mercor®

FIRE VENTILATION SYSTEMS

FIRE DAMPERS AND FIRE VALVES

mcr WIP PROV/V, mcr WIP PROV/V-M | Multi-blade smoke control dampers for multi-compartment and single-compartment fire ventilation systems

BIM CAD

downloadable models
on the website
under the designer zone tab

CE
2334-CPR-0014

CTO S.A.

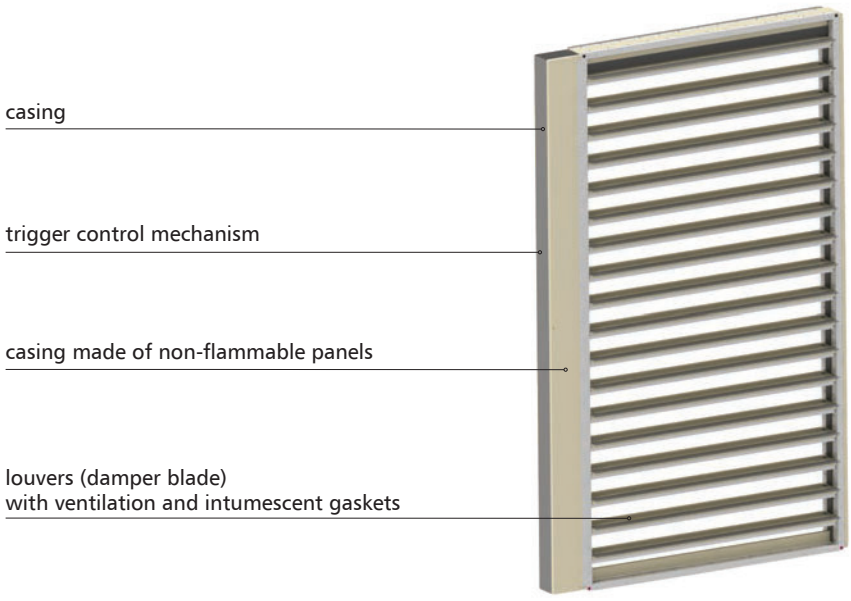
ATEST HIGIENICZNY

» **EIS120, EIS90, EIS60 E_{600} 120**
» Fire resistance class: EI120 (v_{ed} i↔o)S1000C_{10000}AAmulti, EI90 (v_{ed} i↔o)S1000C_{10000}AAmulti, EI60 (v_{ed} i↔o)S1000C_{10000}AAmulti.
» Certificate of constancy of performance 2434-CPR-0374/W
» Dampers certified for compliance with EN 12101-8.
» Dampers rated under EN 13501-4 and tested under EN 1366-10.
» Narrow louvered smoke control dampers for fire ventilation systems.
» Certified installation on/in multi-compartment and single-compartment fire ventilation system ducts.
» Certified installation including a masking grille.
» Option of mounting dampers in modules (damper next to damper, damper above damper).

14.1| Application

mcr WIP PROV/V, mcr WIP PROV/V-M multi-blade smoke control dampers are intended for installation in automatically operated fire ventilation systems. mcr WIP PROV/V dampers are used in fire ventilation systems, while dampers marked as mcr WIP PROV/V-M are used in mixed, fire and comfort ventilation systems. When installed, these devices prevent the propagation of fire, smoke and fire gases to adjacent areas. During normal operation, the fire damper blade is in the open or closed position, depending on its function. The fire damper blade in the fire compartment is opened, whereas in other areas the blades are closed. Admissible flow velocity in the connected duct is 12 m/s. Due to their design, mcr WIP PROV/V, mcr WIP PROV/V-M fire dampers are intended for use in systems, where the components such as a silencer, bend or supply and extraction grille are installed downstream of the smoke control damper. Dampers may be installed in smoke extract ducts, shafts and at system ends.

14.2| Design



mcr WIP PROV/V, mcr WIP PROV/V-M | Multi-blade smoke control dampers for multi-compartment and single-compartment fire ventilation systems

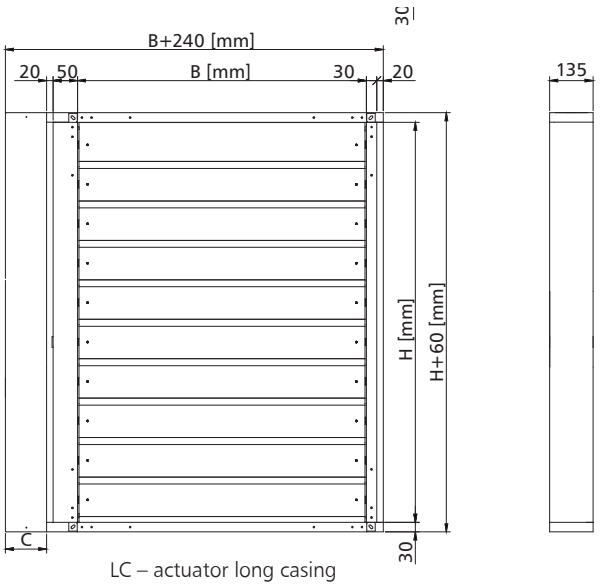
The multi-blade mcr WIP PROV/V damper consists of a rectangular casing made of two steel sections connected with a non-combustible plate using rivets and galvanized steel sheet fasteners, a set of movable blades rotating around their axes and a trigger control mechanism. The damper casing is made of fire resistant panels and galvanized "C" shape metal sheet profiles. The device is reinforced on both sides with steel flat bar corners. On the vertical side H, intumescent and ventilation gaskets are installed on the inside. The vertical edge with the actuator is protected by a fire resistant panel. The actuator cover is mounted on the side H of the damper. Each damper blade is made of two fire resistant panels, which are displaced against each other. An intumescent gasket and ventilation gasket are attached with staples on both sides, along the entire blade length. The damper blades revolve on their own axes, which consist of two steel pins. Each pin is mounted in a brass sleeve installed on the vertical side H of the fire damper casing.

14.3 | Versions

14.3.1 | Damper closing and opening with an actuator

During normal operation, the smoke control dampers are opened or closed. In case of fire, the smoke control damper louvers are opened in the fire compartment area and closed in the other areas - the smoke control damper is released remotely by feeding the supply voltage to the trigger control mechanism.

mcr WIP PROV/V, mcr WIP PROV/V-M smoke control damper are equipped with a trigger control mechanism in the form of a BE, BEE, BEN, MLE, ME axial actuator without the return spring (24 V AC/DC or 230 V AC). The BE, BEE, BEN, MLE, ME series actuators are equipped with limit switches used to monitor the damper blade position. Furthermore, a mechanical position indicator is placed on the actuator. mcr WIP PROV/V, mcr WIP PROV/V-M smoke control dampers with BE, BEE, BEN, MLE, ME actuators can be opened/closed by supplying voltage to the actuator terminals. Dampers with those actuators may also be opened/closed manually using a key.



LC – actuator long casing

dimensions in [mm]

mechanism	C
BE, BEE, BEN, MLE, ME	120

14.4 | Dimensions

» **Rectangular dampers::**

» snominal width B: from 110 mm to 1200 mm
» nominal height H: from 270 mm to 2300 mm
» maximum single damper cross-section surface up to 2.76 m²

Apart from the standard dimensions, fire dampers may be manufactured with intermediate dimensions (at 10 mm increments within the given ranges).

Square dampers may also be additionally equipped with round connection collars allowing for so called "bare end" connection to round ducts.

14.5 | Installation

mcr WIP PROV/V rectangular dampers (with grille) are rated EI120(v_{ed} i↔o)S1000C_{10000}AAmulti if installed in/on building shafts made of blocks, bricks, hollow bricks, slabs or solid materials.

mcr WIP PROV/V rectangular dampers are rated EI120(v_{ed} i↔o)S1000C_{10000}AAmulti if installed in/on vertical/horizontal smoke exhaust ducts in accordance with EN 1366-8 or EN 1366-9, with a min. wall thickness of 50 mm.

mcr WIP PROV/V damper modules (damper next to damper, damper above damper) are rated EI120(v_{ed} i↔o)S1000C_{10000}AAmulti if installed in/on building shafts made of blocks, bricks, hollow bricks, slabs or solid materials.

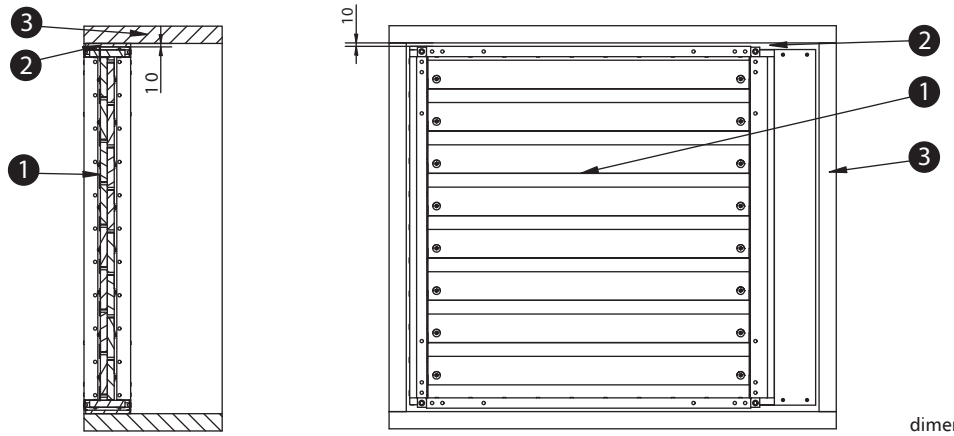
mcr WIP PROV/V damper modules (damper next to damper, damper above damper) are rated EI120(v_{ed} i↔o)S1000C_{10000}AAmulti when installed on vertical smoke exhaust ducts in accordance with EN 1366-8 or EN 1366-9, with a min. wall thickness of 50 mm.

mcr WIP PROV/V rectangular dampers are rated E600120(v_{ed} i↔o)S1000C_{10000}AAsingle in single-zone fire ventilation systems.

14.5.1 | Preparation of installation openings

The recommended size of the opening enabling correct installation of the mcr WIP PRO/V damper depends on the method and location of installation.
For a damper mounted on a horizontal section of a duct made of fire resistant panels, a gap of at least 10 mm should be left in its clearance on each side of the damper and filled around its perimeter with masonry mortar.
For a damper mounted on a horizontal section of a duct made of fire resistant panels "butt-on" to the duct wall, the damper should be sealed at the point of contact between the collar and the wall, and enclosed around the perimeter with board trims and sealed with assembly mortar.

» **installation in the opening clearance**

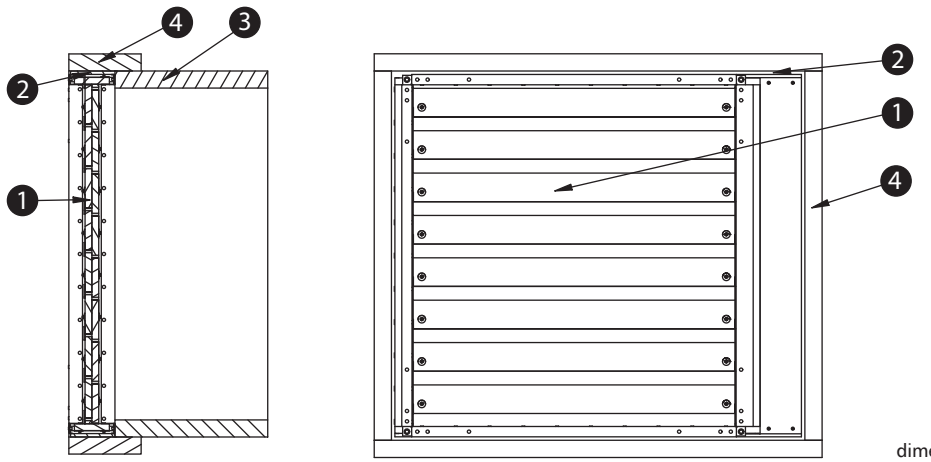


1. damper
2. masonry mortar*
3. duct

dimensions in [mm]

* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

» **“butt-on” installation**



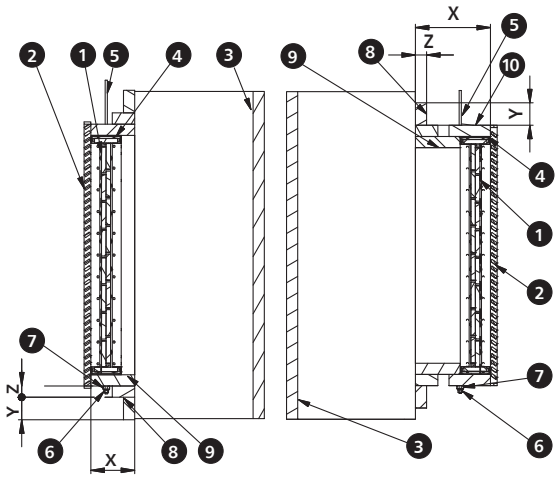
1. damper
2. masonry mortar*
3. duct
4. trim

dimensions in [mm]

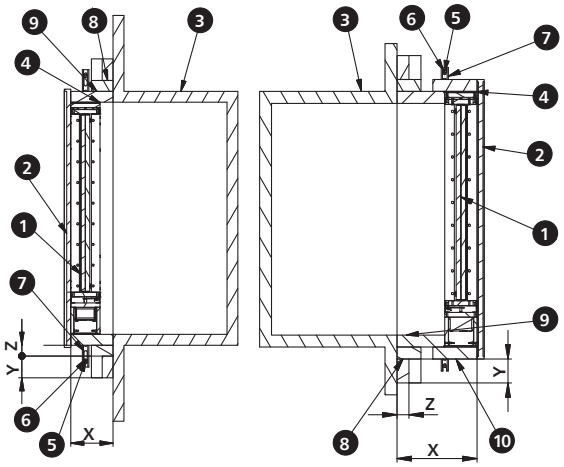
* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

14.5.2 | Example installation on a vertical, solid or brick building shaft

» vertical section



» top view

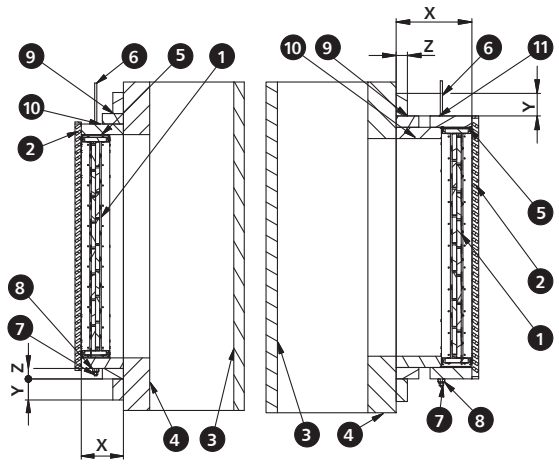


X - min. 135 mm
Y - min. 40mm - board trim
Z - min. 50mm - board trim

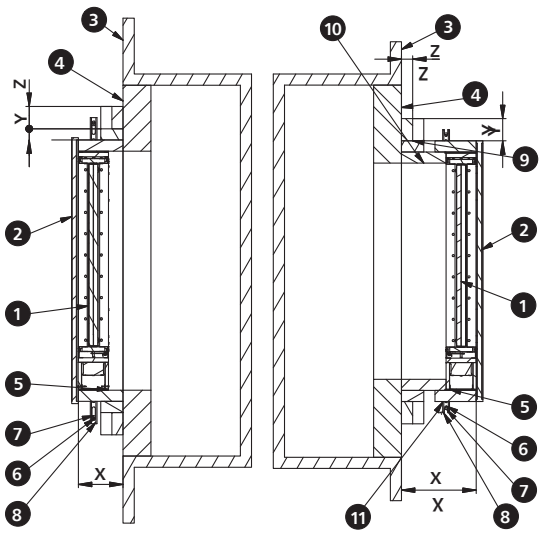
1. mcr WIP PROV damper
2. masking grille
3. construction shaft
4. masonry mortar*
5. suspension system - rod
6. suspension system, fastening according to EN 1366-8
7. suspension system - horizontal element
8. fire resistant panel elements
9. horizontal section of the duct made of fire resistant panels
10. fire resistant panel trim

* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

» vertical section



» top view

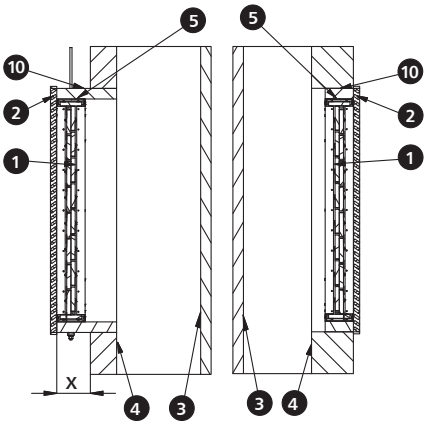


X - min. 135 mm
Y - min. 40mm - board trim
Z - min. 50mm - board trim

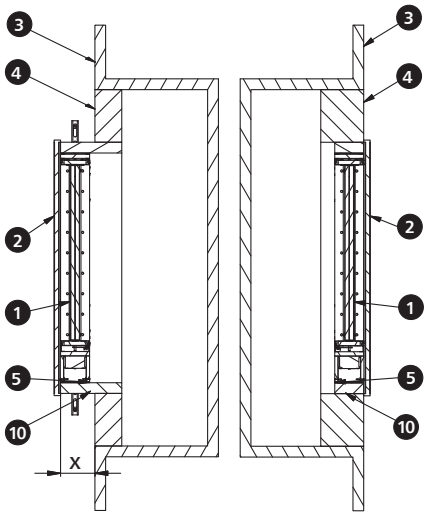
1. mcr WIP PROV damper
2. masking grille
3. construction shaft
4. closing wall of the shaft
5. masonry mortar*
6. suspension system, fastening
7. suspension system - horizontal element
8. suspension system, fastening
9. fire resistant panel elements
10. horizontal section of the duct made of fire resistant panels acc. to EN 1366-8
11. .fire resistant panel trim

* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

» **vertical section**



» **top view**



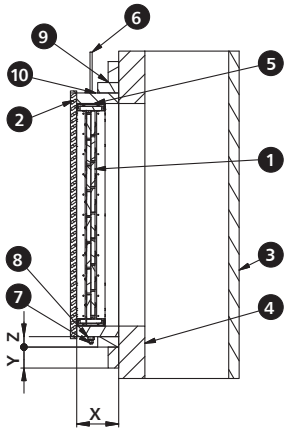
X – min. 135mm

1. mcr WIP PROV/V damper
2. masking grille
3. construction shaft
4. closing wall of the shaft
5. masonry mortar*
10. horizontal section of the duct made of fire resistant panels acc. to EN 1366-8

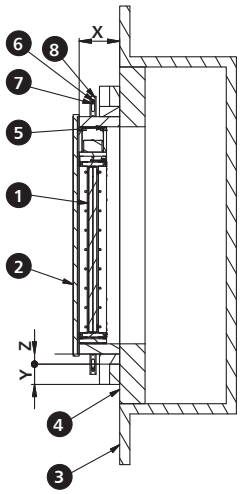
* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

14.5.3 | Sample installation on a vertical building shaft made of boards

» **vertical section**



» **top view**



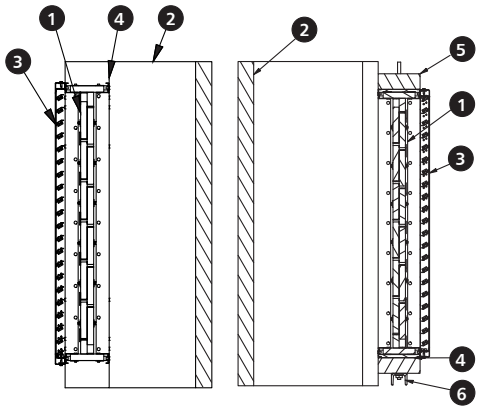
X - min. 135 mm
Y - min. 40mm - board trim
Z - min. 50mm - board trim

1. mcr WIP PROV damper
2. masking grille
3. construction shaft
4. closing wall of the shaft
5. masonry mortar*
6. suspension system, fastening
7. suspension system - horizontal element
8. suspension system, fastening
9. fire resistant panel elements
10. horizontal section of the duct made of fire resistant panels acc. to EN 1366-8

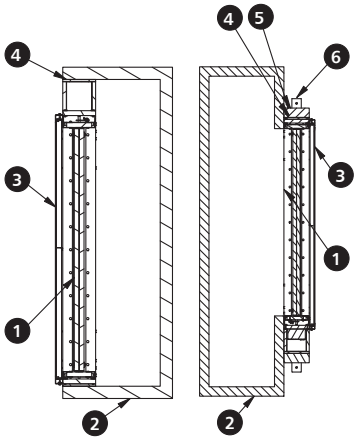
* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

14.5.4 | Sample installation in/on a vertical fire ventilation duct or in/on an air supply duct

