

# Eurovent certification for Air Handling Units in hot and humid climates



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# Value of independent verification

- Independent verification of manufacturer's claims
- Developed in cooperation with the industry, high expertise
- Allows comparisons between products
- Certified products are better integrated into a bigger system (e.g., building, AHU, technical building systems, etc.) which makes the system more reliable

# Value of independent verification

- Allows calculation of energy consumption over live span
- Increases confidence for consultants, no need to over-size
- Provides energy labelling, also for hot and humid climates
- Easy to apply, but verification by database is essential

# ECC programme overview



## VENTILATION & INDOOR AIR QUALITY

Air Handling Units (+ hygienic option)

**RECENT** Ventilation ducts

Air Filters

**RECENT** Residential Air Filters

Air Cleaners

Fans

Air to air heat exchangers

Residential AHU



## INDOOR CLIMATE

Variable refrigerant flow

Chilled beams

Rooftops

liquid-to-liquid plate heat exchangers

Fan coils

Air conditioners

**RECENT** Heat Interface Units



## PROCESS COOLING & FOOD COLD CHAIN

Refrigerated Display Cabinets

Heating & Cooling Coils

Drift eliminators

Heat Recovery Systems with intermediate heat transfer medium

Chillers & Heat-Pumps

Cooling towers

Condensing Units

Evaporative cooling

Heat Exchangers for refrigeration

# Eurovent AHU certification

- Heavily customised machinery which is difficult to certify
- Other organisations certify individual parts, but not the complete system
- About 80% of AHUs sold in Europe and 60% in Middle East are Eurovent certified
- Tested for mechanical and electrical performance characteristics, incl. sound power, ERC, and selection software
- Testing regime with annual recurrent audits
- Global benchmark

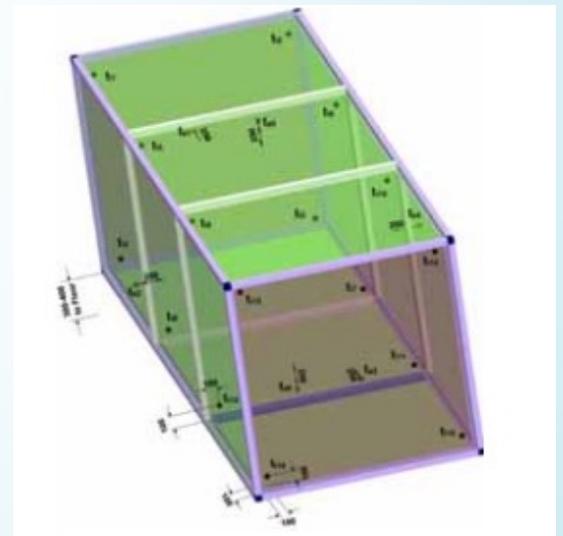
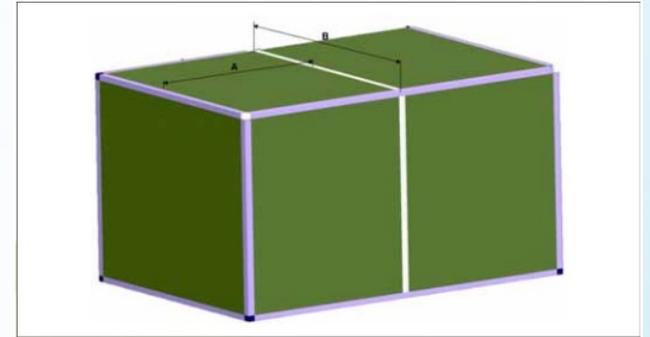
# Air Handling Unit

## • Third Party Certified

### Model Box

Construction envelope built according to specifications presented in manufacturer's literature, used to establish according to relevant standards:

- Mechanical performance
- Thermal performance
- Acoustical performance (requirement for EN)



