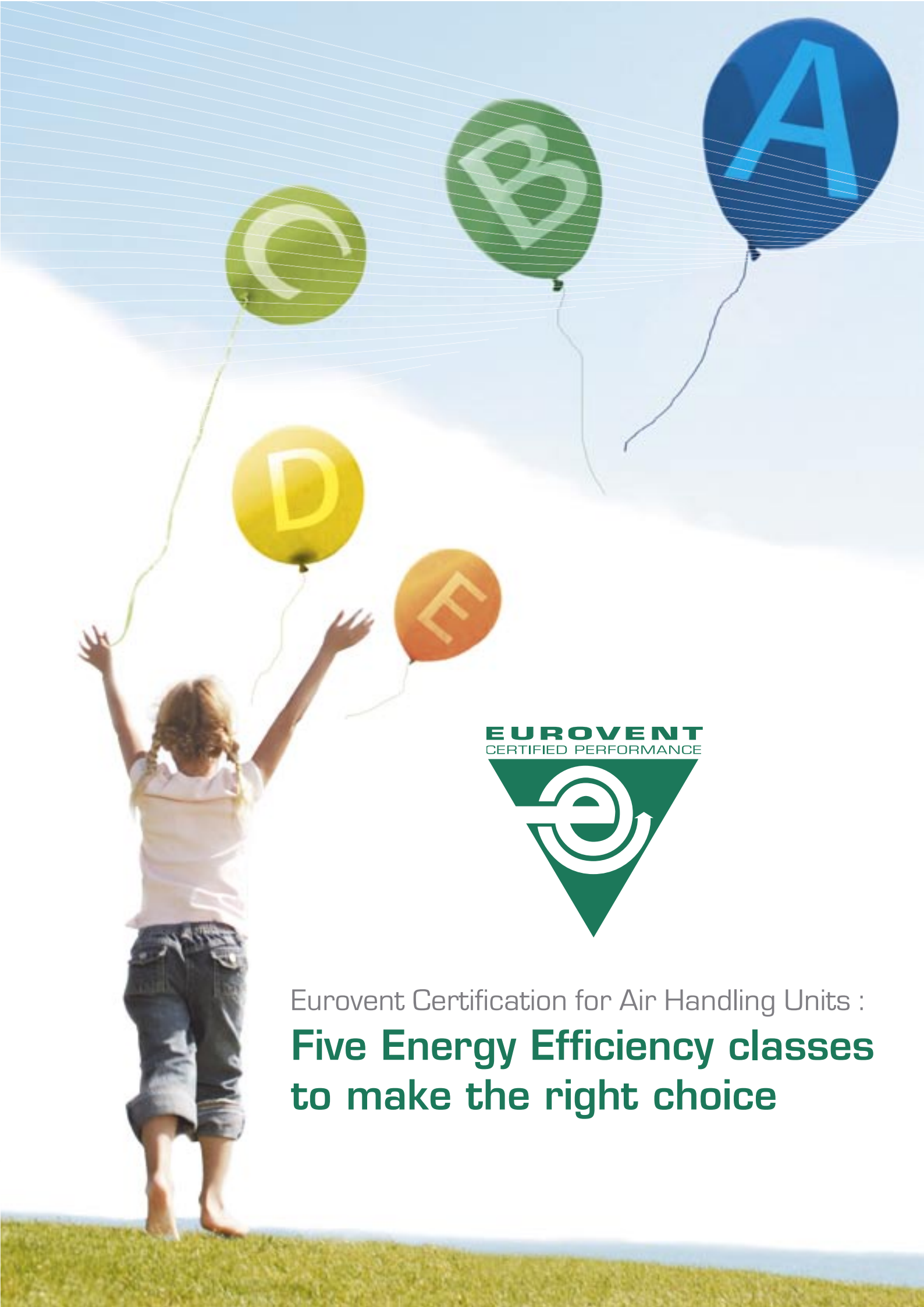

EUROVENT
CERTIFIED PERFORMANCE

Eurovent Certification for Air Handling Units :

Five Energy Efficiency classes to make the right choice

A truly international certification

The Eurovent Certification Programmes are managed by an autonomous organization, the Eurovent Certification Company. It is recognized world-wide for securing correct and reliable product data for HVAC&R equipment.

