

Product brochure



Air heating and
ventilation
LEO



Air curtains and air curtain-fan
heater combo units
ELiS



Ductless ventilation with
heat recovery
OXeN

We are experts in providing complete heating and ventilation solutions for medium and big cubature buildings. Our offer consists of three main product groups:

- air heating and ventilation:
fan heaters, gas heaters, electric heaters, mixing chambers, fan heaters for specialized buildings like chicken coops, pools, car washes,
- air curtains and air curtain-fan heater combo units,
- ductless ventilation with heat recovery:
OXeN ventilation units.

Design

In our activity, we put special emphasis on innovative projects, taking into account industrial design. Thanks to the knowledge that we draw from design, we focus not only on aesthetics of manufactured products, but primarily on the benefits that they have to carry. We pay special attention to ergonomics and functionality of solutions, which will be tailored to the needs of users. Our projects have been awarded in several prestigious international competitions in the field of industrial design, like **The Red Dot Design Award**, **IF product design award** and **Dobry Wzór**, organized by Polish Institute of Industrial Design.

BASIC line

In 2014 we launched FLOWAIR BASIC brand as an answer to the cheap lines of products available on the market. Productivity and successfully completed negotiations with subcontractors allowed the reduction of the costs of the selected devices, resulting in the creation of Basic Line. These are the products for customers looking for a good price on the market. At the same time FLOWAIR brand, which promotes new line of products guarantees their quality, reliability and advanced technical solutions.

Achievements

Our greatest achievement are satisfied customers. To achieve this goal we use innovative industrial design.

We are constantly inspired by new technologies and improvements in terms of functionality, control and used materials, as well as custom industrial design. Thanks to this for many years we create new trends in the heating and ventilation industry.

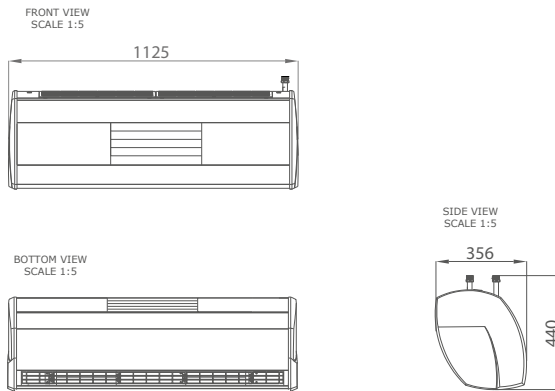
We are also recognized as a credible company in terms of organization and financial and we are already nine times awarded the title of Fair Play Company.

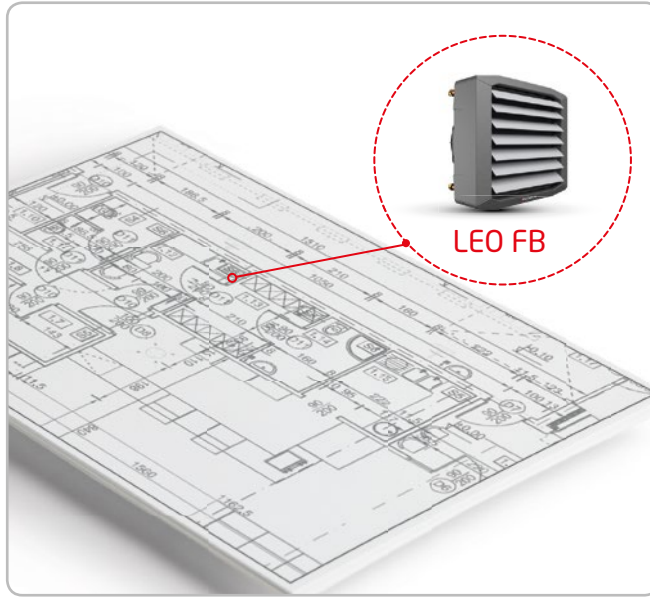


reddot design award



ELiS DUO
air curtain-fan heater combo unit





**AIR HEATING
AND VENTILATION**

• LEO FB	8
• LEO D	17
• LEO FS	20
• LEO INOX	25
• LEO EX	30
• LEO EL	33
• LEO AGRO	36



**AIR CURTAINS AND AIR CURTAIN-FAN
HEATER COMBO UNITS**

• ELIS C	42
• ELIS T	46
• ELIS B	50
• ELIS A	55
• ELIS DUO	60
• ELIS G	65



**DUCTLESS VENTILATION WITH HEAT
RECOVERY**

• OXeN	72
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Tel. + 48 58 627 57 20
Fax. + 48 58 627 57 21
e-mail: info@flowair.pl
www.flowair.com

System FLOWAIR

is a pioneering solution that enables integration of operation of heating and ventilation units and control their operation **with only one controller**.

Innovative control **SYSTEM** makes possible to take advantage of features that were previously reserved for extensive building management system BMS.



ELIS DUO
air curtain-fan heater
combo units



T-box
intelligent controller
with touch screen



JUST ONE CONTROLLER is needed

- control of all units from one place
- quick access to operating parameters of the units

Cooperation with BMS

Weekly programmer

Read of operation parameters

Various operation modes

Intuitive use



LEO
fan heaters

ELiS
air curtains

OXeN
ductless ventilation
with heat recovery

LEO D
destratifiers

AIR HEATING AND VENTILATION



Fan heaters **LEO FB**



Fan heaters LEO FB

Heating capacity [kW]	2–100
Air flow [m³/h]	150–8500
Weight [kg]	7,4–35,7
Colour	grey
Casing	EPP (expanded polypropylene)

Application:

Medium and big cubature buildings: industrial halls, warehouses, department stores, production halls, sports halls, sacral buildings, etc., as well as smaller spaces such as: workshops, garages, stores, car show rooms, gas stations, etc.

Available types of units:

LEO FB V

Fan heater with AC fan, with possibility of 3-step air flow regulation.

LEO FB M

Heater with energy-efficient fan with EC motor, controlled by external 0-10V signal, enabling stepless regulation of fan speed in range of 0-100%.

Indexes LEO FB V

Name	FB 10V	FB 20V	FB 30V	FB 25V	FB 45V	FB 65V	FB 95V
Index	10982	10983	10927	10919	10922	10925	10978

Indexes LEO FB M

Name	FB 10M	FB 20M	FB 30M	FB 25M	FB 45M	FB 65M	FB 95M
Index	10984	10985	10928	10920	10923	10926	10976

Special attributes



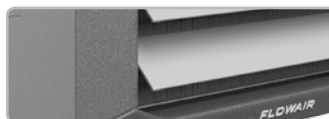
3-STEP FAN

LEO FB V fan heaters are equipped with 3-step fan. It is the simplest and an effective way to control operation of the heater.



EC FAN

Use of energy-efficient fan with EC motor in LEO FB M fan heaters allows reduction of energy costs even by 50%.



EPP CASING

Mechanical strength, resistance to dirt, low weight and aesthetic look – everything thanks to EPP material (expanded polypropylene).

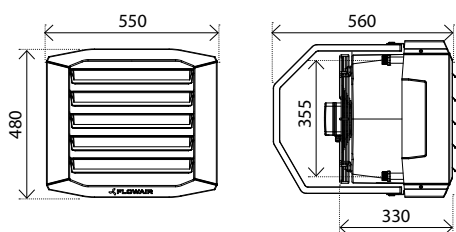


CONDENSATE TRAY – LEO FB 25|45|65

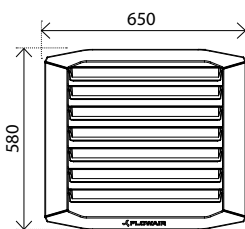
LEO FB fan heaters can also be used for cooling. Thanks to built-in tray, condensate can be easily discharged from the heat exchanger.

Dimensions

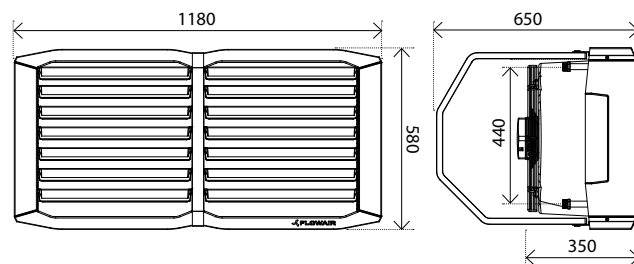
LEO FB 10|20|30



LEO FB 25|45|65



LEO FB 95



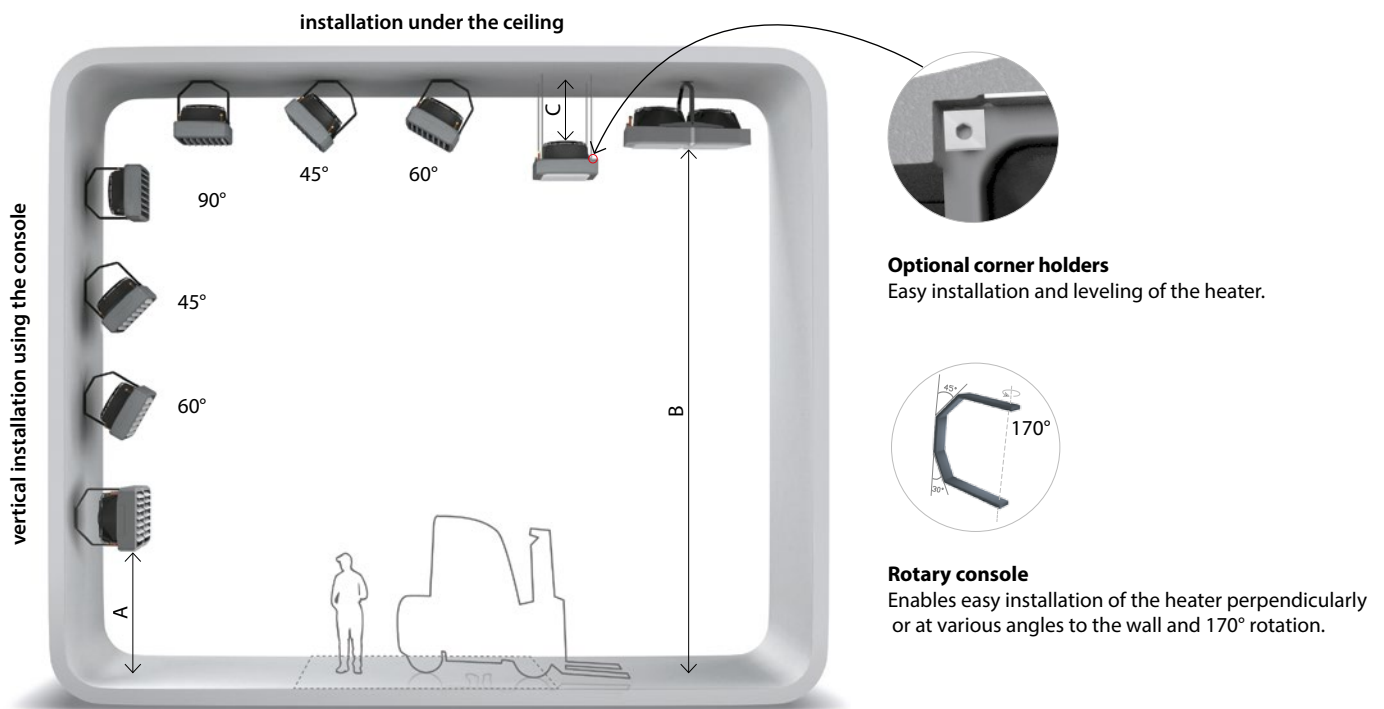
Technical data

	FB 10V	FB 10M	FB 20V	FB 20M	FB 30V	FB 30M	FB 25V	FB 25M	FB 45V	FB 45M	FB 65V	FB 65M	FB 95V	FB 95M
Max. air flow [m ³ /h]	2100		2000		1900		4400		4100		3900		8500	
Power supply [V/Hz]	230/50													
Max. current consumption [A]	0,5	0,25	0,5	0,25	0,5	0,25	1,4	0,7	1,4	0,7	1,4	0,7	2x1,4 (2,8)	2x0,7 (1,4)
Max. power consumption [W]	110	57,5	110	57,5	110	57,5	320	170	320	170	320	170	2x320 (640)	2x170 (340)
IP	54													
Max. acoustic pressure level ⁽¹⁾ [dB(A)]	47	45	47	45	47	45	54	51	54	51	54	51	57	53
Max. air stream range ⁽²⁾ [m]	14,5		14,0		13,0		26,0		24,0		22,0		33,0	
Max. heating water temp. [°C]	120													
Max. operating pressure [MPa]	1,6													
Weight of unit [kg]	9,3	7,4	10,2	8,3	11,3	9,5	14,8	11,5	16,0	13,1	18,3	15,0	32,2	25,6
Weight of unit filled with water [kg]	10,0	8,1	11,4	9,5	12,7	10,9	15,8	12,5	18,0	15,1	21,0	17,7	35,7	29,1

⁽¹⁾ 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

⁽²⁾ Range of horizontal isothermal air stream, at 0,5 m/s velocity limit

Installation



Recommended installation distances [m]

	FB 10	FB 20	FB 30	FB 25	FB 45	FB 65	FB 95
A	max. 3,0	max. 3,0	max. 3,0	2,5-8,0	2,5-8,0	2,5-8,0	2,5-10,0
B	2,5-5,0	2,5-5,0	2,5-5,0	2,5-10,0	2,5-10,0	2,5-10,0	2,5-12,0
C	min. 0,3						

