DESCRIPTION

Fantech Rectangular Attenuators are available in different models to suit a variety of applications and duct dimensions. They can be made in different widths and heights, and each model number denotes a different percentage open area and length combination.

The rectangular attenuators are available in the following models:

RS Series - Rectangular Attenuators

The RS series (Straight Splitter) is used for general HVAC purposes and suitable for industrial applications.
These attenuators deliver good acoustic attenuation properties across a broad spectrum of sound frequencies while providing higher noise reductions. This range is suitable for dry applications. Refer to the RS..QS series for applications where moisture may be present in the air stream.

RT Series - Rectangular Attenuators

The RT series (Tapered Splitter) is ideal for general HVAC purposes and suitable for industrial applications. These attenuators deliver good acoustic attenuation properties across a broad spectrum of sound frequencies while maintaining low air flow pressure drops through the attenuator. This range is suitable for dry applications. Refer to the RT..QS series for applications where moisture may be present in the air stream.

RT..QS Series - Rectangular Q-Seal Attenuators

The Rectangular Q-Seal attenuator includes the qualities of the RT series attenuator and incorporates an infill system fully wrapped in an impermeable plastic membrane/film.
The RT..QS Series is suitable in medical and clean room applications and any sensitive ventilation systems requiring a wrapped infill material to prevent the possibility of insulation fibre ingress into the airstream. They are also suitable where the insulation medium is directly exposed to weather, grease, liquid or dusts. Attenuators of this model type may also be cleaned periodically by low-pressure steam or pressure washer equipment.

CONSTRUCTION

- Casing and splitters made from Z275 coated galvanized steel.
- Infill from bio-soluble acoustic grade glasswool or mineral wool, encased behind finely perforated galvanized steel. Infill is hygroscopic and incombustible.
- RT and RS Series have a fiberglass membrane between infill and perforated steel layer to minimize fibre egress from the infill into the air stream.
- Q-Seal (QS) variants have infill material fully wrapped in liquid impermeable Melinex® PET Plastic Film.
- Standard construction rated to duct pressures between -500Pa and +1kPa relative to atmosphere.

SELECTION PROCEDURE & PRESSURE DROP CALCULATION

Attenuators with small percentages of free area and longer length will provide the greatest attenuation but also the greatest pressure loss. Certain steps within the attenuator selection process may therefore need to be repeated a number of times in order to determine the best selection within these constraints.

The Fantech Selection Program can be used to quickly create multiple selection options or alternatively the following manual process can be used.

Step 1: Insertion Loss
From the performance data table select an attenuator that provides an insertion loss closest to that of the required insertion loss.

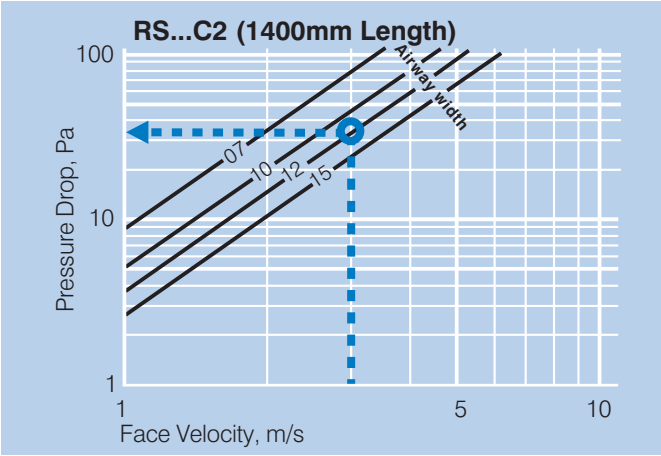
Step 2: Dimensions
Considering the dimensional constraints of the connecting duct work or installation location, select the most suitable set module width for the attenuator chosen in step one and nominate the required height (unrestricted).

Step 3: Face Velocity
Calculate the face velocity of the attenuator selected using the known air volume of the application and chosen width and height:

$$\textit{Face Velocity (m/s)} = \frac{\textit{Air Volume (m3/s)}}{\textit{Width (m)} \times \textit{Height (m)}}$$

Step 4: Pressure Drop Graphs
Locate the pressure drop graph which matches the length of the attenuator selection. Draw a line vertically from the calculated Face Velocity to where it intersects the chosen attenuator model. Draw a line horizontally from this point and where it intersects the vertical axis is the pressure drop for the chosen attenuator.

Example: A RS12C2 attenuator with a calculated face velocity of 3m/s has been selected. The resulting pressure drop is 33Pa.



SECTIONAL SIZING AND JOINING FLANGE INFORMATION

- Flanges 35mm TDF or compatible up to a maximum height or width of 1200mm. Above these sizes 40mm or 50mm steel angle section frames used, supplied undrilled.
- Matching flanges for attaching to accompanying ductwork can also be supplied.
- Rectangular attenuators will typically be made in a single piece up to a maximum of 2250mm in width, length or height. Above this dimension attenuators will be split into multiple sections in the dimension(s) exceeding the 2250mm limit noted.
- As a special request, attenuators may be divided into smaller sized sections than standard to fit through small spaces, before they are reassembled as a single unit on site.

CUSTOMISED ATTENUATOR OPTIONS

The following are available as special options when ordering Fantech rectangular attenuators:

- Different materials of construction such as Stainless Steel Grades 304 and 316.
- Paints / protective coatings such as epoxy paint, Chlorinated Rubber etc.
- Flange material/dimensions profile can be specified e.g. Ductmate, TDF, Plain Steel Angle.
- Access doors for easy cleaning (e.g. in Kitchen Exhaust Applications).

