

# 07



Protection louvres



Supply air/exhaust  
air towers

# External elements

Protection louvres are installed in building fronts (in supply and exhaust air openings) as a protection against the direct ingress of rain, birds, bigger insects etc. They are suitable for all low pressure air-conditioning, heating and ventilation.

Air towers are used for the supply and exhaust of air.

VENTILATING GRILLES,  
VENTILATING VALVES

CIRCULAR DIFFUSERS,  
SQUARE DIFFUSERS

SWIRL DIFFUSERS,  
VARIABLE SWIRL  
DIFFUSERS

SLOT DIFFUSERS,  
ROUND DUCT DIFFUSERS

AIR DISPLACEMENT  
UNITS

SUPPLY AIR NOZZLES

EXTERNAL ELEMENTS

AIR FLOW  
CONTROL UNITS

SOUND ATTENUATORS,  
SOUND ATTENUATING  
LOUVRES

# Overview

## ■ Protection louvres

Protection louvres are installed in building fronts (in supply and exhaust air openings) as a protection against the direct ingress of rain, birds, bigger insects etc. They are suitable for all low pressure air-conditioning, heating and ventilation. They are made of galvanised steel or aluminium in numerous standard or special dimensions.

### Protection louvres



AZR-3



AZR-4



JZR-6



OZR-1

## ■ Supply air/exhaust air towers

Air towers are used for the supply and exhaust of air. Various construction types can be made of different materials and in different dimensions according to the customer's request.

### Supply air/exhaust air towers



SP - round



SP - rectangular

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## ■ Circular protection louvres OZR-1

### Application

Circular protection louvres OZR-1 are suitable for all low pressure air-conditioning, heating and ventilation where supply and exhaust opening require protection against the direct ingress of rain, birds, bigger insects etc.

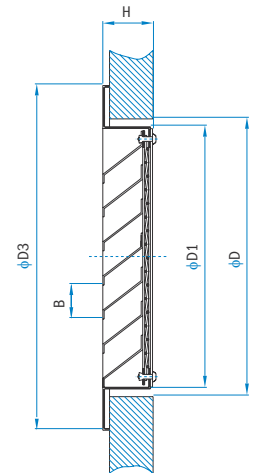
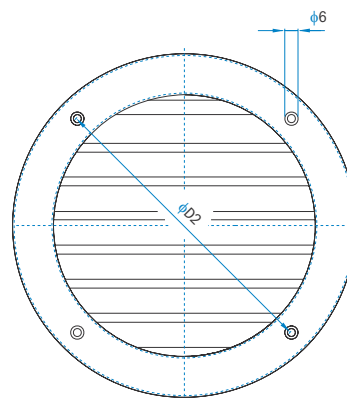
### Description

Circular protection louvres OZR-1 consist of supporting frame and specially designed horizontal vanes. They are made of sheet steel or sheet aluminium and screen of galvanised steel wire. Upon customer's wish, they can be coloured in any colour or galvanized.

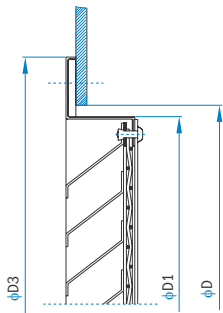


### Standard sizes

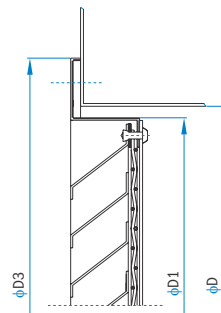
Size	ΦD	ΦD1	ΦD2	ΦD3	B	H
160	160	150	178	208	27.5	32
200	200	190	218	248	25	32
250	250	240	268	298	25	32
315	315	305	333	363	26.5	32
355	355	345	373	403	25.4	32
400	400	390	419	450	25	32
500	500	490	519	550	25	40
630	630	620	649	680	25.2	40
800	800	790	819	850	25	40



### Installation types

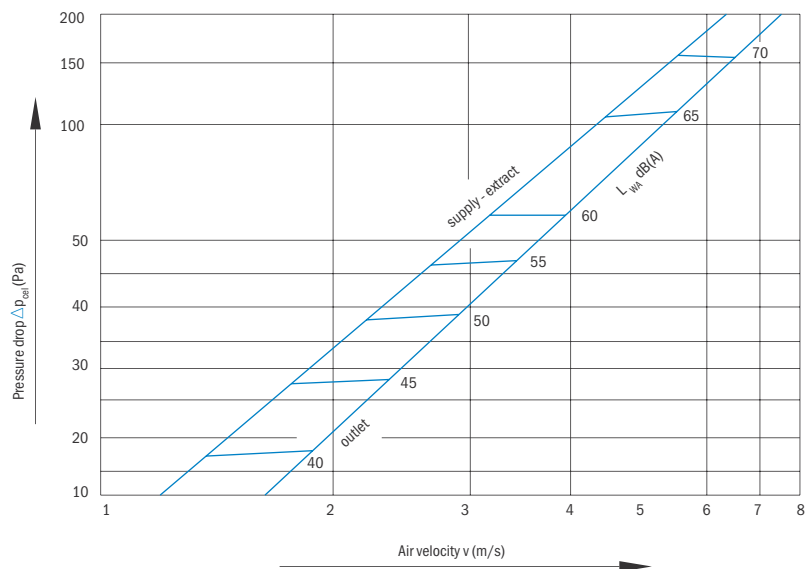


Protection louvre is screw-connected directly to wall or duct.



Protection louvre is screw-fastened to the round duct via the flange.

### Pressure drop diagram



#### Example of calculation

Size 630  $\geq A_{ef} = 0.2241 \text{ m}^2$   
 $Q = 2500 \text{ m}^3/\text{h}$   
 $v = (Q / 3600) / A_{ef} = (2500 / 3600) / 0.2241 = 3 \text{ m/s}$   
 $\Delta p_{cel}$  from diagram      Supply    55 Pa  
     Outlet    40 Pa

#### Definition of symbols

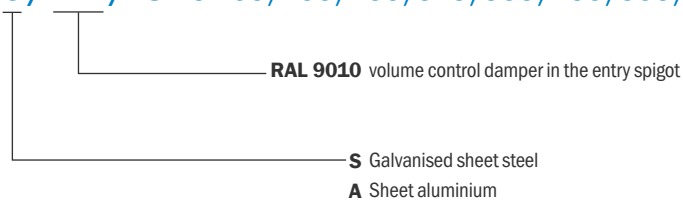
$\Delta p_{cel}$  (Pa)    pressure drop  
 $L_{WA}$  (dB(A))    sound power level  
 $V$  (m/s)        air velocity

Use the diagram to determine the total pressure drop in respect of air velocity at the free sectional area  $A_{ef}$ .

<b>Size</b>	<b>160</b>	<b>200</b>	<b>250</b>	<b>315</b>	<b>355</b>	<b>400</b>	<b>500</b>	<b>630</b>	<b>800</b>
<b><math>A_{ef} (\text{m}^2)</math></b>	0.0144	0.0224	0.0351	0.0556	0.0707	0.0883	0.1395	0.2241	0.3630

#### Ordering key

**OZR - 1 / S / RAL / Size 160, 200, 250, 315, 355, 400, 500, 630, 800**



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 AIR DISPLACEMENT UNITS  
 SUPPLY AIR NOZZLES  
 EXTERNAL ELEMENTS  
 AIR FLOW CONTROL UNITS  
 SOUND ATTENUATORS, SOUND ATTENUATING LOUVRES