FAN COIL HEATERS - LEO

Fan heaters **LEO**	
Heating capacity [kW]	0.7–121
Air flow [m³/h]	1000–5800
Weight [kg]	9.5–26.2
Colour	Grey
Casing	EPP expanded polypropylene

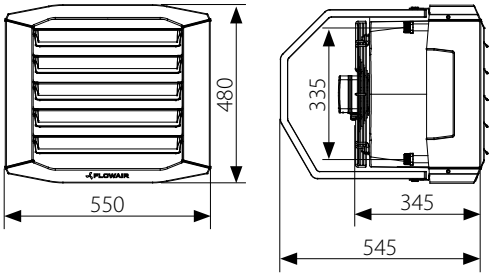
APPLICATION

Big cubature buildings: industrial halls, warehouses, department stores, production halls, sports halls, sacral buildings, etc., as well as smaller rooms, like: workshops, garages, stores, car show rooms, gas stations, etc.

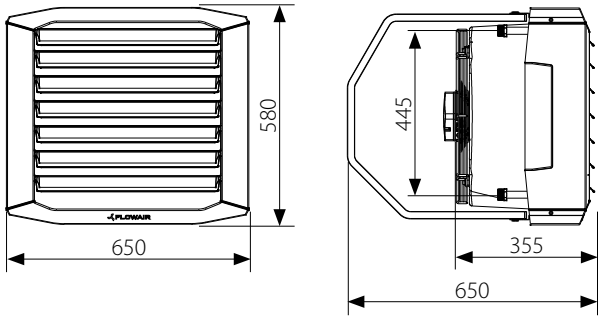
AVAILABLE TYPES OF UNITS:

- **LEO BMS**
  LEO BMS fan heater is equipped with energy efficient 3 speed fans controlled by the DRV module. The DRV module manages the operation of devices according to control signals from T-box or directly from BMS.
- **LEO**
  LEO fan heater with AC fan offers possibility to switch between 3 steps of efficiency.

