

Rectangular Silencers

Our ranges of Rectangular Silencers have applications or as industrial silencers suitable for use in industrial situations through to specially manufactured silencers in PVC, aluminum or stainless steel for specific applications.

Tested Results

Apart from the time proven performance of Barclay Engineering's rectangular silencers, the tabulated acoustic performances are based on tests which were carried out on our test rig. All the tests were carried out in accordance with AS1277 and were witnessed by Herring Storer Acoustic, as an independent party.



Industrial - Rectangular Silencer



Rectangular Silencer – Vertical Splitters

Construction

Standard silencers for commercial applications are constructed of pre-galvanized sheet steel for the casing, splitter bull nose and splitter tail. The splitters are filled with high density acoustic mineral wool which is protected by perforated pre-galvanized sheet metal. A polyester membrane can be incorporated into the splitters for protection against Oil, grease, dust or water.

Industrial silencers have heavier casings made from 3mm, 5mm, or thicker steel and can be painted to any paint specification as required. Aluminum and stainless steel construction is also available for some acidic applications, while PVC is available for some acidic applications.

Flanges

Our rectangular silencers are supplied with end flanges made from angle iron with long silencers having additional flanges fitted along the length to stiffen and support the casing.

The angle flanges are normally finished in cold galvanized paint for protection, Although special paint finishes are applied when the whole silencer case has to adhere to a special paint specification.

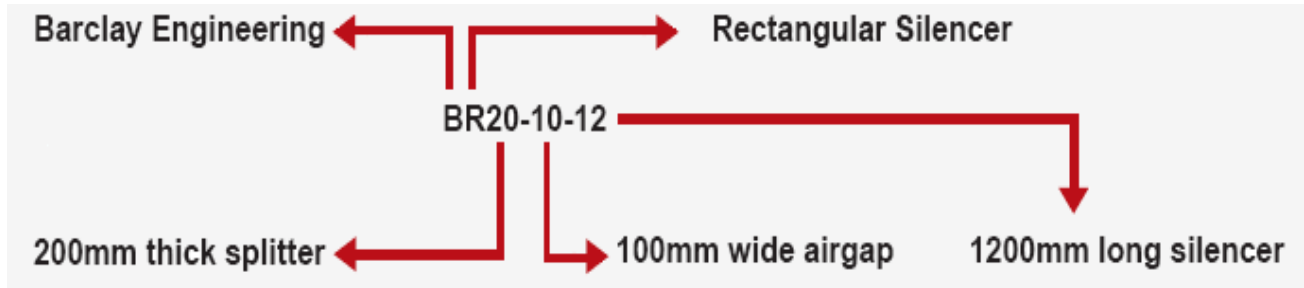
Applications

Rectangular Silencers can be used in any air transfer application from a small rectangular silencer in air exhaust or air conditioning ducts to very large inlet and outlet silencers for gas turbines. Other typical applications include ventilations air for plant rooms, pumping stations and generator rooms, as well as inlet air to fans, boilers, kilns etc.