Heating capacities

		LEO FB 10				LEO FB 20				LEO FB 30				LEO FB 25				LEO FB 45				LEO FB 65				LEO FB 95																																																																																																																						
		V = 2100 m³/h				V = 2000 m³/h				V = 1900 m³/h				V = 4400 m³/h				V = 4100 m³/h				V = 3900 m³/h				V = 8500 m³/h																																																																																																																						
Tp1	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2	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	kW	l/h	kPa	°C	kW	l/h	kPa	°C	kW	l/h	kPa	°C	kW	l/h	kPa	°C	kW	l/h	kPa	°C																																																																																																																
Tw1/Tw2 = 90/70°C																																																																																																																																																
0	10,1	446	2,8	14,5	21,4	946	17,6	32,0	27,3	1202	14,3	42,5	26,7	1179	11,6	18,0	45,0	1986	15,2	32,5	65,5	2892	21,3	50,0	100,9	4449	41,0	36,0	5	9,5	417	2,4	18,5	20,1	887	15,7	34,5	25,5	1125	12,7	44,5	25,0	1101	10,2	22,0	42,1	1958	13,4	35,5	61,4	2712	18,9	51,5	96,2	4244	36,7	38,5	10	8,8	388	2,1	22,5	18,7	827	13,8	37,5	23,7	1047	11,1	46,5	23,2	1024	8,9	25,0	39,2	1730	11,8	38,0	57,3	2529	16,7	53,0	89,6	3955	32,2	41,0	15	8,1	358	1,9	26,5	17,4	768	12,0	40,5	22,0	970	9,7	49,0	21,4	946	7,7	29,5	36,3	1603	10,3	41,0	53,1	2344	14,5	55,0	83,0	3663	28,0	43,5	20	7,4	328	1,6	30,5	16,0	708	10,5	43,5	20,2	892	8,3	51,0	19,7	868	6,6	33,0	33,4	1475	8,8	43,5	48,9	2159	12,5	56,5	76,3	3369	24,0	46,5
Tw1/Tw2 = 80/60°C																																																																																																																																																
0	8,6	377	2,1	12,0	18,4	810	13,7	27,5	23,3	1025	11,0	36,5	22,7	999	8,8	15,5	38,5	1693	11,7	27,5	56,5	2481	16,6	43,0	88,3	3881	32,0	31,0	5	7,9	347	1,8	16,0	17,1	751	12,0	30,0	21,6	947	9,6	38,5	21,0	921	7,6	19,0	35,6	1565	10,2	30,5	52,3	2300	14,4	44,5	81,8	3594	27,8	33,5	10	7,2	317	1,6	20,0	15,7	691	10,3	33,0	19,8	869	8,2	40,5	19,2	843	6,5	23,0	32,7	1437	8,7	33,5	48,2	2116	12,4	46,5	75,2	3304	24,0	36,0	15	6,5	287	1,3	24,0	14,3	631	8,7	36,0	18,0	791	6,9	42,5	17,4	765	5,4	26,5	29,8	1308	7,3	36,0	44,0	1931	10,5	48,0	68,5	3011	20,1	38,5	20	5,9	257	1,1	28,0	13,0	570	7,3	39,0	16,2	713	5,7	45,0	15,6	686	4,5	30,5	26,8	1179	6,1	39,0	39,7	1744	8,8	50,0	61,8	2716	16,7	41,5
Tw1/Tw2 = 70/50°C																																																																																																																																																
0	7,0	307	1,5	10,0	15,4	675	10,2	23,0	19,4	848	8,1	30,5	18,7	819	6,3	12,5	32,0	1402	8,6	23,0	47,3	2071	12,3	36,0	74,0	3236	23,6	26,0	5	6,3	277	1,3	14,0	14,0	615	8,6	26,0	17,6	770	6,8	32,5	16,9	741	5,3	16,5	29,1	1273	7,2	26,0	43,2	1889	10,4	37,5	67,4	2948	19,9	28,5	10	5,6	246	1,0	18,0	12,7	555	7,2	28,5	15,8	691	5,6	34,5	15,1	662	4,3	20,0	26,1	1144	6,0	29,0	38,9	1704	8,7	39,5	60,7	2657	16,5	31,0	15	4,9	215	0,8	22,0	11,3	494	5,8	31,5	14,0	613	4,5	36,5	13,3	583	3,4	24,0	23,2	1014	4,8	31,5	34,7	1517	7,0	41,0	54,0	2363	13,3	33,0	20	4,2	184	0,6	26,0	9,9	433	4,6	34,5	12,2	533	3,5	38,5	11,5	502	2,6	27,5	20,2	883	3,7	34,0	30,3	1328	5,5	43,0	47,2	2066	10,5	36,5
Tw1/Tw2 = 60/40°C																																																																																																																																																
0	5,4	234	1,0	7,5	12,4	540	7,1	18,5	15,4	671	5,5	24,0	14,6	637	4,2	10,0	25,5	1110	5,9	18,5	38,1	1659	8,6	29,0	59,5	2593	16,3	20,5	5	4,7	203	0,8	11,5	11,0	479	5,6	21,0	13,6	592	4,4	26,0	12,8	558	3,3	13,5	22,5	980	4,7	21,0	33,8	1475	6,9	30,5	52,8	2303	13,2	23,5	10	3,9	170	0,6	15,5	9,6	418	4,5	24,0	11,8	512	3,4	28,0	11,0	478	2,5	17,5	19,5	849	3,6	24,0	29,5	1288	5,4	32,5	46,1	2010	10,3	26,0	15	3,1	135	0,4	19,5	8,2	356	3,4	27,0	9,9	431	2,5	30,5	9,1	396	1,8	21,0	16,5	717	2,7	27,0	25,2	1097	4,1	34,0	39,3	1712	7,7	28,5	20	1,9	82	0,2	22,5	6,7	293	2,4	30,0	8,0	349	1,7	32,5	7,2	312	1,2	24,5	13,3	581	1,9	29,5	20,7	902	2,9	35,5	32,4	1410	5,5	31,0

To obtain operating parameters concerning other water temperatures, please contact 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 – water stream flow in the heat exchanger

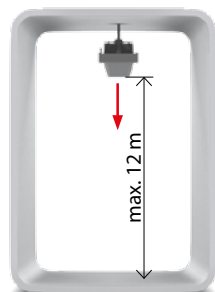
Δpw – water pressure drop in the heat exchanger

Accessories

FB CONFUSOR

Material: powder-painted steel

Weight: 3,8 kg



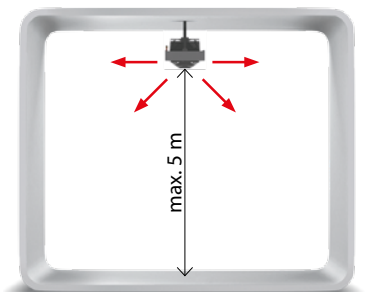
Dedicated for fan heaters
LEO FB 25|45|65

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

FB 4-SIDE OUTLET GRILLE

Material: powder-painted steel

Weight: 2,8 kg



Dedicated for fan heaters
LEO FB 25|45|65

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

Indexes FB accessories

Name	FB confusor	FB 4-side outlet grille	console FB S	console FB L
Index	10974	10972	10930	10929

Accessories

MIXING CHAMBER

Material: galvanized steel, aluminum, plastic



Dedicated for fan heaters
LEO FB 25|45|65|95

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

Indexes LEO KM L

Name	KM L	KM 95
Index	11838	10997

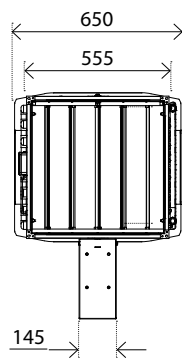
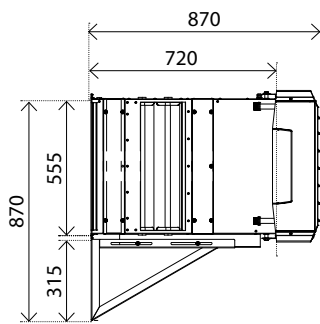


LEO FB + KM L

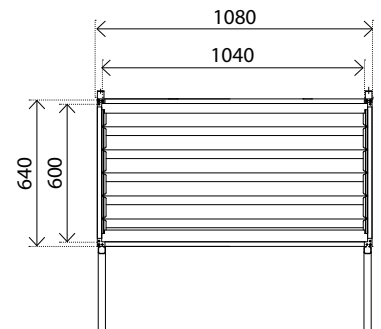
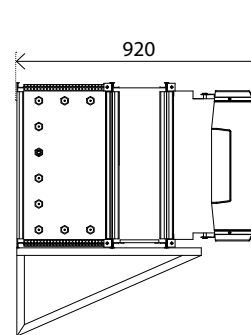
	LEO FB 25 + KM L	LEO FB 45 + KM L	LEO FB 65 + KM L	LEO FB 95 + KM 95
Heating capacity [kW]	14–24	24–37	29–52	47–87
Air flow [m ³ /h]	1550–3200	1470–3000	1300–2800	2650–6500
Weight [kg]	31,0–73,7			
Colour	silver			
Casing	steel + aluminium + plastic + EPP			

Dimensions

LEO FB 25|45|65 + KM L

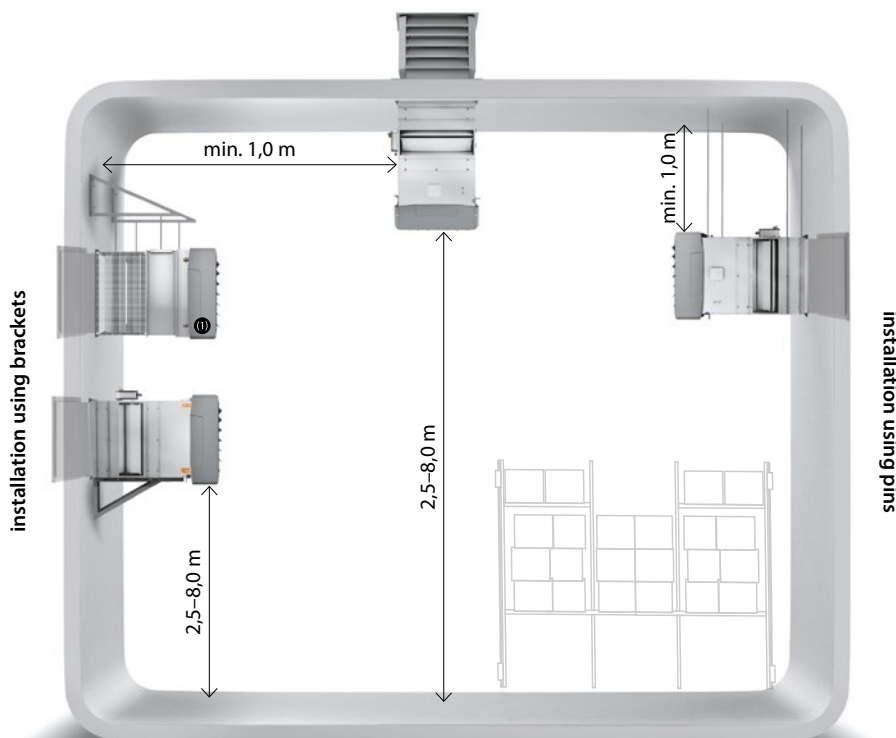


LEO FB 95 + KM 95



Installation

installation under the ceiling



⁽¹⁾ Only for LEO FB 95 + KM 95

Control systems

KM REGULATION

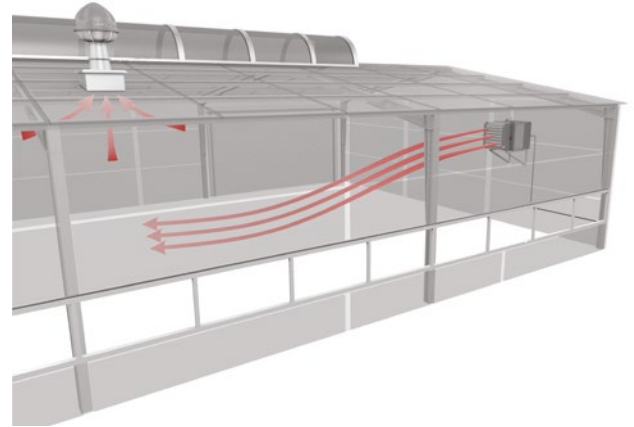
Complete control and protection set for LEO KM L.

Elements of FB + KM L set:

- DRV KM control module,
- dampers actuator,
- 3-way valve with 3-point actuator,
- fresh air temperature sensor,
- ambient air temperature sensor,
- supplied air temperature sensor,
- heating medium temperature sensor.

