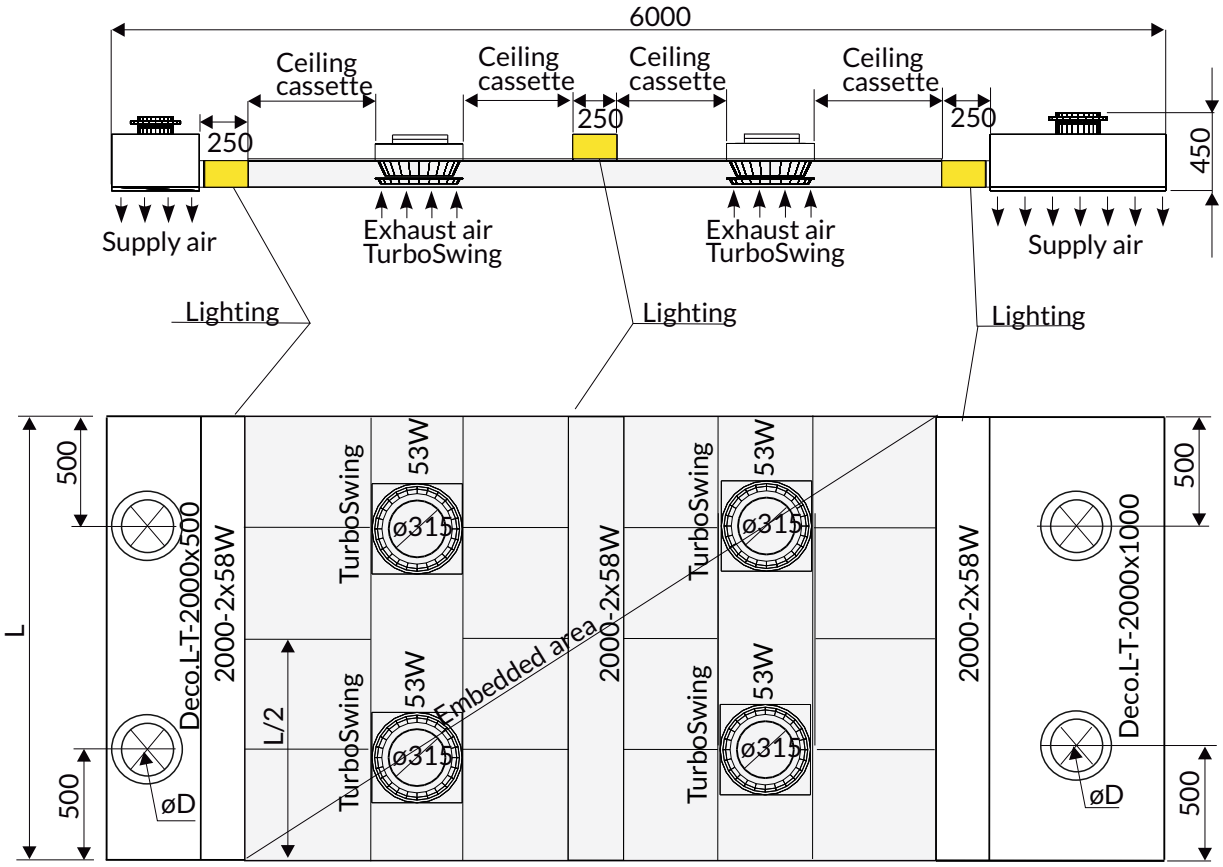
PARTS

1. TurboSwing
2. Damper
3. Light fixture
4. Light
5. Supply air unit
6. Ceiling panel
7. Collar saddle
8. Balancing damper
9. Motor
10. Motor connection box
11. Motor cable
12. Dome fixing
13. Separation plate
14. Air flow measuring tap
15. Collection basin
16. Tap
17. Limit switch
18. Signal light