# Air Handling Unit

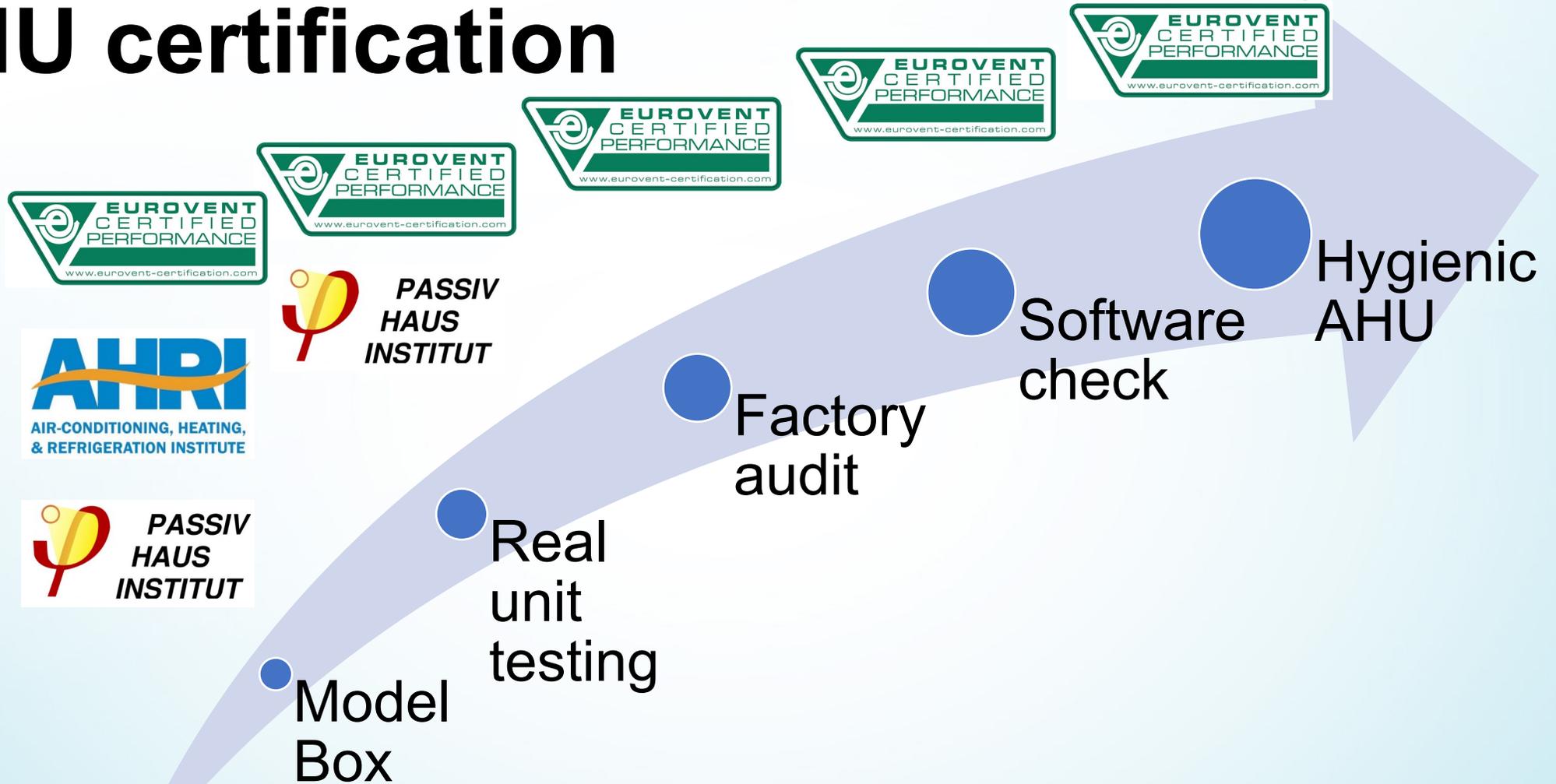
- Third Party Certification

## Real Unit

Unit from the range of a specific size,  
used to establish complete performance  
for all the available functions of the Air  
Handling Unit range



