CLIMECON

ROL and ROL-S

The stylish and silent nozzle duct ROL is designed for rooms requiring large air volumes distributed evenly and without draught. The functional entity is completed by the ROL-S Adjustment and silencer unit.

0918

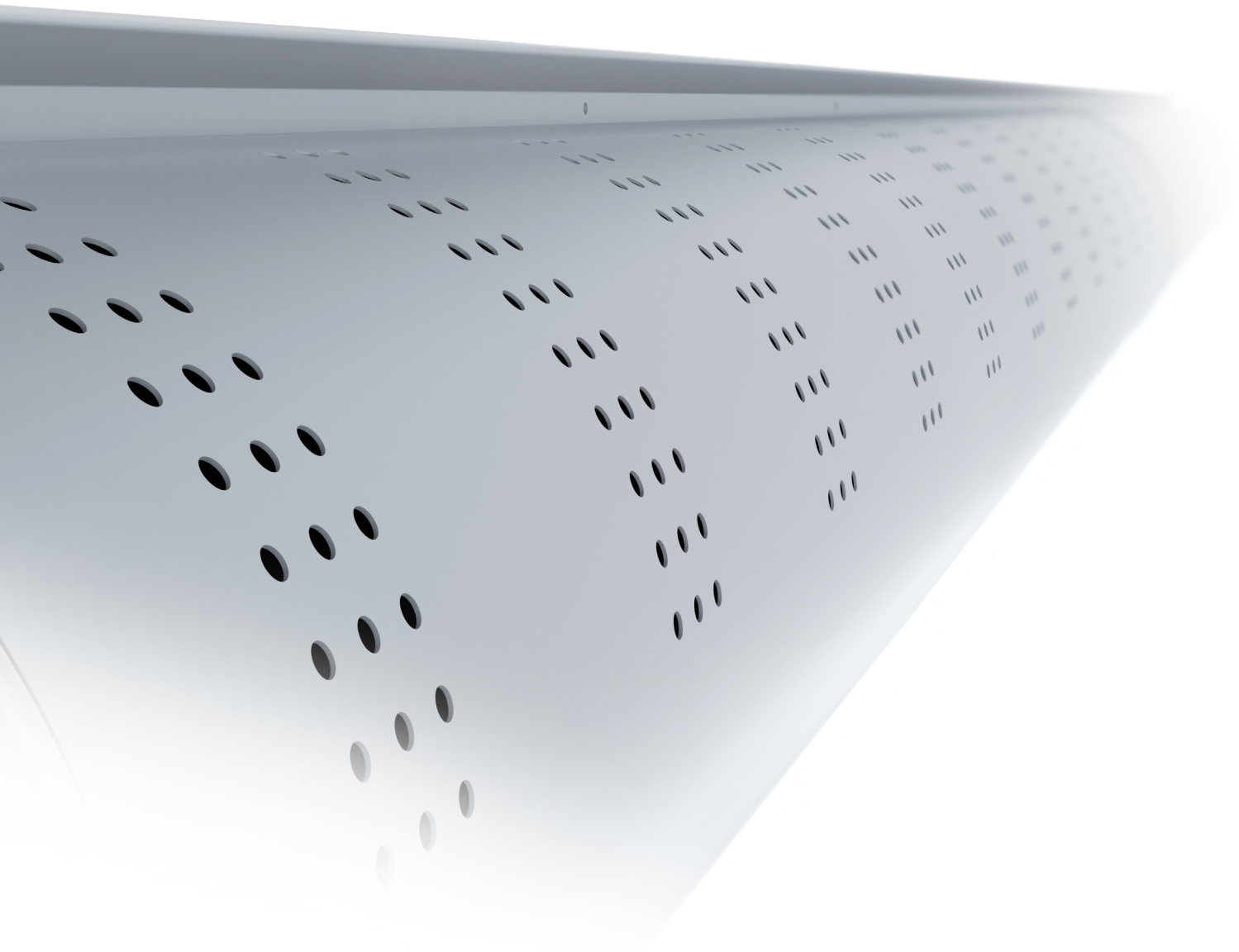
ROL

The **ROL nozzle duct** is designed for rooms requiring large air volumes distributed evenly, silently and without draught. Typical applications include office spaces, workrooms, day care centres, schools, industrial and research premises.

The ROL nozzle duct features optimally sized perforation with a precisely defined perforation pattern. This results in air distribution with extremely good mixing that grabs a large volume of surrounding air. Thanks to the high mixing ratio, ROL is perfectly suited for cooled air.

With the help of **ROL-S adjustment and silencer unit** is achieved a functional and stylish set which includes both the air flow control and duct noise dampening.

ROL and ROL-S are also supremely easy to maintain and keep clean.



ROL and ROL-S – a stylish, silent nozzle duct

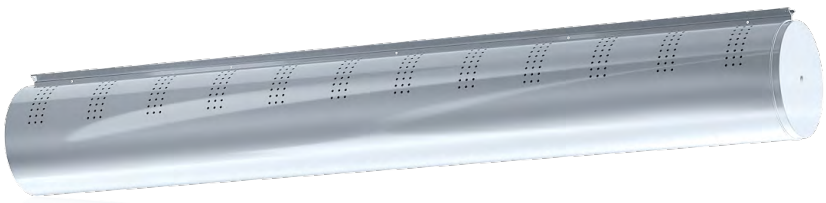
+ Even, widely distributed throw pattern
+ Extremely silent
+ Smooth surface, attractive appearance and easy to clean
+ New installation methods, fast and easy
+ Tested by Finnish Technical Research Center VTT
+ The new adjustment unit has a wider adjustment range than the previous one
+ The new adjustment unit also serves as a cleaning hatch
+ Hassle-free serviceability throughout the product lifecycle

ROL is available in 4 different perforation patterns plus ROL-0, a blind design module

ROL -90°

ROL -45°

ROL-0

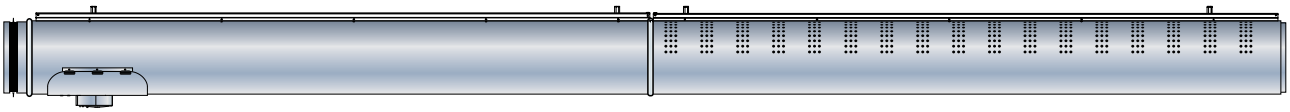


A complete ventilation system

ROL and ROL-S form a completed unit for installation and control, which is equipped with a cool slide rail type installation rail. The supply contains connector fittings and an end with a measurement fitting. The smooth surface is very easy to keep clean. The ROL nozzle duct supply air jet drags along a large amount of surrounding air, which means a large air mass is moving at low speed.

The adjustment unit ROL-S, which has very good resilience, can be adjusted accurately. The measurement is based on the pressure difference over the control unit. By using the combination of ROL and ROL-S an accurate, low noise and even air distribution is obtained. ROL-S also effectively suppresses the air sound radiated through the ducts.

In addition to ROL-S adjustment and silencer unit ROL can be fitted with a non-perforated connection or intermediate element of ROL-0.



ROL-S ROL End unit with measurement joint in case ROL-S adjustment unit not used

Quick guide

Max 3 m/s < 30 dB(A)

Size Ø	ROL	ROL+ROL-S
125	-30	Not available
160	30-60	30-50
200	50-95	50-90
250	60-140	60-140
315	90-220	90-200
400	150-310	Not available
500	200-500	Not available

Product designation

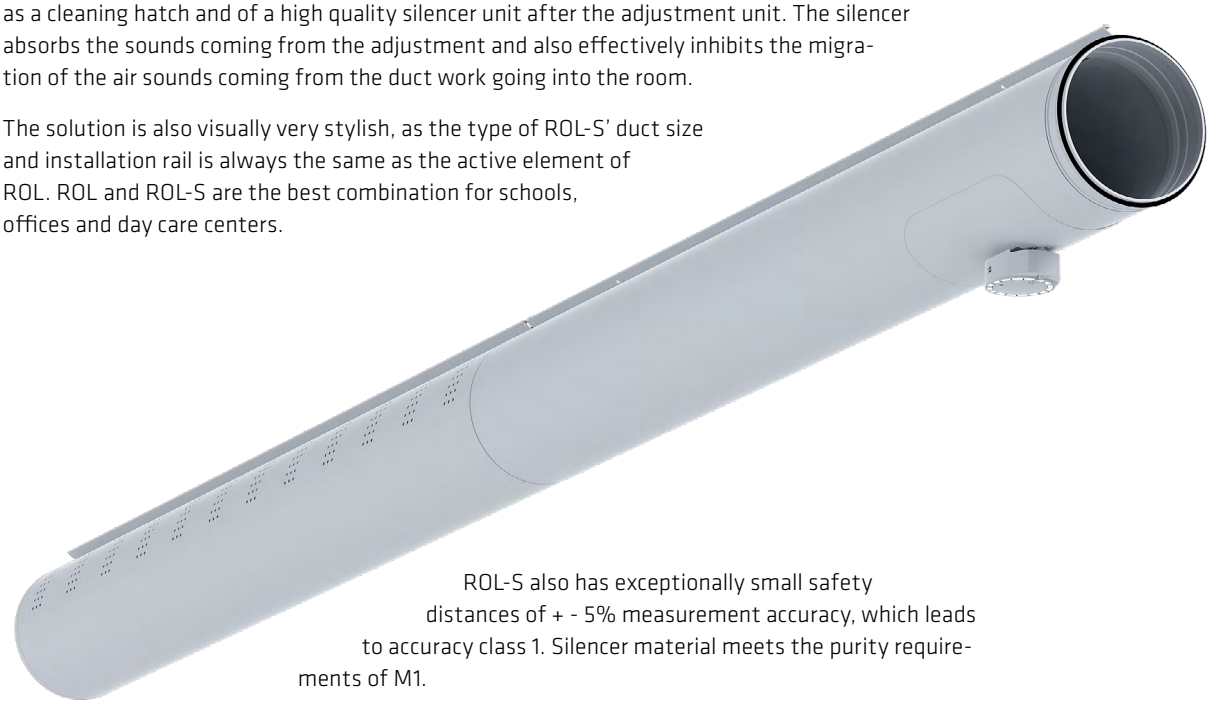
Nozzle duct ROL	200 /	180 -	1 +	ROL-S
	1	2	3	4

