



# LAF Dehumidifiers

# LAF 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
- Service temperature range 3 - 30°C
- Humidity operating range 25 - 100% RH
- Automatic stop when the condensate container is full
- Easy to handle - large wheels ensure good mobility (Ø 250 mm)
- Robust, durable design suitable for building sites - can be lifted by the handle
- LAF50S/ES/E2S is stackable

### Design

The casing is made of galvanized and painted sheet steel. Built-in condensate collecting container with level switch and provision for connecting a drain hose. Electronic demand-controlled hot gas defrosting offers quick and effective defrosting. The different models of LAF50 is stackable, at a height of two, to save space in storage. Degree of protection IPX4 (splash-proof design).

### Electric heating, designation suffixe -E, -ES and -E2S

The LAF 50ES / 100E / 150E models have a built-in 1500 W electric heater element and the LAF 50E2S model has a 2000 W heater element. All E, ES and E2S models have a switch for selecting dehumidification with or without electric heating. A permanently preset room thermostat controls the electric heating to 22°C.

### Connection

All models are delivered with a 2-metre long 230 V power supply cable, with plug fitted.



### Approvals

The dehumidifiers have been tested and approved by SEMKO in accordance with:  
 LVD Directive: EN 60335-1, EN 60335-2-40 and EN 50366  
 EMC Directive: EN 61000-6-1 and EN 61000-6-3  
 EMF Directive: EN 50366



## Overview of range

Type		LAF 50S	LAF 50ES	LAF 50E2S	LAF 100	LAF 100E	LAF 150	LAF 150E
Operating humidity range	% RH	25-100	25-100	25-100	25-100	25-100	25-100	25-100
Operating temp. range	°C	+3 - +30	+3 - +30	+3 - +30	+3 - +30	+3 - +30	+3 - +30	+3 - +30
Power supply	V	230V~	230V~	230V~	230V~	230V~	230V~	230V~
Fuse	A	10	10	16	10	16	10	16
Max. power consumption	W	600	2100	2600	1070	2570	1400	2900
Power consumption W at 20°C / 60% RH	W	400	400*	400*	720	720*	1070	1070*
Additional heating	W	-	1500	2000	-	1500	-	1500
Dehumidification at 20°C, 60% RH	l / 24h	13	13	13	25	25	36	36
Dehumidification at 30°C, 80% RH	l / 24h	23	23	23	49	49	71	71
Power consumption at 20°C, 60% RH	kW / l	0,73	0,73*	0,73*	0,69	0,69*	0,71	0,71*
Refrigerant		R 410A	R 410A	R 410A	R 410A	R 410A	R 407C	R 407C
Rotary compressor		yes	yes	yes	yes	yes	yes	yes
Air flow rate	m³/h	500	500	500	850	850	925	925
Volume of collecting container	l	9	9	9	11	11	11	11
Degree of protection		IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4
Weight	kg	37	38	38	51	52	57	58
Length	mm	440	440	440	450	450	450	450
Width	mm	540	540	540	640	640	640	640
Height	mm	980	980	980	960	960	1110	1110

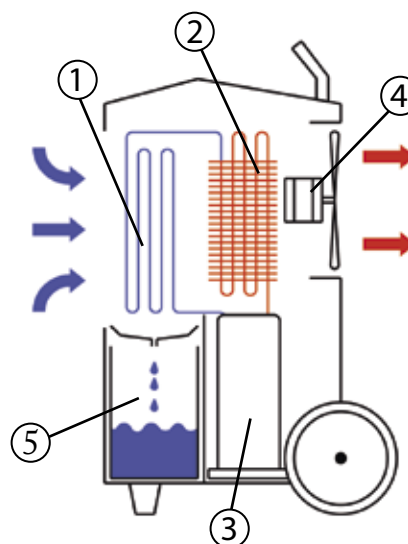
\* Power consumption excluding heater element.

## 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).

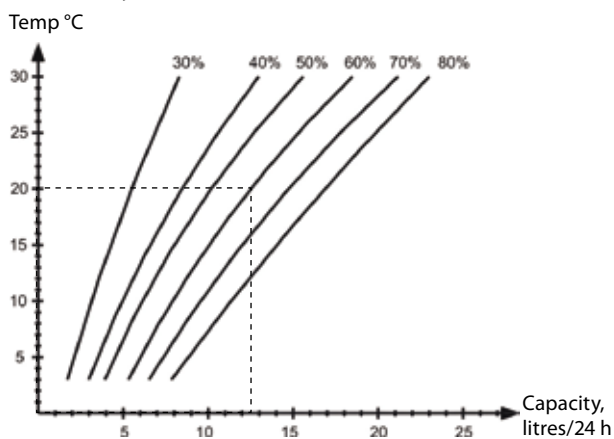
In order to speed up the drying process, models E, ES and E2S of the LAF have built-in electric heaters that raise the temperature in the premises, thus accelerating the drying process.



