Halton THL – Conical diffuser

Overview

- Horisontal or vertical air supply
- Suitable for both heating and cooling applications
- Adjustable throw pattern (radial or compact jet)
- Installation flush to the ceiling, or exposed (especially in high spaces)
- Circular duct connection with gasket
- Openable front disk enables cleaning of the diffuser and ductwork

Accessories

- Plenum options with measurement and adjustment functions

Quick selection

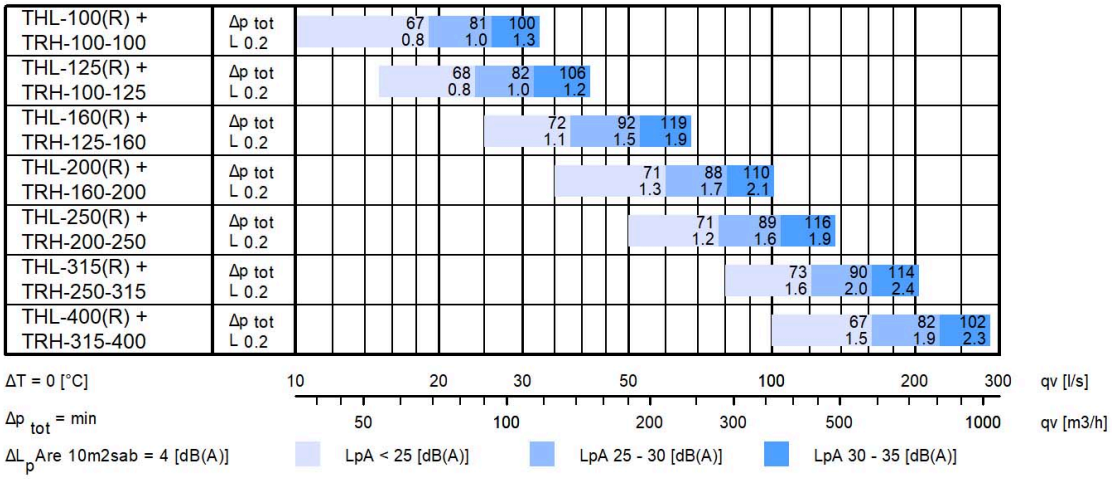
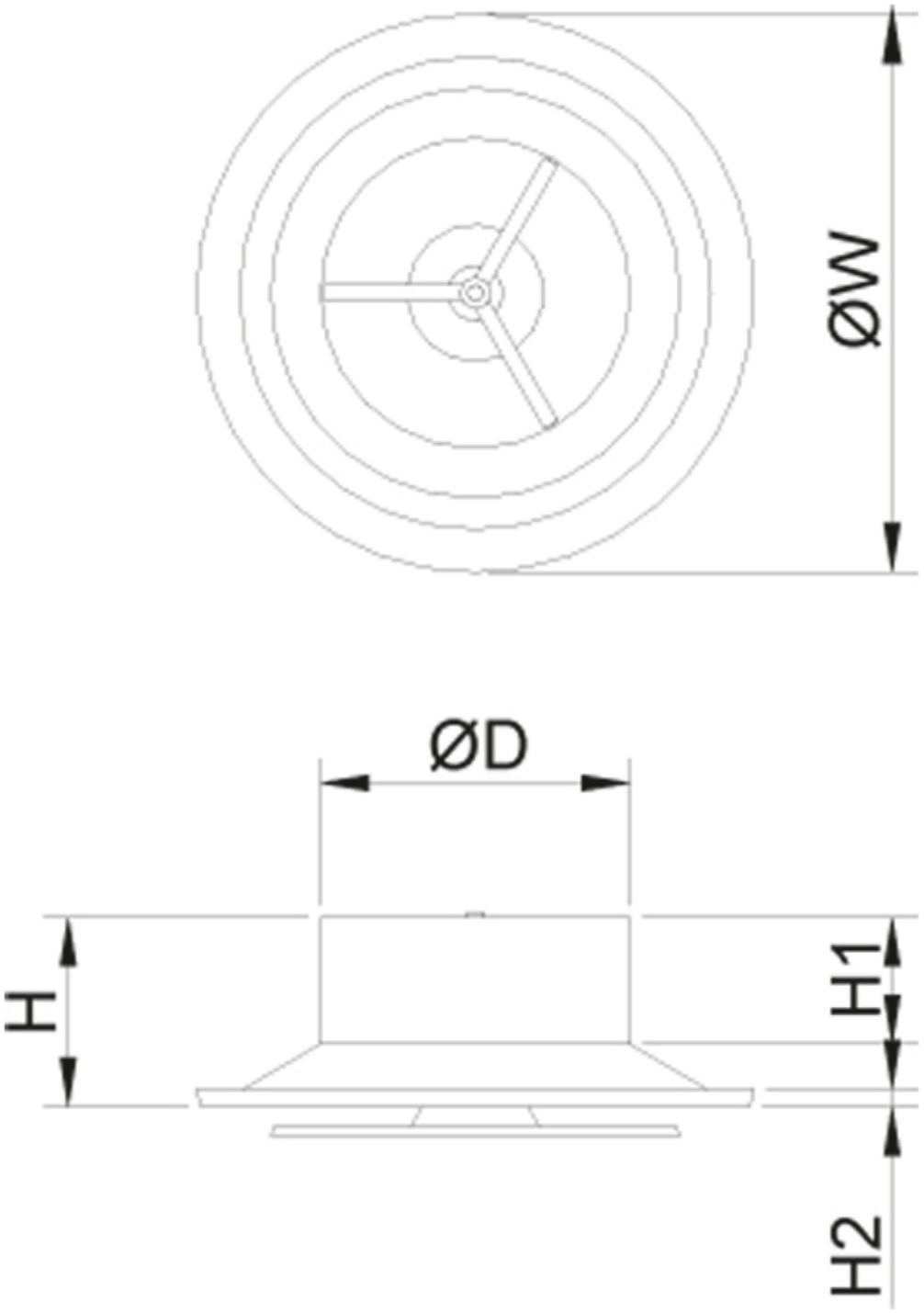