1 = size (diameter) 125 - 500 mm
2 = supply air sector, see page 7
3 = number of modules (= length)
4 = adjustment/damper unit as an accessory

ROL-S model, quieter than quiet

ROL-S is the best and safest option for applications where high standards are set for adjustability, noise level and appearance. ROL-S consists of the opened adjustment unit functioning also as a cleaning hatch and of a high quality silencer unit after the adjustment unit. The silencer absorbs the sounds coming from the adjustment and also effectively inhibits the migration of the air sounds coming from the duct work going into the room.

The solution is also visually very stylish, as the type of ROL-S' duct size and installation rail is always the same as the active element of ROL. ROL and ROL-S are the best combination for schools, offices and day care centers.

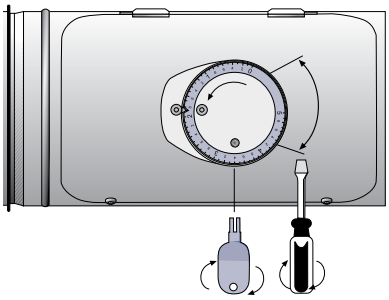


ROL-S also has exceptionally small safety distances of + - 5% measurement accuracy, which leads to accuracy class 1. Silencer material meets the purity requirements of M1.

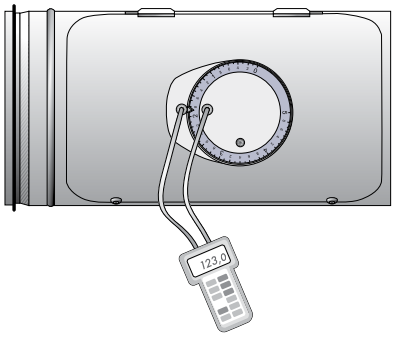
New innovative adjustment unit

The new ROL-S adjustment unit provides more accurate and precise adjustment than ever before. Both adjustment and measuring is performed through the patented adjustment unit. The adjustment setting is simply read from the display disc with numbering corresponding to the different k values.

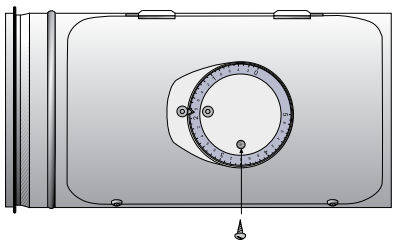
The measurement is based on static pressure difference over the adjustment unit. This gives accurate and reliable measurement even with small pressure differences and low air velocities. The adjustment setting can be locked.



The unit is adjusted using an adjustment key or, for example, a screwdriver. The adjustment disc numbers correspond to the different k values.



Pressure difference is measured from the connections on the adjustment unit.



The adjustment setting can be locked with a screw if desired.

Ease of maintenance

ROL and ROL-S are extremely easy to maintain and to keep clean throughout their life cycle. The ROL-S adjustment unit can be easily opened and through the formed cleaning hatch the silencer unit can be cleaned as well as the adjustment unit and the duct from the inside. ROL in turn can be opened from the end and through this the inside can be accessed to perform cleaning work inside the product. The smooth surface is easy to keep clean by vacuuming and wiping with a wet cloth.

The adjustment unit can be opened:

- Free access to the duct from the cleaning hatch complying with regulations
- The adjustment unit is easy to clean and service
- ROL-S can be cleaned reliably also from the inside

ROL can be opened also from the end:

- The product can be cleaned also from the inside

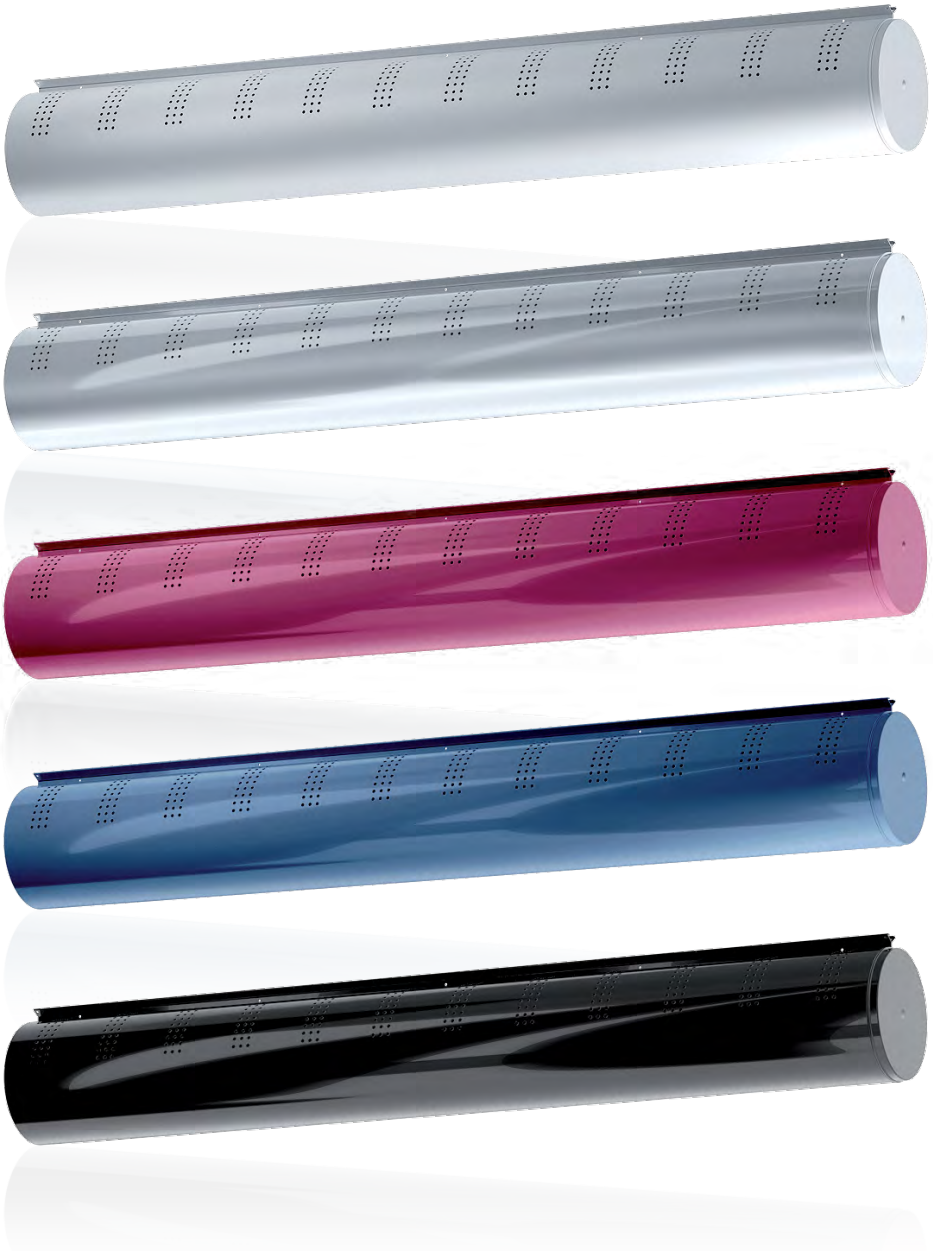
ROL suits your interior perfectly

Today, many rooms and working spaces are carefully designed with a detailed colour scheme. In contrast, ventilation terminal units often are not included in the visual design. ROL now gives you an opportunity to give a finishing touch to the interior. You can use colour to either blend ROL into the surrounding colours or use it as a technological highlight.

The standard colour of ROL and ROL-S is pure white RAL 9016. The basic colours are also black, RAL 9005, white RAL 9010, white aluminum RAL 9006 and steel gray RAL 9007+ 9023. ROL and ROL-S are also available with a stunning gloss lacquered surface. On request ROL and ROL-S can also be painted in other RAL colours.

In elementicular demanding applications ROL and ROL-S can also be made of stainless or acid-proof steel, as well as of anodized sea aluminum e.g., for indoor swimming pool conditions.