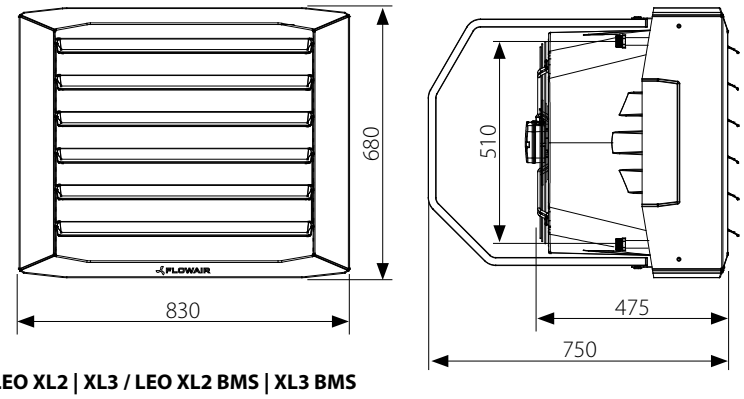
DIMENSIONS



LEO S1 | S2 | S3 / LEO S1 BMS | S2 BMS | S3 BMS



LEO L1 | L2 | L3 / LEO L1 BMS | L2 BMS | L3 BMS



LEO XL2 | XL3 / LEO XL2 BMS | XL3 BMS

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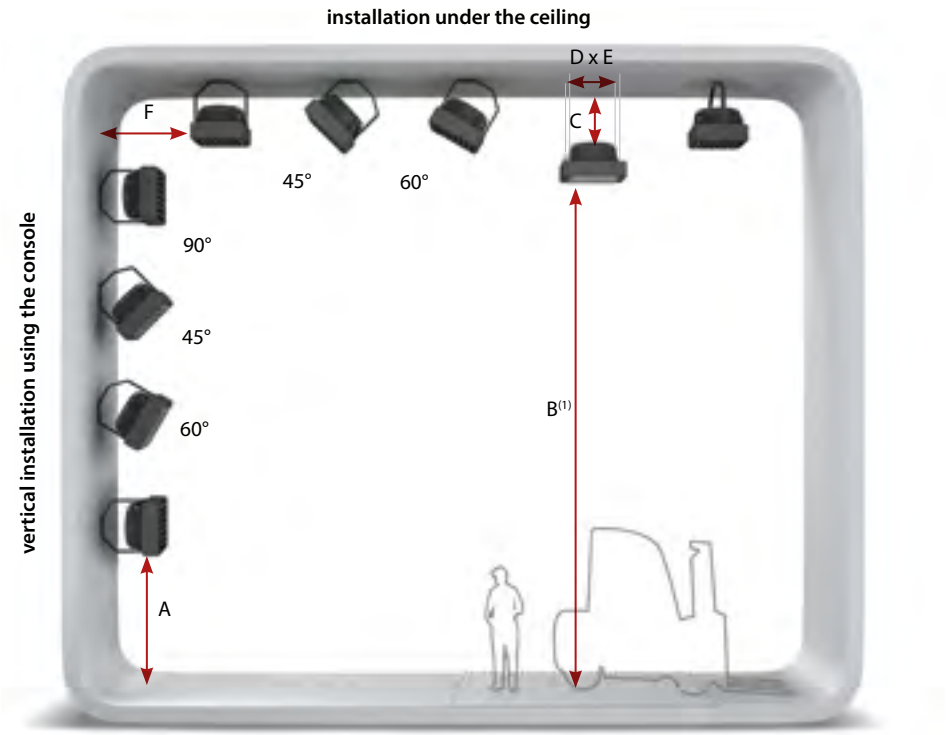
www.flexiheatuk.com
01202 822221

INSTALLATION

Possibility of setting the direction of air stream



(1) When device is mounted under the ceiling please note the proper nonisothermal air stream range

Optional corner brackets
For easy installation and leveling of the fan heater use optional corner mounting brackets.

Rotary console
It enables installation of the heater perpendicularly or horizontally at various angles to the partition.

RECOMMENDED INSTALLATION DISTANCE [M]

	S1	S2	S3	L1	L2	L3	XL2	XL3
A	max. 3.0	max. 3.0	max. 3.0	2.5–8.0	2.5–8.0	2.5–8.0	2.5–8.0	2.5–8.0
B	2.5–7.0	2.5–6.0	2.5–6.0	2.5–9.5	2.5–8.5	2.5–8.0	2.5–9.5	2.5–9.0
C	min. 0.3							
D	0.415	0.415	0.415	0.515	0.515	0.515	0.66	0.66
E	0.415	0.415	0.415	0.515	0.515	0.515	0.58	0.58
F	min. 0.5							

TECHNICAL DATA