» vertical section



» top view

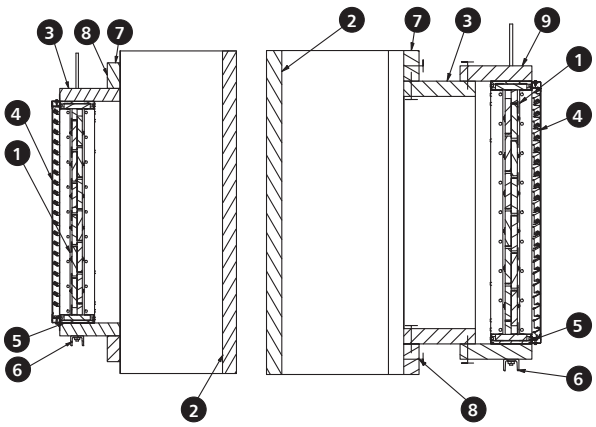


1. mcr WIP PROV damper
2. self-supporting, board duct
3. masking grille
4. masonry mortar*
5. board mounting trim
6. suspension system

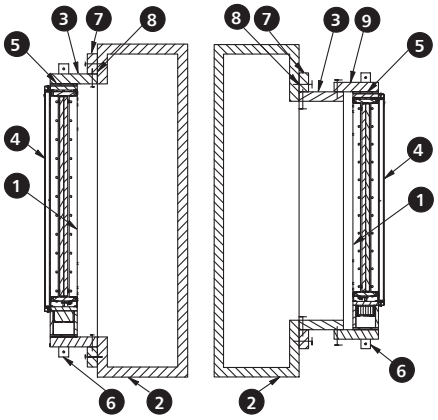
* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

14.5.5 | Sample installation in/on a horizontal branch/section from a vertical fire ventilation duct or on an air supply duct

» vertical section



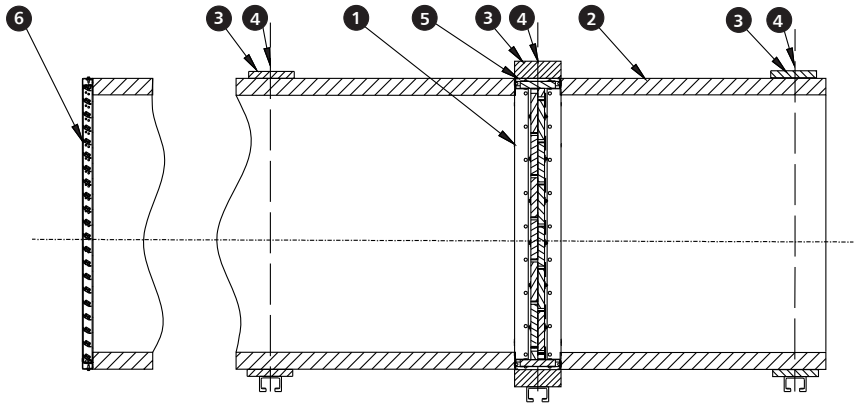
» top view



1. mcr WIP PROV damper
2. self-supporting, board duct
3. duct horizontal section
4. masking grille
5. masonry mortar*
6. suspension system
7. additional mounting trim
8. connectors - e.g. screws
9. trim around the damper circumference

* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

14.5.6 | Sample installation in a horizontal section of a fire ventilation duct or an air supply duct

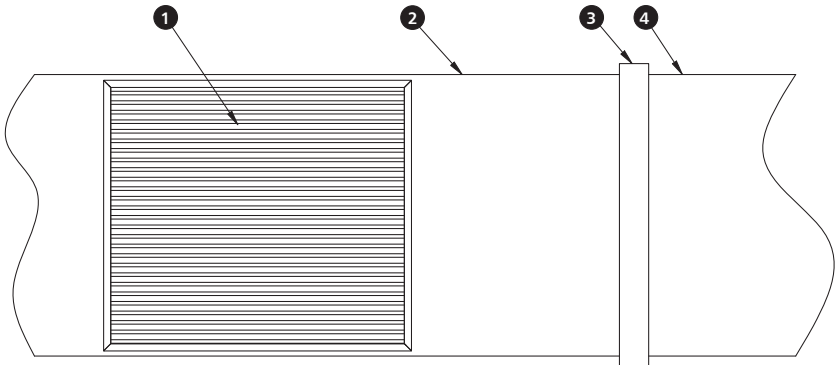


1. mcr WIP PROV damper
2. self-supporting duct
3. system trims of duct section or trim for damper casing
4. suspension system
5. masonry mortar*
6. masking grille at the damper or at the end of the installation

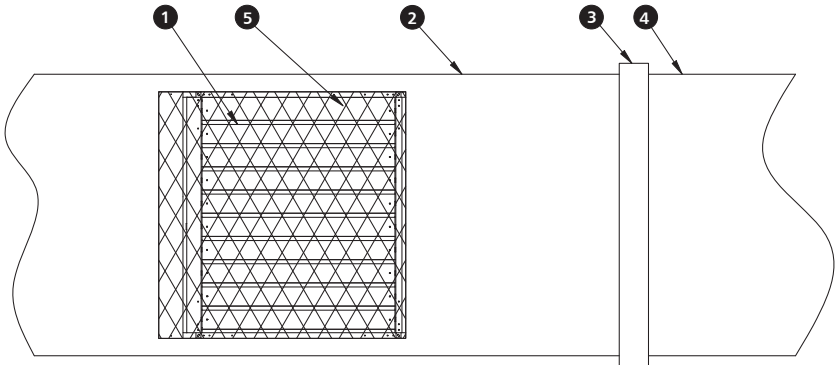
* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

14.5.7 | Sample installation in the side wall of a horizontal section of a fire ventilation duct or an air supply duct

» with a lamella masking grille type MST



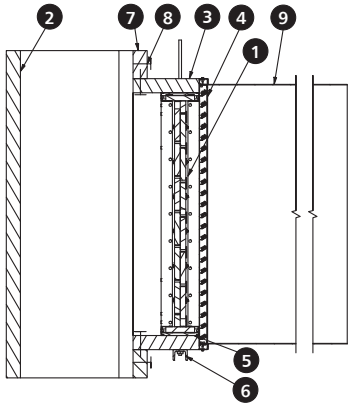
» with a mesh masking grille type MWP



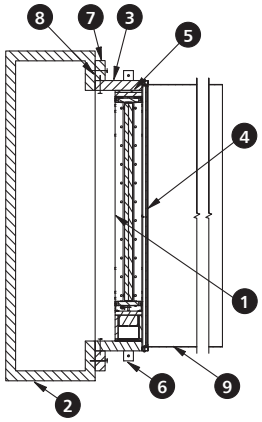
1. masking grille
2. duct horizontal section
3. trims - connecting duct sections
4. duct horizontal section
5. mcr WIP PROV damper

14.5.8 | Sample installation on a horizontal branch/section from a vertical fire ventilation duct - connection to a steel duct

» vertical section



» top view

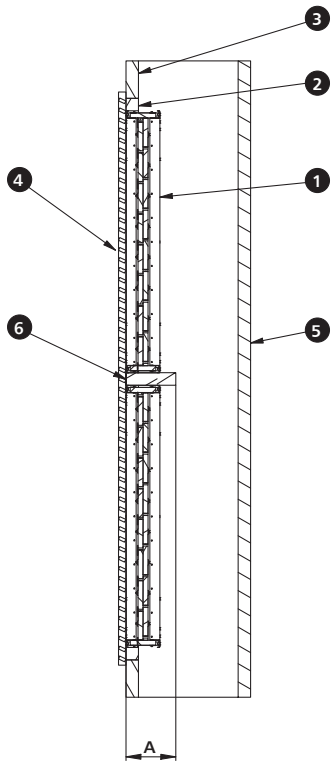


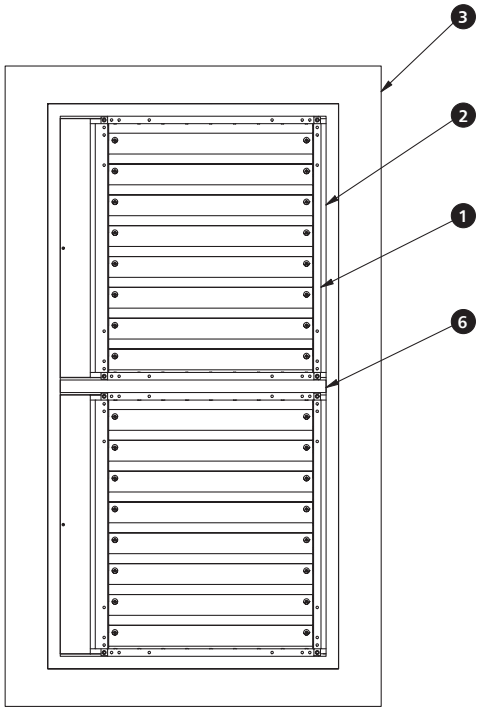
1. mcr WIP PROV damper
2. self-supporting duct
3. horizontal section of the duct (damper casing)
4. masking grille
5. masonry mortar*
6. suspension system
7. additional mounting trim
8. connectors - e.g. screws
9. horizontal steel duct

* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

14.5.9 | Sample installation on/in the wall of a vertical fire ventilation duct or an air supply duct - damper above damper

» in the duct clearance

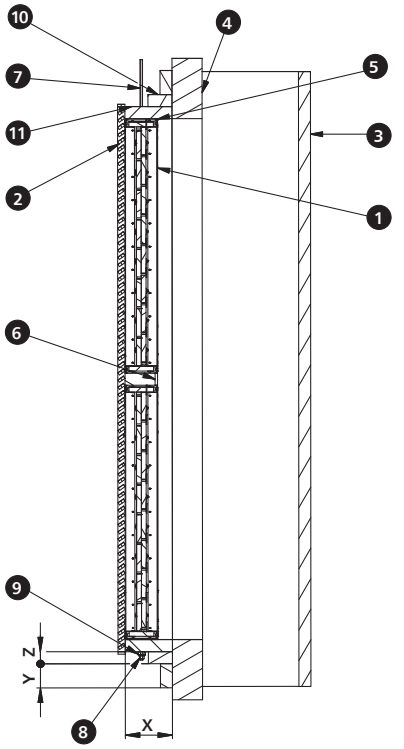


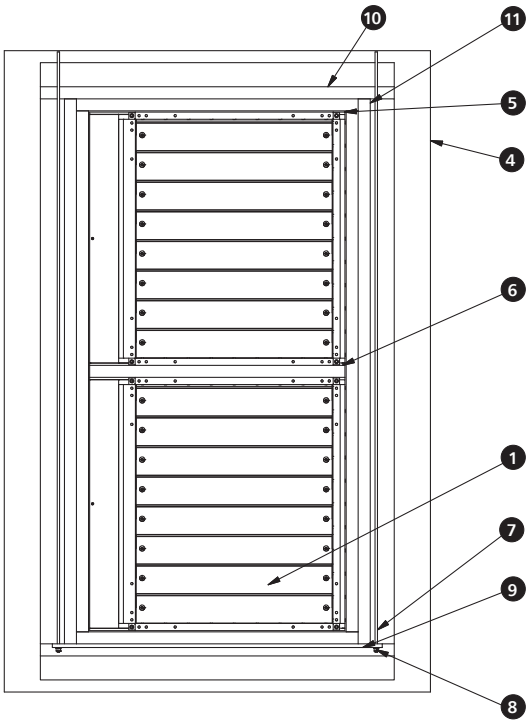


1. mcr WIP PROV damper
2. masonry mortar*
3. duct or shaft wall
4. masking grille
5. vertical duct or shaft
6. fire board strip, min. 50mm thick, width A, min. 135mm, placed between the dampers, sealed with masonry mortar

* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

» on the shaft





X - min. 135mm
Y - min. 40 mm
- board trim
Z - min. 50 mm
- board trim

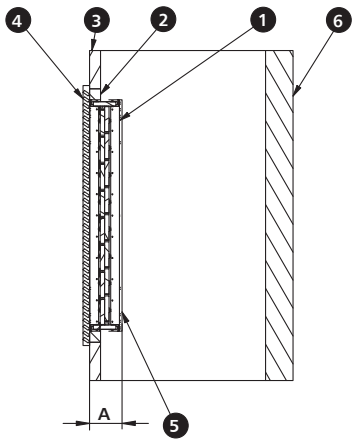
1. mcr WIP PROV damper
2. masking grille
3. shaft wall
4. shaft wall
5. masonry mortar*
6. fire board strip, min. 50mm thick, width A, min. 135mm, placed between the dampers, sealed with masonry mortar
7. suspension system
8. suspension system
9. suspension system
10. board trims
11. section of the duct made of panels acc. to EN 1366-8

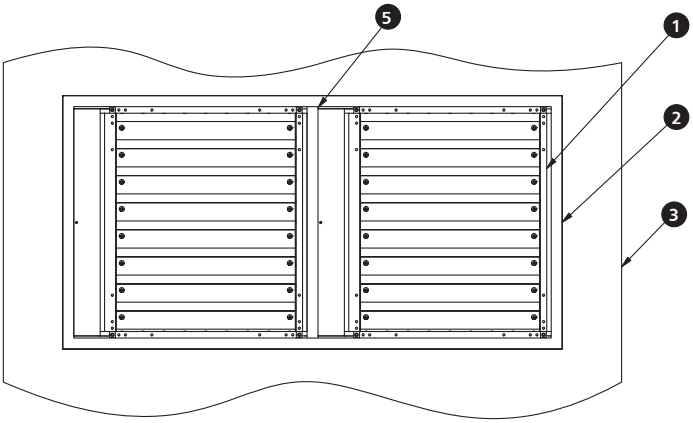
* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

14.5.10 | Sample installation in the side wall of a horizontal section of a fire ventilation duct or an air supply duct

» in the duct clearance

The dampers can be mounted in the following configuration: left - left damper, left - right damper or right - left damper.





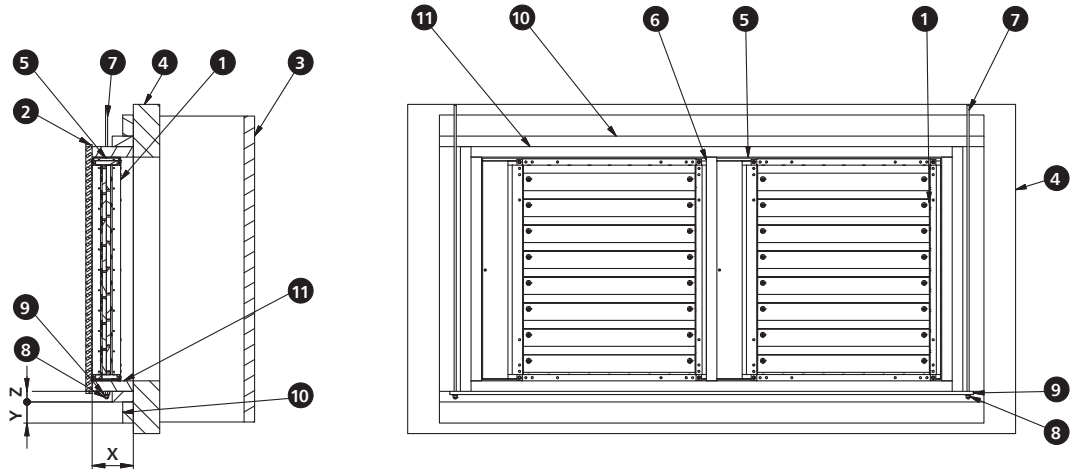
1. mcr WIP PROV damper
2. masonry mortar*
3. duct wall
4. masking grille
5. fire board strip, min. 50mm thick, width A, min. 135mm, placed between the dampers, sealed with masonry mortar
6. duct wall

* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

mcr WIP PROV/V, mcr WIP PROV/V-M | Multi-blade smoke control dampers for multi-compartment and single-compartment fire ventilation systems

» on the shaft

The dampers can be mounted in the following configuration: left - left damper, left - right damper or right - left damper.

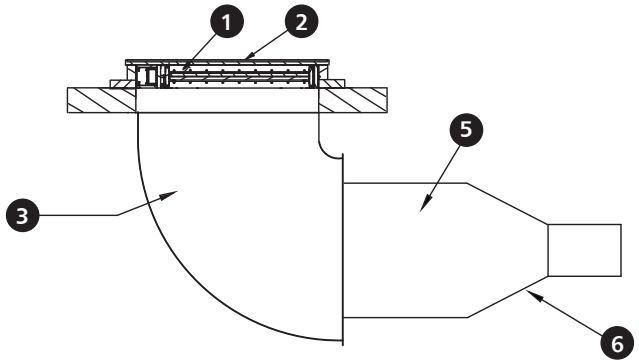


X - min. 135 mm
Y - min. 40mm - board trim
Z - min. 50mm - board trim

1. mcr WIP PROV damper
2. masking grille
3. shaft wall
4. shaft wall
5. masonry mortar*
6. fire board strip, min. 50mm thick, width A, min. 135mm, placed between the dampers, sealed with masonry mortar
7. suspension system
8. suspension system
9. suspension system
10. board trims
11. section of the duct made of panels

* Recommended damper installation in a wet system is based on masonry mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters no worse than the recommended solutions and with appropriate approval documents confirming the appropriate fire resistance class.

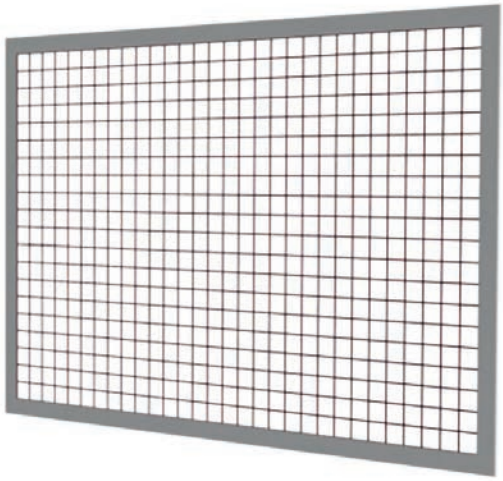
» Sample installation for non-standard applications



1. mcr WIP PROV damper
2. masking grille
3. smoke exhaust duct
4. duct reduction
5. duct narrowing

mcr WIP PROV/V, mcr WIP PROV/V-M multi-blade smoke control damper, thanks to its design, is adapted for installation in places where non-standard solutions are used. Installation can be performed in places where such elements as a bend, duct narrowing or reduction will be downstream of the smoke control damper. This allows for optimal use of space and ensures adequate airflow, and the damper itself allows for flexible adjustment to various ventilation system configurations.

14.5.11 | MWP mesh masking grille



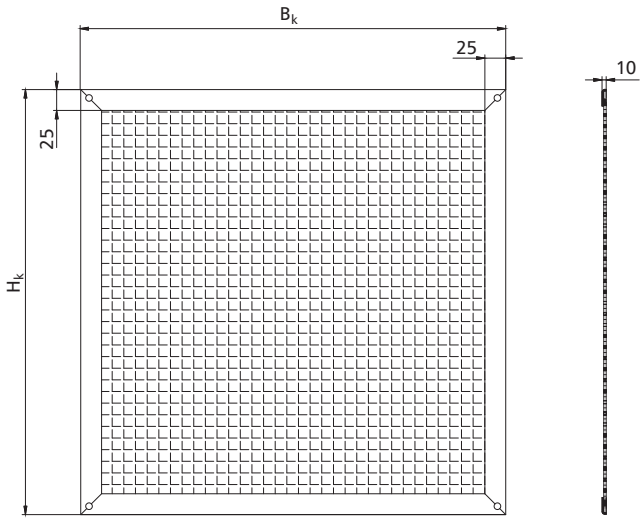
The MWP mesh masking grille is supplied together with the mcr WIP PROV damper by the damper manufacturer. The grille and its installation at the damper or at the end of the installation where the damper is installed is required for the damper to obtain the EIS120 class. In the absence of a masking grille, the damper has a resistance of EIS60 or EIS 90. In the event of additional architectural requirements, the design of the system masking grilles allows the damper and grille to be covered with additional masking grilles, or the system MWP grille to be replaced with any steel masking grille.

Legend:

mcr MWP / B x H / X

- additional parameters
- width x height
- grille type

X - colour code
[no symbol] - RAL9010
RALXXXX - selected colour code from the RAL palette
NONE - masking grille not painted



dimensions in [mm]

14.5.12 | MST lamella masking grille

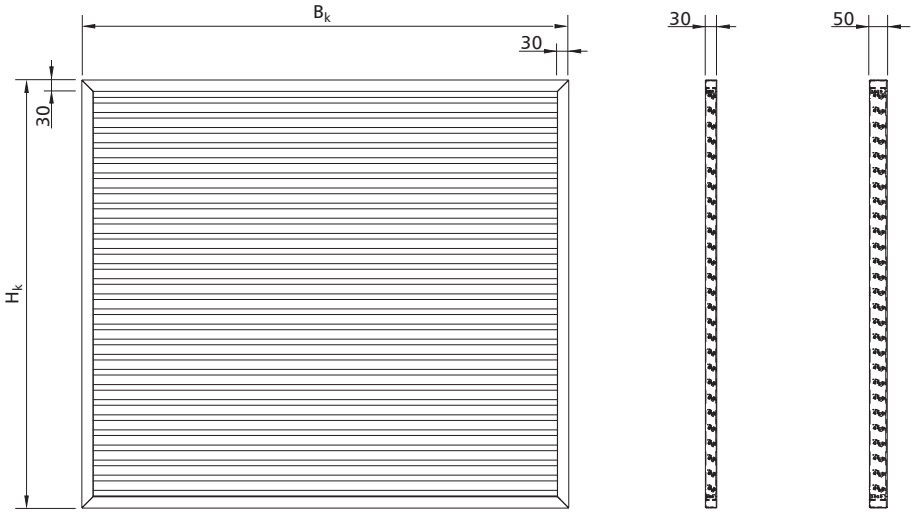
An alternative solution to the MWP mesh masking grid is the MST lamella masking grid. The grille is available in two versions: MST-30 and MST-50.
The grille consists of an internal body, which is attached to the wall with screws, and an external masking frame, which is put on the body after its assembly. The solution makes the mounting screws invisible, which guarantees a highly aesthetic solution. The cover grille is painted in RAL 9010 as standard. It can be painted in any RAL colour upon request or left unpainted.

