

# TAR

## CIRCULAR SILENCER



### Characteristics:

TAR are circular silencers with a housing that attenuates sound transferred by ducts in ventilation systems.

### Intended use

The TAR silencers are designed for attenuating noise transferred by ducts in ventilation systems. They are usually located between fans and intake or extraction ducts as well as before intake ventilators which supply air to rooms requiring high acoustic comfort.

### Design

An external silencer housing is made of galvanised sheet. Inside the housing, there is an attenuating insert, made of non-flammable sound absorbing material, protected by a shutter made of perforated galvanised sheet. The TAR silencers are normally fitted with nipple connectors adjusted to the standardized diameters of circular spiro ducts. It is possible to order customized silencers with sleeve or flange connectors. In a stainless version, the steel elements mentioned above are made of 1.4301 stainless steel (according to PN-EN1 0088-1).

### Application

The tightness of the standard TAR silencer housing is classed as C according to EN 12237, which allows for using these silencers in ventilation systems with pressure ranging from -750 to 2,000 Pa. The recommended airflow speed for using TAR silencers is up to 12 m/s.

### Installation

As standard, the TAR silencers can be installed inside buildings in both vertical and horizontal positions. The silencers are installed by means of lifting slings.

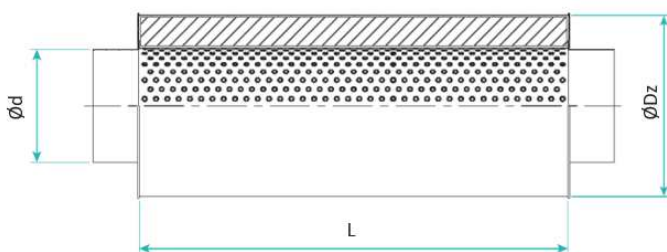


Figure 1. TAR silencer

### Technical Data

Table 1. Dimensions and empty weight

Diameter Ød [mm]	External diameter ØDz [mm]	Weight m [kg]		
		L = 500 [mm]	L = 1000 [mm]	L = 1500 [mm]
80	180	4	8	12
100	200	5	9	14
125	225	5	11	16
160	360	9	18	27
200	400	11	21	32
250	450	13	25	38
315	615	19	38	57
400	700	23	46	68
500	800	27	55	82
630	930	33	67	100
800	1,100	42	83	125

Table 2. TAR silencer internal noise TAR L<sub>WA</sub> [dB(A)]

Diameter Ød [mm]	v [m/s]			
	5.0	8.0	10.0	12.0
80	<5	15	22	27
100	<5	16	23	28
125	<5	17	24	30
160	<5	21	27	32
200	5	22	28	34
250	8	24	31	36
315	10	26	32	38
400	13	27	34	41
500	16	31	37	43
630	17	32	38	44
800	20	34	42	47