SUGGESTED SPECIFICATION

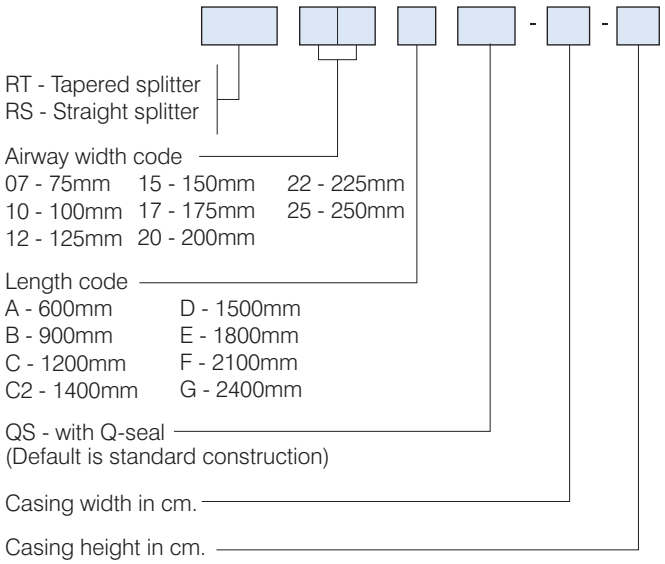
Rectangular attenuators shall be of the RS, RT or RT..QS Series as designed and manufactured by Fantech Pty. Ltd. and shall have the dimensions, acoustic attenuator insertion losses and pressure losses as scheduled. Acoustic Attenuator Insertion Loss data for the attenuators to be derived from tests in accordance to BS4718:1971.

The casing shall be manufactured from forming grade Z275 coated galvanised steel sheet with Pittsburgh corner seams. The infill material shall be either rockwool or fibreglass as specified by the manufacturer. The infill material shall be covered with a membrane to prevent erosion of the fibres, then encased in galvanised perforated sheet metal. Where attenuators are exposed to the weather they shall be of the RT..QS Series where all infill materials shall be lined with an impervious film to prevent the ingress of moisture.

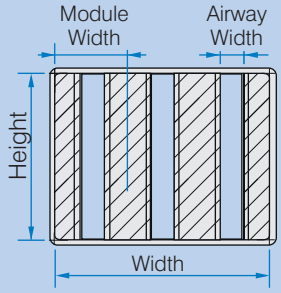
The infill material when tested in accordance with AS1530.3:1989 shall have the following indices:-

Ignitability	0
Spread of flame	0
Heat evolved	0
Smoke developed	0

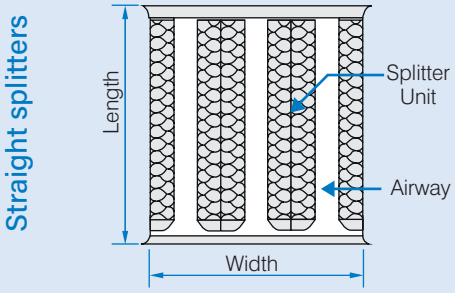
HOW TO ORDER



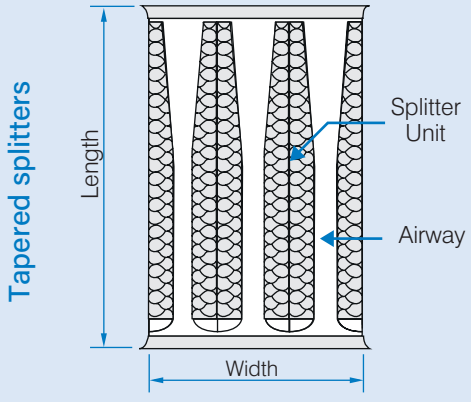
Front view (RS, RT & RT..QS Series)



Top view (RS Series)



Top view (RT & RT..QS Series)



Note: Dimensions will vary according to your selection and be included in the "How To Order" model number.

