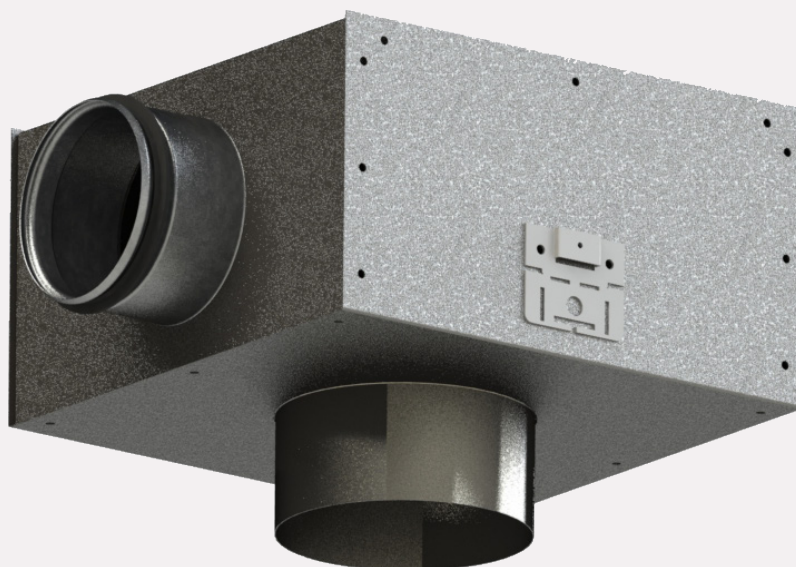


# Halton TRH

Plenum for diffusers



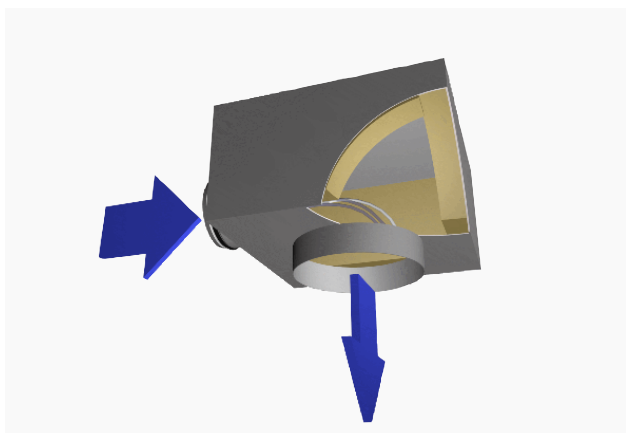
- Plenum ensuring proper function of supply air ceiling diffuser and connecting to ductwork
- Flexibility for levelling diffuser elevation
- Detachable measurement and airflow rate adjustment module
- Effective sound attenuation
- Access for ductwork cleaning

## Material

PART	MATERIAL	NOTE
Casing	Galvanised steel	
Collar	Galvanised steel	
Attenuation material	Polyester fibre	Alternatively mineral wool
Spigot with gasket	Galvanised steel	Gasket rubber compound
Measurement and adjustment module MSM/MEM	Body;Aluminium Plate;Galvanised steel Brackets;Galvanised steel Plastic parts;Polypropylene (PP) Spindle;Stainless steel	

## Function

- Halton TRH balancing plenum equalizes the supply airflow by reducing the flow velocity
- Air is spread evenly into the diffuser ensuring proper function
- A range of diffusers can be connected to the distribution ductwork using Halton TRH plenum, which improves their functional characteristics considerably
- The balancing plenum also attenuates duct noise

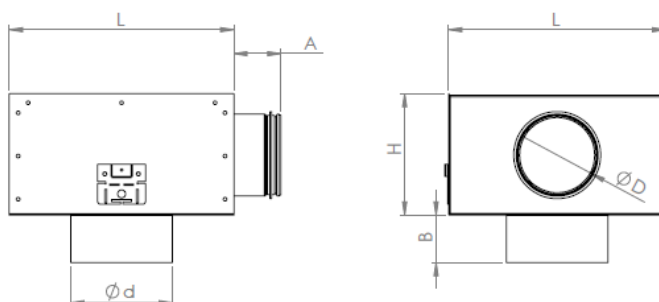


## Accessories

ACCESSORY	CODE	DESCRIPTION
Airflow measurement and adjustment unit	MSM	Adjustment and measurement module for supply airflow rate
Airflow adjustment unit	MEM	Adjustment module for exhaust airflow rate
Sound attenuation material	AT	Internal sound attenuation material of polyester fiber or mineral wool
Sides of sound attenuation	IN	3 sides or 5 sides

## Dimensions

NS	A	B	D	d	H	L
100/125	63	56	99	127	152	281
100/160	63	56	99	162	152	281
125/125	63	56	124	127	180	431
125/160	63	56	124	162	180	431
125/200	63	56	124	202	180	431
125/250	63	56	124	252	180	431
160/160	63	56	159	162	212	431
160/200	63	56	159	202	212	431
160/250	63	56	159	252	212	431
200/200	63	56	199	202	264	597
200/250	63	56	199	252	264	597
200/315	63	56	199	317	264	597
200/400	63	56	199	402	264	597
250/250	63	56	249	252	316	597
250/315	63	56	249	317	316	597
250/400	63	56	249	402	316	597
315/315	63	56	314	317	381	597
315/400	63	56	314	402	381	597



## Installation

The plenum is connected to the ductwork by use of spigot. Adjustment for the desired airflow rate can be performed after installation.