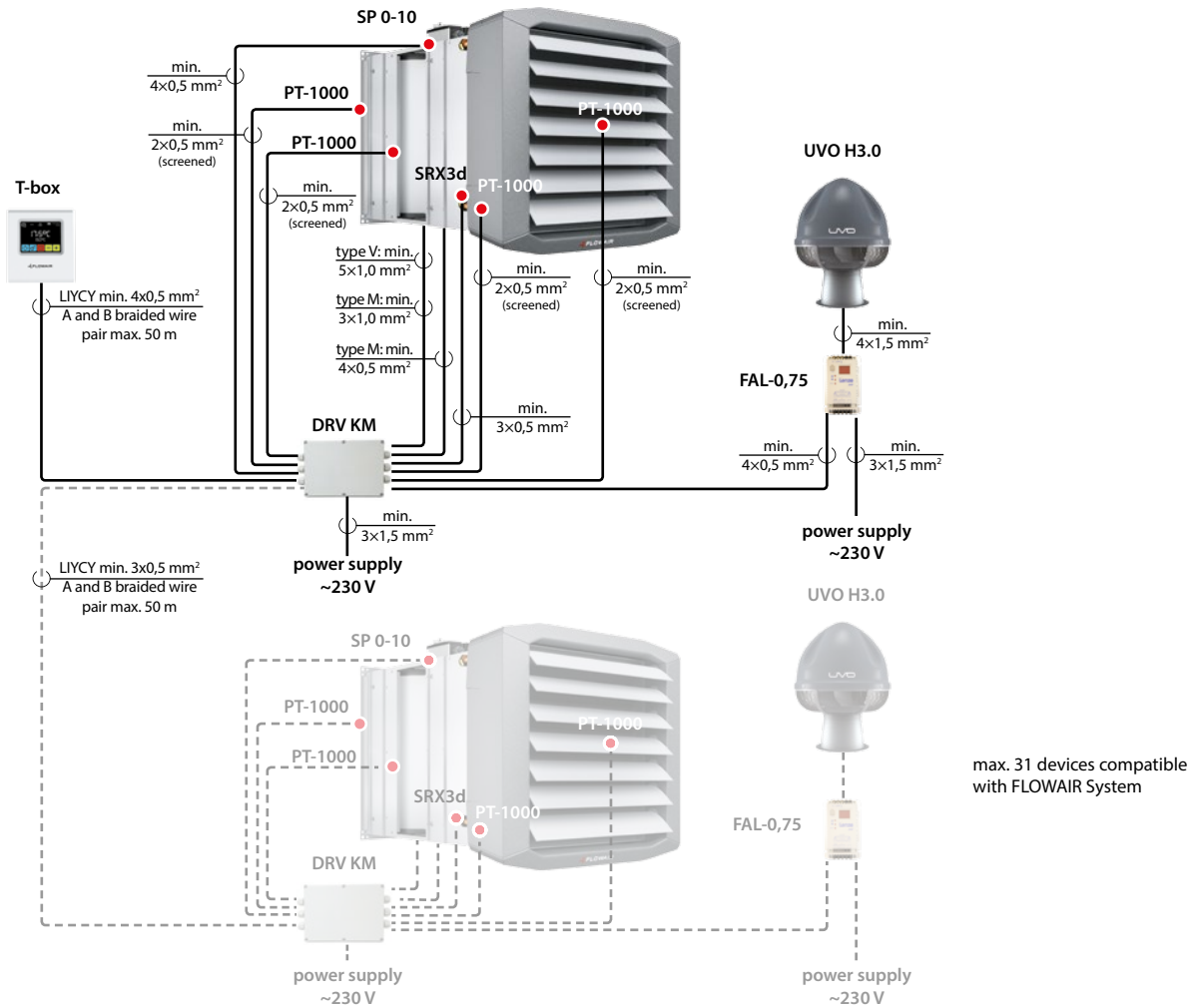
Basic functions:

- modulated or 3-step fan regulation,
- heat exchanger antifreeze protection,
- room antifreeze protection,
- smooth regulation of supplied air temperature,
- balance, overpressure or underpressure to roof fans,
- possibility of connection to BMS,
- weekly programmer,
- possibility of control up to 31 units in System FLOWAIR by one T-box controller,
- possibility to connect gas detection unit.



LEO KM ventilation

KM regulation



Indexes LEO KM L control system

Name	T-box	FAL-0,75	UVO H3.0	KMFB set
Index	10799	10711	15001	11782

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Roof fans UVO




UVO H is a group of roof fans with horizontal air outlet. They are designed for ventilation of any type of buildings. They are installed on the roof of the building and their main function is to remove used air from the room.



Technical data

			UVO H1.4	UVO H3.0
Max. air flow stream [m ³ /h]			1400	3000
Revs [min ⁻¹]			2600	3000
Power supply ⁽¹⁾ [V]			230	Y – 3 x 400 Δ – 3 x 230
Max. current consumption [A]			0,7	Y – 1,33 Δ – 2,3
Max. power consumption [W]			160	550
IP			44	54
Max. underpressure [Pa]			550	520
Max. air temperature [°C]			40	60
Max. air contamination [g/m ³]			0,3	
Casing			ABS plastic	
Colour			grey	
Weight [kg]			8,0	20,0
Max. acoustic pressure level [dB(A)]	inlet	1 m	65,7	74,0
		5 m	54,9	60,0
	outlet	1 m	70,0	80,0
		5 m	61,0	70,0

⁽¹⁾ Factory motor winding of UVO H3.0 roof fan has Y connecton (for power supply 3x400V)
In case of connection to 3x230V power supply, fan winding must have Δ connection (e.g. in case of use a FAL-0.75 inverter)

Fan heater LEO V		Fan heater LEO M
Regulacja TS	Regulacja HMI	Regulacja T-box
		
3-step fan speed regulator with thermostat	Programmable controller	Intelligent controller with touch screen

Controlling options

Manual 3-step air flow regulation	✓	✓	
Automatic 3-step air flow regulation		✓	
Automatic stepless air flow regulation			✓

Modes

Heating / Cooling / Ventilation	✓	✓	✓
Operation in continuous or thermostatic mode	✓	✓	✓
Weekly programmer		✓	✓
BMS		✓	✓
Room antifreeze		✓	✓
Integration with FLOWAIR System			✓

Max. number of connected units

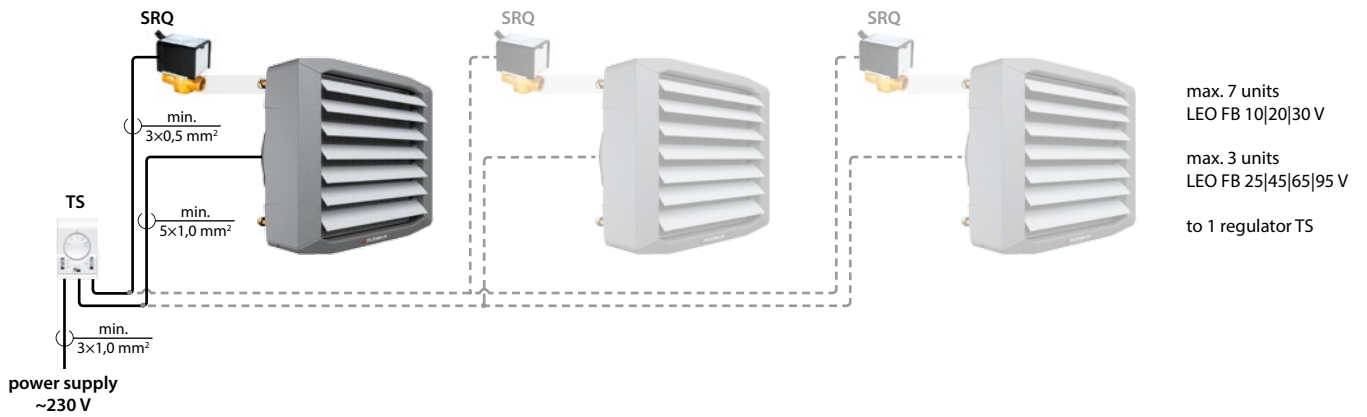
	LEO FB 10 20 30	LEO FB 25 45 65 95	LEO FB 10 20 30	LEO FB 25 45 65 95	LEO FB 10 20 30 25 45 65 95
Via controller	7	3	2	1	31
Via 1 additional splitter RX	12	6	12	6	n/a
Via 2 additional splitters RX	24	12	24	12	n/a
Via 3 additional splitters RX	36	18	36	18	n/a

Type of fan

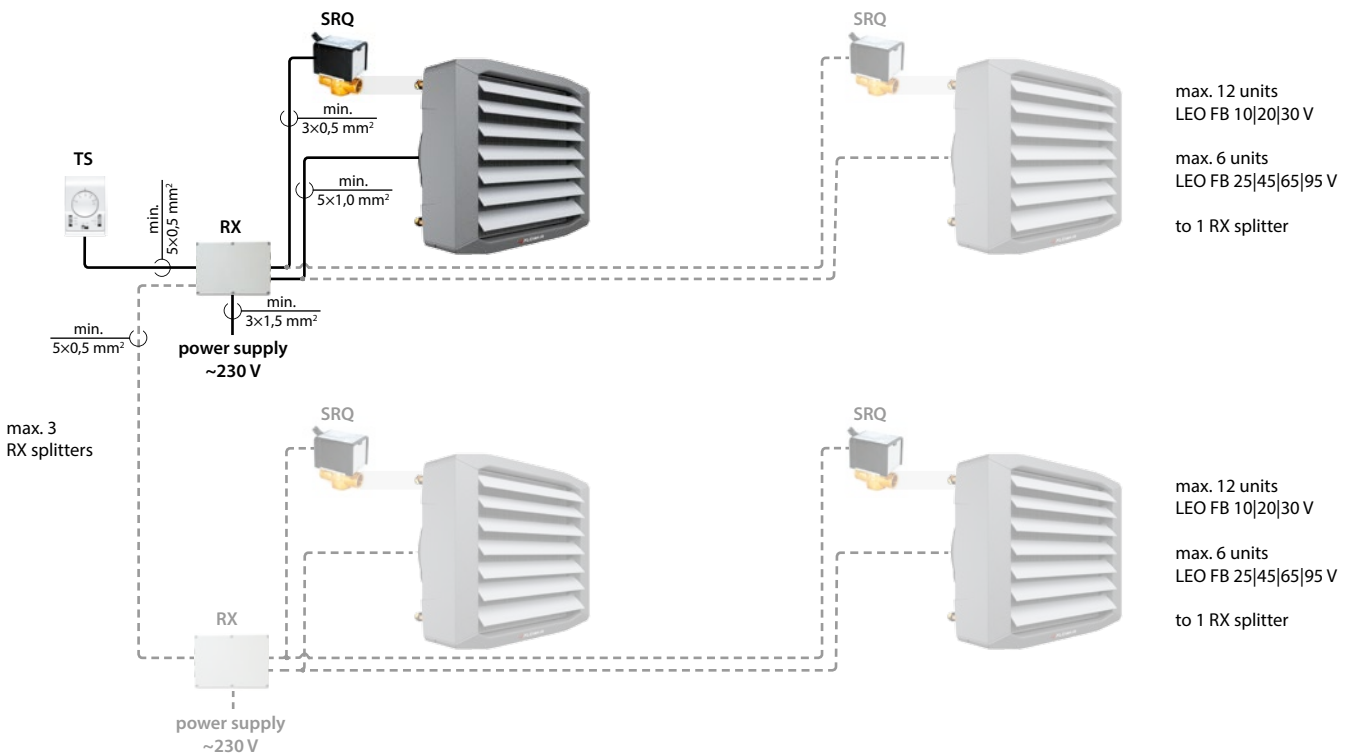
AC – fan with 3-step motor	✓	✓	
EC – fan with electronically commutated motor; energy-savings up to 50%			✓

