## INTRODUCTION

Type **KSD20** Series Rectangular Attenuators are used for ducted systems or smaller items of plant, to provide a low level of attenuation, whilst allowing passage of air to or from the equipment being treated.

Whilst all **KSD20** Series attenuators are selected to suit particular criteria, in general these are used to provide a better level of attenuation at medium to higher frequencies due to the 100mm thick splitter configuration.

The **KSD20** Series attenuators are also very efficient at providing Cross Talk protection as well as being suitable for small and medium duct cross sectional areas.

All attenuators are designed to suit your individual project, and our Team of Sales Engineers can assist with the design of the attenuation package for the optimum product selection.
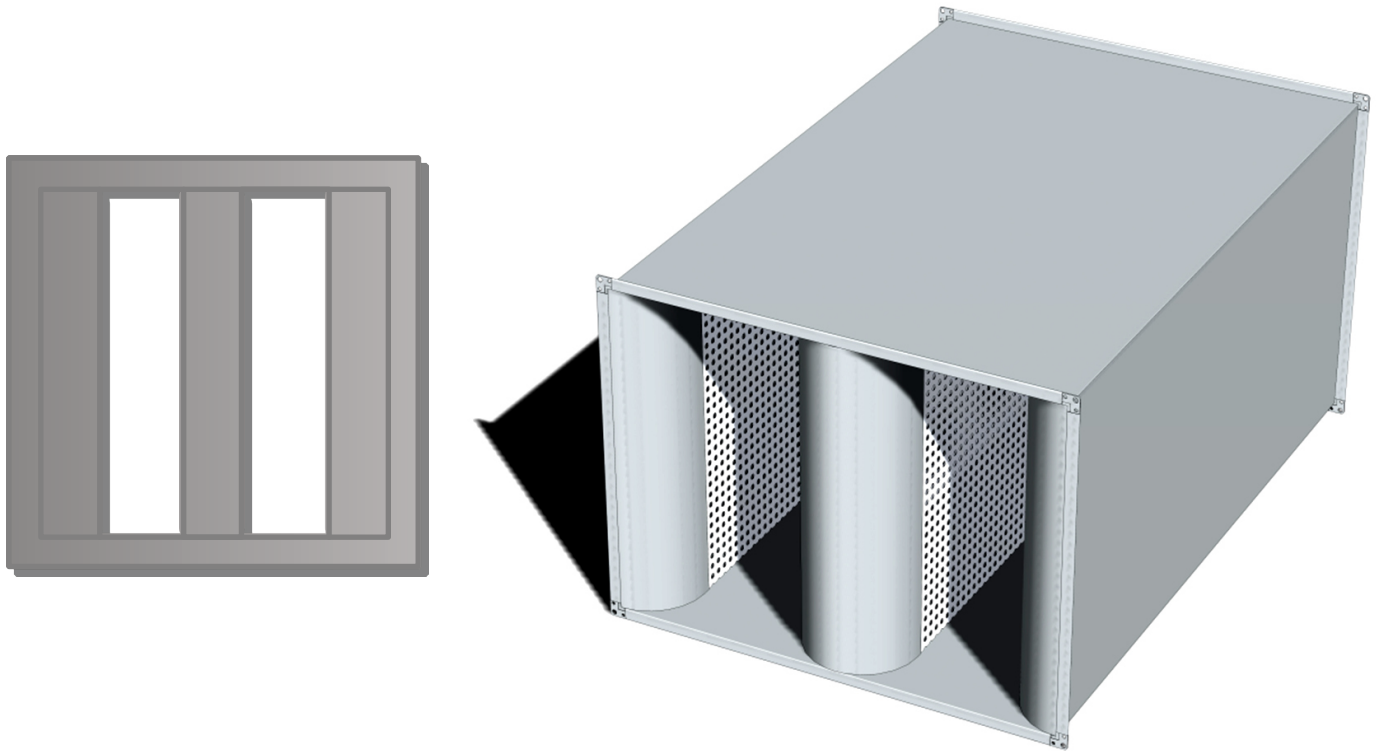
DESIGN AND MANUFACTURE

The **KSD20** Series Rectangular Attenuators are designed and fabricated to suit particular projects to take into account the specific sound reduction requirements with regard to both Octave and Broad Band noise, regenerated noise and airflow characteristics, such as the effect on other equipment and pressure drop.

