

# Halton CAR – Conical diffuser



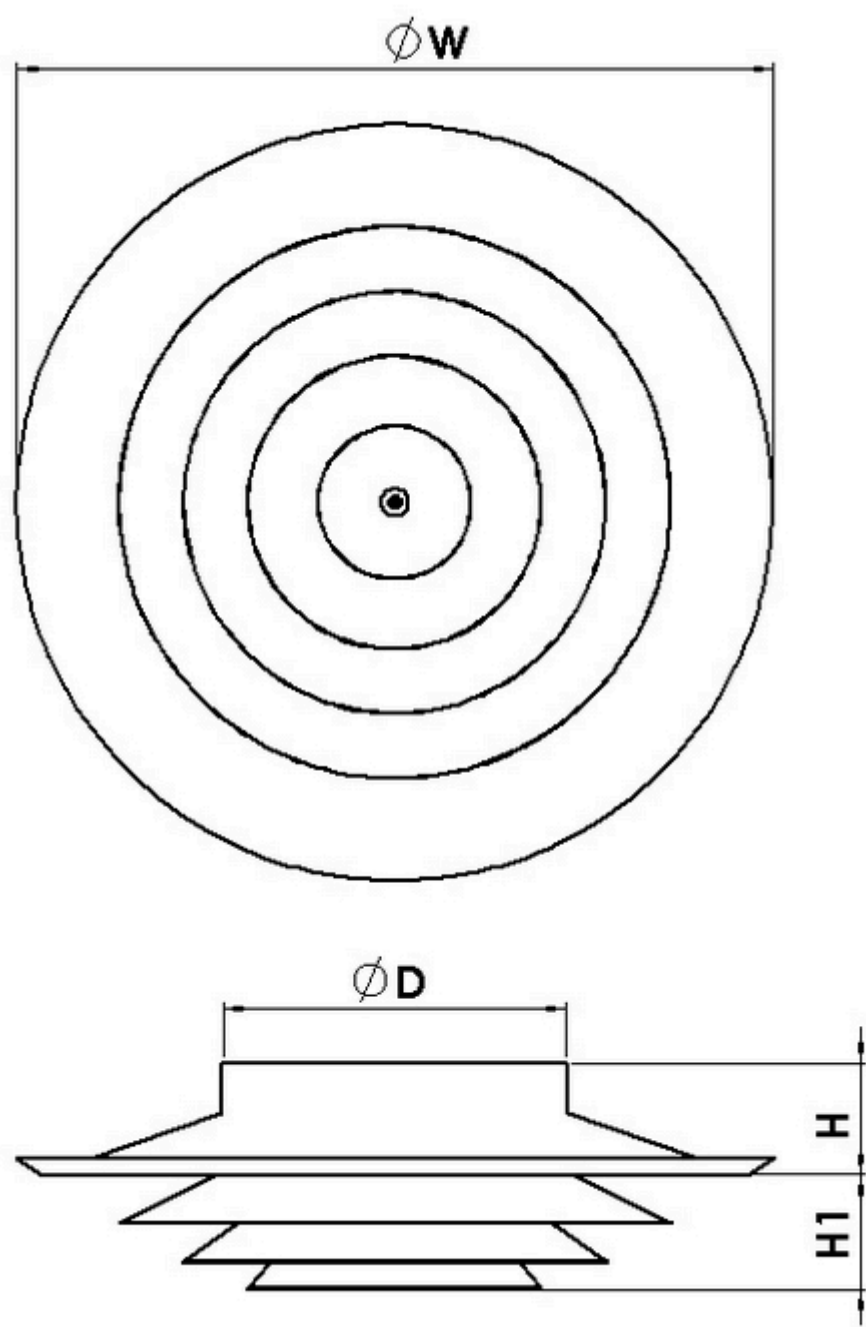
## Overview

- Horizontal air supply
- Suitable for supply/exhaust and high airflow rates
- Cooling applications with supply/room air temperature difference as low as -16 °C
- Also suitable for heating
- Integrated or suspended ceiling installation
- Circular duct connection with rubber gasket
- Openable cone module enables the cleaning of the diffuser and ductwork

## Product models and accessories

- Balancing plenum with adjustment functions (Halton TRH) or even with measurement function (Halton TRI).
- Adjustment module for balancing of the airflow
- Modular 600×600 mm suspended ceiling model

# Dimensions



NS	W	H	H1	ØD
160	343	65	54	159
200	457	80	70	199
250	571	87	88	249
315	686	91	106	314
355	857	102	133	354
400	857	100	133	399
450	1030	120	157	449
560	1200	124	184	558

Special dimensions are not available.