Control systems

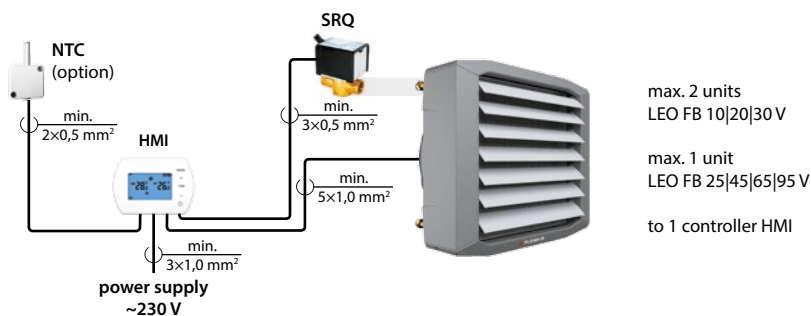
LEO type V fan heaters TS regulation



LEO type V fan heaters TS regulation + RX



LEO type V fan heaters HMI regulation

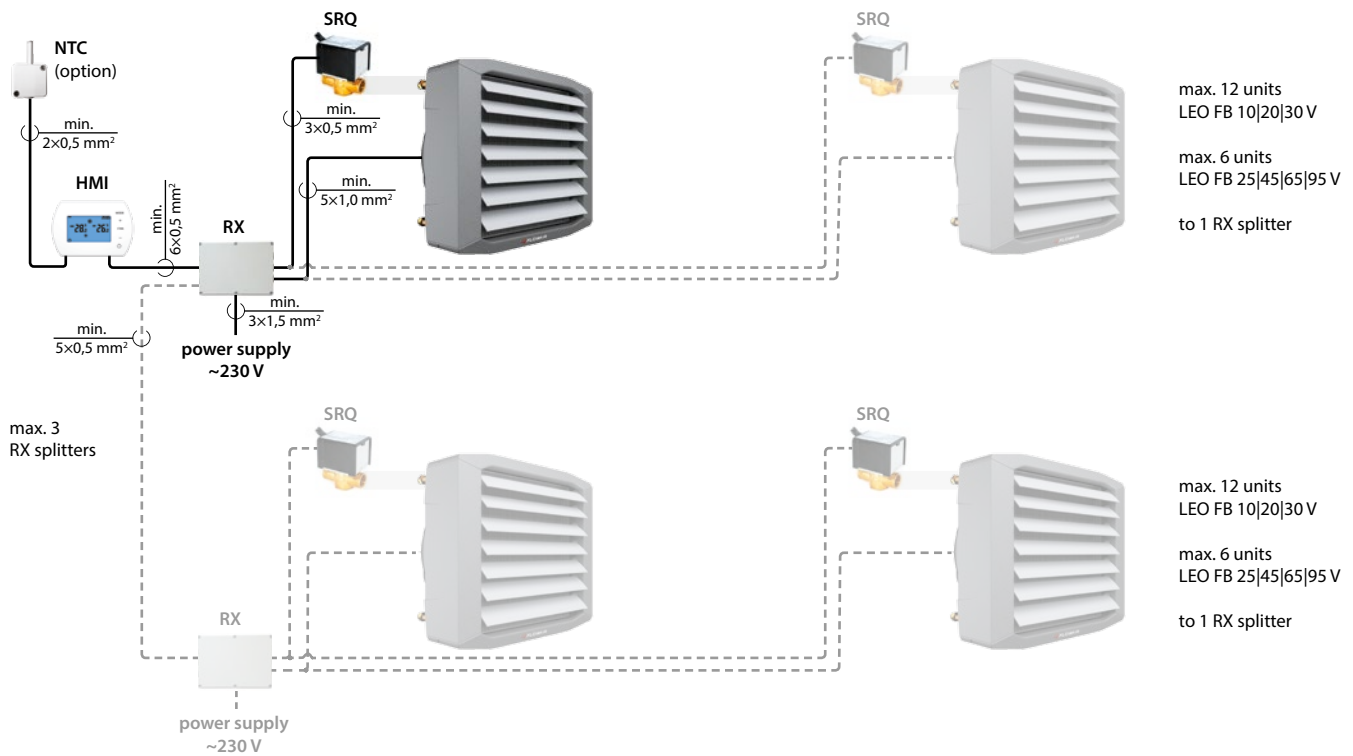


Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Control systems

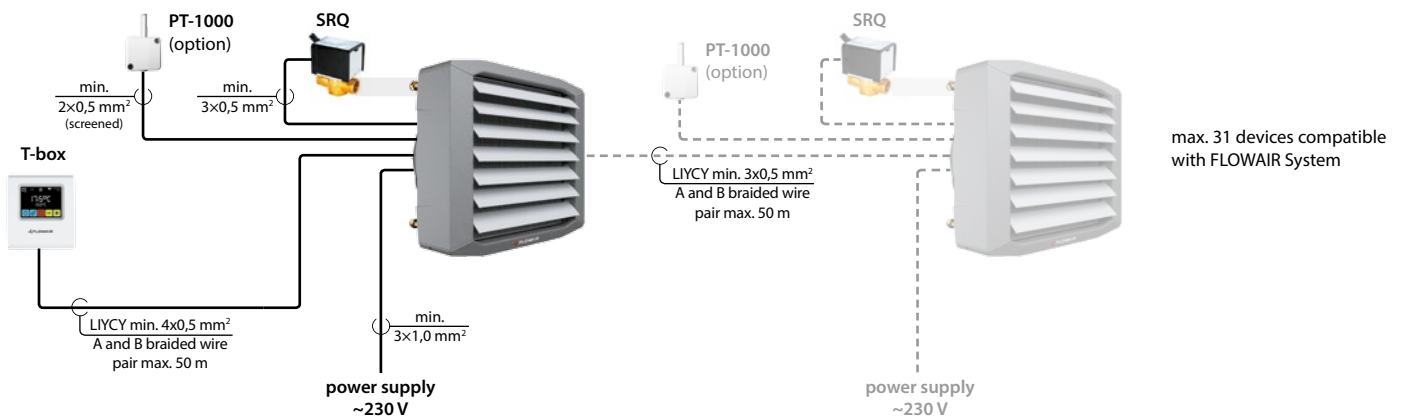
LEO type V fan heaters

HMI regulation + RX



LEO type M fan heaters

T-box regulation



Indexes LEO FB V control system

Name	T-box	HMI	TS	RX	SRQ2d-½	SRQ2d-¾	SRQ3d-½	SRQ3d-¾	NTC	PT-1000
Index	10799	11775	10996	11779	10803	10788	10804	10805	10791	10546

Indexes LEO FB M control system

Name	T-box	SRQ2d-½	SRQ2d-¾	SRQ3d-½	SRQ3d-¾	PT-1000
Index	10799	10803	10788	10804	10805	10546

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Destratificator LEO D



Indexes LEO D

Name	D 2	DT 2
Index	10062	10063

Destratificator LEO D

Air flow [m ³ /h]	3100–5400
Weight [kg]	13,9
Colour	grey
Casing	EPP (expanded polypropylene)

Application:

High industrial and public buildings, like industrial halls, warehouses, supermarkets, exhibition halls.

Available types of units:

LEO D 2

Destratificator without additional regulation systems with possibility of 3-step air flow regulation.

LEO DT 2

Destratificator with thermostat, which turns on the unit automatically, when ambient temperature rises above set temperature.

Additional description:

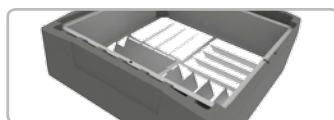
The main function of destratificator is to prevent accumulation of warm air in upper zones of the room. The fan intakes warm air and forces its flow to the zone occupied by the people. This solution reduces heat losses through the ceiling and results in faster heating of the building.

Special attributes



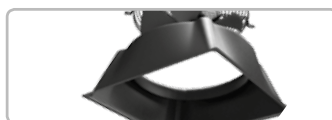
FAN

LEO D are equipped with 3-step fan. It is the simplest and an effective way to control operation of the destratificator.



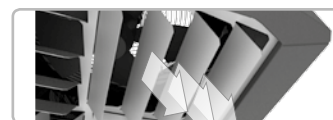
EPP CASING

Mechanical strength, resistance to dirt, low weight and aesthetic look – everything thanks to EPP material (expanded polypropylene).



AIR NOZZLE

Fan is placed in specially designed nozzle. Its profile reduces air flow noise and increases unit's efficiency.

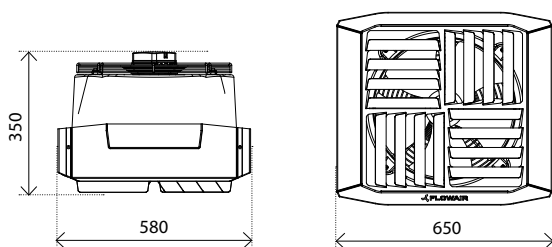


AIR BLADES

Air outlet is equipped with air deflectors for easy air stream direction and split of the air flow.

Dimensions

LEO D

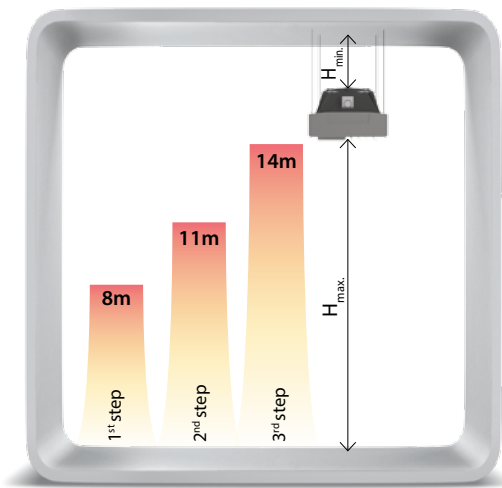


Technical data

	LEO D 2 DT 2
Max. air flow [m ³ /h]	5400
Power supply [V/Hz]	230/50
Max. current consumption [A]	1,4
Max. power consumption [W]	320
IP	54
Max. acoustic pressure level ⁽¹⁾ [dB(A)]	55
Max. operating temperature [°C]	60
Weight of unit [kg]	13,9

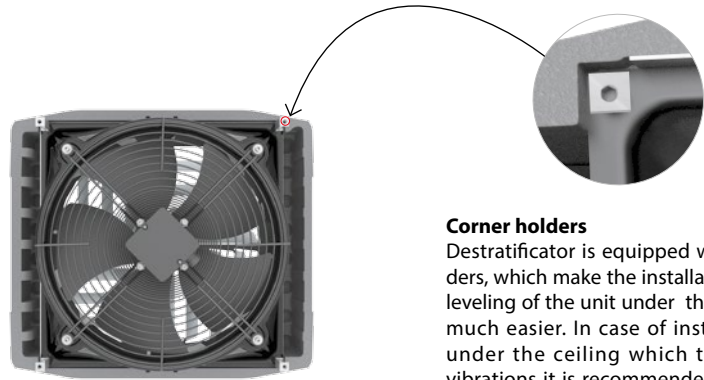
⁽¹⁾ Acoustic pressure level at the distance of 5 m from the unit, in the room of medium capability of sound absorption and 1500 m³ of cubature

Installation



H_{max} – maximum mounting height for air blades installed vertically

H_{min} – 1/3 height of hall, minimum 1 m



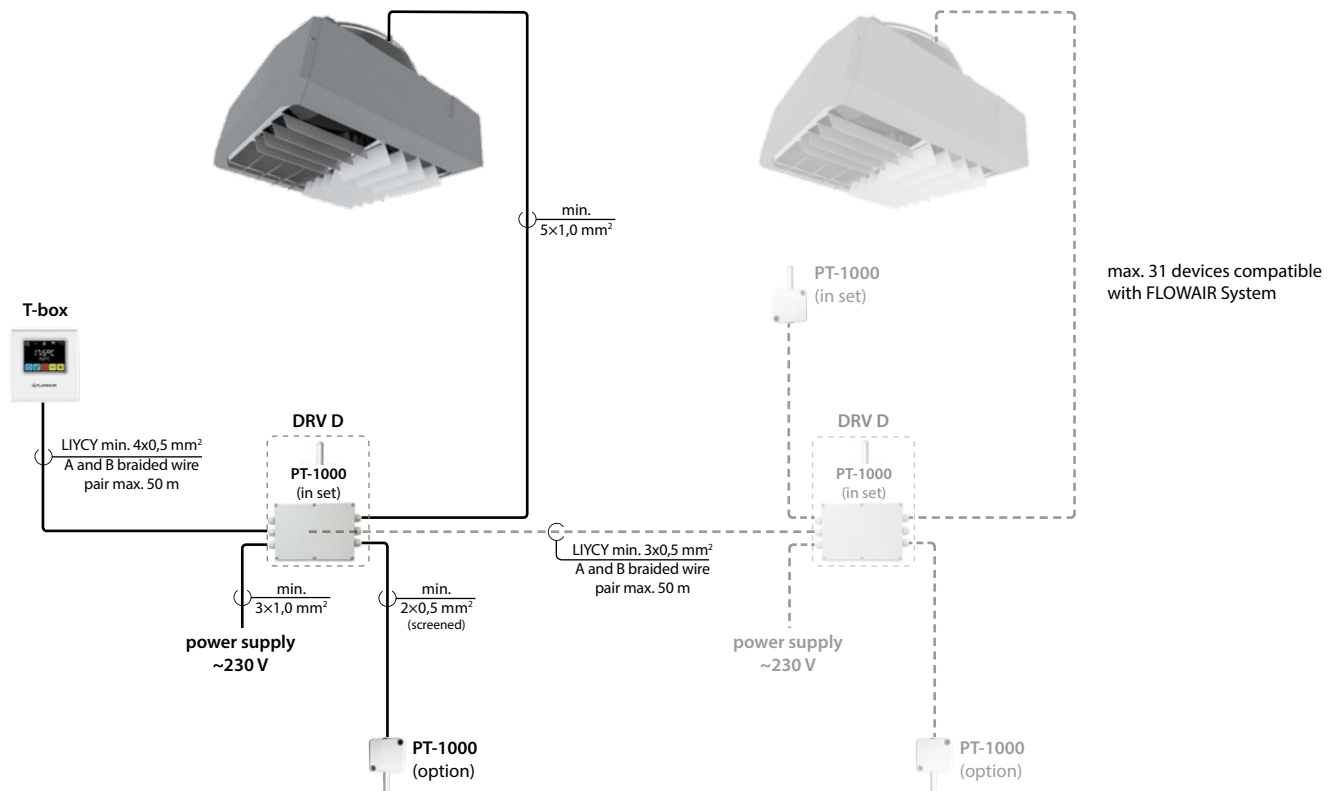
Corner holders

Destratificator is equipped with holders, which make the installation and leveling of the unit under the ceiling much easier. In case of installation under the ceiling which transmit vibrations it is recommended to use vibro-isolators.

Control systems

LEO D 2 destratificator

T-box regulation



LEO DT 2 destratificator

ON/OFF regulation



Indexes LEO D 2 control systems

Name	T-box	DRV D	PT-1000
Index	10799	11784	10546

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Fan heaters LEO FS



Fan heaters LEO FS

Heating capacity [kW]	5–19
Air flow [m³/h]	230–1750
Weight [kg]	13,8–16,8
Colour	grey
Casing	antistatic ABS

Application:

Small and medium cubature buildings, representative buildings, like restaurants, pubs, stores etc.

Available types of units:

LEO FS V

Fan heater with AC fan, with possibility of 3-step air flow regulation.

LEO FS M

Heater with energy-efficient fan with EC motor, controlled by external 0-10V signal, enabling stepless regulation of fan speed in range of 0-100%.

Indexes LEO FS V

Name	FS 19V
Index	10975

Indexes LEO FS M

Name	FS 19M
Index	10021

Special attributes



3-STEP FAN

LEO FS V fan heaters are equipped with 3-step fan. It is the simplest and effective way to control operation of the heater.



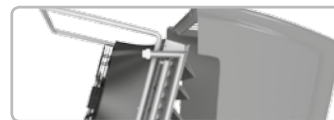
EC FAN

Use of energy-efficient fan with EC motor in LEO FS M fan heaters reduces energy costs even by 50%.



CASING

Is made of durable plastic – ABS. It fully covers all of the water and electrical connections, what makes the unit very aesthetic.

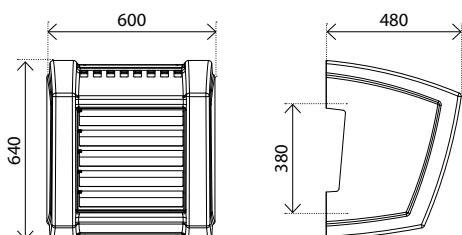


EASY INSTALLATION

Light construction and integrated installation console ensure easy and quick installation of the unit. There is no need to use any additional brackets.