TurboSwing Ventilated Ceiling

DIMENSIONS



Supply air unit	Spigots	øD	L	Width	Recommended air flow
Deco.L-S/T 1000×500	1	200	1000	500	60-80 l/s ~ 220-290 m^3/h
Deco.L-S/T 2000×500	2	200	2000	500	120-160 l/s ~ 430-576 m^3/h
Deco.L-T 1000×1000	1	250	1000	1000	100-150 l/s ~ 360-540 m^3/h
Deco.L-S/T 1500×1000	3	200	1500	1000	150-225 l/s ~ 540-810 m^3/h
Deco.L-T 2000×1000	2	250	2000	1000	200-300 l/s ~ 720-1080 m^3/h
Deco.L-S 2000×1000	4	200	2000	1000	200-300 l/s ~ 720-1080 m^3/h

Exhaust air

Model	ø/mm	Lenght	Recommended air flow	W
TurboSwing	315	500	1-200 l/s ~ 3.6-720 m^3/h	53

Lighting

T8 Versions	Lamps	Power /W	L
2×36-1500	2	36	1500
2×58-2000	2	58	2000

Ceiling cassette

Length / K	Width
500-1500	500

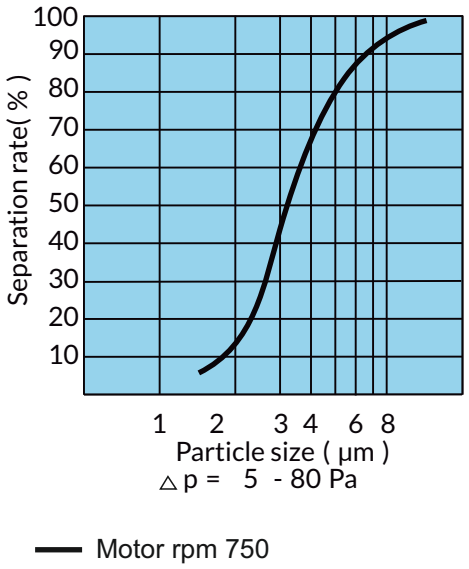
TurboSwing Ventilated Ceiling

EXHAUST AIR

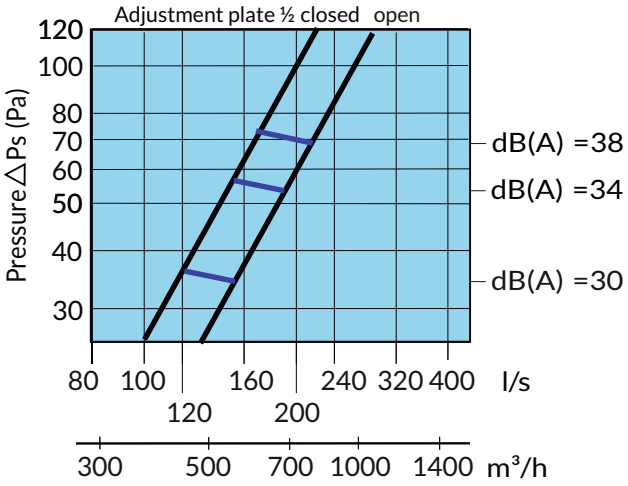
Recommended exhaust flow / spigot

Spigot size ø	Exhaust flow		Pressure loss
mm	l/s	m^3/h	Pa
315	- 200	- 720	60

SEPARATION RATE



PRESSURE LOSS AND SOUND DATA



TurboSwing 750 rpm

Sound power level, Lw

Sound power level Lw in each octave band is computed by adding the corresponding factor, Kok to the sound power level LpA.
Lw= LpA+Kok.

