

Halton TRB – Conical diffuser



Overview

- Horizontal or vertical air supply
- Suitable for both heating and cooling applications
- Supply air jet velocity is effectively reduced due to high mixing effect
- Installation flush to the ceiling, or exposed (especially in high spaces)
- Adjustable throw pattern and pressure drop
- Circular duct connection; gasket in sizes 100 ... 400 mm
- Openable cone module enables cleaning of the diffuser and ductwork.

Accessories

- Plenum options with measurement and adjustment functions

Quick selection

Values with adjustment module (MSM) fully open.

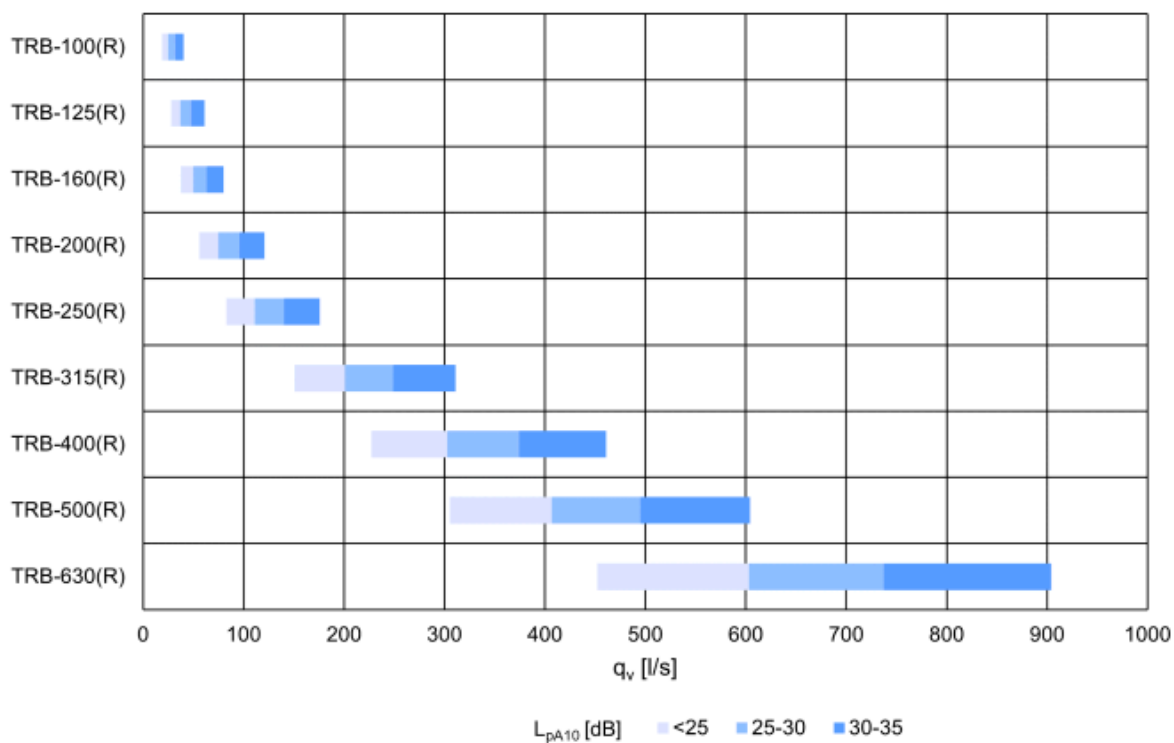


Fig. 1. Quick selection for diffuser with radial jet, unit l/s

