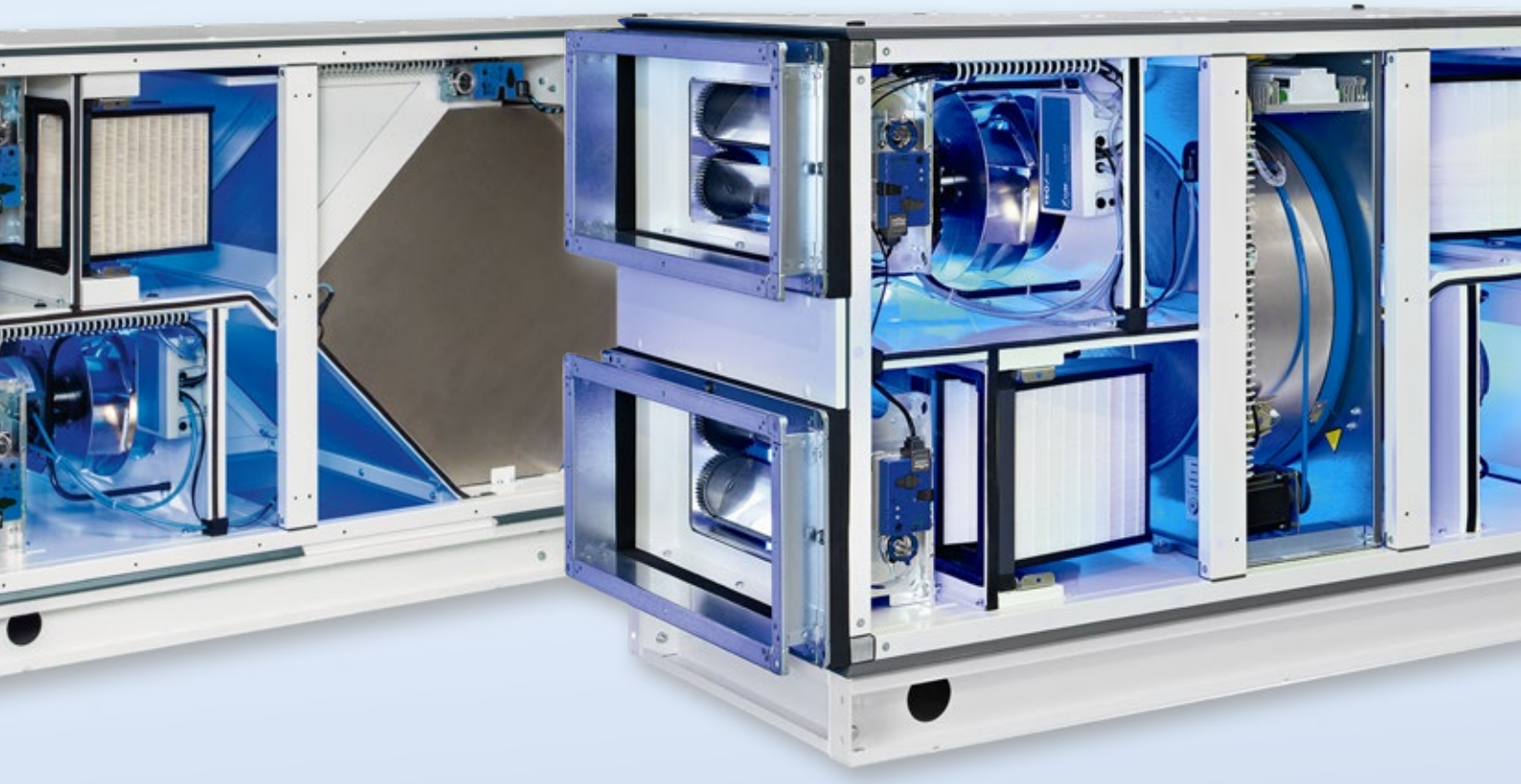
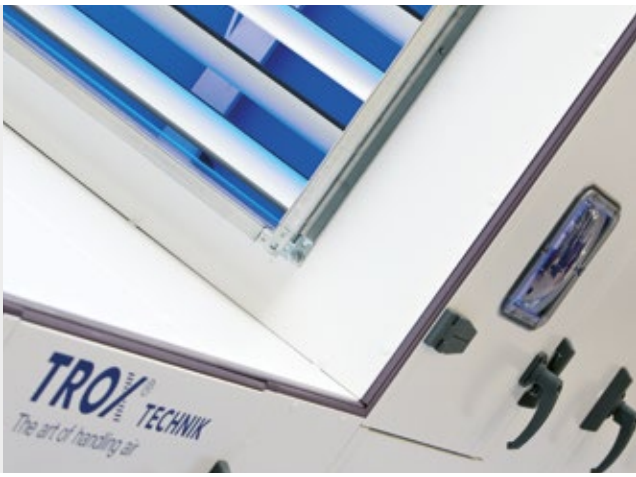
X CUBE compact