The recommended safety distance before Halton TRH plenum is at least 3\*D.

## Adjustment

The supply flow rate is determined by using the measurement and adjustment module MSM.

The tubes and control spindle are passed through the diffuser. Measure the differential pressure with a manometer. The flow rate is calculated using the formula below.

$$q_v = k \times \sqrt{\Delta p_m}$$

## Servicing

Open or detach the diffuser. Detach the measurement and adjustment module by pulling gently from the casing (not from the control spindle or measurement tubes). Wipe the parts with a damp cloth, instead of immersing in water.

The measurement and adjustment module is remounted by pushing the body until it meets the stopper.

## Technical specification

The balancing plenum shall be made of galvanised steel and shall have a robust and airtight construction. The airflow rate measurement and adjustment module shall be available for supply application. The measurement and adjustment module shall be adjustable without opening the device.

The diameter of installation hole in ceiling tile shall be at least 5 mm larger than the diffuser connection.

Adjust the airflow rate by rotating the control spindle until the desired setting is achieved. If needed lock the damper position with a screw. Replace the tubes and spindle into the plenum.

The sound attenuation material within the plenum can also be removed, to enable cleaning of the inner side of the plenum. Close or replace the diffuser after cleaning.

The balancing plenum shall have a spigot with integral gasket for airtight duct connection. The balancing plenum shall attenuate duct noise. The sound attenuation material shall be made of polyester fibre with a washable surface or mineral wool.

**Product code****TRH/D-E**

- D = Diameter of duct connection  
100, 125, 160, 200, 250, 315, 400, 500
- E = Diameter of diffuser connection  
100, 125, 160, 200, 250, 315, 400, 500

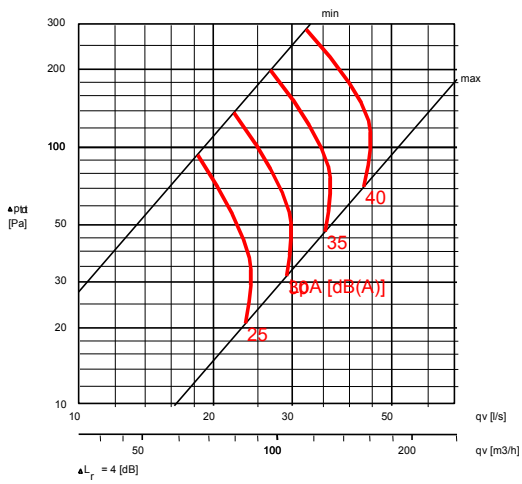
**Other options and accessories**

- AT = Sound attenuation material  
NA No attenuation material  
D Polyester fiber  
W Mineral wool
- IN = Sides of sound attenuation  
NA No measurement/adjustment module  
3 Sound attenuation on 3 sides  
5 Sound attenuation on 5 sides
- OM = Measurement/adjustment module  
NA No measurement/adjustment module  
YS MSM installed (supply)  
YE MEM installed (exhaust)
- ZT = Tailored product  
N No

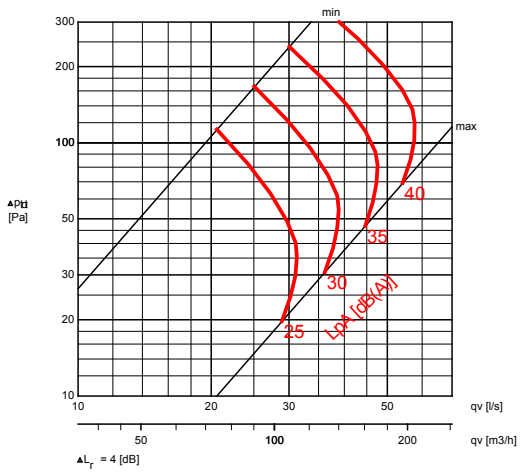
**Code example**

TRH/160-250, AT=D, IN=3, OM=YS, ZT=N

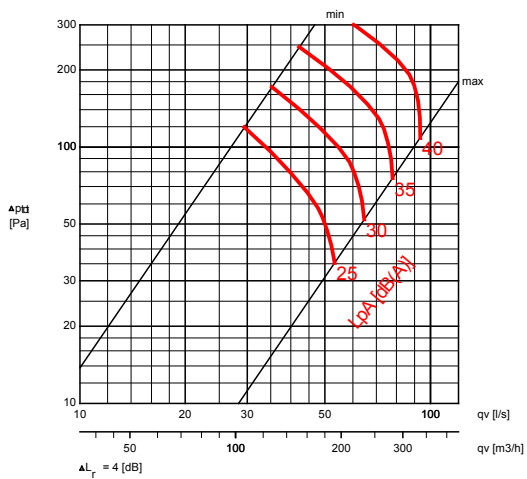
**Pressure drop and sound data**  
**TRH-100-100**



