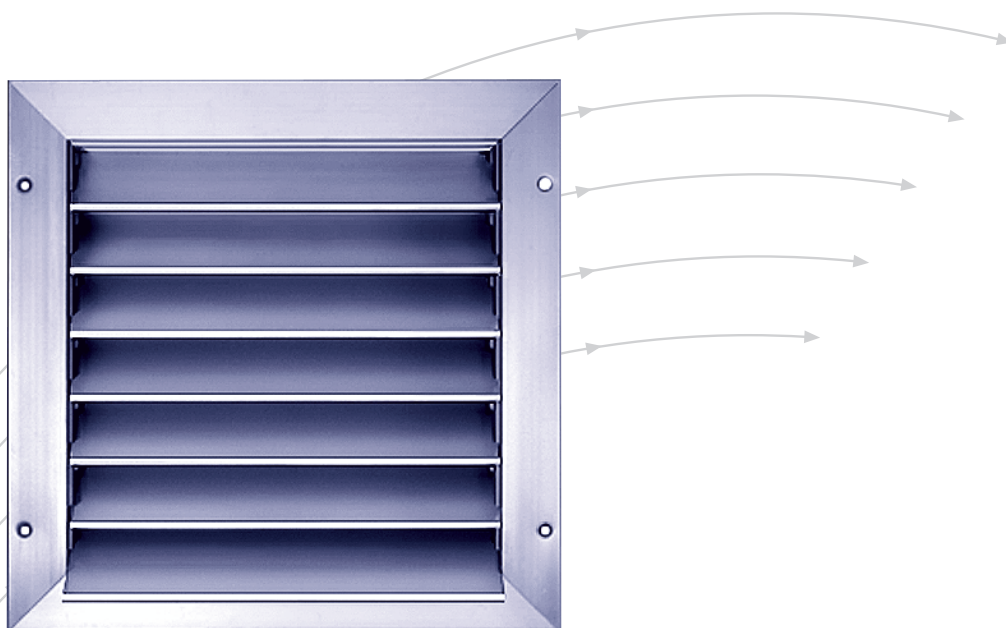


Weather Resistant Louvres

- Type WSL
- Untreated aluminium



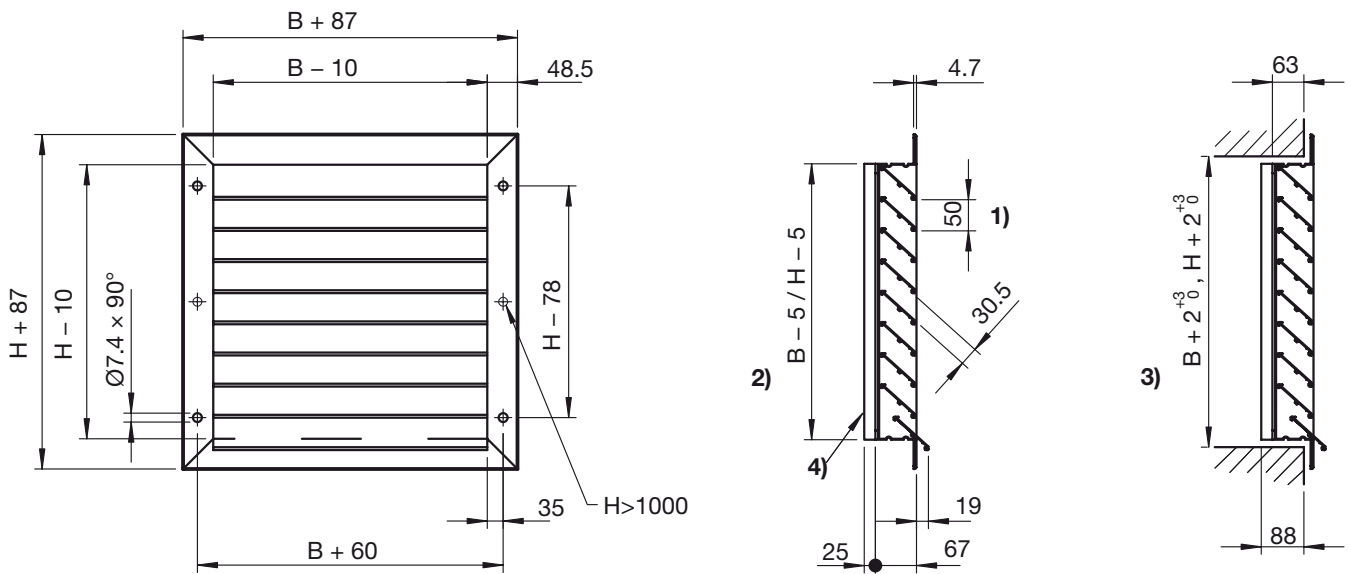
TROX® **TECHNIK**



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Dimensions



- 1) Subdivision
- 2) External dimensions
- 3) Minimum recess
- 4) $B > 1000$ mm with bridge, on the rear