## Material

Part	Material	Finishing
Diffuser	Steel	Epoxy-painted, white (RAL 9003)
Plenum box	Galvanised steel	–

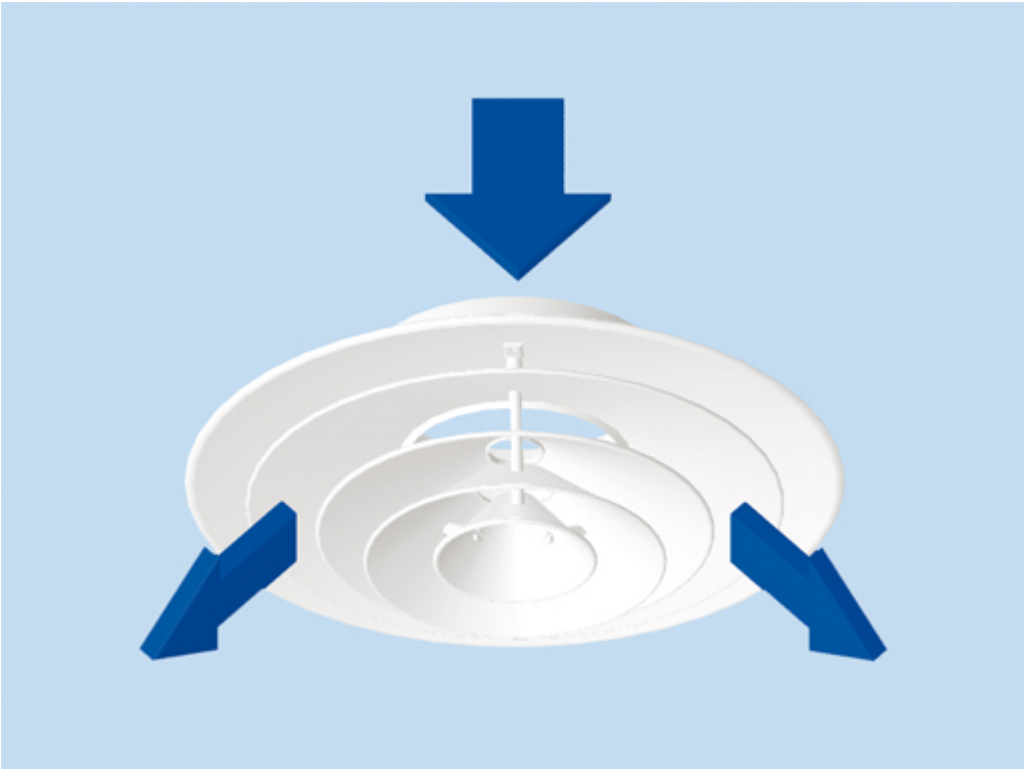
## Accessories

Accessory	Code	Description
Plenum	TRH	Plenum for duct connection (with or without insulation)
Balancing plenum with airflow measurement and adjustment unit	TRI/N	For balancing, equalising the airflow
Sound attenuation	IN	Polyester fibre as sound attenuation material in the TRI plenum. Mineral wool as sound attenuation material in the TRH plenum.
Airflow measurement and adjustment unit	MSM	For supply installation

# Product models

Product model	Code	Description
Diffuser integrated in front panel, 600 x 600 mm	CAR/B	Sizes 160, 200 and 250 are available as integrated in a steel panel for installation in a modular 600x600 mm suspended ceiling. The external dimensions of the front panel are 595 mm x 595 mm

# Function



Supply air is divided into several jets through the cones. The divergent sections of the diffuser create negative pressure under the diffuser so room air is induced into the supply air terminal. Room air and supply air mix.

This internal induction reduces temperature and the air velocity into the space. The process is the same outside the diffuser between the supply and mixed room air, with external induction further reducing velocity and the temperature difference between supply and room air.