Fig.1. Halton THL with TRH plenum.

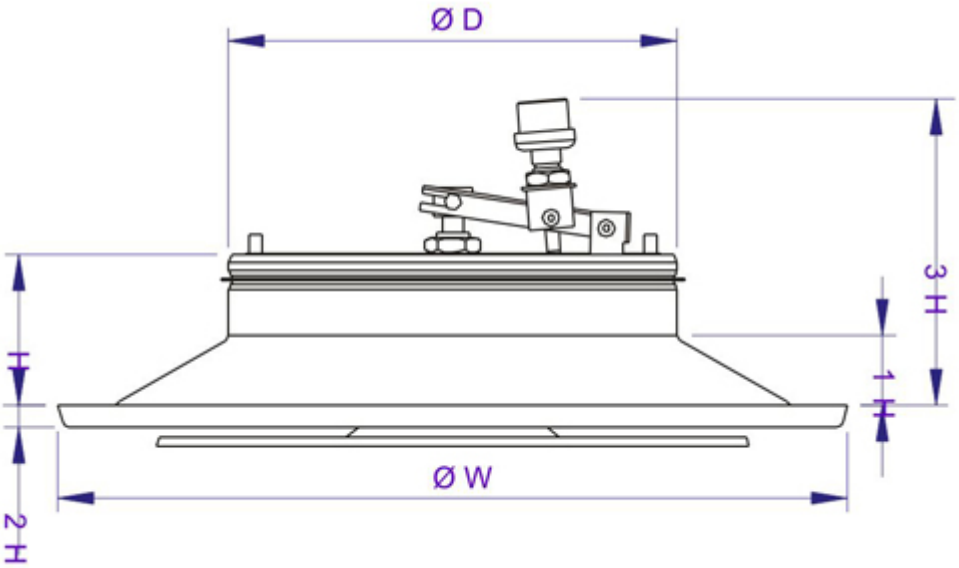
Dimensions

Halton THL, manual



NS	ØW	H	H1	H2	ØD
100	286	97	25	9	99
125	286	97	25	9	124
160	286	97	25	9	159
200	354	81	30	10	199
250	440	84	39	12	249
315	546	102	52	14	314
400	685	135	70	14	399

Halton THL with wax-bulb actuator



NS	ØW	H	H1	H2	H3	ØD
250	440	84	39	12	173	249
315	546	102	52	14	193	314
400	685	135	70	14	215	399

Material

Part	Material	Note
Frame	Steel	–
Front disk	Steel	–
Finishing	Painted, white (RAL 9003)	Special colours available

Accessories

Accessory	Code	Description
Balancing plenum	TRI	For balancing, equalising the airflow and attenuating the duct noise (polyesterfibre)
Balancing plenum	TRH	For balancing, equalising the airflow and attenuating the duct noise (mineral wool and polyester fibre)

