

Save energy with Leister

The latest generation of double-flange air heaters is specially designed to be used in the hot air recirculation mode. Depending on the air inlet and air outlet temperature, a massive amount of energy can be saved by “recycling” hot air. This not only saves on expenses, it also protects the environment. On the inlet side, the device can easily tolerate temperatures up to 350°C. The two LE 5000 DF-R and LE 10000 DF-R models cover a power range spanning from 4.5 to 17 kW, and reach air temperatures of 650°C; the HT version can even get up to 900°C.

- Maximum air inlet temperature: 350°C
- Greater energy efficiency for the whole process
- Energy cost savings
- Less hot exhaust air
- Systems can be designed smaller



LE 5000 DF-R



LE 10 000 DF-R

The inlet side's special design and materials allow for high air inlet temperatures.

The electrical supply's functioning and safety are guaranteed even under extreme conditions.

The new double-flange air heaters are manufactured using Leister's well-known high quality standards.



High degree of manufacturing quality



Temperature-resistant cable



Robust structural design

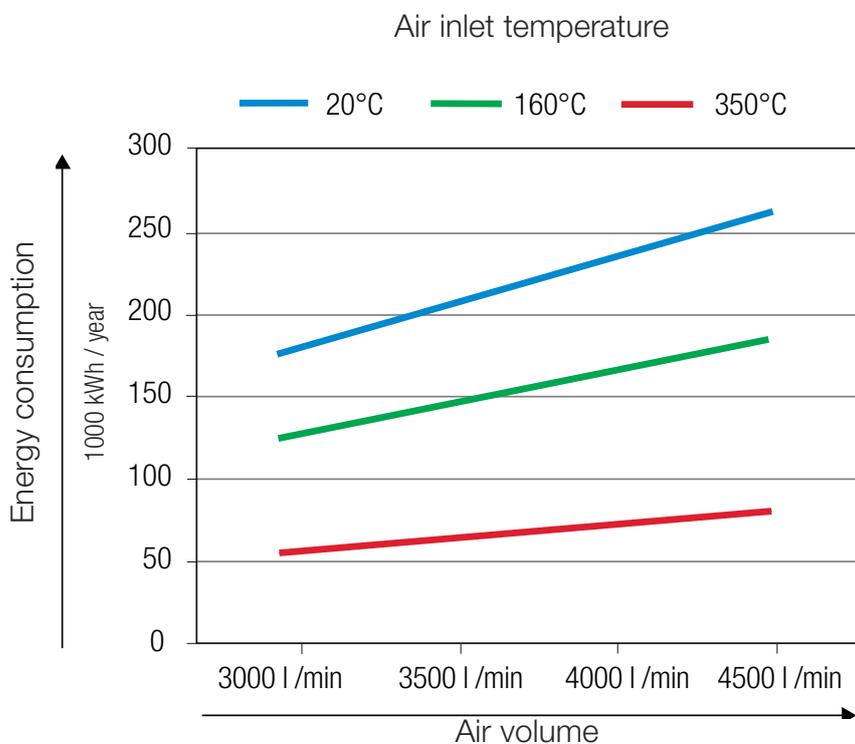
Energy savings due to hot-air recirculation

In order to heat a given volume of air (flow rate) to the predetermined temperature, a certain amount of energy is needed. The greater the temperature difference ΔT between air inlet and air outlet temperature, the greater the amount of energy. This ΔT is reduced by using hot-air recirculation.

Sample calculation:

To heat up 4000 l/min of air flow to a desired temperature of $T_2 = 500^\circ\text{C}$, different outputs are required, depending on the air inlet temperature T_1 .

$T_1 = 20^\circ\text{C} \rightarrow 38.7 \text{ kW}$
 $T_1 = 160^\circ\text{C} \rightarrow 27.4 \text{ kW}$ Savings: 29.2 % compared with 20°C
 $T_1 = 350^\circ\text{C} \rightarrow 12.1 \text{ kW}$ Savings: 68.7 % compared with 20°C ; 55.8 % compared with 160°C



Power consumption for a 24-hour operation at 250 days / year. It's easy to see: The higher the air inlet temperature, the lower the energy consumption.

These differences also match the potential savings in energy. The energy savings are 159,600 kWh per year when the recirculation mode is used and the inlet temperature is 350°C , instead of working with ambient air at 20°C (in 24-hour operation, for 250 working days).

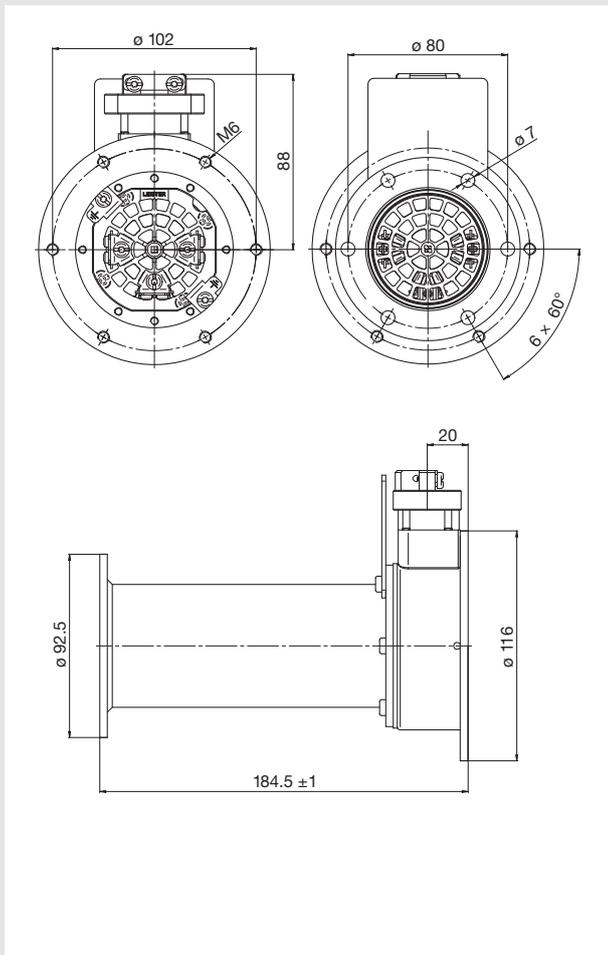
Annual energy consumption at $T_1 = 20^\circ\text{C} \rightarrow 232\,200 \text{ kWh}$

