“Cool” Testing

Refrigeration and climate control test facility

Reliable data from an independent testing body

Are you looking for a test rig to complement your own testing facilities? Do you want the performance of your refrigeration machines or individual components to be assessed by an independent body? The results of our tests comply fully with the law and are thus particularly important in conjunction with product liability questions.

Test rig

Test rig performance

Using our multifunction test rig we ascertain the efficiency of systems and components in refrigeration and air conditioning technology under design conditions. Such equipment includes water and air-cooled refrigeration equipment, heat pumps, evaporators, condensers, air coolers and liquid heat exchangers, cooling towers, recoolers and all types of air conditioning units.

Climate control devices with heat recovery (plate-type heat exchangers, rotating air-to-air heat exchangers etc.) can also be measured since a second air preparation system is available. Regardless of what you install on our test rig - we measure performance precisely, even with a variety of refrigerants.

Tests in compliance with standards, over a broad performance range

We conduct testing in a performance range of from 5 to approximately 2,500 kW following either your instructions or applicable standards. Depending on your requirements, the water temperature can be set from 1.8°C to 60°C. When brine is used, the tests can also be run at temperatures below freezing.

The air flow can be pre-conditioned to temperatures of between 10°C and +60°C. Relative humidity can be set over a broad range. The maximum air volume flow available is 60 m^3/s (or 216,000 m^3/h).

It goes without saying that we are also flexible when it comes to the electrical connections. The 60 Hz frequency required for the US market is also available.

Air supply

Development accompanying tests

Are the capacities of your own testing facilities not sufficient for comprehensive testing in support of development work? Are they not sufficiently dimensioned in terms of performance? Our test rig is ideally suited for these tasks, too, particularly since a high degree of stability of the air and water inlets is assured even during long-term testing. What's more, our testing also provides a reliable basis for improving the reliability of performance characteristics and the calculation programs used in conjunction with them. This is how we make a decisive contribution to quality assurance.

Naturally, costs are also important. If you have capacity testing carried out by DMT, then you may be able to eliminate your own, expensive test rig. Your test programs can be carried out in performance ranges that you yourselves cannot realize. There is no need for expensive expansion of your test rig.

Complete recognition thanks to long years of experience

Our experts have decades of experience in performance testing and output verification in the fields of refrigeration and air conditioning. The test rig for refrigeration, air conditioning and heat technology has been accredited as per EN ISO/IEC 17025. This is one of the reasons why we are recognized as a testing laboratory as per EUROVENT Certification.

Additional services

Apart from the actual testing work in the field of refrigeration and air conditioning, we can also offer you a host of additional services:

- Acoustic pressure measurements as per ISO 3744, ISO 9614
- Testing of ventilation and air conditioning units for conformity with VDI 6022 and other technical regulations
- Hygiene inspections
- Hygiene training
- Independent expert reports on refrigeration and air conditioning technology as per water conservation regulations
- Carrying out complete, on-site performance measurements on installed devices or at the manufacturer's premises

Technical specifications for the testing facility

Water side:

- Flow rate on cold-water side up to 500 m³/h
- Flow rate on cooling water side up to 500 m³/h
- Temperatures of 1.8 to 60 °C (without ethylene glycol), (even lower temperatures with ethylene glycol)

Air sides:

- 1st air side: pre-conditioned air flow rates of up to 60 m³/s
- 2nd air side: pre-conditioned air flow rates of up to 10 m³/s
- Temperatures from -10 to 60°C
- Relative humidity of up to 95% at 32°C

Max. performances of the items being tested:

- Water-cooled chillers up to approx. 2,500 kW
- Air-cooled chillers and heat pumps up to approx. 600 kW
- Evaporators (water) up to approx. 1,000 kW
- Evaporators (air) up to approx. 600 kW
- Condensers (water) up to approx. 1,100 kW
- Condensers (air) up to approx. 700 kW
- Cooling towers with pre-conditioned air up to approx. 800 kW (considerably higher performance is possible with pre-conditioned water)
- Dry coolers up to approx. 600 kW
- Heat exchangers (liquid/liquid) up to approx. 1,000 kW

Data of the test hall:

- Usable hall length 18 m, width 5.5 m
- Maximum height of crane hook: 7.9 m
- Crane carrying capacity: 80 kN
- Admissible floor load: 35 kN/m²
- Inner dimensions of the climate-controlled test chamber (L x H x W): approx. 10 x 3.6 x 5 m
- Electrical connection (at 50 Hz): 400 V / 270 kW

Additional connection ratings include 500 V, 60 Hz (for the US market). Higher connection ratings can be provided on request.

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