Factor, Kok

Hz	125	250	500	1000	2000	4000
Kok	7	-1	-5	-5	-7	-6
tol.	±3	±3	±2	±2	±3	±4

Motor properties

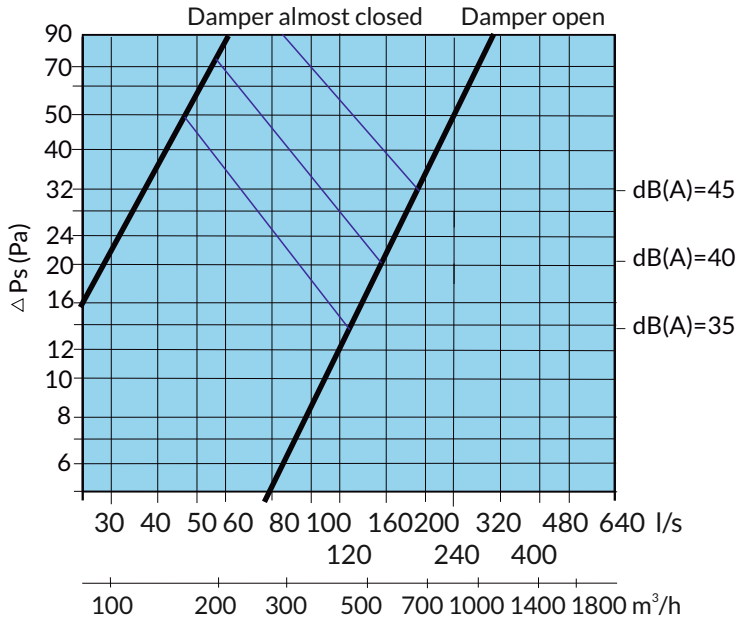
Power connection: 230V
Power consumption: 53W ; 0,46A

