



LAF Dehumidifiers



LAF 46 / 50 / 100 / 150

Condensing dehumidifiers for professional use

VEAB condensing dehumidifiers are designed for professional use in application in which strict demands are made on capacity. The LAF is therefore suitable for building sites and for dealing with water damage in order to achieve a sufficiently low humidity of the building materials, carpets and wall covering materials. In basements and warehouses, the LAF can maintain sufficiently low humidity to avoid corrosion, smells and mould problems. Drying by means of a LAF dehumidifier is very economical and efficient. The energy consumption is minimal compared to warming and then ventilating away the humid air. For every litre of water evaporated, 700 W of heat are recovered.

- Energy-efficient rotary compressor - saves about 30 % of energy compared to a piston compressor
- Efficient tubular evaporator that dehumidifies even when the temperature is low and when the humidity is low
- Demand-controlled hot gas defrosting (not LAF 46)
- Service temperature range 3 - 30°C (LAF 46 10 - 30°C)
- Humidity operating range 25 - 100 % RH
- Automatic stop when the condensate container is full
- Easy to handle - large wheels ensure good mobility
- Robust, durable design suitable for building sites - can be lifted by the handle



Accessories

- Wall bracket
- Operating hour meter
- Condensate collecting container with built-in pump
- Hygrostat (humidistat)

Design

Built-in condensate collecting container with level switch and provision for connecting a drain hose.
 2-metre long 230V power supply cable with plug.
 Electronic demand-controlled hot gas defrosting offers quick and effective defrosting.

LAF 46 has time-regulated defrosting.

Degree of protection IP X4.

Approvals

The dehumidifiers have been tested and approved by SEMKO in accordance with:

LVD Directive: EN 60355-1, EN 60335-2-40 and EN 50366

EMC Directive: EN 61000-6-1 and EN61000-6-3

EMF Directive: EN 50366



Types/Models

LAF 46, LAF 50, LAF 100 and LAF 150

Basic models without electric heating.

LAF 50E, LAF 100E and LAF 150E

Models with suffix E have built-in 1500 W heater elements. Switch for selecting dehumidification with or without electric heating.

A permanently preset room thermostat controls the electric heating at around 22°C.

LAF 50E2

The LAF 50E2 has a built-in 2000 W electric heater element. Switch for selecting dehumidification with or without electric heating.

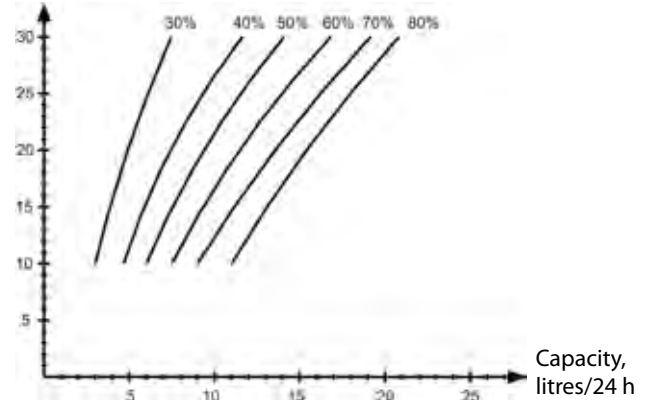
A permanently preset room thermostat controls the electric heating at around 22°C.

When selecting a dehumidifier, it is important to compare the capacity at a normal operating point. A normal operating point for dehumidification is 20°C and 60% RH. (The capacity at 30°C and 80% RH is of no interest in normal use.)