SN

SO

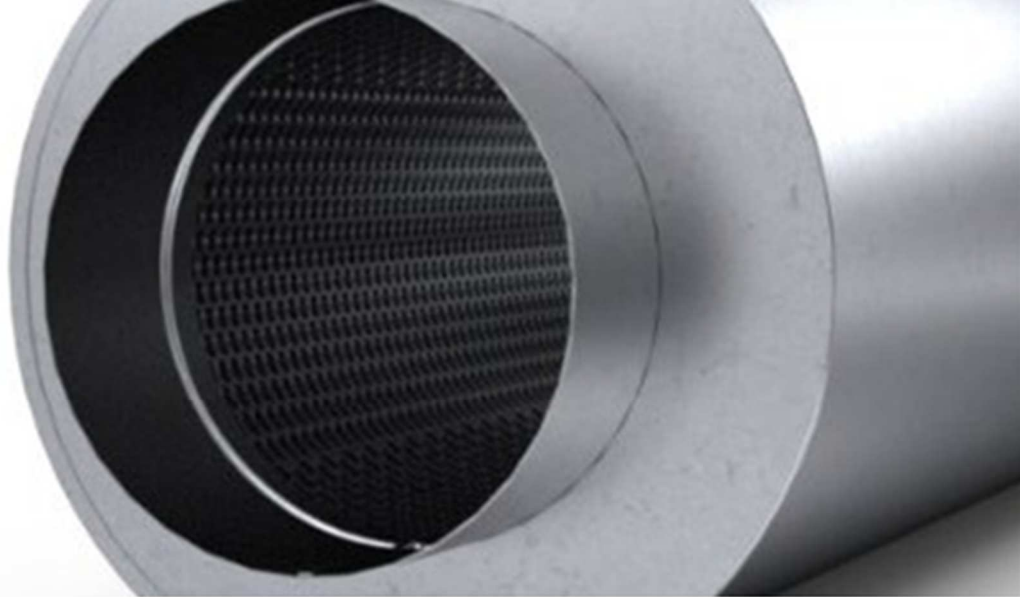


Table 3. TAR silencer attenuation, length 500 mm,  $D_e$  [dB].

Diameter $\varnothing d$ [mm]	Frequency $f_m$ [Hz]							
	63	125	250	500	1k	2k	4k	8k
80	2	5	7	14	28	26	21	17
100	2	4	7	14	25	22	18	15
125	1	4	7	13	23	19	15	13
160	2	7	11	17	19	19	15	8
200	2	6	10	16	18	16	11	6
250	2	5	9	14	16	13	9	5
315	2	4	8	12	15	10	6	4
400	1	3	7	11	13	8	5	3
500	1	3	6	9	12	7	4	2
630	0	2	5	7	11	5	3	2
800	0	1	4	6	9	4	2	2

Table 4. TAR silencer attenuation, length 1000 mm,  $D_e$  [dB].

Diameter $\varnothing d$ [mm]	Frequency $f_m$ [Hz]							
	63	125	250	500	1k	2k	4k	8k
80	5	8	18	32	47	50	36	27
100	5	8	16	30	43	47	32	24
125	3	7	15	27	39	40	27	20
160	4	10	18	32	39	32	21	15
200	4	9	16	29	33	26	15	12
250	3	8	14	25	28	20	11	9
315	3	7	12	22	24	16	8	7
400	2	6	10	19	20	13	5	5
500	2	5	9	15	17	10	4	4
630	2	3	7	12	14	8	3	3
800	1	2	5	8	12	6	2	2

Table 5. TAR silencer attenuation, length 1500 mm,  $D_e$  [dB].

Diameter $\varnothing d$ [mm]	Frequency $f_m$ [Hz]							
	63	125	250	500	1k	2k	4k	8k
80	7	11	25	42	50	50	49	34
100	7	10	22	38	50	50	43	30
125	4	9	20	35	49	50	37	26
160	4	18	31	39	50	43	31	20
200	4	16	28	35	46	34	22	16
250	4	14	24	32	41	27	15	12
315	3	12	21	28	36	21	10	9
400	3	10	17	24	31	16	7	7
500	2	8	13	21	27	13	5	5
630	2	6	10	17	22	10	3	4
800	2	4	6	13	17	8	2	3