Climecon ROL and the combination of ROL and ROL-S are the best choice for nozzle ducts both for their technical characteristics as well as for the material and color options.



Traffic white
RAL 9016

Gloss lacquered
steel

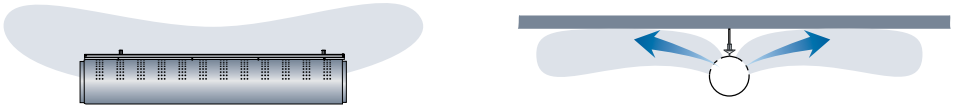
Traffic purple
RAL 4006

Gentian blue
RAL 5010

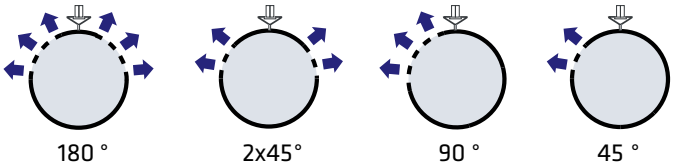
Jet black
RAL 9005

How the nozzle duct ROL works

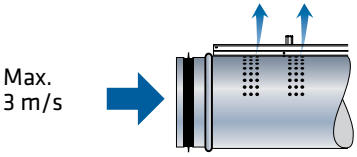
ROL's even perforation pattern creates an even, wide air distribution with a good mixing ratio.



For the best results, ROL nozzle duct comes in four different supply air sector options. This guarantees an optimal throw direction in all circumstances.

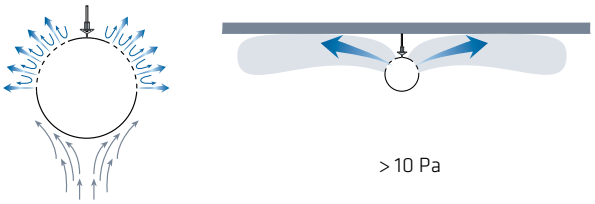


The airflow in ROL is determined by its diameter. The larger the air volume required, the larger diameter or the more ducts should be chosen. Controlled air velocity and a sufficient terminal resistance or pressure drop are required for perfect operation. The recommended minimum pressure drop is 10 Pa, providing good control over the throw pattern and reliable adjustment for the entire system.

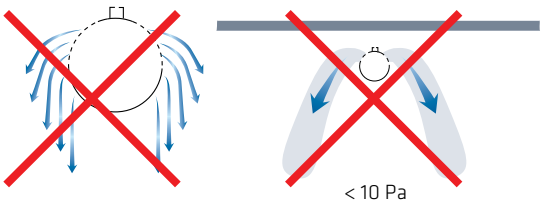


Draught-free indoor climate and high mixing ratio through sufficient pressure difference

A sufficient pressure drop creates the coanda effect, guaranteeing an evenly distributed and well mixed supply airflow. The nozzle duct will then function as designed even with low-temperature air.



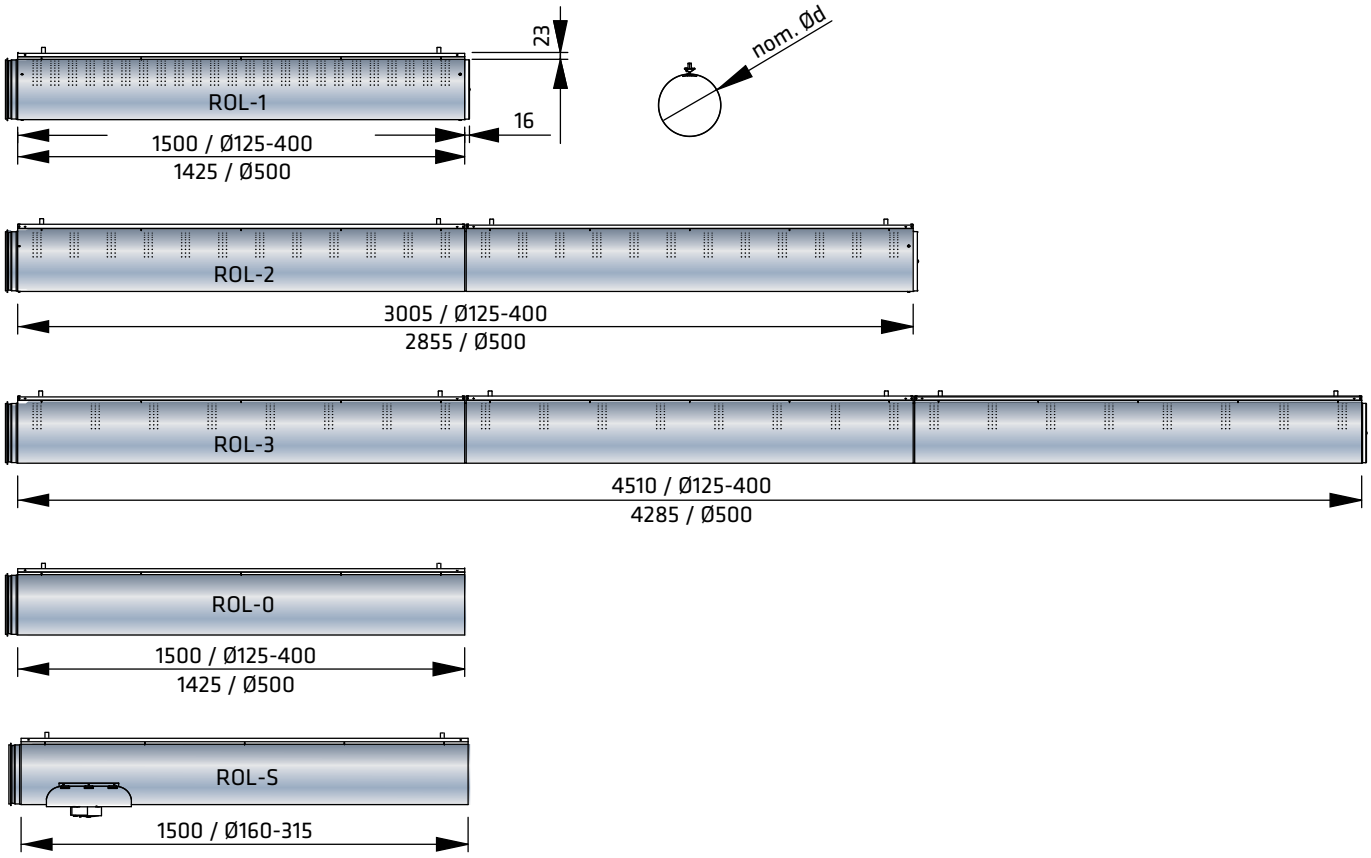
A low pressure drop will not create the coanda effect, which results in a low mixing ratio. The low-temperature supply air flows down creating a feeling of draught.



NOTE! Concerns all nozzle ducts.

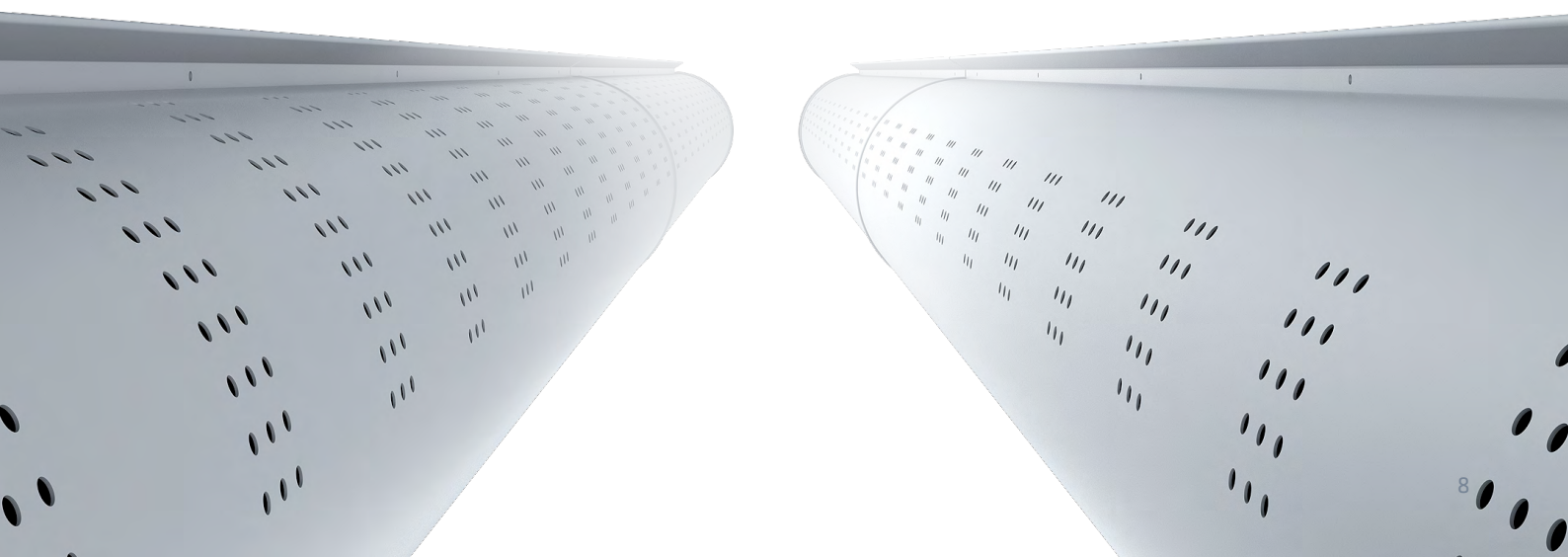
Correct pressure drop with all section lengths

ROL's function is based on a carefully designed, even perforation distribution. The supply air area spreads evenly along the entire length of the unit. When the required air volume is known, the optimal length for even air distribution throughout the area is chosen. The widely distributed perforation grabs a large volume of surrounding air, resulting in a large air volume moving at a low velocity and free of draught.