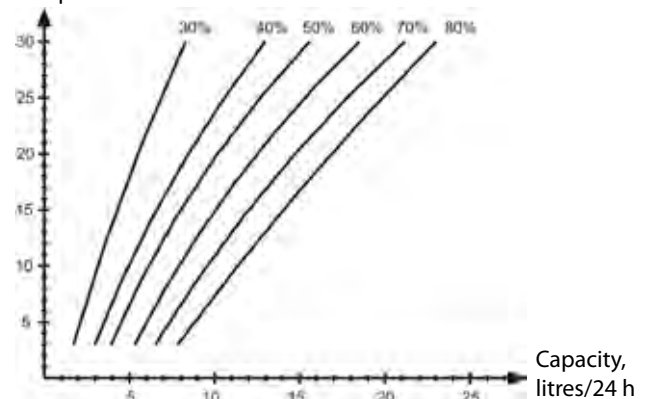
Capacity of LAF 46

Temp. °C



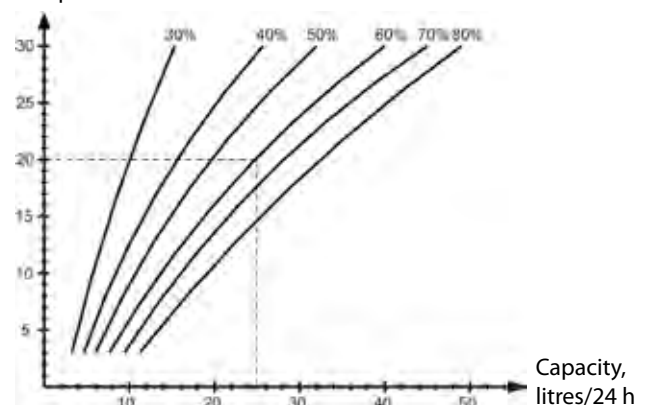
Capacity of LAF 50

Temp. °C



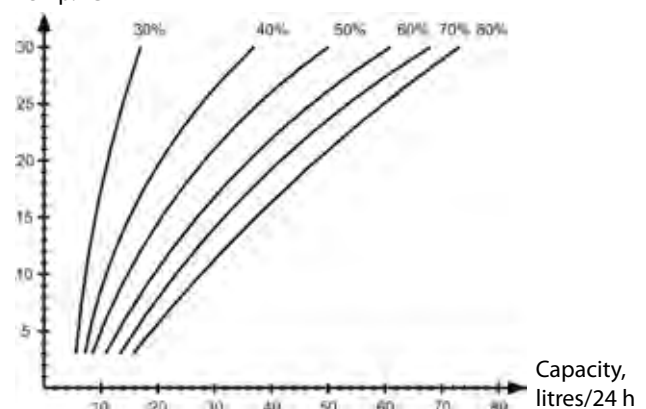
Capacity of LAF 100

Temp. °C



Capacity of LAF 150

Temp. °C



Technical data	LAF 46	LAF 50	LAF 50E	LAF 50E2
Operating humidity range, % RH	25-100%	25-100%	25-100%	25-100%
Operating temp. range, °C	+10 - +30	+3 - +30	+3 - +30	+3 - +30
Max. power consumption, W	550	550	2050	2550
Power consumption W at 20°C / 60% RH	400	400	400*	400*
Heater element, W	-	-	1500	2000
Dehumidification at 20°C, 60% RH, l/24h	12	13	13	13
Dehumidification at 30°C, 80% RH, l/24h	21	23	23	23
Power consumption, kW/litre at 20°C, 60% RH	0,73	0,73	0,73*	0,73*
Degree of protection	IP X4	IP X4	IP X4	IP X4
Refrigerant	R 410A	R 410A	R 410A	R 410A
Rotary compressor	ja	ja	ja	ja
Weight, kg	37	37	38	38
Dimensions L x W x H mm	400 x 500 x 890	400 x 500 x 890	400 x 500 x 890	400 x 500 x 890
Fuse, A	10	10	10	16
Air flow rate, m³/h	500	500	500	500

* Power consumption excluding heater element.

Technical data	LAF 100	LAF 100E	LAF 150	LAF 150E
Operating humidity range, % RH	25-100%	25-100%	25-100%	25-100%
Operating temp. range, °C	+3 - +30	+3 - +30	+3 - +30	+3 - +30
Max. power consumption, W	1070	2570	1470	2970
Power consumption W at 20°C / 60% RH	720	720*	1070	1070*
Heater element, W	-	1500	-	1500
Dehumidification at 20°C, 60% RH, l/24h	25	25	36	36
Dehumidification at 30°C, 80% RH, l/24h	49	49	71	71
Power consumption, kW/litre at 20°C, 60% RH	0,69	0,69*	0,71	0,71*
Degree of protection	IP X4	IP X4	IP X4	IP X4
Refrigerant	R 410A	R 410A	R 410A	R 410A
Rotary compressor	yes	yes	yes	ja
Weight, kg	52	53	63	64
Dimensions L x W x H mm	390x600x1020	390x600x1020	390x600x1150	390x600x1150
Fuse, A	10	16	10	16
Air flow rate, m³/h	850	850	925	925

* Power consumption excluding heater element.

Dehumidification tips

- Locate the dehumidifier to ensure the best possible air circulation in the room
- Keep the doors and windows closed
- A higher room temperature accelerates the dehumidification
- Untreated iron surfaces will not rust at ambient humidities below 50% RH
- No significant growth of mould occurs at ambient humidities below 65%

Accessories



Hygrostat (humidistat)

A hygrostat is available as an accessory for controlling the room humidity.

The hygrostat is connected to the dehumidifier by means of a plug directly at the normal cable connection of the dehumidifier.

Degree of protection IP 21.

(Not for use on building sites).

Operating hour meter

The operating hour meter measures the compressor operating time.

Can be factory-fitted to the humidifier or as an accessory for retrofitting.

Condensate collecting container with pump

The pump is fitted with a level switch that automatically starts and stops the pump. The collecting container has a socket to which the dehumidifier plug can be connected.

Power supply: 230 V.

Connection for Ø 6 mm i.d. hose.

Max. pump delivery head: 7 metres

Wall bracket

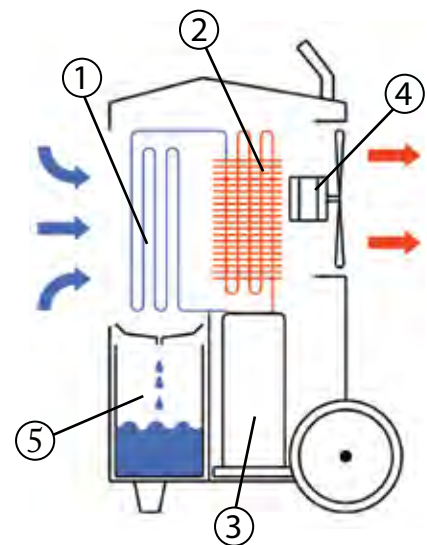
For permanent installation of the dehumidifier.