Legend:

mcr MST / B x H / X

- / : grille type
- B x H : width x height
- X : additional parameters

X - colour code
[no symbol] - RAL9010
RALXXXX - selected colour code from the RAL palette
NONE - masking grille not painted



dimensions in [mm]

14.6 | mcr WIP PROV/V, mcr WIP PROV/V-M rectangular damper technical parameters

B – nominal width [mm]
H – nominal height [mm]
v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]
Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			270					300					350				
		v [m/s]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]
width B [mm]	110	4	0.030	0.019	269	13	33	0.033	0.019	269	14	34	0.039	0.019	269	16	36
		6			404	30	44			404	30	44			404	36	46
		8			539	53	51			539	54	52			539	63	54
		10			673	82	57			673	85	58			673	99	60
	150	4	0.041	0.026	367	13	35	0.045	0.026	367	14	35	0.053	0.026	367	16	37
		6			551	30	45			551	30	46			551	36	48
		8			734	53	53			734	54	53			734	63	55
		10			918	82	59			918	85	59			918	99	61
	200	4	0.054	0.034	490	13	36	0.060	0.034	490	14	36	0.070	0.034	490	16	38
		6			734	30	46			734	30	47			734	36	49
		8			979	53	54			979	54	54			979	63	56
		10			1 224	82	60			1 224	84	60			1 224	99	62
	250	4	0.068	0.043	612	13	37	0.075	0.043	612	14	37	0.088	0.043	612	16	39
		6			918	30	47			918	30	48			918	36	50
		8			1 224	53	55			1 224	54	55			1 224	63	57
		10			1 530	82	61			1 530	85	61			1 530	99	63
	300	4	0.081	0.051	734	13	38	0.090	0.051	734	14	38	0.105	0.051	734	16	40
		6			1 102	30	48			1 102	30	49			1 102	36	51
		8			1 469	53	56			1 469	54	56			1 469	63	58
		10			1 836	82	62			1 836	85	62			1 836	99	64
	350	4	0.095	0.060	857	13	38	0.105	0.060	857	14	39	0.123	0.060	857	16	41
		6			1 285	30	49			1 285	30	49			1 285	36	51
		8			1 714	53	56			1 714	54	57			1 714	63	59
		10			2 142	82	62			2 142	85	63			2 142	99	65
	400	4	0.108	0.068	979	13	39	0.120	0.068	979	14	39	0.140	0.068	979	16	41
		6			1 469	30	49			1 469	30	50			1 469	36	52
		8			1 958	53	57			1 958	54	57			1 958	63	59
		10			2 448	82	63			2 448	84	63			2 448	99	65
	450	4	0.122	0.077	1 102	13	39	0.135	0.077	1 102	14	40	0.158	0.077	1 102	16	42
		6			1 652	30	50			1 652	30	50			1 652	36	52
		8			2 203	53	57			2 203	54	58			2 203	63	60
		10			2 754	82	63			2 754	84	64			2 754	99	66
	500	4	0.135	0.085	1 224	13	40	0.150	0.085	1 224	14	40	0.175	0.085	1 224	16	42
		6			1 836	30	50			1 836	30	51			1 836	36	53
		8			2 448	53	58			2 448	54	58			2 448	63	60
		10			3 060	82	64			3 060	85	64			3 060	99	66
	550	4	0.149	0.094	1 346	2	13	0.165	0.094	1 346	14	41	0.193	0.094	1 346	16	43
		6			2 020	4	24			2 020	30	51			2 020	36	53
		8			2 693	7	31			2 693	54	59			2 693	63	61
		10			3 366	10	37			3 366	84	65			3 366	99	67
	600	4	0.162	0.102	1 469	13	41	0.180	0.102	1 469	14	41	0.210	0.102	1 469	16	43
		6			2 203	30	51			2 203	30	52			2 203	36	54
		8			2 938	53	59			2 938	54	59			2 938	63	61
		10			3 672	82	65			3 672	85	65			3 672	99	67
	650	4	0.176	0.111	1 591	13	41	0.195	0.111	1 591	14	41	0.228	0.111	1 591	16	43
		6			2 387	30	52			2 387	30	52			2 387	36	54
		8			3 182	53	59			3 182	54	59			3 182	63	62
		10			3 978	82	65			3 978	85	65			3 978	99	67

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	270 S_k [m²]	270 S_e [m²]	270 Q [m³/h]	270 d_p [PA]	270 L_{WA} [dB]	300 S_k [m²]	300 S_e [m²]	300 Q [m³/h]	300 d_p [PA]	300 L_{WA} [dB]	350 S_k [m²]	350 S_e [m²]	350 Q [m³/h]	350 d_p [PA]	350 L_{WA} [dB]
700		4	0.189	0.119	1 714	13	41	0.210	0.119	1 714	14	42	0.245	0.119	1 714	16	44
		6			2 570	30	52			2 570	30	52			2 570	36	54
		8			3 427	53	59			3 427	54	60			3 427	63	62
		10			4 284	82	65			4 284	85	66			4 284	99	68
750		4	0.203	0.128	1 836	13	42	0.225	0.128	1 836	14	42	0.263	0.128	1 836	16	44
		6			2 754	30	52			2 754	30	53			2 754	36	55
		8			3 672	53	60			3 672	54	60			3 672	63	62
		10			4 590	82	66			4 590	85	66			4 590	99	68
800		4	0.216	0.136	1 958	13	42	0.240	0.136	1 958	14	42	0.280	0.136	1 958	16	44
		6			2 938	30	52			2 938	30	53			2 938	36	55
		8			3 917	53	60			3 917	54	60			3 917	63	62
		10			4 896	82	66			4 896	84	66			4 896	99	68
850		4	0.230	0.145	2 081	13	42	0.255	0.145	2 081	14	43	0.298	0.145	2 081	16	45
		6			3 121	30	53			3 121	30	53			3 121	36	55
		8			4 162	53	60			4 162	54	61			4 162	63	63
		10			5 202	82	66			5 202	84	66			5 202	99	68
900		4	0.243	0.153	2 203	13	42	0.270	0.153	2 203	14	43	0.315	0.153	2 203	16	45
		6			3 305	30	53			3 305	30	53			3 305	36	55
		8			4 406	53	60			4 406	54	61			4 406	63	63
		10			5 508	82	66			5 508	84	67			5 508	99	69
950		4	0.257	0.162	2 326	13	43	0.285	0.162	2 326	18	47	0.333	0.162	2 326	25	51
		6			3 488	30	53			3 488	41	57			3 488	57	62
		8			4 651	53	61			4 651	72	65			4 651	102	69
		10			5 814	82	67			5 814	113	71			5 814	159	75
1000		4	0.270	0.170	2 448	13	43	0.300	0.170	2 448	18	47	0.350	0.170	2 448	25	51
		6			3 672	30	53			3 672	41	58			3 672	57	62
		8			4 896	53	61			4 896	72	65			4 896	102	70
		10			6 120	82	67			6 120	113	71			6 120	159	75
1050		4	0.284	0.179	2 570	13	43	0.315	0.179	2 570	18	47	0.368	0.179	2 570	25	52
		6			3 856	30	54			3 856	41	58			3 856	57	62
		8			5 141	53	61			5 141	72	65			5 141	102	70
		10			6 426	82	67			6 426	113	71			6 426	159	76
1100		4	0.297	0.187	2 693	13	43	0.330	0.187	2 693	18	47	0.385	0.187	2 693	25	52
		6			4 039	30	54			4 039	41	58			4 039	57	62
		8			5 386	53	61			5 386	72	65			5 386	102	70
		10			6 732	82	67			6 732	113	71			6 732	159	76
1150		4	0.311	0.196	2 815	13	43	0.345	0.196	2 815	18	48	0.403	0.196	2 815	25	52
		6			4 223	30	54			4 223	41	58			4 223	57	63
		8			5 630	53	62			5 630	72	66			5 630	102	70
		10			7 038	82	67			7 038	113	71			7 038	159	76
1200		4	0.324	0.204	2 938	13	44	0.360	0.204	2 938	18	48	0.420	0.204	2 938	25	52
		6			4 406	30	54			4 406	41	58			4 406	57	63
		8			5 875	53	62			5 875	72	66			5 875	102	70
		10			7 344	82	68			7 344	113	72			7 344	159	76
1250		4	0.338	0.213	3 060	13	44	0.375	0.213	3 060	18	48	0.438	0.213	3 060	25	52
		6			4 590	30	54			4 590	41	59			4 590	57	63
		8			6 120	53	62			6 120	72	66			6 120	102	70
		10			7 650	82	68			7 650	113	72			7 650	159	76

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			390					450					520				
		v [m/s]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]
width B [mm]	110	4	0.043	0.028	401	12	34	0.050	0.028	401	14	36	0.057	0.037	532	12	35
		6			601	27	44			601	31	46			798	27	46
		8			802	47	52			802	55	54			1 064	48	53
		10			1 002	74	58			1 002	86	60			1 331	75	59
	150	4	0.059	0.038	546	12	35	0.068	0.038	546	14	37	0.078	0.050	726	12	36
		6			820	27	46			820	31	48			1 089	27	47
		8			1 093	47	53			1 093	55	55			1 452	48	54
		10			1 366	74	59			1 366	86	61			1 814	75	60
	200	4	0.078	0.051	729	12	36	0.090	0.051	729	14	38	0.104	0.067	968	12	38
		6			1 093	27	47			1 093	31	49			1 452	27	48
		8			1 457	47	54			1 457	55	56			1 935	48	56
		10			1 822	74	60			1 822	86	62			2 419	75	62
	250	4	0.098	0.063	911	12	37	0.113	0.063	911	14	39	0.130	0.084	1 210	12	39
		6			1 366	27	48			1 366	31	50			1 814	27	49
		8			1 822	47	55			1 822	55	57			2 419	48	57
		10			2 277	74	61			2 277	86	63			3 024	75	63
	300	4	0.117	0.076	1 093	12	38	0.135	0.076	1 093	14	40	0.156	0.101	1 452	12	39
		6			1 639	27	49			1 639	31	51			2 177	27	50
		8			2 186	47	56			2 186	55	58			2 903	48	57
		10			2 732	74	62			2 732	86	64			3 629	75	63
	350	4	0.137	0.089	1 275	12	39	0.158	0.089	1 275	14	41	0.182	0.118	1 693	12	40
		6			1 913	27	49			1 913	31	51			2 540	27	51
		8			2 550	47	57			2 550	55	59			3 387	48	58
		10			3 188	74	63			3 188	86	65			4 234	75	64
	400	4	0.156	0.101	1 457	12	39	0.180	0.101	1 457	14	41	0.208	0.134	1 935	12	41
		6			2 186	27	50			2 186	31	52			2 903	27	51
		8			2 915	47	57			2 915	55	59			3 871	48	59
		10			3 643	74	63			3 643	86	65			4 838	75	65
	450	4	0.176	0.114	1 639	12	40	0.203	0.114	1 639	14	42	0.234	0.151	2 177	12	41
		6			2 459	27	50			2 459	31	52			3 266	27	52
		8			3 279	47	58			3 279	55	60			4 355	48	59
		10			4 099	74	64			4 099	86	66			5 443	75	65
	500	4	0.195	0.127	1 822	12	40	0.225	0.127	1 822	14	42	0.260	0.168	2 419	12	42
		6			2 732	27	51			2 732	31	53			3 629	27	52
		8			3 643	47	58			3 643	55	60			4 838	48	60
		10			4 554	74	64			4 554	86	66			6 048	75	66
	550	4	0.215	0.139	2 004	12	41	0.248	0.139	2 004	14	43	0.286	0.185	2 661	12	42
		6			3 006	27	51			3 006	31	53			3 992	27	53
		8			4 008	47	59			4 008	55	61			5 322	48	60
		10			5 009	74	65			5 009	86	67			6 653	75	66
	600	4	0.234	0.152	2 186	12	41	0.270	0.152	2 186	14	43	0.312	0.202	2 903	12	42
		6			3 279	27	52			3 279	31	54			4 355	27	53
		8			4 372	47	59			4 372	55	61			5 806	48	61
		10			5 465	74	65			5 465	86	67			7 258	75	66
	650	4	0.254	0.164	2 368	12	41	0.293	0.164	2 368	14	43	0.338	0.218	3 145	12	43
		6			3 552	27	52			3 552	31	54			4 717	27	53
		8			4 736	47	59			4 736	55	61			6 290	48	61
		10			5 920	74	65			5 920	86	67			7 862	75	67

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	390 S_k [m²]	390 S_e [m²]	390 Q [m³/h]	390 d_p [PA]	390 L_{WA} [dB]	450 S_k [m²]	450 S_e [m²]	450 Q [m³/h]	450 d_p [PA]	450 L_{WA} [dB]	520 S_k [m²]	520 S_e [m²]	520 Q [m³/h]	520 d_p [PA]	520 L_{WA} [dB]
	700	4	0.273	0.177	2 550	12	42	0.315	0.177	2 550	14	44	0.364	0.235	3 387	12	43
		6			3 825	27	52			3 825	31	54			5 080	27	54
		8			5 100	47	60			5 100	55	62			6 774	48	61
		10			6 376	74	66			6 376	86	68			8 467	75	67
	750	4	0.293	0.190	2 732	12	42	0.338	0.190	2 732	14	44	0.390	0.252	3 629	12	43
		6			4 099	27	53			4 099	31	55			5 443	27	54
		8			5 465	47	60			5 465	55	62			7 258	48	61
		10			6 831	74	66			6 831	86	68			9 072	75	67
	800	4	0.312	0.202	2 915	12	42	0.360	0.202	2 915	14	43	0.416	0.269	3 871	12	43
		6			4 372	27	53			4 372	31	54			5 806	27	54
		8			5 829	47	60			5 829	55	61			7 741	48	61
		10			7 286	74	66			7 286	86	67			9 677	75	67
	850	4	0.332	0.215	3 097	12	43	0.383	0.215	3 097	14	43	0.442	0.286	4 113	12	43
		6			4 645	27	53			4 645	31	54			6 169	27	54
		8			6 193	47	61			6 193	55	61			8 225	48	61
		10			7 742	74	66			7 742	86	67			10 282	75	67
	900	4	0.351	0.228	3 279	12	43	0.405	0.228	3 279	14	43	0.468	0.302	4 355	12	43
		6			4 918	27	53			4 918	31	54			6 532	27	54
		8			6 558	47	61			6 558	55	61			8 709	48	61
		10			8 197	74	67			8 197	86	67			10 886	75	67
	950	4	0.371	0.240	3 461	12	43	0.428	0.240	3 461	18	49	0.494	0.319	4 596	12	44
		6			5 192	27	54			5 192	41	59			6 895	27	55
		8			6 922	47	61			6 922	74	67			9 193	48	62
		10			8 653	74	67			8 653	115	73			11 491	75	68
	1000	4	0.390	0.253	3 643	12	43	0.450	0.253	3 643	18	49	0.520	0.336	4 838	12	45
		6			5 465	27	54			5 465	41	60			7 258	27	55
		8			7 286	47	61			7 286	74	67			9 677	48	63
		10			9 108	74	67			9 108	115	73			12 096	75	69
	1050	4	0.410	0.266	3 825	12	43	0.473	0.266	3 825	18	49	0.546	0.353	5 080	12	45
		6			5 738	27	54			5 738	41	60			7 620	27	55
		8			7 651	47	62			7 651	74	67			10 161	48	63
		10			9 563	74	67			9 563	115	73			12 701	75	69
	1100	4	0.429	0.278	4 008	12	44	0.495	0.278	4 008	18	49	0.572	0.370	5 322	12	45
		6			6 011	27	54			6 011	41	60			7 983	27	56
		8			8 015	47	62			8 015	74	67			10 644	48	63
		10			10 019	74	68			10 019	115	73			13 306	75	69
	1150	4	0.449	0.291	4 190	12	44	0.518	0.291	4 190	18	50	0.598	0.386	5 564	12	45
		6			6 285	27	54			6 285	41	60			8 346	27	56
		8			8 379	47	62			8 379	74	68			11 128	48	63
		10			10 474	74	68			10 474	115	73			13 910	75	69
	1200	4	0.468	0.304	4 372	12	44	0.540	0.304	4 372	18	50	0.624	0.403	5 806	12	45
		6			6 558	27	55			6 558	41	60			8 709	27	56
		8			8 744	47	62			8 744	74	68			11 612	48	64
		10			10 930	74	68			10 930	115	74			14 515	75	69
	1250	4	0.488	0.316	4 554	12	44	0.563	0.316	4 554	18	50	0.650	0.420	6 048	12	46
		6			6 831	27	55			6 831	41	61			9 072	27	56
		8			9 108	47	62			9 108	74	68			12 096	48	64
		10			11 385	74	68			11 385	115	74			15 120	75	70

B – nominal width [mm]
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S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	550 S_k [m²]	550 S_e [m²]	550 Q [m³/h]	550 d_p [PA]	550 L_{WA} [dB]	640 S_k [m²]	640 S_e [m²]	640 Q [m³/h]	640 d_p [PA]	640 L_{WA} [dB]	650 S_k [m²]	650 S_e [m²]	650 Q [m³/h]	650 d_p [PA]	650 L_{WA} [dB]
110		4	0.061	0.037	532	13	36	0.070	0.046	664	11	35	0.072	0.046	664	12	36
		6			798	29	46			996	26	46			996	27	47
		8			1 064	51	54			1 327	46	53			1 327	48	54
		10			1 331	79	60			1 659	72	59			1 659	76	60
150		4	0.083	0.050	726	13	37	0.096	0.063	905	11	37	0.098	0.063	905	12	37
		6			1 089	29	48			1 358	26	47			1 358	27	48
		8			1 452	51	55			1 810	46	55			1 810	48	56
		10			1 814	79	61			2 263	72	61			2 263	76	61
200		4	0.110	0.067	968	13	38	0.128	0.084	1 207	11	38	0.130	0.084	1 207	12	39
		6			1 452	29	49			1 810	26	49			1 810	27	49
		8			1 935	51	56			2 413	46	56			2 413	48	57
		10			2 419	79	62			3 017	72	62			3 017	76	63
250		4	0.138	0.084	1 210	13	39	0.160	0.105	1 508	11	39	0.163	0.105	1 508	12	40
		6			1 814	29	50			2 263	26	50			2 263	27	50
		8			2 419	51	57			3 017	46	57			3 017	48	58
		10			3 024	79	63			3 771	72	63			3 771	76	64
300		4	0.165	0.101	1 452	13	40	0.192	0.126	1 810	11	40	0.195	0.126	1 810	12	41
		6			2 177	29	51			2 715	26	50			2 715	27	51
		8			2 903	51	58			3 620	46	58			3 620	48	59
		10			3 629	79	64			4 525	72	64			4 525	76	64
350		4	0.193	0.118	1 693	13	41	0.224	0.147	2 112	11	40	0.228	0.147	2 112	12	41
		6			2 540	29	51			3 168	26	51			3 168	27	52
		8			3 387	51	59			4 224	46	58			4 224	48	59
		10			4 234	79	65			5 279	72	64			5 279	76	65
400		4	0.220	0.134	1 935	13	41	0.256	0.168	2 413	11	41	0.260	0.168	2 413	12	42
		6			2 903	29	52			3 620	26	52			3 620	27	52
		8			3 871	51	59			4 827	46	59			4 827	48	60
		10			4 838	79	65			6 034	72	65			6 034	76	66
450		4	0.248	0.151	2 177	13	42	0.288	0.189	2 715	11	42	0.293	0.189	2 715	12	42
		6			3 266	29	52			4 073	26	52			4 073	27	53
		8			4 355	51	60			5 430	46	60			5 430	48	60
		10			5 443	79	66			6 788	72	65			6 788	76	66
500		4	0.275	0.168	2 419	13	42	0.320	0.210	3 017	11	42	0.325	0.210	3 017	12	43
		6			3 629	29	53			4 525	26	53			4 525	27	53
		8			4 838	51	60			6 034	46	60			6 034	48	61
		10			6 048	79	66			7 542	72	66			7 542	76	67
550		4	0.303	0.185	2 661	13	43	0.352	0.230	3 318	11	42	0.358	0.230	3 318	12	43
		6			3 992	29	53			4 978	26	53			4 978	27	54
		8			5 322	51	61			6 637	46	60			6 637	48	61
		10			6 653	79	67			8 296	72	66			8 296	76	67
600		4	0.330	0.202	2 903	13	43	0.384	0.251	3 620	11	43	0.390	0.251	3 620	12	44
		6			4 355	29	54			5 430	26	53			5 430	27	54
		8			5 806	51	61			7 240	46	61			7 240	48	62
		10			7 258	79	67			9 050	72	67			9 050	76	67
650		4	0.358	0.218	3 145	13	44	0.416	0.272	3 922	11	43	0.423	0.272	3 922	12	44
		6			4 717	29	54			5 883	26	54			5 883	27	54
		8			6 290	51	62			7 844	46	61			7 844	48	62
		10			7 862	79	67			9 805	72	67			9 805	76	68

