

CIRCULAR SILENCER

OPTIMUM RANGE

Designed for high acoustic requirements, the **OPTIMUM** range circular silencers are equipped with a central attenuator.

Their acoustic and aeraulic performances have been tested and approved by an independent laboratory, the Centre de Transfert de Technologie du Mans, according to the European standard ISO 7235: 2009.

This new range has been developed on these certified results and offers the best compromise between attenuations, regenerations and pressure losses.



- OPTIMUM 50** Silencer with a 50 mm-thick soundproofing casing and equipped with a central attenuator (splitter)
- OPTIMUM 100** Silencer with a 50 mm-thick soundproofing casing and equipped with a central attenuator (splitter)

CONSTRUCTION		Characteristics	Options	
			OPTIMUM 50	OPTIMUM 100
Casing	Matierial	Rolled-stapled or spiral galvanized steel duct (depending on diameter)	Stainless steel 304L or 316L, painted steel (Standard RAL) or aluminium	Stainless steel 304L or 316L, painted steel (Standard RAL) or aluminium
	Connection	Male connection with EPDM seal Casing airtightness minimum class C*	-	Threaded flanges Rotating flanges
Soundproofing	Material	Mineral wool with anti-erosion fiberglass layer on the surface, A2-S1-D0 (M0) fire classification	Surfaçage en tissu de verre sur le corps du silencieux et le baffle central pour application salle blanche	
	Protection	Perforated steel or stretch metal (depending on diameter) galvanized steel in the air flow	Stretch metal on the central splitter	
Accessories		<i>Options</i> : protective guards, support legs, stretch metal protection on the central splitter, glass fabric on the central splitter for anti erosion fiberglass fabric		

*In order to guarantee class C airtightness, the silencer are fitted directly in the air ductwork, without requiring screws.

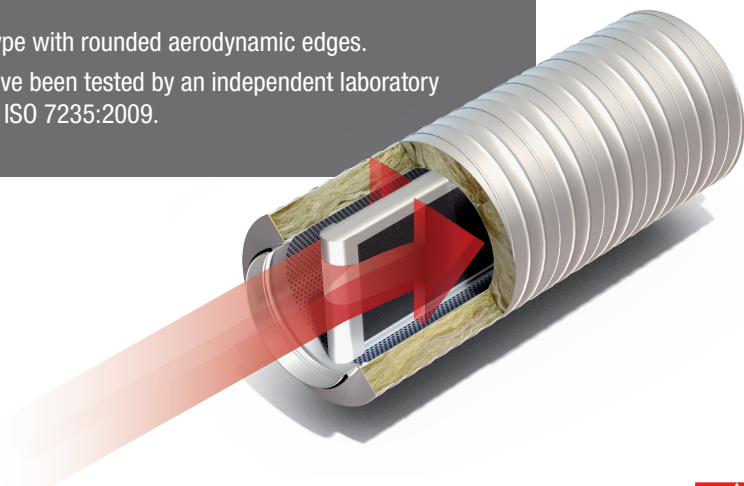
SPECIFICATIONS

Circular silencers composed of :

- a 50 or 100 mm-thick soundproofing casing protected by perforated steel sheet in the air flow,
- a central attenuator of splitter type with rounded aerodynamic edges.

The acoustic performances must have been tested by an independent laboratory according to the European standard ISO 7235:2009.

OPTIMUM type, F2A brand.

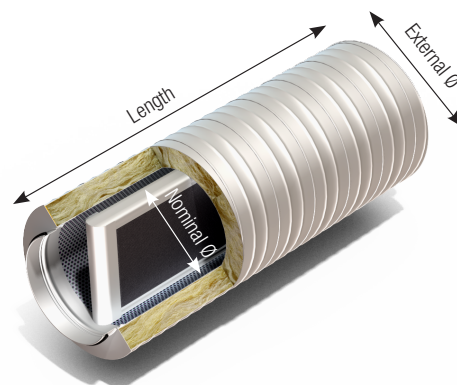


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DIMENSIONS

OPTIMUM 50				
Nominal Ø (mm)	External Ø (mm)	Length (mm)	Central splitter thickness (mm)	Weight (kg)
125	225	600 900	50	5 7
160	250	600 900	50	6 9
200	315	600 900	50	7 10
250	355	600 900	50	9 12
315	400	600 900	50	12 16
355	450	900	50	17
400	500	900	100	20
450	560	900	100	23
500	630	900	100	25



ACOUSTIC CHARACTERISTICS

OPTIMUM 50 Soundproofing casing thickness = 50 mm



Nominal diameter (in mm)	Static attenuation (dB)								
	Length (mm)	63 Hz	125Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
125	600	2	6	11	17	28	41	46	25
	900	3	7	18	25	43	48	49	25
160	600	2	4	8	15	24	36	39	26
	900	2	5	11	21	39	48	48	29
200	600	2	4	7	12	24	37	27	19
	900	2	5	11	18	32	46	41	27
250	600	1	4	6	14	25	37	18	13
	900	4	5	11	20	31	39	29	15
315	600	1	2	4	11	20	27	13	12
	900	2	2	7	15	27	36	19	10
355	900	1	2	6	14	28	32	13	12
400	900	3	4	6	16	30	30	14	10
450	900	1	2	8	17	28	21	12	12
500	900	1	3	6	15	22	19	10	11

Results from tests carried out by an independent laboratory (CTTM) according to the European standard ISO 7235 : 2009

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*Air velocity in air sections

Tests carried out by an independent laboratory according to the European standard ISO 7235 : 2009.