How the dehumidifier works

The built-in fan continuously circulates the room air through the dehumidifier. When the humid air flows through the evaporator (cooling element), it will be cooled to its dew point and condensate will be precipitated out of the air. The water runs down into the condensate collecting container. The built-in level switch will stop the dehumidifier when the condensate container is full.

The dry and cold air then flows through the condenser where it is heated by the compressor heat and by the energy recovered in the earlier conversion of water vapour into water. The dry and warm air is discharged back into the premises, where it absorbs more moisture.

At certain temperature/humidity conditions, frost will form on the cooling element. Automatic defrosting control is then activated once an hour and delivers the warm gas to the cooling element so that the frost will be thawed and will run down into the condensate collecting container (hot gas defrosting). LAF 46 has time-regulated defrosting. In order to speed up the drying process, models E and E2 of the LAF have built-in electric heaters that raise the temperature in the premises, thus accelerating the drying process.



1. Evaporator
2. Condenser
3. Rotary compressor

4. Fan
5. Condensate collecting container

LAF 10

Compact dehumidifier for smaller premises

The LAF 10 is a dehumidifier that lowers the air humidity, while also supplying additional heat to the premises. The dehumidifier is suitable for maintaining a low humidity in basements, storage areas and the like. The LAF 10 is also excellent for drying laundry. The laundry will dry more quickly, and humid air will not spread through the house.

- Low energy consumption
- Adjustable hygrostat (humidistat)
- Low sound level
- Two fan speeds
- Built-in filter
- Automatic defrosting
- Outlet for drain hose
- Wheels and carrying handle make the unit easy to handle

Technical data

Air humidity operating range, % RH	30-80
Operating temperature range, °C	8-35
Power consumption (at 20°C) W	220
Current (at 20°C) A	1,0
Power supply V	230 V AC
Condensate container volume, l	4,0
Refrigerant type	R134a
Degree of protection	IP 21
Weight, kg	13,5
Width, mm	270
Height, mm	550
Depth, mm	364



Capacity of LAF 10

	litres/24h
At 32°C 80 % RH,	10,0
At 27°C 60 % RH	5,0
At 20°C 60 % RH	4,0
At 8°C 60 % RH	1,8

Design

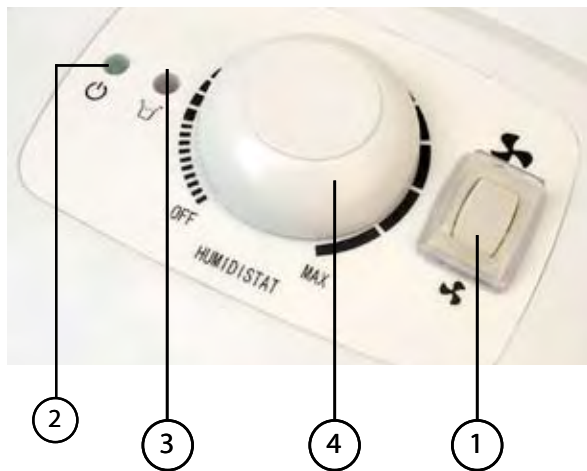
Degree of protection IP 21.
 Built-in condensate collecting container with level switch and indicating lamp.
 Connected to the mains power supply by means of an earthed plug.
 Water hose connection: Ø 6 mm.





Approvals

The dehumidifier has been tested and approved by TÜF in accordance with:
 LVD Directive: EN 60355-1, EN 60335-2-40 and EN 50366
 EMC Directive: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
 EMF Directive: EN 50366



Control panel



1. Fan	Pos.  - low fan speed Pos.  - high fan speed
2. 	Lamp lights up when the dehumidifier is running
3. 	Lamp lights up when the condensate container is full or has been left out.
4. Humidistat knob	Hygrostat for presetting the required air humidity (30 - 80% relative humidity)

Plug the power supply cable into the wall socket, preset the required air humidity and fan speed, and then start the dehumidifier.

The LAF 10 will now run to lower the air humidity to the preset level. When the condensate collecting container is full and needs to be emptied, an indicating lamp will light up and the dehumidifier will stop. Scope is available for connecting a hose to discharge the condensate directly to drain.



How the dehumidifier works

The LAF 10 operates along the same principle as a heat pump or a refrigerator. The humid room air is cooled as it flows through the cold evaporator. During the cooling process, the water vapour condenses out of the air to form water droplets. The condensate is collected into the built-in condensate collecting container, and so is the water from the automatic defrosting.

This process in which the water gives up its heat to the air, together with compressor heat, causes the air discharged back into the room to be dehumidified and to have a temperature that is about 5 - 7°C higher than the incoming air. The electrical energy consumed by the dehumidifier and the energy liberated when the water condenses are thus returned in the form of warm air.