Remark: The nominal dimensions B and H are not measured!

Nom. width B [mm]	Nom. height H [mm]
200	200
250	250
300	300
350	350
400	400
500	500
600	600
700	700
800	800
1000	1000
1250	1250 x
1500	1500 x
1750	1750 x
2000	2000 x
2500 x	
3000 x	

x = for nominal sizes 2000 x 2000, 3000 x 1000 and 1000 x 3000 mm = individual louvres (supplied in one piece). Larger sizes in sections.

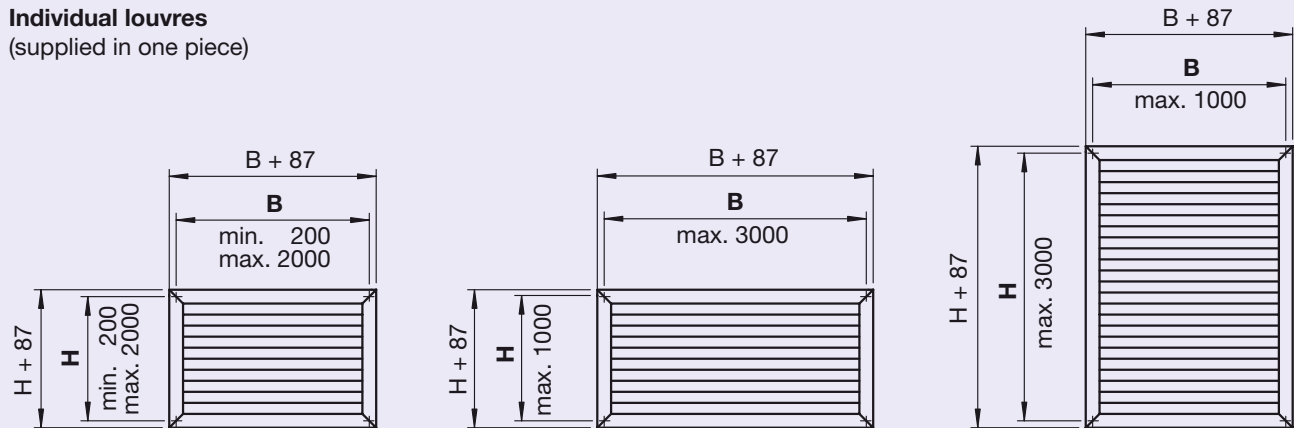
Sizes

Overview of WSL individual and continuous louvres

Remark: B × H are nominal sizes

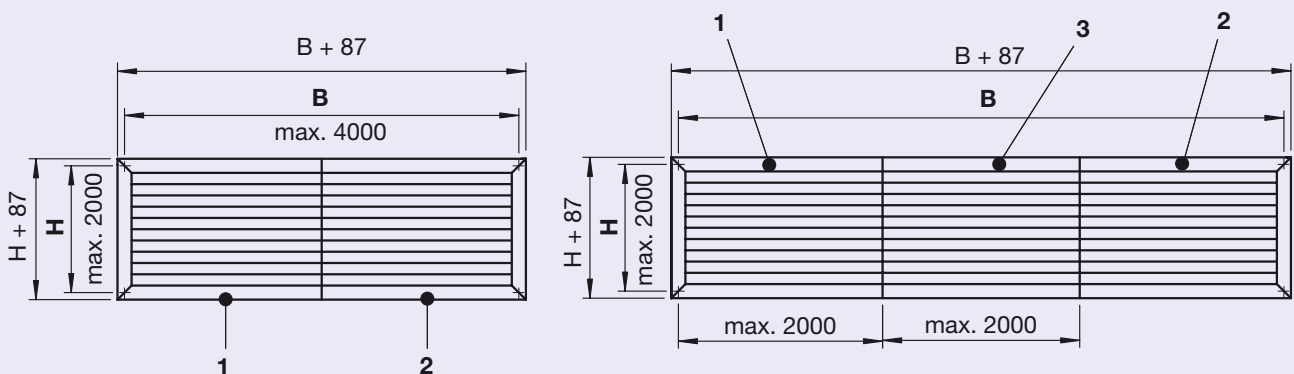
Individual louvres

(supplied in one piece)



