# Pressure control valve OLR

## Description

OLR is a rectangular pressure control valve for installation directly onto a wall. OLR consists of two sound-attenuating baffles, which are mounted either side of the wall and connected by means of the accompanying perforated wall sleeve, which ensures excellent noise reduction.

- High capacity
- Sound-attenuating baffles
- Can be installed in wall thicknesses from 90 - 170 mm

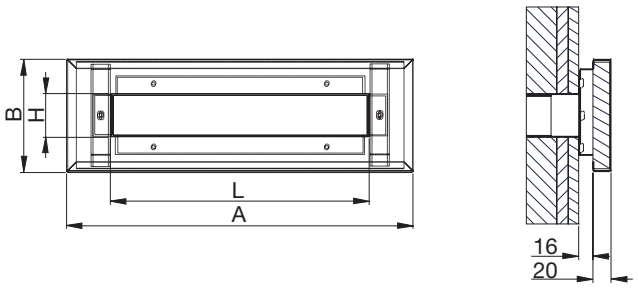
## Maintenance

Front plate can be removed to enable cleaning of internal parts. The visible parts of the diffuser can be wiped with a damp cloth.

## Order code

| Product | OLR | aaa | A |
|---|---|---|---|
| Type | | | |
| Size | | | |
| Version | | | |

## Dimensions




| Size | A mm | B mm | L mm | H mm |
|---|---|---|---|---|
| 400 | 400 | 130 | 300 | 50 |
| 600 | 600 | 130 | 500 | 50 |
| 800 | 800 | 130 | 700 | 50 |
| 1000 | 1000 | 130 | 900 | 50 |

Hole dimension = L + 5 mm x H + 5 mm.

## Materials and finish

| | |
|---|---|
| Installation bracket: | Galvanised steel |
| Front plate: | Galvanised steel |
| Standard finish: | Powder-coated |
| Standard colour: | RAL 9010 or 9003, Gloss 30 |

The diffuser is available in other colours. Please contact Lindab's sales department for further information.

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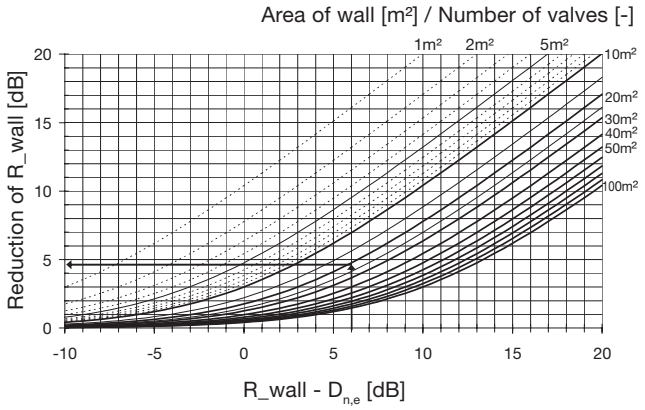
## Technical data

## Sample calculation

When dimensioning an overflow diffuser, calculate the decrease in the wall's noise-reducing properties. For these calculations, the area of the wall and sound reduction figure R must be known. This is adjusted in relation to the diffuser's $D_{n,e}$ value. $D_{n,e}$ is the diffuser's R value given at a transmission area of 10 $m^2$, as specified in ISO 140-10. The $D_{n,e}$ value can be converted into the R value for other transmission areas using the table below.

| **Area [$m^2$]** | 10 | 2 | 1 |
|---|---|---|---|
| **Correction [dB]** | 0 | -7 | -10 |

The diagram below indicates the decrease in the wall's reduction figure, based on the diffuser, in a given octave band:




As a rough estimate the calculation can be performed directly using the wall's $R_w$ value.