Currently, more than 180 manufacturers from all over the world have their units tested on a voluntary basis in the framework of 17 certification programmes of which the first ones were established in 1994.

The principle of Eurovent Certification is the same for all programmes and unique within the HVAC&R sector, **as Eurovent is the only body in Europe verifying physically whether the manufacturer's data are correct** through tests carried out by independent laboratories under contract with Eurovent Certification.

Manufacturers willing to participate present their product range to Eurovent Certification. Eurovent Certification then makes a random choice of a product at the manufacturing site of the producer and asks a test laboratory to verify it. Only when the test results correspond to the data in the product literature or in the software of the manufacturer, will the product be certified. If not, the manufacturer is required to change his literature or his software or else to withdraw from the certification programme.

Eurovent works with 12 European test facilities specialised in different product groups according to their equipment and set-up, such as TÜV in Germany, etc.

Five good reasons to choose Eurovent Certified Air Handling Units (AHU)

1 No certification without verification

Eurovent Certification offers the only AHU Certification Programme in Europe where the final assembled products, and not only the software of component suppliers, are regularly verified by independent test laboratories according to European and International Standards.

2 Internationally recognized

The Eurovent Certification Programmes are an internationally recognized guarantee for reliable and correct manufacturers' data.

3 Always the right choice

The five energy efficiency classes of the new energy efficiency label for Air Handling Units guarantee that you always make the right choice : whether you want an A or an E.

4 Excellent value for money

You get exactly what you pay for.
Due to reliable and accurate capacity ratings, the energy cost of the Air Handling Unit is predictable and consistent with the product and its application. The unit can be designed with confidence using correctly sized and matched equipment. This will bring down the operational cost.

5 Fair competition

By using the same rating standards for all manufacturers participating in the Eurovent Certification programmes, Eurovent Certification guarantees fair competition between the manufacturers and facilitates the engineer's choice since he can trust in the supplied data without making detailed comparisons.

EN 13053 : A European Standard as the basis to evaluate the energy efficiency of Air Handling Units

To facilitate the evaluation of the energy efficiency of Air Handling Units for planners, OEMs, installers and end-users, Eurovent Certification developed an energy efficiency label based **on the internationally recognized European Standard EN 13053 "Ventilation for buildings – Air handling units – Rating and performance for units, components and sections"**

Some basics about EN 13053 :

The energy consumption of Air Handling Units is mainly determined by three factors:

- Temperature efficiency and pressure drop of the heat recovery
- Air velocity in the internal cross section of the unit
- Absorbed electric power of the fan motors

To measure means to know : The Eurovent Certification programme for Air Handling Units

Like no other certification programme in Europe, Eurovent Certification stands for reliable, correct and precise manufacturers' data.

Why ?

Because the data are actually measured by independent test laboratories according to the international test standards EN 13053 (performance characteristics) and EN 1886 (mechanical characteristics)

What ?

Within the framework of EN 13053 and EN 1886, several criteria are regularly measured by independent test facilities under contract with Eurovent Certification.

Mechanical characteristics (Test Standard EN 1886)
Casing strength
Casing air leakage
Filter bypass leakage
Thermal transmittance of the casing
Thermal bridging factor
Acoustical insulation of casing

Performance characteristics (Test Standard EN 13053)
Air flow - Available static pressure - power input
Octave band in-duct sound power level
Airborne sound power level
Heating capacity
Cooling capacity
Heat recovery
Pressure loss on water side

How ?

Air Handling Units are no mass production units. Each product is unique and specifically adapted to the customers' requirements. The AHU Eurovent Certification Programme takes this into account.

