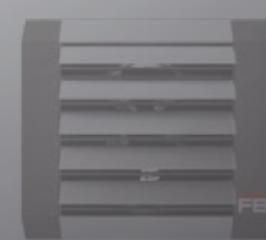
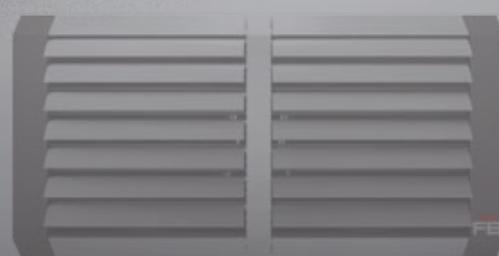
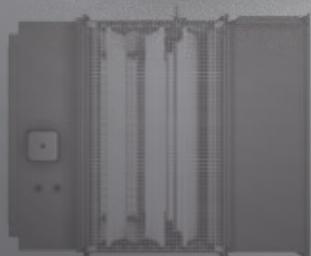


 **FLOWAIR**
intelligent air flow

**LEO
FB**

**LEO
KMFB**



FLOWAIR.COM

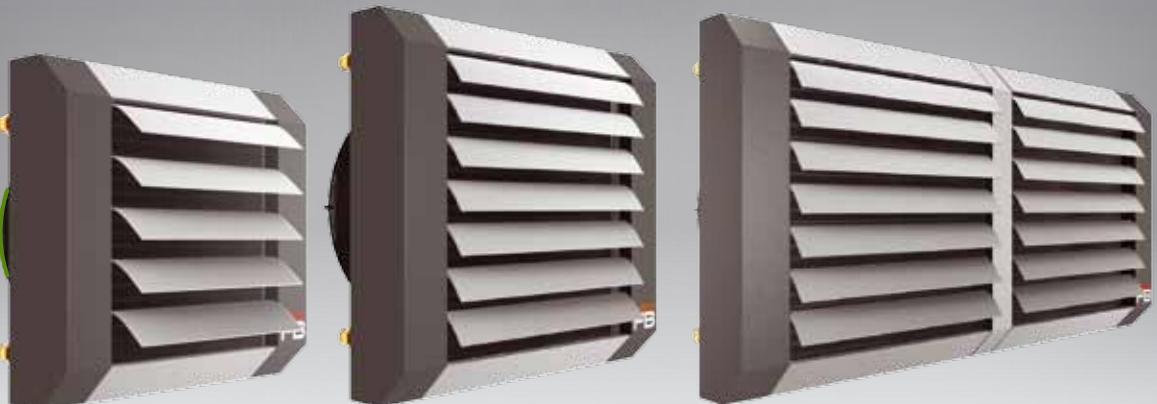
	AIR HEATERS					AIR HEATERS WITH MIXING CHAMBER		
	FB 15	FB 25	FB 45	FB 65	FB 95	KMFB 25	KMFB 45	KMFB 65
Heating capacity (kW)	3–17	10–25	25–47	44–65	63–100	10 – 21,5	20 - 39	37,5 - 51
Air flow (m³/h)	150–2000	900–4400	1500–4100	2200–3900	4050–8500	900–3200	1100 - 3000	1800 - 2800
Δ T (°C)	29,0	16,0	31,5	46,0	32,5	19,0	36,0	50,0
Weight (kg)	12–13,2	16,9–17,9	18,1–20,1	20,4–23,1	34,5–38,0	45,9 – 46,9	47,1 – 49,1	49,4 – 52,1
Colour	grey							
Casing	steel + plastic							

* Water 90/70°C, inlet air 0°C and maximum air flow.

15

25 | 45 | 65

95



WE THINK OF EVERYTHING

Our units of modern design contain a large number of special features, introduced to improve customer satisfaction.



Good Design



AWARD WINNING SOLUTIONS

Our units combine functionality with smart design, giving the best solution. Angled, horizontal or vertical mounting is possible. With a finish of metal and plastic, our units are aesthetically pleasing and can be found in many applications.