Product Models

Halton THL, manually operated

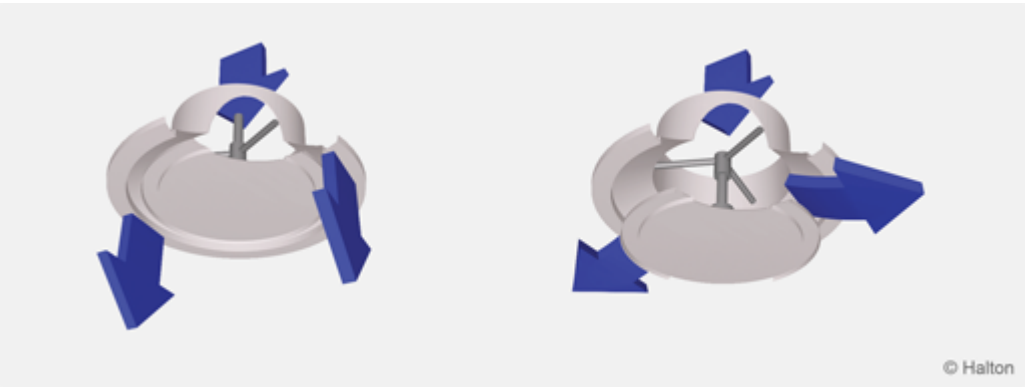
Changing manually the front disk position the throw pattern can be adjusted from radial to compact.

Halton THL with wax-bulb actuator

Sizes 250, 315 and 400 can be equipped with a wax-bulb actuator, which work without any power supply. The front disk position changes according to the temperature of supply air. The temperature range of the wax-bulb actuator is about 20 °C to 27 °C.

The time taken to change from radial to compact jet (or the other way around) is 10 – 20 minutes. When warm air is supplied the piston of the wax bulb actuator keeps moving until the THL supply air pattern is vertical. When cold air is supplied, the Halton THL supply air pattern is changed back to horizontal by means of a spring.

Function

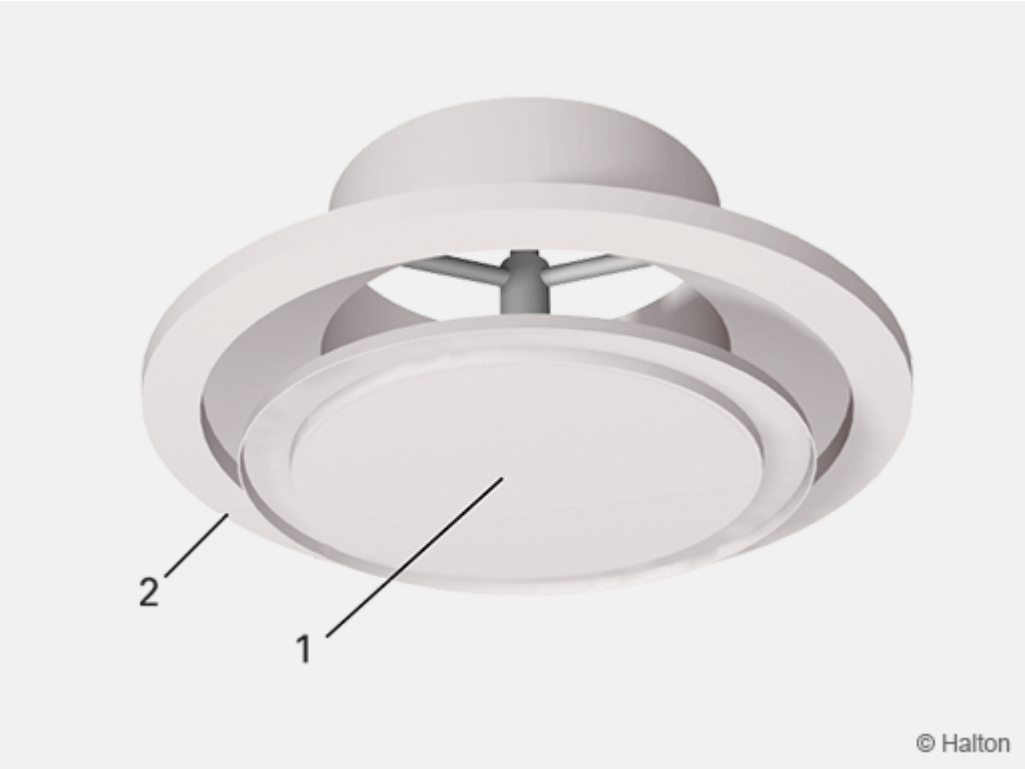


Compact jet **Radial jet**

The Halton THL is a ceiling diffuser with an adjustable low pattern.
The horisontal radial jet is used mainly in cooling applications and the vertical compact jet with warm supply air in heating applications.