Protection rating: IP55
Insulation rating: 155
CE-approved

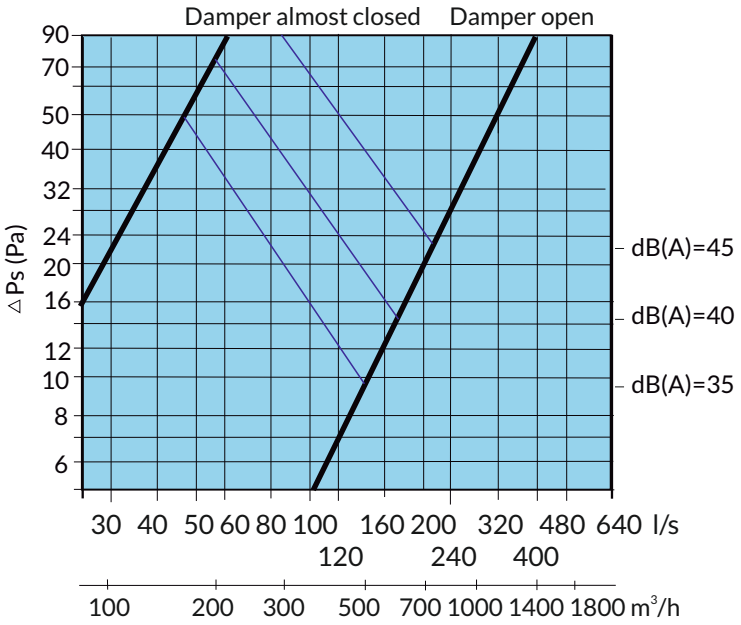
TurboSwing Ventilated Ceiling

SUPPLY AIR

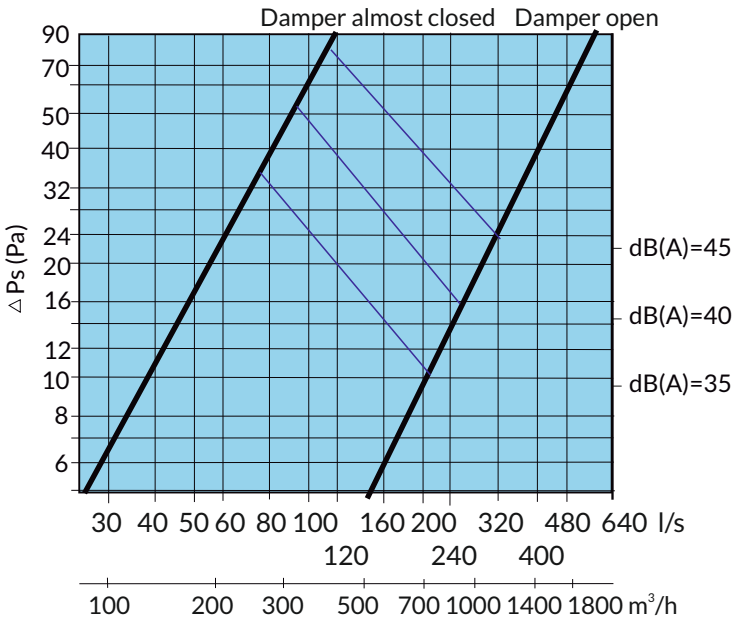
Deco.L- S/T – 1000 x 500



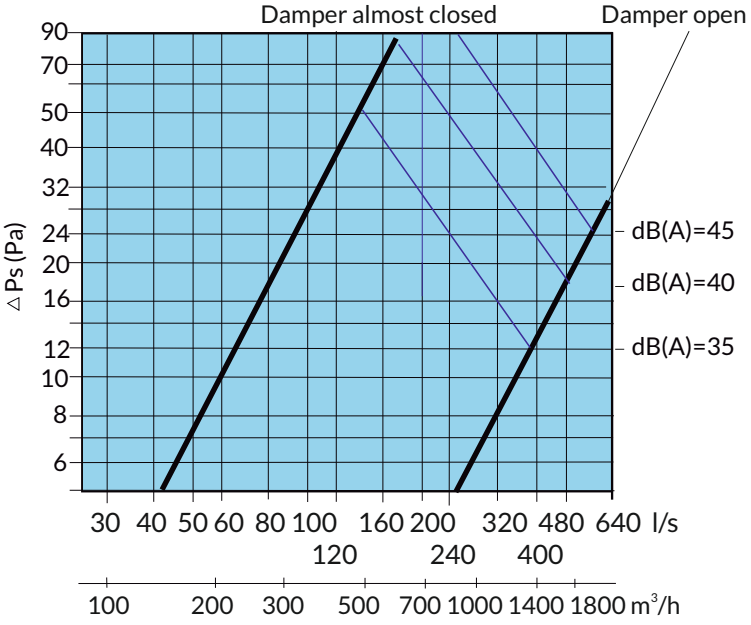
Deco.L- S/T – 1000 x 1000



Deco.L- S/T – 2000 x 500



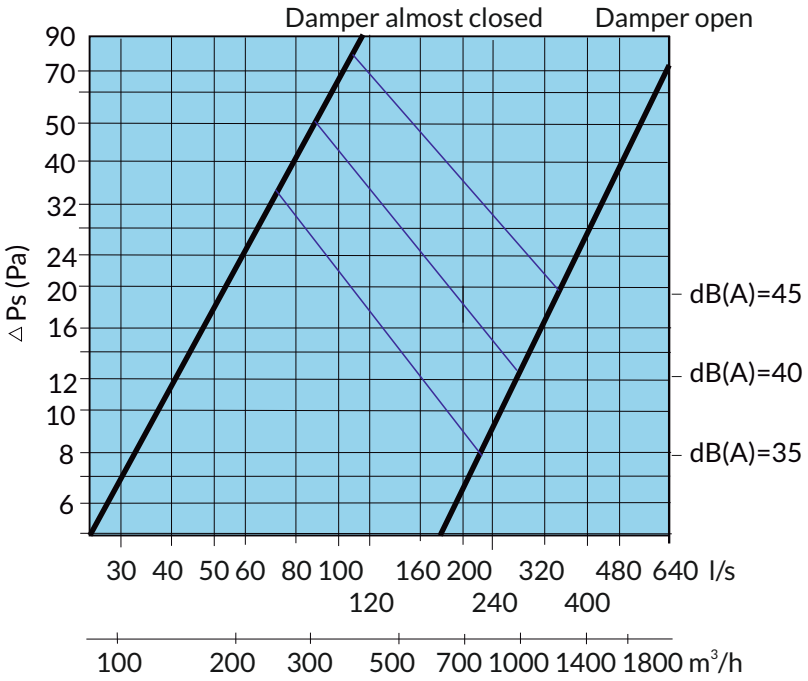
Deco.L- S/T – 2000 x 1000



TurboSwing Ventilated Ceiling

SUPPLY AIR

Deco.L- S/T – 1500 x 1000



Sound Power level, Lw

Sound power level Lw in each octave band is computed by adding the corresponding factor, Kok to the sound power level LpA.
Lw= LpA+Kok.