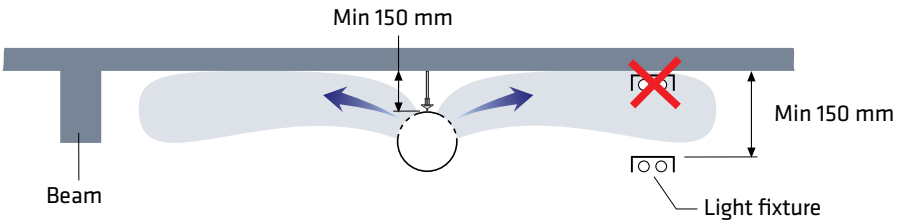


On request ROL may also be made as a 4 module unit the length of which is 6015 mm in sizes Ø125-400 and 5715 mm in size Ø500.

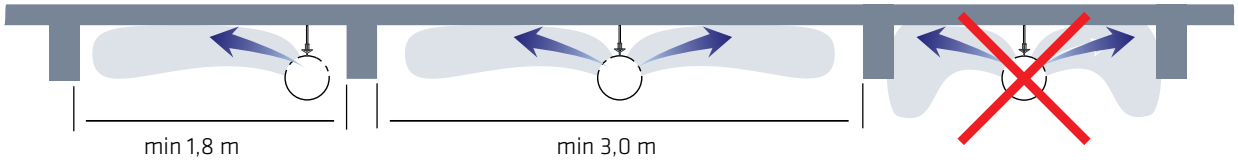
NOTE! The supply air area (number of perforations) is standard regardless of section length. Thus the pressure drop is not decreased or flow velocity increased as the duct length increases, which improves measurement and adjustment while at the same time ensuring a controlled throw pattern along the entire duct length.



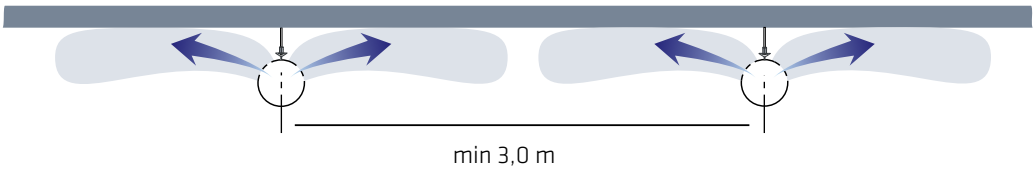
ROL nozzle duct, installation examples



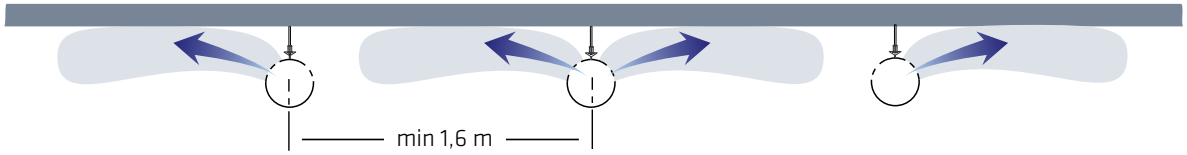
The recommended installation distance of the ROL nozzle duct from the ceiling is min 150 mm. Obstacles to the airflow, such as beams or surface-mounted light fixtures, should be avoided.



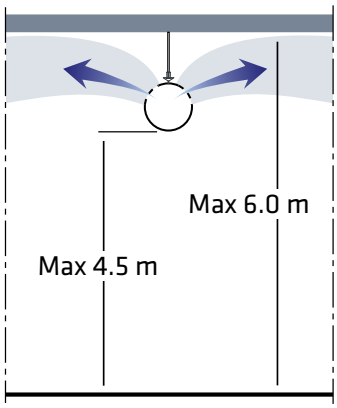
If beams are located close to one another, it is recommended that ROL is installed next to the beam with a single-directional throw.



The minimum distance between two nozzle ducts should be 3 metres.

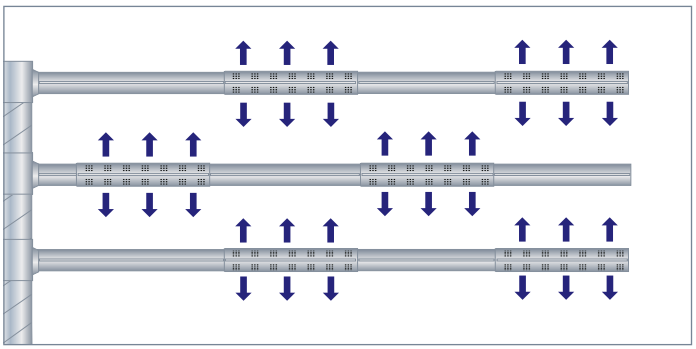


Alternative installation when nozzle ducts are less than 3 metres from each other.

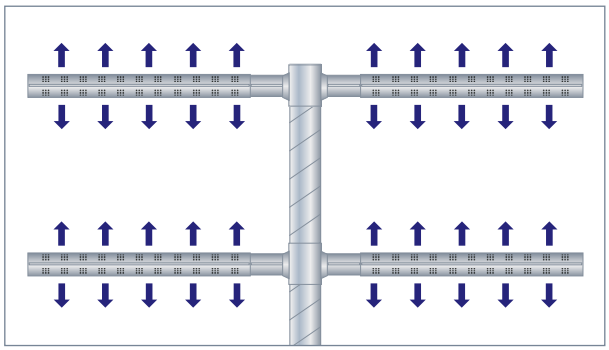


Recommended mounting height is 2.5-4.5 meters. Recommended room height - 6 meters max.

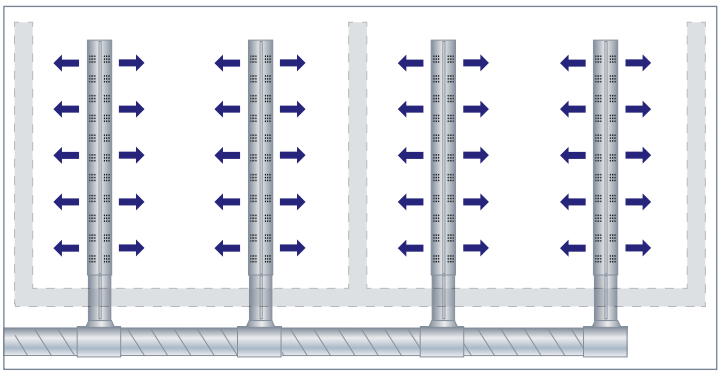
ROL nozzle duct, installation examples



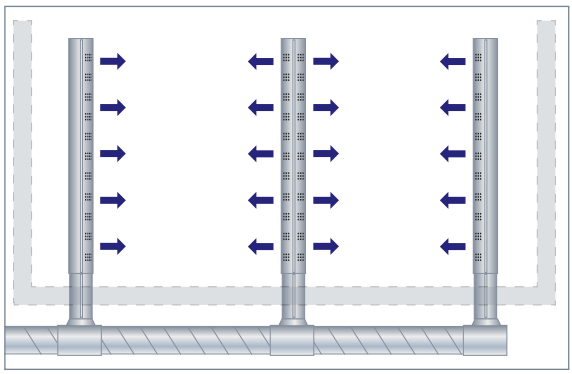
+ Restaurants
+ Shops
+ Production facilities



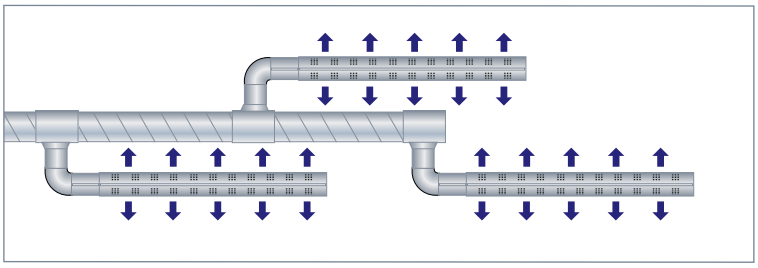
+ Canteens
+ Open spaces
+ Gyms



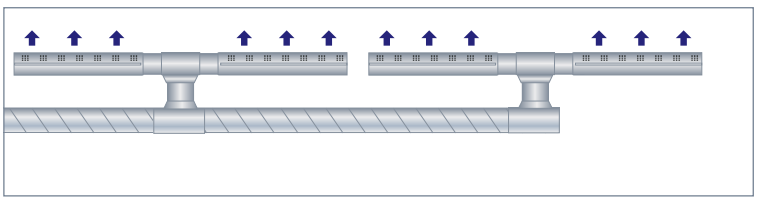
+ Offices
+ Classrooms
+ Conference rooms



+ Auditoriums
+ Classrooms
+ Reading rooms



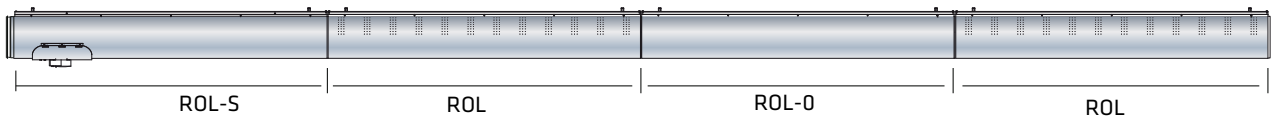
+ Corridors
+ Warehouses
+ Narrow spaces



+ Exhibition rooms
+ Conference rooms
+ Industrial spaces

Extending the ROL nozzle duct

ROL can easily be extended by installing a blind ROL-0 module between active nozzle ducts.