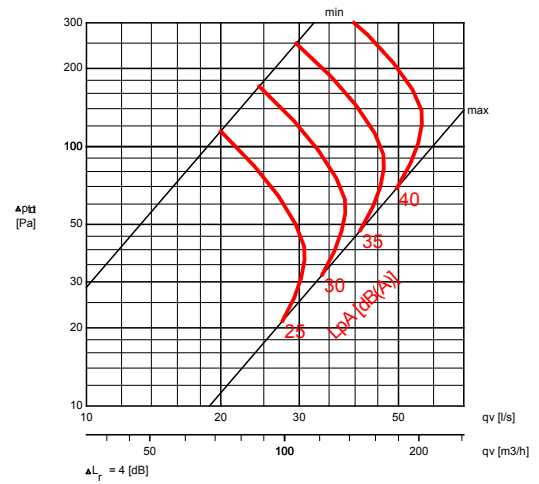
**TRH-100-160**



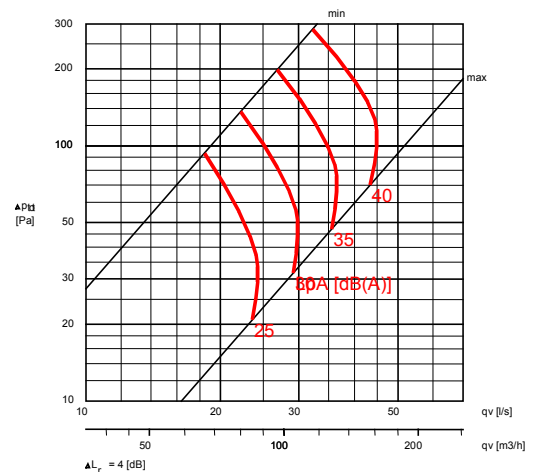
**TRH-125-160**



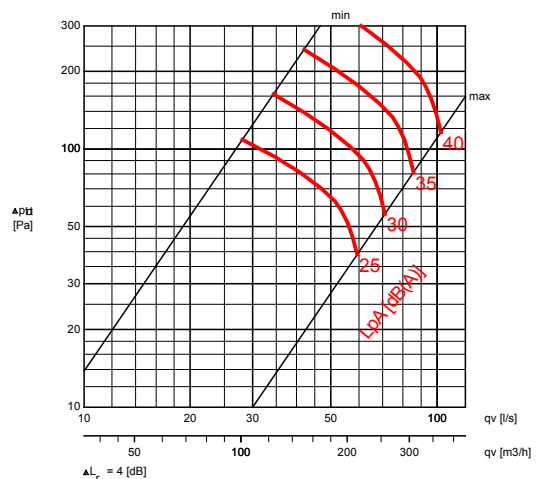
**TRH-100-125**



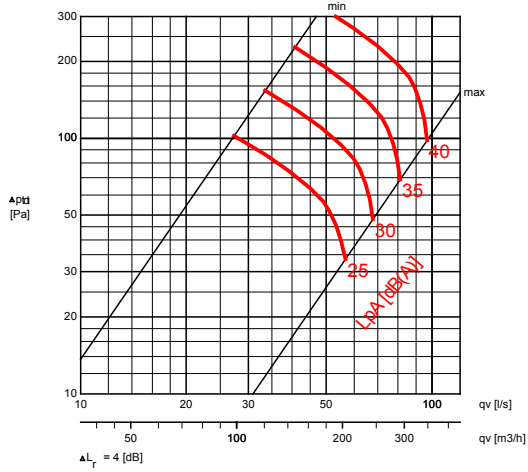
**TRH-100-100**



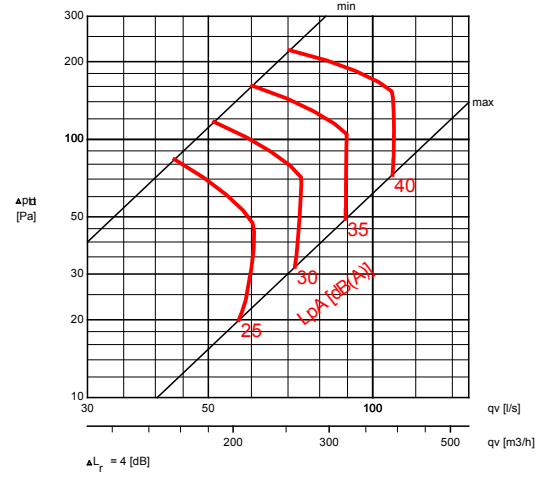
**TRH-125-200**



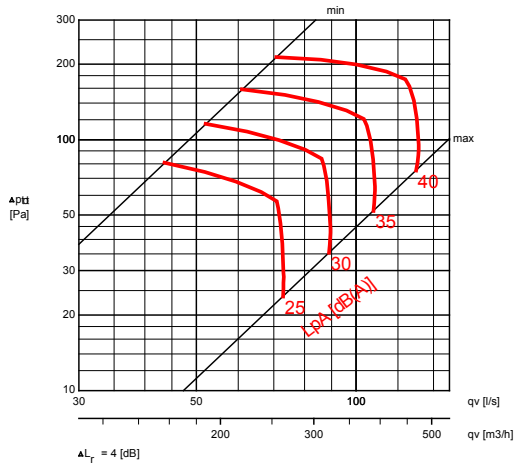
### TRH-125-250



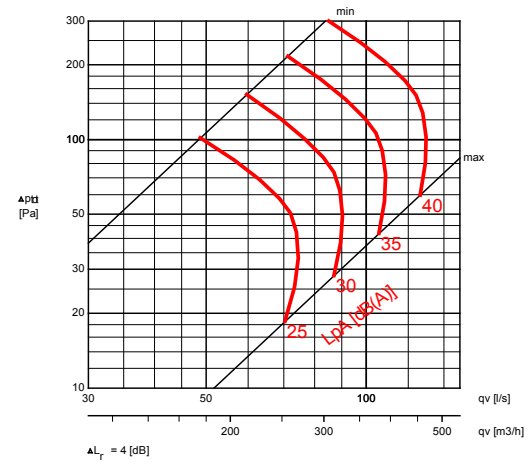
### TRH-160-160



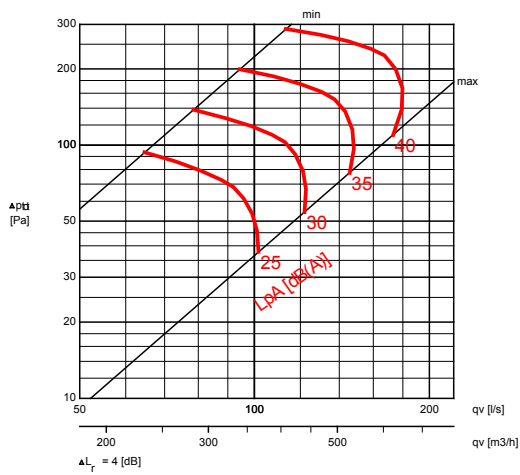
### TRH-160-200



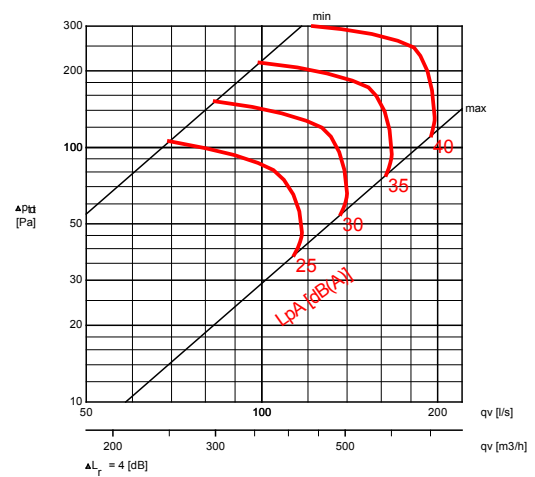
### TRH-160-250



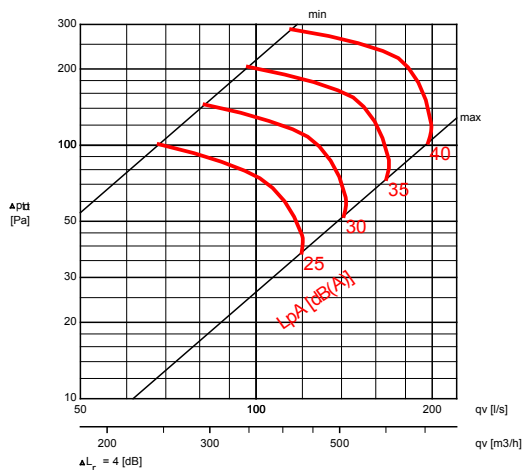
### TRH-200-200



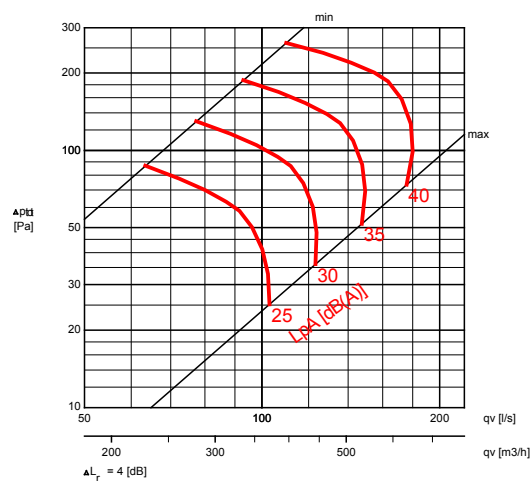
### TRH-200-250



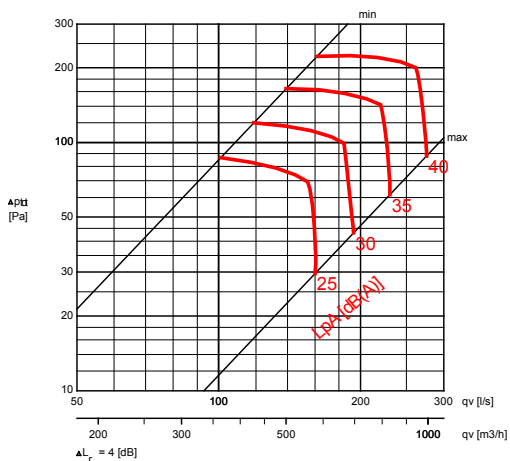
### TRH-200-315



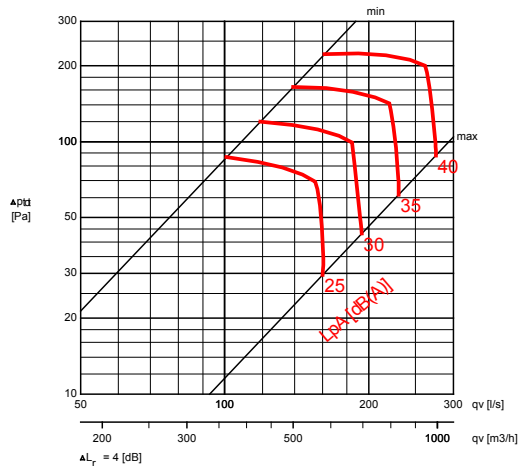
### TRH-200-400



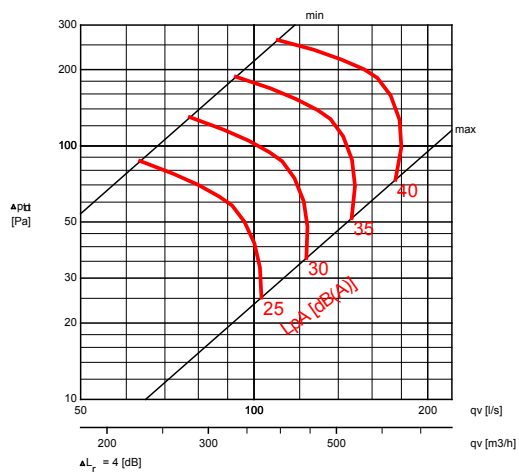
### TRH-250-315



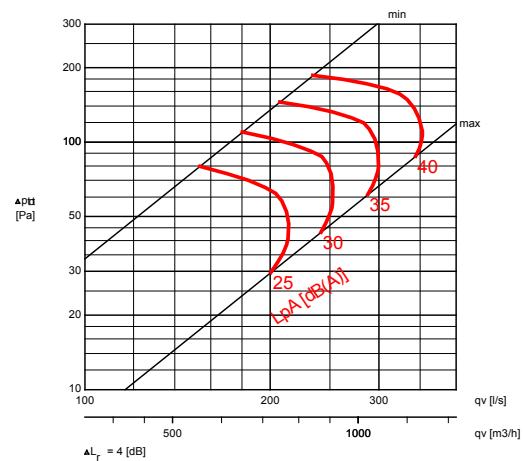
### TRH-250-400



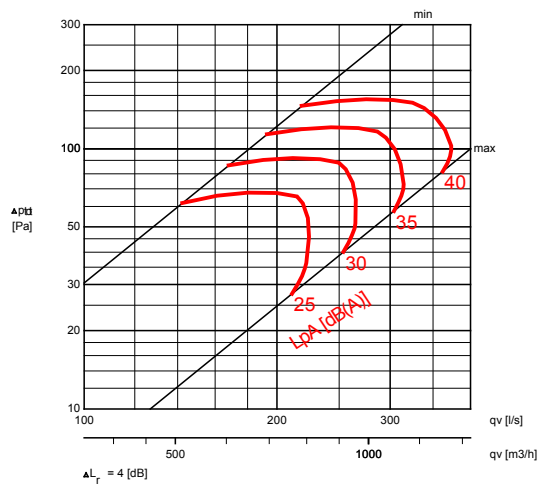
### TRH-200-400



### TRH-315-315



# TRH-315-400



## Sound attenuation

	ΔL([dB])							
	f[Hz]							
	63	125	250	500	1000	2000	4000	8000
Halton TRH-100-100	21	15	13	16	17	12	13	13
Halton TRH-100-125	21	15	13	16	17	12	13	13
Halton TRH-100-160	21	15	13	16	17	12	13	13