B – nominal width [mm]
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S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	550 S_k [m²]	550 S_e [m²]	550 Q [m³/h]	550 d_p [PA]	550 L_{WA} [dB]	640 S_k [m²]	640 S_e [m²]	640 Q [m³/h]	640 d_p [PA]	640 L_{WA} [dB]	650 S_k [m²]	650 S_e [m²]	650 Q [m³/h]	650 d_p [PA]	650 L_{WA} [dB]
700		4	0.385	0.235	3 387	13	44	0.448	0.293	4 224	11	43	0.455	0.293	4 224	12	44
		6			5 080	29	54			6 335	26	54			6 335	27	55
		8			6 774	51	62			8 447	46	61			8 447	48	62
		10			8 467	79	68			10 559	72	67			10 559	76	68
750		4	0.413	0.252	3 629	13	44	0.480	0.314	4 525	11	44	0.488	0.314	4 525	12	44
		6			5 443	29	55			6 788	26	54			6 788	27	55
		8			7 258	51	62			9 050	46	62			9 050	48	63
		10			9 072	79	68			11 313	72	68			11 313	76	68
800		4	0.440	0.269	3 871	13	44	0.512	0.335	4 827	11	44	0.520	0.335	4 827	12	44
		6			5 806	29	55			7 240	26	55			7 240	27	55
		8			7 741	51	62			9 654	46	62			9 654	48	63
		10			9 677	79	68			12 067	72	68			12 067	76	68
850		4	0.468	0.286	4 113	13	45	0.544	0.356	5 129	11	44	0.553	0.356	5 129	12	44
		6			6 169	29	55			7 693	26	55			7 693	27	55
		8			8 225	51	63			10 257	46	62			10 257	48	63
		10			10 282	79	69			12 821	72	68			12 821	76	68
900		4	0.495	0.302	4 355	13	45	0.576	0.377	5 430	11	45	0.585	0.377	5 430	12	44
		6			6 532	29	56			8 145	26	52			8 145	27	55
		8			8 709	51	63			10 860	46	60			10 860	48	63
		10			10 886	79	69			13 576	72	65			13 576	76	68
950		4	0.523	0.319	4 596	15	47	0.608	0.398	5 732	11	45	0.618	0.398	5 732	12	46
		6			6 895	33	57			8 598	26	55			8 598	27	56
		8			9 193	58	65			11 464	46	63			11 464	48	64
		10			11 491	91	71			14 330	72	69			14 330	76	69
1000		4	0.550	0.336	4 838	15	47	0.640	0.419	6 034	11	45	0.650	0.419	6 034	12	46
		6			7 258	33	58			9 050	26	56			9 050	27	56
		8			9 677	58	65			12 067	46	63			12 067	48	64
		10			12 096	91	71			15 084	72	69			15 084	76	70
1050		4	0.578	0.353	5 080	15	47	0.672	0.440	6 335	11	45	0.683	0.440	6 335	12	46
		6			7 620	33	58			9 503	26	56			9 503	27	57
		8			10 161	58	65			12 671	46	63			12 671	48	64
		10			12 701	91	71			15 838	72	69			15 838	76	70
1100		4	0.605	0.370	5 322	15	48	0.704	0.461	6 637	11	45	0.715	0.461	6 637	12	46
		6			7 983	33	58			9 955	26	56			9 955	27	57
		8			10 644	58	66			13 274	46	63			13 274	48	64
		10			13 306	91	71			16 592	72	69			16 592	76	70
1150		4	0.633	0.386	5 564	15	48	0.736	0.482	6 939	11	46	0.748	0.482	6 939	12	46
		6			8 346	33	58			10 408	26	56			10 408	27	57
		8			11 128	58	66			13 877	46	64			13 877	48	64
		10			13 910	91	72			17 347	72	69			17 347	76	70
1200		4	0.660	0.403	5 806	15	48	0.768	0.503	7 240	11	46	0.780	0.503	7 240	12	47
		6			8 709	33	58			10 860	26	56			10 860	27	57
		8			11 612	58	66			14 481	46	64			14 481	48	65
		10			14 515	91	72			18 101	72	70			18 101	76	70
1250		4	0.688	0.420	6 048	15	48	0.800	0.524	7 542	11	46	0.813	0.524	7 542	12	47
		6			9 072	33	59			11 313	26	57			11 313	27	57
		8			12 096	58	66			15 084	46	64			15 084	48	65
		10			15 120	91	72			18 855	72	70			18 855	76	71

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S_e – damper active cross-section [m²]

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d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			700					760					800				
		v [m/s]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]
width B [mm]	110	4	0.077	0.046	664	14	38	0.084	0.055	795	12	37	0.088	0.055	795	10	34
		6			996	30	48			1 193	28	48			1 193	22	45
		8			1 327	54	56			1 590	50	55			1 590	40	52
		10			1 659	85	61			1 988	78	61			1 988	62	58
	150	4	0.105	0.063	905	14	39	0.114	0.075	1 084	12	39	0.120	0.075	1 084	10	36
		6			1 358	30	49			1 626	28	49			1 626	22	46
		8			1 810	54	57			2 169	50	57			2 169	40	54
		10			2 263	85	63			2 711	78	62			2 711	62	60
	200	4	0.140	0.084	1 207	14	40	0.152	0.100	1 446	12	40	0.160	0.100	1 446	10	37
		6			1 810	30	51			2 169	28	50			2 169	22	48
		8			2 413	54	58			2 892	50	58			2 892	40	55
		10			3 017	85	64			3 614	78	64			3 614	62	61
	250	4	0.175	0.105	1 508	14	41	0.190	0.126	1 807	12	41	0.200	0.126	1 807	10	38
		6			2 263	30	52			2 711	28	51			2 711	22	49
		8			3 017	54	59			3 614	50	59			3 614	40	56
		10			3 771	85	65			4 518	78	65			4 518	62	62
	300	4	0.210	0.126	1 810	14	42	0.228	0.151	2 169	12	42	0.240	0.151	2 169	10	39
		6			2 715	30	53			3 253	28	52			3 253	22	49
		8			3 620	54	60			4 337	50	60			4 337	40	57
		10			4 525	85	66			5 422	78	66			5 422	62	63
	350	4	0.245	0.147	2 112	14	43	0.266	0.176	2 530	12	42	0.280	0.176	2 530	10	39
		6			3 168	30	53			3 795	28	53			3 795	22	50
		8			4 224	54	61			5 060	50	60			5 060	40	57
		10			5 279	85	66			6 325	78	66			6 325	62	63
	400	4	0.280	0.168	2 413	14	43	0.304	0.201	2 892	12	43	0.320	0.201	2 892	10	40
		6			3 620	30	54			4 337	28	53			4 337	22	51
		8			4 827	54	61			5 783	50	61			5 783	40	58
		10			6 034	85	67			7 229	78	67			7 229	62	64
	450	4	0.315	0.189	2 715	14	44	0.342	0.226	3 253	12	43	0.360	0.226	3 253	10	41
		6			4 073	30	54			4 879	28	54			4 879	22	51
		8			5 430	54	62			6 506	50	61			6 506	40	59
		10			6 788	85	68			8 132	78	67			8 132	62	64
	500	4	0.350	0.210	3 017	14	44	0.380	0.251	3 614	12	44	0.400	0.251	3 614	10	41
		6			4 525	30	55			5 422	28	54			5 422	22	52
		8			6 034	54	62			7 229	50	62			7 229	40	59
		10			7 542	85	68			9 036	78	68			9 036	62	65
	550	4	0.385	0.230	3 318	14	45	0.418	0.276	3 976	12	44	0.440	0.276	3 976	10	41
		6			4 978	30	55			5 964	28	55			5 964	22	52
		8			6 637	54	63			7 952	50	62			7 952	40	59
		10			8 296	85	68			9 940	78	68			9 940	62	65
	600	4	0.420	0.251	3 620	14	45	0.456	0.301	4 337	12	45	0.480	0.301	4 337	10	42
		6			5 430	30	56			6 506	28	55			6 506	22	52
		8			7 240	54	63			8 675	50	63			8 675	40	60
		10			9 050	85	69			10 843	78	69			10 843	62	66
	650	4	0.455	0.272	3 922	14	45	0.494	0.326	4 699	12	45	0.520	0.326	4 699	10	42
		6			5 883	30	56			7 048	28	56			7 048	22	53
		8			7 844	54	63			9 397	50	63			9 397	40	60
		10			9 805	85	69			11 747	78	69			11 747	62	66

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S_e – damper active cross-section [m²]

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d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	700 S_k [m²]	700 S_e [m²]	700 Q [m³/h]	700 d_p [PA]	700 L_{WA} [dB]	760 S_k [m²]	760 S_e [m²]	760 Q [m³/h]	760 d_p [PA]	760 L_{WA} [dB]	800 S_k [m²]	800 S_e [m²]	800 Q [m³/h]	800 d_p [PA]	800 L_{WA} [dB]
	700	4	0.490	0.293	4 224	14	46	0.532	0.351	5 060	12	45	0.560	0.351	5 060	10	42
		6			6 335	30	56			7 590	28	56			7 590	22	53
		8			8 447	54	64			10 120	50	63			10 120	40	61
		10			10 559	85	69			12 650	78	69			12 650	62	66
	750	4	0.525	0.314	4 525	14	46	0.570	0.377	5 422	12	46	0.600	0.377	5 422	10	43
		6			6 788	30	56			8 132	28	56			8 132	22	53
		8			9 050	54	64			10 843	50	64			10 843	40	61
		10			11 313	85	70			13 554	78	69			13 554	62	67
	800	4	0.560	0.335	4 827	14	44	0.608	0.402	5 783	12	46	0.640	0.402	5 783	10	43
		6			7 240	30	55			8 675	28	56			8 675	22	54
		8			9 654	54	62			11 566	50	64			11 566	40	61
		10			12 067	85	67			14 458	78	70			14 458	62	67
	850	4	0.595	0.356	5 129	14	46	0.646	0.427	6 144	12	46	0.680	0.427	6 144	10	43
		6			7 693	30	57			9 217	28	57			9 217	22	54
		8			10 257	54	65			12 289	50	64			12 289	40	61
		10			12 821	85	70			15 361	78	70			15 361	62	67
	900	4	0.630	0.377	5 430	14	47	0.684	0.452	6 506	12	46	0.720	0.452	6 506	10	44
		6			8 145	30	57			9 759	28	57			9 759	22	54
		8			10 860	54	65			13 012	50	64			13 012	40	62
		10			13 576	85	71			16 265	78	70			16 265	62	67
	950	4	0.665	0.398	5 732	15	49	0.722	0.477	6 867	11	45	0.760	0.477	6 867	13	48
		6			8 598	35	59			10 301	25	56			10 301	30	58
		8			11 464	62	67			13 735	44	63			13 735	53	66
		10			14 330	97	73			17 168	69	69			17 168	83	71
	1000	4	0.700	0.419	6 034	15	49	0.760	0.502	7 229	11	45	0.800	0.502	7 229	13	48
		6			9 050	35	59			10 843	25	56			10 843	30	58
		8			12 067	62	67			14 458	44	63			14 458	53	66
		10			15 084	97	73			18 072	69	69			18 072	83	72
	1050	4	0.735	0.440	6 335	15	49	0.798	0.527	7 590	11	46	0.840	0.527	7 590	13	48
		6			9 503	35	60			11 385	25	56			11 385	30	59
		8			12 671	62	67			15 180	44	64			15 180	53	66
		10			15 838	97	73			18 976	69	69			18 976	83	72
	1100	4	0.770	0.461	6 637	15	49	0.836	0.552	7 952	11	46	0.880	0.552	7 952	13	48
		6			9 955	35	60			11 928	25	56			11 928	30	59
		8			13 274	62	67			15 903	44	64			15 903	53	66
		10			16 592	97	73			19 879	69	70			19 879	83	72
	1150	4	0.805	0.482	6 939	15	50	0.874	0.577	8 313	11	46	0.920	0.577	8 313	13	48
		6			10 408	35	60			12 470	25	56			12 470	30	59
		8			13 877	62	68			16 626	44	64			16 626	53	66
		10			17 347	97	73			20 783	69	70			20 783	83	72
	1200	4	0.840	0.503	7 240	15	50	0.912	0.602	8 675	11	46	0.960	0.602	8 675	13	49
		6			10 860	35	60			13 012	25	57			13 012	30	59
		8			14 481	62	68			17 349	44	64			17 349	53	67
		10			18 101	97	74			21 686	69	70			21 686	83	72
	1250	4	0.875	0.524	7 542	15	50	0.950	0.628	9 036	11	46	1.000	0.628	9 036	13	49
		6			11 313	35	60			13 554	25	57			13 554	30	59
		8			15 084	62	68			18 072	44	64			18 072	53	67
		10			18 855	97	74			22 590	69	70			22 590	83	73

B – nominal width [mm]
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v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	890 S_k [m²]	890 S_e [m²]	890 Q [m³/h]	890 d_p [PA]	890 L_{WA} [dB]	900 S_k [m²]	900 S_e [m²]	900 Q [m³/h]	900 d_p [PA]	900 L_{WA} [dB]	950 S_k [m²]	950 S_e [m²]	950 Q [m³/h]	950 d_p [PA]	950 L_{WA} [dB]
110		4	0.098	0.064	927	13	38	0.099	0.064	927	13	39	0.105	0.064	927	14	40
		6			1 390	29	49			1 390	30	49			1 390	32	50
		8			1 853	51	56			1 853	53	57			1 853	57	58
		10			2 317	79	62			2 317	83	63			2 317	89	64
150		4	0.134	0.088	1 264	13	40	0.135	0.088	1 264	13	40	0.143	0.088	1 264	14	41
		6			1 895	29	50			1 895	30	51			1 895	32	52
		8			2 527	51	58			2 527	53	58			2 527	57	59
		10			3 159	79	63			3 159	83	64			3 159	89	65
200		4	0.178	0.117	1 685	13	41	0.180	0.117	1 685	13	41	0.190	0.117	1 685	14	42
		6			2 527	29	51			2 527	30	52			2 527	32	53
		8			3 370	51	59			3 370	53	59			3 370	57	60
		10			4 212	79	65			4 212	83	65			4 212	89	66
250		4	0.223	0.146	2 106	13	42	0.225	0.146	2 106	13	42	0.238	0.146	2 106	14	43
		6			3 159	29	52			3 159	30	53			3 159	32	54
		8			4 212	51	60			4 212	53	60			4 212	57	61
		10			5 265	79	66			5 265	83	66			5 265	89	67
300		4	0.267	0.176	2 527	13	43	0.270	0.176	2 527	13	43	0.285	0.176	2 527	14	44
		6			3 791	29	53			3 791	30	54			3 791	32	55
		8			5 054	51	61			5 054	53	61			5 054	57	62
		10			6 318	79	66			6 318	83	67			6 318	89	68
350		4	0.312	0.205	2 948	13	43	0.315	0.205	2 948	13	44	0.333	0.205	2 948	14	45
		6			4 423	29	54			4 423	30	54			4 423	32	55
		8			5 897	51	61			5 897	53	62			5 897	57	63
		10			7 371	79	67			7 371	83	68			7 371	89	69
400		4	0.356	0.234	3 370	13	44	0.360	0.234	3 370	13	44	0.380	0.234	3 370	14	45
		6			5 054	29	54			5 054	30	55			5 054	32	56
		8			6 739	51	62			6 739	53	62			6 739	57	63
		10			8 424	79	68			8 424	83	68			8 424	89	69
450		4	0.401	0.263	3 791	13	44	0.405	0.263	3 791	13	45	0.428	0.263	3 791	14	46
		6			5 686	29	55			5 686	30	55			5 686	32	56
		8			7 582	51	62			7 582	53	63			7 582	57	64
		10			9 477	79	68			9 477	83	69			9 477	89	70
500		4	0.445	0.293	4 212	13	45	0.450	0.293	4 212	13	45	0.475	0.293	4 212	14	46
		6			6 318	29	55			6 318	30	56			6 318	32	57
		8			8 424	51	63			8 424	53	63			8 424	57	64
		10			10 530	79	69			10 530	83	69			10 530	89	70
550		4	0.490	0.322	4 633	13	45	0.495	0.322	4 633	13	46	0.523	0.322	4 633	14	47
		6			6 950	29	56			6 950	30	56			6 950	32	57
		8			9 266	51	63			9 266	53	64			9 266	57	65
		10			11 583	79	69			11 583	83	70			11 583	89	70
600		4	0.534	0.351	5 054	13	46	0.540	0.351	5 054	13	46	0.570	0.351	5 054	14	47
		6			7 582	29	56			7 582	30	57			7 582	32	58
		8			10 109	51	64			10 109	53	64			10 109	57	65
		10			12 636	79	69			12 636	83	70			12 636	89	71
650		4	0.579	0.380	5 476	13	46	0.585	0.380	5 476	13	46	0.618	0.380	5 476	14	47
		6			8 213	29	56			8 213	30	57			8 213	32	58
		8			10 951	51	64			10 951	53	65			10 951	57	65
		10			13 689	79	70			13 689	83	70			13 689	89	71

B – nominal width [mm]
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S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			890					900					950				
		v [m/s]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]
width B [mm]	700	4	0.623	0.410	5 897	13	46	0.630	0.410	5 897	13	47	0.665	0.410	5 897	14	48
		6			8 845	29	57			8 845	30	57			8 845	32	58
		8			11 794	51	64			11 794	53	65			11 794	57	66
		10			14 742	79	70			14 742	83	71			14 742	89	72
	750	4	0.668	0.439	6 318	13	47	0.675	0.439	6 318	13	47	0.713	0.439	6 318	14	48
		6			9 477	29	57			9 477	30	58			9 477	32	59
		8			12 636	51	65			12 636	53	65			12 636	57	66
		10			15 795	79	70			15 795	83	71			15 795	89	72
	800	4	0.712	0.468	6 739	13	47	0.720	0.468	6 739	13	47	0.760	0.468	6 739	14	48
		6			10 109	29	57			10 109	30	58			10 109	32	59
		8			13 478	51	65			13 478	53	65			13 478	57	66
		10			16 848	79	71			16 848	83	71			16 848	89	72
	850	4	0.757	0.497	7 160	13	47	0.765	0.497	7 160	13	48	0.808	0.497	7 160	14	49
		6			10 741	29	58			10 741	30	58			10 741	32	59
		8			14 321	51	65			14 321	53	66			14 321	57	67
		10			17 901	79	71			17 901	83	71			17 901	89	72
	900	4	0.801	0.527	7 582	13	47	0.810	0.527	7 582	13	48	0.855	0.527	7 582	14	49
		6			11 372	29	58			11 372	30	58			11 372	32	59
		8			15 163	51	65			15 163	53	66			15 163	57	67
		10			18 954	79	71			18 954	83	72			18 954	89	73
	950	4	0.846	0.556	8 003	11	46	0.855	0.556	8 003	12	47	0.903	0.556	8 003	14	49
		6			12 004	25	57			12 004	26	57			12 004	32	60
		8			16 006	45	64			16 006	47	65			16 006	57	67
		10			20 007	70	70			20 007	74	70			20 007	89	73
	1000	4	0.890	0.585	8 424	11	46	0.900	0.585	8 424	12	47	0.950	0.585	8 424	14	49
		6			12 636	25	57			12 636	26	57			12 636	32	60
		8			16 848	45	64			16 848	47	65			16 848	57	67
		10			21 060	70	70			21 060	74	71			21 060	89	73
	1050	4	0.935	0.614	8 845	11	46	0.945	0.614	8 845	12	47	0.998	0.614	8 845	14	49
		6			13 268	25	57			13 268	26	58			13 268	32	60
		8			17 690	45	65			17 690	47	65			17 690	57	67
		10			22 113	70	70			22 113	74	71			22 113	89	73
	1100	4	0.979	0.644	9 266	11	47	0.990	0.644	9 266	12	47	1.045	0.644	9 266	14	50
		6			13 900	25	57			13 900	26	58			13 900	32	60
		8			18 533	45	65			18 533	47	65			18 533	57	68
		10			23 166	70	71			23 166	73	71			23 166	89	74
	1150	4	1.024	0.673	9 688	11	47	1.035	0.673	9 688	12	47	1.093	0.673	9 688	14	50
		6			14 531	25	57			14 531	26	58			14 531	32	60
		8			19 375	45	65			19 375	47	65			19 375	57	68
		10			24 219	70	71			24 219	74	71			24 219	89	74
	1200	4	1.068	0.702	10 109	11	47	1.080	0.702	10 109	12	48	1.140	0.702	10 109	14	50
		6			15 163	25	58			15 163	26	58			15 163	32	61
		8			20 218	45	65			20 218	47	66			20 218	57	68
		10			25 272	70	71			25 272	74	71			25 272	89	74
	1250	4	1.113	0.731	10 530	11	47	1.125	0.731	10 530	12	48	1.188	0.731	10 530	14	50
		6			15 795	25	58			15 795	26	58			15 795	32	61
		8			21 060	45	65			21 060	47	66			21 060	57	68
		10			26 325	70	71			26 325	74	72			26 325	89	74