Factor, Kok

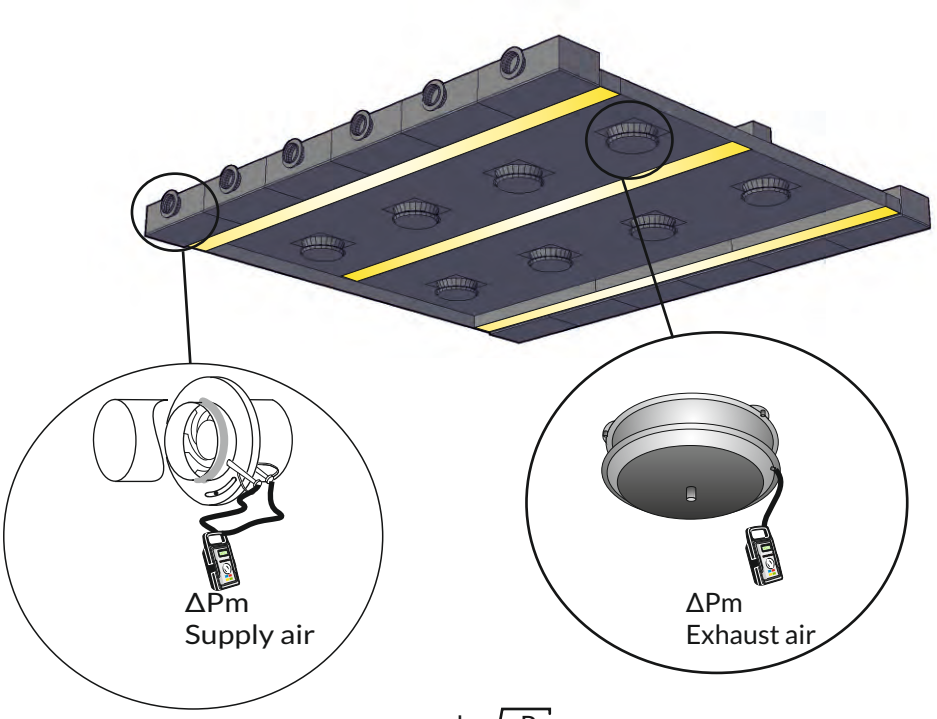
Product	Hz					
	125	250	500	1000	2000	4000
Deco.L-1000×500	7	8	3	-6	-18	-19
Deco.L-2000×500	8	7	2	-5	-19	-19
Deco.L-1000×1000	8	8	3	-6	-19	-20
Deco.L-1500×1000	9	7	3	-5	-19	-19
Deco.L-2000×1000	9	7	3	-5	-19	-19

Sound attenuation
The average sound attenuation ΔL (dB) includes end reflection.

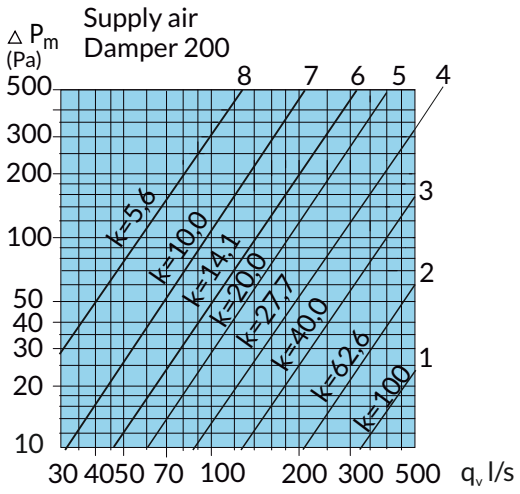
Product	Hz					
	125	250	500	1000	2000	4000
Deco.L- 1000×500	9	6	9	9	8	10
Deco.L- 2000×500	6	5	6	8	7	8
Deco.L- 1000×1000	6	5	7	8	7	8
Deco.L- 1500×1000	6	5	7	9	7	9
Deco.L- 2000×1000	6	5	10	10	8	10

