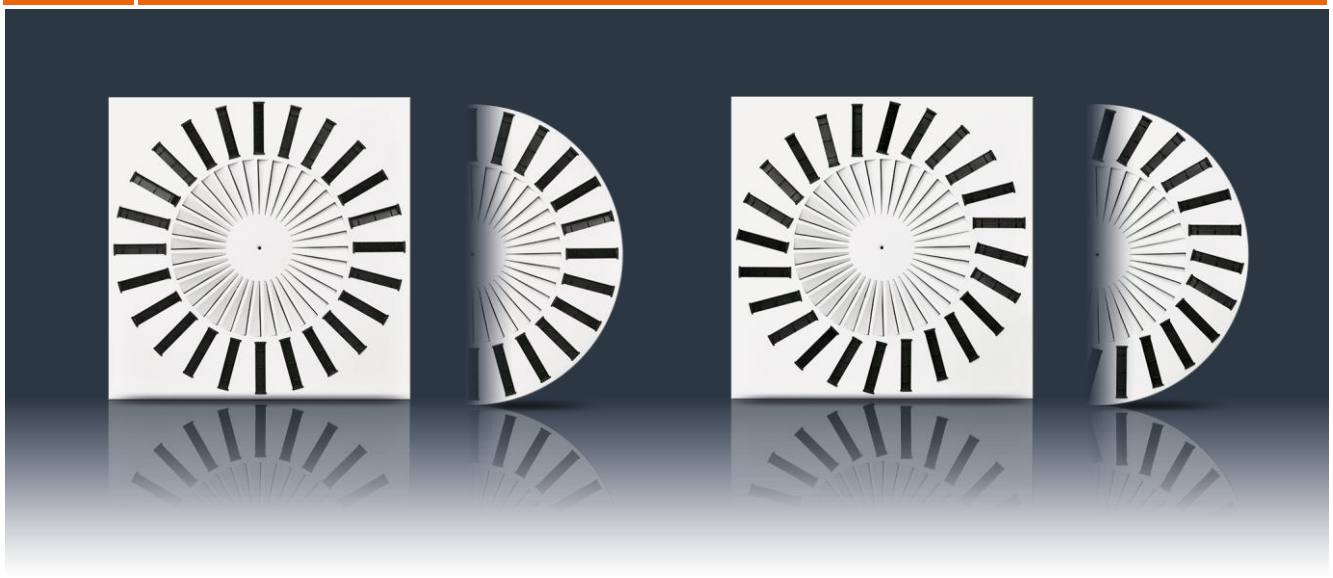
2.2.3. Mixed swirl diffuser AWR-3



Use:
Supply or Exhaust in low and medium pressure installation in non aggressive environment with relative humidity up to 70%.Recommended for horizontal air supply in rooms up to approximately 4 m.

Assembly:
On rectangular ducts, in plenum box with central screw.

Construction:
Steel panel with pressed fixed blades and air outlet diameter Ø 350 in square panel AWR-3-PK or circular AWR-3-PO, as well as radially placed vents (standard number of vents 16, 24 and 32), adjustable (recommended adjustment: 45°).

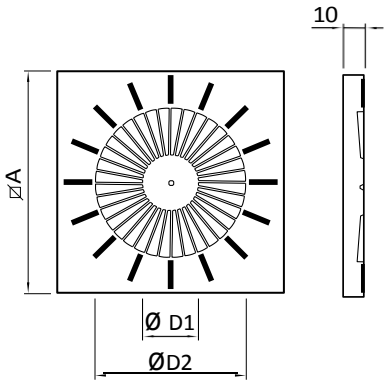
Material:
Black steel sheet, galvanized steel, aluminum.

Surface finish
RAL 9003 whie powder coat or other RAL colour according to RAL catalogue on demand.