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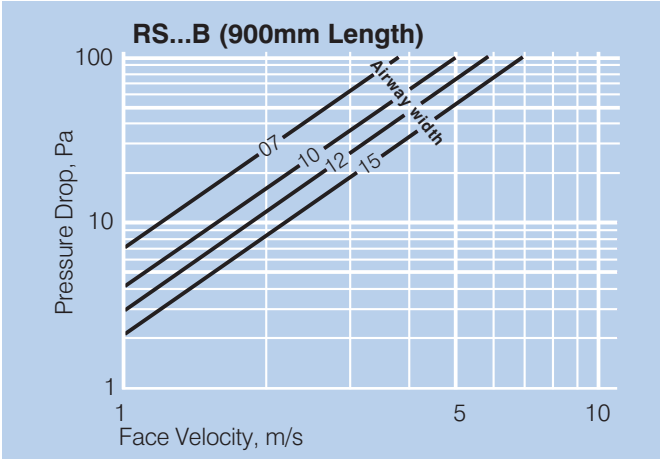
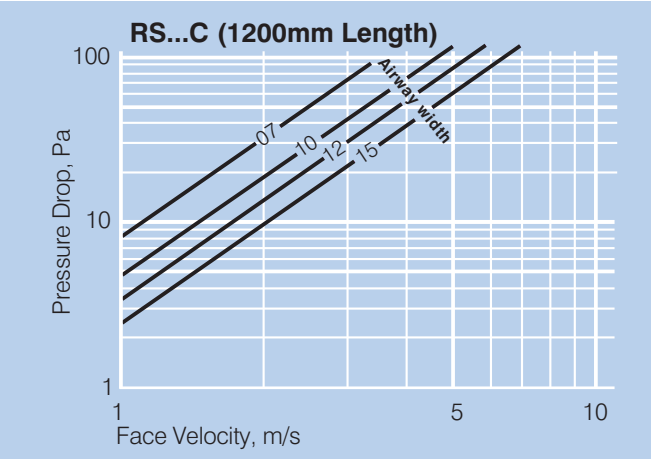
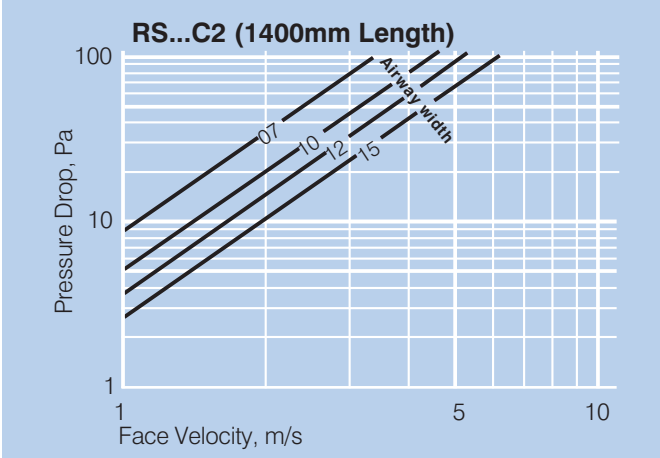
TECHNICAL DATA – RS STRAIGHT SPLITTER

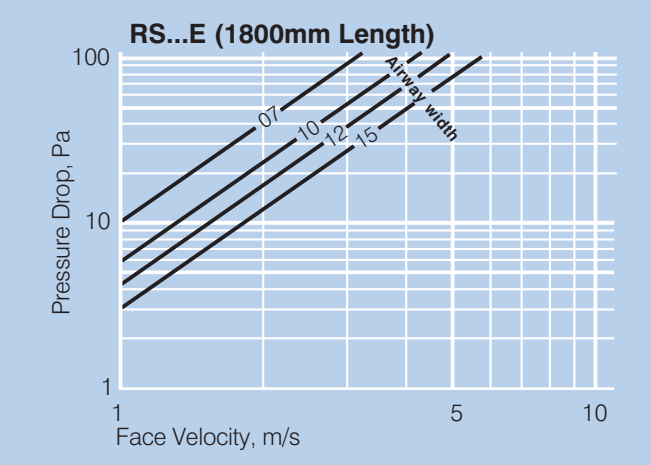
Model No. RS...	Length, mm	Static Insertion Loss, dB, Octave Band Centre Frequency (Hz)								Module Widths, mm.
		63	125	250	500	1k	2k	4k	8k	
07B	**900**	6	12	23	36	45	43	36	28	275, 550, 825, 1100, 1375, 1650, 1925, 2200 **Free Area 27%**
07C	**1200**	8	16	30	47	50	50	47	39	
07C2	**1400**	9	18	33	48	50	50	48	41	
07E	**1800**	10	21	41	50	50	50	50	45	
07F	**2100**	12	25	45	50	50	50	50	50	
07G	**2400**	13	28	48	50	50	50	50	50	
10B	**900**	5	10	19	31	39	35	27	21	300, 600, 900, 1200, 1500, 1800, 2100, 2400 **Free Area 33%**
10C	**1200**	6	13	26	41	48	46	37	26	
10C2	**1400**	7	15	29	45	49	49	41	29	
10E	**1800**	9	18	35	49	50	50	48	36	
10F	**2100**	10	20	40	50	50	50	50	37	
10G	**2400**	11	23	44	50	50	50	50	39	
12B	**900**	4	9	17	28	35	31	22	17	325, 650, 975, 1300,1625, 1950, 2275 **Free Area 38%**
12C	**1200**	5	11	22	37	43	40	30	21	
12C2	**1400**	6	12	25	41	46	43	33	23	
12E	**1800**	7	15	31	47	50	48	40	28	
12F	**2100**	8	17	35	50	50	50	43	30	
12G	**2400**	9	20	39	50	50	50	45	32	
15B	**900**	4	8	15	25	31	28	18	13	350, 700, 1050, 1400, 1750, 2100 **Free Area 43%**
15C	**1200**	5	9	19	33	38	34	23	16	
15C2	**1400**	5	10	22	37	42	37	25	17	
15E	**1800**	6	13	27	45	49	46	32	21	
15F	**2100**	7	15	31	45	50	50	37	24	
15G	**2400**	8	18	35	50	50	50	41	26	