Selection

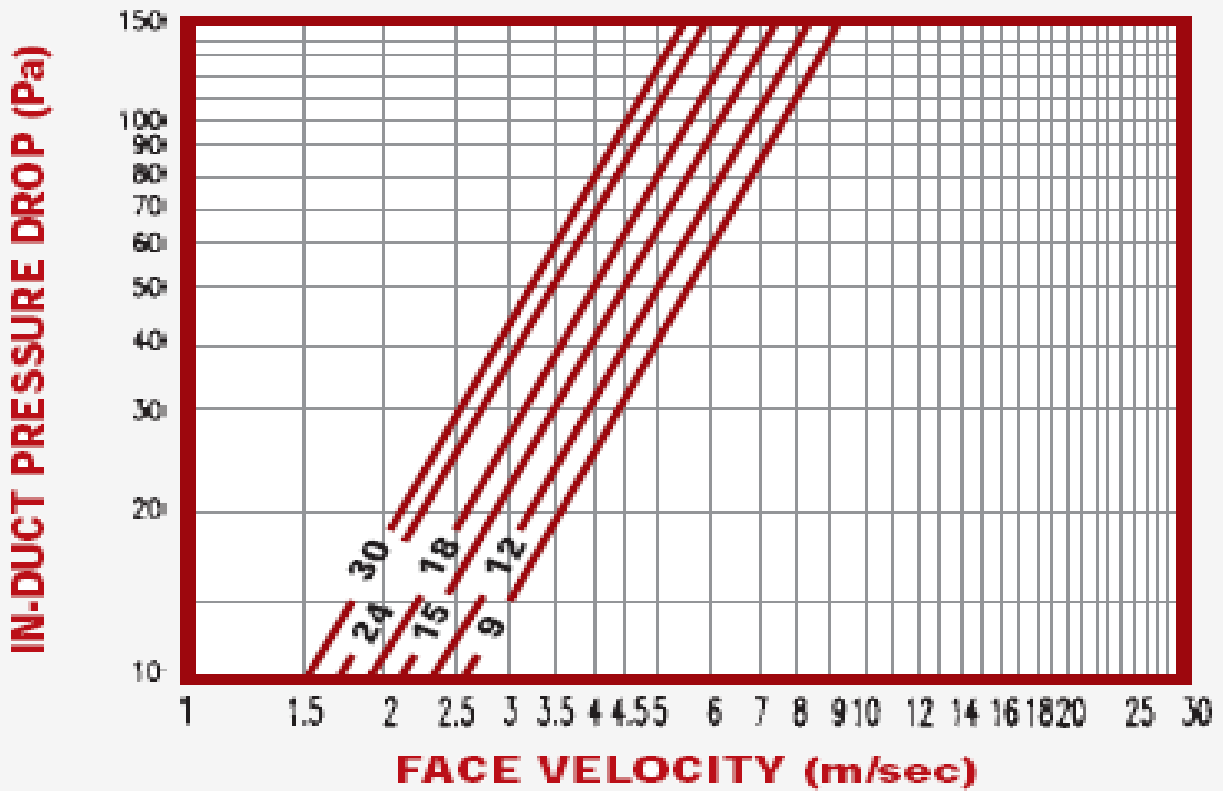
Firstly, select the model with the required insertion loss from the static insertion loss Tables for the 20 series or 30 series. Secondly, the in-duct pressure loss can be Determined from the aerodynamic performance charts for the model selected from either the 20 series or 30 series.

If the pressure drop is found to be too high it may be lowered by increasing the width of the silencer, by adding more modules, or by increasing the height of the silencer. The model coding is explained **below**:



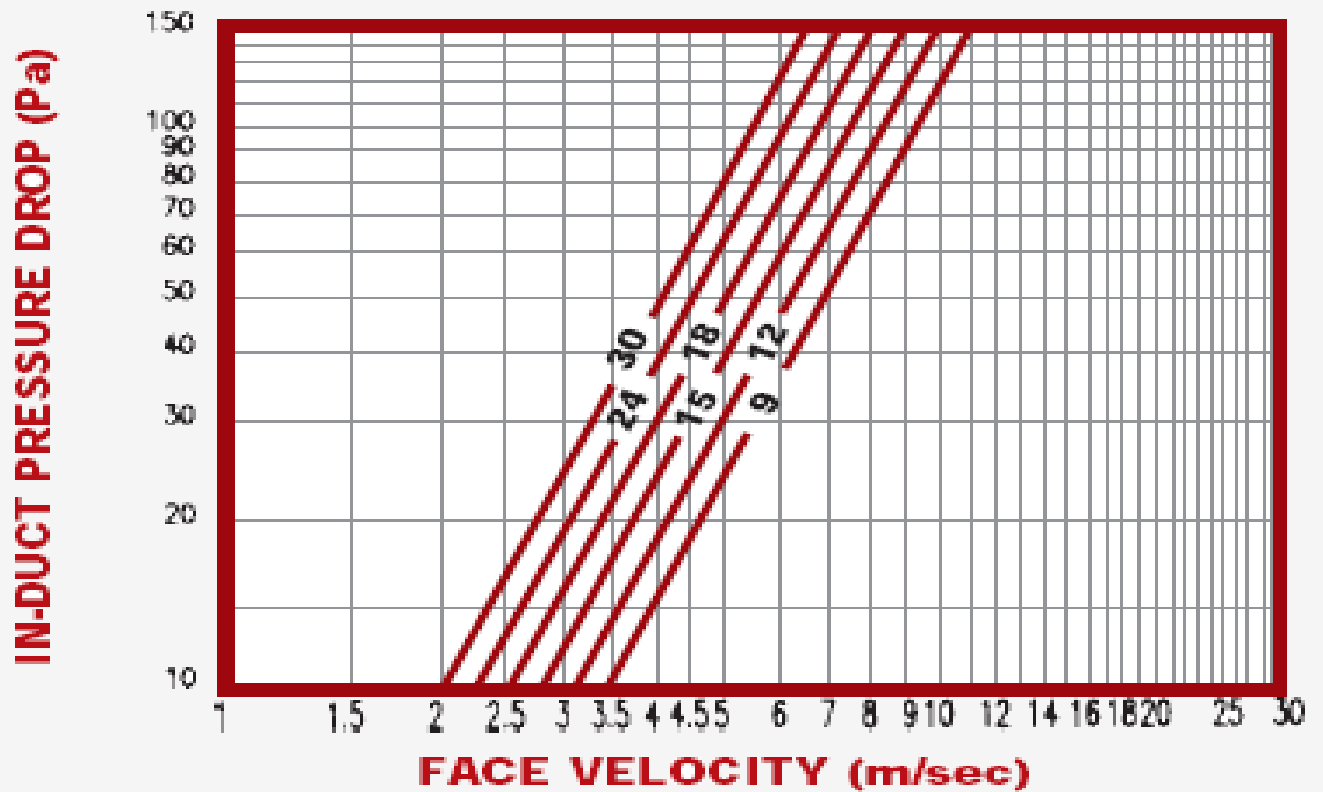
Rectangular Silencers- 20 Series Aerodynamic Performance