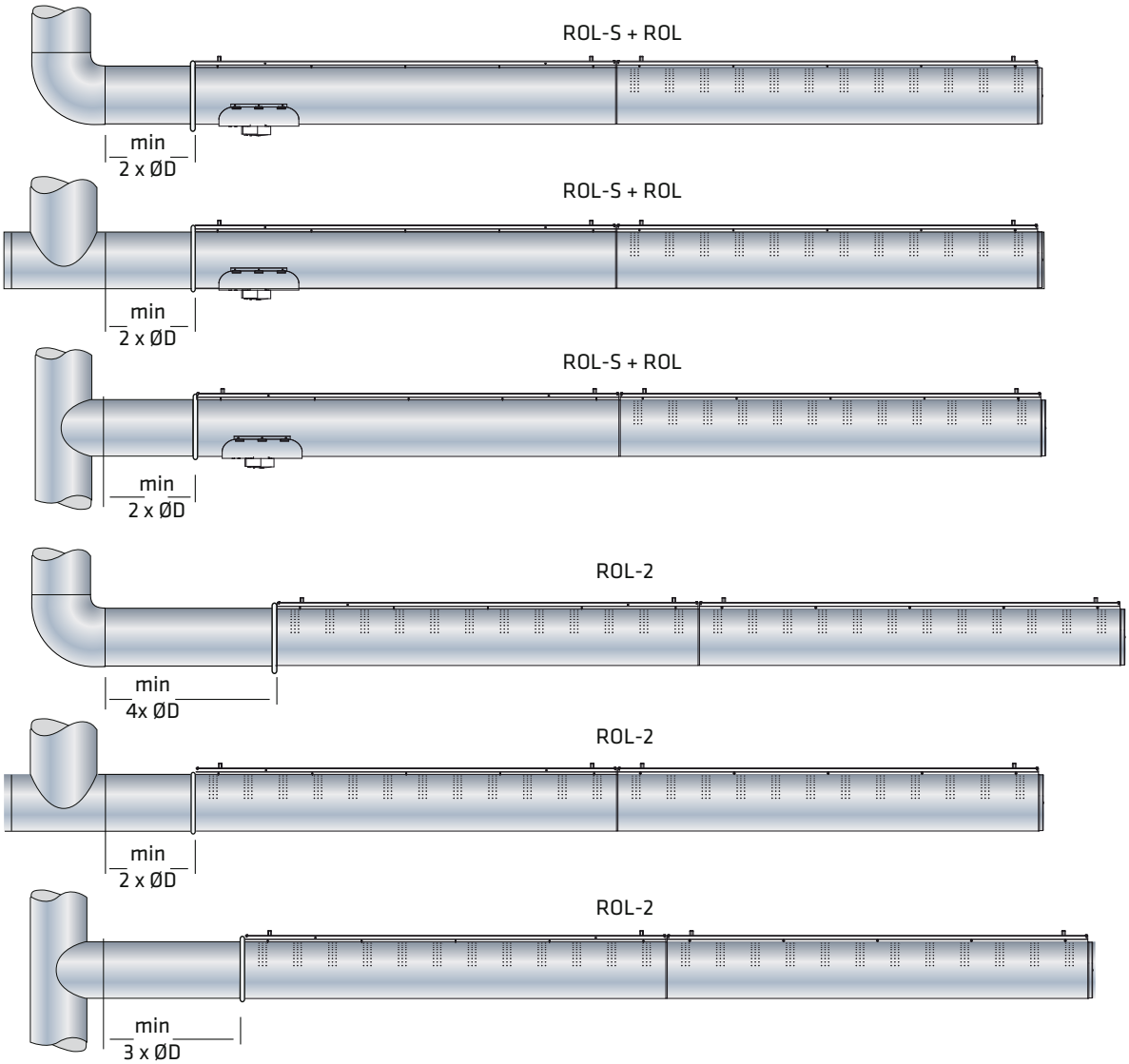
ROL-0 standard lengths are 500, 1000 and 1500 mm. Made-to-measure lengths available by special order.

Materials and surface finish

ROL is manufactured of galvanised sheet steel. The standard colour is RAL 9016. ROL is available in any colour in the RAL K1 colour chart by special order. For elementicular demanding applications ROL and ROL-S can be manufactured of stainless steel or HST steel.

Minimum distances

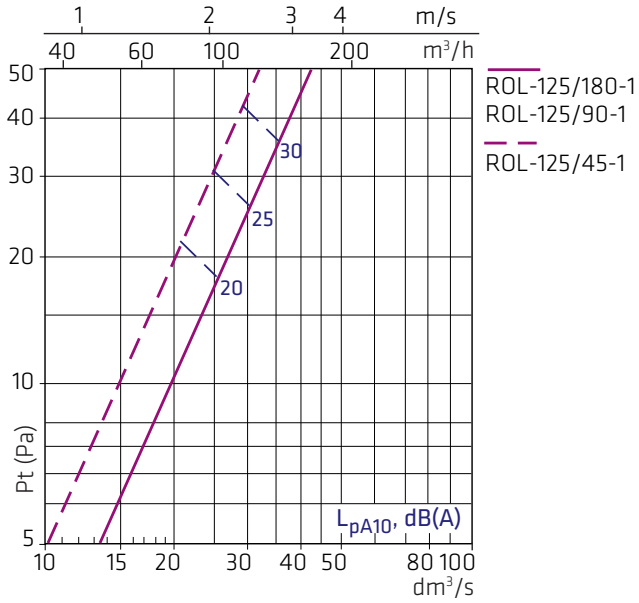
Recommended minimum distances after bend, T branch and T joint.



Dimensioning

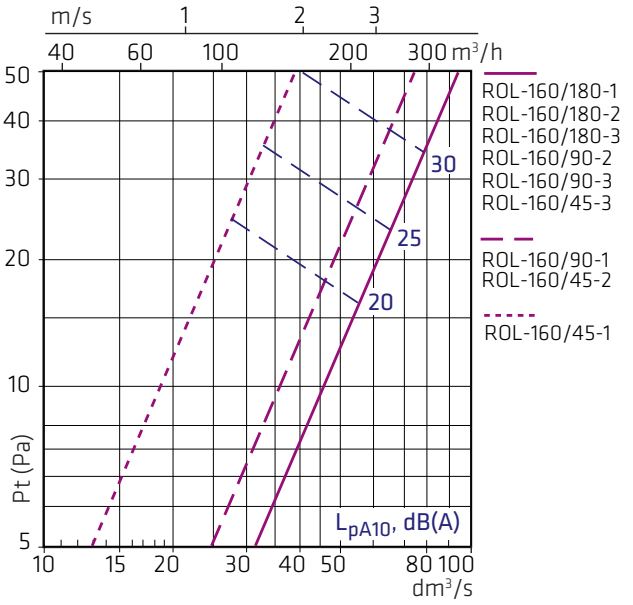
The recommended air flows are shown on page 3. The graphs are not intended for commissioning.