Compact. Efficient. TROX.



TROX® TECHNIK

The art of handling air



▶The art of handling air ▶▶

TROX understands the art of handling air like no other company. Since its foundation in 1951, TROX has been developing and manufacturing sophisticated components, units and systems for ventilation and air conditioning as well as for fire and smoke protection. Dedicated research and development have made TROX a global leader of innovation in these fields.

The TROX X-CUBE was a milestone in the market for air handling units in 2011. The X-CUBE units are configurable and meet just about every requirement. They are characterised by the most advanced technology, high quality and sophisticated details.

The innovative air handling units define new, considerably higher standards for quality, performance, reliability, energy efficiency, and hygiene. The X-CUBE offers the entire TROX know-how in an easy-to-operate air handling unit. Compelling all down the line.

With the X-CUBE compact, TROX has continued these benefits in its ready-to-operate and pre-configured air handling unit that combines the excellent features of the X-CUBE in the smallest of spaces.

X-CUBE technology in a compact unit

The X-CUBE compact can be fitted with a counter flow plate heat exchanger or with a rotary heat exchanger – it is in any case the ideal solution for almost all applications, such as:

- Treatment rooms (in clinics, pet clinics, hospitals, health centres or nursing homes)
- Schools, offices and administration buildings
- Club houses, event rooms
- Shops
- Toilet extract air, washrooms, changing rooms
- Hotels, spas, fitness studios

Two heat exchanger systems for volume flow rates of 600 to 6,000 m³/h are the ideal solution for small and midrange applications.