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S_e – damper active cross-section [m²]

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d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			1010					1050					1100				
		v [m/s]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]
width B [mm]	110	4	0.111	0.073	1 058	12	38	0.116	0.073	1 058	13	39	0.121	0.073	1 058	15	41
		6			1 587	28	49			1 587	29	49			1 587	33	51
		8			2 116	50	57			2 116	51	57			2 116	59	59
		10			2 645	77	62			2 645	79	63			2 645	93	65
	150	4	0.152	0.100	1 443	12	40	0.158	0.100	1 443	13	40	0.165	0.100	1 443	15	42
		6			2 164	28	50			2 164	29	51			2 164	33	53
		8			2 886	50	58			2 886	51	58			2 886	59	60
		10			3 607	77	64			3 607	79	64			3 607	93	66
	200	4	0.202	0.134	1 924	12	41	0.210	0.134	1 924	13	41	0.220	0.134	1 924	15	43
		6			2 886	28	52			2 886	29	52			2 886	33	54
		8			3 848	50	59			3 848	51	59			3 848	59	61
		10			4 810	77	65			4 810	79	65			4 810	93	67
	250	4	0.253	0.167	2 405	12	42	0.263	0.167	2 405	13	42	0.275	0.167	2 405	15	44
		6			3 607	28	53			3 607	29	53			3 607	33	55
		8			4 810	50	60			4 810	51	60			4 810	59	62
		10			6 012	77	66			6 012	79	66			6 012	93	68
	300	4	0.303	0.200	2 886	12	43	0.315	0.200	2 886	13	43	0.330	0.200	2 886	15	45
		6			4 329	28	53			4 329	29	54			4 329	33	56
		8			5 772	50	61			5 772	51	61			5 772	59	63
		10			7 214	77	67			7 214	79	67			7 214	93	69
	350	4	0.354	0.234	3 367	12	43	0.368	0.234	3 367	13	44	0.385	0.234	3 367	15	46
		6			5 050	28	54			5 050	29	54			5 050	33	56
		8			6 733	50	62			6 733	51	62			6 733	59	64
		10			8 417	77	67			8 417	79	68			8 417	93	70
	400	4	0.404	0.267	3 848	12	44	0.420	0.267	3 848	13	44	0.440	0.267	3 848	15	46
		6			5 772	28	55			5 772	29	55			5 772	33	57
		8			7 695	50	62			7 695	51	62			7 695	59	64
		10			9 619	77	68			9 619	79	68			9 619	93	70
	450	4	0.455	0.301	4 329	12	45	0.473	0.301	4 329	13	45	0.495	0.301	4 329	15	47
		6			6 493	28	55			6 493	29	55			6 493	33	57
		8			8 657	50	63			8 657	51	63			8 657	59	65
		10			10 822	77	68			10 822	79	69			10 822	93	71
	500	4	0.505	0.334	4 810	12	45	0.525	0.334	4 810	13	45	0.550	0.334	4 810	15	47
		6			7 214	28	56			7 214	29	56			7 214	33	58
		8			9 619	50	63			9 619	51	63			9 619	59	65
		10			12 024	77	69			12 024	79	69			12 024	93	71
	550	4	0.556	0.367	5 291	12	45	0.578	0.367	5 291	13	46	0.605	0.367	5 291	15	48
		6			7 936	28	56			7 936	29	56			7 936	33	58
		8			10 581	50	63			10 581	51	64			10 581	59	66
		10			13 226	77	69			13 226	79	70			13 226	93	72
	600	4	0.606	0.401	5 772	12	46	0.630	0.401	5 772	13	46	0.660	0.401	5 772	15	48
		6			8 657	28	56			8 657	29	57			8 657	33	59
		8			11 543	50	64			11 543	51	64			11 543	59	66
		10			14 429	77	70			14 429	79	70			14 429	93	72
	650	4	0.657	0.434	6 252	12	46	0.683	0.434	6 252	13	46	0.715	0.434	6 252	15	48
		6			9 379	28	57			9 379	29	57			9 379	33	59
		8			12 505	50	64			12 505	51	65			12 505	59	67
		10			15 631	77	70			15 631	79	70			15 631	93	72

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S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1010 S_k [m²]	1010 S_e [m²]	1010 Q [m³/h]	1010 d_p [PA]	1010 L_{WA} [dB]	1050 S_k [m²]	1050 S_e [m²]	1050 Q [m³/h]	1050 d_p [PA]	1050 L_{WA} [dB]	1100 S_k [m²]	1100 S_e [m²]	1100 Q [m³/h]	1100 d_p [PA]	1100 L_{WA} [dB]
700		4	0.707	0.468	6 733	12	46	0.735	0.468	6 733	13	47	0.770	0.468	6 733	15	49
		6			10 100	28	57			10 100	29	57			10 100	33	59
		8			13 467	50	65			13 467	51	65			13 467	59	67
		10			16 834	77	70			16 834	79	71			16 834	93	73
750		4	0.758	0.501	7 214	12	47	0.788	0.501	7 214	13	47	0.825	0.501	7 214	15	49
		6			10 822	28	57			10 822	29	58			10 822	33	60
		8			14 429	50	65			14 429	51	65			14 429	59	67
		10			18 036	77	71			18 036	79	71			18 036	93	73
800		4	0.808	0.534	7 695	12	47	0.840	0.534	7 695	13	47	0.880	0.534	7 695	15	49
		6			11 543	28	58			11 543	29	58			11 543	33	60
		8			15 391	50	65			15 391	51	65			15 391	59	67
		10			19 238	77	71			19 238	79	71			19 238	93	73
850		4	0.859	0.568	8 176	12	47	0.893	0.568	8 176	13	48	0.935	0.568	8 176	15	50
		6			12 264	28	58			12 264	29	58			12 264	33	60
		8			16 353	50	65			16 353	51	66			16 353	59	68
		10			20 441	77	71			20 441	79	72			20 441	93	74
900		4	0.909	0.601	8 657	12	48	0.945	0.601	8 657	13	48	0.990	0.601	8 657	15	50
		6			12 986	28	58			12 986	29	58			12 986	33	60
		8			17 315	50	66			17 315	51	66			17 315	59	68
		10			21 643	77	71			21 643	79	72			21 643	93	74
950		4	0.960	0.635	9 138	11	46	0.998	0.635	9 138	13	48	1.045	0.635	9 138	15	50
		6			13 707	25	57			13 707	29	59			13 707	33	61
		8			18 276	44	64			18 276	51	66			18 276	59	68
		10			22 846	69	70			22 846	79	72			22 846	93	74
1000		4	1.010	0.668	9 619	11	46	1.050	0.668	9 619	13	48	1.100	0.668	9 619	15	50
		6			14 429	25	57			14 429	29	59			14 429	33	61
		8			19 238	44	65			19 238	51	66			19 238	59	68
		10			24 048	69	70			24 048	79	72			24 048	93	74
1050		4	1.061	0.701	10 100	11	47	1.103	0.701	10 100	13	49	1.155	0.701	10 100	15	51
		6			15 150	25	57			15 150	29	59			15 150	33	61
		8			20 200	44	65			20 200	51	67			20 200	59	69
		10			25 250	69	71			25 250	79	72			25 250	93	74
1100		4	1.111	0.735	10 581	11	47	1.155	0.735	10 581	13	49	1.210	0.735	10 581	15	51
		6			15 872	25	57			15 872	29	59			15 872	33	61
		8			21 162	44	65			21 162	51	67			21 162	59	69
		10			26 453	69	71			26 453	79	73			26 453	93	75
1150		4	1.162	0.768	11 062	11	47	1.208	0.768	11 062	13	49	1.265	0.768	11 062	15	51
		6			16 593	25	58			16 593	29	60			16 593	33	62
		8			22 124	44	65			22 124	51	67			22 124	59	69
		10			27 655	69	71			27 655	79	73			27 655	93	75
1200		4	1.212	0.802	11 543	11	47	1.260	0.802	11 543	13	49	1.320	0.802	11 543	15	51
		6			17 315	25	58			17 315	29	60			17 315	33	62
		8			23 086	44	65			23 086	51	67			23 086	59	69
		10			28 858	69	71			28 858	79	73			28 858	93	75
1250		4	1.263	0.835	12 024	11	47	1.313	0.835	12 024	13	49	1.375	0.835	12 024	15	51
		6			18 036	25	58			18 036	29	60			18 036	33	62
		8			24 048	44	66			24 048	51	67			24 048	59	69
		10			30 060	69	71			30 060	79	73			30 060	93	75

B – nominal width [mm]
H – nominal height [mm]

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S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1130 S_k [m²]	1130 S_e [m²]	1130 Q [m³/h]	1130 d_p [PA]	1130 L_{WA} [dB]	1200 S_k [m²]	1200 S_e [m²]	1200 Q [m³/h]	1200 d_p [PA]	1200 L_{WA} [dB]	1250 S_k [m²]	1250 S_e [m²]	1250 Q [m³/h]	1250 d_p [PA]	1250 L_{WA} [dB]
110		4	0.124	0.083	1 190	12	39	0.132	0.083	1 190	13	40	0.138	0.092	1 321	11	37
		6			1 784	27	49			1 784	30	51			1 982	24	48
		8			2 379	49	57			2 379	54	58			2 642	43	55
		10			2 974	76	63			2 974	84	64			3 303	66	61
150		4	0.170	0.113	1 622	12	40	0.180	0.113	1 622	13	41	0.188	0.125	1 801	11	39
		6			2 433	27	51			2 433	30	52			2 702	24	49
		8			3 244	49	58			3 244	54	59			3 603	43	57
		10			4 055	76	64			4 055	84	65			4 504	66	63
200		4	0.226	0.150	2 163	12	41	0.240	0.150	2 163	13	42	0.250	0.167	2 402	11	39
		6			3 244	27	51			3 244	30	53			3 603	24	50
		8			4 326	49	59			4 326	54	60			4 804	43	57
		10			5 407	76	65			5 407	84	66			6 005	66	63
250		4	0.283	0.188	2 704	12	42	0.300	0.188	2 704	13	43	0.313	0.209	3 002	11	40
		6			4 055	27	52			4 055	30	54			4 504	24	51
		8			5 407	49	60			5 407	54	61			6 005	43	58
		10			6 759	76	66			6 759	84	67			7 506	66	64
300		4	0.339	0.225	3 244	12	43	0.360	0.225	3 244	13	44	0.375	0.250	3 603	11	41
		6			4 866	27	53			4 866	30	54			5 404	24	51
		8			6 489	49	61			6 489	54	62			7 206	43	59
		10			8 111	76	66			8 111	84	68			9 007	66	65
350		4	0.396	0.263	3 785	12	43	0.420	0.263	3 785	13	45	0.438	0.292	4 203	11	41
		6			5 678	27	54			5 678	30	55			6 305	24	52
		8			7 570	49	61			7 570	54	63			8 407	43	60
		10			9 463	76	67			9 463	84	68			10 508	66	65
400		4	0.452	0.300	4 326	12	44	0.480	0.300	4 326	13	45	0.500	0.334	4 804	11	42
		6			6 489	27	54			6 489	30	56			7 206	24	53
		8			8 652	49	62			8 652	54	63			9 608	43	60
		10			10 814	76	68			10 814	84	69			12 010	66	66
450		4	0.509	0.338	4 866	12	44	0.540	0.338	4 866	13	46	0.563	0.375	5 404	11	43
		6			7 300	27	55			7 300	30	56			8 106	24	53
		8			9 733	49	62			9 733	54	64			10 809	43	61
		10			12 166	76	68			12 166	84	70			13 511	66	66
500		4	0.565	0.376	5 407	12	45	0.600	0.376	5 407	13	46	0.625	0.417	6 005	11	43
		6			8 111	27	55			8 111	30	57			9 007	24	54
		8			10 814	49	63			10 814	54	64			12 010	43	61
		10			13 518	76	69			13 518	84	70			15 012	66	67
550		4	0.622	0.413	5 948	12	45	0.660	0.413	5 948	13	47	0.688	0.459	6 605	11	43
		6			8 922	27	56			8 922	30	57			9 908	24	54
		8			11 896	49	63			11 896	54	65			13 211	43	62
		10			14 870	76	69			14 870	84	70			16 513	66	67
600		4	0.678	0.451	6 489	12	46	0.720	0.451	6 489	13	47	0.750	0.500	7 206	11	44
		6			9 733	27	56			9 733	30	57			10 809	24	54
		8			12 977	49	64			12 977	54	65			14 412	43	62
		10			16 222	76	69			16 222	84	71			18 014	66	68
650		4	0.735	0.488	7 029	12	46	0.780	0.488	7 029	13	47	0.813	0.542	7 806	11	44
		6			10 544	27	56			10 544	30	58			11 709	24	55
		8			14 059	49	64			14 059	54	65			15 612	43	62
		10			17 573	76	70			17 573	84	71			19 516	66	68

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S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1130 S_k [m²]	1130 S_e [m²]	1130 Q [m³/h]	1130 d_p [PA]	1130 L_{WA} [dB]	1200 S_k [m²]	1200 S_e [m²]	1200 Q [m³/h]	1200 d_p [PA]	1200 L_{WA} [dB]	1250 S_k [m²]	1250 S_e [m²]	1250 Q [m³/h]	1250 d_p [PA]	1250 L_{WA} [dB]
	700	4	0.791	0.526	7 570	12	46	0.840	0.526	7 570	13	48	0.875	0.584	8 407	11	44
		6			11 355	27	57			11 355	30	58			12 610	24	55
		8			15 140	49	64			15 140	54	66			16 813	43	63
		10			18 925	76	70			18 925	84	71			21 017	66	68
	750	4	0.848	0.563	8 111	12	47	0.900	0.563	8 111	13	48	0.938	0.626	9 007	11	45
		6			12 166	27	57			12 166	30	58			13 511	24	55
		8			16 222	49	65			16 222	54	66			18 014	43	63
		10			20 277	76	70			20 277	84	72			22 518	66	69
	800	4	0.904	0.601	8 652	12	47	0.960	0.601	8 652	13	48	1.000	0.667	9 608	11	45
		6			12 977	27	57			12 977	30	59			14 412	24	56
		8			17 303	49	65			17 303	54	66			19 215	43	63
		10			21 629	76	71			21 629	84	72			24 019	66	69
	850	4	0.961	0.638	9 192	12	47	1.020	0.638	9 192	13	48	1.063	0.709	10 208	11	45
		6			13 788	27	58			13 788	30	59			15 312	24	56
		8			18 384	49	65			18 384	54	66			20 416	43	63
		10			22 981	76	71			22 981	84	72			25 520	66	69
	900	4	1.017	0.676	9 733	12	47	1.080	0.676	9 733	13	49	1.125	0.751	10 809	11	46
		6			14 599	27	58			14 599	30	59			16 213	24	56
		8			19 466	49	65			19 466	54	67			21 617	43	64
		10			24 332	76	71			24 332	84	73			27 022	66	69
	950	4	1.074	0.713	10 274	11	47	1.140	0.713	10 274	13	49	1.188	0.792	11 409	11	47
		6			15 411	24	57			15 411	30	60			17 114	24	57
		8			20 547	43	65			20 547	54	67			22 818	43	65
		10			25 684	67	70			25 684	84	73			28 523	66	71
	1000	4	1.130	0.751	10 814	11	47	1.200	0.751	10 814	13	50	1.250	0.834	12 010	11	47
		6			16 222	24	57			16 222	30	60			18 014	24	58
		8			21 629	43	65			21 629	54	68			24 019	43	65
		10			27 036	67	71			27 036	84	73			30 024	66	71
	1050	4	1.187	0.789	11 355	11	47	1.260	0.789	11 355	13	50	1.313	0.876	12 610	11	47
		6			17 033	24	58			17 033	30	60			18 915	24	58
		8			22 710	43	65			22 710	54	68			25 220	43	65
		10			28 388	67	71			28 388	84	74			31 525	66	71
	1100	4	1.243	0.826	11 896	11	47	1.320	0.826	11 896	13	50	1.375	0.917	13 211	11	47
		6			17 844	24	58			17 844	30	61			19 816	24	58
		8			23 792	43	65			23 792	54	68			26 421	43	65
		10			29 740	67	71			29 740	84	74			33 026	66	71
	1150	4	1.300	0.864	12 437	11	47	1.380	0.864	12 437	13	50	1.438	0.959	13 811	11	48
		6			18 655	24	58			18 655	30	61			20 717	24	58
		8			24 873	43	65			24 873	54	68			27 622	43	66
		10			31 091	67	71			31 091	84	74			34 528	66	71
	1200	4	1.356	0.901	12 977	11	48	1.440	0.901	12 977	13	50	1.500	1.001	14 412	11	48
		6			19 466	24	58			19 466	30	61			21 617	24	58
		8			25 955	43	66			25 955	54	68			28 823	43	66
		10			32 443	67	71			32 443	84	74			36 029	66	72
	1250	4	1.413	0.939	13 518	11	48	1.500	0.939	13 518	13	51	1.563	1.043	15 012	11	48
		6			20 277	24	58			20 277	30	61			22 518	24	59
		8			27 036	43	66			27 036	54	69			30 024	43	66
		10			33 795	67	72			33 795	84	74			37 530	66	72

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S_e – damper active cross-section [m²]

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d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1300 S_k [m²]	1300 S_e [m²]	1300 Q [m³/h]	1300 d_p [PA]	1300 L_{WA} [dB]	1350 S_k [m²]	1350 S_e [m²]	1350 Q [m³/h]	1350 d_p [PA]	1350 L_{WA} [dB]	1400 S_k [m²]	1400 S_e [m²]	1400 Q [m³/h]	1400 d_p [PA]	1400 L_{WA} [dB]
	110	4	0.143	0.090	1 299	12	40	0.149	0.092	1 323	13	40	0.154	0.099	1 430	12	41
		6			1 948	27	51			1 984	28	51			2 146	26	51
		8			2 598	48	58			2 645	50	59			2 861	46	59
		10			3 247	75	64			3 307	78	64			3 576	72	65
	150	4	0.195	0.123	1 771	12	41	0.203	0.125	1 804	13	41	0.210	0.135	1 950	12	41
		6			2 657	27	51			2 705	28	52			2 926	26	52
		8			3 542	48	58			3 607	50	59			3 901	46	59
		10			4 428	75	65			4 509	78	65			4 876	72	65
	200	4	0.260	0.164	2 362	12	41	0.270	0.167	2 405	13	42	0.280	0.181	2 601	12	42
		6			3 542	27	52			3 607	28	52			3 901	26	53
		8			4 723	48	58			4 810	50	59			5 201	46	59
		10			5 904	75	65			6 012	78	66			6 502	72	66
	250	4	0.325	0.205	2 952	12	42	0.338	0.209	3 006	13	42	0.350	0.226	3 251	12	43
		6			4 428	27	53			4 509	28	53			4 876	26	53
		8			5 904	48	58			6 012	50	59			6 502	46	59
		10			7 380	75	66			7 515	78	66			8 127	72	66
	300	4	0.390	0.246	3 542	12	43	0.405	0.251	3 607	13	43	0.420	0.271	3 901	12	43
		6			5 314	27	53			5 411	28	53			5 851	26	54
		8			7 085	48	59			7 214	50	59			7 802	46	59
		10			8 856	75	66			9 018	78	67			9 752	72	67
	350	4	0.455	0.287	4 133	12	43	0.473	0.292	4 208	13	43	0.490	0.316	4 551	12	44
		6			6 199	27	54			6 313	28	54			6 827	26	54
		8			8 266	48	59			8 417	50	59			9 102	46	59
		10			10 332	75	67			10 521	78	67			11 378	72	68
	400	4	0.520	0.328	4 723	12	44	0.540	0.334	4 810	13	44	0.560	0.361	5 201	12	44
		6			7 085	27	54			7 214	28	55			7 802	26	55
		8			9 446	48	59			9 619	50	59			10 403	46	59
		10			11 808	75	68			12 024	78	68			13 003	72	68
	450	4	0.585	0.369	5 314	12	44	0.608	0.376	5 411	13	45	0.630	0.406	5 851	12	45
		6			7 970	27	55			8 116	28	55			8 777	26	55
		8			10 627	48	59			10 822	50	59			11 703	46	59
		10			13 284	75	68			13 527	78	69			14 629	72	69
	500	4	0.650	0.410	5 904	12	45	0.675	0.418	6 012	13	45	0.700	0.452	6 502	12	46
		6			8 856	27	55			9 018	28	56			9 752	26	56
		8			11 808	48	59			12 024	50	59			13 003	46	59
		10			14 760	75	69			15 030	78	69			16 254	72	69
	550	4	0.715	0.451	6 494	12	46	0.743	0.459	6 613	13	46	0.770	0.497	7 152	12	46
		6			9 742	27	56			9 920	28	56			10 728	26	57
		8			12 989	48	59			13 226	50	59			14 304	46	59
		10			16 236	75	69			16 533	78	70			17 879	72	70
	600	4	0.780	0.492	7 085	12	46	0.810	0.501	7 214	13	46	0.840	0.542	7 802	12	47
		6			10 627	27	57			10 822	28	57			11 703	26	57
		8			14 170	48	59			14 429	50	59			15 604	46	59
		10			17 712	75	70			18 036	78	70			19 505	72	71
	650	4	0.845	0.533	7 675	12	47	0.878	0.543	7 816	13	47	0.910	0.587	8 452	12	47
		6			11 513	27	57			11 723	28	58			12 678	26	58
		8			15 350	48	59			15 631	50	59			16 904	46	60
		10			19 188	75	71			19 539	78	71			21 130	72	71