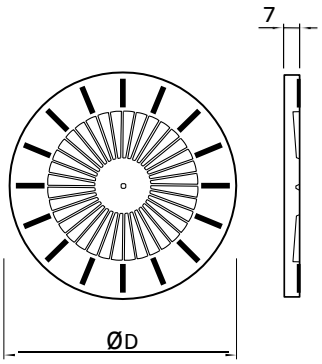
Air flow regulation:
With damper in inlet of plenum box

Certificates:
Hygienic certificate: BK/K/0926/01/2018

Type and dimension marking:

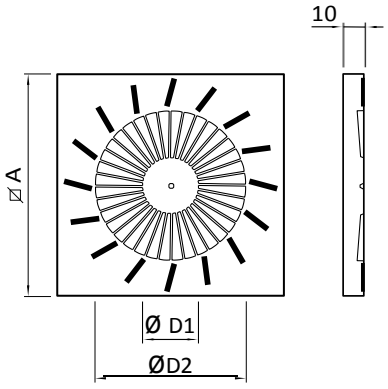


AWR-3-1-PK

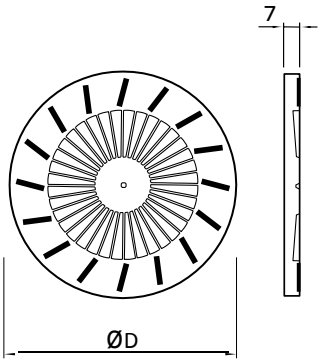


AWR-3-1-PO

⍁ A	Ø D1	Ø D2	Ø D
595	130	350	600
623			625



AWR-3-2-PK



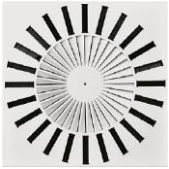
AWR-3-2-PO

Typ	600/625-16	600/625-24	600/625-32
A_{ef} (m²)	0,0438	0,0496	0,0708

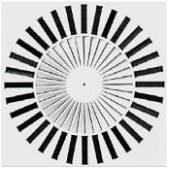
A_{ef} – free area of whole diffuser depands on plastic elements