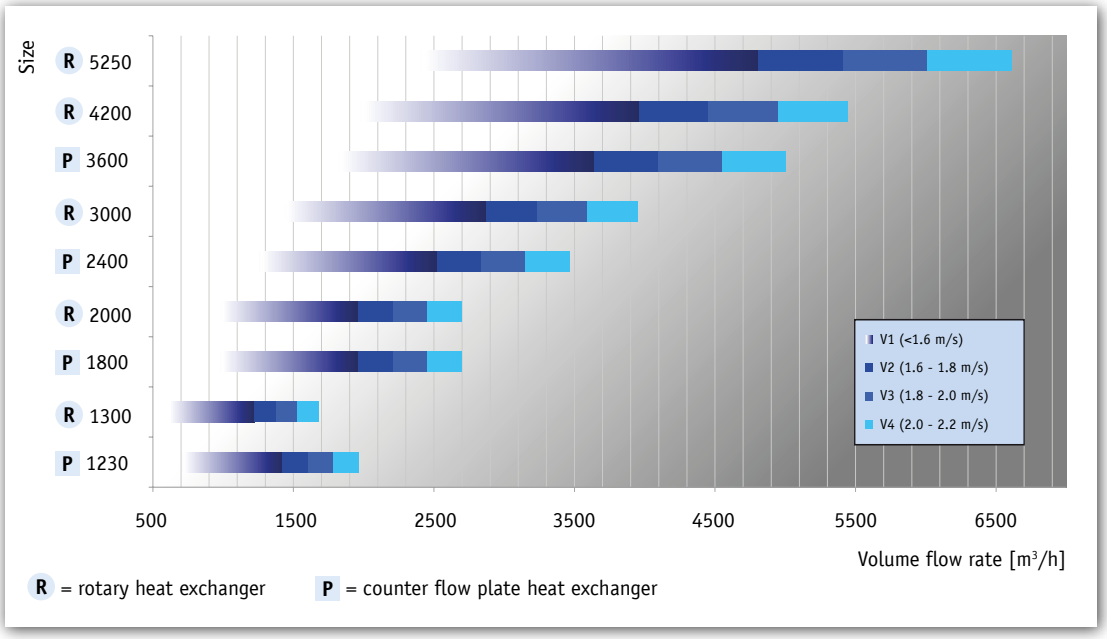
R

X-CUBE compact with rotary heat exchanger

P

X-CUBE compact with counter flow plate heat exchanger

X-CUBE compact: Volume flow rates and sizes



X-CUBE compact: Volume flow rates and sizes to EN 13053

X-CUBE – innovative air handling units from TROX

Smooth internal surfaces ensure optimum hygienic conditions

Weatherproof roof protects each unit and accessories

Top performance, small size

Der X-CUBE compact distinguishes itself by high quality in each and every detail and a whole spectrum of intelligent advantages.

Compact. Efficient. TROX.
With the X-CUBE compact, TROX has created a ready-to-operate and pre-configured air handling unit that combines the excellent features of the X-CUBE in the smallest of spaces. These units handle volume flow rates of 600 to 6,000 m^3/h and offer a heat recovery efficiency of over 80 % (dry, to DIN EN 308), hence they are the ideal solution for small and midrange applications.

Energy-efficient fans without impeller housing and with EC motor ensure maximum efficiency and low sound power levels. An extensive range of accessories, such as a heating coil, a CO_2 sensor and a control panel, can easily be connected to the X-CUBE compact control system.

Advantages at a glance

- Volume flow rates of 600 to 6,000 m^3/h
- Maximum energy efficiency
- Powerful EC fans
- High level of hygiene (conforms to VDI 6022)
- Heat recovery unit with rotary heat exchanger or counter flow plate heat exchanger
- Air filtration with TROX Mini Pleat or NanoWave filters
- Ready-to-operate unit (plug and play)
- Integral, bus compatible controls
- Intuitive operation
- Direct integration with modern building management systems
- Optional weatherproof version with powder-coated metal roof to protect the unit and accessories, with perimeter drip edge, RAL 7012
- Made in Germany

Quick sizing and configuration with the TROX Easy Product Finder

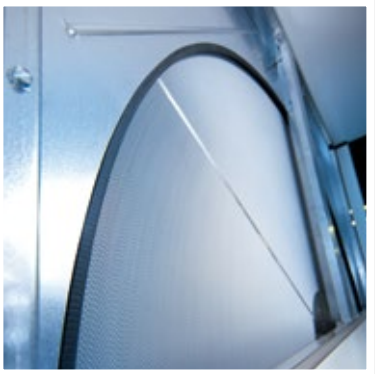
Quick sizing tables or the TROX Easy Product Finder design programme help you find the best unit.

Efficient heat recovery

X-CUBE compact with counter flow plate heat exchanger in four sizes
The X-CUBE compact with counter flow plate heat exchanger ensures completely separate supply air and extract air flows and at the same time efficient heat recovery. It provides room air of the highest quality, even in areas where the air is likely to be contaminated with odorous or chemical substances, e.g. in restaurants, commercial kitchens, or the chemical industry.


Counter flow plate heat exchanger

X-CUBE compact with rotary heat exchanger in five sizes
The X-CUBE compact with rotary heat exchanger is the ideal solution for energy-efficient and maximum heat recovery and moisture transfer in a compact unit of minimal length. The regenerative rotary heat exchanger can be perfectly adapted to individual application situations.


Rotary heat exchanger

Requirements on heat recovery systems resulting from the Energy-related Products Directive

The X-CUBE compact units already meet the minimum thermal efficiency requirements stipulated in the ErP Directive for 2018.

