TROX® TECHNIK
The art of handling air

# X-CUBE CENTRAL AIR HANDLING UNITS

## From good to better

X-CUBE

### REDUCE ENERGY COSTS WITH THE X-CUBE DOWNSTREAM SOUND ATTENUATOR

Sound attenuators improve, obviously, the acoustics; but they can also help to reduce energy costs, as is proven by the new TROX downstream sound attenuator for the X-CUBE AHU.

It is placed just downstream of the fan and, due to the clever air distribution, creates a much lower pressure drop while at the same time reducing the sound power level.

- Patented new product
- Ideal for air volumes up to 9,000 m³
- Optimised performance, improved downstream characteristics
- Lower noise emission levels
- Increased energy efficiency

## X-CUBE RUN-AROUND COIL SYSTEMS

### FOR EFFICIENT HEAT RECOVERY

The Ecodesign Directive prescribes that from 2018 onwards, air handling units must offer a heat recovery efficiency of more than 73%, and RAC systems more than 68%. A run around coil system from TROX with a TROX hydraulic unit including special RAC control guarantees highly efficient heat recovery of up to 80 %.

Furthermore: A special highlight is the reliable technical data by a certified design software.

The perfect overall system:

- Optimum control
- High operational reliability
- State-of-the-art technology
- Economic efficiency

Suitable for all requirements:

- Optional cold and heat feed
- Dehumidification recovery
- Preheating/filter
- Indirect adiabatic cooling

Find out more in our brochure "X-CUBE Run around coil system for efficient heat recovery".

## TROX AUTOMATICALLY CHECKS ENERGY EFFICIENCY ACCORDING TO ECODESIGN DIRECTIVE

| ErP-Stage | | | January 2016 | January 2018 |
|---|---|---|---|---|
| Heat recovery system (HRS) BVU with a regulator device | | | demanded | demanded |
| HRS BVU heat recovery effiency η [%] | | Run-around coil system | 63 | 68 |
| | | Plate heat exchangers, rotary heat exchanger, miscellaneous | 67 | 73 |
| Filter differential pressure monitoring | | | – | demanded |
| Fan speed regulation | | | demanded | demanded |
| Fan efficiencies UVU $\eta_{stat}$ [%] | | $P_{stat} \leq 30$ kW | $6{,}2 \times \ln(P_{stat}) + 35$ | $6{,}2 \times \ln(P_{stat}) + 42$ |
| | | $P_{stat} > 30$ kW | 56,1 | 63,1 |
| Internal SFP-Value reference configuration [W/(m³/s)] | BVU | | | |
| | Run-around coil system | $q < 2$ m³/s | 1700+E–300 × q/2–F | 1600+E–300 × q/2–F |
| | | $q \geq 2$ m³/s | 1400+E–F | 1300+E–F |
| | Plate heat exchangers, rotary heat exchanger, miscellaneous | $q < 2$ m³/s | 1200+E–300 × q/2–F | 1100+E–300 × q/2–F |
| | | $q \geq 2$ m³/s | 900+E–F | 800+E–F |
| | UVU | | 250 | 230 |
| HRS-Efficiency bonus E [W/(m³/s)] | | Run-around coil system | (η–0,63) × 3000 | (η–0,68) × 3000 |
| | | Plate heat exchangers, rotary heat exchanger, miscellaneous | (η–0,67) × 3000 | (η–0,73) × 3000 |
| Filter correction value F [W/(m³/s)] | | Reference configuration | 0 | 0 |
| | | Filter M5 is missing | 160 | 150 |
| | | Filter F7 is missing | 200 | 190 |
| | | Filters M5 + F7 are missing | 360 | 340 |

With the adoption of the Kyoto Protocol, the European Union has committed itself to reducing CO2 emissions by at least 20 percent by 2020. In order to reach this goal, the EU adopted already in 2005 the Energy-Using Products Directive. The Energy-Related Products Directive 2009/125/EG, colloquially called 'ecodesign directive', defines minimum requirements for many energy-related products. Within the European Union, air handling units have to meet new energy efficiency requirements from 1 January 2016 onwards. The next step after that will become effective two years later, on 1 January 2018.

TROX air handling units of Type X-CUBE are configured to individual customer requirements with a dedicated configuration software. This software automatically considers the new energy efficiency requirements for all X-CUBE air handling units and hence ensures their correct configuration. All X-CUBE air handling units that are produced and placed on markets of the European Union from 1 January 2016 onwards meet the new requirements.

Please find attached the table ErP – Efficiency Requirements as of 2016

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