BR 20-10

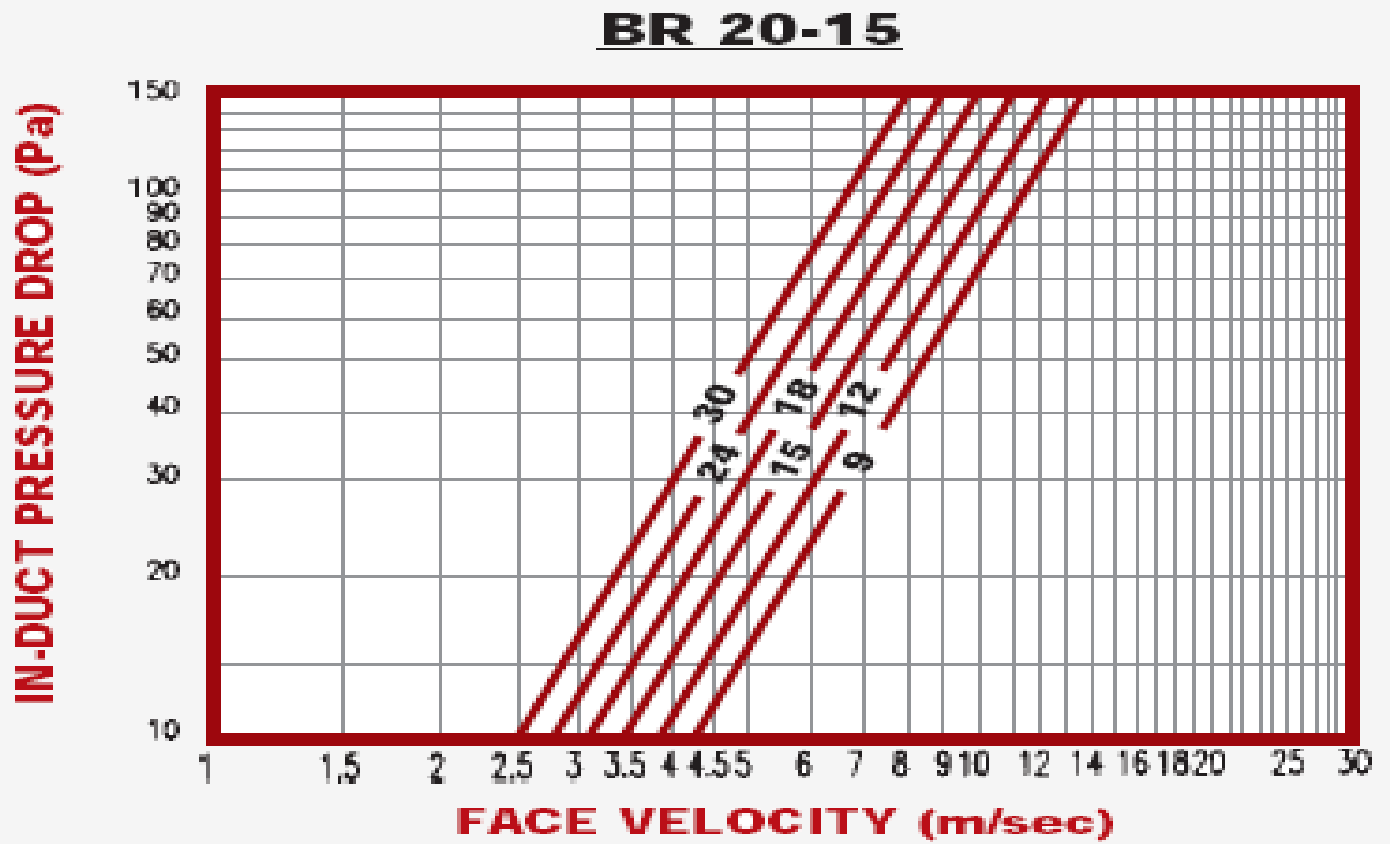


Rectangular Silencers- 20 Series Aerodynamic Performance

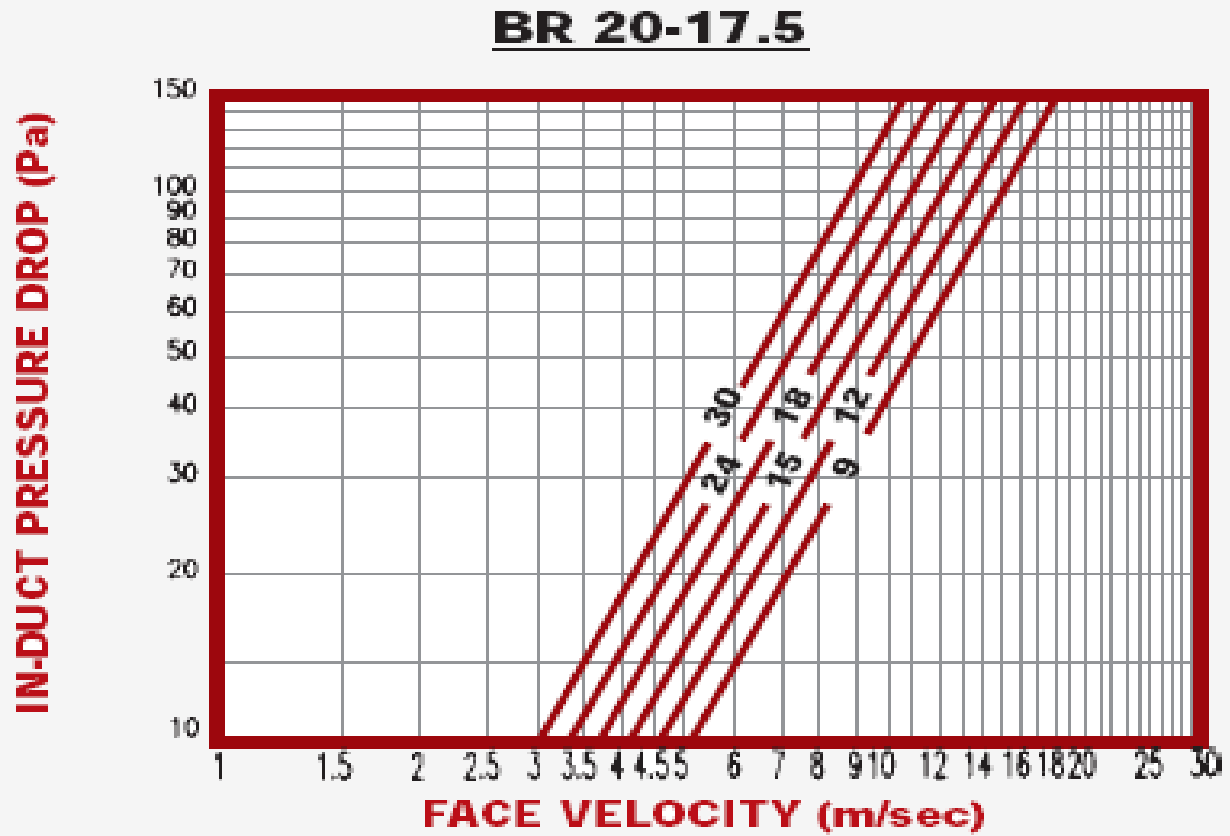
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Rectangular Silencers- 20 Series Aerodynamic Performance