Size	ErP requirements as of 2018	X-CUBE compact[1]
R/1300	Heat recovery systems 73 %	80 %
R/2000		80 %
R/3000		80 %
R/4200		80 %
R/5250		80 %
P/1230		81 %
P/1800		81 %
P/2400		81 %
P/3600		81 %

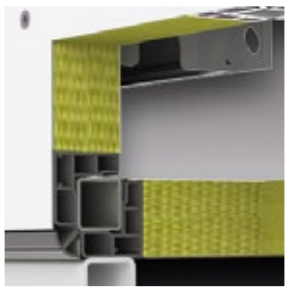
[1] *Heat recovery efficiency (dry) based on design volume flow rate (e.g. R/1300 = 1300 m³/h with an external pressure loss of 250 Pa)*

Perfection in the smallest of spaces

X CUBE compact

Panels

- *Integrated cover sections*
- *Compression latches facilitate inspection and cleaning*

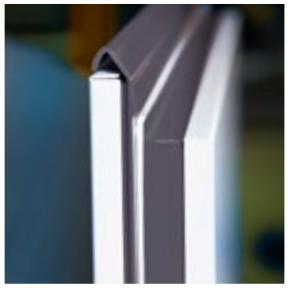


Casing

- *Integral acoustic and thermal insulation*
- *Elimination of thermal bridging due to separation between inner skin and outer skin as well as between supply air and extract air*

Steel frame

- *Powder-coated*
- *Completely covered by panels*



Panel construction

- *Seamless foam seal, maintenance-free*
- *Low leakage*
- *Minimal heat loss*
- *Heat transfer class T2*

Surfaces

- *Corrosion-resistant powder coating*
- *No protruding frame parts, hence easy to clean*

Base frame

- *With holes for the insertion of transport tubes (see central picture)*
- *Removable wire slings at the top*

Centrifugal fan

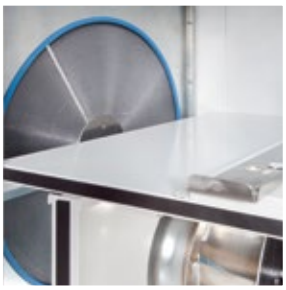
- *Fan with no impeller casing and with EC motor*
- *High efficiency*
- *Low sound pressure level*
- *Complies with the efficiency class IE4 according to IEC 60034-30*

Filter

- *Eurovent-certified, energy class A*
- *Compact depth*
- *Low initial differential pressure*
- *High dust holding capacity*
- *Quick-release clamping mechanism*

Heat recovery

- *Choice of rotary heat exchanger or counter flow plate heat exchanger*



Multileaf dampers

- *Aerodynamically profiled hollow blades*
- *Leakage class 2 according to EN 1751*

Controls

- *For Modbus and BACnet*
- *Removable tray*
- *Control input signal for peripheral accessories*

Control panel

- *Intuitive operation with 3.5“ touch display*

Casing tested to EN 1886 by TÜV Süd, Germany

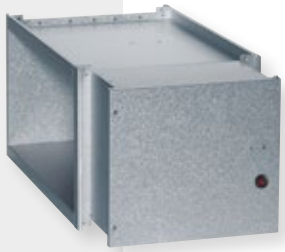
- Leakage class L1 (M)
- Stability class D1 (M)
- Filter classes up to F9 (M)
- Thermal transmittance class T2
- Thermal bridging class TB2

TÜV SÜD
Industry Service

Heating coil module XCC-HM

Heating/cooling coil module XCC-HCM

PWW heating coil module XCC-HD



Electric duct air heater XCC-EHD

Droplet eliminator for XCC-HCM

Extensive range of accessories

Several accessories have been developed specifically for the X-CUBE compact and fit in perfectly with the various units. The accessory modules with the same powder-coated casings as the X-CUBE compact offer many advantages: corrosion resistant high-quality materials, easy access for cleaning and maintenance, and external standardised connections. The modules have a spigot which allows for direct connection to the X-CUBE compact, or they can be installed in the ductwork and remote from the X-CUBE compact.

The heating and cooling coil modules
can be connected to the X-CUBE compact units either individually or as combined subassemblies, depending on the requirements of temperature control.

Heating module XCC-HM and PWW duct heating coil XCC-HD
The heating coil module is simply integrated with the heating circuit from the outside. A frost protection device on the heating module protects it from damage due to subzero temperatures.

Heating/cooling coil module XCC-HCM
The heating coil/cooling coil module helps to provide the ideal supply air temperature.

Electric duct air heater XCC-EHD
An electric duct air heater is available for installation into the duct. It is used to increase the supply air temperature or as a preheater in the fresh air duct.