Standard AHU Certification Procedure:
A product which has already been manufactured for a customer will be chosen randomly at the manufacturer's site for the test.
The manufacturer is then required to rebuild exactly the same product for the certification.
The unit will be delivered to an independent test laboratory under contract with Eurovent.
The test laboratory will verify the air handling unit characteristics and compare the obtained values to the manufacturer's software output.
The aim is to guarantee that the units are actually built according to the manufacturer's software or, in other words, that the software reflects the actual values of the unit.

How often ?

Inspection of the manufacturer's site to make sure that the units are built according to the manufacturer's software is carried out every year by a Eurovent Expert and tests of the real unit and the model box are carried out regularly in independent test houses according to the ISO Quality System of the participant.

The Eurovent Energy Efficiency Label for Air Handling Units

Five energy efficiency classes to make the right choice

With the new energy efficiency label for Air Handling Units, Eurovent Certification helps planners, installers, OEMs and end-users selecting the most suitable product for their application.

Energy efficiency at one glance :

Five energy efficiency classes from A (for the highest energy efficiency) to E (for the lowest energy efficiency) offer exactly the right answer regarding the level of energy efficiency required, whilst keeping it clear and simple.

Globally recognized :

Based on the globally recognized European Standard EN 13053, the Eurovent energy efficiency label for Air Handling Units takes into account the air velocity, the absorbed electrical power of the fan motor as well as the efficiency of heat recovery.

A clear vision requires precision :

Precision is an indispensable prerequisite for the energy efficiency certification of Air Handling Units. Eurovent Certification is currently the only certification programme in Europe able to guarantee such precision through regular measuring and testing of the units.

Classes and Requirements :

Definition of two unit types :

1. AC↬ to EC↬ for units with 100% recirculation air or with outdoor air > 9°C : no heat recovery
2. A to E for units with outdoor air ≤ 9°C and heat recovery

CLASS	Maximum velocity	f-Pref	Heat recovery system (outdoor air ≤ 9°C)		
	[m/s]	[-]	η [%]	Φ [%]	ΔP [Pa]
AC↬ / A	≤ 1.8	≤ 0.90	≥ 71 %	≥ 75 %	≤ 280
BC↬ / B	≤ 2.0	≤ 0.95	≥ 64 %	≥ 67 %	≤ 230
CC↬ / C	≤ 2.2	≤ 1.00	≥ 55 %	≥ 57 %	≤ 170
DC↬ / D	≤ 2.5	≤ 1.06	≥ 45 %	≥ 47 %	≤ 125
EC↬ / E	≤ 2.8	≤ 1.12	≥ 36 %	≥ 37 %	≤ 100
FC↬ / F	No requirements				

Life Cycle Cost (LCC) considerations for Air Handling Units

Life Cycle Cost (LCC) considerations are a very powerful tool to evaluate the energy consumption and the total operational cost of Air Handling Units. When combined with an energy efficiency label, the customer can be sure to get exactly what he expects.

No more apples and oranges

Eurovent Certification provides a detailed model to get a clear picture of the full cost involved with all Air Handling Units whilst making sure that the data of all manufacturers participating in the programme are comparable.

It takes into account parameters such as :

- *Air volume flow*
- *Air supply temperature in winter and summer*
- *Thermodynamic functions within the unit (heating, cooling, humidification, dehumidification)*
- *Climatic data at the place of the equipment*
- *Heat recovery efficiency*
- *Energy consumption of the fans*
- *Operational time of the installation*
- *Investment cost*
- *Energy cost*
- *Maintenance cost, etc.*

LCC and Energy Efficiency Label :

An unbeatable combination

The data of Air Handling Units certified by Eurovent are directly comparable and offer a neutral basis for Life Cycle Cost calculations. Combined with the Eurovent energy efficiency label, planners, installers, OEMs and end-users obtain precise and clear data to be sure to make the right choice.

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