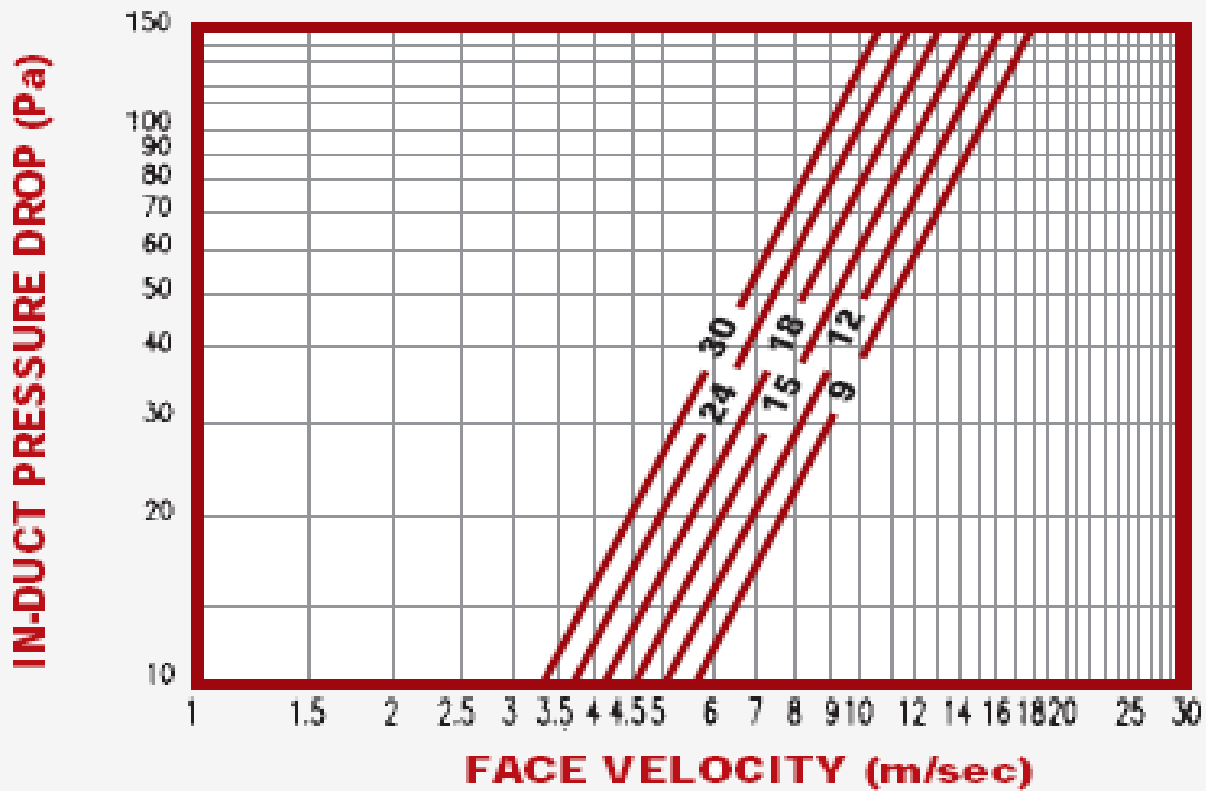


Rectangular Silencers- 20 Series Aerodynamic Performance



Rectangular Silencers- 20 Series Aerodynamic Performance

BR 20-20



**Rectangular Silencers with Fibretex Infill
(20 Series)**

Static Insertion Loss (dB)

Model	OCTAVE BAND CENTRE FREQUENCIES (HZ)							
	63	125	250	500	1K	2K	4K	8K
BR20-10-09	8	14	16	32	42	40	26	19
BR20-10-12	9	15	20	36	45	44	30	21
BR20-10-15	10	17	31	40	49	48	34	24
BR20-10-18	11	18	31	46	52	53	39	26
BR20-10-24	11	21	38	49	59	61	47	31
BR20-10-30	11	24	43	59	61	63	56	36
BR20-12.5-09	6	12	16	30	39	32	21	15
BR20-12.5-12	8	14	22	34	42	37	24	17
BR20-12.5-15	9	15	28	37	45	41	28	19
BR20-12.5-18	10	16	30	41	48	45	31	21
BR20-12.5-24	11	18	35	58	58	53	38	25
BR20-12.5-30	11	20	42	59	59	61	45	28

Selected Silencers have been tested at Barclay Engineering Laboratory.
Other Values interpolated in accordance with AS 1277-1983 Appendix C.