The attenuators are fabricated in line with DW144 and can be varied to suit high pressure or industrial grade systems, as well as bespoke applications.

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PERFORMANCE DATA

Insertion (dB) at Octave Band Centre Frequencies (Hz)

TYPE	MOD SIZE (mm)	LENGTH (mm)	63	125	250	500	1000	2000	4000	8000	'K' (FACE)
KSD2010	150	600	3	5	11	26	31	23	18	14	6.93
	150	900	3	6	15	33	45	36	27	21	7.64
	150	1200	4	7	20	40	55	49	36	28	8.34
	150	1500	5	9	25	48	55	55	45	35	9.05
	150	1800	5	10	29	55	55	55	54	43	9.75
	150	2100	6	11	34	55	55	55	55	50	10.46
	150	2400	7	13	39	55	55	55	55	55	11.16

TYPE	MOD SIZE (mm)	LENGTH (mm)	63	125	250	500	1000	2000	4000	8000	'K' (FACE)
KSD2015	175	600	2	4	8	18	27	21	16	13	3.38
	175	900	2	5	11	26	42	33	24	19	3.68
	175	1200	3	6	15	34	55	45	32	25	3.97
	175	1500	4	7	19	43	55	55	40	31	4.27
	175	1800	4	8	22	51	55	55	48	37	4.57
	175	2100	5	9	26	55	55	55	55	44	4.87
	175	2400	6	11	30	55	55	55	55	50	5.17

TYPE	MOD SIZE (mm)	LENGTH (mm)	63	125	250	500	1000	2000	4000	8000	'K' (FACE)
KSD2020	200	600	2	3	7	16	25	19	14	11	1.72
	200	900	2	4	10	23	38	29	20	17	1.85
	200	1200	3	5	13	31	51	40	27	23	1.99
	200	1500	3	6	16	39	55	50	34	29	2.12
	200	1800	4	7	19	47	55	55	41	35	2.25
	200	2100	4	8	22	54	55	55	48	41	2.39
	200	2400	5	9	25	55	55	55	54	48	2.52

TYPE	MOD SIZE (mm)	LENGTH (mm)	63	125	250	500	1000	2000	4000	8000	'K' (FACE)
KSD2025	225	600	2	3	6	14	24	18	11	9	1.04
	225	900	2	3	8	21	36	27	17	13	1.12
	225	1200	2	4	10	28	48	36	23	18	1.2
	225	1500	3	5	13	35	55	45	29	23	1.28
	225	1800	3	5	15	42	55	54	35	28	1.36
	225	2100	3	6	17	49	55	55	41	33	1.44
	225	2400	4	7	20	55	55	55	47	38	1.52

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TYPE	MOD SIZE (mm)	LENGTH (mm)	Insertion (dB) at Octave Band Centre Frequencies (Hz)								'K' (FACE)
			63	125	250	500	1000	2000	4000	8000	
KSD2030	250	600	2	3	6	13	21	16	9	7	0.75
	250	900	2	3	7	19	32	23	13	11	0.81
	250	1200	2	4	9	25	43	31	18	15	0.88
	250	1500	2	4	11	31	54	39	23	19	0.94
	250	1800	2	5	13	37	55	47	28	23	1.01
	250	2100	2	5	15	44	55	54	33	27	1.07
	250	2400	3	6	17	50	55	55	38	31	1.14

TYPE	MOD SIZE (mm)	LENGTH (mm)	Insertion (dB) at Octave Band Centre Frequencies (Hz)								'K' (FACE)
			63	125	250	500	1000	2000	4000	8000	
KSD2035	275	600	1	2	5	11	20	14	7	6	0.54
	275	900	1	2	6	16	30	20	10	9	0.6
	275	1200	1	3	8	22	40	27	14	12	0.65
	275	1500	2	3	10	27	50	33	18	15	0.7
	275	1800	2	4	11	33	55	40	22	18	0.76
	275	2100	2	4	13	38	55	47	26	21	0.81
	275	2400	3	5	15	44	55	53	30	24	0.86