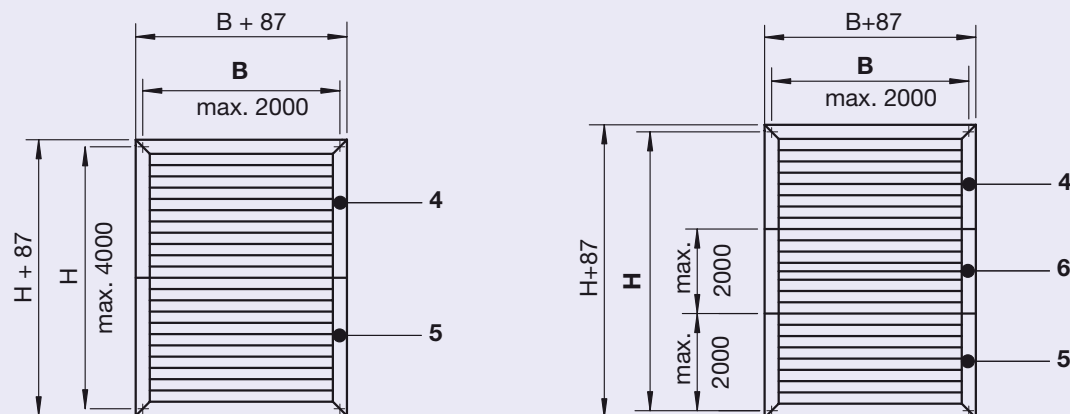
Continuous louvres «horizontal», type WSL - BH...

(supplied in sections)

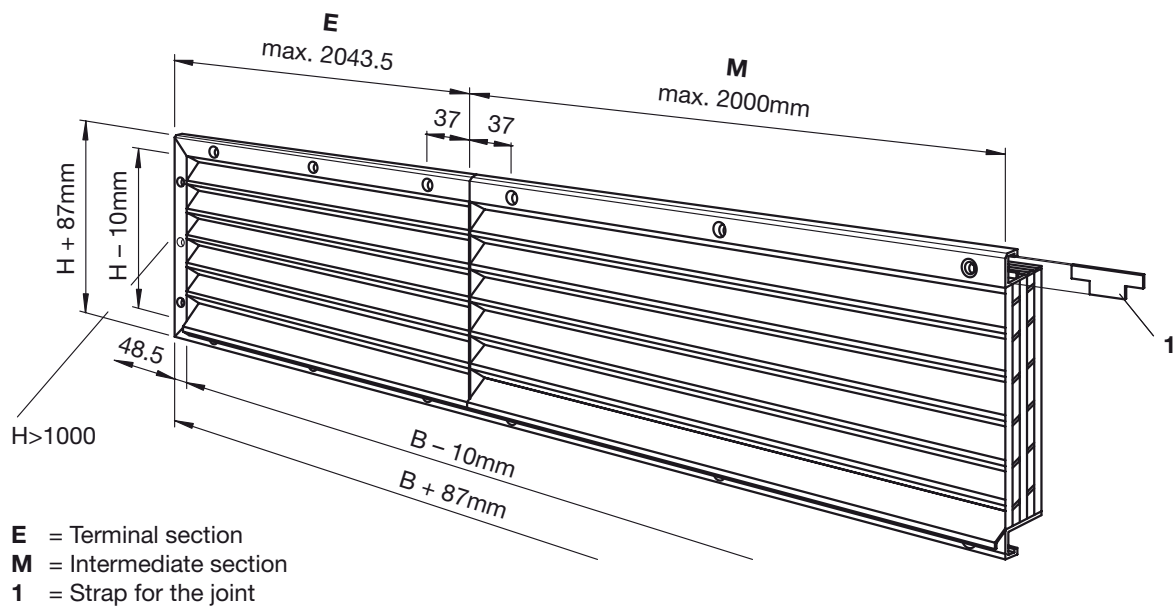


- 1 Left-hand terminal section horizontal
- 2 Right-hand terminal section horizontal
- 3 Intermediate section horizontal

Continuous louvres «vertical», type WSL - BV...