Halton TRH-125-125	17	13	13	14	9	9	12	11
Halton TRH-125-160	17	13	13	14	9	9	12	11
Halton TRH-125-200	17	13	13	14	9	9	12	11
Halton TRH-125-250	17	13	13	14	9	9	12	11
Halton TRH-160-160	18	11	11	11	11	12	12	12
Halton TRH-160-200	18	11	11	11	11	12	12	12
Halton TRH-160-250	18	11	11	11	11	12	12	12
Halton TRH-200-200	15	9	10	14	7	9	10	11
Halton TRH-200-250	15	9	10	14	7	9	10	11
Halton TRH-200-315	15	9	10	14	7	9	10	11
Halton TRH-200-400	15	9	10	14	7	9	10	11
Halton TRH-250-250	12	7	11	13	9	10	10	11
Halton TRH-250-315	12	7	11	13	9	10	10	11
Halton TRH-250-400	12	7	11	13	9	10	10	11
Halton TRH-315-400	3	1	12	18	13	13	13	14



## Sound level data

		Qv	dPst	dPt	Lw63	Lw125	Lw250	Lw500	Lw1k	Lw2k	Lw4k	Lw8k	LpA	NR	NC	
		(l/s)	(Pa)	(Pa)	63	125	250	500	1000	2000	4000	8000	[dB(A)]			
		(m3/h)														
Halton TRH 100-100	max	18	65	91	94	39	37	34	26	18	14	16	12	25	19	16
		22	79	131	136	44	42	38	31	24	20	22	20	30	23	21
		27	97	192	199	49	47	42	36	29	25	28	27	35	30	27
		33	119	280	291	54	52	46	41	35	31	34	35	40	38	34
	min	23	83	15	20	27	38	34	25	16	6	4	16	25	20	17
		29	104	23	31	35	43	39	31	23	14	10	18	30	24	22
		36	130	36	49	43	48	44	38	30	22	17	19	35	30	28
		44	158	52	71	49	52	48	43	36	29	22	20	40	35	34