ROL-125



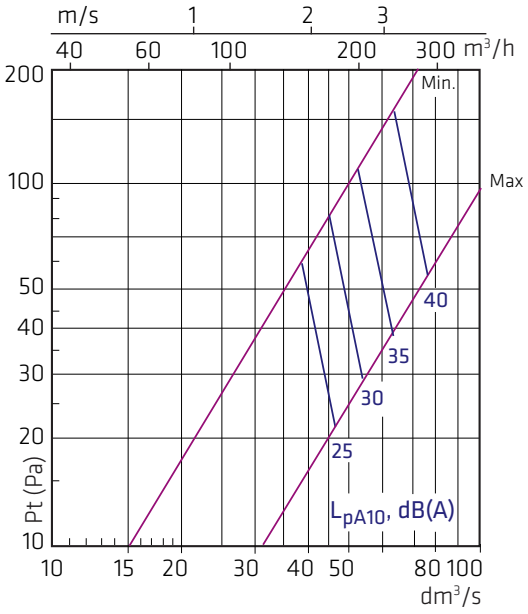
$L_{wokt} = L_{pA10} + K$								
f, Hz	63	125	250	500	1k	2k	4k	8k
K, dB	-6	2	7	9	2	-10	-14	30
ΔL (dB)								
f, Hz	63	125	250	500	1k	2k	4k	8k
ΔL, dB	13	11	6	3	3	4	5	9

ROL-160



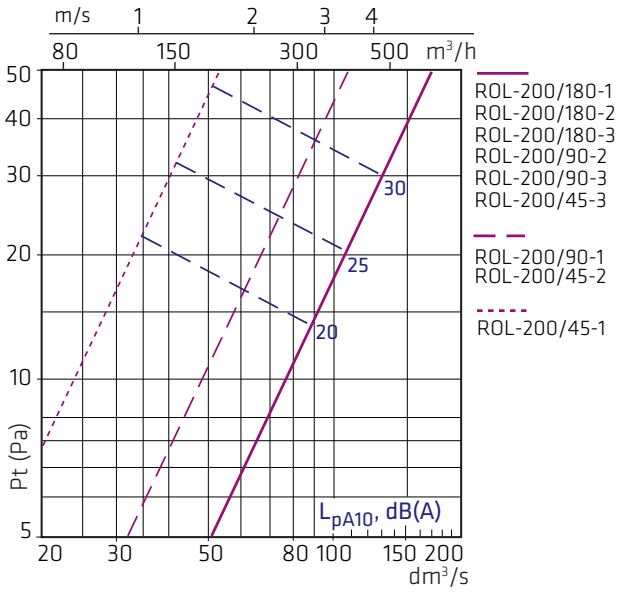
$L_{wokt} = L_{pA10} + K$								
f, Hz	63	125	250	500	1k	2k	4k	8k
K, dB	-6	2	7	9	2	-10	-14	30
ΔL (dB)								
f, Hz	63	125	250	500	1k	2k	4k	8k
ΔL, dB	13	11	6	3	3	4	5	9

ROL-160 / 180 + ROL-S



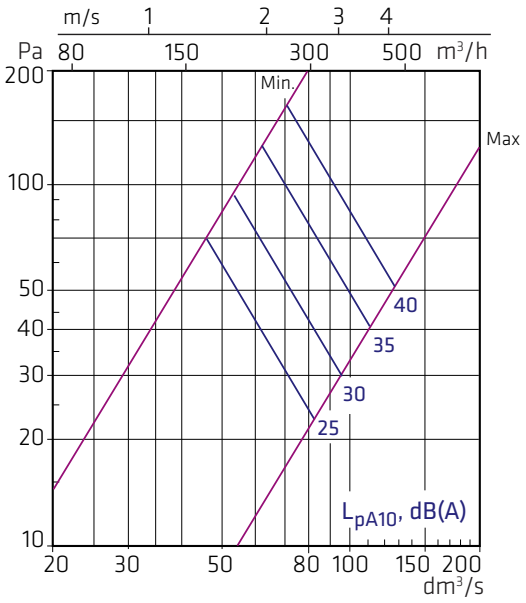
$L_{wokt} = L_{pA10} + K$								
f, Hz	63	125	250	500	1k	2k	4k	8k
K, dB	-2	0	3	5	-4	-13	-21	-25
ΔL (dB)								
f, Hz	63	125	250	500	1k	2k	4k	8k
ΔL, dB	27	22	15	13	22	29	27	21

ROL-200



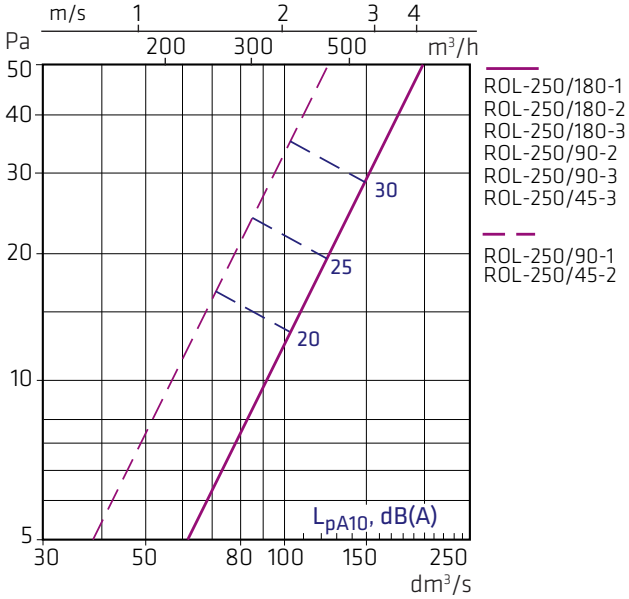
$L_{wokt} = L_{pA10} + K$								
f, Hz	63	125	250	500	1k	2k	4k	8k
K, dB	-5	1	6	8	1	-8	-14	-22
ΔL (dB)								
f, Hz	63	125	250	500	1k	2k	4k	8k
ΔL, dB	12	9	4	2	3	4	4	8

ROL-200 / 180 + ROL-S



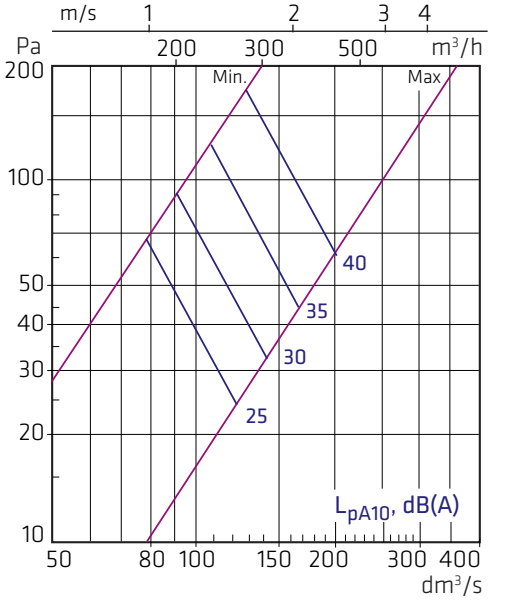
$L_{wokt} = L_{pA10} + K$								
f, Hz	63	125	250	500	1k	2k	4k	8k
K, dB	-2	2	5	5	-5	-14	-18	-13
ΔL (dB)								
f, Hz	63	125	250	500	1k	2k	4k	8k
ΔL, dB	20	17	10	9	19	28	25	18

ROL-250



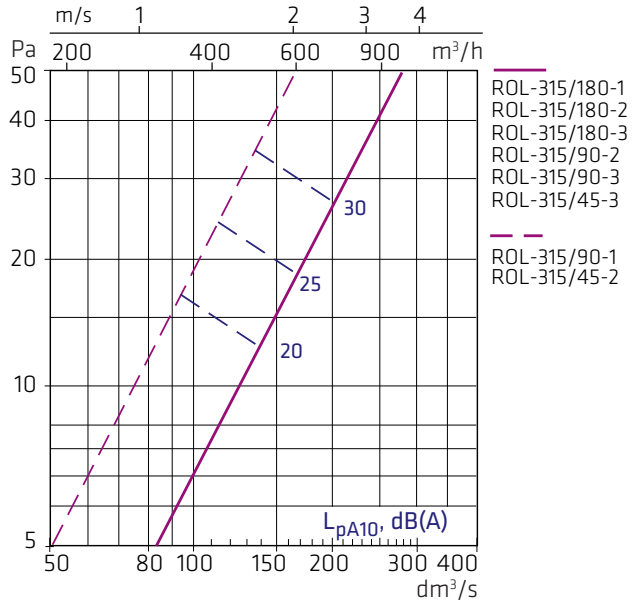
$L_{wokt} = L_{pA10} + K$								
f, Hz	63	125	250	500	1k	2k	4k	8k
K, dB	-1	3	5	7	1	-8	-15	-21
ΔL (dB)								
f, Hz	63	125	250	500	1k	2k	4k	8k
ΔL, dB	10	7	3	1	2	3	4	9

ROL-250 / 180 + ROL-S



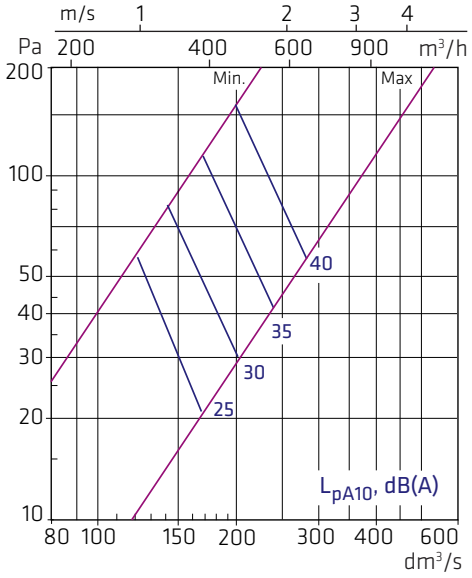
$L_{wokt} = L_{pA10} + K$								
f, Hz	63	125	250	500	1k	2k	4k	8k
K, dB	4	4	7	6	-2	-10	-14	-14
ΔL (dB)								
f, Hz	63	125	250	500	1k	2k	4k	8k
ΔL, dB	19	16	11	14	21	25	24	19