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

Installation



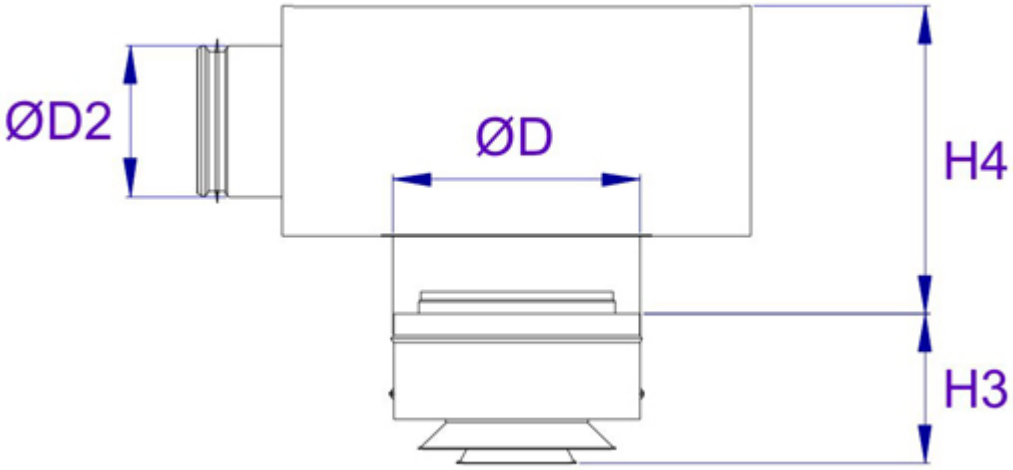
Code description
1. Front disk
2. Frame

The diffuser is connected either directly to the duct by screwing or riveting or alternatively to the Halton TRI balancing plenum.

The minimum recommended safety distance upstream of the diffuser is 3xD.

Installation with Halton TRI

The collar of Halton TRI plenum can be installed either internally in the plenum or externally onto the bottom of the plenum.
The height of the unit for the external installation is presented in the table below.
When the collar is installed internally, the total height H3 is reduced by 60 mm.



THL (ØD)	ØD1	TRI	ØW1	H2	H3
100	100	TRI-100-100	244	9	242-282
125	100	TRI-100-125	244	9	242-282
125	160	TRI-125-125	244	9	272-312
160	125	TRI-125-160	244	9	272-312
160	160	TRI-160-160	244	9	312-352
200	160	TRI-160-200	306	10	312-352
200	200	TRI-200-200	306	10	371-411
250	200	TRI-200-250	384	11	380-420
250	250	TRI-250-250	384	11	444-484
315	250	TRI-250-315	482	13	455-495
315	315	TRI-315-315	482	13	500-550
400	315	TRI-315-400	617	14	518-558

Adjustment

The Halton THL itself has no means for airflow adjustment.

In order to enable airflow adjustment and measurement of airflow rate it is recommended that the diffuser be connected to the Halton TRH or TRI balancing plenum. The supply airflow rate is determined by using the measurement and adjustment module MSM.

Detach the front disk or the whole diffuser and pass the tubes and control spindle through the side slot of the diffuser.
Replace the front disk or diffuser.
Measure the differential pressure using a manometer. The airflow rate is calculated using the

formula below.

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

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

The k-factor for installations with different safety distances (D= duct diameter)

TRI	> 8 x D	min 3 x D
100	6.0	7.5
125	9.9	12.6
160	16.9	21.9
200	28.3	31.0
250	47.9	51.5
315	78.6	–

The technical performance has been defined for radial and compact jet with the fixed cone module openings. The adjustment positions used are detailed in the table below.

	THL (R)	THL (C)
Size	**Radial jet**	**Compact jet**
100	8	-4
125	10	-4
160	12	0
200	15	0
250	19	0
315	24	0
400	30	0

Servicing

Measure the distance between the front disk and the upper frame in order to enable recovery of the same technical properties after cleaning.

Detach the front disk of the diffuser and clean the parts by wiping with a damp cloth.

Reinstall the front panel.

Specification

The ceiling diffuser has a steel casing with an adjustable front disk and a spigot with integral gasket for connection to the circular duct.

The diffuser is polyester or painted white (RAL 9003) colour.
The throw pattern of the diffuser is adjustable in radial or compact jet.

Order code

THL/D; CO-MO-ZT

D = Duct connection size
100, 125, 160, 200, 250, 315, 400

Other options and accessories

CO = Colour
SW Signal white (RAL 9003)
X Special colour (RAL xxxx)

MO = Actuator type
NA Not assigned
M1 Wax-bulb actuator (if D = 250, 315 or 400)

ZT = Tailored product
N No
Y Yes (ETO)

Sub products

TRI Balancing plenum
TRH Balancing plenum

Code example

THL-100, CO=SW, MO=NA, ZT=N