- 4 Upper terminal section vertical
- 5 Lower terminal section vertical
- 6 Intermediate section vertical



WSL Individual louvres

WSL individual louvres are available in the following versions:

- **Standard:** untreated aluminium with galvanized wire
- Aluminium painted according to RAL...
- Aluminium colorless anodised
- Aluminium colored anodised as per TROX HESCO color card
- Galvanized insect screen
- The lowest blade not protruding

Installation and accessories

Installation without wall frame in concrete or brick wall as well as in wood and metal structures.

The wide edge at the WSL to a great extent allows installing it **without** any wall frame.

min. recess dimensions = nominal width $B + 2$ mm
 = nominal height $H + 2$ mm

Included are: raised countersunk metal screws with slit $\varnothing 5.5 \times 25$ mm. (At site: dowels $\varnothing 7$ mm for concrete or brick wall).

Special installation situations

- a) Installation with wall frame
- b) Installation into wall with outside insulation
- c) Installation into gas concrete
- d) Installation without any screws visible

Please consult us for additional information!

WSL Continuous louvres

Application and Realisation as described previously.

Dimensions

WSL with a nominal width $B > 2000$ mm (or 3000 mm) are called continuous weather resistant louvres.

Nominal widths B with graduation of 1mm are available.

Common heights H , see individual louvres page 4 and table page 2. Sections of 50 to 50 mm are most common.

For special cases, nominal dimensions $B \times H$ within maximum sizes are available in any dimension.

Continuous WSL louvres are supplied in sections (terminal and intermediate sections).

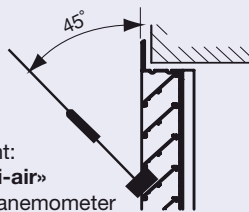
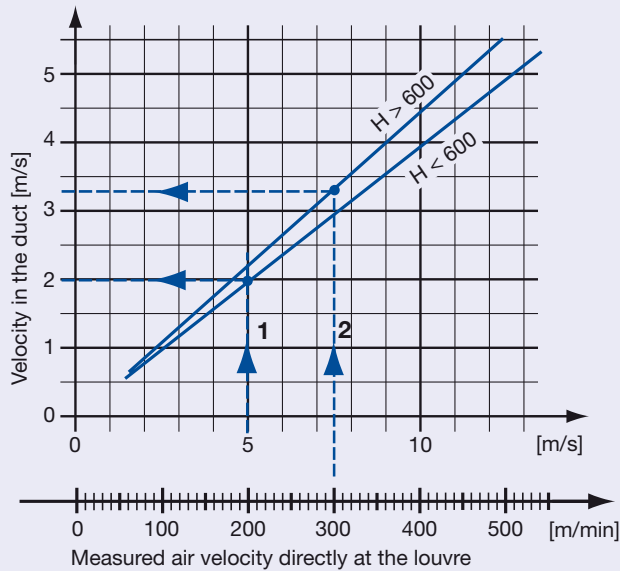
Maximum length of a section = 2000 mm, see page 4 and above.

L_w	dB	Sound power level
	dB(lin)	Linear sound power level
L_{wA}	dB(A)	A-weighted sound power level
A	m^2	Eff. nominal surface (B × H)
A_0	m^2	Nominal surface of reference
Δp_s	Pa	Pressure drop
Δp_t	Pa	Total pressure drop
\dot{V}	m^3/h	Air volume rate
\dot{V}_A	m^3/h	Extract air volume rate $\dot{V}_A = v_A \times A \times 3600$
\dot{V}_Z	m^3/h	Supply air volume rate $\dot{V}_Z = v_Z \times A \times 3600$
v_{gem}	m/s	Measured air velocity directly at the louvre
v_{gem}	m/min	Measured air velocity directly at the louvre