Mixed swirl diffuser AWR-3 - varianty

AWR-3-1-PK/600-16 /625-16*



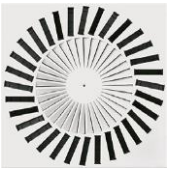
AWR-3-1-PK/600-24 /625-24*



AWR-3-1-PK/600-32 /625-32*

AWR-3-2-PK/600-16 /625-16*

AWR-3-2-PK/600-24 /625-24*



AWR-3-2-PK/600-32 /625-32*

AWR-3-1-PO/600-16 /625-16*

AWR-3-1-PO/600-24 /625-24*

AWR-3-1-PO/600-32 /625-32*

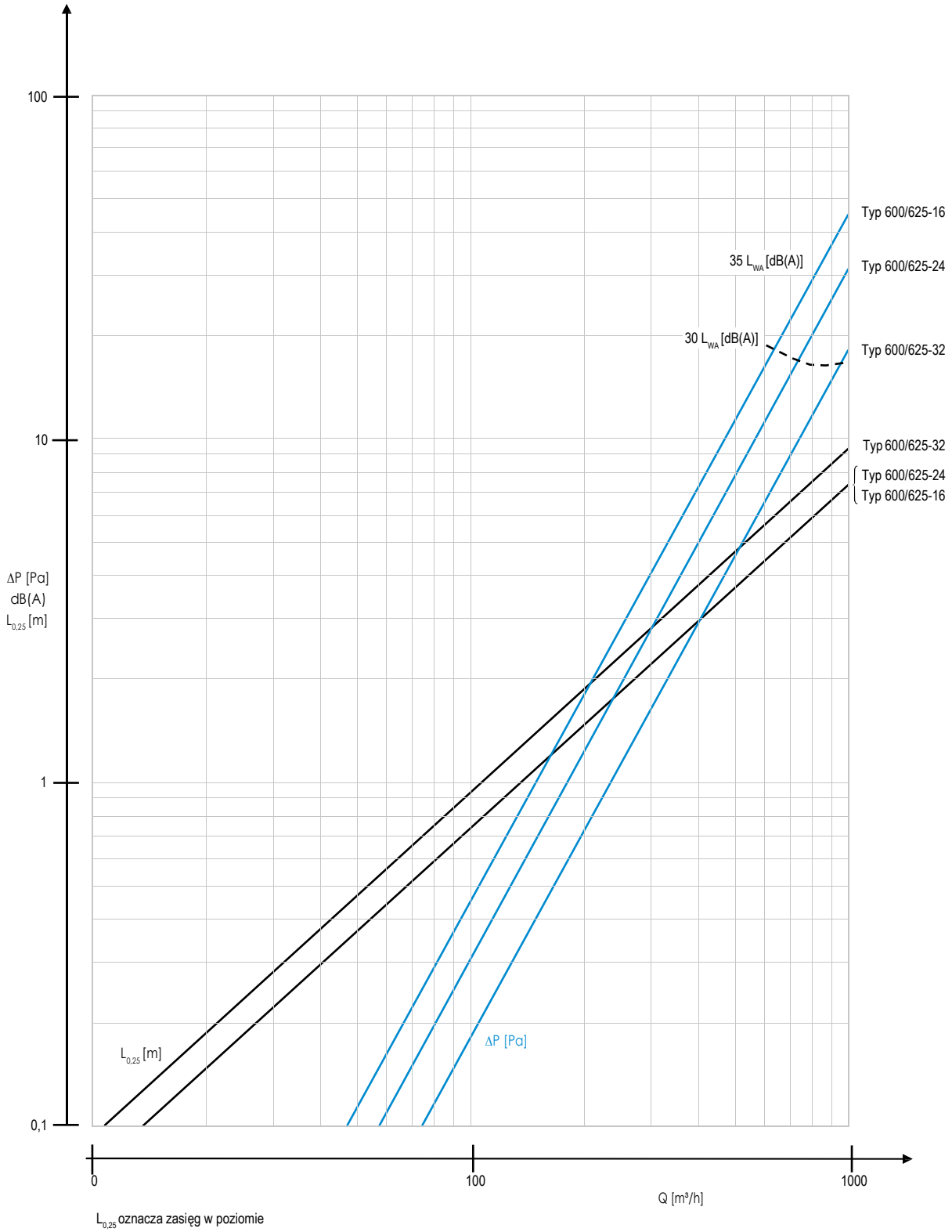
AWR-3-2-PO/600-16 /625-16*

AWR-3-2-PO/600-24 /625-24*

AWR-3-2-PO/600-32 /625-32*

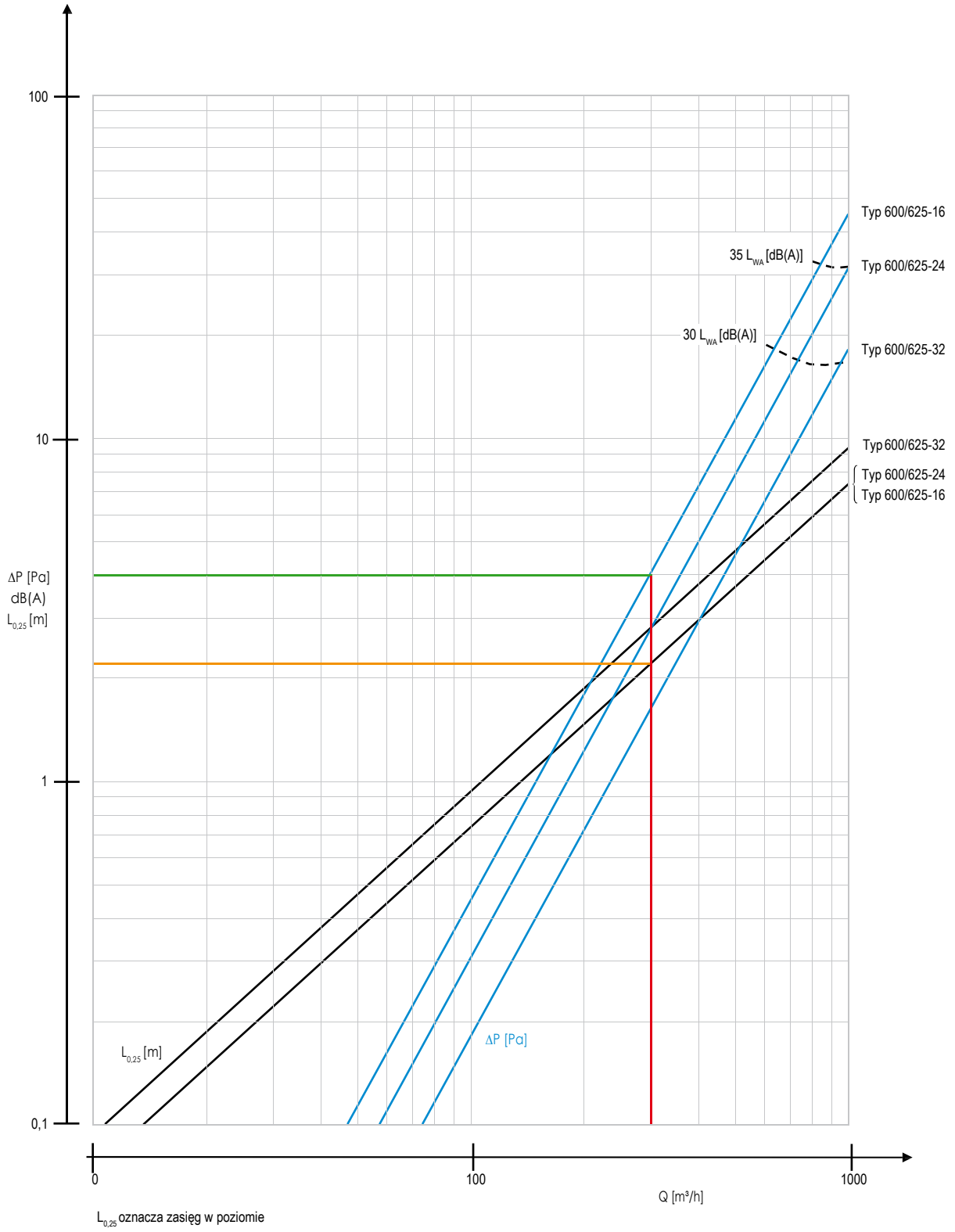
*) opptional.