Fan heater **LEO S**

	LEO S1 / S1 BMS			LEO S2 / S2 BMS			LEO S3 / S3 BMS		
Step	III	II	I	III	II	I	III	II	I
Max. air flow stream [m³/h]	2300	1900	1500	2000	1600	1250	1800	1400	1000
Heating capacity [kW][1]	0,7 – 12,8			2,1 – 26,5			1,7 – 32,7		
Nominal heat power (70/50/16°C, III-step) [kW]	4,5			10,2			12,3		
Power supply [V/Hz]	230/50			230/50			230/50		
Max. current consumption [A]	0,5	0,4	0,3	0,6	0,4	0,3	0,6	0,4	0,3
Max. power consumption [W]	120	90	70	130	90	70	130	90	70
IP / Insulation class	54/F			54/F			54/F		
Max. acoustic pressure level [dB(A)][2]	56,3	50,7	43,9	56,3	50,7	43,9	56,3	50,7	43,9
Max. acoustic power level [dB(A)][3]	71,4	65,8	59,0	71,4	65,8	59,0	71,4	65,8	59,0
Horizontal range [m][4]	16,0	13,0	10,0	14,0	11,0	8,5	12,5	9,5	7,0
Vertical range [m][5]	6,0	5,1	4,1	5,3	4,4	3,5	4,9	3,9	2,9
Max. heating water temperature [°C]	120			120			120		
Max. operating pressure [MPa]	1,6			1,6			1,6		
Connection	½″			½″			½″		
Max. operating temperature [°C]	60			60			60		
Weight of unit [kg]	9,5			10,4			10,8		
Weight of unit filled with water [kg]	10,2			11,6			12,2		