Quick selection

Air volume rate per m^2 (B × H)	\dot{V}	≤	approx. 10 000 m^3/h
Air velocity in the duct	v_A	≤	approx. 2.78 m/s
Sound power level per m^2	L_w		approx. 50 dB(A)
Pressure drop:			
– by discharge outlet	Δp_s		approx. 27 Pa,
	Δp_t		approx. 32 Pa
	ζ		approx. 7.2 (zeta value)
– by taking in fresh air	Δp_s		approx. 42 Pa,
	Δp_t		approx. 46 Pa
	ζ		approx. 10.3 (zeta value)

Determination of the air volume rate, extract air



Measuring instrument:
 - Schiltknecht «mini-air»
 - Lambrecht minute anemometer

Example 1 (extract air)

Given

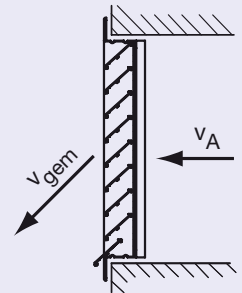
v_{gem} 5 m/s
 $B \times H$ 0.4 × 0.4 m = 0.16 m²

Wanted

- Air velocity v_A in the duct ($B \times H$) m/s
- Extract air volume rate \dot{V}_A m³/h

Solution

- $v_A = 2.0$ m/s
- $\dot{V}_A = v_A \times A \times 3600 = 2.0 \times 0.16 \times 3600 = 1152$ m³/h



Example 2 (extract air)

Given

v_{gem} 300 m/min
 $B \times H$ 0.2 × 1.0 m = 0.20 m²

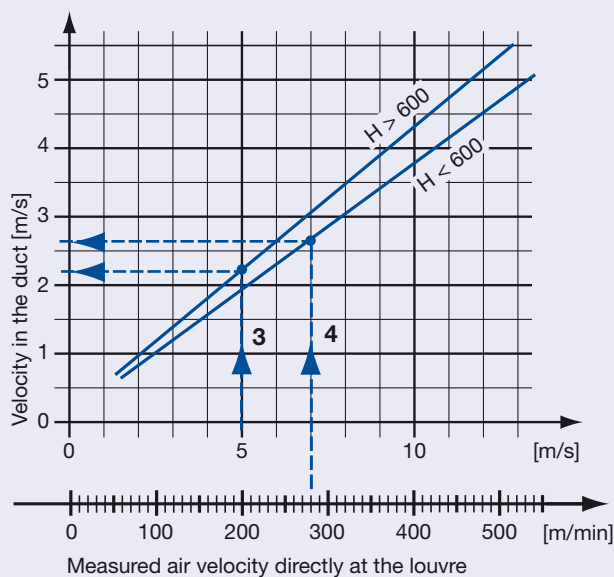
Wanted

- Air velocity v_A in the duct ($B \times H$) m/s
- Extract air volume rate \dot{V}_A m³/h

Solution

- $v_A = 3.25$ m/s
- $\dot{V}_A = v_A \times A \times 3600 = 3.25 \times 0.20 \times 3600 = 2340$ m³/h

Determination of the air volume rate, supply air



Example 3 (supply air)

Given

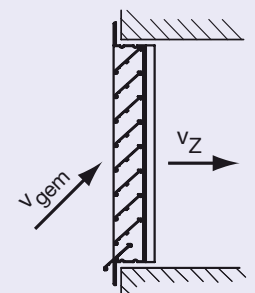
v_{gem} 5 m/s
 $B \times H$ 0.2 × 1.0 m = 0.20 m²

Wanted

- Air velocity v_Z in the duct ($B \times H$) m/s
- Supply air volume rate \dot{V}_Z m³/h

Solution

- $v_Z = 2.2$ m/s
- $\dot{V}_Z = v_Z \times A \times 3600 = 2.2 \times 0.20 \times 3600 = 1584$ m³/h



Example 4 (supply air)

Given

v_{gem} 280 m/min
 $B \times H$ 0.5 × 0.5 m = 0.25 m²

Wanted

- Air velocity v_Z in the duct ($B \times H$) m/s
- Supply air volume rate \dot{V}_Z m³/h

Solution

- $v_Z = 2.6$ m/s
- $\dot{V}_Z = v_Z \times A \times 3600 = 2.6 \times 0.25 \times 3600 = 2340$ m³/h