Halton TRH 100-125	max	20	72	114	118	41	34	33	25	17	18	21	20	25	23	20
		24	86	160	166	43	38	36	29	22	22	25	26	30	29	26
		30	108	243	252	46	44	41	35	28	28	31	33	35	36	32
		35	126	345	357	48	48	45	39	33	33	35	39	40	42	38
	min	28	101	14	22	31	38	34	26	16	8	10	18	25	22	19
		34	122	22	33	36	43	40	32	23	16	15	19	30	26	23
		41	148	31	47	40	46	44	37	28	22	18	20	35	30	28
		49	176	45	68	44	50	49	42	34	29	22	20	40	35	33
Halton TRH 100-160	max	20	72	105	109	46	30	31	22	17	18	21	20	25	23	20
		25	90	160	166	47	34	36	27	22	23	26	27	30	30	27
		31	112	240	249	48	39	41	33	28	29	32	34	35	37	34
		36	130	335	348	49	43	45	37	33	34	37	41	40	43	40
	min	29	104	11	19	46	35	34	25	14	3	6	18	25	22	18
		36	130	18	31	47	39	40	32	22	11	13	19	30	25	23
		44	158	26	45	48	43	44	37	28	20	18	20	35	30	28
		55	198	42	71	48	46	49	43	36	30	24	20	40	36	34
Halton TRH 125-125	max	25	90	91	93	40	34	33	26	20	17	14	14	25	18	16
		31	112	138	142	46	40	37	31	25	22	20	20	30	24	21
		38	137	195	201	52	46	41	36	30	27	26	26	35	29	26
		46	166	296	304	58	52	45	41	35	32	32	32	40	35	32
	min	38	137	18	24	38	35	34	26	16	9	8	19	25	23	19
		48	173	30	39	45	40	39	32	23	16	13	20	30	25	22
		58	209	45	58	51	45	43	37	29	22	17	21	35	29	28
		72	259	68	89	56	49	47	43	35	29	21	21	40	35	34