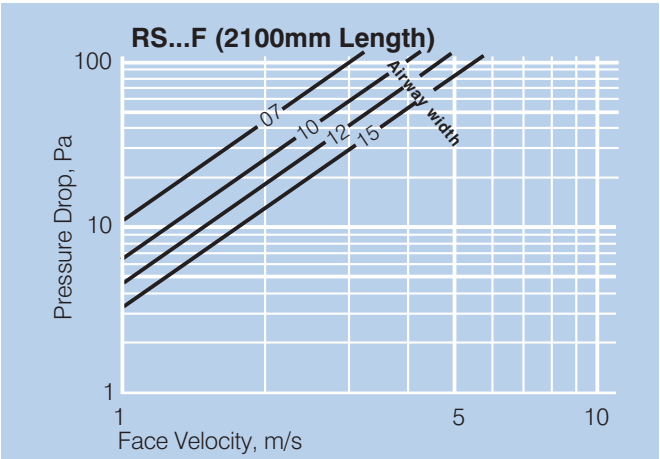
PRESSURE LOSS GRAPHS – RS STRAIGHT SPLITTER

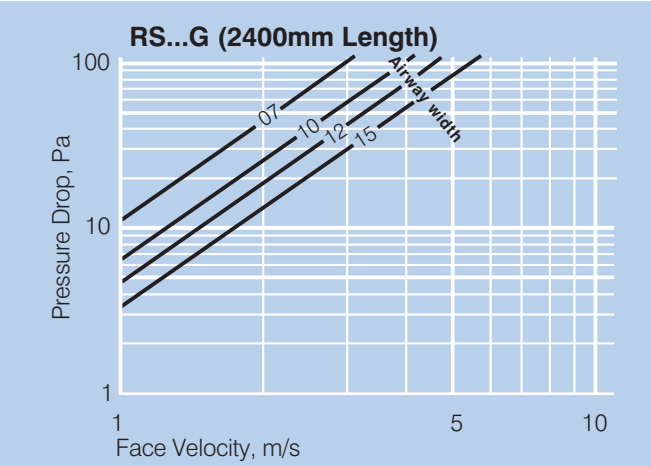












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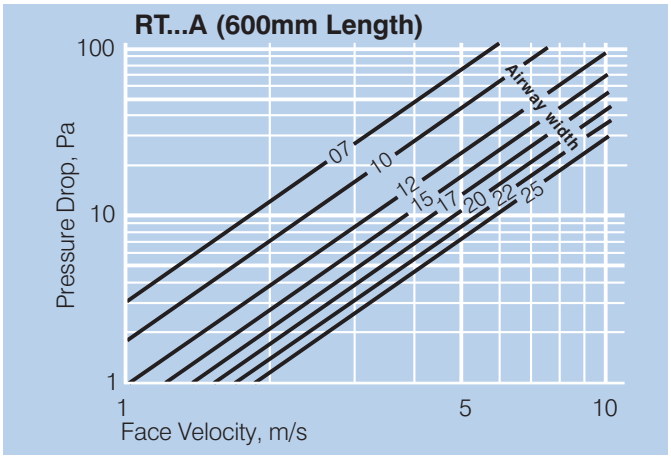
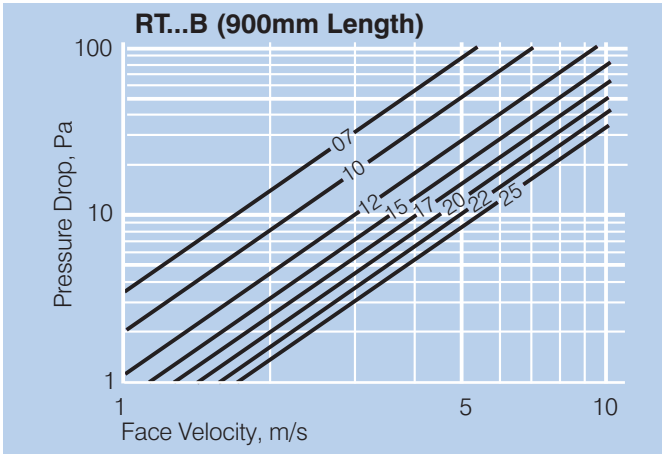
TECHNICAL DATA – RT TAPERED SPLITTER