Technical Data

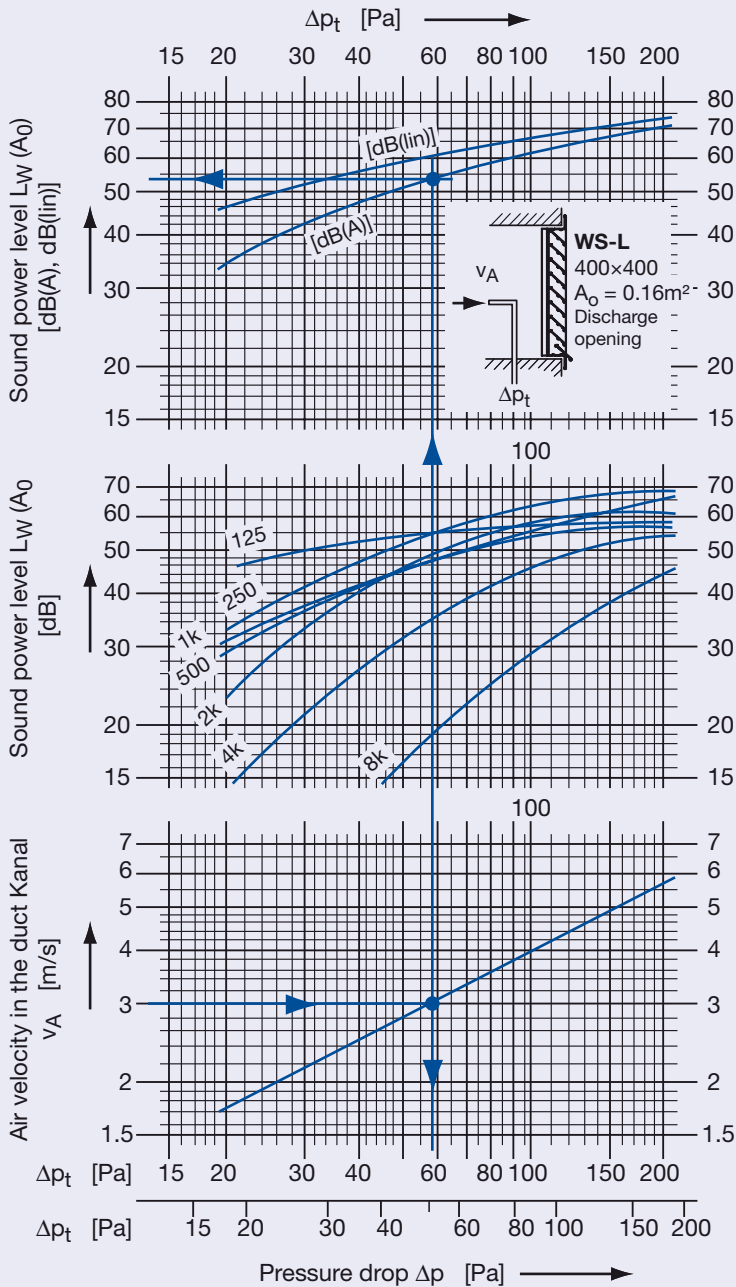
Sound power level, discharge opening

Sound power level L_W (A_0) and pressure drop Δp_t ; Δp_s

WSL 400×400mm

Nom. surface of reference $A_0 = 0.16 \text{ m}^2$

Sound power level of reference $W_0 = 10^{-12} \text{ W}$



Example

WSL 200×400mm

$v_A = 3 \text{ m/s}$

Of diagram

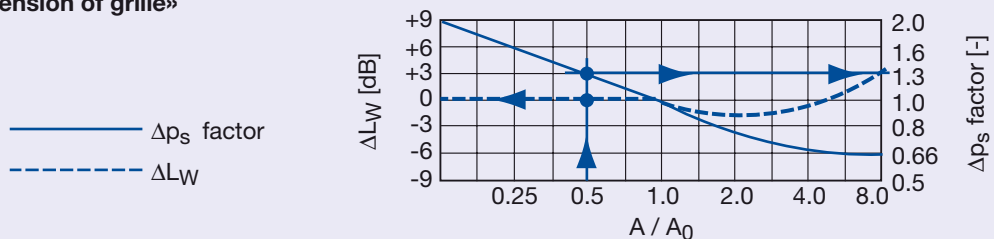
L_W	by 0.16 m^2	= 53 dB(A)
Δp_s		= 50 Pa
A / A_0	= $0.08 / 0.16$	= 0.5
ΔL_W		= +0 dB
L_W	= $53 + 0$	= 53 dB(A)
Δp_s Factor		= 1.3
Δp_s	= 50×1.3	= 65 Pa