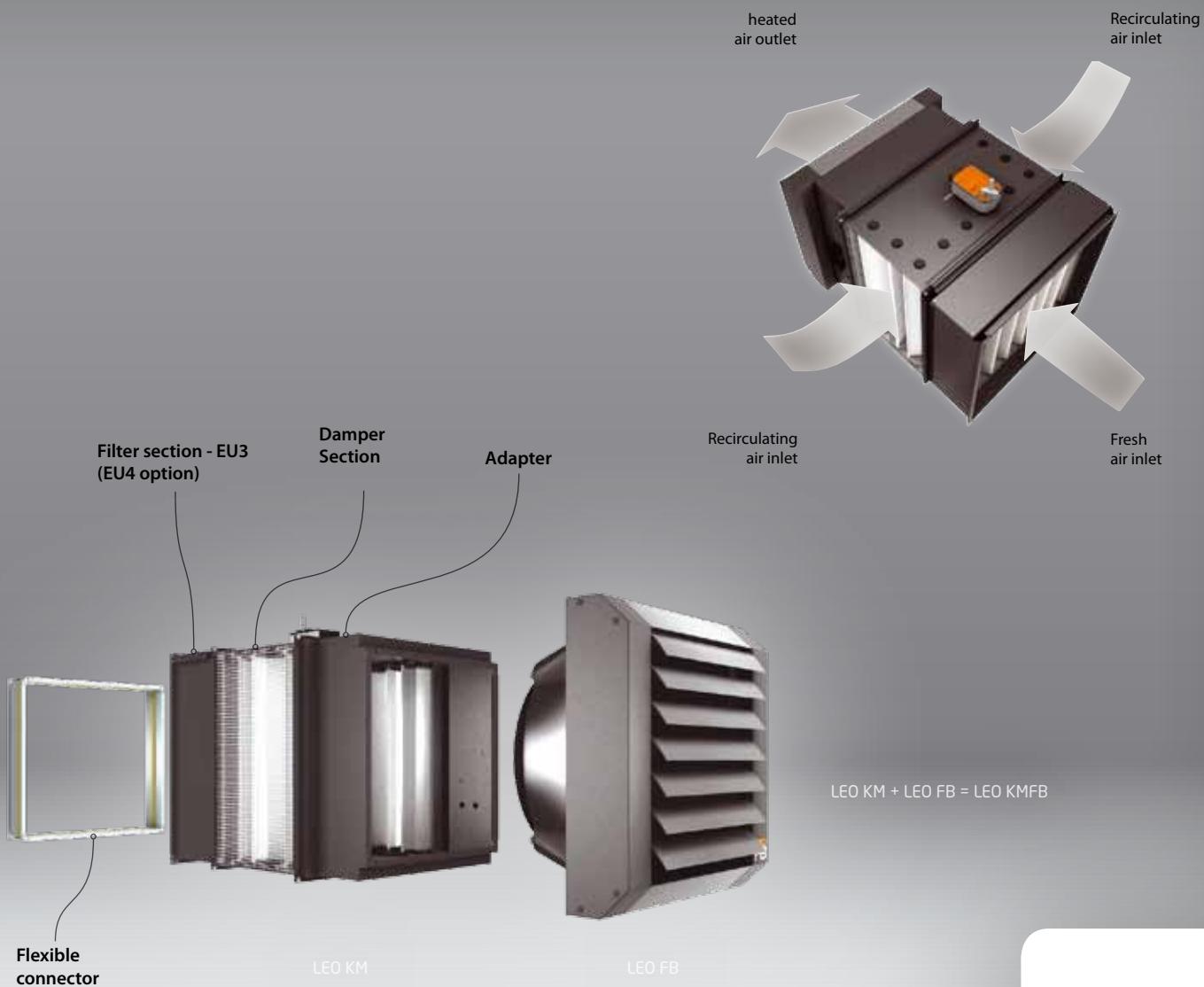
INTELLIGENT ECO FLOW

Each year we introduce innovative solutions giving increased comfort and savings. In our products we install high efficiency fans with low current consumption. Flowair as a first has installed the EC fan in our air heaters. EC fans consume less energy than a 60W bulb.



M = COMFORT!

Programmable panels which are able to control up to 10 units mean less time needed for starting units and changing setting: in one place you can set all operating parameters. Using additional temperature sensors you can mount the panel away from the installation area.