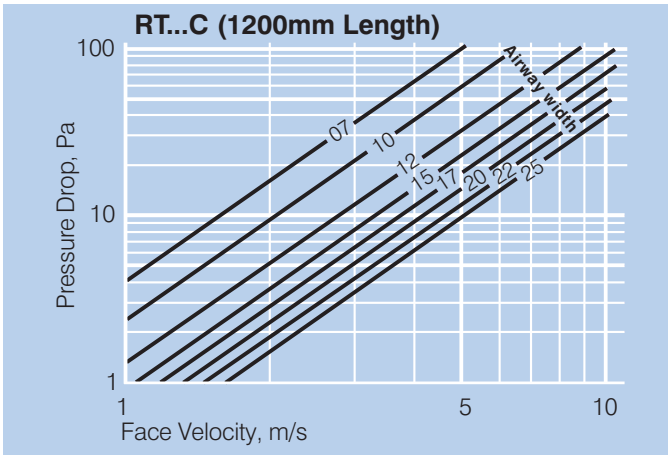
Model No. RT...	Length, mm	Static Insertion Loss, dB, Octave Band Centre Frequency (Hz)								Module Widths, mm.
		63	125	250	500	1k	2k	4k	8k	
07A	600	4	6	13	23	31	30	19	17	275*, 550, 825, 1100, 1375, 1650, 1925, 2200 **Free Area 27%**
07B	900	5	10	19	33	39	34	27	22	
07C	1200	6	13	24	40	43	38	33	26	
07C2	1400	7	15	27	44	46	41	34	27	
07E	1800	8	19	34	50	49	45	37	32	
07F	2100	10	23	40	50	49	46	43	41	
07G	2400	11	25	44	50	50	48	45	43	
10A	600	3	5	11	18	28	24	15	13	300*, 600, 900, 1200, 1500, 1800, 2100, 2400 **Free Area 33%**
10B	900	4	8	16	28	35	29	21	16	
10C	1200	6	11	21	39	42	35	27	20	
10C2	1400	6	12	24	42	43	38	30	21	
10E	1800	7	16	30	49	47	43	35	25	
10F	2100	7	18	35	50	48	45	42	30	
10G	2400	8	20	39	50	50	50	44	32	
12A	600	2	5	10	13	24	23	11	9	325*, 650, 975, 1300, 1625, 1950, 2275 **Free Area 38%**
12B	900	4	8	15	27	33	26	18	14	
12C	1200	5	10	20	34	38	31	22	16	
12C2	1400	5	11	23	39	41	34	25	17	
12E	1800	6	14	29	45	45	40	31	20	
12F	2100	7	16	32	50	47	43	38	23	
12G	2400	8	19	38	50	50	46	39	26	
15A	600	2	4	8	11	22	16	10	8	350*, 700, 1050, 1400, 1750, 2100 **Free Area 43%**
15B	900	3	6	13	21	27	21	14	11	
15C	1200	4	8	18	31	34	27	18	13	
15C2	1400	4	9	20	34	37	30	19	14	
15E	1800	5	14	27	43	44	35	26	17	
15F	2100	6	15	29	47	46	41	33	19	
15G	2400	6	17	34	49	50	43	34	21	
17A	600	2	3	8	10	20	13	9	7	375*, 750, 1125, 1500, 1875, 2250 **Free Area 47%**
17B	900	3	6	13	21	26	19	12	9	
17C	1200	4	8	17	27	31	23	14	11	
17C2	1400	4	9	19	31	34	26	16	12	
17E	1800	5	12	25	38	40	32	21	14	
17F	2100	5	14	28	44	44	37	24	14	
17G	2400	6	16	33	46	50	39	26	16	
20A	600	2	3	7	10	18	10	8	6	400*, 800, 1200, 1600, 2000, 2400 **Free Area 50%**
20B	900	2	5	11	18	20	14	9	6	
20C	1200	3	8	15	23	28	19	12	9	
20C2	1400	4	9	17	26	31	21	13	9	
20E	1800	4	11	23	34	38	26	16	10	
20F	2100	5	13	27	40	44	31	16	10	
20G	2400	5	14	29	43	48	33	19	12	
22A	600	1	3	7	9	14	9	7	5	425*, 850, 1275, 1700, 2125 **Free Area 53%**
22B	900	2	4	10	16	18	12	8	7	
22C	1200	3	7	13	19	25	17	10	7	
22C2	1400	3	8	15	23	28	19	10	7	
22E	1800	4	9	21	30	34	22	11	7	
22F	2100	4	12	25	36	40	26	14	8	
22G	2400	5	12	27	40	42	30	16	10	
25A	600	1	2	6	8	11	8	5	5	450*, 900, 1350, 1800, 2250 **Free Area 56%**
25B	900	1	4	9	14	16	11	6	6	
25C	1200	2	6	12	16	22	15	8	6	
25C2	1400	3	7	14	20	25	17	9	6	
25E	1800	3	8	19	25	30	18	9	7	
25F	2100	4	10	23	31	36	24	11	7	
25G	2400	4	11	25	36	38	28	13	9	

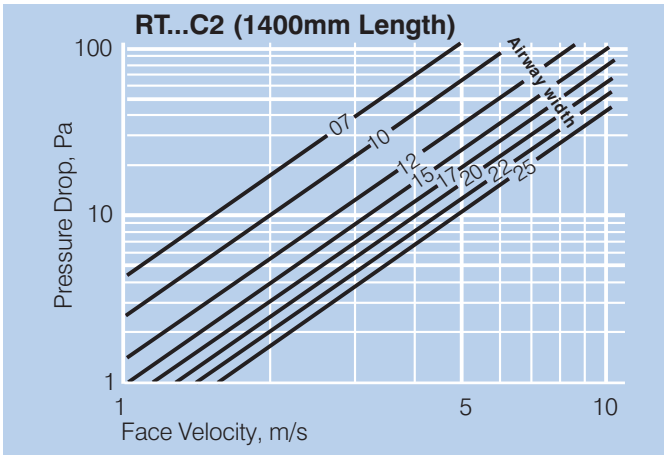
* Single module width,mm

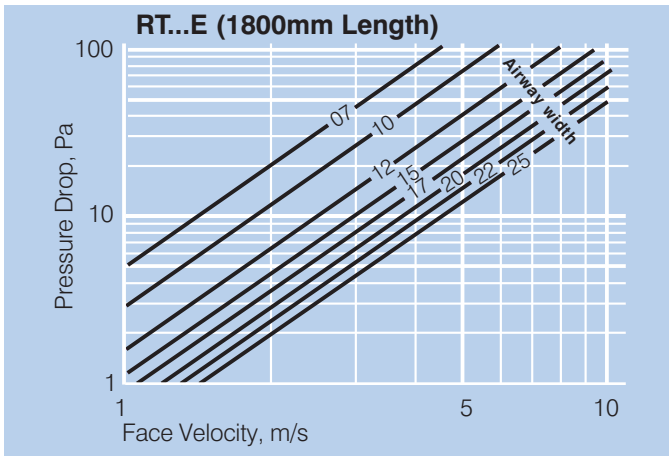
PRESSURE LOSS GRAPHS – RT TAPERED SPLITTER