Droplet eliminator for XCC-HCM
The blades of the slide-out droplet eliminator ensure complete drainage of the condensate into the stainless steel drip tray underneath.

An optional electronically controlled circulator pump and a 3-way control ball valve with actuator complete the range of modules.

Control panel XCC-CD-ST
The XCC-CD-ST is a control panel with touch screen and a user-friendly graphical interface, and was specially designed for X-CUBE compact control. The control panel communicates with the X-CUBE control master via a Modbus interface, which ensures simple installation.

Control panel XCC-CD-ST

Digital control panel XCC-CD-RD
Digital flush mounted control panel for operation and temperature measurement. Integral Modbus communication interface to control push button functions or access the display. The room temperature is measured with an integral sensor.

Room control panel XCC-CD-RD

Analog control panel XCC-CD-RA
Analog surface mounted control panel for setting the room temperature, to be used in the room where the setpoint value is to be adjusted. The setpoint value can be adjusted by ± 5 °C. The room temperature is measured with an integral sensor.

Controls module XCC-CB
Module for the connection of functional modules (provided by others) with the compact unit.

Controls module XCC-CB

Sensors
Various sensors are available for capturing the room conditions, e.g.:
– Temperature sensor for duct installation (XCC-S-TD)
– Combined CO_2 and VOC sensor for duct installation (XCC-S-CO2VOCd)
– Combined temperature, CO_2 and humidity sensor (XCC-S-TCO2HR)


Sensor XCC-S-TCO2HR

Constant pressure control XCC-CPC
Retrofit set for changing from volume flow control to constant pressure control.

Constant pressure control XCC-CPC

Advantages at a glance

High energy efficiency
Energy efficiency was the guiding concept in the development of the X-CUBE compact. Construction, insulation, low leakage, heat recovery, energy-efficient motors, and intelligent control technology have resulted in a considerable savings potential when compared to conventional air handling units.

Unparalleled hygiene
With the special shape of the casing, its smooth surfaces, and the way in which the components are installed, the X-CUBE compact complies with the VDI 6022 guideline.

Easy installation
The X-CUBE compact is delivered ready to operate. Transport is easy as the unit can be disassembled and shipped in three parts. Holes are provided for the insertion of transport tubes so that each unit can be lifted with a crane.

Safe maintenance
The X-CUBE compact has been designed without any sharp edges and hence ensures maximum safety. All components are easily accessible and easy to maintain.

Intuitive operation
To meet different application requirements, the X-CUBE compact can be easily adjusted using the control panel on the unit or a web browser. Virtually all status information is available at a glance. The excellent reliability ensures easy handling and safe operation.

Seamless integration with modern building management systems
The X-CUBE compact can be integrated with modern building management systems via Modbus or BACnet. Adding other interfaces is possible.

Made in Germany
Thanks to its highly advanced manufacturing processes in Germany, TROX can supply excellent quality and meet the most demanding delivery times. Just for the X-CUBE, TROX built a dedicated 15,000 m² production facility in Anholt, which has been equipped with the most advanced manufacturing technology. Almost needless to mention that TROX implements the relevant industry standards and has all its components and processes certified.

It's TROX

The whole picture

The X-CUBE units have benefitted from TROX's decades of experience and attention to detail. All components ideally complement one another. TROX engineers look beyond the actual air handling unit; they take the whole ventilation and air conditioning system into account.

Its own test laboratories allow TROX to optimise the acoustic, energy-related or aerodynamic characteristics of a unit and all its components. TROX is the only German manufacturer of air handling units whose know-how extends to filters, fire and smoke protection, sound attenuators, and to all other components and systems.

The TROX airflow laboratory in Neukirchen-Vluyn, Germany

International expertise

For many years TROX has been producing air handling units in Spain, South Africa and South America for the local markets. That experience has been incorporated in the development of the X-CUBE units and now benefits customers in Germany.

References

TROX X-CUBE units have already been installed in many buildings in Germany where they ensure an excellent climate. Their range of application is diverse and includes massive production halls, large office complexes, clinics like the Charité and more.

Charité in Berlin

Engelbert Strauss in Biebergemuend

TROX® TECHNIK

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