Fan heater **LEO L**

	LEO L1 / LEO L1 BMS			LEO L2 / LEO L2 BMS			LEO L3 / LEO L3 BMS		
Step	III	II	I	III	II	I	III	II	I
Max. air flow stream [m³/h]	4250	2800	1700	3800	2400	1400	3400	2100	1200
Heating capacity [kW][1]	1,3 – 32,3			2,2 – 50,4			3,2 – 65,2		
Nominal heat power (70/50/16°C, III-step) [kW]	11,7			19,1			25,6		
Power supply [V/Hz]	230 /50			230/50			230/50		
Max. current consumption [A]	1,4	1,2	0,6	1,5	1,2	0,6	1,5	1,2	0,6
Max. power consumption [W]	330	240	120	340	240	120	340	240	120
IP / Insulation class	54/F			54/F			54/F		
Max. acoustic pressure level [dB(A)][2]	64,1	54,5	42,1	64,1	54,5	42,1	64,1	54,5	42,1
Max. acoustic power level [dB(A)][3]	79,2	69,6	57,2	79,2	69,6	57,2	79,2	69,6	57,2
Horizontal range [m][4]	24,0	15,0	9,5	21,5	13,0	8,0	19,0	11,5	6,5
Vertical range [m][5]	8,3	5,6	3,7	7,5	4,9	3,1	6,8	4,4	2,8
Max. heating water temperature [°C]	120			120			120		
Max. operating pressure [MPa]	1,6			1,6			1,6		
Connection	¾″			¾″			¾″		
Max. operating temperature [°C]	60			60			60		
Weight of unit [kg]	14,9			16,2			17,8		
Weight of unit filled with water [kg]	15,9			18,2			20,5		

(1) The range of heating power with parameters below, min: 1st gear/speed of fan, temperature of heating medium 40/30°C, air temperature at the inlet 20°C, max. 3rd gear/speed of fan, temperature of heating medium 120/90°C, Air temperature at the inlet 0°C
(2) Acoustic pressure level at the distance of 5 m from the unit, in the room of medium capability of sound absorption and 1500 m³ of cubature
(3) According to PN-EN ISO3744
(4) Range of horizontal isothermal air stream, at 0,5 m/s velocity limit
(5) Range of vertical nonisothermal air stream, at ΔT = 5°C at 0,5m/s velocity limit

TECHNICAL DATA

Fan heater **LEO XL**	LEO XL2 / LEO XL2 BMS			LEO XL3 / LEO XL3 BMS		
Step	III	II	I	III	II	I
Max. air flow stream [m³/h]	5800	4600	2900	5300	4100	2500
Heating capacity [kW][1]	6,6 – 94,0			8,3 – 121,0		
Nominal heat power (70/50/16°C, III-step) [kW]	36,5			48,1		
Power supply [V/Hz]	230/50			230/50		
Max. current consumption [A]	2,3	1,8	1,4	2,4	1,8	1,4
Max. power consumption [W]	520	370	270	550	370	270
IP / Insulation class	54/F			54/F		
Max. acoustic pressure level [dB(A)][2]	67,5	61,1	52,3	67,5	61,1	52,3
Max. acoustic power level [dB(A)][3]	82,6	76,2	67,8	82,6	76,2	67,8
Horizontal range [m][4]	26,0	20,5	13,0	23,5	18,0	11,0
Vertical range [m][5]	8,5	7,0	4,7	7,7	6,2	4,1
Max. heating water temperature [°C]	120			120		
Max. operating pressure [MPa]	1,6			1,6		
Connection	¾"			¾"		
Max. operating temperature [°C]	60			60		
Weight of unit [kg]	23,2			26,2		
Weight of unit filled with water [kg]	25,9			30,3		

(1) The range of heating power with parameters below, min: 1st gear/speed of fan, temperature of heating medium 40/30°C, air temperature at the inlet 20°C, max. 3rd gear/speed of fan, temperature of heating medium 120/90°C, Air temperature at the inlet 0°C
(2) Acoustic pressure level at the distance of 5 m from the unit, in the room of medium capability of sound absorption and 1500 m³ of cubature
(3) According to PN-EN ISO3744
(4) Range of horizontal isothermal air stream, at 0,5 m/s velocity limit
(5) Range of vertical nonisothermal air stream, at ΔT = 5°C at 0,5m/s velocity limit