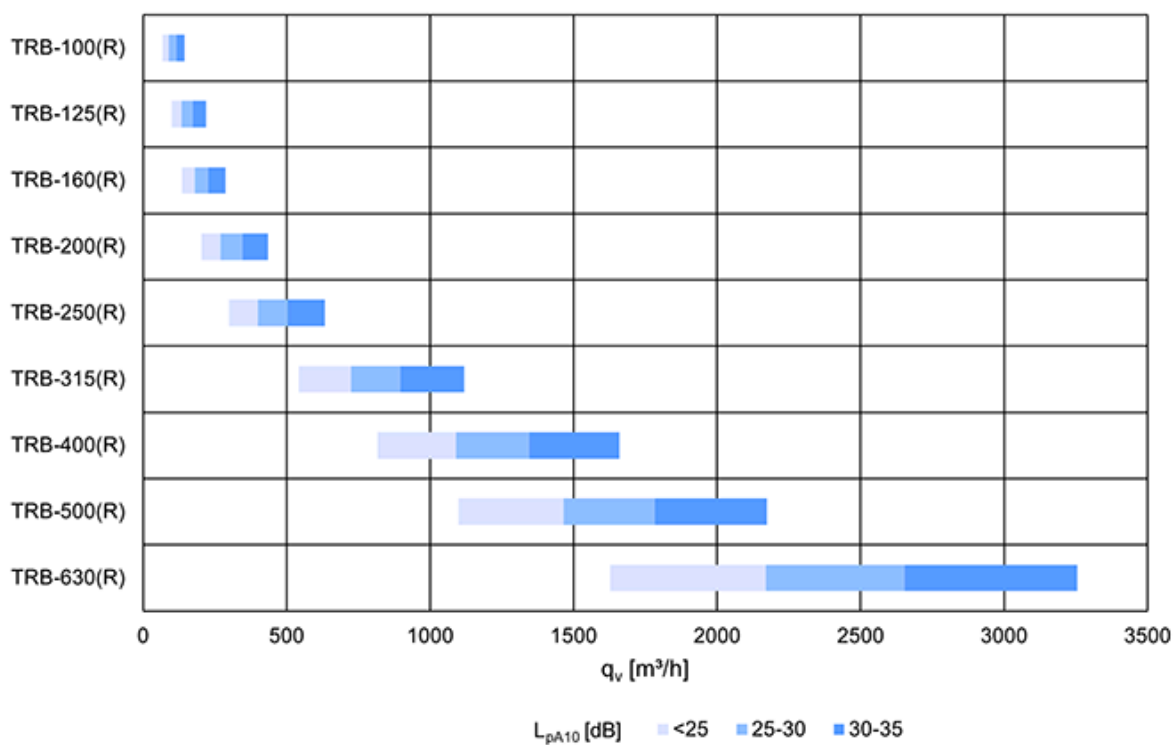


Fig. 2. Quick selection for diffuser with radial jet, unit m³/h

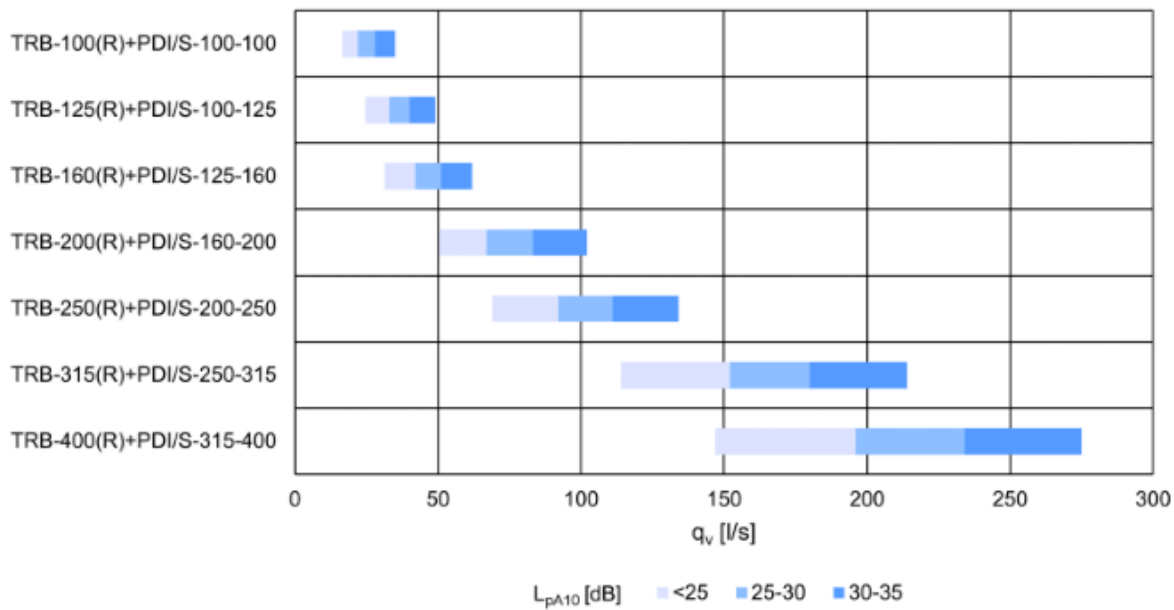


Fig. 3. Quick selection for diffuser and plenum with radial jet, unit l/s

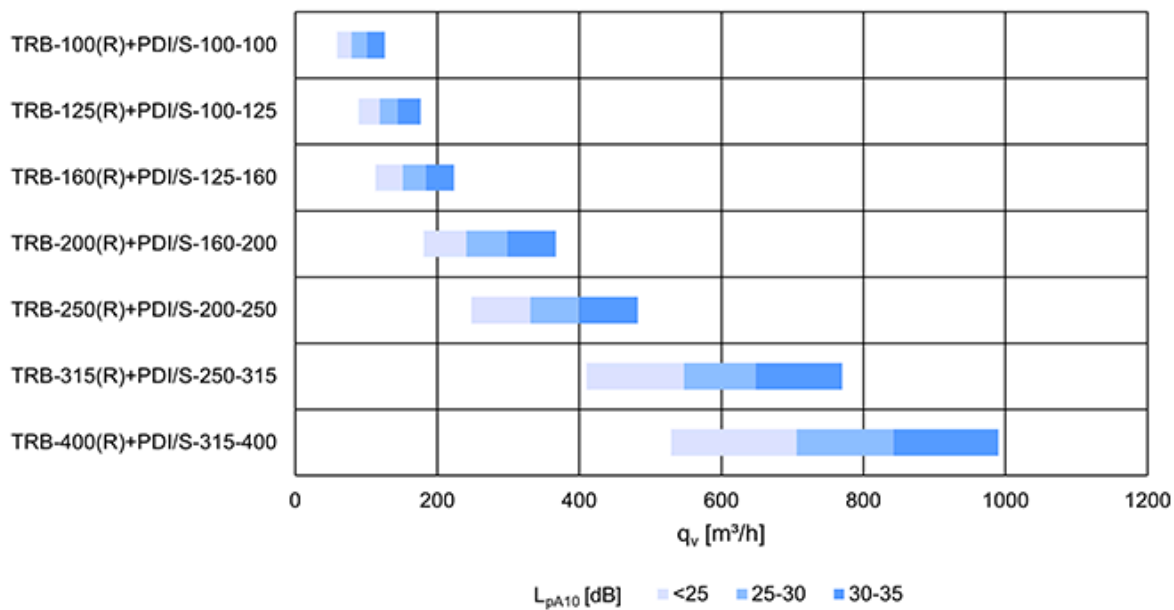
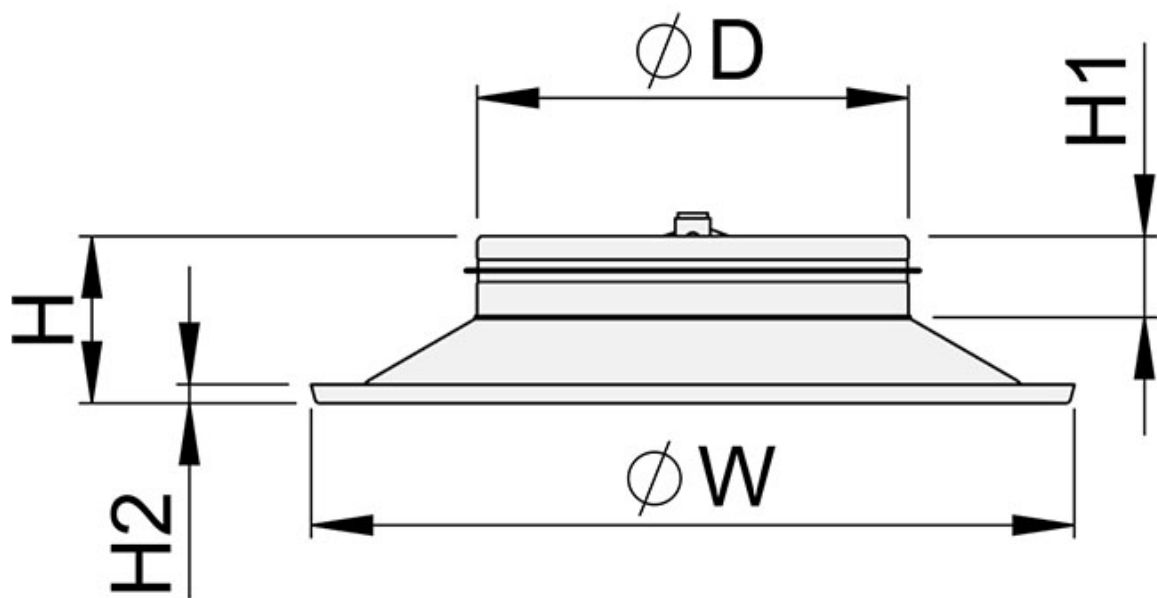