# AHU certification



# Model box

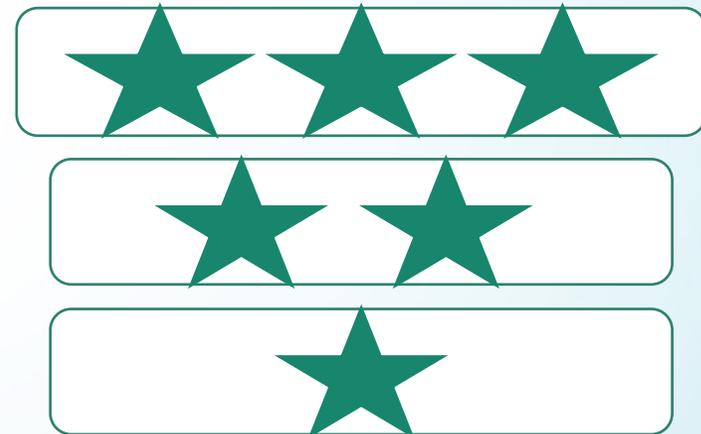
Casing	ECP	Passivhaus	AHRI
Casing Deflection Rating Class	✓		✓
Casing Air Leakage Class	✓	✓	✓
Thermal Transmittance Class with Leakage	✓		✓ (option)
Thermal Transmittance Class without Leakage			✓ (option)
Thermal Bridging Class	✓		✓ (option)
Acoustic Insulation	✓		
Filter Bypass Leakage	✓		

# Real unit testing

Real Unit Performances	ECP	Passivhaus	AHRI
Energy Recovery Rate	✓	✓	N/A
Octave band in-duct sound power level	✓		
Air flow	✓		
Total electrical power consumption of the ventilation apparatus	✓	✓	
Acoustic Performance	✓	✓	
Energy Efficiency	✓	✓	

# Hygienic AHUs

- The Hygienic option is a certification by range
- 3 levels of certification represented by stars
- requirements are listed in the Appendix H TCR ECP-05-AHU-2021



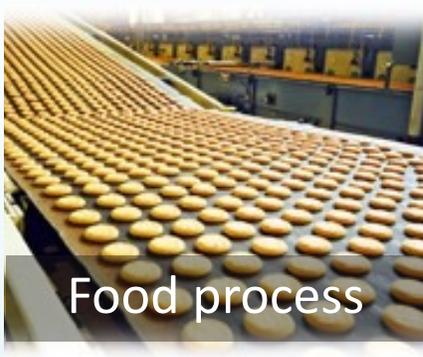
# Hygienic AHUs



# Hygienic AHUs



# Hygienic AHUs



**A level 3 unit can also be used for a hospital, an office, a school, a hotel or a retail**

# Hygienic AHUs

	Offices, schools, hotels, retail ...  Level 1 ★☆☆	Hospitals  Level 2 ★★☆☆	Pharmaceutical, food processes, white rooms  Level 3 ★★★
Corrosivity class for metallic materials	At least C3		At least C4
Thermal Bridging class	At least TB3		At least TB2
Casing Air leakage Class	At least L2 (M)* & L2(R)*		At least L1 (M) & L1(R)
Water Drainage from pans, condense trays and water tanks	95%		
Filters class (supply side)	epm1 50%		epm1 85%
Number of filter on supply side	1	2	
Fin thickness	0.10 mm	0.12 mm	
Minimum distance between fins (cooler)	2.5 mm		3.0 mm
Minimum distance between fins (heating)	2.0 mm		2.5 mm