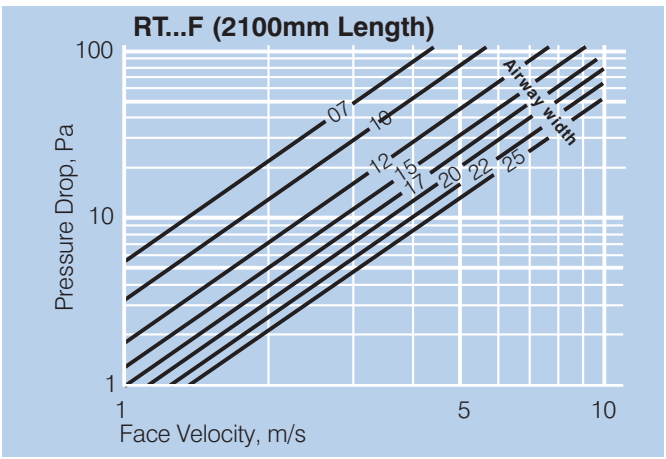


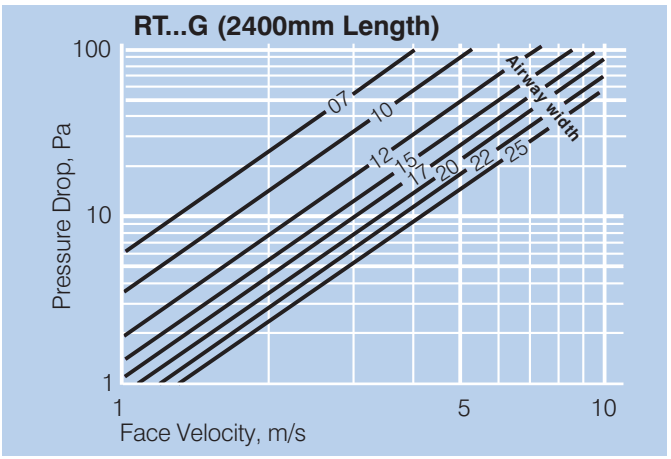












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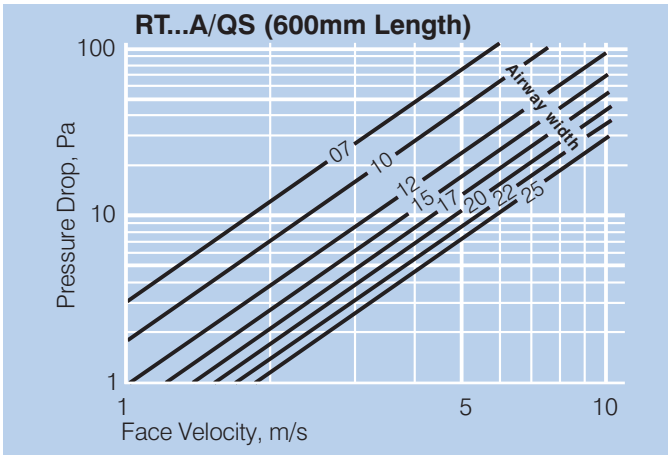
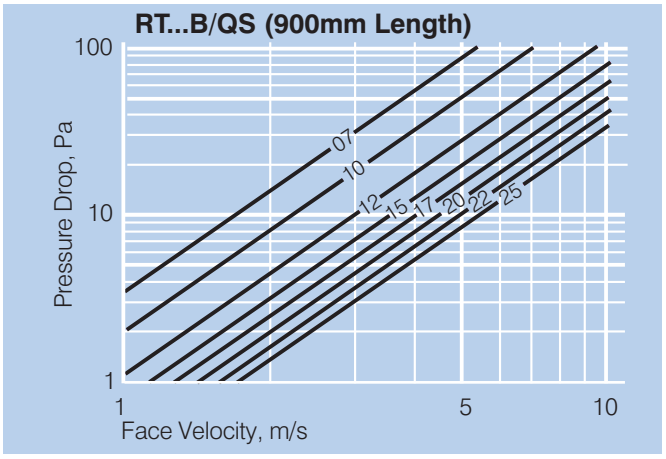
TECHNICAL DATA – RT - Q-Seal Series