Fig. 4. Quick selection for diffuser and plenum with radial jet, unit m³/h

Dimensions and weight



NS [mm]	ØW [mm]	H [mm]	H1 [mm]	H2 [mm]	ØD [mm]	Weight [kg]
100	286	105	63	9	99	1.1
125	286	105	63	9	124	1.1
160	286	80	48	9	159	1.1
200	354	90	49	10	199	1.5
250	438	96	45	11	249	2.0
315	544	118	51	13	314	3.0
400	682	149	65	14	399	4.7
500	845	169	65	15	499	6.8
630	1055	195	65	16	629	16.9

Halton TRB with Halton Pop PDI plenum

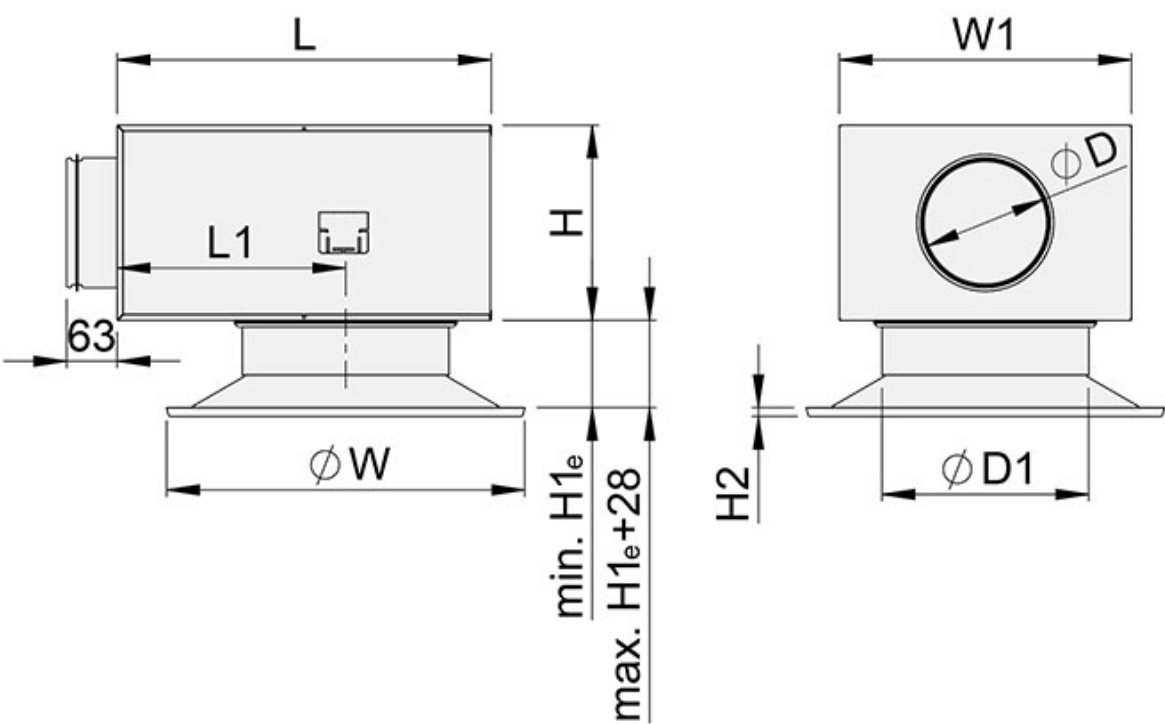


Fig. 5. Halton TRB with Halton Pop PDI plenum, externally positioned connection spigot