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S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1300 S_k [m²]	1300 S_e [m²]	1300 Q [m³/h]	1300 d_p [PA]	1300 L_{WA} [dB]	1350 S_k [m²]	1350 S_e [m²]	1350 Q [m³/h]	1350 d_p [PA]	1350 L_{WA} [dB]	1400 S_k [m²]	1400 S_e [m²]	1400 Q [m³/h]	1400 d_p [PA]	1400 L_{WA} [dB]
	700	4	0.910	0.574	8 266	12	47	0.945	0.585	8 417	13	48	0.945	0.585	9 102	12	48
		6			12 398	27	58			12 625	28	58			13 653	26	58
		8			16 531	48	59			16 834	50	59			18 204	46	60
		10			20 664	75	71			21 042	78	71			22 756	72	72
	750	4	0.975	0.615	8 856	12	48	1.013	0.626	9 018	13	48	1.013	0.626	9 752	12	49
		6			13 284	27	58			13 527	28	59			14 629	26	59
		8			17 712	48	59			18 036	50	59			19 505	46	60
		10			22 140	75	72			22 545	78	72			24 381	72	72
	800	4	1.040	0.656	9 446	12	49	1.080	0.668	9 619	13	49	1.080	0.668	10 403	12	49
		6			14 170	27	59			14 429	28	59			15 604	26	60
		8			18 893	48	59			19 238	50	59			20 805	46	60
		10			23 616	75	72			24 048	78	73			26 006	72	73
	850	4	1.105	0.697	10 037	12	49	1.148	0.710	10 220	13	49	1.148	0.710	11 053	12	50
		6			15 055	27	60			15 331	28	60			16 579	26	60
		8			20 074	48	59			20 441	50	59			22 105	46	60
		10			25 092	75	73			25 551	78	73			27 632	72	74
	900	4	1.170	0.738	10 627	12	50	1.215	0.752	10 822	13	50	1.215	0.752	11 703	12	50
		6			15 941	27	60			16 232	28	60			17 554	26	61
		8			21 254	48	59			21 643	50	60			23 406	46	60
		10			26 568	75	74			27 054	78	74			29 257	72	74
	950	4	1.235	0.779	11 218	12	50	1.283	0.793	11 423	13	51	1.283	0.793	12 353	12	51
		6			16 826	27	61			17 134	28	61			18 530	26	61
		8			22 435	48	59			22 846	50	60			24 706	46	60
		10			28 044	75	74			28 557	78	74			30 883	72	75
	1000	4	1.300	0.820	11 808	12	51	1.350	0.835	12 024	13	51	1.350	0.835	13 003	12	52
		6			17 712	27	61			18 036	28	62			19 505	26	62
		8			23 616	48	59			24 048	50	60			26 006	46	60
		10			29 520	75	75			30 060	78	75			32 508	72	75
	1050	4	1.365	0.861	12 398	12	52	1.418	0.877	12 625	13	52	1.418	0.877	13 653	12	52
		6			18 598	27	62			18 938	28	62			20 480	26	63
		8			24 797	48	59			25 250	50	60			27 307	46	60
		10			30 996	75	75			31 563	78	76			34 133	72	76
	1100	4	1.430	0.902	12 989	12	52	1.485	0.919	13 226	13	52	1.485	0.919	14 304	12	53
		6			19 483	27	63			19 840	28	63			21 455	26	63
		8			25 978	48	59			26 453	50	60			28 607	46	60
		10			32 472	75	76			33 066	78	76			35 759	72	76
	1150	4	1.495	0.943	13 579	12	53	1.553	0.960	13 828	13	53	1.553	0.960	14 954	12	53
		6			20 369	27	63			20 741	28	63			22 431	26	64
		8			27 158	48	60			27 655	50	60			29 907	46	60
		10			33 948	75	76			34 569	78	77			37 384	72	77
	1200	4	1.560	0.984	14 170	12	53	1.620	1.002	14 429	13	54	1.620	1.002	15 604	12	54
		6			21 254	27	64			21 643	28	64			23 406	26	64
		8			28 339	48	60			28 858	50	60			31 208	46	60
		10			35 424	75	77			36 072	78	77			39 010	72	78
	1250	4	1.625	1.025	14 760	12	54	1.688	1.044	15 030	13	54	1.688	1.044	16 254	12	55
		6			22 140	27	64			22 545	28	65			24 381	26	65
		8			29 520	48	60			30 060	50	60			32 508	46	60
		10			36 900	75	78			37 575	78	78			40 635	72	78

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			1450					1500					1550				
		v [m/s]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]
width B [mm]	110	4	0.160	0.099	1 430	12	41	0.165	0.108	1 562	11	41	0.171	0.108	1 562	12	42
		6			2 146	28	52			2 343	25	52			2 343	27	52
		8			2 861	50	59			3 124	44	59			3 124	47	60
		10			3 576	77	65			3 905	69	65			3 905	74	66
	150	4	0.218	0.135	1 950	12	42	0.225	0.148	2 130	11	42	0.233	0.148	2 130	12	42
		6			2 926	28	52			3 195	25	53			3 195	27	53
		8			3 901	50	59			4 260	44	60			4 260	47	60
		10			4 876	77	66			5 324	69	66			5 324	74	66
	200	4	0.290	0.181	2 601	12	42	0.300	0.197	2 840	11	43	0.310	0.197	2 840	12	43
		6			3 901	28	53			4 260	25	53			4 260	27	53
		8			5 201	50	59			5 679	44	60			5 679	47	60
		10			6 502	77	66			7 099	69	66			7 099	74	67
	250	4	0.363	0.226	3 251	12	43	0.375	0.247	3 550	11	43	0.388	0.247	3 550	12	43
		6			4 876	28	53			5 324	25	54			5 324	27	54
		8			6 502	50	59			7 099	44	60			7 099	47	60
		10			8 127	77	67			8 874	69	67			8 874	74	67
	300	4	0.435	0.271	3 901	12	43	0.450	0.296	4 260	11	44	0.465	0.296	4 260	12	44
		6			5 851	28	54			6 389	25	54			6 389	27	55
		8			7 802	50	59			8 519	44	60			8 519	47	60
		10			9 752	77	67			10 649	69	68			10 649	74	68
	350	4	0.508	0.316	4 551	12	44	0.525	0.345	4 969	11	44	0.543	0.345	4 969	12	45
		6			6 827	28	55			7 454	25	55			7 454	27	55
		8			9 102	50	59			9 939	44	60			9 939	47	60
		10			11 378	77	68			12 424	69	68			12 424	74	69
	400	4	0.580	0.361	5 201	12	45	0.600	0.394	5 679	11	45	0.620	0.394	5 679	12	45
		6			7 802	28	55			8 519	25	56			8 519	27	56
		8			10 403	50	60			11 359	44	60			11 359	47	60
		10			13 003	77	69			14 198	69	69			14 198	74	69
	450	4	0.653	0.406	5 851	12	45	0.675	0.444	6 389	11	46	0.698	0.444	6 389	12	46
		6			8 777	28	56			9 584	25	56			9 584	27	56
		8			11 703	50	60			12 779	44	60			12 779	47	60
		10			14 629	77	69			15 973	69	69			15 973	74	70
	500	4	0.725	0.452	6 502	12	46	0.750	0.493	7 099	11	46	0.775	0.493	7 099	12	46
		6			9 752	28	56			10 649	25	57			10 649	27	57
		8			13 003	50	60			14 198	44	60			14 198	47	60
		10			16 254	77	70			17 748	69	70			17 748	74	70
	550	4	0.798	0.497	7 152	12	46	0.825	0.542	7 809	11	47	0.853	0.542	7 809	12	47
		6			10 728	28	57			11 714	25	57			11 714	27	58
		8			14 304	50	60			15 618	44	60			15 618	47	60
		10			17 879	77	70			19 523	69	71			19 523	74	71
	600	4	0.870	0.542	7 802	12	47	0.900	0.592	8 519	11	47	0.930	0.592	8 519	12	48
		6			11 703	28	58			12 779	25	58			12 779	27	58
		8			15 604	50	60			17 038	44	60			17 038	47	60
		10			19 505	77	71			21 298	69	71			21 298	74	71
	650	4	0.943	0.587	8 452	12	48	0.975	0.641	9 229	11	48	1.008	0.641	9 229	12	48
		6			12 678	28	58			13 843	25	58			13 843	27	59
		8			16 904	50	60			18 458	44	60			18 458	47	60
		10			21 130	77	71			23 072	69	72			23 072	74	72

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S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1450 S_k [m²]	1450 S_e [m²]	1450 Q [m³/h]	1450 d_p [PA]	1450 L_{WA} [dB]	1500 S_k [m²]	1500 S_e [m²]	1500 Q [m³/h]	1500 d_p [PA]	1500 L_{WA} [dB]	1550 S_k [m²]	1550 S_e [m²]	1550 Q [m³/h]	1550 d_p [PA]	1550 L_{WA} [dB]
	700	4	1.015	0.632	9 102	12	48	1.050	0.690	9 939	11	49	1.085	0.690	9 939	12	49
		6			13 653	28	59			14 908	25	59			14 908	27	59
		8			18 204	50	60			19 878	44	60			19 878	47	61
		10			22 756	77	72			24 847	69	72			24 847	74	73
	750	4	1.088	0.677	9 752	12	49	1.125	0.740	10 649	11	49	1.163	0.740	10 649	12	49
		6			14 629	28	59			15 973	25	60			15 973	27	60
		8			19 505	50	60			21 298	44	60			21 298	47	61
		10			24 381	77	73			26 622	69	73			26 622	74	73
	800	4	1.160	0.722	10 403	12	49	1.200	0.789	11 359	11	50	1.240	0.789	11 359	12	50
		6			15 604	28	60			17 038	25	60			17 038	27	61
		8			20 805	50	60			22 717	44	60			22 717	47	61
		10			26 006	77	73			28 397	69	74			28 397	74	74
	850	4	1.233	0.768	11 053	12	50	1.275	0.838	12 069	11	50	1.318	0.838	12 069	12	51
		6			16 579	28	61			18 103	25	61			18 103	27	61
		8			22 105	50	60			24 137	44	60			24 137	47	61
		10			27 632	77	74			30 172	69	74			30 172	74	74
	900	4	1.305	0.813	11 703	12	51	1.350	0.887	12 779	11	51	1.395	0.887	12 779	12	51
		6			17 554	28	61			19 168	25	61			19 168	27	62
		8			23 406	50	60			25 557	44	60			25 557	47	61
		10			29 257	77	74			31 946	69	75			31 946	74	75
	950	4	1.378	0.858	12 353	12	51	1.425	0.937	13 488	11	52	1.473	0.937	13 488	12	52
		6			18 530	28	62			20 233	25	62			20 233	27	62
		8			24 706	50	60			26 977	44	61			26 977	47	61
		10			30 883	77	75			33 721	69	75			33 721	74	76
	1000	4	1.450	0.903	13 003	12	52	1.500	0.986	14 198	11	52	1.550	0.986	14 198	12	52
		6			19 505	28	62			21 298	25	63			21 298	27	63
		8			26 006	50	60			28 397	44	61			28 397	47	61
		10			32 508	77	76			35 496	69	76			35 496	74	76
	1050	4	1.523	0.948	13 653	12	52	1.575	1.035	14 908	11	53	1.628	1.035	14 908	12	53
		6			20 480	28	63			22 362	25	63			22 362	27	63
		8			27 307	50	60			29 817	44	61			29 817	47	61
		10			34 133	77	76			37 271	69	76			37 271	74	77
	1100	4	1.595	0.993	14 304	12	53	1.650	1.085	15 618	11	53	1.705	1.085	15 618	12	54
		6			21 455	28	63			23 427	25	64			23 427	27	64
		8			28 607	50	60			31 236	44	61			31 236	47	61
		10			35 759	77	77			39 046	69	77			39 046	74	77
	1150	4	1.668	1.038	14 954	12	54	1.725	1.134	16 328	11	54	1.783	1.134	16 328	12	54
		6			22 431	28	64			24 492	25	64			24 492	27	65
		8			29 907	50	60			32 656	44	61			32 656	47	61
		10			37 384	77	77			40 820	69	78			40 820	74	78
	1200	4	1.740	1.084	15 604	12	54	1.800	1.183	17 038	11	55	1.860	1.183	17 038	12	55
		6			23 406	28	65			25 557	25	65			25 557	27	65
		8			31 208	50	61			34 076	44	61			34 076	47	61
		10			39 010	77	78			42 595	69	78			42 595	74	79
	1250	4	1.813	1.129	16 254	12	55	1.875	1.233	17 748	11	55	1.938	1.233	17 748	12	55
		6			24 381	28	65			26 622	25	66				27	66
		8			32 508	50	61			35 496	44	61			35 496	47	61
		10			40 635	77	79			44 370	69	79			44 370	74	79

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S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1600 S_k [m²]	1600 S_e [m²]	1600 Q [m³/h]	1600 d_p [PA]	1600 L_{WA} [dB]	1650 S_k [m²]	1650 S_e [m²]	1650 Q [m³/h]	1650 d_p [PA]	1650 L_{WA} [dB]	1700 S_k [m²]	1700 S_e [m²]	1700 Q [m³/h]	1700 d_p [PA]	1700 L_{WA} [dB]
	110	4	0.176	0.106	1 522	13	42	0.182	0.118	1 693	11	42	0.187	0.118	1 693	12	43
		6			2 283	30	53			2 540	26	53			2 540	27	53
		8			3 044	53	60			3 387	46	60			3 387	49	61
		10			3 806	83	66			4 233	71	66			4 233	76	67
	150	4	0.240	0.144	2 076	13	43	0.248	0.160	2 309	11	43	0.255	0.160	2 309	12	43
		6			3 114	30	53			3 464	26	53			3 464	27	54
		8			4 152	53	60			4 618	46	60			4 618	49	61
		10			5 189	83	67			5 773	71	67			5 773	76	67
	200	4	0.320	0.192	2 768	13	43	0.330	0.214	3 079	11	43	0.340	0.214	3 079	12	44
		6			4 152	30	54			4 618	26	54			4 618	27	54
		8			5 535	53	60			6 157	46	61			6 157	49	61
		10			6 919	83	67			7 697	71	67			7 697	76	68
	250	4	0.400	0.240	3 460	13	44	0.413	0.267	3 848	11	44	0.425	0.267	3 848	12	44
		6			5 189	30	54			5 773	26	55			5 773	27	55
		8			6 919	53	60			7 697	46	61			7 697	49	61
		10			8 649	83	68			9 621	71	68			9 621	76	68
	300	4	0.480	0.288	4 152	13	44	0.495	0.321	4 618	11	45	0.510	0.321	4 618	12	45
		6			6 227	30	55			6 927	26	55			6 927	27	56
		8			8 303	53	60			9 236	46	61			9 236	49	61
		10			10 379	83	68			11 545	71	69			11 545	76	69
	350	4	0.560	0.336	4 843	13	45	0.578	0.374	5 388	11	45	0.595	0.374	5 388	12	46
		6			7 265	30	56			8 082	26	56			8 082	27	56
		8			9 687	53	60			10 776	46	61			10 776	49	61
		10			12 109	83	69			13 469	71	69			13 469	76	69
	400	4	0.640	0.384	5 535	13	46	0.660	0.428	6 157	11	46	0.680	0.428	6 157	12	46
		6			8 303	30	56			9 236	26	56			9 236	27	57
		8			11 071	53	60			12 315	46	61			12 315	49	61
		10			13 838	83	69			15 394	71	70			15 394	76	70
	450	4	0.720	0.432	6 227	13	46	0.743	0.481	6 927	11	46	0.765	0.481	6 927	12	47
		6			9 341	30	57			10 391	26	57			10 391	27	57
		8			12 455	53	61			13 854	46	61			13 854	49	61
		10			15 568	83	70			17 318	71	70			17 318	76	71
	500	4	0.800	0.481	6 919	13	47	0.825	0.535	7 697	11	47	0.850	0.535	7 697	12	47
		6			10 379	30	57			11 545	26	58			11 545	27	58
		8			13 838	53	61			15 394	46	61			15 394	49	61
		10			17 298	83	71			19 242	71	71			19 242	76	71
	550	4	0.880	0.529	7 611	13	47	0.908	0.588	8 466	11	48	0.935	0.588	8 466	12	48
		6			11 417	30	58			12 700	26	58			12 700	27	58
		8			15 222	53	61			16 933	46	61			16 933	49	61
		10			19 028	83	71			21 166	71	71			21 166	76	72
	600	4	0.960	0.577	8 303	13	48	0.990	0.641	9 236	11	48	1.020	0.641	9 236	12	49
		6			12 455	30	58			13 854	26	59			13 854	27	59
		8			16 606	53	61			18 472	46	61			18 472	49	61
		10			20 758	83	72			23 090	71	72			23 090	76	72
	650	4	1.040	0.625	8 995	13	49	1.073	0.695	10 006	11	49	1.105	0.695	10 006	12	49
		6			13 492	30	59			15 009	26	59			15 009	27	60
		8			17 990	53	61			20 012	46	61			20 012	49	61
		10			22 487	83	72			25 015	71	73			25 015	76	73

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S_e – damper active cross-section [m²]

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d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1600 S_k [m²]	1600 S_e [m²]	1600 Q [m³/h]	1600 d_p [PA]	1600 L_{WA} [dB]	1650 S_k [m²]	1650 S_e [m²]	1650 Q [m³/h]	1650 d_p [PA]	1650 L_{WA} [dB]	1700 S_k [m²]	1700 S_e [m²]	1700 Q [m³/h]	1700 d_p [PA]	1700 L_{WA} [dB]
	700	4	1.120	0.673	9 687	13	49	1.155	0.748	10 776	11	49	1.190	0.748	10 776	12	50
		6			14 530	30	60			16 163	26	60			16 163	27	60
		8			19 374	53	61			21 551	46	61			21 551	49	61
		10			24 217	83	73			26 939	71	73			26 939	76	74
	750	4	1.200	0.721	10 379	13	50	1.238	0.802	11 545	11	50	1.275	0.802	11 545	12	50
		6			15 568	30	60			17 318	26	61			17 318	27	61
		8			20 758	53	61			23 090	46	61			23 090	49	61
		10			25 947	83	74			28 863	71	74			28 863	76	74
	800	4	1.280	0.769	11 071	13	50	1.320	0.855	12 315	11	51	1.360	0.855	12 315	12	51
		6			16 606	30	61			18 472	26	61			18 472	27	61
		8			22 141	53	61			24 630	46	61			24 630	49	62
		10			27 677	83	74			30 787	71	74			30 787	76	75
	850	4	1.360	0.817	11 763	13	51	1.403	0.909	13 085	11	51	1.445	0.909	13 085	12	52
		6			17 644	30	61			19 627	26	62			19 627	27	62
		8			23 525	53	61			26 169	46	61			26 169	49	62
		10			29 407	83	75			32 711	71	75			32 711	76	75
	900	4	1.440	0.865	12 455	13	52	1.485	0.962	13 854	11	52	1.530	0.962	13 854	12	52
		6			18 682	30	62			20 781	26	62			20 781	27	63
		8			24 909	53	61			27 708	46	61			27 708	49	62
		10			31 136	83	75			34 636	71	76			34 636	76	76
	950	4	1.520	0.913	13 146	13	52	1.568	1.016	14 624	11	52	1.615	1.016	14 624	12	53
		6			19 720	30	63			21 936	26	63			21 936	27	63
		8			26 293	53	61			29 248	46	61			29 248	49	62
		10			32 866	83	76			36 560	71	76			36 560	76	76
	1000	4	1.600	0.961	13 838	13	53	1.650	1.069	15 394	11	53	1.700	1.069	15 394	12	53
		6			20 758	30	63			23 090	26	64			23 090	27	64
		8			27 677	53	61			30 787	46	61			30 787	49	62
		10			34 596	83	76			38 484	71	77			38 484	76	77
	1050	4	1.680	1.009	14 530	13	53	1.733	1.122	16 163	11	54	1.785	1.122	16 163	12	54
		6			21 795	30	64			24 245	26	64			24 245	27	64
		8			29 061	53	61			32 327	46	62			32 327	49	62
		10			36 326	83	77			40 408	71	77			40 408	76	78
	1100	4	1.760	1.057	15 222	13	54	1.815	1.176	16 933	11	54	1.870	1.176	16 933	12	55
		6			22 833	30	64			25 399	26	65			25 399	27	65
		8			30 444	53	61			33 866	46	62			33 866	49	62
		10			38 056	83	78			42 332	71	78			42 332	76	78
	1150	4	1.840	1.105	15 914	13	55	1.898	1.229	17 703	11	55	1.955	1.229	17 703	12	55
		6			23 871	30	65			26 554	26	65			26 554	27	66
		8			31 828	53	61			35 405	46	62			35 405	49	62
		10			39 785	83	78			44 257	71	79			44 257	76	79
	1200	4	1.920	1.153	16 606	13	55	1.980	1.283	18 472	11	55	2.040	1.283	18 472	12	56
		6			24 909	30	66			27 708	26	66			27 708	27	66
		8			33 212	53	61			36 945	46	62			36 945	49	62
		10			41 515	83	79			46 181	71	79			46 181	76	79
	1250	4	2.000	1.201	17 298	13	56	2.063	1.336	19 242	11	56	2.125	1.336	19 242	12	56
		6			25 947	30	66			28 863	26	66			28 863	27	67
		8			34 596	53	61			38 484	46	62			38 484	49	62
		10			43 245	83	79			48 105	71	80			48 105	76	80

