VENTILATION - AIR CONDITIONING - COOLING

WOLF
GEISENFELD
50 Years of Experience in Ventilation Technology

Wolf GmbH & Co. KG • D-85290 Geisenfeld
Phone:- (08452)-99-0 • Telefax:- (08452)-8410
Internet: www.wolf-geisenfeld.de • e-mail: info@wolf-geisenfeld.de

Tested and Certified product quality

By TÜV for safety of appliances.

Wolf appliances correspond to the safety-guidlines for machinery.

EUROVENT Certifikation no. 99-10-015-

Wolf appliances are produced according to DIN EN ISO 9001, which refers to quality assurance of air handling units regarding production and service.

DIN EN ISO 9001
Reg. Nr.09611196

Clean room technology WK-HY. These units are officially tested by **Hygiene- Institute Gelsenkirchen/Germany.**

Wolf holds the necessary approval with DVGW - quality sign for installing directly fired warm air heaters (WLE-DIN 4794) with **gas burners.**

For the installation of directly heated warm air heaters (WLE-DIN 4794) with oil burners we are registered in the regulation list for buildings, established by TÜV Building and Operation Technology Bavaria, reg. association.

WOLF
GEISENFELD
HEIZUNG
LÜFTUNG
KLIMA

Air Conditioning Technology

Air conditioning units for indoor-installation

30 mm / 60 mm casing

Rate of air flow: 800 - 450 000 m³/h

Air conditioning units for outdoor-installation

35 mm / 65 mm / 95 mm Verkleidung
One of the world´s best weatherproof air conditioning units

Rate of air flow: 800 - 450 000 m³/h

Hygiene-clean room technology

WK-HY released by the Hygiene-Institute of the Ruhr-distrikt, Gelsenkirchen

30 mm / 60 mm casing
System: Hygiene: WK-HY
Hygiene technology

The innovative **Hygiene-RLT-Unit** by Wolf Geisenfeld sets new benchmarks in hygiene-and clean room technology. Some examples for application:

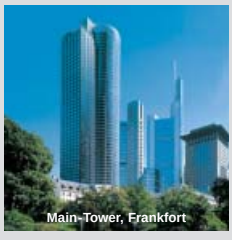
- Medical field
- Laboratory techniques
- Clean room-technology
- Pharmaceutical industry
- Food production
- Computer-,micro-chips industry
- Bio-technology
- Chemical industry

Free running fan blade (V-belt-drive, alternatively) extractable and completely removeable. Each in-built modul (fan, heater, cooler, filter, etc.) can be pulled-out to provide optimal cleaning and disinfection works.

- Internal sides absolutely smooth
- Optimized constructional shaping
- each part extractable
- Quality approved by certificates and testreports

- Inner tray special steel (alternatively galvanized)
- Outer tray galvanized
- Special closures

References



RMVA Tailing plant, Cologne

Hospitals: Recreation centre, Saarschleife; Humboldt-Hospital, Berlin; Schleswig-Hospital; Health-resort Bad Aibling

Hotel chains: Maritim Hotels Bremen, Stuttgart, Ulm, Bonn; Ibis, Sheraton, Kempinski, Holiday Inn Hotels, a.s.o.

Test report according to pr EN 1886 for room air conditioners, installation inside		
Casing wall thickness	**30 mm**	**60 mm**
1. Casing stiffnes		
Casing class	1A / 2A	1A
at test pressure (Pa)	-1500 bis -400	-1500
Casing class	1A	1A
at test pressure (Pa)	125 bis 780	+1500
2. Casing leakage: Casing class		
at test pressure (Pa) -400	B	B
at test pressure (Pa) +700	B	B
3. Filter-bypass-leackage: Highest applicable filter class		
at test pressure (Pa) - 400	F 9	F 9
at test pressure (Pa) +400	F 9	F 9
4. Heat loss through walls		
heat transition		
coeffzient Ua	1,702 W/m²K	1,78 W/m²K
Casing class	T 4	T 4
5. Thermal bridges of casing		
thermal bridge factor	0,39	0,41
Casing class	TB 4	TB 4

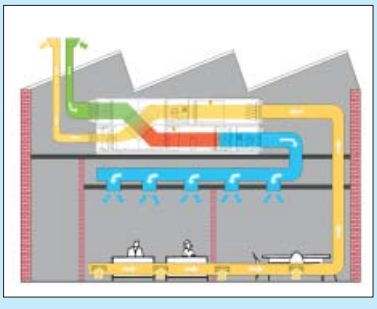
Test report according to pr EN 1886 for air conditioning units, installation outdoors		
Casing wall thickness	**65 mm**	**95 mm**
1. Casing stiffnes		
Casing class	1A / 2A	1A
at test pressure (Pa)	-1500 bis -400	-1500
Casing class	1A	1A
at test pressure (Pa)	125 bis 780	+1500
2. Casing leakage: Casing class		
at test pressure (Pa) -400	B	B
at test pressure (Pa) +700	B	B
3. Filter-bypass-leackage: Highest applicable filter class		
at test pressure (Pa) - 400	F 9	F 9
at test pressure (Pa) +400	F 9	F 9
4. Heat loss through walls		
heat transition		
coeffzient Ua	0,976 W/m²K	0,856 W/m²K
Casing class	T 2	T 2
5. Thermal bridges of casing		
thermal bridge factor	0,65	0,65
Casing class	TB 2	TB 2

WOLF GEISENFELD HEIZUNG LÜFTUNG KLIMA

Cooling Technology

Cooling Appliances for Indoor Installation

Air conditioning unit with superposed cooling and secondary refrigeration device (air cooling)



Superposed adiabatic cooling
For the first time a plate heat exchanger with soft-cooling allows operation of a heat-recovery system installed in ventilation and conditioning units for heating in the winter as well as for cooling in the summer.