Rectangular Silencers with Fibretex Infill
(20 Series)

Static Insertion Loss (dB)

Model	OCTAVE BAND CENTRE FREQUENCIES (HZ)							
	63	125	250	500	1K	2K	4K	8K
BR20-15-09	4	11	14	28	37	25	15	12
BR20-15-12	6	12	18	31	39	29	18	13
BR20-15-15	8	13	26	34	41	33	21	14
BR20-15-18	9	14	28	38	44	37	24	16
BR20-15-24	10	15	41	49	51	45	29	18
BR20-15-30	11	17	40	51	53	53	35	21
BR20-17.5-09	3	10	14	26	32	23	14	11
BR20-17.5-12	5	11	18	30	36	26	16	12
BR20-17.5-15	7	12	23	33	39	29	18	13
BR20-17.5-18	8	12	26	36	42	33	20	14
BR20-17.5-24	9	17	30	44	49	40	25	16
BR20-17.5-30	10	18	38	48	56	46	29	18

Selected Silencers have been tested at Barclay Engineering Laboratory.
Other Values interpolated in accordance with AS 1277-1983 Appendix C.

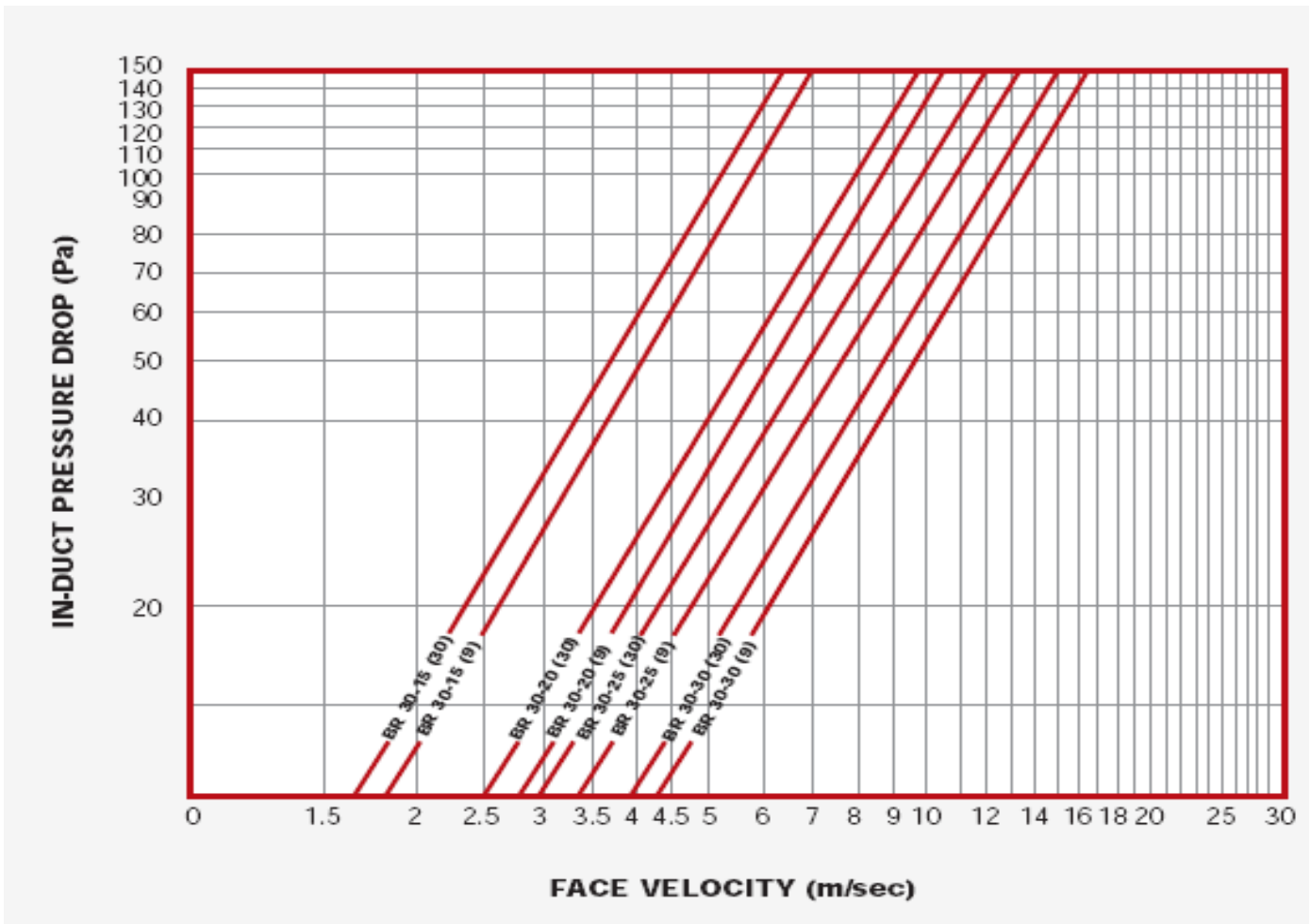
**Rectangular Silencers with Fibretex Infill
(20 Series)**