Diagram for selection mied swirl diffuser AWR-3-1-PK and AWR-3-2-PK (blades 45°)



$L_{0,25}$ oznacza zasięg w poziomie

Instruction of using diagram for selection mixed swirl diffuser AWR-3-1-PK and AWR-3-2-PK (blades 45°)



Example:
The chart applies to the diffuser with adjustable blades set at 45°. Pressure losses shall be read from the vertical axis, characteristics are presented by blue lines. Stream range L0.25=0.2 also read from the horizontal axis, characteristics are presented by-diagonal black lines. Range types 600-16 and 600-24 virtually overlap each other and are represented by a single line

- Diffuser type 600-16
- Demanded air outlet 300 m3/h
- Stream range 2.1 m/s
- Pressure loss at single diffuser 3.5 Pa
- Acoustic power level below 30 LWA [dB(A)]

Table for selection mixed swirl diffuser AWR-3

Typ		600/625-16	600/625-24	600/625-32
A_{ef} [m²]		0,0438	0,0496	0,0708
Q [m³/h]				
25	$L_{0,25}$ [m]	0,2	0,2	0,2
	V_{max} [m/s]	0,3	0,2	0,2
	$V_{śr}$ [m/s]	0,2	0,1	0,1
	Δp [Pa]	0,0	0,0	0,0
	L_{WA} [dB(A)]	<30	<30	<30
50	$L_{0,25}$ [m]	0,4	0,4	0,5
	V_{max} [m/s]	0,5	0,4	0,3
	$V_{śr}$ [m/s]	0,3	0,3	0,2
	Δp [Pa]	0,1	0,1	0,0
	L_{WA} [dB(A)]	<30	<30	<30
100	$L_{0,25}$ [m]	0,7	0,8	0,9
	V_{max} [m/s]	1,0	0,8	0,7
	$V_{śr}$ [m/s]	0,6	0,6	0,4
	Δp [Pa]	0,4	0,3	0,2
	L_{WA} [dB(A)]	<30	<30	<30
150	$L_{0,25}$ [m]	1,1	1,1	1,4
	V_{max} [m/s]	1,5	1,3	1,0
	$V_{śr}$ [m/s]	1,0	0,8	0,6
	Δp [Pa]	1,0	0,7	0,4
	L_{WA} [dB(A)]	<30	<30	<30
200	$L_{0,25}$ [m]	1,5	1,5	1,9
	V_{max} [m/s]	2,0	1,7	1,3
	$V_{śr}$ [m/s]	1,3	1,1	0,8
	Δp [Pa]	1,8	1,2	0,7
	L_{WA} [dB(A)]	<30	<30	<30
250	$L_{0,25}$ [m]	1,8	1,9	2,3
	V_{max} [m/s]	2,5	2,1	1,7
	$V_{śr}$ [m/s]	1,6	1,4	1,0
	Δp [Pa]	2,8	1,9	1,1
	L_{WA} [dB(A)]	<30	<30	<30
300	$L_{0,25}$ [m]	2,2	2,3	2,8
	V_{max} [m/s]	3,0	2,5	2,0
	$V_{śr}$ [m/s]	1,9	1,7	1,2
	Δp [Pa]	4,0	2,8	1,6
	L_{WA} [dB(A)]	<30	<30	<30
350	$L_{0,25}$ [m]	2,6	2,7	3,2
	V_{max} [m/s]	3,5	2,9	2,3
	$V_{śr}$ [m/s]	2,2	2,0	1,4
	Δp [Pa]	5,5	3,8	2,2
	L_{WA} [dB(A)]	<30	<30	<30
400	$L_{0,25}$ [m]	2,9	3,0	3,7
	V_{max} [m/s]	4,0	3,4	2,7
	$V_{śr}$ [m/s]	2,5	2,2	1,6
	Δp [Pa]	7,2	4,9	2,9
	L_{WA} [dB(A)]	<30	<30	<30

Typ		600/625-16	600/625-24	600/625-32
A_{ef} [m²]		0,0438	0,0496	0,0708
Q [m³/h]				
500	$L_{0,25}$ [m]	3,7	3,8	4,6
	V_{max} [m/s]	5,0	4,2	3,3
	$V_{śr}$ [m/s]	3,2	2,8	2,0
	Δp [Pa]	11,2	7,7	4,5
	L_{WA} [dB(A)]	<30	<30	<30
600	$L_{0,25}$ [m]	4,4	4,5	5,6
	V_{max} [m/s]	6,0	5,1	4,0
	$V_{śr}$ [m/s]	3,8	3,4	2,4
	Δp [Pa]	16,2	11,1	6,5
	L_{WA} [dB(A)]	30	<30	<30
700	$L_{0,25}$ [m]	5,2	5,3	6,5
	V_{max} [m/s]	7,0	5,9	4,7
	$V_{śr}$ [m/s]	4,4	3,9	2,7
	Δp [Pa]	22,1	15,2	8,8
	L_{WA} [dB(A)]	<35	30	<30
800	$L_{0,25}$ [m]	5,9	6,1	7,4
	V_{max} [m/s]	8,0	6,7	5,4
	$V_{śr}$ [m/s]	5,1	4,5	3,1
	Δp [Pa]	28,8	19,9	11,5
	L_{WA} [dB(A)]	35	<35	<30
900	$L_{0,25}$ [m]	6,6	6,8	8,3
	V_{max} [m/s]	9,0	7,6	6,0
	$V_{śr}$ [m/s]	5,7	5,0	3,5
	Δp [Pa]	36,5	25,2	14,6
	L_{WA} [dB(A)]	<40	<35	30
1000	$L_{0,25}$ [m]	7,4	7,6	9,3
	V_{max} [m/s]	10,0	8,4	6,7
	$V_{śr}$ [m/s]	6,3	5,6	3,9
	Δp [Pa]	45,1	31,1	18,0
	L_{WA} [dB(A)]	40	35	<35
1100	$L_{0,25}$ [m]	8,1	8,3	10,2
	V_{max} [m/s]	11,0	9,3	7,4
	$V_{śr}$ [m/s]	7,0	6,2	4,3
	Δp [Pa]	54,6	37,7	21,8
	L_{WA} [dB(A)]	>40	<40	35
1200	$L_{0,25}$ [m]	8,8	9,1	11,1
	V_{max} [m/s]	12,0	10,1	8,0
	$V_{śr}$ [m/s]	7,6	6,7	4,7
	Δp [Pa]	64,9	44,9	26,0
	L_{WA} [dB(A)]	>40	40	<40