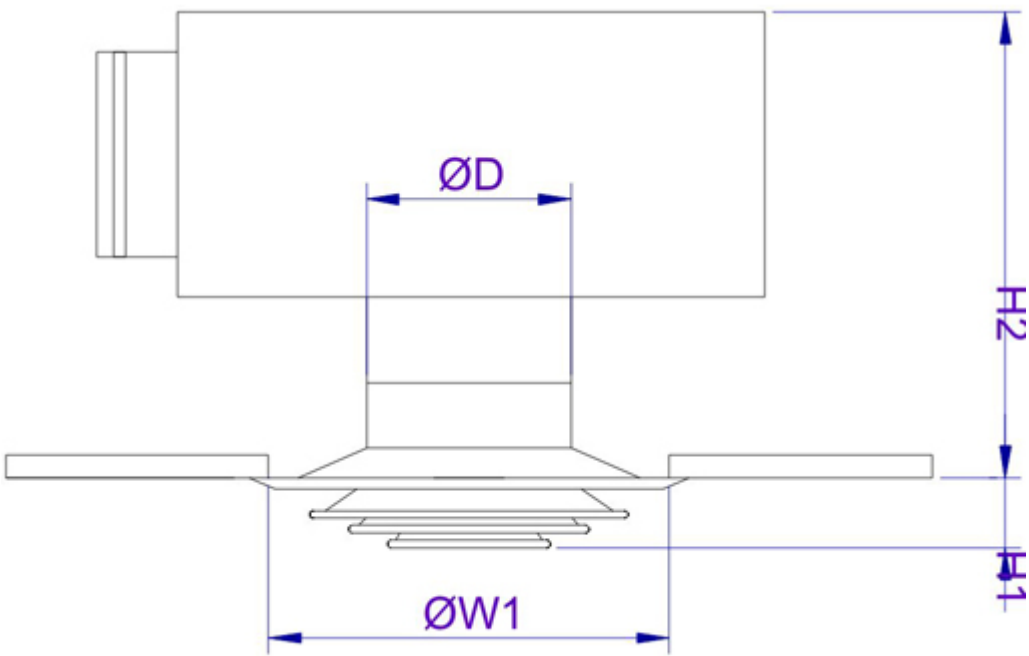
The diffuser can also be used as an exhaust unit.

# Installation

The Halton CAR diffuser can be installed flush with a suspended ceiling or fully exposed in the space.

The diffuser is connected directly to the duct using a Halton TRH plenum or Halton TRI balancing plenum. When it is connected directly to ductwork, a safety distance of minimum 3D upstream of the diffuser should be maintained.

### Installation with plenum Halton TRI or TRH



### Halton TRI

CAR	ØD	TRI	H2	H1
160	159	TRI-160-160	304...334	54
200	199	TRI-200-200	369...399	70
250	249	TRI-250-250	440...470	88
315	314	TRI-315-315	490...520	106

## Halton TRH

CAR	ØD	TRH	H2	H1
160	159	TRH-160	290...320	54
200	199	TRH-200	395...425	70
250	249	TRH-250	402...432	88
315	314	TRH-315	556...686	106
355	349	TRH-355	567...597	133
400	399	TRH-400	565...595	133
450	449	TRH-450	785...815	157
560	559	TRH-560	789...819	184

When the Halton TRI spigot is installed in the plenum, the H dimensions can be reduced by 60 mm.

The technical performance for the combination of supply air diffuser and Halton TRI plenum is presented separately for the two different installations.

## Dimensions of the ceiling opening

CAR	ØW1
160	290
200	406
250	510
315	610
355	760
400	760
450	915
560	1065

## Adjustment

The airflow rate can be adjusted and measured only when the diffuser is installed.

In order to enable airflow adjustment and measurement of airflow rate, it is recommended to connect the diffuser to a plenum equipped with the MSM module.

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

Detach the conical central core and pass the tubes and control spindle through the diffuser. Measure the differential pressure with a manometer. The flow 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 in the plenum and push the conical central core back into place.

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

TRH/TRI	>8xD	min 3XD
125	9.9	12.6
160	16.9	21.9
200	28.3	31.0
250	47.9	51.5
315	78.6	

## Service

Remove the conical central core by unscrewing it from the frame.

Clean the parts by wiping them with a damp cloth.

Put each screw back in place, and screw on until the conical central core fits in place.

## Option: with balancing plenum Halton TRI+MSM or Halton TRH+MSM

Remove the measurement and adjustment module by pulling gently on the shaft (not the control spindle).

Wipe the parts with a damp cloth, instead of immersing in water.

Reassemble the measurement and adjustment module by pushing the shaft until the module meets the stopper.

Put each screw back in place, and screw on until the conical central core fits in place.

## Specification

The diffuser is made of several stamped cones, made of epoxy-painted steel with a white (RAL 9003) standard colour.

The diffuser is suitable for installation on exposed ductwork or flush to the ceiling.

The diffuser is connected to the ductwork using a Halton TRI balancing plenum, which utilises polyester fibre with a washable surface as sound attenuation material.  
The diffuser is connected to the ductwork using a Halton TRH plenum, which utilises mineral wool as sound attenuation material.

The plenum comprises an airflow measurement and adjustment unit.

The conical central core is removable.

The air discharge pattern is radial around the full perimeter of the air diffuser.  
The cones form divergent sections, which creates underpressure inducing room air into the unit.

## Order Code

### CAR/D; WS-CO-ZT

**D = Diameter of duct connection (mm)**

160, 200, 250, 315, 355, 400, 450, 560

### Other options and accessories

**WS = Width of suspended ceiling element**

NA Not Assigned

**CO = Colour**

SW Signal white (RAL 9003)

X Special colour (RAL xxxx)

**ZT = Tailored product**

N No

Y Yes (ETO)

### Sub products

TRI Plenum

TRH Plenum

### Code example

CAR-160, WS=NA, CO=SW, ZT=N