



# Witness Testing

Chiller testing facilities  
Daikin Applied Europe



Our capabilities, your comfort



# Witness testing

## Peace of mind system integration

Each day, the solutions offered by Daikin Applied Europe ensure people the best configuration for their thermic comfort. Our solutions for process cooling and heating are worldwide requested. Any application can be served, resulting in a wide range of products available for our customers. We are industry leaders in air cooled and water cooled chiller technologies. All our efforts result in dedicated solutions tailored to application peculiarities. Our performance in each condition can be shared with customers during witness tests.

During witness testing even the toughest design conditions can be simulated. Customers and consultants can appreciate product performance before its delivery, ensuring “peace of mind” chiller integration in the whole project.

We have specific competencies and state of the art testing facilities to pursue these goals.

### The new Daikin Applied Europe testing facilities in Cecchina factory (Rome, Italy) include:

- › A newly built climatic test chamber
- › 3 test stands dedicated to water cooled chillers
- › Customer Lounge, from where testing can be viewed in all comfort



# New Climatic Chamber



The state-of-the-art testing centre follows a rigorous set of procedures to ensure proper operation of Daikin products in any environment. The new testing regime has been independently verified and accredited to EN 14511:2013, ISO 9614:2009 and other major recognised European and American HVACR industry standards. In addition, the climatic chamber has been approved by the Air Conditioning, Heating and Refrigeration Institute (AHRI), with tests on air-cooled units for the Eurovent testing campaign being conducted in this new Daikin facility.

Up to  
**2000 kW**  
in cooling  
at the forefront  
of testing

The range of tests that could be performed in the new chamber is very wide. It can be summarized in:

#### **Eurovent and AHRI conditions at full load and part load**

#### **Customized full load and part load points, including:**

- › High ambient temperature installations: up to +52 °C
  - › Extremely low ambient temperature: down to -15 °C
  - › Negative evaporator leaving water temperature conditions: down to -8 °C with glycol solutions
  - › Heat recovery and heat pump tests
  - › 4-6 pipes units
  - › Free cooling
  - › Acoustic tests
- 
- › Voltage range: 380 – 400 – 440 – 690 V
  - › Frequency range: 50 – 60 Hz

The new climatic chamber enables testing of the entire air-cooled chiller range, in any design condition.



**EWYD-4Z Multipurpose units**

4 and 6 pipes layouts can be tested

**NEW R1234ze chiller EWAH-TZ B**

Up to 1060 kW – 20 FANS

**Up to 30 FANS chiller EWAD-T B**

Cooling capacity up to 2000 kW

Each application can be simulated. From comfort cooling conditions (residential / office / commercial buildings / hospitals) to highly customized chillers for industrial process cooling applications (food / pharma / refrigerated warehouses / data centers, etc.). Chillers for rental cooling purposes can be tested in our facility, in different expected operating conditions.

Here are only a few examples of successful witness tests:



**Application: Pharma**

**Unit: EWADC11TZ-XS B2**

Cooling load: 695 kW

Conditions:

Chilled water in/out: 0/-5 °C

Ambient temperature: 42°C

Tests performed:

Full load + 3 part loads

Testing time: 1 day



**Application: Bank headquarters**

**Unit: EWYD580BZ-SS**

Cooling load: 580 kW

Heating load: 618 kW

Conditions:

Chilled water in/out: 12 / 7 °C at 35 °C ambient

Heated water in/out: 40 / 45 °C at 7 °C ambient

Tests performed:

Full load in cooling & heating

50% part load in cooling

Acoustic test in cooling – full load

Testing time: 1 day



**Application: Hospital**

**Unit: EWYD6504Z-XR A2**

Cooling load: 756 kW

Heating load: 751 kW

Conditions:

Chilled water in/out: 12 / 6 °C at 38°C ambient

Heated water in/out: 40 / 45 °C at 5 °C ambient

Tests performed:

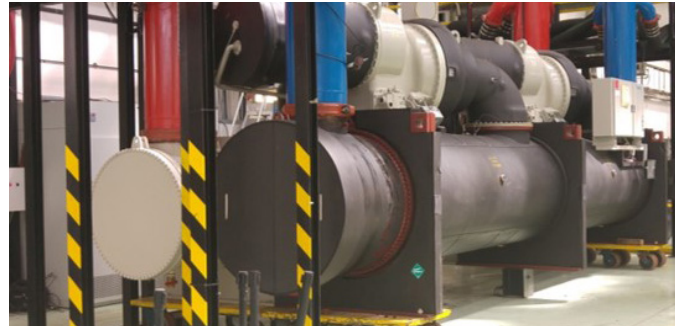
Full load in cooling & heating

Acoustic test in cooling – full load

Testing time: 1 day

# Water cooled test stands

Our chiller testing facility offers the most advanced testing technology for water cooled units. 3 test stands are available for witness testing purposes, up to 2 – 4 – 11 MW cooling capacity. The largest capacity test stand is also AHRI approved.