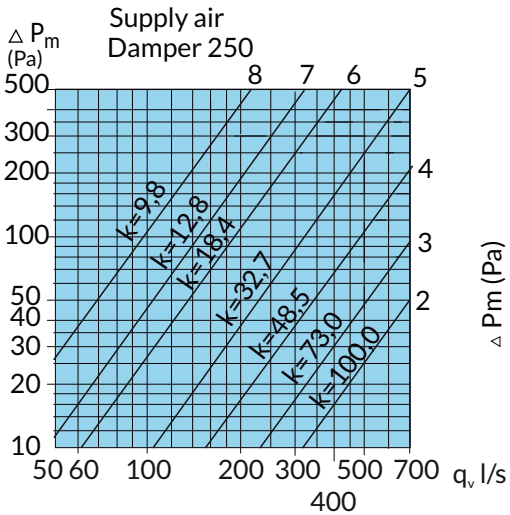
TurboSwing Ventilated Ceiling

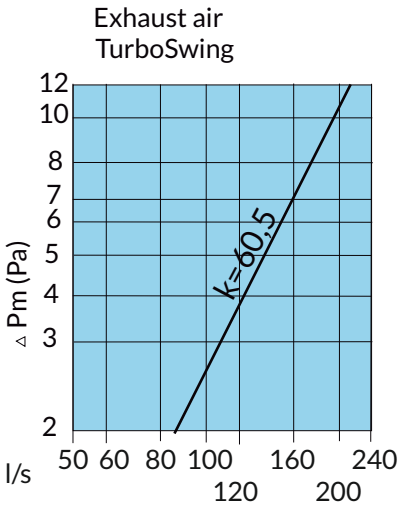
AIR FLOW MEASUREMENT



$q_v = k \times \sqrt{\Delta P_m}$



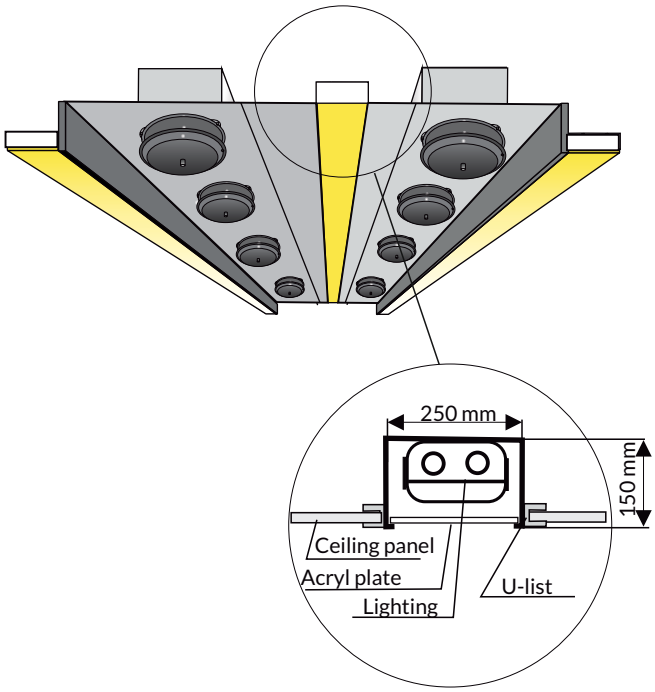




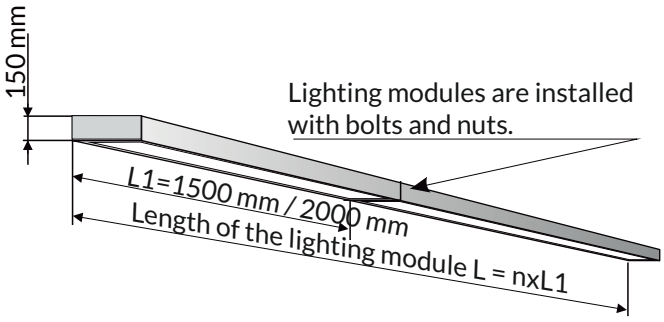
TurboSwing Ventilated Ceiling

LIGHTING

Each lighting beam contains a light fixture 2x36W or 2x58W (IP 65) and fluorescent strip lights (colour temperature 840, cool white).
The lighting module delivery does not include the cables. The electrical contractor supplies and installs the necessary cablings between the light fixtures.
The light fixture modules include acrylic prisma covers that are delivered separately and installed into place at site.



n= number of modules
L1= Length of the lighting module, 1500 mm / 2000 mm
Recommended lighting level is 22-30 W/m^2 floor surface when the lighting level is 300-500 lx.