**LEO
KMFB**

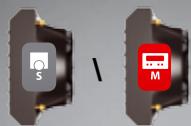
THE SIMPLEST VENTILATION

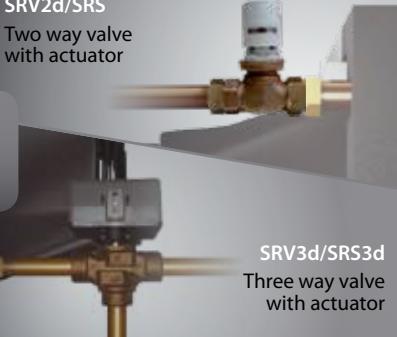
Air heater joined with mixing chamber delivers fresh air to the room while heating it. It is the simplest mechanical ventilation with lowest possible power consumption, without requiring additional equipment.

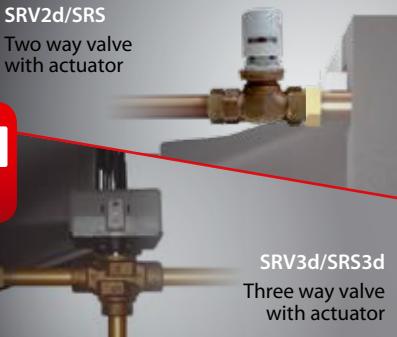


EASY MOUNTING

Mixing chamber is delivered in sections, with minor assembly, it is ready to go. There are three air inlets in the mixing chamber: two for recirculating air and one for external air.



SRV2d/SRS Two way valve with actuator 	RD Room thermostat with weekly programmer 	
SRV3d/SRS3d Three way valve with actuator 	RA Room thermostat 	TR/TRd/TRs Five step transformer 

SRV2d/SRS Two way valve with actuator 	VNT20 Panel with speed regulator and built in thermostat 	
SRV3d/SRS3d Three way valve with actuator 	VNTLCD Programmable weekly panel with speed regulator and built in thermostat 	PT-1000 IP20/IP65 External temperature sensor 

FB CONTROLLERS

Depending on type of units (S or M-type) there are two types of control systems:

S- type
Common and easiest way to control units

M - type
Advanced, automatic and innovative way of controlling units.



S-TYPE

- Easy use, simple on-off operating
- Cheaper solution
- Lowest investment cost.
- One on one control
- Independent control of each unit



M- TYPE

- Grouping**
Heating system automatically adjusted to meet actual heat demand.
- Thermal comfort**
Minimal temperature changes.
- Quiet**
Operation algorithm: lowest possible speed of fan - whisper quiet.
- Savings**
Lowest possible speed operation causes decreased current consumption.
- Multi-task panel**
Panel gives possibilities to adjust speed of fan, control temperature and program the operation schedule weekly(VNTLCD). Control of ten units is also possible.





KMFB Control systems

KTS
Full set to supply and control mixing chamber

Buffer
Distribution of supply and steering signals



KTS

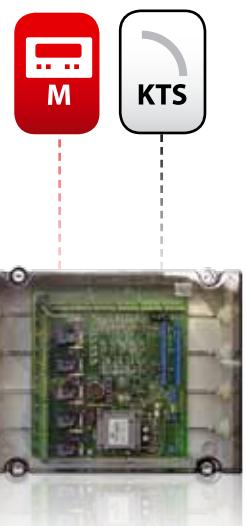
Easiest way to make ventilation
KTS set ensure control for ventilation, including controlling exhaust fan.
Full information
Visible status panel
Failure free
Antifreeze protection
Stepless adjusting
You can change ventilation performance between 0 and 100% of fresh air.