Tolerances

Total level $\pm 2 \text{ dB}$

Octave level $\pm 4 \text{ dB}$

2. Correction «dimension of grille»



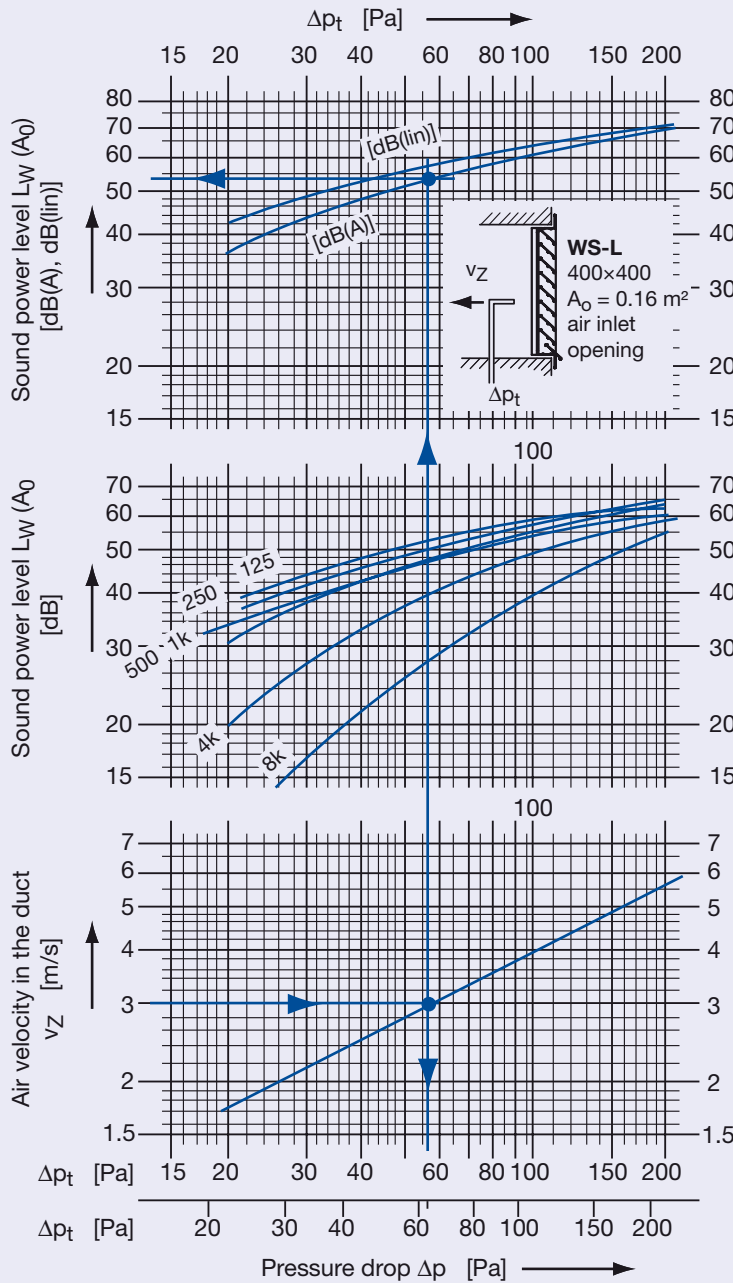
Sound power level, air inlet opening

Sound power level L_W (A_0) and pressure drop Δp_t ; Δp_s

WSL 400×400mm

Nom. surface of reference $A_0 = 0.16 \text{ m}^2$

Sound power level of reference $W_0 = 10^{-12} \text{ W}$



Example

WSL 200×400mm

$v_z = 3 \text{ m/s}$

Of diagram

L_w	by 0.16 m^2	=	52 dB(A)
Δp_s		=	62 Pa
A / A_0	= $0.08 / 0.16$	=	0.5
ΔL_w		=	+1 dB
L_w	= $52 + 1$	=	53 dB(A)
Δp_s Factor		=	1.4
Δp_s	= 62×1.4	=	87 Pa