Static Insertion Loss (dB)

Model	OCTAVE BAND CENTRE FREQUENCIES (HZ)							
	63	125	250	500	1K	2K	4K	8K
BR20-20-09	2	10	11	25	28	20	13	9
BR20-20-12	4	10	16	28	32	23	14	10
BR20-20-15	6	11	18	31	37	26	16	11
BR20-20-18	7	11	25	34	41	29	17	12
BR20-20-24	8	12	28	40	50	34	20	13
BR20-20-30	9	16	31	46	59	40	23	15

Selected Silencers have been tested at Barclay Engineering Laboratory.
Other Values interpolated in accordance with AS 1277-1983 Appendix C.

**Rectangular Silencers Aerodynamic Performance
(30 series)**



Rectangular Silencers with Fibretex Infill
(30 series)

Static Insertion Loss (dB)

Model	OCTAVE BAND CENTRE FREQUENCIES (HZ)							
	63	125	250	500	1K	2K	4K	8K
BR30-15-09	7	14	17	21	28	20	15	14
BR30-15-12	10	16	23	28	32	26	21	17
BR30-15-15	11	18	28	33	38	30	25	20
BR30-15-18	13	20	33	39	44	35	27	22
BR30-15-24	15	25	43	49	52	45	37	25
BR30-15-30	19	28	51	60	61	58	43	32
BR30-20-09	6	11	15	26	29	16	14	13
BR30-20-12	7	12	20	29	31	22	17	16
BR30-20-15	8	15	24	36	37	26	20	17
BR30-20-18	10	18	27	40	41	30	22	13
BR30-20-24	13	20	36	47	49	38	25	21
BR30-20-30	14	24	46	54	55	46	31	22

Selected Silencers have been tested at Barclay Engineering Laboratory.
Other Values interpolated in accordance with AS 1277-1983 Appendix C.

Rectangular Silencers with Fibretex Infill
(30 series)

Static Insertion Loss (dB)

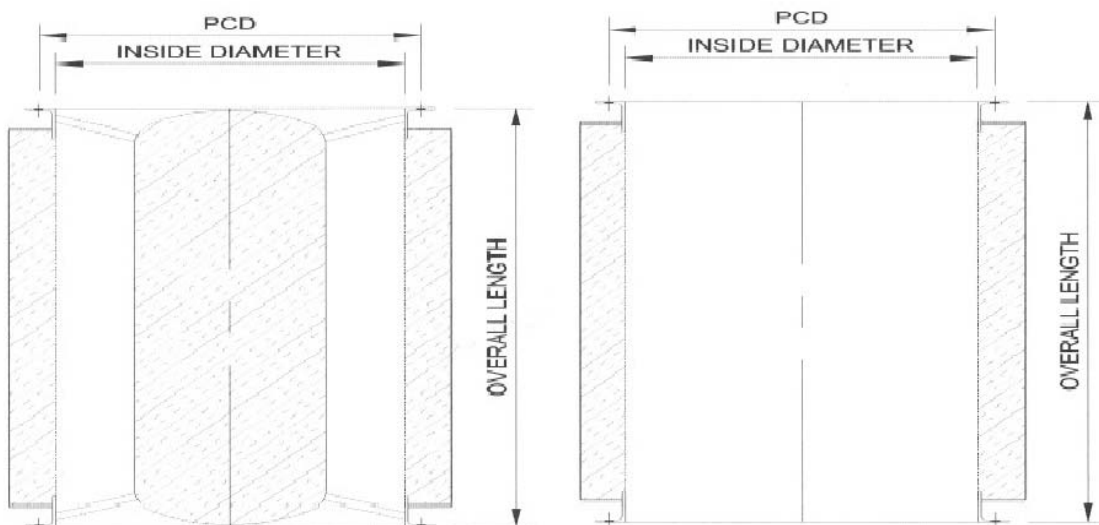
Model	OCTAVE BAND CENTRE FREQUENCIES (HZ)							
	63	125	250	500	1K	2K	4K	8K
BR30-25-09	3	10	14	21	21	13	13	8
BR30-25-12	5	12	18	26	25	16	16	9
BR30-25-15	7	14	22	30	30	19	17	11
BR30-25-18	9	16	26	36	35	24	18	13
BR30-25-24	12	20	34	46	44	30	21	16
BR30-25-30	15	24	41	51	53	36	23	19
BR30-30-09	3	8	13	18	15	13	12	9
BR30-30-12	5	10	15	23	17	15	13	11
BR30-30-15	6	12	20	27	23	17	15	13
BR30-30-18	7	14	23	31	31	20	16	14
BR30-30-24	10	15	30	40	42	24	18	16
BR30-30-30	12	18	37	42	48	27	19	17