Secondary refrigeration device
Direct cooling (air-cooling)

The advantages of this combination=superposed adiabatic cooling with secondary direct cooling are:

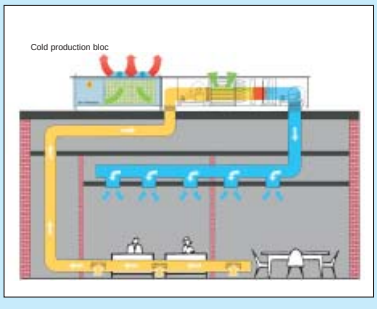
- Reduced refrigeration medium
- Lower investment costs (double practical application: **(summer / winter)**
- Lower electrical power consumption

Complete r**efrigeration plant** with semi-hermetical condenser, appropriate for continously adjustable output regulation of revolutions, with collector for refrigeration medium refrigeration dryer, inspection glass, high and low pressure push switch, oil pressure push switch, winding-thermo-protected switch for compressor.

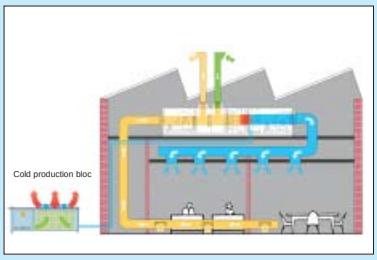
Switch control box for DDC (direct digital control) controlling means and cooling plant. A computer processes data from the input unit and transmits instructions to the output unit. It collects, calculates, optimizes, switches and maintains all data of the cold production bloc

Cooling Appliances for Outdoor Installation

(Air cooling)



The make of Wolf-Geisenfeld direct-evaporating cooling plants is compact and weather-proof,
suitable for installation outdoors. Cooling technology is completely integrated in the centre part. Lavishly sound insulation measurres at the compressor part as well as the slowly revolting condenser fan guarantee
low noise operation, anti-harmful to the environment.
Production and initial operation are being done according to the Wolf-Geisenfeld quality features DIN EN ISO9001 and VDI (Association of German Engenieers)- guide lines. Since there is no necessity of installing a cold water plant (pipe lines, insulation, pumps, valves) and due to the direct evaporating technology, the investment cost for the cooling plant are considerably low.



Ventilation centres for indoor installation (split construction) are being connected to the external placed, low noise running cold production bloc by CU (copper)-pipes.
Reasonable pressure conditions in the refrigeration cycle, advantageous part-load ratio and the omission of cold water pumps together effect lower (approx. 15%) consumption of electrical energy than in usual „cold water plants". Refrigerating mediums are either HFKW (FFC 134a, R 407c)) or HFCKW (R22), partly chlorinated

Split Construction

Refrigeration mediums are HFKW (FFC (134a, R 407c))

References

Sports grounds: Max-Schmeling-Hall, Berlin, Ulrich-Haberland-Stadium Leverkusen, Bördeland-Hall, Magdeburg a.s.o.

Cologne-Arena

Amusement Parks / Leisure:
Warner Brothers Movie World Bottrop,
Concert-Hall, Bochum;
Sea Water Pool, Dangast, a..s.o.

Fair centres/Movies: Fair Palace Leipzig;
Fair-centre Leipzig; Movie-centre, Düren;
Movie-centre „Colosseum"; Berlin, a.s.o.

Our company

Computerized, automatic sheet metal working centre with 240 storage shelves and automatically operating withdrawal-platform-lift-trucks for large-size sheets

Air heating

Air-Heater WD-A

Heating capacity: 5 - 216 kW

Ceiling-Air-Heater / Cooling FB-A de luxe

Heating capacity: 6,5 - 68 kW

Cassette-Air-Heater ZD-A multi

Heating capacity: 2,9 - 32,2 kW

circulating air

mixed air / outside air

Warm-Air-Heater WLE

Heating capacity: 35 - 1163 kW

References

Shopping centres: Avenue-Centre Magdeburg; FBO-Werrepark Bad Oeynhausen,

Shopping centres: Rotmain-centre Bayreuth; Blautal-Centre Ulm; Westpark Ingolstadt

Intern. air ports: Munich, Düsseldorf, Cologne/Bonn, Frankfort, Berlin, Hamburg, a.s.o.

Train stations: Main station, Leipzig: AD-Trans; German Railway; German Railway Cargo, Mainz; Railway guiding centre Karlsruhe,