Cooling applications can be simulated in many conditions. From small-medium sized comfort cooling conditions (residential / office / commercial buildings) to highly customized chillers for industrial process cooling applications (food / pharma, etc.) and up to large

public buildings and district cooling applications. Chillers for marine applications can be tested in our facility, ensuring complete integration of the chiller in the ship's HVAC system.

Here are only a few examples of successful witness tests:



**Application: Courthouse**

**Unit: EWWDC21VZ-XS A2**

Cooling load: 1736 kW

Conditions:

Chilled water in/out: 10 / 5 °C  
 Condenser water in/out: 40 / 45 °C  
 Power supply: 400 V / 50 Hz

Tests performed:

Full load + 3 part loads  
 Testing time: 1 day



**Application: Marine – cruise vessel**

**Unit: DWDC**

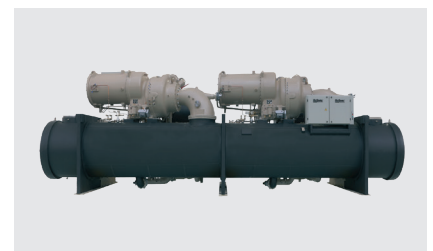
Cooling load: 6000 kW

Conditions:

Chilled water in/out: 12 / 6 °C  
 Condenser water in/out: 32 / 38 °C  
 Power supply: 11000 V / 60 Hz

Tests performed:

Full load + 3 part loads  
 Testing time: 1 day



**Application: District cooling**

**Unit: WCT**

Cooling load: 11 MW

Conditions:

Chilled water in/out: 10 / 5 °C  
 Condenser water in/out: 35 / 39 °C  
 Power supply: 11000 V / 50 Hz

Tests performed:

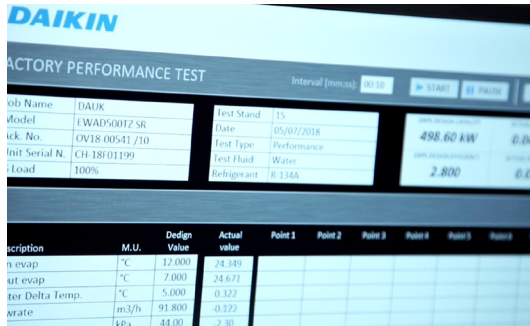
Full load + 3 part loads  
 Testing time: 1 day

**Power supply conditions can be set according to an extensive range:**

Voltage: 380 – 400 – 460 – 690 – 3000 – 3300 – 4160 – 6000 – 6600 – 10000 – 11000 – 13200 – 13800 V  
 Frequency: 50 – 60 Hz

# Customer Lounge

We elevate witness testing experience to a higher level. The dedicated lounge rooms ensure remote data log and monitoring from test stands. Product control and open discussion on product and design characteristics can then be fulfilled comfortably.



Factory Performance Test	
Job Name	DAIKIN
Model	EWAD5007Z SR
Unit No.	OV18-00541 /10
Unit Serial N.	CH-18F01199
Load	100%
Test Stand	15
Date	05/07/2018
Test Type	Performance
Test Fluid	Water
Refrigerant	R134a
Power	498.60 kW
Flow	2.800

Description	M.U.	Design Value	Actual value	Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
Evaporator	°C	12.000	24.345						
Condenser	°C	7.000	24.671						
Water Delta Temp.	°C	5.000	0.322						
Water Flow Rate	m <sup>3</sup> /h	91.800	0.322						
Water Pressure	kPa	44.000	-2.30						



Product performance can be confirmed from the comfort of your chair. Details can be observed from the webcams all around the unit, ensuring customer expectations and safety. As well, the unit under testing can be directly checked through the glass.

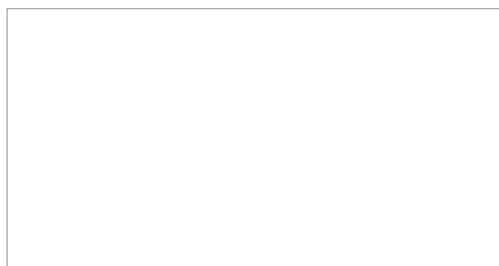
Our customers are free to select what should be displayed on our monitors just by clicking on our tablet

*“Please come visit us  
and enjoy new chiller test facilities  
at Daikin Applied Europe”*

Marco Flavio Calanca, Marketing Manager



**Daikin Europe N.V.** Naamloze Vennootschap Zandvoordestraat 300 · 8400 Oostende · Belgium · [www.daikin.eu](http://www.daikin.eu) · BE 0412 120 336 · RPR Oostende (Publisher)



ECPEN18-420

09/18



Daikin Europe N.V. participates in the Eurovent Certified Performance programme for Liquid Chilling Packages and Hydronic Heat Pumps, Fan Coil Units and Variable Refrigerant Flow systems. Check ongoing validity of certificate: [www.eurovent-certification.com](http://www.eurovent-certification.com)

The present publication is drawn up by way of information only and does not constitute an offer binding upon Daikin Europe N.V. Daikin Europe N.V. has compiled the content of this publication to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Europe N.V. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this publication. All content is copyrighted by Daikin Europe N.V.

Printed on non-chlorinated paper.