Annual energy consumption at $T_1 = 350^\circ\text{C} \rightarrow 72\,600 \text{ kWh}$, savings = 159 600 kWh

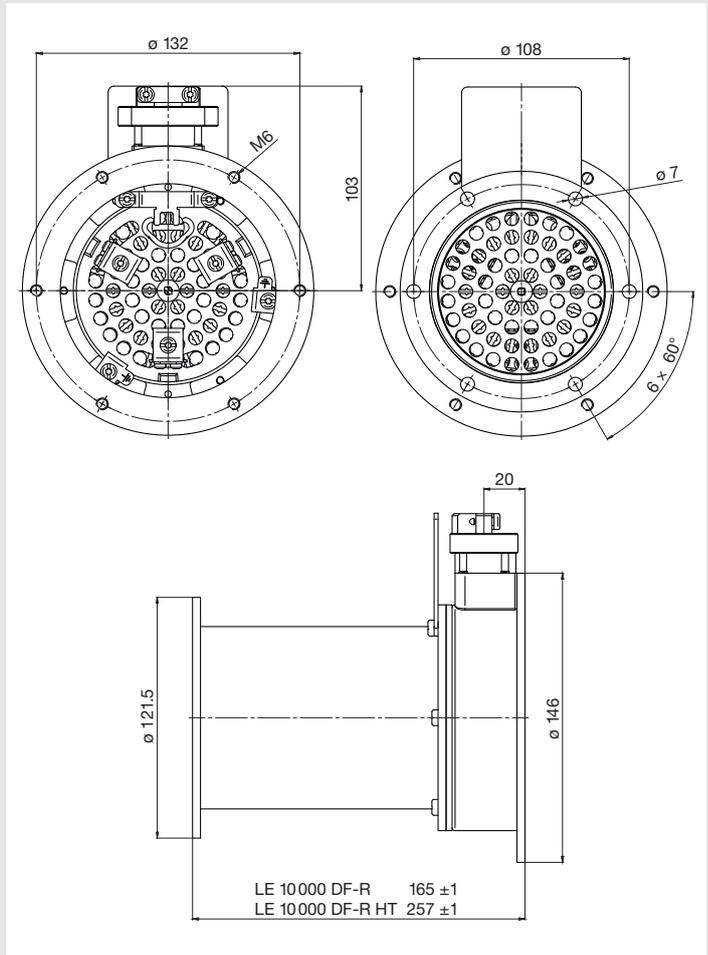
If the price of electricity (commercial, large consumers) is € 0.12/kWh, the potential savings per year is €19,152 just from using DF-R type double-flange air heaters!*

* Based on a 24-hour operation, 250 days per year, $T_1 = 350^\circ\text{C}$ instead of 20°C and $T_2 = 500^\circ\text{C}$ and 4000 l/min air flow (see above).

Installation dimensions LE 5000 DF-R in mm



Installation dimensions LE 10000 DF-R in mm



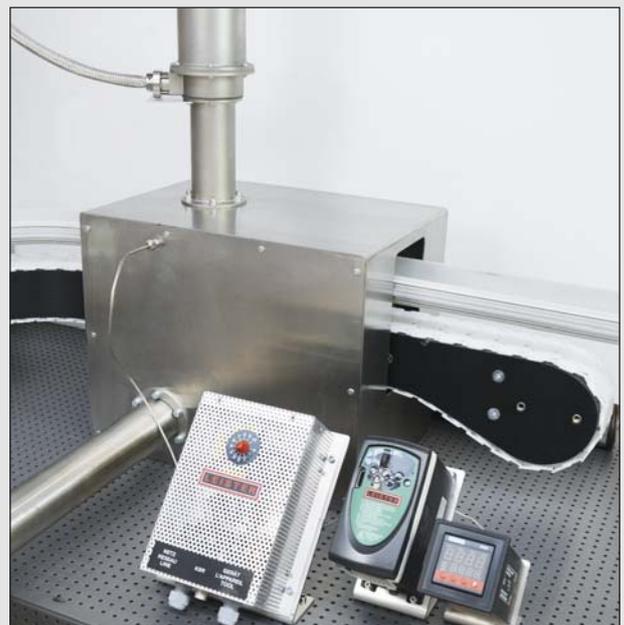
Article numbers and technical data LE 5000 DF-R

Voltage V~		3 x 230	3 x 400	3 x 400	3 x 400
Power kW		8	4.5	6.5	7.5
LE 5000 DF-R	Art.-No.	146.793	146.480	146.794	146.795

Article numbers and technical data LE 10000 DF-R

Voltage V~		3 x 400	3 x 400	3 x 400	3 x 400
Power kW		5.5	11	17	15
LE 10000 DF-R	Art.-Nr.	146.796	146.479	146.797	–
LE 10000 DF-R-HT	Art.-Nr.	–	–	–	146.850

The LE 5000 DF and LE 10000 DF basic models are also still available.



Double-flanged air heater LE 5000 DF-R on a shrink tunnel. In the foreground, Leister control units for air heaters and blowers.

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