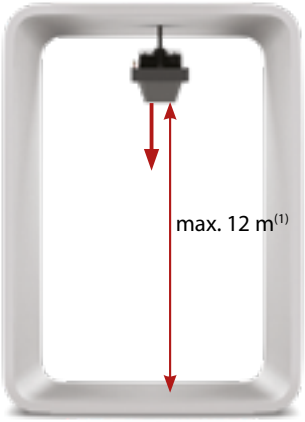
FOR MORE INFORMATION PLEASE CLICK HERE FOR THE WEBPAGE

ACCESSORIES – CONFUSOR LEO

for LEO L and XL fan heaters

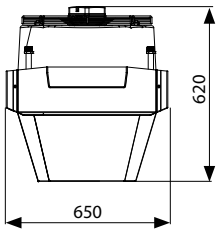
Material: powder-painted steel, RAL 9007
Weight:
Confusor LEO L: 3,8 kg
Confusor LEO XL: 6,2 kg

Confusor increases air flow speed. It results in faster air distribution to the lower zones of the room.

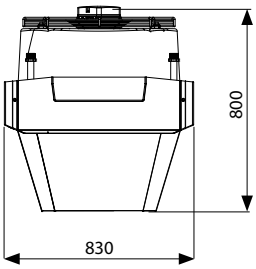


(1) When device is mounted under the ceiling please note the proper nonisothermal air stream range.

DIMENSIONS



LEO L1 | L2 | L3 + L confusor



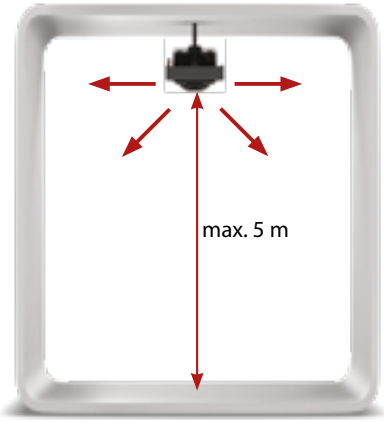
LEO XL2 | XL3 +XL confusor

ACCESSORIES – 4-SIDE OUTLET GRILLE LEO

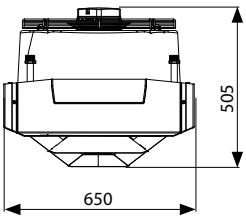
for LEO L and XL fan heaters

Material: powder-painted steel, RAL 9007
Weight:
Outlet grille LEO L: 2,8 kg
Outlet grille LEO XL: 4,8 kg

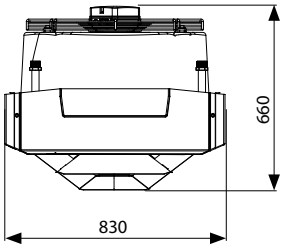
Outlet grille improves air distribution. It is perfect solution for low level ceiling rooms, where heaters are installed under the ceiling.



DIMENSIONS



LEO L1 | L2 | L3 + L 4 side outlet grille



LEO XL2 | XL3 + XL 4 side outlet grille

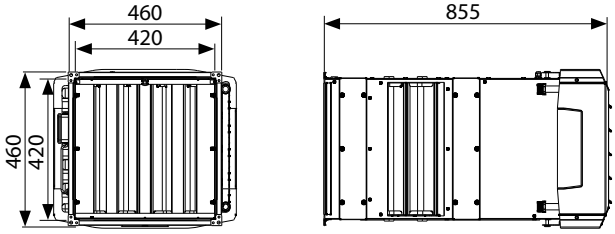
ACCESSORIES – MIXING CHAMBER

for all LEO fan heaters

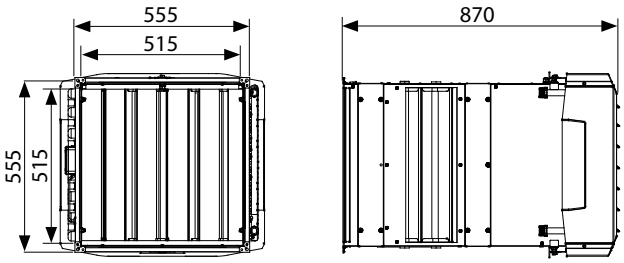
LEO fan heaters with LEO KM mixing chamber from heating and ventilation unit. It is the easiest way to create efficient mechanical ventilation without additional systems.