TYPE	MOD SIZE (mm)	LENGTH (mm)	Insertion (dB) at Octave Band Centre Frequencies (Hz)								'K' (FACE)
			63	125	250	500	1000	2000	4000	8000	
KSD2040	300	600	1	2	3	10	18	12	5	4	0.38
	300	900	1	2	4	14	26	17	7	5	0.43
	300	1200	1	2	6	19	34	23	9	7	0.47
	300	1500	1	3	8	24	43	29	11	9	0.52
	300	1800	1	3	9	29	51	34	13	11	0.56
	300	2100	1	3	11	34	55	40	15	13	0.61
	300	2400	2	4	13	39	55	46	18	15	0.65

MELINEX

When Melinex linings are used the following allowances should be made to the Insertion Loss Figures.

Insertion (dB) at Octave Band Centre Frequencies (Hz)							
63	125	250	500	1000	2000	4000	8000
x 1.00	x 1.00	x 0.95	x 0.85	x 0.80	x 0.65	x 0.55	x 0.50

AVAILABLE SIZES

Type **KSD20** Series attenuators can be supplied in a multitude of sizes with the width dependant on the module size and height selected to suit pressure drop requirements.

The **KSD20** Series can be selected to have a cross sectional size from 150mm wide x 200mm high up to cross sectional sizes of 2000mm x 2000mm in one section. Larger sections are available by fixing two or more modules together.

The attenuator length increases in 300mm increments from 600mm long to 2400mm long although other sizes are available.

TYPICAL SPECIFICATION

Type **KSD20** Series Attenuator.

Manufacturer:	Conabeare Acoustics Limited - 0118 930 3650
Attenuator Type:	**KSD20** Series Rectangular Attenuator.
Outer Skin:	Pre-Galvanised Steel Sheet Outer Skin throughout.
Splitters:	45kg/m³ density mineral wool retained behind glass fibre tissue and expanded or perforated metal skin having a minimum 30% free area.
Flanges:	Generally Mez20, Mez30 or Mez40 Flanges although other flange systems/ types are available.
Finish:	Mill Finish as Standard.
Description:	Fabricated Steel Attenuator comprising pre-galvanised steel components throughout. Attenuator to be factory assembled using mechanical fixings and supplied in one section for incorporation into the works.

AVAILABLE OPTIONS

- ○ MX - Melinex Lining to Splitters.
- ○ HS - Horizontal Splitters.
- ○ SP - Special Construction such as Double Skinned.
- ○ CRP - Chlorinated Rubber Paint.
- ○ HT - High Temperature.
- ○ XT - Cross Talk Attenuator.
- ○ VB or HB - Bend Attenuator - Contact Our Engineering department for Advice.
- ○ Stainless Steel Fabrication.
- ○ PVC Fabrication.

PRESSURE LOSS

To establish the pressure loss through the attenuator based on air on and off condition being straight length of duct as detailed within BS EN ISO 7535:2003. The following example should be used;

Example

KSD2020 Attenuator at 1.2 metres wide x 0.9 metres high x 1.5 metres long having a duty of 5.94m³/s.

$$Step\ 1 - (Module\ Size = 0.2m) \times (Number\ of\ Modules = 6) \times (Height = 0.9m) \rightarrow 0.2 \times 6 \times 0.9 = 1.08$$

$$Step\ 2 - \left(\frac{Airflow(m^3/s)}{Step\ 1}\right)^2 \rightarrow \left(\frac{5.94m^3/s}{1.08}\right)^2 = 30.25$$

$$Step\ 3 - (Step\ 2 \times' K' Factor) \times 0.6 \rightarrow (30.25 \times 2.12) \times 0.6 = Pressure\ Drop\ of\ 38Pa$$

Rectangular Attenuators - KSD20 Series

KSD20 - 23.01