ROL-315



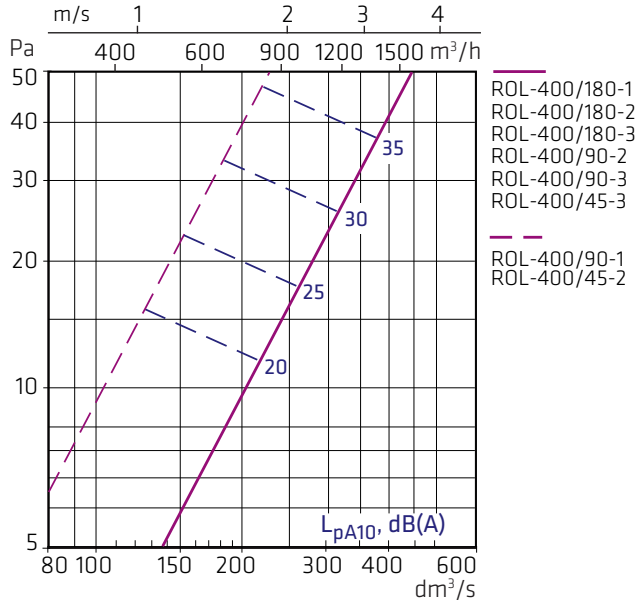
$L_{wokt} = L_{pA10} + K$								
f, Hz	63	125	250	500	1k	2k	4k	8k
K, dB	-1	2	4	6	-3	-6	-14	-23
ΔL (dB)								
f, Hz	63	125	250	500	1k	2k	4k	8k
ΔL, dB	8	6	2	1	2	3	3	8

ROL-315 / 180 + ROL-S



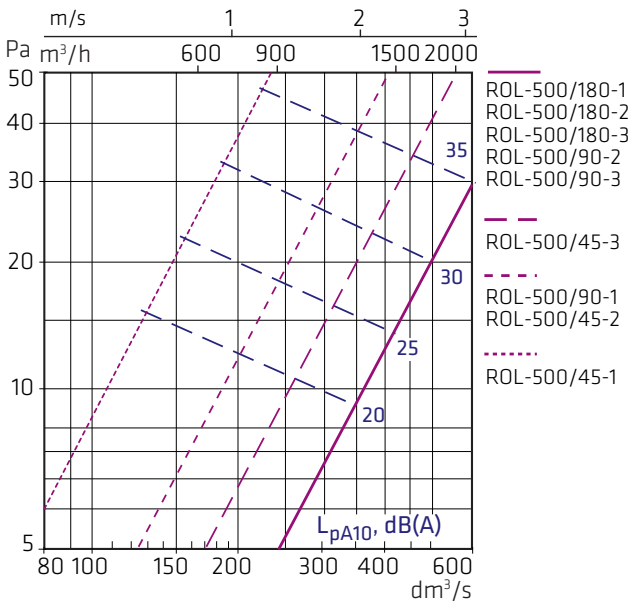
$L_{wokt} = L_{pA10} + K$								
f, Hz	63	125	250	500	1k	2k	4k	8k
K, dB	2	6	9	6	1	-8	-12	-17
ΔL (dB)								
f, Hz	63	125	250	500	1k	2k	4k	8k
ΔL, dB	20	13	9	12	15	22	18	20

ROL-400



$L_{wokt} = L_{pA10} + K$								
f, Hz	63	125	250	500	1k	2k	4k	8k
K, dB	-1	2	3	5	2	-5	-14	-22
ΔL (dB)								
f, Hz	63	125	250	500	1k	2k	4k	8k
ΔL, dB	8	4	1	1	2	2	3	8

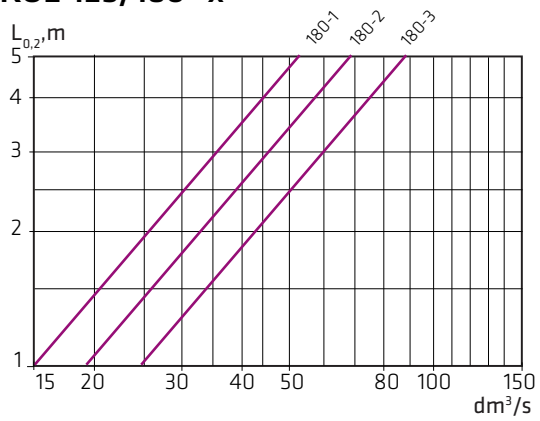
ROL-500



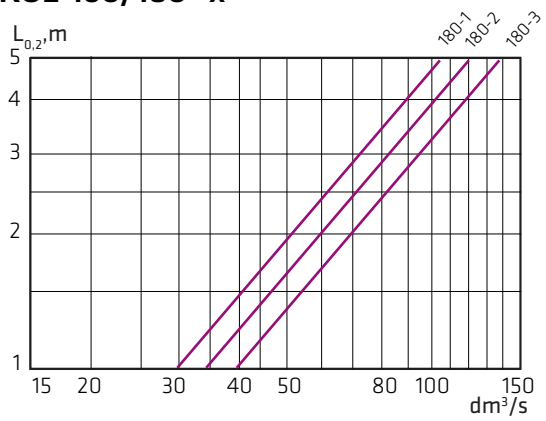
$L_{wokt} = L_{pA10} + K$								
f, Hz	63	125	250	500	1k	2k	4k	8k
K, dB	-1	2	3	5	2	-5	-14	-22
ΔL (dB)								
f, Hz	63	125	250	500	1k	2k	4k	8k
ΔL, dB	8	4	1	1	2	2	3	8