Halton TRH 125-160	max	29	104	112	115	40	34	31	24	20	20	19	16	25	20	18
		36	130	171	176	45	41	36	29	25	25	25	24	30	27	24
		43	155	244	251	49	46	40	34	30	30	31	30	35	33	30
		51	184	352	362	54	52	45	38	35	34	36	37	40	40	36
	min	53	191	24	35	38	37	33	26	18	11	5	17	25	21	17
		65	234	36	53	44	43	39	32	24	18	12	19	30	24	22
		79	284	52	77	48	47	43	37	30	25	19	20	35	30	27
		93	335	72	106	53	52	48	41	35	31	25	21	40	34	32
Halton TRH 125-200	max	28	101	105	108	42	30	30	22	21	22	20	17	25	21	19
		34	122	155	160	45	36	34	26	25	26	25	24	30	27	24
		43	155	244	251	47	43	39	32	31	32	32	32	35	35	32
		51	184	352	362	50	49	43	36	35	36	37	39	40	41	38
	min	58	209	24	37	32	39	32	25	19	15	5	14	25	18	15
		72	259	36	57	39	44	38	31	25	22	14	18	30	24	21
		86	310	52	81	44	48	43	36	30	28	21	21	35	29	26
		103	371	75	117	50	53	47	40	35	34	29	24	40	34	32
Halton TRH 125-250	max	27	97	98	101	43	23	30	20	21	23	20	19	25	22	19
		34	122	153	158	44	31	35	26	26	28	27	27	30	30	26
		41	148	222	229	45	37	39	30	30	32	32	33	35	36	33
		50	180	325	335	45	43	43	35	34	36	38	40	40	42	39
	min	56	202	21	33	32	36	34	26	19	16	5	15	25	19	16
		68	245	31	49	37	42	39	31	25	23	14	18	30	25	22
		82	295	44	71	41	47	44	36	30	29	22	21	35	30	28
		96	346	59	96	45	52	48	40	35	34	29	23	40	34	32