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d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1750 S_k [m²]	1750 S_e [m²]	1750 Q [m³/h]	1750 d_p [PA]	1750 L_{WA} [dB]	1800 S_k [m²]	1800 S_e [m²]	1800 Q [m³/h]	1800 d_p [PA]	1800 L_{WA} [dB]	1850 S_k [m²]	1850 S_e [m²]	1850 Q [m³/h]	1850 d_p [PA]	1850 L_{WA} [dB]
	110	4	0.193	0.127	1 823	11	43	0.198	0.127	1 825	12	43	0.204	0.136	1 956	11	43
		6			2 735	25	53			2 737	26	54			2 934	24	54
		8			3 646	44	61			3 650	47	61			3 912	43	62
		10			4 558	69	67			4 562	73	67			4 891	67	67
	150	4	0.263	0.173	2 486	11	43	0.270	0.173	2 488	12	44	0.278	0.185	2 668	11	44
		6			3 729	25	54			3 732	26	54			4 001	24	55
		8			4 972	44	61			4 977	47	61			5 335	43	62
		10			6 215	69	67			6 221	73	68			6 669	67	68
	200	4	0.350	0.230	3 315	11	44	0.360	0.230	3 318	12	44	0.370	0.247	3 557	11	45
		6			4 972	25	55			4 977	26	55			5 335	24	55
		8			6 630	44	61			6 636	47	61			7 114	43	62
		10			8 287	69	68			8 294	73	68			8 892	67	69
	250	4	0.438	0.288	4 144	11	45	0.450	0.288	4 147	12	45	0.463	0.309	4 446	11	45
		6			6 215	25	55			6 221	26	56			6 669	24	56
		8			8 287	44	61			8 294	47	61			8 892	43	62
		10			10 359	69	69			10 368	73	69			11 115	67	69
	300	4	0.525	0.345	4 972	11	45	0.540	0.346	4 977	12	46	0.555	0.371	5 335	11	46
		6			7 458	25	56			7 465	26	56			8 003	24	56
		8			9 945	44	61			9 953	47	62			10 670	43	62
		10			12 431	69	69			12 442	73	69			13 338	67	70
	350	4	0.613	0.403	5 801	11	46	0.630	0.403	5 806	12	46	0.648	0.432	6 224	11	46
		6			8 702	25	56			8 709	26	57			9 337	24	57
		8			11 602	44	61			11 612	47	62			12 449	43	62
		10			14 503	69	70			14 515	73	70			15 561	67	70
	400	4	0.700	0.460	6 630	11	46	0.720	0.461	6 636	12	47	0.740	0.494	7 114	11	47
		6			9 945	25	57			9 953	26	57			10 670	24	58
		8			13 260	44	61			13 271	47	62			14 227	43	62
		10			16 574	69	70			16 589	73	71			17 784	67	71
	450	4	0.788	0.518	7 458	11	47	0.810	0.518	7 465	12	47	0.833	0.556	8 003	11	48
		6			11 188	25	58			11 197	26	58			12 004	24	58
		8			14 917	44	61			14 930	47	62			16 006	43	62
		10			18 646	69	71			18 662	73	71			20 007	67	72
	500	4	0.875	0.576	8 287	11	48	0.900	0.576	8 294	12	48	0.925	0.618	8 892	11	48
		6			12 431	25	58			12 442	26	59			13 338	24	59
		8			16 574	44	61			16 589	47	62			17 784	43	62
		10			20 718	69	72			20 736	73	72			22 230	67	72
	550	4	0.963	0.633	9 116	11	48	0.990	0.634	9 124	12	49	1.018	0.679	9 781	11	49
		6			13 674	25	59			13 686	26	59			14 672	24	59
		8			18 232	44	62			18 248	47	62			19 562	43	62
		10			22 790	69	72			22 810	73	72			24 453	67	73
	600	4	1.050	0.691	9 945	11	49	1.080	0.691	9 953	12	49	1.110	0.741	10 670	11	49
		6			14 917	25	59			14 930	26	60			16 006	24	60
		8			19 889	44	62			19 907	47	62			21 341	43	62
		10			24 862	69	73			24 883	73	73			26 676	67	73
	650	4	1.138	0.748	10 773	11	49	1.170	0.749	10 783	12	50	1.203	0.803	11 560	11	50
		6			16 160	25	60			16 174	26	60			17 339	24	61
		8			21 547	44	62			21 565	47	62			23 119	43	62
		10			26 933	69	73			26 957	73	74			28 899	67	74

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1750 S_k [m²]	1750 S_e [m²]	1750 Q [m³/h]	1750 d_p [PA]	1750 L_{WA} [dB]	1800 S_k [m²]	1800 S_e [m²]	1800 Q [m³/h]	1800 d_p [PA]	1800 L_{WA} [dB]	1850 S_k [m²]	1850 S_e [m²]	1850 Q [m³/h]	1850 d_p [PA]	1850 L_{WA} [dB]
	700	4	1.225	0.806	11 602	11	50	1.260	0.806	11 612	12	50	1.295	0.865	12 449	11	51
		6			17 403	25	61			17 418	26	61			18 673	24	61
		8			23 204	44	62			23 224	47	62			24 898	43	62
		10			29 005	69	74			29 030	73	74			31 122	67	74
	750	4	1.313	0.863	12 431	11	51	1.350	0.864	12 442	12	51	1.388	0.926	13 338	11	51
		6			18 646	25	61			18 662	26	61			20 007	24	62
		8			24 862	44	62			24 883	47	62			26 676	43	62
		10			31 077	69	74			31 104	73	75			33 345	67	75
	800	4	1.400	0.921	13 260	11	51	1.440	0.922	13 271	12	52	1.480	0.988	14 227	11	52
		6			19 889	25	62			19 907	26	62			21 341	24	62
		8			26 519	44	62			26 542	47	62			28 454	43	62
		10			33 149	69	75			33 178	73	75			35 568	67	76
	850	4	1.488	0.978	14 088	11	52	1.530	0.979	14 100	12	52	1.573	1.050	15 116	11	52
		6			21 132	25	62			21 151	26	63			22 675	24	63
		8			28 176	44	62			28 201	47	62			30 233	43	63
		10			35 221	69	76			35 251	73	76			37 791	67	76
	900	4	1.575	1.036	14 917	11	52	1.620	1.037	14 930	12	53	1.665	1.112	16 006	11	53
		6			22 375	25	63			22 395	26	63			24 008	24	64
		8			29 834	44	62			29 860	47	62			32 011	43	63
		10			37 292	69	76			37 325	73	77			40 014	67	77
	950	4	1.663	1.093	15 746	11	53	1.710	1.094	15 759	12	53	1.758	1.173	16 895	11	54
		6			23 619	25	64			23 639	26	64			25 342	24	64
		8			31 491	44	62			31 519	47	62			33 790	43	63
		10			39 364	69	77			39 398	73	77			42 237	67	77
	1000	4	1.750	1.151	16 574	11	54	1.800	1.152	16 589	12	54	1.850	1.235	17 784	11	54
		6			24 862	25	64			24 883	26	64			26 676	24	65
		8			33 149	44	62			33 178	47	62			35 568	43	63
		10			41 436	69	77			41 472	73	78			44 460	67	78
	1050	4	1.838	1.209	17 403	11	54	1.890	1.210	17 418	12	54	1.943	1.297	18 673	11	55
		6			26 105	25	65			26 127	26	65			28 010	24	65
		8			34 806	44	62			34 836	47	62			37 346	43	63
		10			43 508	69	78			43 546	73	78			46 683	67	79
	1100	4	1.925	1.266	18 232	11	55	1.980	1.267	18 248	12	55	2.035	1.359	19 562	11	55
		6			27 348	25	65			27 372	26	66			29 344	24	66
		8			36 464	44	62			36 495	47	63			39 125	43	63
		10			45 580	69	79			45 619	73	79			48 906	67	79
	1150	4	2.013	1.324	19 061	11	55	2.070	1.325	19 077	12	56	2.128	1.420	20 452	11	56
		6			28 591	25	66			28 616	26	66			30 677	24	67
		8			38 121	44	62			38 154	47	63			40 903	43	63
		10			47 651	69	79			47 693	73	79			51 129	67	80
	1200	4	2.100	1.381	19 889	11	56	2.160	1.382	19 907	12	56	2.220	1.482	21 341	11	57
		6			29 834	25	66			29 860	26	67			32 011	24	67
		8			39 779	44	62			39 813	47	63			42 682	43	63
		10			49 723	69	80			49 766	73	80			53 352	67	80
	1250	4	2.188	1.439	20 718	11	57	2.250	1.440	20 736	12	57	2.313	1.544	22 230	11	57
		6			31 077	25	67			31 104	26	67			33 345	24	68
		8			41 436	44	62			41 472	47	63			44 460	43	63
		10			51 795	69	80			51 840	73	81			55 575	67	81

B – nominal width [mm]
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v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1900 S_k [m²]	1900 S_e [m²]	1900 Q [m³/h]	1900 d_p [PA]	1900 L_{WA} [dB]	1950 S_k [m²]	1950 S_e [m²]	1950 Q [m³/h]	1950 d_p [PA]	1950 L_{WA} [dB]	2000 S_k [m²]	2000 S_e [m²]	2000 Q [m³/h]	2000 d_p [PA]	2000 L_{WA} [dB]
	110	4	0.209	0.136	1 956	11	44	0.215	0.136	1 956	12	44	0.220	0.145	2 088	11	44
		6			2 934	26	54			2 934	27	55			3 132	25	55
		8			3 912	45	62			3 912	48	62			4 175	44	63
		10			4 891	71	68			4 891	75	68			5 219	69	68
	150	4	0.285	0.185	2 668	11	44	0.293	0.185	2 668	12	45	0.300	0.198	2 847	11	45
		6			4 001	26	55			4 001	27	55			4 270	25	56
		8			5 335	45	62			5 335	48	62			5 694	44	63
		10			6 669	71	68			6 669	75	69			7 117	69	69
	200	4	0.380	0.247	3 557	11	45	0.390	0.247	3 557	12	45	0.400	0.264	3 796	11	46
		6			5 335	26	56			5 335	27	56			5 694	25	56
		8			7 114	45	62			7 114	48	62			7 592	44	63
		10			8 892	71	69			8 892	75	69			9 490	69	69
	250	4	0.475	0.309	4 446	11	46	0.488	0.309	4 446	12	46	0.500	0.330	4 745	11	46
		6			6 669	26	56			6 669	27	56			7 117	25	57
		8			8 892	45	62			8 892	48	62			9 490	44	63
		10			11 115	71	69			11 115	75	70			11 862	69	70
	300	4	0.570	0.371	5 335	11	46	0.585	0.371	5 335	12	46	0.600	0.395	5 694	11	47
		6			8 003	26	57			8 003	27	57			8 541	25	57
		8			10 670	45	62			10 670	48	62			11 388	44	63
		10			13 338	71	70			13 338	75	70			14 234	69	71
	350	4	0.665	0.432	6 224	11	47	0.683	0.432	6 224	12	47	0.700	0.461	6 643	11	47
		6			9 337	26	57			9 337	27	58			9 964	25	58
		8			12 449	45	62			12 449	48	63			13 285	44	63
		10			15 561	71	71			15 561	75	71			16 607	69	71
	400	4	0.760	0.494	7 114	11	47	0.780	0.494	7 114	12	48	0.800	0.527	7 592	11	48
		6			10 670	26	58			10 670	27	58			11 388	25	59
		8			14 227	45	62			14 227	48	63			15 183	44	63
		10			17 784	71	71			17 784	75	72			18 979	69	72
	450	4	0.855	0.556	8 003	11	48	0.878	0.556	8 003	12	48	0.900	0.593	8 541	11	48
		6			12 004	26	59			12 004	27	59			12 811	25	59
		8			16 006	45	62			16 006	48	63			17 081	44	63
		10			20 007	71	72			20 007	75	72			21 352	69	72
	500	4	0.950	0.618	8 892	11	49	0.975	0.618	8 892	12	49	1.000	0.659	9 490	11	49
		6			13 338	26	59			13 338	27	59			14 234	25	60
		8			17 784	45	62			17 784	48	63			18 979	44	63
		10			22 230	71	72			22 230	75	73			23 724	69	73
	550	4	1.045	0.679	9 781	11	49	1.073	0.679	9 781	12	49	1.100	0.725	10 439	11	50
		6			14 672	26	60			14 672	27	60			15 658	25	60
		8			19 562	45	62			19 562	48	63			20 877	44	63
		10			24 453	71	73			24 453	75	73			26 096	69	74
	600	4	1.140	0.741	10 670	11	50	1.170	0.741	10 670	12	50	1.200	0.791	11 388	11	50
		6			16 006	26	60			16 006	27	61			17 081	25	61
		8			21 341	45	63			21 341	48	63			22 775	44	63
		10			26 676	71	74			26 676	75	74			28 469	69	74
	650	4	1.235	0.803	11 560	11	50	1.268	0.803	11 560	12	51	1.300	0.857	12 336	11	51
		6			17 339	26	61			17 339	27	61			18 505	25	62
		8			23 119	45	63			23 119	48	63			24 673	44	63
		10			28 899	71	74			28 899	75	74			30 841	69	75

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	1900 S_k [m²]	1900 S_e [m²]	1900 Q [m³/h]	1900 d_p [PA]	1900 L_{WA} [dB]	1950 S_k [m²]	1950 S_e [m²]	1950 Q [m³/h]	1950 d_p [PA]	1950 L_{WA} [dB]	2000 S_k [m²]	2000 S_e [m²]	2000 Q [m³/h]	2000 d_p [PA]	2000 L_{WA} [dB]
	700	4	1.330	0.865	12 449	11	51	1.365	0.865	12 449	12	51	1.400	0.923	13 285	11	51
		6			18 673	26	61			18 673	27	62			19 928	25	62
		8			24 898	45	63			24 898	48	63			26 571	44	63
		10			31 122	71	75			31 122	75	75			33 214	69	75
	750	4	1.425	0.926	13 338	11	51	1.463	0.926	13 338	12	52	1.500	0.989	14 234	11	52
		6			20 007	26	62			20 007	27	62			21 352	25	63
		8			26 676	45	63			26 676	48	63			28 469	44	63
		10			33 345	71	75			33 345	75	76			35 586	69	76
	800	4	1.520	0.988	14 227	11	52	1.560	0.988	14 227	12	52	1.600	1.054	15 183	11	53
		6			21 341	26	63			21 341	27	63			22 775	25	63
		8			28 454	45	63			28 454	48	63			30 367	44	63
		10			35 568	71	76			35 568	75	76			37 958	69	77
	850	4	1.615	1.050	15 116	11	53	1.658	1.050	15 116	12	53	1.700	1.120	16 132	11	53
		6			22 675	26	63			22 675	27	64			24 198	25	64
		8			30 233	45	63			30 233	48	63			32 265	44	63
		10			37 791	71	77			37 791	75	77			40 331	69	77
	900	4	1.710	1.112	16 006	11	53	1.755	1.112	16 006	12	54	1.800	1.186	17 081	11	54
		6			24 008	26	64			24 008	27	64			25 622	25	64
		8			32 011	45	63			32 011	48	63			34 163	44	63
		10			40 014	71	77			40 014	75	77			42 703	69	78
	950	4	1.805	1.173	16 895	11	54	1.853	1.173	16 895	12	54	1.900	1.252	18 030	11	54
		6			25 342	26	64			25 342	27	65			27 045	25	65
		8			33 790	45	63			33 790	48	63			36 060	44	64
		10			42 237	71	78			42 237	75	78			45 076	69	78
	1000	4	1.900	1.235	17 784	11	54	1.950	1.235	17 784	12	55	2.000	1.318	18 979	11	55
		6			26 676	26	65			26 676	27	65			28 469	25	66
		8			35 568	45	63			35 568	48	63			37 958	44	64
		10			44 460	71	78			44 460	75	79			47 448	69	79
	1050	4	1.995	1.297	18 673	11	55	2.048	1.297	18 673	12	55	2.100	1.384	19 928	11	56
		6			28 010	26	66			28 010	27	66			29 892	25	66
		8			37 346	45	63			37 346	48	63			39 856	44	64
		10			46 683	71	79			46 683	75	79			49 820	69	79
	1100	4	2.090	1.359	19 562	11	56	2.145	1.359	19 562	12	56	2.200	1.450	20 877	11	56
		6			29 344	26	66			29 344	27	67			31 316	25	67
		8			39 125	45	63			39 125	48	63			41 754	44	64
		10			48 906	71	79			48 906	75	80			52 193	69	80
	1150	4	2.185	1.420	20 452	11	56	2.243	1.420	20 452	12	57	2.300	1.516	21 826	11	57
		6			30 677	26	67			30 677	27	67			32 739	25	67
		8			40 903	45	63			40 903	48	63			43 652	44	64
		10			51 129	71	80			51 129	75	80			54 565	69	81
	1200	4	2.280	1.482	21 341	11	57	2.340	1.482	21 341	12	57	2.400	1.582	22 775	11	57
		6			32 011	26	67			32 011	27	68			34 163	25	68
		8			42 682	45	63			42 682	48	64			45 550	44	64
		10			53 352	71	81			53 352	75	81			56 938	69	81
	1250	4	2.375	1.544	22 230	11	57	2.438	1.544	22 230	12	58	2.500	1.648	23 724	11	58
		6			33 345	26	68			33 345	27	68			35 586	25	69
		8			44 460	45	63			44 460	48	64			47 448	44	64
		10			55 575	71	81			55 575	75	82			59 310	69	82

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]															
		2050					2100					2150				
	v [m/s]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]
110	4	0.226	0.153	2 202	10	45	0.231	0.154	2 219	11	45	0.237	0.154	2 219	11	45
	6			3 303	23	55			3 329	24	56			3 329	25	56
	8			4 404	42	63			4 438	43	63			4 438	45	63
	10			5 504	65	69			5 548	67	69			5 548	71	69
150	4	0.308	0.209	3 002	10	45	0.315	0.210	3 026	11	45	0.323	0.210	3 026	11	46
	6			4 504	23	56			4 539	24	56			4 539	25	57
	8			6 005	42	63			6 052	43	63			6 052	45	63
	10			7 506	65	69			7 565	67	69			7 565	71	70
200	4	0.410	0.278	4 003	10	46	0.420	0.280	4 035	11	46	0.430	0.280	4 035	11	46
	6			6 005	23	56			6 052	24	57			6 052	25	57
	8			8 006	42	63			8 070	43	63			8 070	45	64
	10			10 008	65	70			10 087	67	70			10 087	71	70
250	4	0.513	0.348	5 004	10	46	0.525	0.350	5 044	11	47	0.538	0.350	5 044	11	47
	6			7 506	23	57			7 565	24	57			7 565	25	58
	8			10 008	42	63			10 087	43	63			10 087	45	64
	10			12 510	65	70			12 609	67	71			12 609	71	71
300	4	0.615	0.417	6 005	10	47	0.630	0.420	6 052	11	47	0.645	0.420	6 052	11	48
	6			9 007	23	58			9 078	24	58			9 078	25	58
	8			12 010	42	63			12 105	43	63			12 105	45	64
	10			15 012	65	71			15 131	67	71			15 131	71	72
350	4	0.718	0.487	7 006	10	48	0.735	0.490	7 061	11	48	0.753	0.490	7 061	11	48
	6			10 508	23	58			10 592	24	59			10 592	25	59
	8			14 011	42	63			14 122	43	63			14 122	45	64
	10			17 514	65	72			17 653	67	72			17 653	71	72
400	4	0.820	0.556	8 006	10	48	0.840	0.560	8 070	11	48	0.860	0.560	8 070	11	49
	6			12 010	23	59			12 105	24	59			12 105	25	59
	8			16 013	42	63			16 140	43	63			16 140	45	64
	10			20 016	65	72			20 174	67	72			20 174	71	73
450	4	0.923	0.626	9 007	10	49	0.945	0.630	9 078	11	49	0.968	0.630	9 078	11	49
	6			13 511	23	59			13 618	24	60			13 618	25	60
	8			18 014	42	63			18 157	43	64			18 157	45	64
	10			22 518	65	73			22 696	67	73			22 696	71	73
500	4	1.025	0.695	10 008	10	49	1.050	0.701	10 087	11	50	1.075	0.701	10 087	11	50
	6			15 012	23	60			15 131	24	60			15 131	25	61
	8			20 016	42	63			20 174	43	64			20 174	45	64
	10			25 020	65	73			25 218	67	74			25 218	71	74
550	4	1.128	0.765	11 009	10	50	1.155	0.771	11 096	11	50	1.183	0.771	11 096	11	51
	6			16 513	23	61			16 644	24	61			16 644	25	61
	8			22 018	42	63			22 192	43	64			22 192	45	64
	10			27 522	65	74			27 740	67	74			27 740	71	74
600	4	1.230	0.834	12 010	10	51	1.260	0.841	12 105	11	51	1.290	0.841	12 105	11	51
	6			18 014	23	61			18 157	24	62			18 157	25	62
	8			24 019	42	63			24 209	43	64			24 209	45	64
	10			30 024	65	74			30 262	67	75			30 262	71	75
650	4	1.333	0.904	13 010	10	51	1.365	0.911	13 113	11	51	1.398	0.911	13 113	11	52
	6			19 516	23	62			19 670	24	62			19 670	25	62
	8			26 021	42	63			26 227	43	64			26 227	45	64
	10			32 526	65	75			32 783	67	75			32 783	71	76

mcr WIP PROV/V, mcr WIP PROV/V-M | Multi-blade smoke control dampers for multi-compartment and single-compartment fire ventilation systems

