



intarSANIT-TCH is the new air conditioning and supply solution for workrooms, with heat recovery from extract air.

The ventilation unit is specifically designed for the supply of fresh air in workrooms and food processing rooms, which operate at a temperature of 10 to 15 °C.

Features

- ▶ 230V 50Hz power supply. Available in 60Hz. Others voltages by request.
- ▶ Built-in a white coated aluminium frame.
- ▶ Compact and lightweight design.
- ▶ Adjustable ventilation flow from 500 up to 1000 m³/h.
- ▶ Compact refrigeration system with natural refrigerant R-290.
- ▶ Static and dynamic heat recovery from exhaust air.
- ▶ Air supply and extraction by centrifugal fan for connection to duct or textile diffuse.
- ▶ G4 pre-filter and F7 new air filter.



- ❄ Air cold room filtration, sterilization and purification.
- ❄ Ventilation flow adaptable to occupation, and room overpressure.
- ❄ High energy efficiency with heat recovery from exhaust air.
- ❄ Easy ceiling installation.

Installation scheme



Workroom ventilation

The regulations on safety and health at work stipulate a minimum ventilation flow of 50 m³/h per worker for non-sedentary work (Directive 89/391/EEC).

UNE-EN 16798 establishes the requirements for air quality. In workrooms, at least medium air quality (IDA3) should be ensured, and high air quality (IDA1) for laboratories and clean rooms.

Cold room type	Indoor air quality UNE-EN 13779	Metabolic activity of the worker at 12°C	Level of CO ₂ in the air above the outer level ppm	Ventilation flow / person (m ³ /h)*
Laboratories, clean rooms	IDA 1, high quality	Light work seated 1.5 met	350	80
Workshops, handling rooms	IDA 2, good quality	Light work standing 2 met	500	75
Cutting rooms	IDA 3, medium quality	Moderate work 1.5 met	800	60
Warehouses, packing rooms, loading and unloading	IDA 4, low quality	Moderate work 1.5 met	1 200	50

Table 1.* Estimated ventilation flow for rooms where contamination is due solely to worker respiration, with good air mixing by dilution.

230V 50Hz | Ventilation | R-290

Series / Model	Recovered power (W)	Cooling capacity (W)	Total cooling power (W) ⁽¹⁾	Ventilation air flow (m ³ /h)	Available impulsion static pressure (Pa)	Impulsion temperature	Max. current (A)	Input power (kW)	Weight (kg)	SPL (dBA) from 3 m ⁽²⁾
R-290 TCH-1	4 700	4 800	9 500	1 000	50	15.0	16	2.37	110	49
				750	80	13.5				
				500	100	12.0				

Options

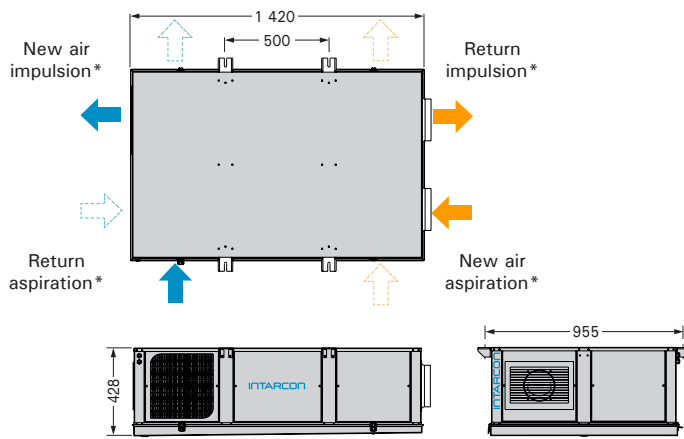
- ▶ CO₂ and VOCs level control.

⁽¹⁾ Nominal performance for outdoor ambient conditions of 35 °C 40 % RH and indoor conditions of 12 °C.

⁽²⁾ Sound pressure level, with directivity 1, measured at 3 m from the unit (non-binding value calculated from sound power).

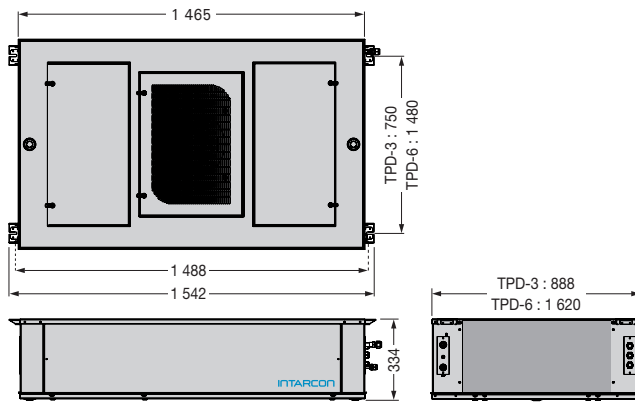
Dimensions

TCH series



* Interchangeable air connection sides.

TPD series



Dimensions in mm.

Control

iPro electronic control with distance digital display.

- ▶ Air supply temperature control.
- ▶ Room temperature control.
- ▶ Control option: remote touch display.
- ▶ Serial communication (TCH).
- ▶ Filter status control (TCH).
- ▶ Air flow control (TPD).
- ▶ External communication (TPD).



Air pathogens transmission

When talking, coughing or sneezing, small droplets are emitted that evaporate quickly and give rise to aerosols of very small particles. These micro-particles can remain in the air for hours and be transported long distances. It has been shown that the survival of viruses and bacteria in these particles is greater the lower the air temperature. The transmission of pathogens by air in closed places is favoured by the recirculation of air without sterilization or filtration treatment and the absence of ventilation with outside air, and it has been shown that these aerosols are the main contagion route of COVID-19.

The simulation of the transmission of aerosols in a process room shows that the probability of contagion in a room without ventilation is 15 times higher than a room equipped with a minimum renewal of outside air and an adequate level of filtration.

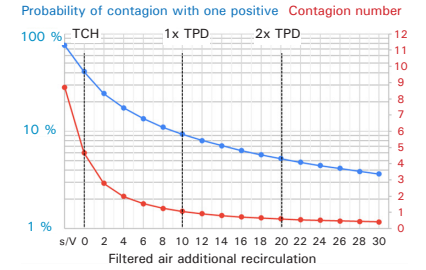


Fig. 2. Simulation of the probability of contagion given a positive in a 200 m² workroom with 13 workers at a temperature of 12 °C. Source: Prof. José L. Jiménez, Dept. of Chem. And CIRES, Univ. of Colorado-Boulder.

Ultraviolet light sterilization

Ultraviolet UV-C radiation of wavelengths of 280 nm - 200 nm damages the DNA of many micro-organisms and prevents them from reproducing. In this way, bacteria, viruses and fungi can be eliminated without leaving residues. The ultraviolet light is placed in the ventilation section to concentrate its biocidal action on the HEPA filters, the G4 pre-filter and the access doors, keeping the interior air treatment section sterile; This guarantees the best hygiene during filter replacement and unit cleaning.



Fig 3. intarSANIT complies with UNE 0048/20 June 2020, on the protection of the health and safety of workers against the risks related to exposure to artificial optical radiation.