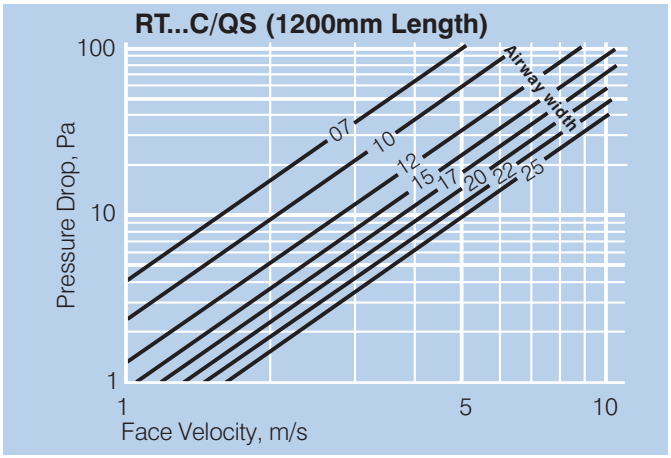
Model No. RT...QS	Length mm	Static Insertion Loss, dB Octave Band Centre Frequency (Hz) 63	125	250	500	1k	2k	4k	8k	Module widths, mm
07A	600	3	5	10	18	20	18	12	9	275*,550,
07B	900	4	7	14	25	28	25	17	13	825,1100,
07C	1200	5	10	20	32	38	32	22	16	1375, 1650,
07C2	1400	6	12	24	37	45	36	25	19	1925, 2200,
07E	1800	7	17	31	44	50	42	30	23	
07F	2100	9	19	34	46	51	44	33	25	**Free Area**
07G	2400	10	22	38	49	52	47	35	27	**27%**
10A	600	3	5	9	15	17	14	10	8	300*, 600,
10B	900	4	7	13	22	24	20	14	11	900,1200,
10C	1200	5	9	17	28	32	25	17	13	1500, 1800,
10C2	1400	6	11	20	32	37	28	20	14	2100, 2400,
10E	1800	7	15	26	39	43	35	24	17	
10F	2100	8	17	29	42	46	38	26	19	**Free Area**
10G	2400	8	19	33	46	48	42	29	20	**33%**
12A	600	3	4	8	14	14	12	8	7	325*, 650,
12B	900	4	6	11	20	21	17	11	10	975, 1300,
12C	1200	4	8	15	26	28	22	15	11	1625, 1950,
12C2	1400	5	9	17	30	33	25	17	12	2275
12E	1800	6	12	22	36	39	32	21	14	
12F	2100	7	13	26	40	43	35	23	16	**Free Area**
12G	2400	8	15	29	43	46	39	25	18	**38%**
15A	600	2	3	7	13	13	10	7	6	350, 700,
15B	900	3	5	10	18	19	14	10	9	1050, 1400,
15C	1200	3	6	13	24	25	19	13	10	1750, 2100,
15C2	1400	3	7	16	28	29	22	15	10	
15E	1800	4	10	21	34	35	28	18	12	
15F	2100	5	12	24	38	39	31	19	14	**Free Area**
15G	2400	6	13	27	41	42	34	21	16	**43%**
17A	600	2	3	6	11	12	9	6	5	375*, 750,
17B	900	3	4	9	16	17	12	8	7	1125, 1500,
17C	1200	3	6	12	22	22	16	10	7	1875, 2250,
17C2	1400	3	7	15	25	26	19	11	8	
17E	1800	3	9	19	32	33	24	14	9	
17F	2100	4	10	21	35	36	26	16	10	**Free Area**
17G	2400	4	11	24	39	40	29	18	11	**47%**
20A	600	1	3	6	10	10	7	5	4	400*, 800,
20B	900	2	4	9	15	15	10	7	6	1200, 1600,
20C	1200	2	5	12	20	19	14	8	6	2000, 2400,
20C2	1400	2	6	14	24	22	17	8	7	
20E	1800	3	8	18	30	28	21	11	8	
20F	2100	3	9	20	34	32	23	13	9	**Free Area**
20G	2400	3	10	22	37	36	25	15	10	**50%**
22A	600	1	2	5	9	9	6	4	4	425*, 850,
22B	900	2	3	7	13	13	8	6	5	1275, 1700,
22C	1200	2	4	10	18	17	12	7	5	2125
22C2	1400	2	5	11	21	20	14	7	5	
22E	1800	2	6	15	28	26	18	9	6	
22F	2100	2	7	18	31	30	20	11	7	**Free Area**
22G	2400	3	10	22	37	36	25	15	10	**53%**
25A	600	1	2	5	8	8	5	3	3	450*, 900,
25B	900	1	3	7	12	11	7	5	4	1350, 1800,
25C	1200	1	4	9	16	15	10	5	4	2250
25C2	1400	1	5	10	19	17	12	6	4	
25E	1800	2	5	14	26	23	16	8	5	
25F	2100	2	6	16	29	27	18	9	6	**Free Area**
25G	2400	2	7	18	33	31	20	11	7	**56%**