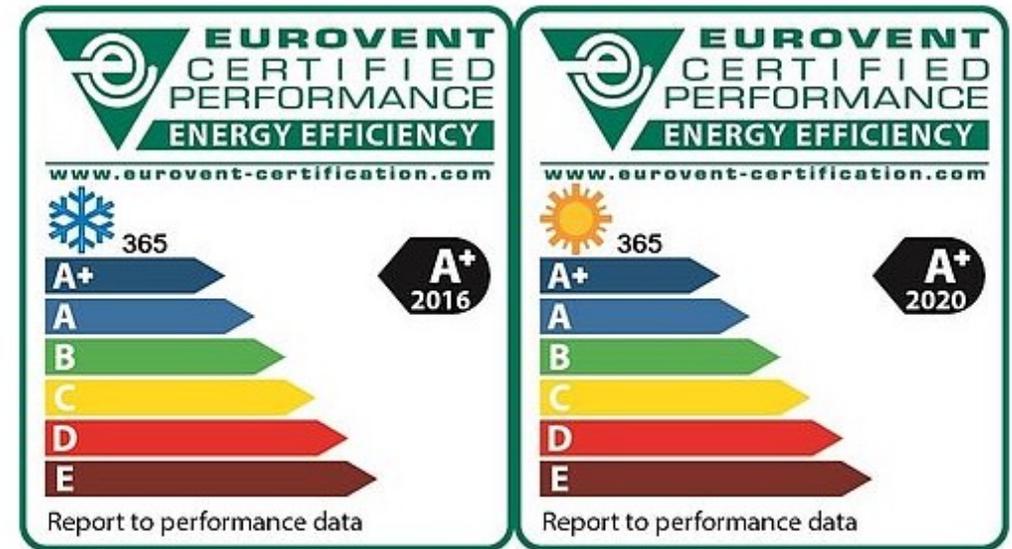
Specifications are subject to change without notice.

\* M= model box, R= real unit

# Energy labelling

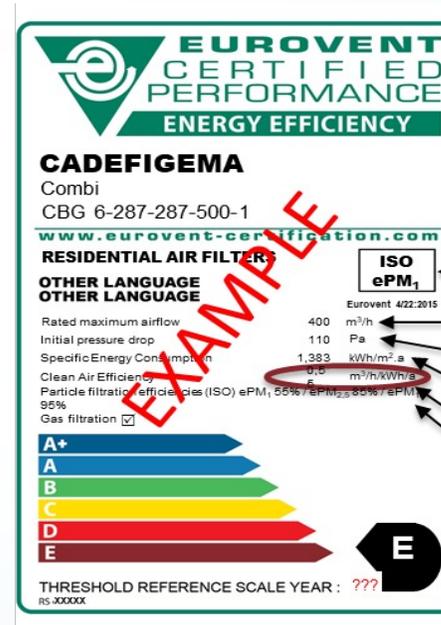
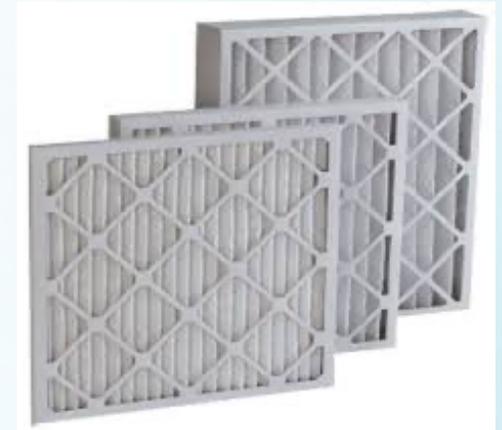
## Summer label

- Calculated based on ASHRAE weather data
- Energy label according to project location



# Eurovent Filter certification

- Filters are 2<sup>nd</sup> largest contributor to pressure drop
- Only filter certification verifying energy AND filtration efficiency
- ISO16890



# Key takeaways

- Security for your configuration: You can design precisely to the operating point; safety margins are not necessary
- Transparent and realistic comparisons of units
- Saves money and time
- Investment security
- Enables fair competition
- Highest level of confidence in product performance

# THANK YOU

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