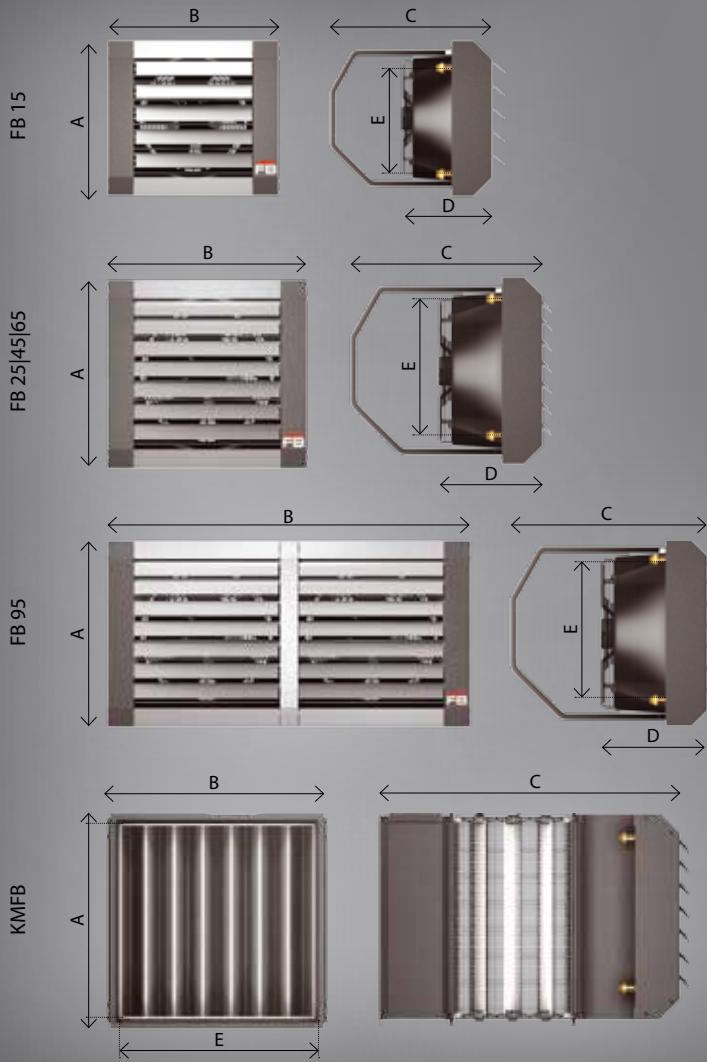
BUFFER

Savings and convenience
Buffer allows for control of up to 5 mixing chambers from one KTE control box
Status information
Led lights give status alarms for each unit separately (ie: pollution of filters, antifreeze, exhaust fan failure).

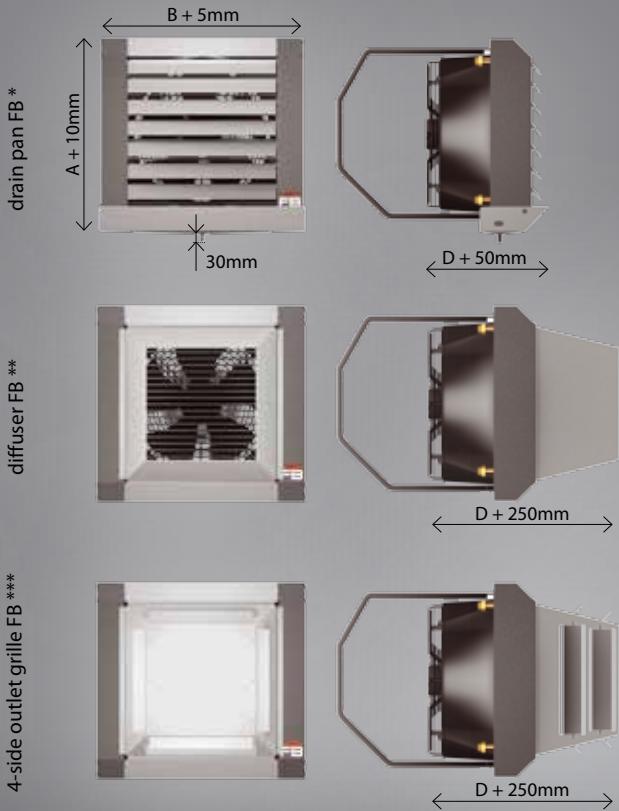
max.5



DIMENSIONS & MOUNTING



with accessories:



Weight [kg]	FB 15	FB 25	FB 45	FB 65	FB 95	KMFB 25	KMFB 45	KMFB 65
Unit	12,0	16,9	18,1	20,4	34,5	45,9	47,1	49,4
Unit filled with water	13,2	17,9	20,1	23,1	38,0	46,9	49,1	52,1
Weight of accessories [kg]								
Drain pan FB*	1,1	1,3	1,3	1,3	-	-	-	-
Diffuser FB**	-	3,6	3,6	3,6	2x3,6	-	-	-
4-side outlet grille FB***	-	4,6	4,6	4,6	-	-	-	-
Dimensions [mm]								
A	500	600	600	600	600	640	640	640
B	540	640	640	640	1175	640	640	640
C	525	610	610	630	610	900	900	920
D	335	350	350	370	350	-	-	-
E	345	440	440	440	440	-	-	-
Recommended distances [m]								
F	max. 3,0	2,5-8,0	2,5-8,0	2,5-8,0	2,5-10,0	2,5 - 8,0	2,5 - 8,0	2,5 - 8,0
G	Without diffuser	2,5- 5,0	2,5-10,0	2,5-10,0	2,5-10,0	2,5-12,0	2,5 - 8,0	2,5 - 8,0
	With diffuser	-	max. 12,0	max. 12,0	max. 12,0	max. 14,0	-	-
Air stream range [m]								
L	14	26	24	22	33	18	16,5	15,5

* Drain pan is needed while Leo FB unit is used in cooling function. It removes condensate, negating the need for uncontrolled drainage.

** Diffuser increases the speed of outlet air. It enables a greater air stream range. It assists in distributing air to areas with high ceilings where air flow is normally sluggish.

*** 4-sides grille is recommended to use in low ceiling rooms. It has a four sided outlet grille to divide the main air stream.

range of isothermal horizontal stream,
limit speed 0,5 m/s

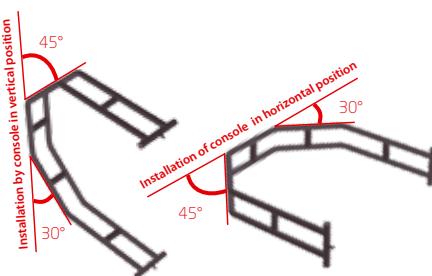


3D consoles

Specially designed consoles for the heater can be mounted at an angle of 30° or 45° to the mounting surface. The console can be mounted either vertically or horizontally in relation to the unit.

KMFB brackets

Brackets make installation easier and more aesthetic.