Wiring diagram

Note! Electric cables are not included in the delivery

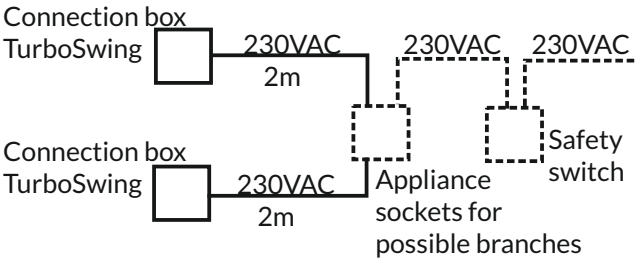
TurboSwing Ventilated Ceiling

ELECTRICAL AND AUTOMATION PLANNING INSTRUCTIONS

HPAC designer records in the plans the types and locations of the products to be wired. Goes through the required cabling and the purchase of safety switch (compulsory) and applicance sockets, together with the electrical designer.

Electrical designer records in the plans the location of the safety switch (compulsory) and the required applicance sockets. Records in the plans the wiring from the group switchgear to the safety switch. Records in the plans the required wiring from the safety switch to the appliance sockets, together with the HPAC designer.

Automation designer records in the plans the running time of the TurboSwing shall match the running time of the exhaust fan.

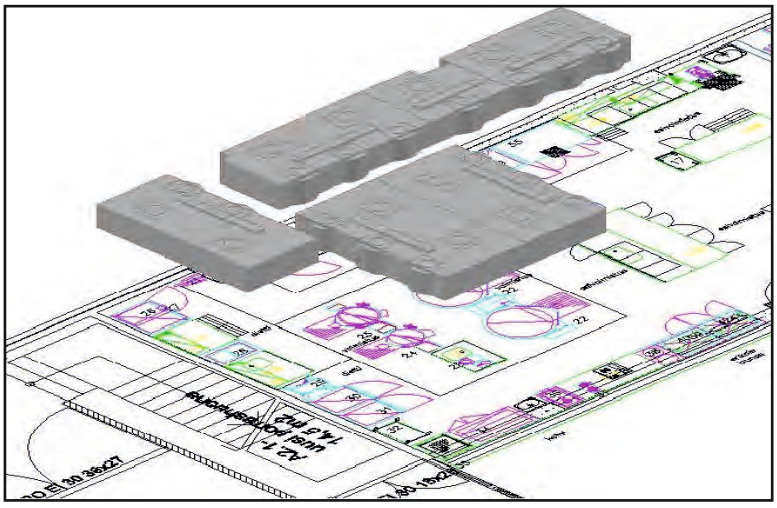


Safety switch is compulsory and it should be situated close to the hood and on the visible place in the kitchen.

The safety switch, appliance sockets and the cables marked with the broken line are not included in the Jeven delivery.

DESIGN SERVICE

Jeven Design Service helps you choose the best solution for your professional kitchen project.
Simply email us a drawing of the kitchen lay-out and a list of the cooking equipment to jeven@jeven.fi
We will do all the calculations and prepare all the necessary drawings of the canopies.
This service is always free of charge to you.



TurboSwing Ventilated Ceiling

SWINGCONTROL UNIT

SwingControl unit has been developed to monitor the operation of the TurboSwing filters.
In the event of any failures in the operation of the TurboSwing units, the SwingControl unit notifies the service staff immediately.
The SwingControl unit monitors the rotation speed of the motor of the TurboSwing devices and it is also possible to choose the nominal speed of the motors (1100 or 750 rpm).
An alarm will be triggered when TurboSwing's engine rotation speed falls below 200 rpm.
The status information of the locally connected TurboSwing equipment is displayed on the LED screen of the SwingControl unit.

CYCLONE VENTILATION

Contact us 0113 263 2900 sales@cycloneventilation.co.uk