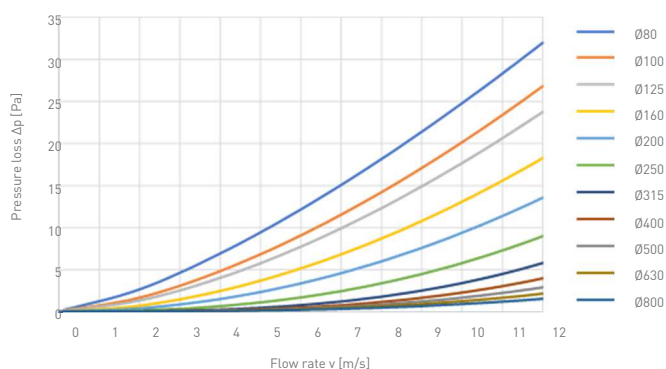


Chart 1. TAR silencer pressure loss, length 500 mm

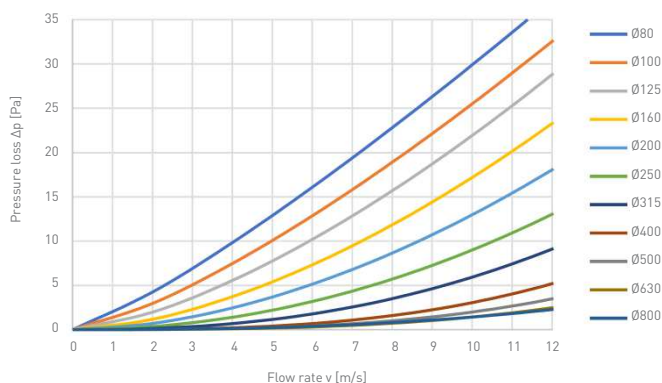


Chart 2. TAR silencer pressure loss, length 1,000 mm

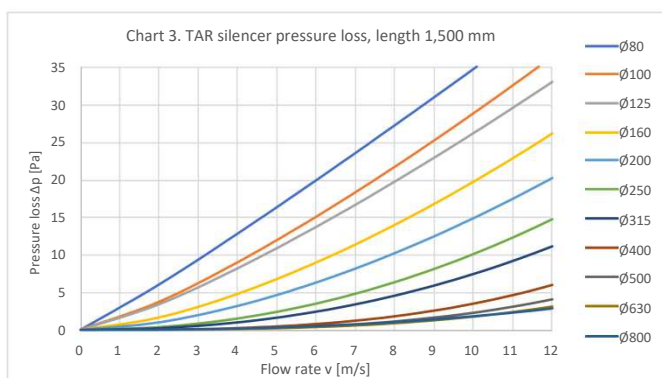


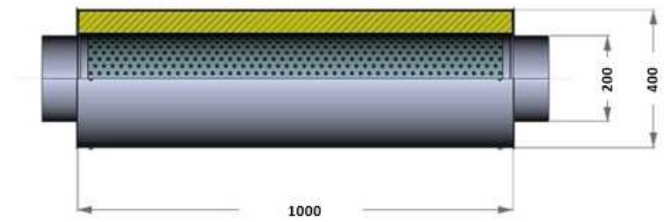
Chart 3. TAR silencer pressure loss, length 1,500 mm



At <http://tlumiki.smay.pl/> you will find a selection tool to easily and quickly choose the right silencers with different configurations.

Silencer selection:

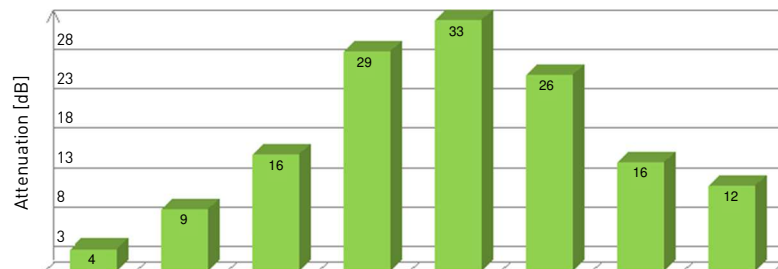
Internal diameter	dw=	200 mm
External diameter	Dz=	400 mm
Silencer length	L=	1000 mm
Fitting	J=	N
Weight	m=	21 kg



Flow parameters:

Volumetric air flow	V=	750 m <sup>3</sup> /h
Air flow rate	w=	6.6 m/s
Pressure loss	dp=	<10 Pa

Attenuation rate:



Frequency:

Attenuation rate:

f =	63	125	250	500	1,000	2,000	4,000	8,000	[Hz]
Dt =	4	9	16	29	33	26	15	12	[dB]

Figure 2. Example of a TAR silencer selection

# TAR – Circular Silencer

When ordering, please provide information according to the following pattern:

TAR – <D> – <L> – <J> – <P>

Where:

**D** silencer internal diameter in mm: 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800

**L** silencer length in mm: 500, 1,000, 1,500

**J** fitting\*

**N – nipple**

M – sleeve

K – flange

**P** materials\*

**SO – galvanised steel**

SN – stainless steel

\* optional values, if not specified, the default values will be used

Order example: **TAR-200-1000-N-SO**