**Example:**

| | |
|---|---|
| $R_w$ (wall) | 50 dB |
| $D_{n,e,w}$ (diffuser) | 44 dB $R_w$- $D_{n,e,w}$ = 6 dB |
| Area of wall | 20 $m^2$ |
| Number of diffusers | 1pcs. 20 $m^2$/1pcs. = 20 $m^2$ |

Indicated reduction of $R_w$ (wall): 5
$R_w$ value for wall with diffuser: ~50-5 = 45 dB

The calculation can also be performed using the following formula:

$$R_{res} = 10 \cdot \text{Log} \frac{S_{wall}}{(10m^2 \cdot 10^{-0,1 \cdot D_{n,e}}) + (S_{wall} \cdot 10^{-0,1 \cdot R_{wall}})}$$

**where:**

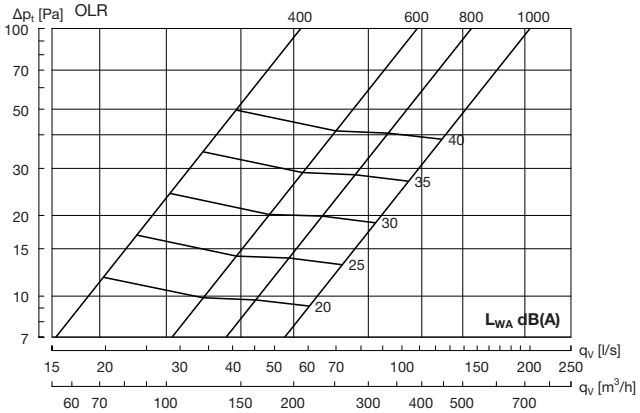
- $R_{res}$ is the resulting reduction figure for wall and diffuser.
- S is wall area.
- $D_{n,e}$ is the diffuser's $D_{n,e}$ value.
- $R_{wall}$ is the wall's R value without diffuser.

## Technical data

## Capacity

Volume flow $q_v$ [l/s] and [$m^3$/h], total pressure drop $\Delta p_t$ [Pa] and sound effect level $L_{WA}$ [dB(A)] are specified for a diffuser on either side of the wall.

## Dimensioning diagram




***Element-normalised reduction figure $D_{n,e}$***

**Table 1:** Cavity wall with 120 mm insulation.

| Size | Centre frequency Hz | | | | | |
|---|---|---|---|---|---|---|
| | 125 | 250 | 500 | 1K | 2K | $D_{n,e,w}$ |
| 400 | *31 | 37 | 41 | 46 | 55 | 46 |
| 600 | *29 | 35 | 38 | 43 | 52 | 43 |
| 800 | *28 | 34 | 37 | 42 | 51 | 42 |
| 1000 | *26 | 33 | 36 | 41 | 50 | 41 |

**Table 2:** Cavity wall with 35-70 mm insulation.

| Size | Centre frequency Hz | | | | | |
|---|---|---|---|---|---|---|
| | 125 | 250 | 500 | 1K | 2K | $D_{n,e,w}$ |
| 400 | *31 | 37 | 39 | 42 | 52 | 44 |
| 600 | *29 | 35 | 37 | 40 | 49 | 42 |
| 800 | *28 | 34 | 35 | 39 | 48 | 40 |
| 1000 | *26 | 33 | 34 | 38 | 47 | 39 |

**Table 3:** Positioning over a frame in a cavity wall with 70 mm insulation.

| Size | Centre frequency Hz | | | | | |
|---|---|---|---|---|---|---|
| | 125 | 250 | 500 | 1K | 2K | $D_{n,e,w}$ |
| 400 | *31 | 37 | 36 | 41 | 52 | 42 |
| 600 | *29 | 35 | 33 | 39 | 49 | 39 |
| 800 | *28 | 34 | 32 | 38 | 48 | 38 |
| 1000 | *26 | 33 | 31 | 37 | 47 | 37 |

**Table 4:** Solid wall without insulation.

| Size | Centre frequency Hz | | | | | |
|---|---|---|---|---|---|---|
| | 125 | 250 | 500 | 1K | 2K | $D_{n,e,w}$ |
| 400 | *31 | 37 | 32 | 37 | 45 | 38 |
| 600 | *29 | 35 | 30 | 35 | 43 | 36 |
| 800 | *28 | 34 | 28 | 33 | 42 | 34 |
| 1000 | *26 | 33 | 27 | 32 | 41 | 33 |

* minimum values