Tolerances

Total level $\pm 2 \text{ dB}$

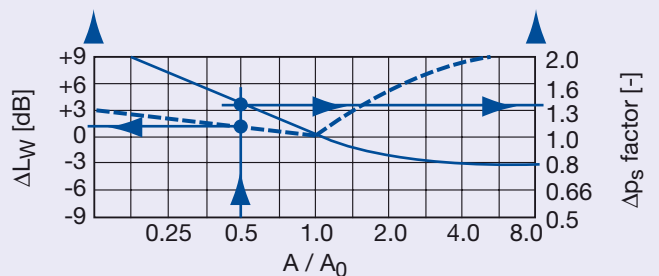
Octave level $\pm 4 \text{ dB}$

2. Correction «dimension of grille»

A_0 Nom. surface of reference = 0.16 m^2

A Eff. nominal surface

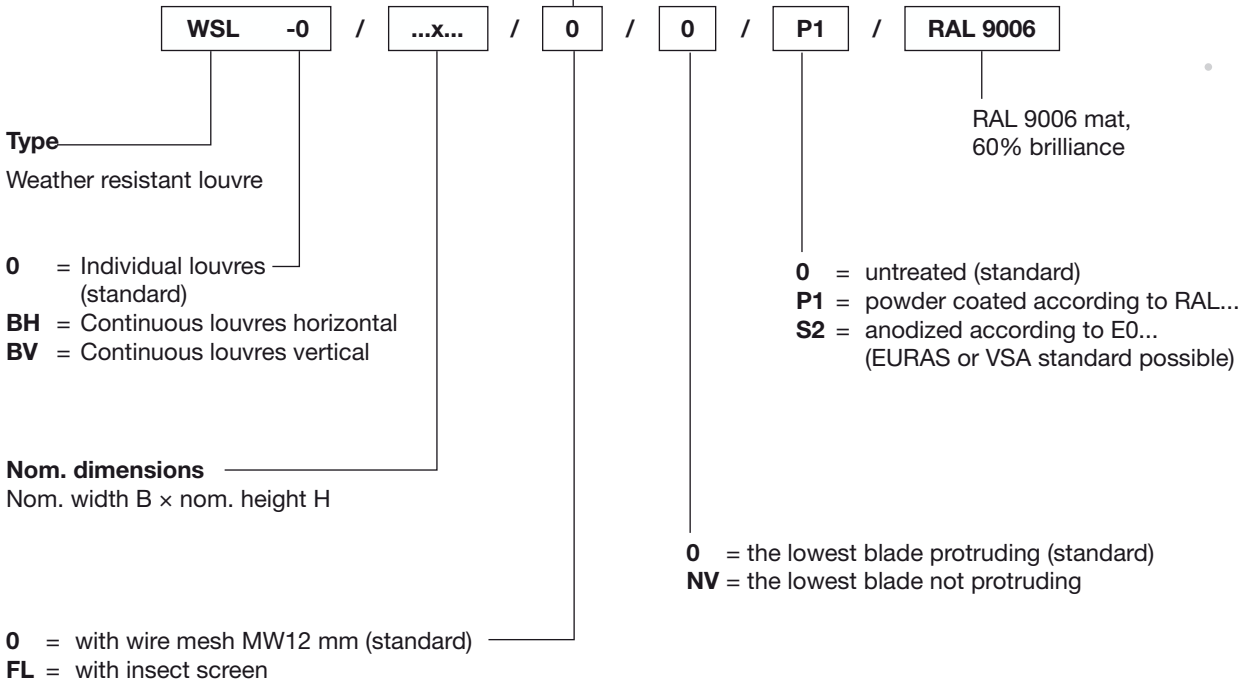
— Δp_s factor
 - - - ΔL_w



Order details

Order codes

No details for standard products



Text for tendering purposes

TROX HESCO weather resistant louvres are installed in intake and outlet openings of buildings walls. Angular frame and blades of untreated aluminium with galvanized wire mesh, mesh width 12 mm.

Order examples

- 2 off WSL / 600×400
- 1 off WSL / 800×600 / S2 (colorless anodized)
- 3 off WSL / 1000×500 / FL / NV
- 1 off WSL-BH / 6000×1500 / P1 / RAL 9006 (60% brilliance) existing of
2x terminal sections 2000×1500
1x intermediate section 2000×1500
- 1 off WSL-BV / 1800×8000 / NV existing of
2x terminal sections 1800×2000
2x intermediate sections 1800×2000