LEO + KM

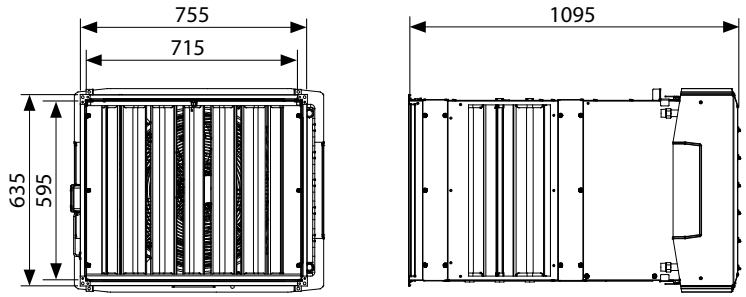
DIMENSIONS



LEO S1 | S2 | S3 + KM S/ LEO S1 BMS | S2 BMS | S3 BMS + KM S



LEO L1 | L2 | L3 + KM L / LEO L1 BMS | L2 BMS | L3 BMS + KM L



LEO XL2 | XL3 + KM XL / LEO XL2 BMS | XL3 BMS + KM XL

For CAD drawings, Revit files and documentation for all available versions of LEO visit www.flowair.com

CONTROL SYSTEMS

for LEO heaters LEO / LEO BMS

TS CONTROLLER
basic version

Simplest regulation of 3-step fans. Fan heater operation is controlled by 3-step fan speed controller with thermostat.

HMI CONTROLLER
basic version

Advanced regulation of 3-step fans via HMI programmable controller.

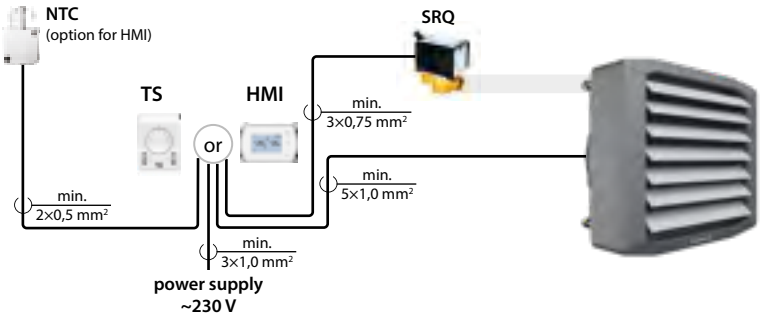
T-box CONTROLLER
BMS version

Intelligent regulation system of 3-step fans. Speed regulation of energy-efficient fan via T-box controller.

FAN HEATER **LEO**	**TS** Controller	**HMI** Controller	**T-box** Controller
Types of regulation/control			
Manual 3-step air flow regulation	✓	✓	✓
Automatic 3-step air flow regulation		✓	✓
Modes			
Heating / Ventilation	✓	✓	✓
Operation in continuous or thermostatic mode	✓	✓	✓
Weekly programmer		✓	✓
BMS		✓	✓
Antifreeze		✓	✓
Integration with FLOWAIR SYSTEM			✓
Max. number of connected units			
Via controller	7	5	31
Via additional splitters	36	36	n/d

CONNECTION DIAGRAMS

TS / HMI CONTROLLER



to 1 TS controller:

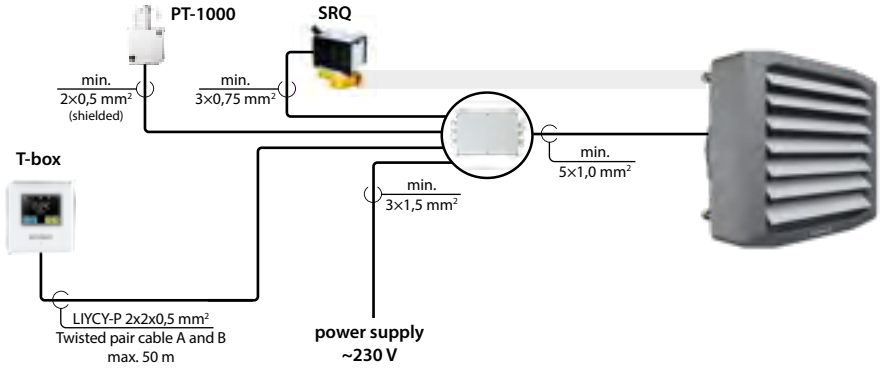
- max. 7 units LEO S
- max. 3 units LEO L
- max. 2 units LEO XL

to 1 HMI controller:

- max. 5 units LEO S
- max. 2 units LEO L
- max. 1 units LEO XL

It is possible to apply RX splitters to increase the maximum number of controlled units

T-box CONTROLLER



max. 31 units compatible
with FLOWAIR SYSTEM
to 1 T-box controller

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01202 822221

HEATING CAPACITIES

Tw1/Tw2 = 120/90°C					Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C					Tw1/Tw2 = 40/30°C				
Tp1	**PT**	**Qw**	**Δpw**	**Tp2**	**Tp1**	**PT**	**Qw**	**Δpw**	**Tp2**	**Tp1**	**PT**	**Qw**	**Δpw**	**Tp2**	**Tp1**	**PT**	**Qw**	**Δpw**	**Tp2**	**Tp1**	**PT**	**Qw**	**Δpw**	**Tp2**
°C	kW	l/h	kPa	°C	°C	kW	l/h	kPa	°C	°C	kW	l/h	kPa	°C	°C	kW	l/h	kPa	°C	°C	kW	l/h	kPa	°C
LEO S1 / LEO S1 BMS																								
V = 2300 m³/h																								
0,0	12,8	381	1,8	16,5	0,0	9,8	430	2,4	12,5	0,0	6,7	292	1,3	8,5	0,0	5,0	219	0,8	6,5	0,0	3,8	325	1,7	5,0
5,0	12,2	362	1,6	20,5	5,0	9,1	401	2,1	16,5	5,0	6,0	262	1,0	12,5	5,0	4,3	188	0,6	10,5	5,0	3,0	263	1,2	9,0
10,0	11,5	343	1,5	24,5	10,0	8,4	372	1,8	21,0	10,0	5,3	232	0,8	17,0	10,0	3,6	155	0,4	14,5	10,0	2,3	197	0,7	13,0
15,0	10,9	324	1,3	29,0	15,0	7,8	343	1,6	25,0	15,0	4,6	202	0,7	21,0	15,0	2,7	117	0,3	18,5	15,0	1,2	104	0,2	16,5
20,0	10,2	305	1,2	33,0	20,0	7,1	314	1,3	29,0	20,0	3,9	170	0,5	25,0	20,0	1,7	74	0,1	22,0	20,0	0,8	72	0,1	21,0
LEO S2 / LEO S2 BMS																								
V = 2000 m³/h																								
0,0	26,5	788	10,7	39,0	0,0	20,1	889	14,2	30,0	0,0	14,4	631	8,2	21,5	0,0	11,5	502	5,6	17,0	0,0	8,3	719	11,4	12,5
5,0	25,2	750	9,8	42,0	5,0	18,9	832	12,6	33,0	5,0	13,1	574	6,9	24,5	5,0	10,2	445	4,5	20,0	5,0	7,0	604	8,4	15,5
10,0	24,0	713	8,9	45,0	10,0	17,6	776	11,1	36,0	10,0	11,8	517	5,7	27,5	10,0	8,9	386	3,6	23,0	10,0	5,6	488	5,8	18,5
15,0	22,7	676	8,1	48,0	15,0	16,3	719	9,7	39,0	15,0	10,5	459	4,6	30,5	15,0	7,5	328	2,7	26,0	15,0	4,3	370	3,5	21,0
20,0	21,5	639	7,3	51,0	20,0	15,0	663	8,4	42,0	20,0	9,2	401	3,6	33,5	20,0	6,1	267	1,9	29,0	20,0	2,8	246	1,7	24,0
LEO S3 / LEO S3 BMS																								
V = 1800 m³/h																								
0,0	32,7	973	8,4	54,0	0,0	24,9	1098	11,1	41,0	0,0	17,6	769	6,2	29,0	0,0	13,8	603	4,2	23,0	0,0	10,1	872	8,6	16,5
5,0	31,1	925	7,6	56,0	5,0	23,3	1026	9,8	43,0	5,0	15,9	697	5,2	31,0	5,0	12,2	530	3,3	25,0	5,0	8,4	726	6,2	18,5
10,0	29,5	878	6,9	58,0	10,0	21,6	954	8,6	45,5	10,0	14,3	624	4,3	33,5	10,0	10,5	457	2,5	27,0	10,0	6,7	579	4,1	21,0
15,0	27,9	831	6,3	60,5	15,0	20,0	883	7,5	47,5	15,0	12,6	551	3,4	35,5	15,0	8,8	382	1,8	29,0	15,0	4,9	428	2,4	23,0
20,0	26,3	784	5,6	62,5	20,0	18,4	811	6,4	49,5	20,0	10,9	478	2,6	37,5	20,0	7,0	304	1,2	31,5	20,0	3,1	264	1,0	25,0
LEO L1 / LEO L1 BMS																								
V = 4250 m³/h																								
0,0	32,3	961	7,0	22,5	0,0	24,6	1086	9,4	17,0	0,0	17,1	749	5,1	12,0	0,0	13,3	578	3,3	9,0	0,0	9,8	845	7,0	7,0
5,0	30,7	913	6,4	26,5	5,0	23,0	1014	8,3	21,0	5,0	15,4	676	4,2	15,5	5,0	11,6	504	2,6	13,0	5,0	8,0	697	4,9	10,5
10,0	29,1	865	5,8	30,0	10,0	21,3	941	7,2	25,0	10,0	13,8	602	3,4	19,5	10,0	9,8	429	1,9	17,0	10,0	6,3	547	3,2	14,5
15,0	27,5	818	5,2	34,0	15,0	19,7	869	6,3	28,5	15,0	12,1	528	2,7	23,5	15,0	8,1	352	1,4	20,5	15,0	4,5	391	1,8	18,0
20,0	25,9	770	4,7	37,5	20,0	18,0	796	5,3	32,5	20,0	10,4	453	2,1	27,0	20,0	6,2	272	0,9	24,5	20,0	1,6	139	0,3	21,0