LpA values presented with room attenuation 4 dB (red 10m<sup>2</sup> - sab). When using room attenuation 8 dB (red 25m<sup>2</sup> - sab): LpA - 4dB.  
NR/NC noise criteria

## Sound level data

		Qv	dPst	dPt	Lw63	Lw125	Lw250	Lw500	Lw1k	Lw2k	Lw4k	Lw8k	LpA	NR	NC	
		(l/s)	(m3/h)	(Pa)	(Pa)	63	125	250	500	1000	2000	4000	[dB(A)]			
Halton TRH 160-160	max	43	155	80	83	41	35	29	23	19	21	22	13	25	23	21
		51	184	110	114	44	39	33	28	24	24	28	20	30	29	26
		60	216	155	160	48	44	38	32	28	28	34	27	35	35	32
	min	71	256	219	226	51	48	43	38	34	33	40	35	40	41	38
		56	202	14	19	50	36	32	24	16	6	6	17	25	20	17
		71	256	24	31	53	41	37	30	23	14	12	19	30	23	20
		90	324	38	50	56	47	43	37	30	22	18	21	35	29	27
109	392	55	73	58	51	47	42	36	29	23	22	40	34	33		
Halton TRH 160-200	max	43	155	76	79	43	33	27	18	16	22	23	12	25	24	22
		53	191	113	117	44	38	32	24	22	27	30	22	30	31	29
		60	216	148	153	45	41	35	28	26	30	35	28	35	36	34
	min	71	256	209	216	46	44	40	33	30	33	41	36	40	42	40
		71	256	16	23	43	37	33	26	17	8	6	16	25	20	16
		90	324	24	36	46	42	38	32	24	17	12	18	30	24	23
		109	392	35	53	49	47	43	37	30	23	17	20	35	29	28
131	472	52	77	52	52	48	42	36	30	22	21	40	35	33		
Halton TRH 160-250	max	49	176	97	101	45	34	30	23	21	20	19	17	25	21	18
		60	216	149	154	47	39	35	28	26	26	26	25	30	28	25
		71	256	210	217	49	43	39	32	30	30	32	32	35	35	32
	min	84	302	294	304	50	47	42	36	34	35	37	39	40	42	39
		71	256	12	19	47	40	32	24	17	6	6	17	25	20	17
		86	310	17	28	48	44	38	30	23	13	12	18	30	24	21
		105	378	25	41	48	49	43	35	29	21	17	20	35	30	27
128	461	37	61	49	53	49	41	35	28	23	21	40	36	34		
Halton TRH 200-200	max	66	238	94	97	41	40	31	25	20	19	15	17	25	20	17
		79	284	136	140	44	44	35	29	25	24	22	23	30	26	22
		95	342	198	203	48	49	40	34	30	29	29	28	35	31	28
	min	114	410	281	289	52	54	44	39	35	34	35	34	40	37	34
		103	371	33	39	40	39	33	27	19	10	9	17	25	20	17
		122	439	45	54	44	44	38	32	24	16	14	18	30	23	22
		146	526	65	78	48	48	42	37	31	23	18	19	35	29	27
172	619	91	109	52	53	47	42	36	30	23	20	40	34	33		
Halton TRH 200-250	max	69	248	100	103	39	36	28	22	22	21	18	20	25	23	20
		82	295	143	147	43	41	32	26	26	26	24	25	30	28	25
		98	353	204	210	47	46	36	30	30	31	30	30	35	33	30
	min	119	428	302	311	51	51	41	35	35	37	37	36	40	39	36
		114	410	30	38	39	38	33	25	21	14	10	17	25	20	17
		135	486	42	53	43	43	37	30	26	20	15	18	30	23	20
		162	583	60	76	47	48	41	35	32	27	20	20	35	28	26
193	695	86	109	50	52	46	41	37	33	25	21	40	33	32		
Halton TRH 200-315	max	69	248	99	102	40	35	26	20	22	23	20	19	25	22	19
		82	295	142	146	42	40	31	25	27	28	26	25	30	28	25
		98	353	202	208	45	44	35	29	31	33	32	31	35	34	31
	min	114	410	273	281	48	48	39	33	35	37	37	36	40	39	36
		119	428	28	37	39	39	31	25	22	17	10	17	25	20	17
		140	504	40	52	42	43	35	29	27	23	15	18	30	23	22
		167	601	56	73	46	49	41	35	33	29	21	20	35	29	27
199	716	80	104	49	54	46	40	38	35	27	22	40	34	33		
Halton TRH 250-400	max	63	227	85	87	47	30	28	20	22	23	19	14	25	22	19
		77	277	123	127	48	35	32	25	27	28	25	22	30	27	24
		93	335	180	185	49	39	36	29	31	32	32	30	35	33	31
	min	108	389	248	255	50	43	39	33	35	37	37	37	40	40	36
		103	371	19	25	39	39	32	26	20	15	12	17	25	20	17
		124	446	28	37	43	44	37	30	26	21	17	19	30	23	20
		146	526	37	50	45	49	42	34	31	26	22	20	35	28	25
178	641	56	75	49	54	47	39	37	33	27	22	40	34	32		

