

NEW! Halton TTAP TP1 – Solid state HVAC unit

Overview

Halton TTAP TP1 is a first solid-state HVAC unit that uses semiconductor technology to provide cooling and heating by using only low voltage electricity. Therefore direct supply from solar panels is possible.

The platform in the unit eliminates the need for hydraulic networks and refrigerants while creating significant reduction in CO₂ emissions, lower total cost of ownership and increased comfort for building users.

The TTAP (Terminal Treatment of Air with Peltier) operation is based on Peltier thermoelectric effect for HVAC cooling and heating developed together with leading sustainable solid state cooling and heating technology provider.

Application area

- Cooling and heating in single offices, open-plan offices and meeting rooms

Key features

- Forced induction terminal with integrated fan to recycle room air combining fresh air supply and room air exhaust in same product
- Cooling and heating with Peltier effect eliminating the need for cooling / heating water networks and refrigerants.
- Installation perpendicular to the façade
- Suitable for spaces requiring a constant or variable airflow system.
- Low need for service and maintenance
- Unparalleled comfort with personalized temperature control, quiet operation and fresh air. Minimum hygienic airflow of approximately 3 vol./h according to ASHRAE “epidemic taskforce” of 30.09.2020.
- Suitable for renewable power supply (e.g. solar panels)
- Sustainability benefits: >20% less embedded CO₂e and >13% less operational CO₂e
- Operational cost benefits: 18% savings compared with typical cost-competitive equipment and installation

Operating principle

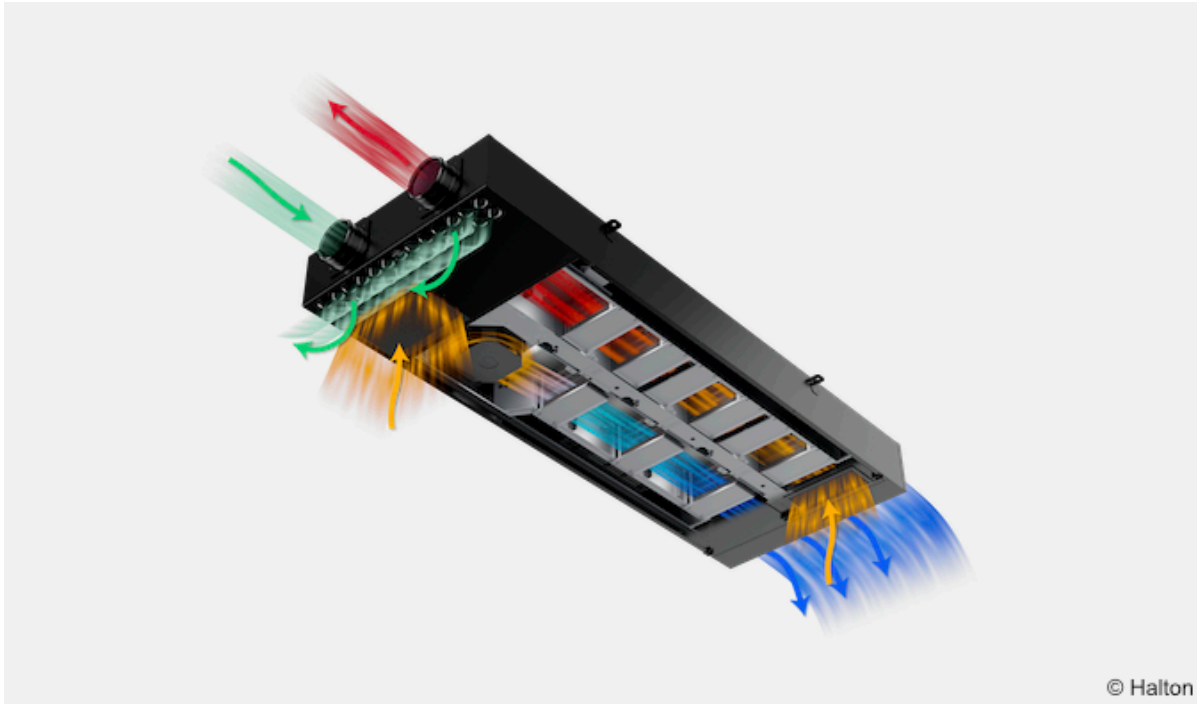


Fig.1. Operation principle of Halton TTAP TP1



Fig.2. Typically this unit is installed above ceiling island in black colour .

The complete unit consist of several functions:

Room air treatment, cooling/ heating

- Room air recycled through the unit by integrated fan.
- Room air is either cooled or heated by integrated Peltier module.
- Room air delivered back to room through grille at the end of the unit.
- Cooling/ heating capacity is adjusted by the electric power of Peltier element

Fresh air supply

- Fresh air connection at the end of the unit (opposite to grille)
- Typical airflow rate between 108 and 216 m³/h, also VAV function available as option.
- Fresh air is diffused to room through nozzles, air supply direction can be modified according demand, having different throw pattern.