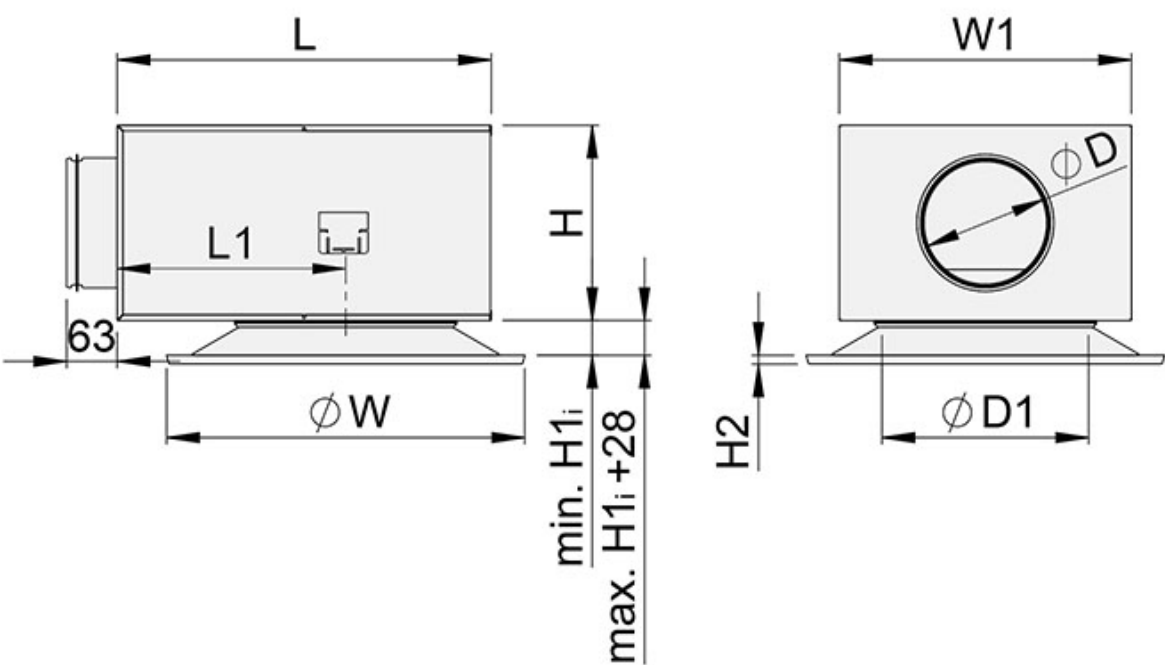


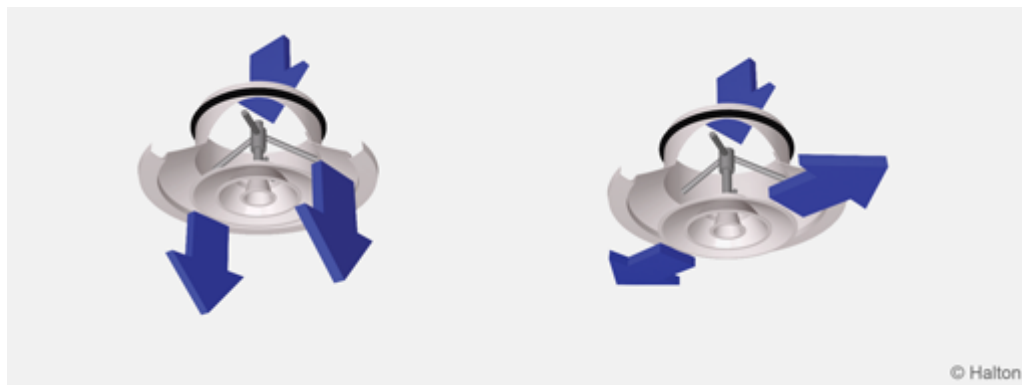
Fig. 6. Halton TRB with Halton Pop PDI plenum, internally positioned connection spigot