Dimensions

LEO FS



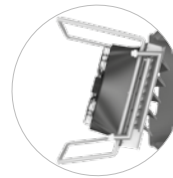
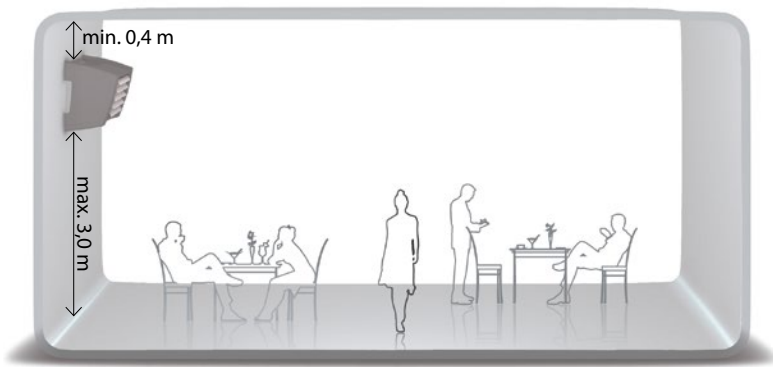
Technical data

	FS V	FS M
Max. air flow [m ³ /h]		1750
Power supply [V/Hz]		230/50
Max. current consumption [A]	0,5	0,25
Max. power consumption [W]	110	57,5
IP		54
Max. acoustic pressure level ⁽¹⁾ [dB(A)]	47	45
Max. air stream range ⁽²⁾ [m]		12,0
Max. heating water temperature [°C]		95
Max. operating pressure [MPa]		1,6
Weight of unit [kg]	14,6	13,8
Weight of unit filled with water [kg]	15,8	15,0

⁽¹⁾ 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

⁽²⁾ Range of horizontal isothermal air stream, at 0,5 m/s velocity limit

Installation



Installation console

Thanks to integrated installation console there is no need to use any additional brackets to install the unit.

Heating capacities

LEO FS																								
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C					Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C					Tw1/Tw2 = 50/40°C				
Tp1	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2	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	kW	l/h	kPa	°C	kW	l/h	kPa	°C				
V = 1750 m³/h																								
0	19,0	838	4,8	32,0	16,2	711	3,7	27,5	13,4	584	2,7	22,5	10,4	454	1,8	17,5	10,4	907	6,3	17,5				
5	17,8	784	4,3	35,0	14,9	657	3,2	30,0	12,1	529	2,3	25,5	9,1	397	1,4	20,5	9,2	796	5,0	20,5				
10	16,5	729	3,8	38,0	13,7	601	2,7	33,0	10,8	472	1,8	28,0	7,8	339	1,1	23,0	7,9	684	3,8	23,0				
15	15,2	673	3,3	40,5	12,4	545	2,3	36,0	9,5	415	1,5	31,0	6,4	278	0,8	25,5	6,6	570	2,7	26,0				
20	14,0	616	2,8	43,5	11,1	488	1,9	38,5	8,2	357	1,1	33,5	4,9	211	0,5	28,0	5,2	455	1,8	29,0				

To obtain operating parameters concerning other water temperatures, please contact 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 – water stream flow in the heat exchanger

Δpw – water pressure drop in the heat exchanger

	Fan heater LEO V		Fan heater LEO M
	TS regulation	HMI regulation	T-box regulation
			
	3-step fan speed regulator with thermostat	Programmable controller	Intelligent controller with touch screen

Controlling options

Manual 3-step air flow regulation	✓	✓	
Automatic 3-step air flow regulation		✓	
Automatic stepless air flow regulation			✓

Modes

Heating / Cooling / Ventilation	✓	✓	✓
Operation in continuous or thermostatic mode	✓	✓	✓
Weekly programmer		✓	✓
BMS		✓	✓
Room antifreeze		✓	✓
Integration with FLOWAIR System			✓

Max. number of connected units

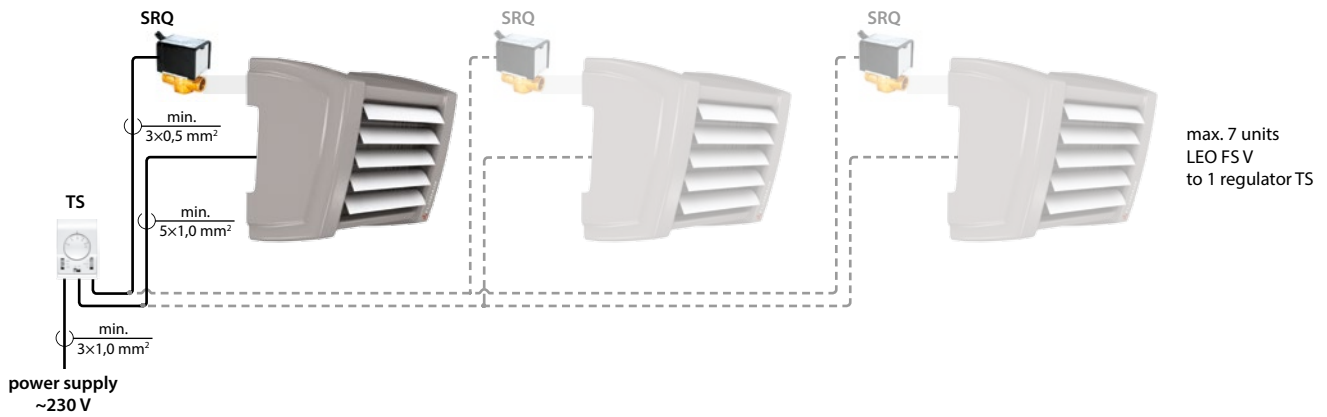
Via controller	7	2	31
Via 1 additional splitter RX	12	12	n/a
Via 2 additional splitters RX	24	24	n/a
Via 3 additional splitters RX	36	36	n/a

Type of fan

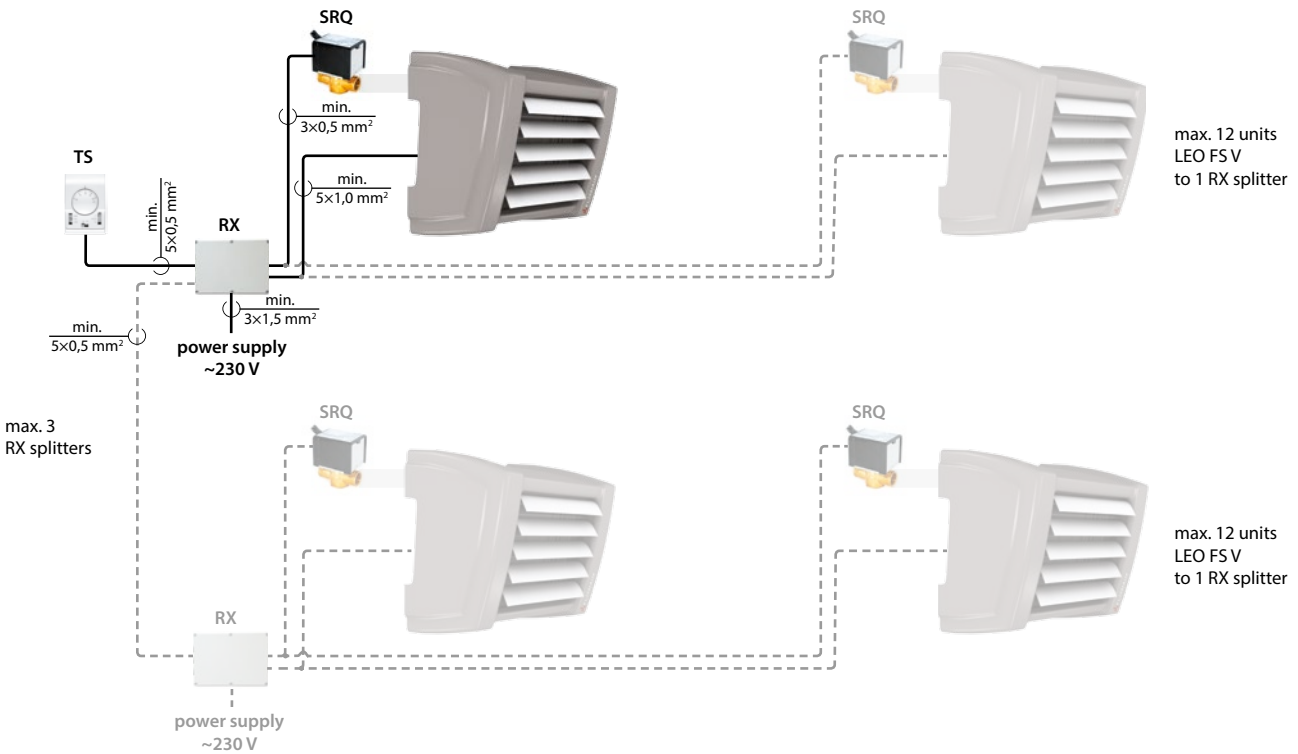
AC – fan with 3-step motor	✓	✓	
EC – fan with electronically commutated motor; energy-savings up to 50%			✓

Control systems

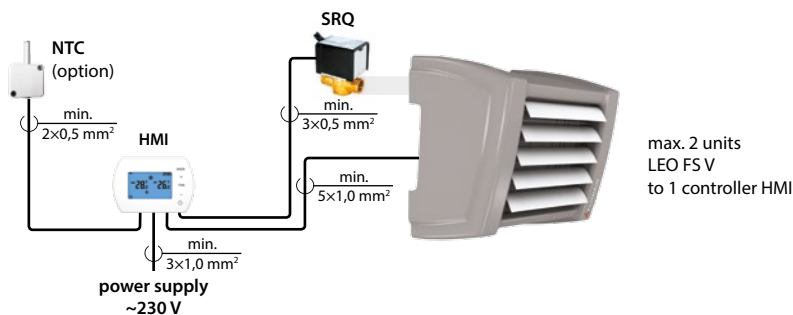
LEO type V fan heaters TS regulation



LEO type V fan heaters TS regulation + RX



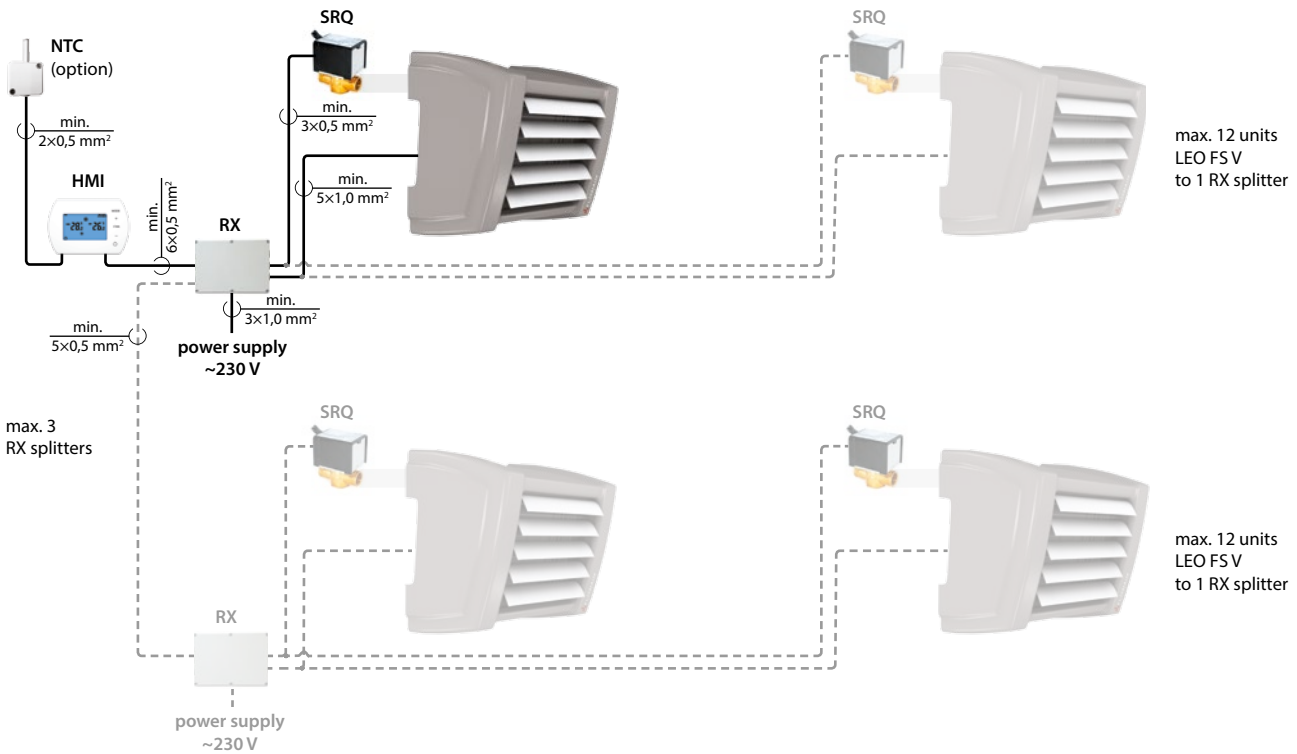
LEO type V fan heaters HMI regulation



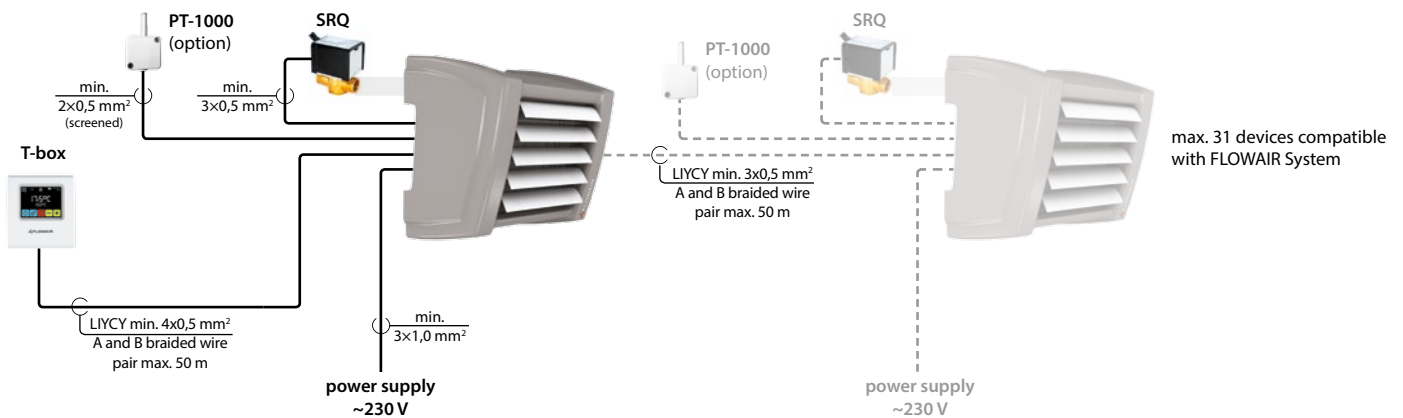
Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Control systems

LEO type V fan heaters HMI regulation + RX



LEO type M fan heaters T-box regulation



Indexes LEO FS V control systems

Name	T-box	HMI	TS	RX	SRQ2d-½	SRQ3d-½	NTC	PT-1000
Index	10799	11775	10996	11779	10803	10804	10791	10546

Indexes LEO FS M control system

Name	T-box	SRQ2d-½	SRQ3d-½	DRV M	PT-1000
Index	10799	10803	10804	11783	10546

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Fan heaters LEO INOX



Fan heaters LEO INOX

Heating capacity [kW]	10–65
Air flow [m³/h]	900–4400
Weight [kg]	16,1–25,4
Colour	–
Casing	stainless steel

Application:

Big cubature buildings, with high humidity, like food industry buildings, gastronomy buildings, greenhouses etc.