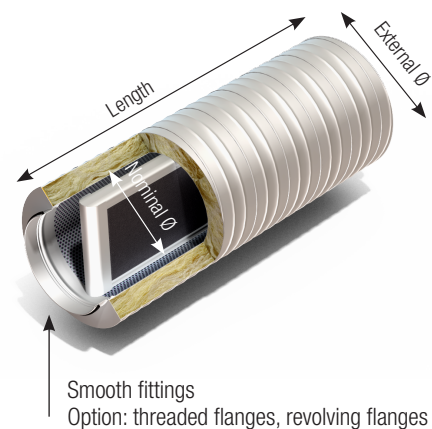
OPTIMUM 50		Regenerations and pressure losses								
Diameter & length (mm)	Air velocity *	63 Hz	125Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Pressures losses (Pa)
Ø125 L600	3m/s	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	6
	5m/s	46	37	34	32	25	19	24	30	17
	7m/s	56	48	41	39	35	28	25	30	34
	10m/s	65	60	50	46	44	38	32	30	70
	13m/s	65	63	54	48	45	42	36	31	118
Ø125 L900	3m/s	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	9
	5m/s	37	32	29	24	18	20	26	32	24
	7m/s	50	44	40	37	31	24	26	32	47
	10m/s	58	55	49	45	41	35	29	32	96
	13m/s	59	59	53	48	45	39	32	32	162
Ø160 L600	3m/s	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	5
	5m/s	41	34	30	27	20	19	25	31	14
	7m/s	53	43	37	36	32	26	25	31	27
	10m/s	58	53	45	42	40	36	30	31	55
	13m/s	64	61	52	47	45	43	38	33	94
Ø160 L900	3m/s	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	5
	5m/s	42	33	29	26	21	19	25	31	14
	7m/s	51	43	37	36	32	23	25	31	28
	10m/s	61	51	44	43	40	33	28	31	56
	13m/s	66	60	50	48	45	40	34	32	95
Ø200 L600	3m/s	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	3
	5m/s	43	35	29	27	22	20	25	31	7
	7m/s	49	40	36	35	30	24	25	31	14
	10m/s	56	49	42	41	39	34	28	31	29
	13m/s	63	59	48	46	45	42	35	32	48
Ø200 L900	3m/s	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	3
	5m/s	40	33	30	27	21	18	24	30	9
	7m/s	49	41	37	36	32	25	24	30	17
	10m/s	57	49	44	43	41	36	29	30	35
	13m/s	60	57	50	48	46	44	37	32	60
Ø250 L600	5m/s	39	35	32	27	24	19	23	29	5
	7m/s	50	47	43	44	41	33	27	31	10
	10m/s	57	57	51	51	51	45	38	34	20
	13m/s	63	64	57	57	57	54	48	43	33
	16m/s	71	69	64	61	61	59	55	51	50
Ø250 L900	5m/s	39	36	34	29	23	19	23	29	6
	7m/s	55	48	43	39	32	24	27	31	11
	10m/s	59	57	52	51	48	41	32	31	23
	13m/s	67	62	60	58	57	52	44	35	39
	16m/s	70	68	64	61	61	58	51	41	59
Ø315 L600	5m/s	44	41	34	34	31	23	23	29	6
	7m/s	53	47	41	43	41	34	28	31	11
	10m/s	59	58	51	50	50	46	41	34	22
	13m/s	65	63	56	55	56	53	50	44	38
	16m/s	70	71	63	59	60	58	55	51	57
Ø315 L900	5m/s	40	37	37	34	30	22	23	29	6
	7m/s	57	49	46	43	37	29	27	31	12
	10m/s	64	58	52	52	50	44	34	32	24
	13m/s	68	64	58	57	57	53	45	35	41
	16m/s	76	70	62	61	62	59	52	43	62
Ø355 L900	5m/s	46	43	35	33	29	23	23	29	7
	7m/s	54	49	43	42	38	33	27	31	13
	10m/s	59	55	49	50	49	44	38	34	26
	13m/s	62	61	55	56	56	53	48	43	44
	16m/s	69	66	60	60	61	58	53	49	67
Ø400 L900	5m/s	49	41	34	32	30	24	23	29	7
	7m/s	59	54	48	44	39	30	28	31	13
	10m/s	66	64	56	54	51	45	35	32	27
	13m/s	71	69	62	60	58	54	46	37	45
	16m/s	77	73	67	65	64	60	54	45	69
Ø450 L900	5m/s	51	49	38	36	30	22	23	29	7
	7m/s	54	53	46	45	39	32	26	31	14
	10m/s	62	59	54	54	50	45	38	33	29
	13m/s	68	64	59	60	57	53	47	40	49
	16m/s	74	69	64	65	62	59	54	48	74
Ø500 L900	5m/s	51	52	38	38	31	25	23	29	7
	7m/s	59	54	43	43	39	35	29	31	13
	10m/s	67	60	51	50	49	46	41	36	27
	13m/s	73	66	57	56	56	55	50	45	45
	16m/s	78	71	63	61	60	60	57	52	68