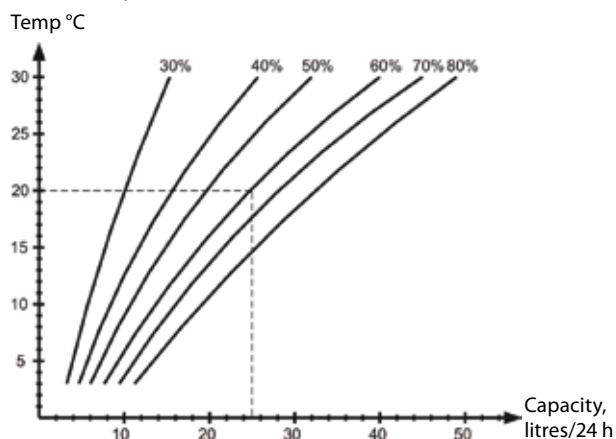
- 1. Evaporator
- 2. Condenser
- 3. Rotary compressor
- 4. Fan
- 5. Condensate collecting container

## Selection of dehumidifier

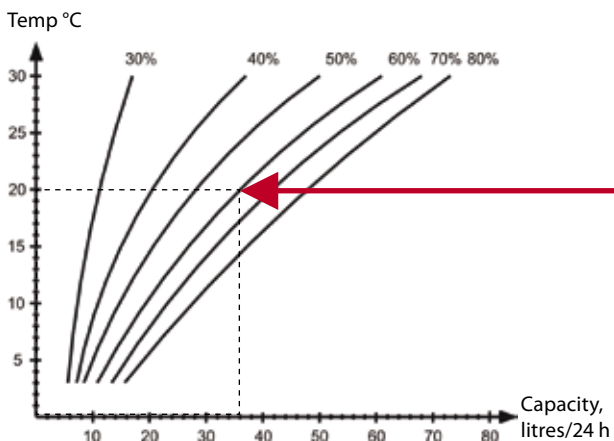
### Capacity of LAF 50



### Capacity of LAF 100



### Capacity of LAF 150



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.)

### 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 process.
- Untreated iron surfaces will not rust at ambient humidities below 50% RH.
- No significant growth of mould occurs at ambient humidities below 65%.

## Accessories

	Product
	<p><b>Humidistat LAF-HY</b>  A humidistat is available as an accessory for controlling the room humidity. The humidistat is connected to the dehumidifier by means of a plug directly at the normal cable connection of the dehumidifier.  Degree of protection IP21.  (Not for use on building sites).</p>
	<p><b>Operating hour meter LAF-OHM</b>  The operating hour meter measures the compressor operating time. Can be factory-fitted to the humidifier or as an accessory for retrofitting.</p>
	<p><b>Condensate collecting container with pump LAF-P</b>  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: 230V.  Connection for Ø 6 mm i.d. hose.  Max. pump delivery head: 7 metres</p>
	<p><b>Wall bracket LAF-W</b>  For permanent installation of the dehumidifier.</p>

# 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 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

### Design

Built-in condensate container with level switch and provision for connecting a drain hose (for which a 6 mm i.d. hose is required). The LAF 10 is provided with a simple and easy-to-use control panel.

### Connection

Connected by means of an earthed plug.

### Control panel

The control panel has a control for setting the fan speed (high/low) and a knob for setting the required humidity (30-80% relative humidity).

In addition, there are two indicating lamps. One of these lights up when the dehumidifier is in operation, and the other lights up when the condensate container needs emptying (does not apply if the LAF 10 is connected directly to drain).



### 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



## Technical data

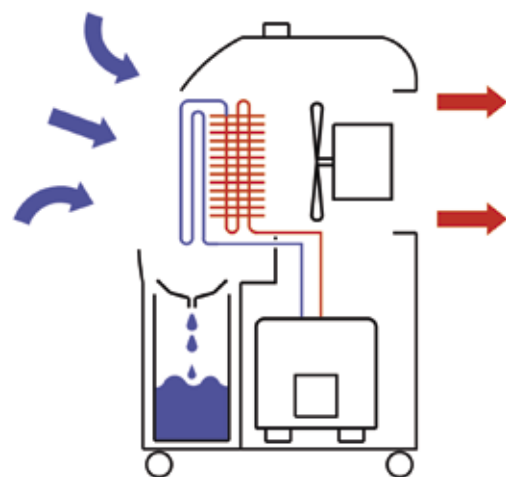
Type		LAF 10
Air humidity operating range	% RH	30-80
Operating temperature range	°C	+8 - + 35
Power consumption at 20°C	W	220
Current at 20°C	A	1,0
Power supply	V	230V~
Dehumidification at 30°C, 80% RH	l / 24 h	10,0
Dehumidification at 27°C 60 % RH	l / 24 h	5,0
Dehumidification at 20°C 60 % RH	l / 24 h	4,0
Dehumidification at 8°C 60 % RH	l / 24 h	1,8
Degree of protection		IP21
Refrigerant		R134a
Condensate container volume	l	4,0
Weight	kg	13,5
Width	mm	270
Depth	mm	364
Height	mm	550



## 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.





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