Available types of units:

LEO INOX V

Fan heater with AC fan, with possibility of 3-step air flow regulation.

LEO INOX M

Heater with energy-efficient fan with EC motor, controlled by external 0-10V signal, enabling stepless regulation of fan speed in range of 0-100%.

Indexes LEO INOX V

Name	INOX 25V	INOX 45V	INOX 65V
Index	10987	10988	10989

Indexes LEO INOX M

Name	INOX 25M	INOX 45M	INOX 65M
Index	10070	10072	10073

Special attributes



3-STEP FAN

LEO INOX V fan heaters are equipped with 3-step fan. It is the simplest and effective way to control operation of the heater.



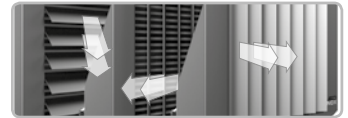
EC FAN

Use of energy-efficient fan with EC motor in LEO INOX M fan heaters allows reduction of energy costs even by 50%.



CASING

Attractive and modern casing of the unit is made of stainless steel (AISI 316L), which ensures resistance to corrosion.

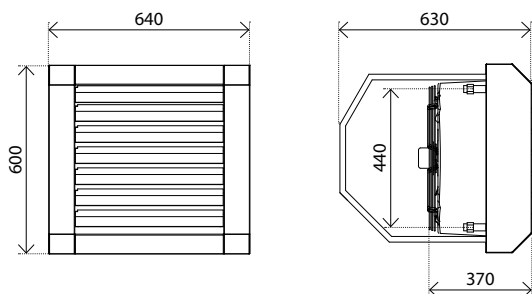


AIR OUTLET

Air outlet is equipped with stainless steel air deflectors for easy air stream direction to the desired area.

Dimensions

LEO INOX 25|45|65



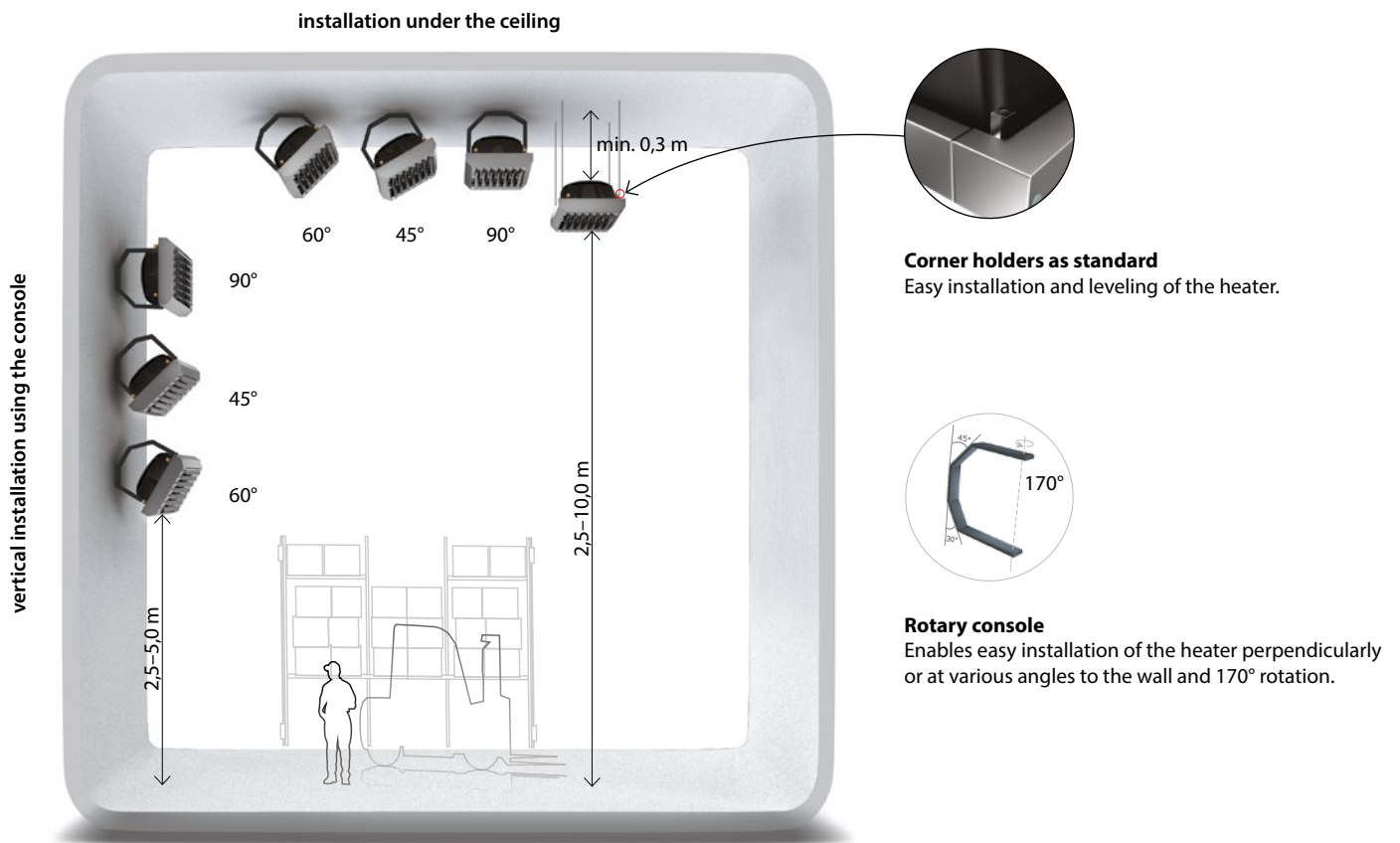
Technical data

	INOX 25V	INOX 25M	INOX 45V	INOX 45M	INOX 65V	INOX 65M
Max. air flow [m ³ /h]	4400		4100		3900	
Power supply [V/Hz]	230/50					
Max. current consumption [A]	1,4	0,7	1,4	0,7	1,4	0,7
Max. power consumption [W]	320	170	320	170	320	170
IP	54					
Max. acoustic pressure level ⁽¹⁾ [dB(A)]	54	51	54	51	54	51
Max. air stream range ⁽²⁾ [m]	26,0		24,0		22,0	
Max. heating water temperature [°C]	130					
Max. operating pressure [MPa]	1,6					
Weight of unit [kg]	19,4	16,1	20,8	17,5	22,7	19,4
Weight of unit filled with water [kg]	20,4	17,1	22,8	19,5	25,4	22,1

⁽¹⁾ 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

⁽²⁾ Range of horizontal isothermal air stream, at 0,5 m/s velocity limit

Installation



Indexes

Name	console INOX
Index	10990

Heating capacities

Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				Tw1/Tw2 = 70/50°C				Tw1/Tw2 = 60/40°C			
Tp1 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C
LEO INOX 25																
V = 4400 m³/h																
0	26,7	1179	11,6	18,0	22,7	999	8,8	15,5	18,7	819	6,3	12,5	14,6	637	4,2	10,0
5	25,0	1101	10,2	22,0	21,0	921	7,6	19,0	16,9	741	5,3	16,5	12,8	558	3,3	13,5
10	23,2	1024	8,9	25,0	19,2	843	6,5	23,0	15,1	662	4,3	20,0	11,0	478	2,5	17,5
15	21,4	946	7,7	29,5	17,4	765	5,4	26,5	13,3	583	3,4	24,0	9,1	396	1,8	21,0
20	19,7	868	6,6	33,0	15,6	686	4,5	30,5	11,5	502	2,6	27,5	7,2	312	1,2	24,5
LEO INOX 45																
V = 4100 m³/h																
0	45,0	1986	15,2	32,5	38,5	1693	11,7	27,5	32,0	1402	8,6	23,0	25,5	1110	5,9	18,5
5	42,1	1958	13,4	35,5	35,6	1565	10,2	30,5	29,1	1273	7,2	26,0	22,5	980	4,7	21,0
10	39,2	1730	11,8	38,0	32,7	1437	8,7	33,5	26,1	1144	6,0	29,0	19,5	849	3,6	24,0
15	36,3	1603	10,3	41,0	29,8	1308	7,3	36,0	23,2	1014	4,8	31,5	16,5	717	2,7	27,0
20	33,4	1475	8,8	43,5	26,8	1179	6,1	39,0	20,2	883	3,7	34,0	13,3	581	1,9	29,5
LEO INOX 65																
V = 3900 m³/h																
0	65,5	2892	21,3	50,0	56,5	2481	16,6	43,0	47,3	2071	12,3	36,0	38,1	1659	8,6	29,0
5	61,4	2712	18,9	51,5	52,3	2300	14,4	44,5	43,2	1889	10,4	37,5	33,8	1475	6,9	30,5
10	57,3	2529	16,7	53,0	48,2	2116	12,4	46,5	38,9	1704	8,7	39,5	29,5	1288	5,4	32,5
15	53,1	2344	14,5	55,0	44,0	1931	10,5	48,0	34,7	1517	7,0	41,0	25,2	1097	4,1	34,0
20	48,9	2159	12,5	56,5	39,7	1744	8,8	50,0	30,3	1328	5,5	43,0	20,7	902	2,9	35,5

To obtain operating parameters concerning other water temperatures, please contact 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 – water stream flow in the heat exchanger

Δpw – water pressure drop in the heat exchanger

Control systems

	Fan heater LEO V		Fan heater LEO M	
TS regulation				
	3-step fan speed regulator with thermostat		Programmable controller	
HMI regulation				
			Intelligent controller with touch screen	

Controlling options

Manual 3-step air flow regulation	✓	✓	
Automatic 3-step air flow regulation		✓	
Automatic stepless air flow regulation			✓

Modes

Heating / Cooling / Ventilation	✓	✓	✓
Operation in continuous or thermostatic mode	✓	✓	✓
Weekly programmer		✓	✓
BMS		✓	✓
Room antifreeze		✓	✓
Integration with FLOWAIR System			✓

Max. number of connected units

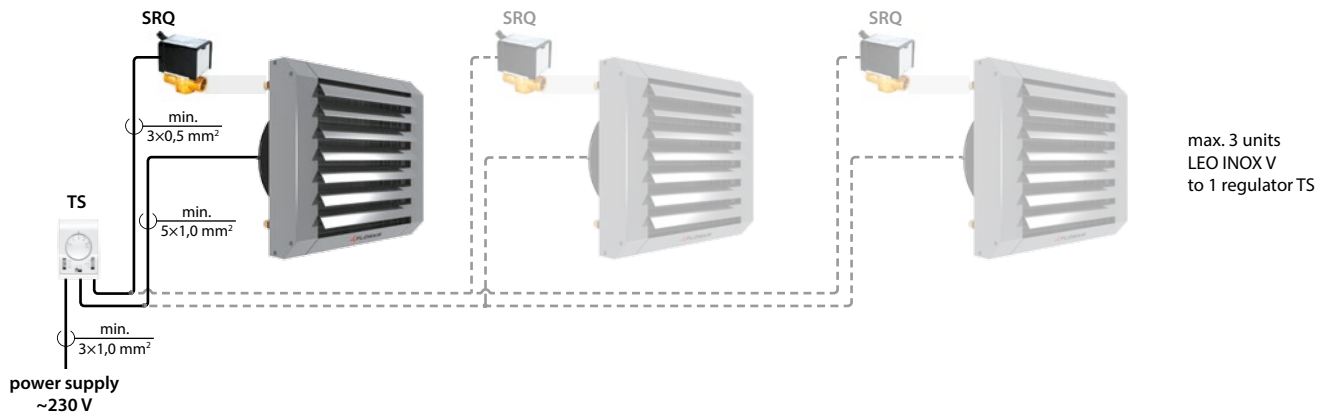
Via controller	3	1	31
Via 1 additional splitter RX	6	6	n/a
Via 2 additional splitters RX	12	12	n/a
Via 3 additional splitters RX	18	18	n/a