1 Easy mounting
... using specially designed
consoles 3D.



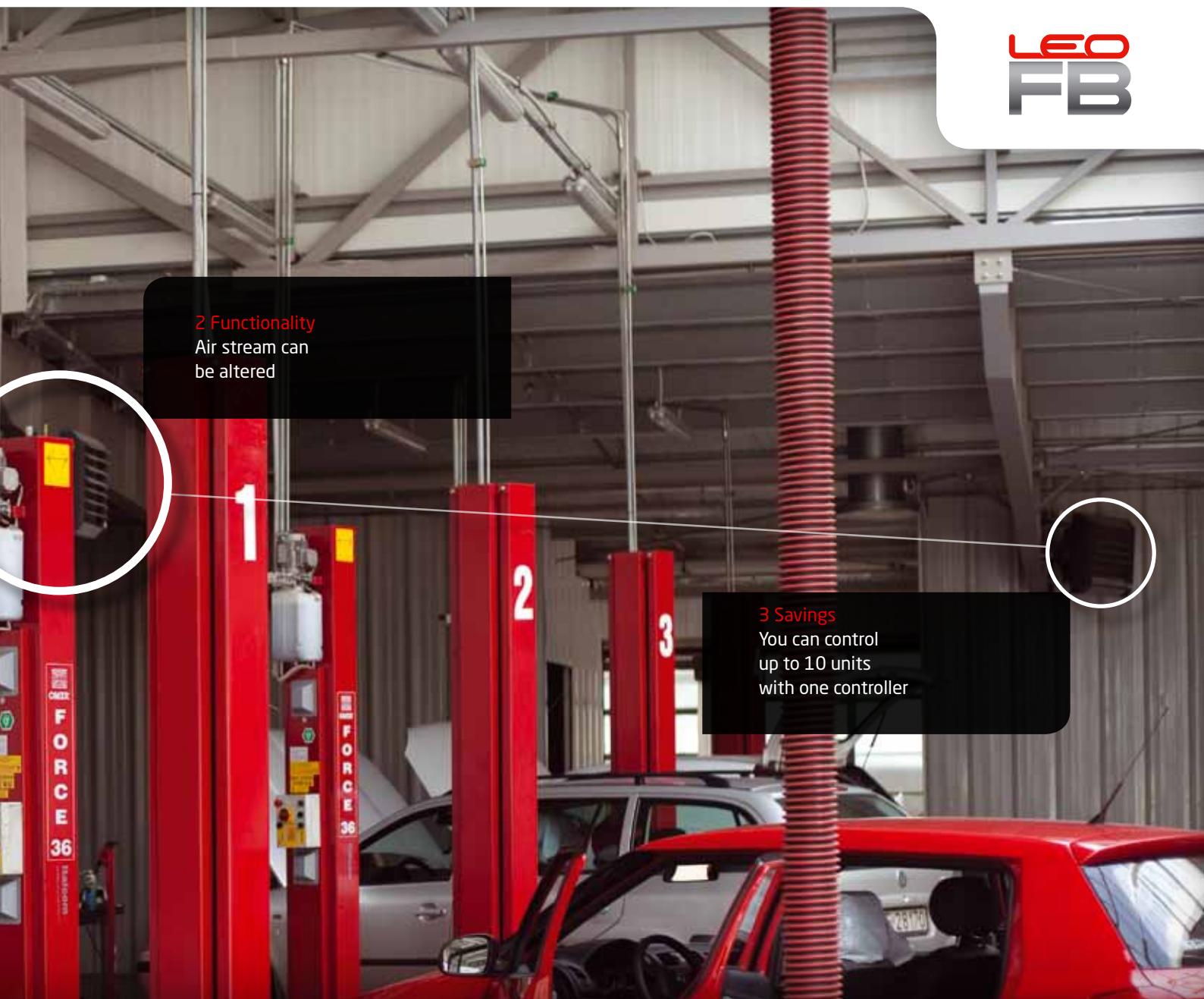
Leo water heaters are the ideal solution for users, who require high-efficiency heating units with sleek design. High quality components, supplied by renowned European producers are used.

Thanks to modern design and excellent technical characteristics, Leo heaters can be mounted in

- industrial buildings
- workshops
- car show rooms
- warehouses
- pavilions
- sports halls
- exhibition halls
- assembly halls
- exam halls
- supermarkets
- churches