LpA values presented with room attenuation 4 dB (red 10m<sup>2</sup> - sab). When using room attenuation 8 dB (red 25m<sup>2</sup> - sab): LpA - 4dB.  
NR/NC noise criteria

## Sound level data

		Qv	dPst	dPt	Lw63	Lw125	Lw250	Lw500	Lw1k	Lw2k	Lw4k	Lw8k	LpA	NR	NC	
		(l/s)	(m3/h)	(Pa)	(Pa)	63	125	250	500	1000	2000	4000	[dB(A)]			
Halton TRH 250-250	max	89	320	67	69	39	34	28	20	18	25	16	13	25	24	21
		109	392	99	102	43	38	32	25	23	29	23	19	30	29	26
		132	475	147	151	46	43	37	31	29	34	30	25	35	33	31
		159	572	215	221	49	47	41	36	34	38	37	32	40	38	36
	min	140	504	24	29	40	38	33	26	19	9	12	19	25	23	19
		167	601	34	41	43	42	37	31	24	15	15	20	30	23	21
		206	742	52	63	47	48	43	37	31	23	19	21	35	29	28
		245	882	74	89	51	52	47	42	37	30	22	21	40	35	33
Halton TRH 250-315	max	101	364	84	87	41	33	26	22	21	24	19	16	25	23	20
		120	432	119	123	42	37	30	26	25	29	27	23	30	29	26
		140	504	162	167	44	41	34	30	29	34	33	28	35	34	32
		159	572	210	216	46	44	37	33	32	38	39	33	40	39	37
	min	159	572	23	29	33	40	32	25	20	10	10	18	25	22	18
		191	688	33	42	38	44	36	30	25	17	14	19	30	22	20
		230	828	48	61	44	49	41	36	31	24	19	20	35	28	26
		277	997	69	88	49	54	46	41	37	31	24	20	40	33	32
Halton TRH 250-400	max	109	392	91	94	43	33	25	21	22	22	23	17	25	24	22
		128	461	126	130	45	36	30	26	27	27	28	24	30	29	26
		152	547	176	182	47	40	34	30	31	31	33	31	35	34	31
		183	659	257	265	49	44	39	35	35	36	38	38	40	41	37
	min	159	572	22	28	42	41	32	25	20	13	10	15	25	19	16
		191	688	31	40	45	45	37	30	25	19	16	19	30	23	21
		222	799	43	55	49	49	42	35	30	24	21	23	35	28	26
		269	968	62	80	53	54	48	40	36	31	28	28	40	34	32
Halton TRH 315-315	max	156	562	80	82	35	37	31	24	20	20	21	18	25	23	20
		180	648	106	109	37	39	34	28	25	25	27	25	30	29	26
		208	749	142	146	40	42	37	32	29	29	33	33	35	36	33
		236	850	182	188	42	45	40	36	33	33	39	40	40	43	40
	min	203	731	27	31	35	39	33	28	20	10	3	8	25	19	18
		241	868	37	43	39	43	37	32	26	17	9	12	30	24	22
		288	1037	53	61	44	48	42	37	32	24	18	17	35	29	27
		344	1238	75	87	48	52	46	41	37	31	26	21	40	34	32
Halton TRH 315-400	max	142	511	60	62	41	31	25	21	24	24	17	15	25	23	20
		166	598	81	84	41	34	28	25	27	28	25	23	30	28	25
		194	698	111	115	42	37	32	29	30	34	33	32	35	35	31
		217	781	139	144	42	39	35	32	32	37	38	38	40	41	37
	min	213	767	24	28	42	41	33	25	17	8	3	7	25	18	16
		250	900	33	39	44	45	37	30	23	15	8	11	30	23	21
		306	1102	49	58	46	50	43	36	30	23	17	17	35	29	27
		363	1307	69	82	48	54	47	41	35	29	24	21	40	34	32

LpA values presented with room attenuation 4 dB (red 10m<sup>2</sup> - sab). When using room attenuation 8 dB (red 25m<sup>2</sup> - sab): LpA - 4dB.  
NR/NC noise criteria