Type of fan

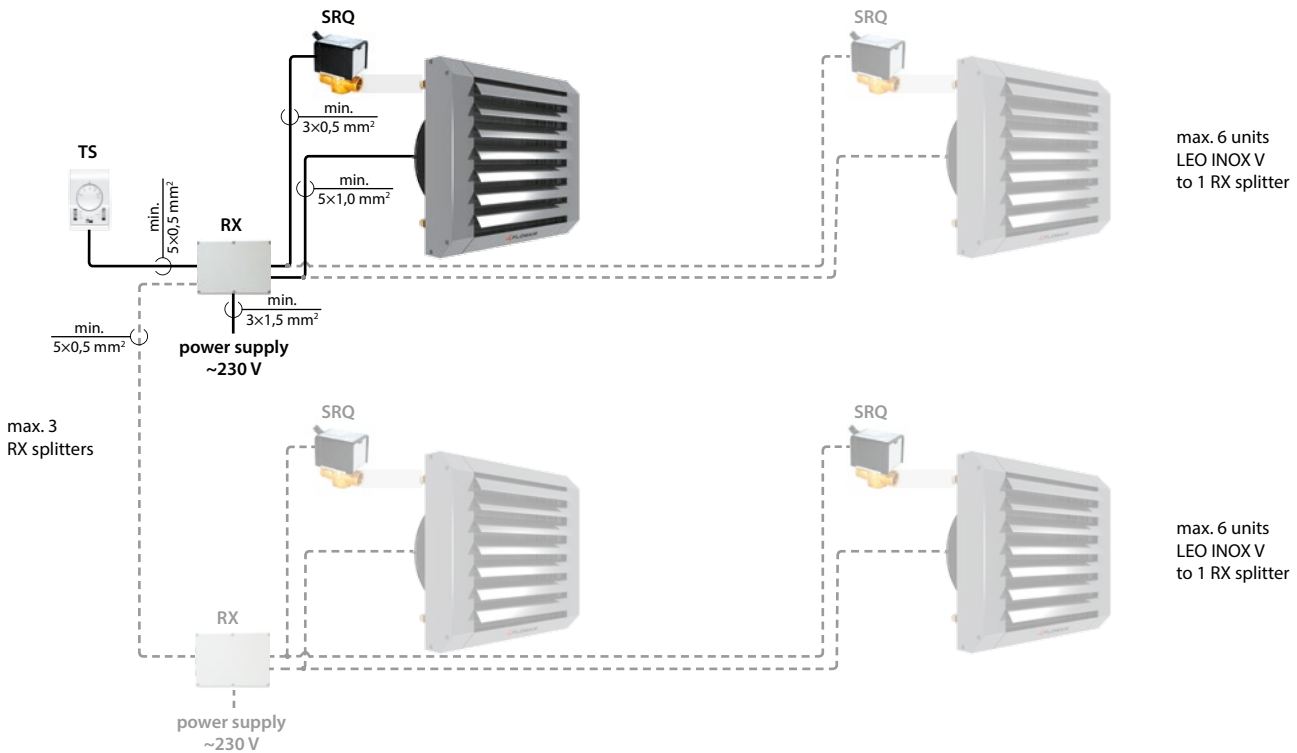
AC – fan with 3-step motor	✓	✓	
EC – fan with electronically commutated motor; energy-savings up to 50%			✓

Control systems

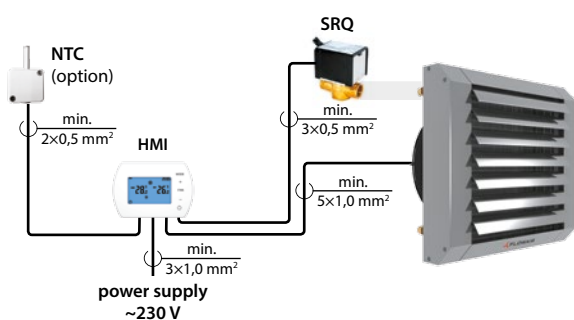
LEO type V fan heaters TS regulation



LEO type V fan heaters TS regulation + RX



LEO type V fan heaters HMI regulation

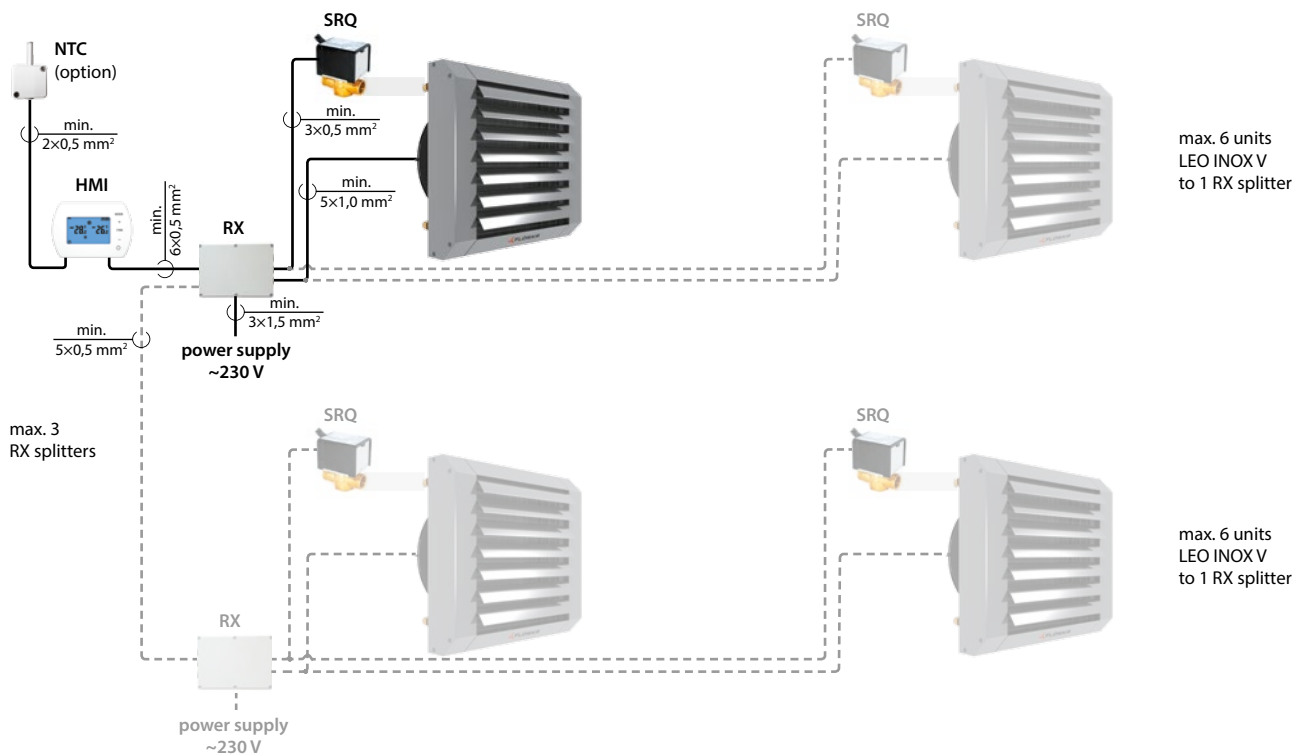


Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Control systems

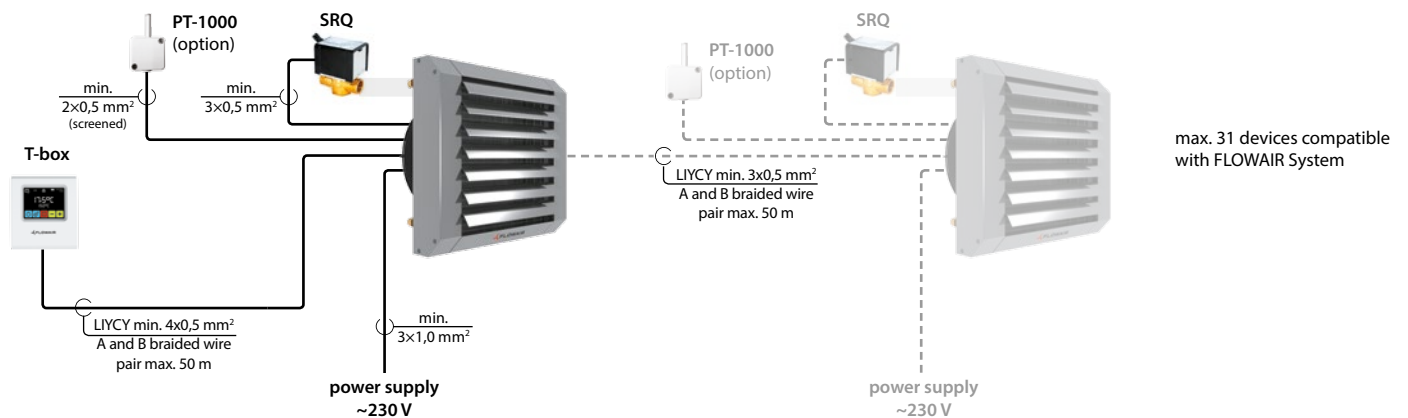
LEO type V fan heaters

HMI regulation + RX



LEO type M fan heaters

T-box regulation



Indexes LEO INOX V control systems

Name	T-box	HMI	TS	RX	SRQ2d-¾	SRQ3d-¾	NTC	PT-1000
Index	10799	11775	10996	11779	10788	10805	10791	10546

Indexes LEO INOX M control system

Name	T-box	SRQ2d-¾	SRQ3d-¾	PT-1000
Index	10799	10788	10805	10546

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Fan heaters LEO EX



Fan heaters LEO EX

Heating capacity [kW]	26–45
Air flow [m³/h]	3800–4300
Weight [kg]	33,1–34,5
Colour	grey
Casing	powder-painted steel

Application:

Buildings with special safety requirements, like heavy industry halls, welding plants etc.

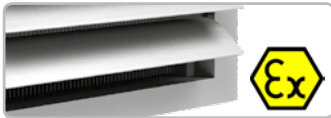
Additional description:

Fan heater equipped with anti-explosion fan and may be installed in Z-2 explosion-risk zones, in rooms at risk of explosion of gases, liquids and their fumes from IIB group of explosiveness and T3 temperature class.

Indexes LEO EX

Name	EX 25	EX 45
Index	10040	10041

Special attributes



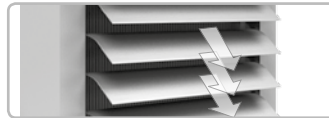
CERTIFICATES IN ACCORDANCE TO DIRECTIVES

All components installed in the hazardous area are approved in accordance with ATEX directive, allowing for work in 2G zone.



AIR NOZZLE

Specially designed profile made of plastic reduces air flow noise.



AIR OUTLET

When installing the heater horizontally under the ceiling, there is the possibility to blow the air in two directions effectively distributing the warm air on larger surface of the room.

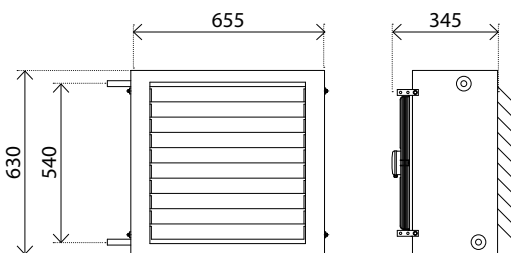


INSTALLATION

Possibility of installation on the wall, as well as under the ceiling.

Dimensions

LEO EX



Technical data

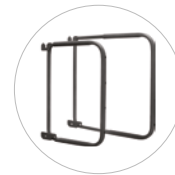
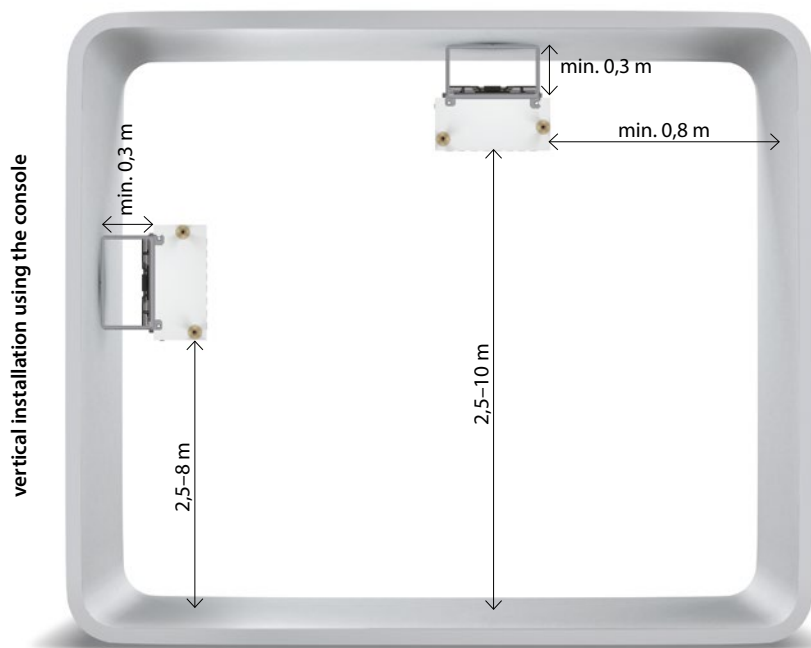
	LEO EX 25	LEO EX 45
Max. air flow [m ³ /h]	4300	3800
Power supply [V/Hz]	3x400/50	
Max. current consumption [A]	0,51	
Max. power consumption [W]	290	
IP	44	
Max. acoustic pressure level ⁽¹⁾ [dB(A)]	51	
Max. air stream range ⁽²⁾ [m]	24,0	22,0
Max. heating water temperature [°C]	130	
Max. operating pressure [MPa]	1,6	
Weight of unit [kg]	33,1	34,5
Weight of unit filled with water [kg]	34,2	36,6

⁽¹⁾ 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

⁽²⁾ Range of horizontal isothermal air stream, at 0,5 m/s velocity limit

Installation

installation under the ceiling



FX brackets

Enable easy and quick installation of the unit on the wall or under the ceiling.