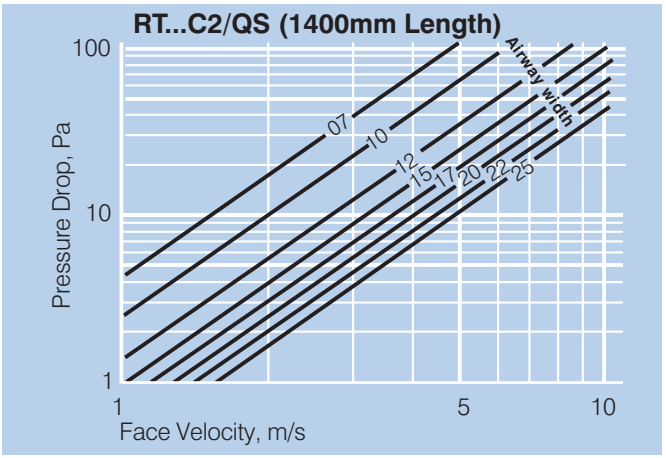
*** Single module width,mm**

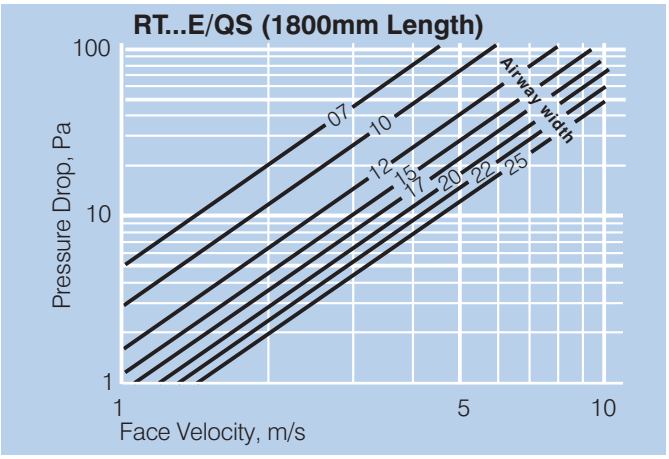
PRESSURE LOSS GRAPHS – RT - Q-Seal Series

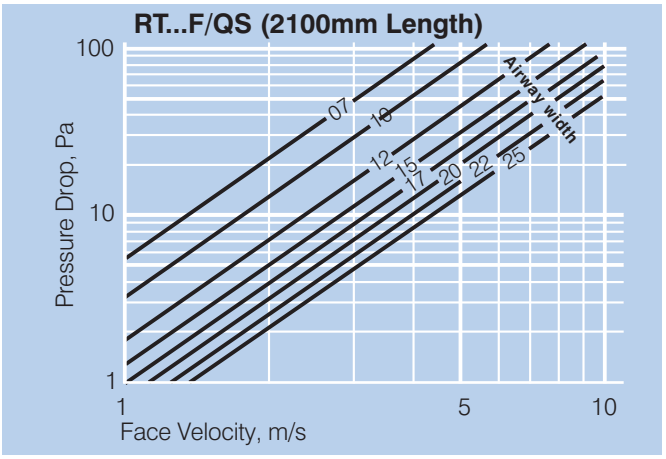


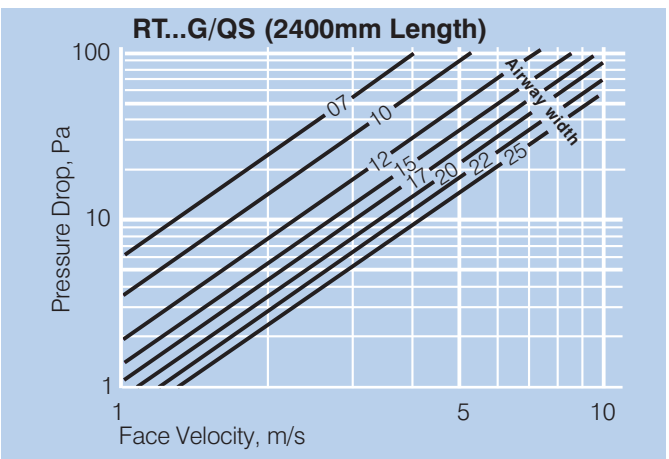












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HOW TO DETERMINE WEIGHT

Attenuator weights for individual models are available on the Fantech Selection Program or alternatively the following manual process can be used to attain the approximate maximum weight of each attenuator combination.

Divide the chosen attenuator width by the chosen module width to get the quantity of modules within the attenuator. Round up to the length and height row closest to the attenuator selected, and then the column with corresponding module quantity will provide the maximum weight of the selection. Interpolate for intermediate sizes as required.

RT TAPERED & RS STRAIGHT SPLITTER SERIES - WEIGHTS, KG*

Length, mm	Height, mm	Module Quantity							
		1	2	3	4	5	6	7	8
600	600	27	47	64	82	99	117	135	152
	1200	49	76	103	130	157	184	210	237
	1800	70	106	142	178	214	250	286	322
	2400	90	136	181	226	271	317	362	407
1200	600	48	84	115	147	177	209	242	272
	1200	88	136	184	233	281	329	376	424
	1800	125	190	254	319	383	448	512	576
	2400	161	243	324	405	485	567	648	729
1800	600	72	125	170	217	262	310	358	403
	1200	130	201	273	345	416	488	557	628
	1800	186	281	376	472	567	663	758	853
	2400	239	360	480	599	718	840	959	1079
2400	600	91	158	215	276	333	393	454	511
	1200	165	255	346	437	528	618	706	796
	1800	235	356	477	598	719	840	961	1082
	2400	302	457	608	759	911	1065	1216	1368

RT..Q-SEAL SERIES - WEIGHTS, KG*

Length, mm	Height, mm	Module Quantity							
		1	2	3	4	5	6	7	8
600	600	24	42	57	73	88	104	120	135
	1200	44	68	92	116	140	164	187	211
	1800	62	94	126	158	190	223	255	287
	2400	80	121	161	201	241	282	322	362
1200	600	43	75	102	131	158	186	215	242
	1200	78	121	164	207	250	293	335	378
	1800	112	169	226	284	341	398	456	513
	2400	143	217	288	360	432	505	577	648
1800	600	64	111	151	193	233	276	318	358
	1200	116	179	243	307	370	434	495	559
	1800	165	250	335	420	505	590	675	759
	2400	212	321	427	533	639	748	854	960
2400	600	81	141	191	245	296	350	404	455
	1200	147	227	308	389	469	550	628	709
	1800	209	317	425	532	640	748	855	963
	2400	269	407	541	676	810	948	1083	1217

* Weights in the above tables are approximate. See the Fantech Selection Program for individual models.