Room air extraction

- Extraction connection next to fresh air connection.
- Extracted air will take the excess heat (cooling mode) out from Peltier element.
- Extract air amount to follow amount of supply air

Dimensions

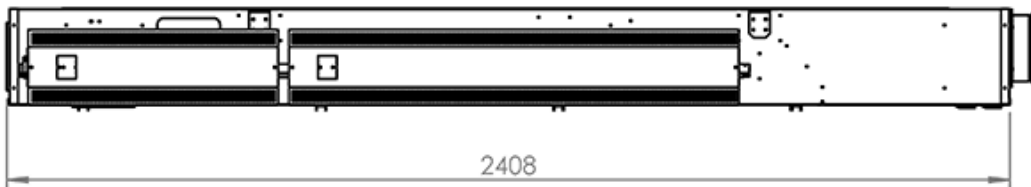


Fig.3. Dimensions from side

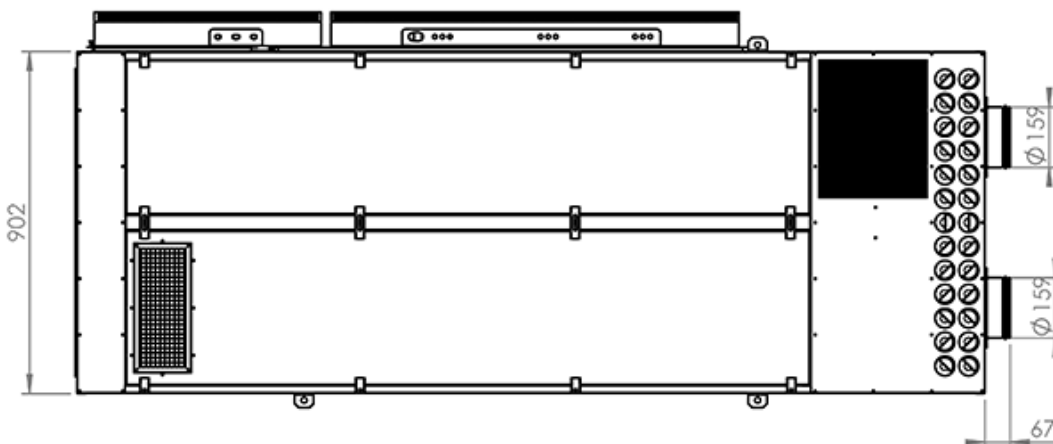


Fig.4. Dimensions from bottom

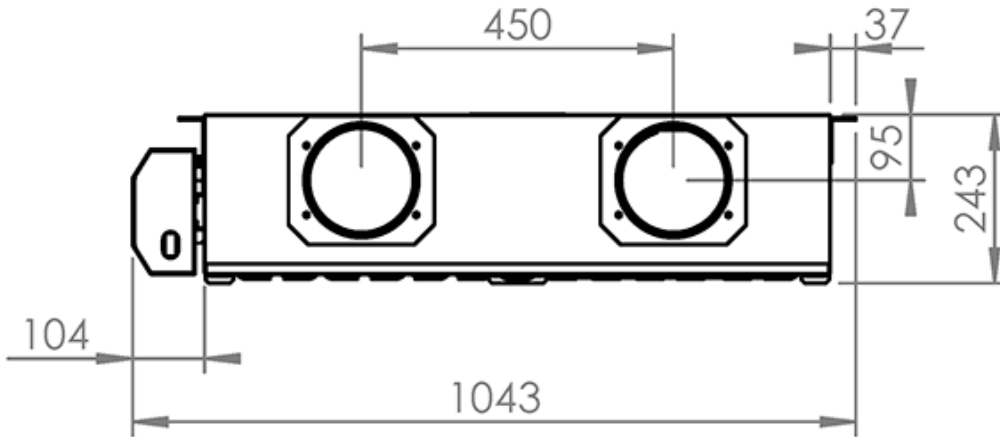


Fig.5. Dimensions from duct connection end

Maintenance

To ensure the proper operation of the unit, maintenance should be carried out at least once a year.

First open the two front acoustic doors giving access to the supply air plenum:

Maintenance

- Clean the exchanger with vacuum cleaner
- Clean the front panel and fan
- Take a visual check of the terminal conditions inside the unit
- Check conditions of terminal blocks: TTAP platform and controllers

Performance check

- HAQ (Halton Air Quality control) settings for terminals
- Blower/extractor flow rates by pressure test
- Fan operation
- The operation of blower/extractor servo-controls on variable flow boxes for Halton TTAP TP1 fitted.

Order code

TP1-M-D-L-W, CO-RC-ZT

Main options	
M = Model	
E	Exposed
I	Integrated
D = Duct connection size [mm]	160
L = Length [mm]	2400
W = Width [mm]	900

Other options and accessories	
CO= Colour	
SW	Signal white (RAL 9003)
B	Jet black (RAL 9005)
X	Special colour (RAL xxxx)
ZT = Taylored product	
Y	Yes (ETO)

Order code example

TP1-I-2400-900; CO=B, ZT=N