Garages





Steel mill



Shopping center



Monastery



Warehouse



Restaurant



Shipyard



TECHNICAL DATA



HEATING CAPACITY TABLE

LEO KMFB 25 + EU3					LEO KMFB 45 + EU3					LEO KMFB 65 + EU3				
Tp1	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2		
°C	kW	l/h	kPa	°C	kW	l/h	kPa	°C	kW	l/h	kPa	°C		
Tw1/Tw2 = 90/70°C														
-25	30,0	1322	15,9	-1,5*	54,5	2405	23,1	21,0	71,2	3142	35,8	39,0		
-22	28,9	1276	14,8	1,0*	52,5	2319	21,6	23,0	68,6	3029	33,5	40,0		
-20	28,2	1245	14,2	3,0*	51,3	2262	20,6	24,0	67,0	2955	32,0	41,0		
-15	26,5	1169	12,6	7,0	48,1	2121	18,4	27,0	62,8	2771	28,4	44,0		
-10	24,8	1095	11,2	11,0	44,9	1983	16,2	30,0	58,7	2592	25,1	46,0		
-5	23,2	1021	9,9	15,0	41,9	1848	14,3	33,0	54,8	2417	22,1	48,0		
0	21,5	949	8,6	19,0	38,9	1716	12,4	36,0	50,9	2246	19,3	50,0		
5	19,9	877	7,5	22,5	35,9	1586	10,8	39,0	47,1	2079	16,8	52,0		
10	18,3	807	6,4	26,0	33,0	1458	9,2	41,5	43,4	1915	14,4	54,0		
15	16,7	737	5,4	30,0	30,2	1333	7,8	44,0	39,8	1755	12,3	56,0		
20	15,1	668	4,5	34,0	27,4	1209	6,6	47,0	36,2	1597	10,4	58,0		
Tw1/Tw2 = 80/60°C														
-25	26,6	1171	13,0	-4,0*	48,6	2137	19,1	16,0	63,8	2805	29,8	32,0		
-22	25,6	1125	12,1	-2,0*	46,7	2053	17,8	18,0	61,3	2695	27,7	33,5		
-20	24,9	1095	11,5	0,0*	45,5	1997	16,9	19,0	59,7	2622	26,4	35,0		
-15	23,2	1021	10,1	4,0*	42,3	1860	14,8	22,0	55,6	2443	23,2	37,0		
-10	21,6	948	8,8	8,0	39,3	1725	12,9	25,0	51,6	2269	20,2	39,0		
-5	19,9	875	7,6	12,0	36,3	1593	11,1	28,0	47,8	2098	17,5	41,0		
0	18,3	804	6,5	16,0	33,3	1464	9,6	31,0	44,0	1931	15,1	43,0		
5	16,7	734	5,5	20,0	30,4	1336	8,1	33,5	40,2	1768	12,8	45,0		
10	15,1	665	4,6	23,5	27,6	1211	6,8	36,0	36,6	1607	10,8	47,0		
15	13,6	596	3,8	27,0	24,8	1088	5,6	39,0	33,0	1450	9,0	49,0		
20	12,0	528	3,0	31,0	22,0	967	4,5	42,0	29,5	1296	7,3	51,0		
Tw1/Tw2 = 70/50°C														
-25	23,3	1019	10,4	-7,0*	42,7	1870	15,4	11,0	56,4	2470	24,3	26,0		
-22	22,3	975	9,6	-4,0*	40,9	1788	14,2	13,0	54,0	2362	22,4	27,0		
-20	21,6	945	9,0	-3,0*	39,6	1734	13,4	14,0	52,4	2292	21,2	28,0		
-15	19,9	872	7,8	1,0*	36,6	1600	11,6	17,0	48,4	2117	18,4	30,0		
-10	18,3	800	6,7	5,0*	33,6	1468	9,9	20,0	44,5	1947	15,8	32,0		
-5	16,7	730	5,6	9,0	30,6	1339	8,4	23,0	40,7	1780	13,4	34,0		
0	15,1	659	4,7	13,0	27,7	1212	7,0	25,5	37,0	1617	11,3	36,5		
5	13,5	590	3,8	17,0	24,9	1087	5,8	28,0	33,3	1457	9,3	38,5		
10	11,9	522	3,1	21,0	22,1	965	4,6	31,0	29,7	1300	7,6	40,0		
15	10,4	454	2,4	24,5	19,3	844	3,7	34,0	26,2	1146	6,1	42,0		
20	8,8	387	1,8	28,0	16,6	725	2,8	36,0	22,7	994	4,7	44,0		

* Not recommended, too low air temperature at the outlet of the air heater.

⊕	FB 15	FB 25 45 65	FB 95
Type	-	S	M
Max. power consumption	W	92	57,5
Max. current consumption	A	0,4	0,25
Type of fan	-	AC	EC
Power supply	V/Hz	230/50	
IP/Insulation class	-	54/F	
Acoustic pressure level*	dB(A)	45	51
			53

* Acoustic pressure level measured in the room of average sound absorption, capacity 1500m3, at distance of 5m from the unit.

⊕	FB 15	FB 25 45 65	FB 95
Connecting stub	"	1/2	3/4
Max. water temperature	°C	95	130
Max. water pressure	MPa	1,6	

Technical data concerning supplying with other water parameters are available upon request at Sales office.

- V – air flow
- PT – heating capacity
- Tp1 – inlet air temperature
- Tp2 – outlet air temperature
- Tw1 – inlet water temperature
- Tw2 – outlet water temperature
- Qw – heating water stream
- Δpw – water pressure drop
- Fi1 – air inlet relative humidity
- Fi2 – air outlet relative humidity



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