Selected Silencers have been tested at Barclay Engineering Laboratory.
Other Values interpolated in accordance with AS 1277-1983 Appendix C.

Cylindrical Silencers

Barclay Engineering's cylindrical silencers are available in 2 standard models, type BCDS (unpodded, straight through) and BCDS (P), podded.

The unpodded model provides sound attenuation with low pressure loss through the Silencer. Podded model provides higher attenuation with reasonable pressure loss. Both models are available in standard length of one diameter (1D) or two diameter (2D) lengths. Non-Standard lengths are available if required.



Construction

Barclay Standard silencer models are constructed with robust pre galvanized Steel construction with end flanges tapped and drilled to suit fan flanges or Ducting flanges dimensions. The acoustic absorbent material is of high density fire Resistant mineral wool, protected with a perforated pre-galvanized sheet. Podded models have a centrally mounted pod with dome entry, supported by Brackets connected to the main body of the silencer.

Special Construction

Industrial silencers with 3mm, 5mm or thicker steel and painting to any specifications are also available on request. Other materials available are:

Aluminum- corrosive environment

Stainless Steel- corrosive or high temperature application

PVC- acid/corrosive application

Extended flanges from the silencer main body to provide access to both sides of the flanges for bolts and nuts for connections are available if required



Model Selection

Model selections are determined with the following examples:

Brand | **Internal Diameter** | **Pod**
BARCLAY - 610 BCDS(P) - 1D
 Cylindrical Silencer | Length (1 x Dia.) = 610

ACOUSTIC PERFORMANCE • INSERTION LOSS (dB)

Model Designation - BCDS(P) - 1D

Barclay Cylindrical Silencer (Pod) - 1 Diameter Long

FAN DIAMETER	MODEL NO.	OCTAVE BAND CENTRE FREQUENCY (Hz)							
		63	125	250	500	1k	2k	4k	8k
#150,240 &300	BCDS-1D	2	3	4	8	14	14	10	8
	BCDS-2D	4	6	7	15	22	22	18	15
#380,480 &610	BCDS-1D	2	3	5	9	14	11	7	6
	BCDS-2D	4	6	10	17	22	18	11	10
	BCDS(P)-1D	4	6	8	14	19	19	16	12
	BCDS(P)-2D	8	11	15	22	31	32	25	21
#760,965 &1220	BCDS-1D	3	4	8	14	13	10	8	5
	BCDS-2D	6	8	14	22	20	15	11	9
	BCDS(P)-1D	4	6	10	18	21	19	15	12
	BCDS(P)-2D	8	11	19	30	34	29	20	15
#1525,1905 &2415	BCDS-1D	4	5	10	13	11	8	7	5
	BCDS-2D	8	9	15	21	17	13	10	8
	BCDS(P)-1D	4	7	12	19	20	19	14	11
	BCDS(P)-2D	8	13	21	31	32	29	20	15

*Test performed in general accordance with AS 1277 - Acoustic Measurement Procedures for ducted silencers

AERODYNAMIC PERFORMANCE

Note: BCDS Model Silencers produce the same pressure loss as equivalent length of straight duct