V – air flow
PT – heating capacity
Tp1 – inlet air temperature
Tp2 – outlet air temperature
Tw1 – inlet water temperature
Tw2 – outlet water temperature
Qw – water flow in the heat exchanger
Δpw – water pressure drop in the heat exchanger

HEATING CAPACITIES

Tw1/Tw2 = 120/90°C					Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C					Tw1/Tw2 = 40/30°C				
Tp1	PT	Qw	Δpw	Tp2	Tp1	PT	Qw	Δpw	Tp2	Tp1	PT	Qw	Δpw	Tp2	Tp1	PT	Qw	Δpw	Tp2	Tp1	PT	Qw	Δpw	Tp2
°C	kW	l/h	kPa	°C	°C	kW	l/h	kPa	°C	°C	kW	l/h	kPa	°C	°C	kW	l/h	kPa	°C	°C	kW	l/h	kPa	°C
LEO L2 / LEO L2 BMS																								
V = 3800 m³/h																								
0,0	50,4	1 500	7,9	43,5	0,0	38,4	1693	10,5	33,0	0,0	27,2	1190	5,9	23,5	0,0	21,5	937	4,0	18,5	0,0	15,6	1 351	8,2	13,5
5,0	48,0	1 428	7,2	46,5	5,0	35,9	1584	9,3	36,0	5,0	24,7	1079	4,9	26,5	5,0	18,9	825	3,2	21,5	5,0	13,0	1 128	5,9	16,0
10,0	45,5	1 355	6,5	49,0	10,0	33,4	1474	8,1	38,5	10,0	22,1	968	4,1	29,0	10,0	16,3	712	2,4	24,0	10,0	10,4	902	4,0	19,0
15,0	43,1	1 283	5,9	52,0	15,0	30,9	1364	7,1	41,5	15,0	19,6	856	3,3	31,5	15,0	13,7	598	1,8	26,5	15,0	7,7	671	2,4	21,5
20,0	40,7	1 211	5,3	54,5	20,0	28,4	1254	6,1	44,0	20,0	17,0	743	2,5	34,5	20,0	11,0	480	1,2	29,5	20,0	4,9	425	1,1	24,0
LEO L3 / LEO L3 BMS																								
V = 3400 m³/h																								
0,0	65,2	1 942	11,9	63,0	0,0	49,4	2182	15,7	48,0	0,0	35,7	1564	9,1	34,5	0,0	28,8	1254	6,4	28,0	0,0	20,5	1 775	12,6	20,0
5,0	62,2	1 852	10,9	65,0	5,0	46,4	2046	13,9	49,5	5,0	32,6	1426	7,7	36,5	5,0	25,6	1115	5,2	29,5	5,0	17,3	1 499	9,3	21,5
10,0	59,2	1 762	10,0	67,0	10,0	43,3	1910	12,3	51,5	10,0	29,5	1289	6,4	38,5	10,0	22,4	975	4,1	31,5	10,0	14,1	1 220	6,5	23,5
15,0	56,2	1 672	9,1	68,5	15,0	40,2	1775	10,8	53,5	15,0	26,3	1150	5,3	40,0	15,0	19,1	832	3,1	33,5	15,0	10,8	935	4,0	25,5
20,0	53,2	1 584	8,2	70,5	20,0	37,1	1639	9,3	55,0	20,0	23,1	1010	4,2	42,0	20,0	15,8	686	2,2	35,0	20,0	7,3	637	2,1	27,0
LEO XL2 / LEO XL2 BMS																								
V = 5800 m³/h																								
0,0	94,0	2 799	23,1	52,5	0,0	71,6	3159	30,7	40,0	0,0	51,4	2248	17,5	28,5	0,0	41,2	1794	12,1	23,0	0,0	29,6	2 568	24,4	16,5
5,0	89,5	2 666	21,1	54,5	5,0	67,0	2958	27,2	42,0	5,0	46,8	2046	14,7	31,0	5,0	36,5	1591	9,7	25,5	5,0	24,9	2 161	17,9	19,0
10,0	85,1	2 533	19,2	57,0	10,0	62,5	2757	23,9	44,5	10,0	42,1	1843	12,2	33,5	10,0	31,8	1386	7,6	27,5	10,0	20,2	1 751	12,3	21,0
15,0	80,6	2 400	17,4	59,5	15,0	57,9	2556	20,8	47,0	15,0	37,5	1639	9,9	35,5	15,0	27,1	1179	5,7	30,0	15,0	15,4	1 336	7,6	23,5
20,0	76,2	2 269	15,7	61,5	20,0	53,4	2355	17,9	49,0	20,0	32,8	1433	7,8	38,0	20,0	22,2	969	4,0	32,0	20,0	10,5	910	3,8	25,5
LEO XL3 / LEO XL3 BMS																								
V = 5300 m³/h																								
0,0	121,0	3 602	18,7	74,0	0,0	91,6	4043	24,6	56,0	0,0	66,6	2916	14,4	41,0	0,0	54,0	2352	10,2	33,0	0,0	38,2	3 313	20,0	23,5
5,0	115,4	3 436	17,2	75,5	5,0	86,0	3794	21,9	57,5	5,0	60,9	2664	12,3	42,0	5,0	48,1	2097	8,3	34,5	5,0	32,4	2 807	14,9	25,0
10,0	109,9	3 270	15,7	76,5	10,0	80,3	3545	19,4	59,0	10,0	55,1	2411	10,2	43,5	10,0	42,2	1840	6,5	35,5	10,0	26,5	2 297	10,4	26,0
15,0	104,3	3 106	14,3	78,0	15,0	74,7	3296	17,0	60,0	15,0	49,3	2157	8,4	45,0	15,0	36,2	1580	5,0	37,0	15,0	20,5	1 777	6,6	27,5
20,0	98,9	2 944	12,9	79,5	20,0	69,1	3048	14,7	61,5	20,0	43,4	1900	6,7	46,0	20,0	30,1	1314	3,6	38,0	20,0	14,3	1 238	3,5	28,5

V – air flow
PT – heating capacity
Tp1 – inlet air temperature
Tp2 – outlet air temperature
Tw1 – inlet water temperature
Tw2 – outlet water temperature
Qw – water flow in the heat exchanger
Δpw – water pressure drop in the heat exchanger