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DIMENSIONS

OPTIMUM 100				
Nominal Ø (mm)	External Ø (mm)	Length (mm)	Central splitter thickness (mm)	Weight (kg)
250	450	1000	50	18
315	500	1000	50	21
355	560	1000	50	24
400	600	1000	100	27
450	630	1000	100	34
500	710	1000	100	40
560	800	1000	100	45
630	800	1000	100	46



ACOUSTIC CHARACTERISTICS

OPTIMUM 100 Soundproofing casing thickness = 100 mm



Nominal diameter (mm)	Length (mm)	Static attenuation (dB)							
		63 Hz	125Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
250	1000	4	10	21	35	45	52	38	20
315	1000	2	5	16	24	35	48	24	17
355	1000	2	7	17	23	32	39	18	14
400	1000	2	7	18	25	36	33	17	13
450	1000	2	5	15	21	32	28	13	11
500	1000	2	6	15	21	28	22	10	9
560	1000	1	6	15	17	27	21	12	11
630	1000	1	5	10	17	25	18	11	7

Diameter & length (mm)	Air velocity *	Regenerations and pressure losses								Pressures losses (Pa)
		63 Hz	125Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
Ø250 L1000	5m/s	39	36	34	29	23	19	23	29	5
	7m/s	50	46	45	42	39	34	27	31	10
	10m/s	59	56	53	51	50	47	40	34	21
	13m/s	67	63	59	56	56	55	50	43	35
	16m/s	73	69	66	61	61	60	56	51	53
Ø315 L1000	5m/s	40	37	37	34	30	22	23	29	7
	7m/s	49	47	44	43	40	34	27	31	14
	10m/s	58	56	52	51	49	46	39	33	28
	13m/s	63	61	57	56	55	53	49	41	48
	16m/s	68	67	61	60	60	59	55	49	72
Ø355 L1000	5m/s	46	43	37	33	30	23	23	29	4
	7m/s	52	47	43	40	39	34	27	31	9
	10m/s	56	55	50	48	49	45	39	33	18
	13m/s	62	60	55	54	55	53	48	41	30
	16m/s	66	63	60	58	60	59	55	49	45
Ø400 L1000	5m/s	49	41	34	32	30	24	23	29	9
	7m/s	53	48	41	40	39	34	27	31	17
	10m/s	59	55	48	47	48	46	39	33	35
	13m/s	65	61	55	53	54	53	48	41	60
	16m/s	72	64	59	58	59	58	55	49	91

*Air velocity in air sections

Tests carried out by an independent laboratory according to the European standard ISO 7235 : 2009

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ACOUSTIC CHARACTERISTICS (continued)

OPTIMUM 100

Soundproofing casing thickness = 100 mm

Diameter & length (mm)	Regenerations and pressure losses									
	Air velocity *	63 Hz	125Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Pertes de charge (Pa)
Ø450 L1000	5m/s	48	48	35	35	30	25	23	29	6
	7m/s	51	50	42	41	39	35	28	31	13
	10m/s	61	57	47	48	47	47	41	35	26
	13m/s	65	63	53	53	53	53	50	44	44
	16m/s	73	68	58	57	57	58	57	52	66
Ø500 L1000	5m/s	47	42	32	30	24	20	21	27	7
	7m/s	51	47	37	37	31	25	25	31	13
	10m/s	56	54	43	43	40	37	31	31	27
	13m/s	64	58	49	50	49	48	44	37	46
	16m/s	71	65	56	55	55	55	52	47	70
Ø560 L1000	5m/s	47	39	34	31	24	19	19	24	7
	7m/s	51	46	42	42	38	29	22	24	11
	10m/s	58	52	50	50	47	42	33	27	17
	13m/s	64	57	54	55	53	49	42	34	24
	16m/s	68	62	58	58	57	53	48	41	37
Ø630 L1000	5m/s	47	40	35	39	31	22	21	30	5
	7m/s	51	47	43	43	36	28	23	29	7
	10m/s	59	53	50	50	50	40	31	30	10
	13m/s	64	58	55	56	53	49	43	34	11
	16m/s	69	63	59	60	59	55	50	42	25

*Air velocity in air sections

Tests carried out by an independent laboratory according to the European standard ISO 7235 : 2009