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			2050					2100					2150				
		v [m/s]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]	S_k [m²]	S_e [m²]	Q [m³/h]	d_p [PA]	L_{WA} [dB]
width B [mm]	700	4	1.435	0.973	14 011	10	52	1.470	0.981	14 122	11	52	1.505	0.981	14 122	11	52
		6			21 017	23	62			21 183	24	63			21 183	25	63
		8			28 022	42	64			28 244	43	64			28 244	45	64
		10			35 028	65	76			35 305	67	76			35 305	71	76
	750	4	1.538	1.043	15 012	10	52	1.575	1.051	15 131	11	53	1.613	1.051	15 131	11	53
		6			22 518	23	63			22 696	24	63			22 696	25	64
		8			30 024	42	64			30 262	43	64			30 262	45	64
		10			37 530	65	76			37 827	67	77			37 827	71	77
	800	4	1.640	1.112	16 013	10	53	1.680	1.121	16 140	11	53	1.720	1.121	16 140	11	54
		6			24 019	23	64			24 209	24	64			24 209	25	64
		8			32 026	42	64			32 279	43	64			32 279	45	64
		10			40 032	65	77			40 349	67	77			40 349	71	77
	850	4	1.743	1.182	17 014	10	54	1.785	1.191	17 148	11	54	1.828	1.191	17 148	11	54
		6			25 520	23	64			25 722	24	64			25 722	25	65
		8			34 027	42	64			34 296	43	64			34 296	45	64
		10			42 534	65	77			42 871	67	78			42 871	71	78
	900	4	1.845	1.251	18 014	10	54	1.890	1.261	18 157	11	54	1.935	1.261	18 157	11	55
		6			27 022	23	65			27 235	24	65			27 235	25	65
		8			36 029	42	64			36 314	43	64			36 314	45	64
		10			45 036	65	78			45 392	67	78			45 392	71	79
	950	4	1.948	1.321	19 015	10	55	1.995	1.331	19 166	11	55	2.043	1.331	19 166	11	55
		6			28 523	23	65			28 749	24	66			28 749	25	66
		8			38 030	42	64			38 331	43	64			38 331	45	64
		10			47 538	65	79			47 914	67	79			47 914	71	79
	1000	4	2.050	1.390	20 016	10	55	2.100	1.401	20 174	11	56	2.150	1.401	20 174	11	56
		6			30 024	23	66			30 262	24	66			30 262	25	67
		8			40 032	42	64			40 349	43	64			40 349	45	65
		10			50 040	65	79			50 436	67	79			50 436	71	80
	1050	4	2.153	1.460	21 017	10	56	2.205	1.471	21 183	11	56	2.258	1.471	21 183	11	57
		6			31 525	23	67			31 775	24	67			31 775	25	67
		8			42 034	42	64			42 366	43	64			42 366	45	65
		10			52 542	65	80			52 958	67	80			52 958	71	80
	1100	4	2.255	1.529	22 018	10	57	2.310	1.541	22 192	11	57	2.365	1.541	22 192	11	57
		6			33 026	23	67			33 288	24	67			33 288	25	68
		8			44 035	42	64			44 384	43	64			44 384	45	65
		10			55 044	65	80			55 480	67	81			55 480	71	81
	1150	4	2.358	1.599	23 018	10	57	2.415	1.611	23 201	11	57	2.473	1.611	23 201	11	58
		6			34 528	23	68			34 801	24	68			34 801	25	68
		8			46 037	42	64			46 401	43	64			46 401	45	65
		10			57 546	65	81			58 001	67	81			58 001	71	82
	1200	4	2.460	1.668	24 019	10	58	2.520	1.681	24 209	11	58	2.580	1.681	24 209	11	58
		6			36 029	23	68			36 314	24	69			36 314	25	69
		8			48 038	42	64			48 419	43	64			48 419	45	65
		10			60 048	65	82			60 523	67	82			60 523	71	82
	1250	4	2.563	1.738	25 020	10	58	2.625	1.751	25 218	11	59	2.688	1.751	25 218	11	59
		6			37 530	23	69			37 827	24	69			37 827	25	70
		8			50 040	42	64			50 436	43	64			50 436	45	65
		10			62 550	65	82			63 045	67	82			63 045	71	83

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	2200 S_k [m²]	2200 S_e [m²]	2200 Q [m³/h]	2200 d_p [PA]	2200 L_{WA} [dB]	2250 S_k [m²]	2250 S_e [m²]	2250 Q [m³/h]	2250 d_p [PA]	2250 L_{WA} [dB]	2300 S_k [m²]	2300 S_e [m²]	2300 Q [m³/h]	2300 d_p [PA]	2300 L_{WA} [dB]
	110	4	0.242	0.154	2 219	12	45	0.248	0.163	2 351	11	46	0.253	0.163	2 351	12	46
		6			3 329	27	56			3 526	25	57			3 526	26	57
		8			4 438	47	64			4 701	44	64			4 701	46	64
		10			5 548	74	69			5 877	69	70			5 877	72	70
	150	4	0.330	0.210	3 026	12	46	0.338	0.223	3 205	11	46	0.345	0.223	3 205	12	47
		6			4 539	27	57			4 808	25	57			4 808	26	57
		8			6 052	47	64			6 411	44	64			6 411	46	64
		10			7 565	74	70			8 014	69	70			8 014	72	71
	200	4	0.440	0.280	4 035	12	47	0.450	0.297	4 274	11	47	0.460	0.297	4 274	12	47
		6			6 052	27	57			6 411	25	58			6 411	26	58
		8			8 070	47	64			8 548	44	64			8 548	46	64
		10			10 087	74	71			10 685	69	71			10 685	72	71
	250	4	0.550	0.350	5 044	12	47	0.563	0.371	5 342	11	48	0.575	0.371	5 342	12	48
		6			7 565	27	58			8 014	25	58			8 014	26	59
		8			10 087	47	64			10 685	44	64			10 685	46	65
		10			12 609	74	71			13 356	69	72			13 356	72	72
	300	4	0.660	0.420	6 052	12	48	0.675	0.445	6 411	11	48	0.690	0.445	6 411	12	48
		6			9 078	27	59			9 616	25	59			9 616	26	59
		8			12 105	47	64			12 822	44	64			12 822	46	65
		10			15 131	74	72			16 027	69	72			16 027	72	72
	350	4	0.770	0.490	7 061	12	48	0.788	0.519	7 479	11	49	0.805	0.519	7 479	12	49
		6			10 592	27	59			11 219	25	59			11 219	26	60
		8			14 122	47	64			14 959	44	64			14 959	46	65
		10			17 653	74	72			18 698	69	73			18 698	72	73
	400	4	0.880	0.560	8 070	12	49	0.900	0.594	8 548	11	49	0.920	0.594	8 548	12	50
		6			12 105	27	60			12 822	25	60			12 822	26	60
		8			16 140	47	64			17 096	44	64			17 096	46	65
		10			20 174	74	73			21 370	69	73			21 370	72	74
	450	4	0.990	0.630	9 078	12	50	1.013	0.668	9 616	11	50	1.035	0.668	9 616	12	50
		6			13 618	27	60			14 424	25	61			14 424	26	61
		8			18 157	47	64			19 233	44	64			19 233	46	65
		10			22 696	74	74			24 041	69	74			24 041	72	74
	500	4	1.100	0.701	10 087	12	50	1.125	0.742	10 685	11	51	1.150	0.742	10 685	12	51
		6			15 131	27	61			16 027	25	61			16 027	26	62
		8			20 174	47	64			21 370	44	65			21 370	46	65
		10			25 218	74	74			26 712	69	74			26 712	72	75
	550	4	1.210	0.771	11 096	12	51	1.238	0.816	11 753	11	51	1.265	0.816	11 753	12	51
		6			16 644	27	62			17 630	25	62			17 630	26	62
		8			22 192	47	64			23 507	44	65			23 507	46	65
		10			27 740	74	75			29 383	69	75			29 383	72	75
	600	4	1.320	0.841	12 105	12	51	1.350	0.890	12 822	11	52	1.380	0.890	12 822	12	52
		6			18 157	27	62			19 233	25	62			19 233	26	63
		8			24 209	47	64			25 644	44	65			25 644	46	65
		10			30 262	74	75			32 054	69	76			32 054	72	76
	650	4	1.430	0.911	13 113	12	52	1.463	0.965	13 890	11	52	1.495	0.965	13 890	12	53
		6			19 670	27	63			20 835	25	63			20 835	26	63
		8			26 227	47	64			27 780	44	65			27 780	46	65
		10			32 783	74	76			34 726	69	76			34 726	72	77

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

width B [mm]	height H [mm]	v [m/s]	2200 S_k [m²]	2200 S_e [m²]	2200 Q [m³/h]	2200 d_p [PA]	2200 L_{WA} [dB]	2250 S_k [m²]	2250 S_e [m²]	2250 Q [m³/h]	2250 d_p [PA]	2250 L_{WA} [dB]	2300 S_k [m²]	2300 S_e [m²]	2300 Q [m³/h]	2300 d_p [PA]	2300 L_{WA} [dB]
	700	4	1.540	0.981	14 122	12	53	1.575	1.039	14 959	11	53	1.610	1.039	14 959	12	53
		6			21 183	27	63			22 438	25	64			22 438	26	64
		8			28 244	47	64			29 917	44	65			29 917	46	65
		10			35 305	74	77			37 397	69	77			37 397	72	77
	750	4	1.650	1.051	15 131	12	53	1.688	1.113	16 027	11	54	1.725	1.113	16 027	12	54
		6			22 696	27	64			24 041	25	64			24 041	26	65
		8			30 262	47	65			32 054	44	65			32 054	46	65
		10			37 827	74	77			40 068	69	77			40 068	72	78
	800	4	1.760	1.121	16 140	12	54	1.800	1.187	17 096	11	54	1.840	1.187	17 096	12	54
		6			24 209	27	65			25 644	25	65			25 644	26	65
		8			32 279	47	65			34 191	44	65			34 191	46	65
		10			40 349	74	78			42 739	69	78			42 739	72	78
	850	4	1.870	1.191	17 148	12	54	1.913	1.261	18 164	11	55	1.955	1.261	18 164	12	55
		6			25 722	27	65			27 246	25	65			27 246	26	66
		8			34 296	47	65			36 328	44	65			36 328	46	65
		10			42 871	74	78			45 410	69	79			45 410	72	79
	900	4	1.980	1.261	18 157	12	55	2.025	1.336	19 233	11	55	2.070	1.336	19 233	12	56
		6			27 235	27	66			28 849	25	66			28 849	26	66
		8			36 314	47	65			38 465	44	65			38 465	46	65
		10			45 392	74	79			48 082	69	79			48 082	72	79
	950	4	2.090	1.331	19 166	12	56	2.138	1.410	20 301	11	56	2.185	1.410	20 301	12	56
		6			28 749	27	66			30 452	25	67			30 452	26	67
		8			38 331	47	65			40 602	44	65			40 602	46	65
		10			47 914	74	79			50 753	69	80			50 753	72	80
	1000	4	2.200	1.401	20 174	12	56	2.250	1.484	21 370	11	57	2.300	1.484	21 370	12	57
		6			30 262	27	67			32 054	25	67			32 054	26	67
		8			40 349	47	65			42 739	44	65			42 739	46	65
		10			50 436	74	80			53 424	69	80			53 424	72	81
	1050	4	2.310	1.471	21 183	12	57	2.363	1.558	22 438	11	57	2.415	1.558	22 438	12	57
		6			31 775	27	67			33 657	25	68			33 657	26	68
		8			42 366	47	65			44 876	44	65			44 876	46	65
		10			52 958	74	81			56 095	69	81			56 095	72	81
	1100	4	2.420	1.541	22 192	12	57	2.475	1.632	23 507	11	58	2.530	1.632	23 507	12	58
		6			33 288	27	68			35 260	25	68			35 260	26	69
		8			44 384	47	65			47 013	44	65			47 013	46	66
		10			55 480	74	81			58 766	69	82			58 766	72	82
	1150	4	2.530	1.611	23 201	12	58	2.588	1.707	24 575	11	58	2.645	1.707	24 575	12	59
		6			34 801	27	69			36 863	25	69			36 863	26	69
		8			46 401	47	65			49 150	44	65			49 150	46	66
		10			58 001	74	82			61 438	69	82			61 438	72	82
	1200	4	2.640	1.681	24 209	12	59	2.700	1.781	25 644	11	59	2.760	1.781	25 644	12	59
		6			36 314	27	69			38 465	25	70			38 465	26	70
		8			48 419	47	65			51 287	44	65			51 287	46	66
		10			60 523	74	82			64 109	69	83			64 109	72	83
	1250	4	2.750	1.751	25 218	12	59	2.813	1.855	26 712	11	60	2.875	1.855	26 712	12	60
		6			37 827	27	70			40 068	25	70			40 068	26	70
		8			50 436	47	65			53 424	44	65			53 424	46	66
		10			63 045	74	83			66 780	69	83			66 780	72	84

The WIP PROV/V fire damper selection program is available at **www.mercor.com.pl**, in the Designer Zone.

14.7 | Estimated weights of mcr WIP PROV/V, mcr WIP PROV/V-M dampers [kg]

height H [mm] \ width B [mm]	110	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1250
263	10	11	12	13	14	14	15	16	17	18	19	20	20	21	22	23	24	25	26	26	27	28	30
300	11	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	33
400	11	12	14	15	16	18	19	20	21	23	24	25	27	28	29	31	32	33	34	36	37	38	41
500	12	13	15	17	18	20	21	23	25	26	28	30	31	33	34	36	38	39	41	43	44	46	49
600	13	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	47	49	51	53	57
700	13	15	18	20	22	24	27	29	31	34	36	38	40	43	45	47	49	52	54	56	59	61	65
800	14	16	19	21	24	27	29	32	34	37	40	42	45	47	50	53	55	58	60	63	66	68	73
900	15	17	20	23	26	29	32	35	38	41	44	47	49	52	55	58	61	64	67	70	73	76	82
1000	16	18	21	25	28	31	34	38	41	44	47	51	54	57	60	64	67	70	73	77	80	83	90
1100	16	19	23	26	30	34	37	41	44	48	51	55	59	62	66	69	73	76	80	84	87	91	98
1200	17	20	24	28	32	36	40	44	47	51	55	59	63	67	71	75	79	83	86	90	94	98	106
1250	17	21	25	29	33	37	41	45	49	53	57	61	65	69	73	78	82	86	90	94	98	102	110
1300	18	21	25	30	34	38	42	47	51	55	59	63	68	72	76	80	85	89	93	97	101	106	114
1400	18	22	27	31	36	40	45	49	54	59	63	68	72	77	81	86	90	95	99	104	109	113	122
1500	19	23	28	33	38	43	47	52	57	62	67	72	77	82	86	91	96	101	106	111	116	121	130
1600	20	24	29	34	40	45	50	55	60	66	71	76	81	86	92	97	102	107	112	118	123	128	138
1700	21	25	31	36	42	47	53	58	64	69	75	80	86	91	97	102	108	113	119	125	130	136	147
1800	21	26	32	38	44	49	55	61	67	73	79	85	90	96	102	108	114	120	125	131	137	143	155
1900	22	27	33	39	46	52	58	64	70	76	83	89	95	101	107	113	120	126	132	138	144	151	163
2000	23	28	34	41	47	54	60	67	73	80	86	93	99	106	112	119	125	132	138	145	151	158	171
2100	23	29	36	43	49	56	63	70	77	84	90	97	104	111	118	125	131	138	145	152	159	165	179
2200	24	30	37	44	51	59	66	73	80	87	94	101	109	116	123	130	137	144	151	159	166	173	187
2300	25	31	38	46	53	61	68	76	83	91	98	106	113	121	128	136	143	151	158	165	173	180	195

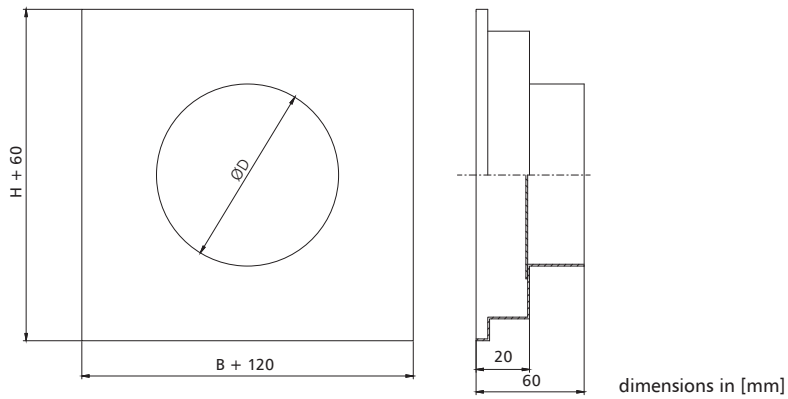
The table shows the weights of dampers with RST-KW1 trigger control mechanisms or actuators.

14.8 | Accessories

14.8.1 | mcr KRP connection stub

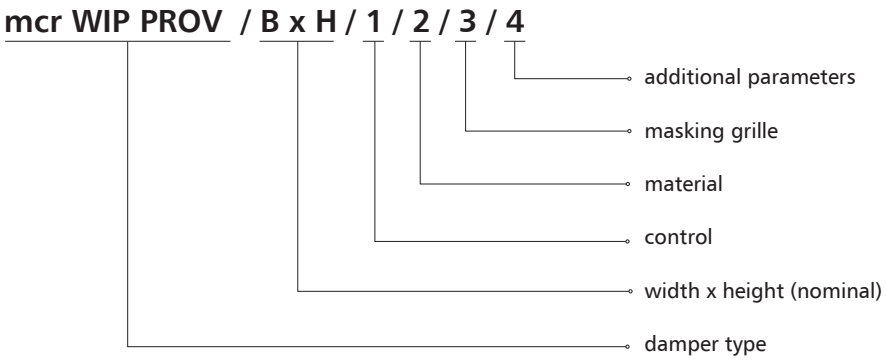
mcr KRP connection stubs are used to connect a circular ventilation duct to a rectangular damper. The connection is a „bare end" pipe. The diameter of the stub pipe is 2 mm smaller than the diameter of the ventilation duct.

Dimensions:
BxH - damper dimensions [mm]
ØD - diameter of the connection duct [mm]



dimensions in [mm]

14.9 | Marking



1 - control:

» **trigger and control mechanism, axial actuator**

BE24 – actuator without a return spring, U = 24 V AC/DC
BE230 – actuator without a return spring, U = 230 V AC/DC
BEE24 – actuator without a return spring, U = 24 V AC/DC
BEE230 – actuator without a return spring, U = 230 V AC/DC
BEN24 – actuator without a return spring, U = 24 V AC/DC
BEN230 – actuator without a return spring, U = 230 V AC/DC
MLE24 – actuator without a return spring, U = 24 V AC/DC
MLE230 – actuator without a return spring, U = 230 V AC/DC
ME24 – actuator without a return spring, U = 24 V AC/DC
ME230 – actuator without a return spring, U = 230 V AC/DC

2 - material:

[no symbol] – galvanized steel, Zn 275 g/m^2 coating
KN – stainless steel
KK – 1.4404 acid-proof steel
KKM – special damper design - damper and its components made of stainless steel, damper partition sleeves additionally secured
KOM – special damper design - damper and its components made of galvanized steel, damper partition sleeves additionally secured

3 - masking grille:

MSTx1 – masking grille
MSTx2 – masking grille
MWPx1 – mesh masking grille
MWPx2 – two mesh masking grilles

4 - additional parameters:

» **Damper axis of rotation**

[no symbol] – horizontal axis of rotation

» **Damper casing**

BU – earth pin

Note: **separate additional parameters entered with the "/" sign**

example marking:

mcr WIP PROV/V 400 x 400 BLE24
EIS120 louvered smoke ventilation damper with a 24 V actuator with limit switches.

Chapter 18 in Technical Catalogue - power supply and control (p. 350) contains the following information:
- technical specifications and connection diagrams **for the trigger control mechanisms supporting the damper.**

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