ROL nozzle duct throw length in two directions 180°

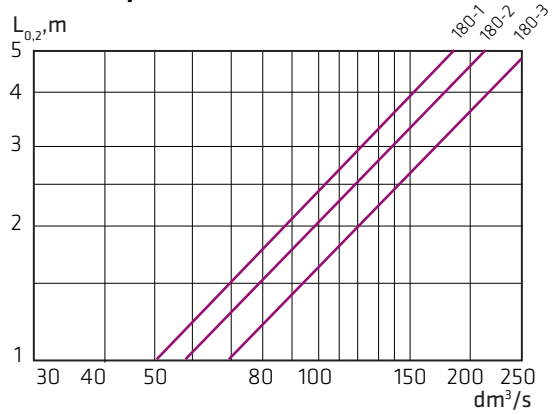
ROL-125/180°-x



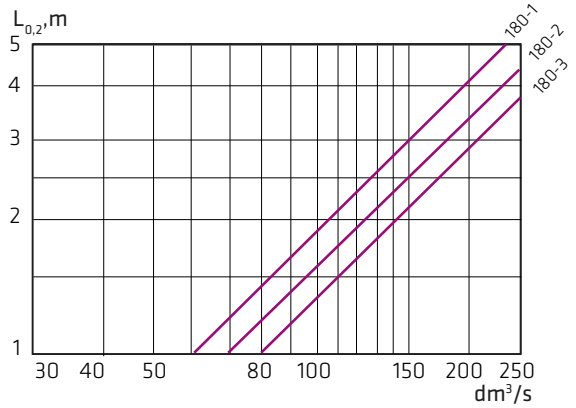
ROL-160/180°-x



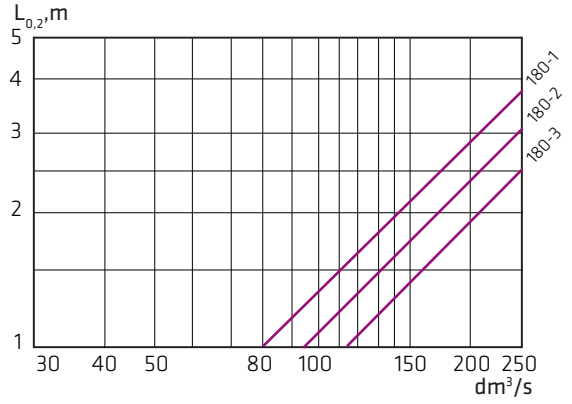
ROL-200/180-x



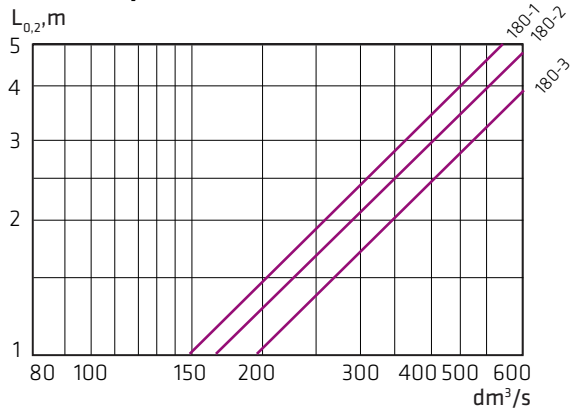
ROL-250/180-x



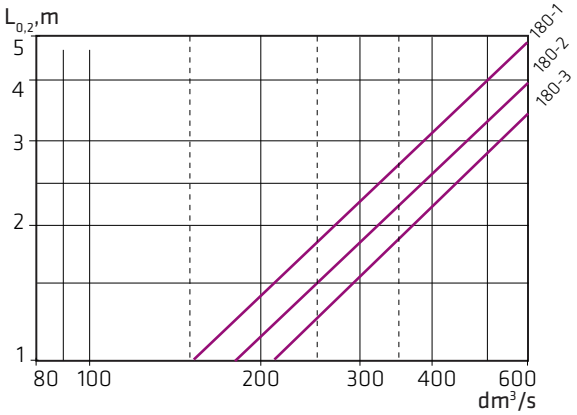
ROL-315/180-x



ROL-400/180-x



ROL-500/180-x

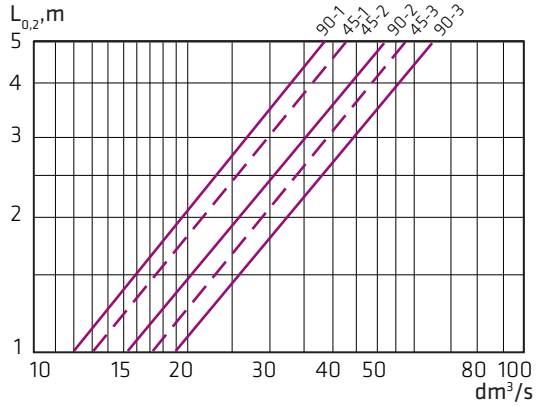


x: length 1, 2 tai 3 = number of modules

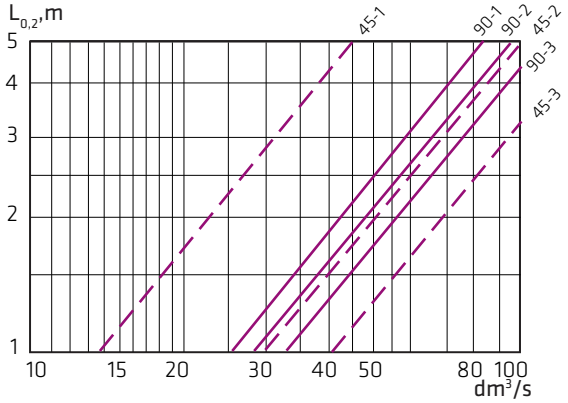
1=1500
2=3000
3=4500

ROL nozzle duct throw length in one direction 90° or 45°

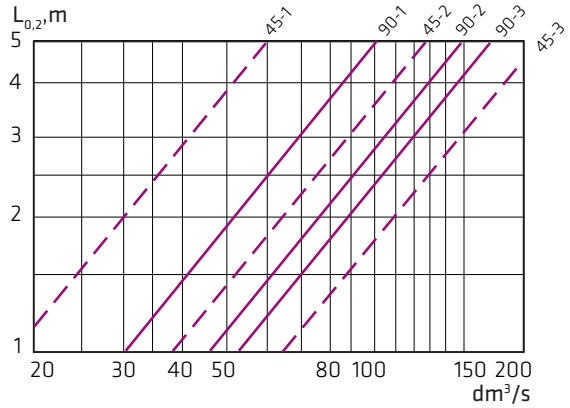
ROL-125/90-x, ROL-125/45-x



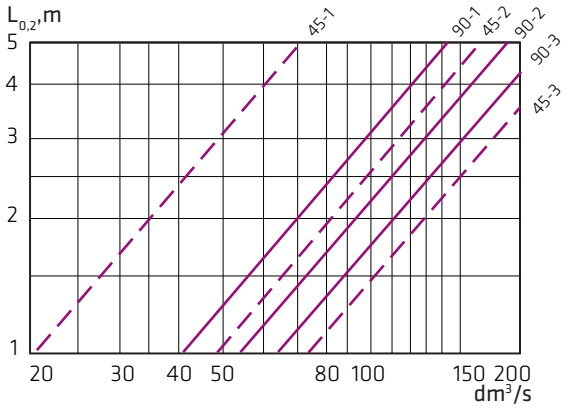
ROL-160/90-x, ROL-160/45-x



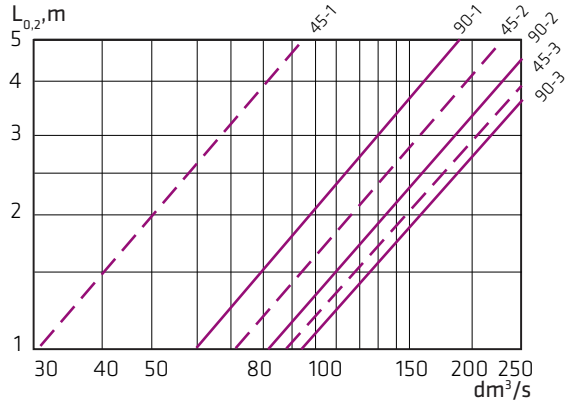
ROL-200/90-x, ROL-200/45-x



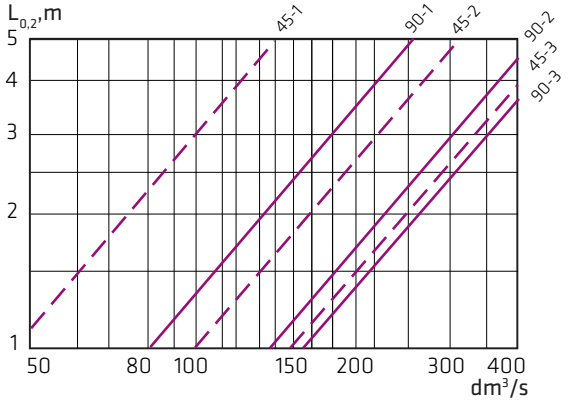
ROL-250/90-x, ROL-250/45-x



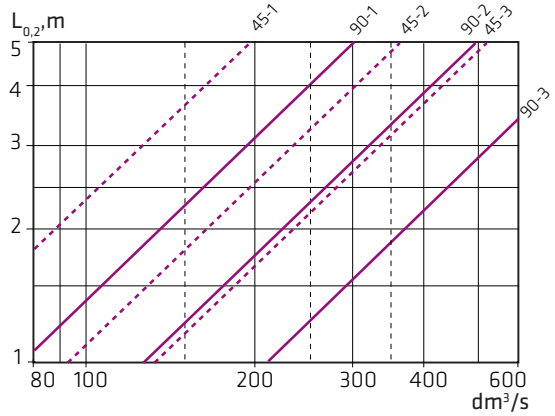
ROL-315/90-x, ROL-315/45-x



ROL-400/90-x, ROL-400/45-x



ROL-500/90-x, ROL-500/45-x



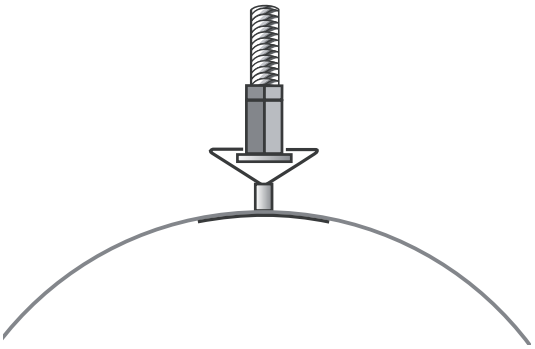
x: length 1, 2 tai 3 = number of modules

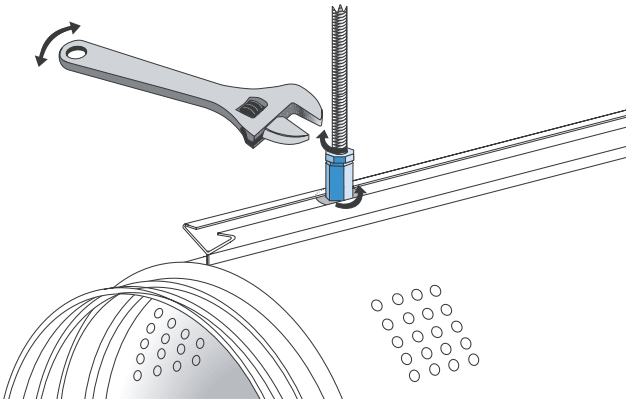
1=1500
2=3000
3=4500

Weights

	1500 1	3000 2	4500 3	ROL-S
125	5,3	7,5	11	-
160	6,3	9	13	7,5
200	7	12	16	9
250	9	15	21	11,5
315	11	19	26	14
400	14	24	34	-
500	17	30	42	-

Installation of ROL nozzle duct





The entirely redesigned hanging rail allows quick installation.

The rotating rivets with left-hand thread in the hanging rail move freely, allowing the longitudinal hanging points to be chosen freely.

The rotating rivets make fastening extremely simple and quick, while allowing exact fine-tuning of the height.

Maintenance and cleaning

The throw pattern, directed away from the module surface, significantly reduces soiling. The even, smooth surface can be cleaned quickly and easily. The end cap can be opened, allowing easy mechanical sweeping of the inside.

The ROL-S adjustment unit can be easily removed and it operates as a cleaning hatch from which the duct can be swept clean. The adjustment unit can thus be cleaned separately.