NS [mm]	ØW [mm]	PDI	ØD [mm]	ØD1 [mm]	L [mm]	W1 [mm]	H [mm]	H1 _e [mm]	H1 _i [mm]	H2 [mm]	L1 [mm]	Weight [kg]
100	286	100-100	99	102	308	282	172	93	26	9	168	3.8
125	286	100-125	99	127	308	282	172	93	26	9	168	3.8
	286	125-125	124	127	308	282	172	93	26	9	168	3.9
160	286	125-160	124	162	308	282	172	90	23	9	168	3.8
	286	160-160	159	162	458	358	239	90	23	9	280	6.1
200	354	160-200	159	202	458	358	239	98	31	10	280	6.4
	354	200-200	199	202	458	358	239	98	31	10	280	6.5
250	438	200-250	199	252	458	358	239	107	40	11	280	6.9
	438	250-250	249	252	520	480	359	107	40	11	280	10.2
315	545	250-315	249	317	520	480	359	121	54	13	280	11.0
	545	315-315	314	317	520	480	359	121	54	13	280	11.2
400	682	315-400	314	402	520	480	359	137	70	14	280	12.7

Material

Part	Description	Note
Frame	Galvanised / Aluminium	Sizes 100 ... 500 / 630 mm
Cone module	Galvanised / Aluminium	Sizes 100 ... 500 / 630 mm
Finishing	Epoxy-painted / White (RAL 9003/30%)	Special colours available

Function



Compact Jet

Radial Jet

Halton TRB is a conical ceiling diffuser with an adjustable flow pattern. The horizontal radial jet is used mainly in cooling applications and the vertical compact jet with

warm supply air in heating applications.

The supply air pattern is adjusted by rotating the cone module into the desired position. The recommended maximum temperature difference between supply air and room air in cooling applications is 10 °C.

The technical performance has been defined for radial jet with cone module opening = 0 mm or for compact jet with opening = -15 mm.

Installation



Fig. 7. Halton TRB diffuser connected to a Halton Pop PDI plenum

The diffuser is connected usually to balancing plenum Halton Pop PDI (see Fig.7.). Alternatively, it can be connected direct to the duct by riveting or screwing. In that case, minimum safety distance to the next T-branch or curve is three times the duct diameter (3xD).

Commissioning



Fig. 8. Adjustment of airflow of diffuser and plenum combination

Airflow control

The diffuser itself has no airflow adjustment. To adjust and measure the supply airflow rate, the diffuser shall be combined with Halton Pop PDI balancing plenum with measurement and adjustment module MSM. In case of exhaust air, use of adjustment module MEM is recommended. It is not possible to measure exhaust airflow rate with adjustment module MEM.

Open the front plate and pass the tubes and control spindle through the front panel (*Fig. 8*). Replace the front panel. Measure the differential pressure with a manometer. The flow rate is calculated using the formula below:

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

where

- q_v Airflow rate [l/s] or [m³/h]
- Δp_m Measured pressure [Pa]
- k The k factor (see the table below)

Adjust the airflow rate by rotating the control spindle until the desired airflow rate (pressure difference) is achieved.

Set the tubes and spindle back into the plenum. Damper position can be locked with a knurled head screw of the adjuster.

Duct connection (PDI)	k factor of MSM adjuster, opening >0 [l/s]	
	> 8D	Min. 3D
100	5.7	7.5
125	9.6	12.6
160	16.4	21.9
200	26.3	31.0
250	47.1	51.5
315	78.8	–

Duct connection (PDI)	k factor of MSM adjuster, opening >0 [m ³ /h]	
	> 8D	Min. 3D
100	20.6	27.0
125	34.4	45.4
160	59.0	78.8
200	94.8	111.6
250	169.5	185.4
315	283.6	–

Servicing

Detach the cone module of the diffuser and clean the parts by wiping with a damp cloth.
Reinstall the cone module.

Specification

The ceiling diffuser has a steel (or aluminium) casing with an adjustable cone module and a spigot with integral gasket for connection to the circular duct.

The throw pattern of the diffuser is adjustable in radial or compact jet.

Order code

TRB-D, CO-ZT

Main options	
D = Connection size [mm]	100, 125, 160, 200, 250, 315, 400, 500, 630

Other options and accessories	
CO = Colour	
SW	Signal white (RAL 9003)
X	Special colour (RAL xxxx)
ZT = Tailored product	
N	No
Y	Yes (ETO)

Tillbehörsprodukter	
Halton Pop PDI	Plenum

Order code example

TRB-250, CO=SW, ZT=N