Indexes

Name	brackets
Index	10563

Heating capacities

Tp1 °C	Tw1/Tw2 = 90/70°C				Tw1/Tw2 = 80/60°C				Tw1/Tw2 = 70/50°C				Tw1/Tw2 = 60/40°C				Tw1/Tw2 = 50/40°C			
	PT kW	Qw l/h	Δpw kPa	Tp2 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C
LEO EX 25																				
V = 4300 m³/h																				
0	25,5	1090	7,6	17,0	21,7	946	5,9	15,0	18,0	802	4,4	12,0	14,7	642	4,9	10,0	14,1	1229	14,9	11,0
5	23,7	1018	6,7	21,0	20,0	5874	5,1	19,0	16,3	694	3,7	16,0	12,8	558	3,8	13,0	12,4	1080	11,8	13,0
10	22,0	946	5,9	25,0	18,2	802	4,4	23,0	14,5	622	3,0	20,0	10,9	475	2,8	17,0	10,7	930	9,0	18,0
15	20,2	874	5,1	29,0	16,5	730	3,7	26,0	12,8	550	2,4	24,0	9,0	392	2,0	21,0	9,0	779	6,6	21,0
20	18,4	805	4,3	33,0	14,8	658	3,0	30,0	11,1	478	1,9	28,0	7,0	308	1,3	25,0	7,2	626	4,4	25,0
LEO EX 45																				
V = 3800 m³/h																				
0	44,9	1882	12,5	35,0	37,2	1584	9,8	29,0	31,2	1340	7,4	24,0	26,8	1167	7,3	20,0	24,9	2167	21,4	20,0
5	41,0	1738	11,0	37,0	34,4	1476	8,4	32,0	28,4	1225	6,3	27,0	23,4	1020	5,7	22,0	22,0	1911	17,1	22,0
10	37,3	1630	9,7	39,0	31,5	1368	5,2	35,0	25,5	1080	5,2	30,0	20,1	876	4,4	25,0	19,0	1654	13,2	25,0
15	34,6	1476	8,3	42,0	28,6	1224	6,1	37,0	22,6	975	4,2	33,0	16,8	732	3,2	28,0	16,0	1395	9,7	28,0
20	31,8	1368	7,1	45,0	25,7	1116	5,0	40,0	19,7	865	3,3	35,0	13,5	589	2,2	31,0	13,0	1134	6,7	30,0

To obtain operating parameters concerning other water temperatures, please contact Sales Office.

V – air flow

PT – heating capacity

Tp1 – inlet air temperature

Tp2 – outlet air temperature

Tw1 – inlet water temperature

Tw2 – outlet water temperature

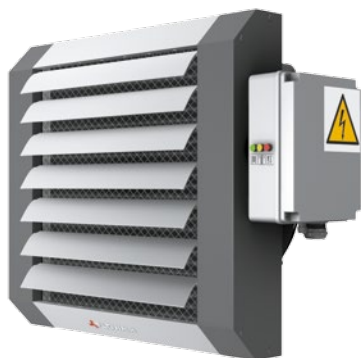
Qw – water stream flow in the heat exchanger

Δpw – water pressure drop in the heat exchanger

Control systems

Control system is selected individually depending on the degree of explosion risk in given building. Control system elements should also be in anti-explosion version and should have at least the same anti-explosion degree like the fan. Fan motor requires to use special external protection systems, i.e. U-EK 230E or similar.

Electric heaters LEO EL



Indexes LEO EL

Name	EL 23
Index	10783

Electric heaters LEO EL 23

Heating capacity ⁽¹⁾ [kW]	9 or 16 / 23
Air flow ⁽¹⁾ [m ³ /h]	3400 / 4200
Weight [kg]	23,5
Colour	silver-graphite
Casing	steel

⁽¹⁾ Parameters for 1st step of operation

Application:

Big cubature buildings, like industrial halls, warehouses, department stores, as well as smaller cubature buildings, like workshops, garages.

Additional description:

LEO EL 23 electric heaters are designed to operate indoors. They can be applied where there is no other heat sources, like gas installation or hot water.

Special attributes



HEATING ELEMENTS

PTC heating elements adapt their temperature to the air flow. Their construction ensures maximum use of the heating capacity on each step of heating.



CONTROL SYSTEM

Heater is equipped with a complete power and protection system. It also has protection against overheating.



THREE MODES

As a standard heater is equipped with room thermostat with mode switch.

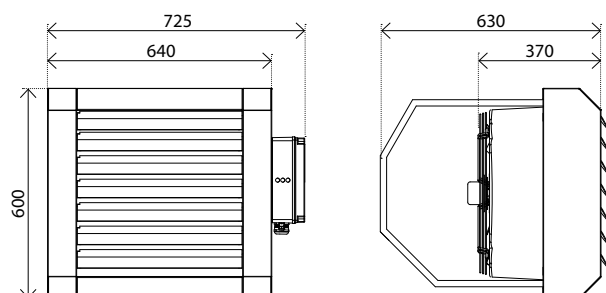


SIGNAL LAMPS

Signal lamps indicate the current status of the heater.

Dimensions

LEO EL 23



Technical data

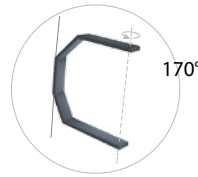
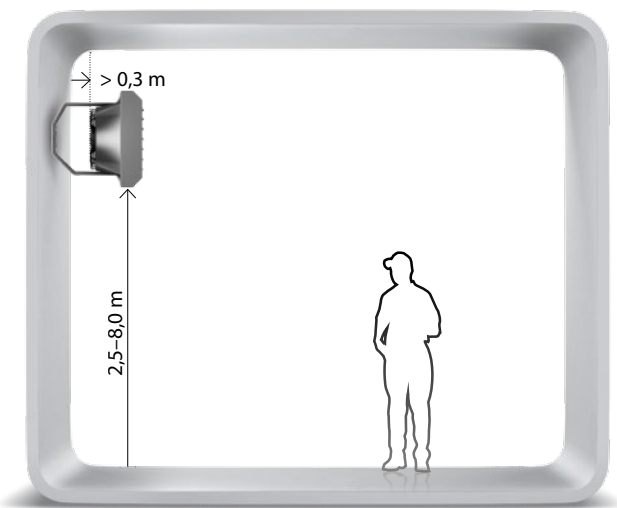
	LEO EL 23	
	I step	II step
Max. air flow [m ³ /h]	3400	4200
Power supply [V/Hz]	3×400/50	
Current consumption [A]	13/23	34
Max. power consumption [kW]	9/16	23
IP	20	
Max. acoustic pressure level ⁽¹⁾ [dB(A)]	51	
Max. air stream range ⁽²⁾ [m]	18	23
Max. operating temperature [°C]	40	
Weight of unit [kg]	23,5	

⁽¹⁾ 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

⁽²⁾ Range of horizontal isothermal air stream, at 0,5 m/s velocity limit

Installation

Only horizontal installation allowed!



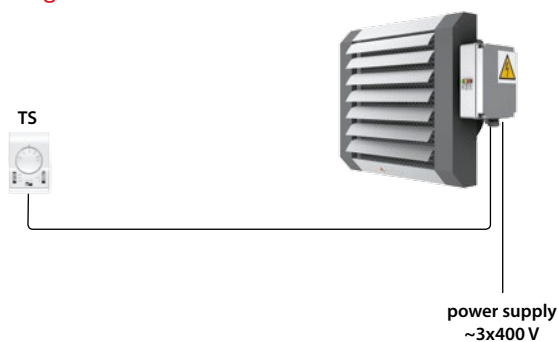
Rotary console

Enables installation of the heater vertically on the wall. It also enables rotation of the unit around connection points with the console.

Control system

Electric heater LEO EL 23

TS regulation



Unit is equipped with a complete power, control and protection system.

Fan and heaters have thermal protections, which prevent damage of the unit in case of too high temperature.

As a standard heater is equipped with room thermostat to change operating mode and set the desired temperature.

Available operating modes:

- SUMMER – fan operation only, without heating, to ensure air circulation in the room,
- I step of heating – two heating capacities available, 9 or 16 kW,
- II step of heating – maximum heating capacity, 23 kW.

Indexes LEO EL 23 control system

Name	TS
Index	10996

Indexes

Name	console
Index	10560

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Accessories

MIXING CHAMBER

Material: galvanized steel, aluminum, plastic



LEO EL 23 electric heater with LEO KM L mixing chamber make a heating and ventilation unit. It is the easiest way to create efficient mechanical ventilation without additional systems.



LEO EL 23 + KM L

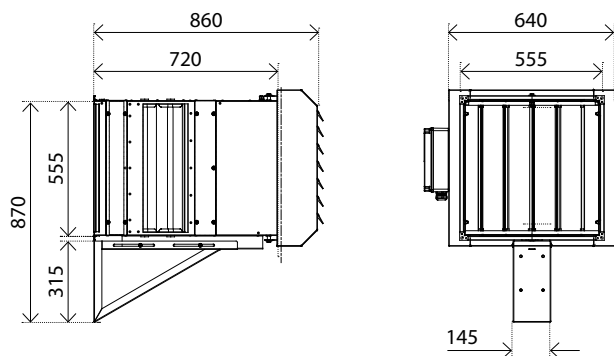
Indexes LEO KM L

Name	KM L
Index	11838

	LEO EL 23 + KM L	
	I step	II step
Heating capacity [kW]	8,3/15,9	22,4
Current consumption [A]	12/19	23
Air flow [m ³ /h]	3200	
Weight of unit [kg]	43,0	

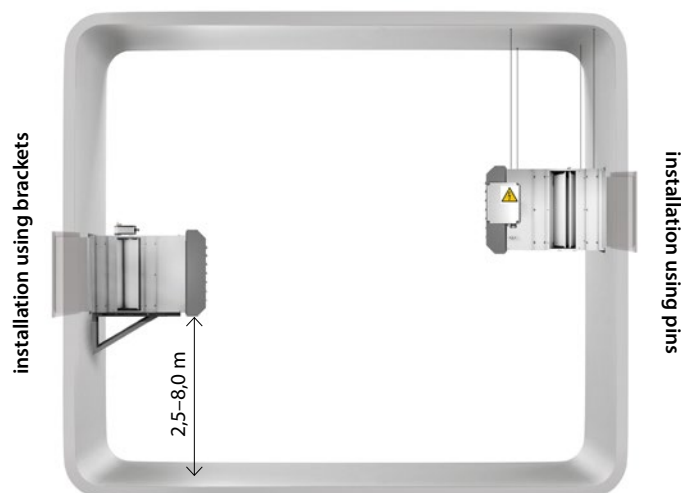
Dimensions

LEO EL 23 + KM L



Installation

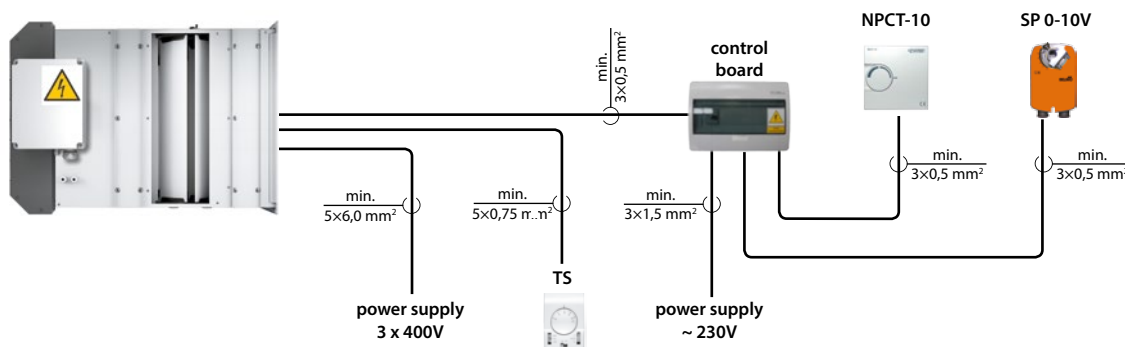
Only horizontal installation allowed!



Control system

Electric heater LEO EL 23 + KM L

Regulation



Indexes LEO EL 23 + KM L

Name	Regulation
Index	10790

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Fan heaters **LEO AGRO**



Indexes LEO AGRO

Name	AGRO
Index	10936

Indexes LEO AGRO SP

Name	AGRO SP
Index	10126

Fan heaters LEO AGRO

	AGRO	AGRO SP
Heating capacity [kW]	16–43	20–56
Air flow [m³/h]	1900–3700	3300–4600
Weight [kg]	21,8–23,9	27,3–31,0
Colour	grey	
Casing	powder-painted steel	plastic

Application:

Medium and big cubature buildings with considerable pollution of the air with solid particles, high humidity or corrosive environment, like agricultural buildings, greenhouses, piggeries.

Available types of units:

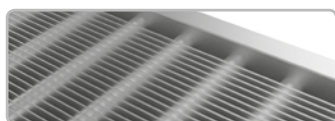
LEO AGRO

Heater with epoxidized heat exchanger in casing made of galvanized steel protected by anti-corrosive coating.

LEO AGRO SP

Heater with epoxidized heat exchanger and long air stream range in casing made of plastic.

Special attributes



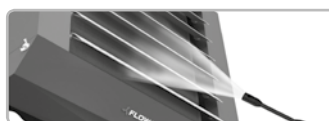
EPOXIDIZED HEAT EXCHANGER

Three-row heat exchanger with 40% thicker fins and increased spacing between them comparing to standard fan heaters, protected by special anti-corrosion coating which improves the reliability of the unit.



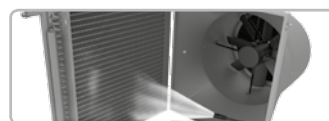
HIGHLY-EFFICIENT FAN

Waterproof and dustproof fan with IP66 protection and compression ratio allows the removal of dust and dirt from the heat exchanger.



EASY CLEANING

Easily removable drip tray with drain plug allows simple discharge of contaminated water after cleaning operation.

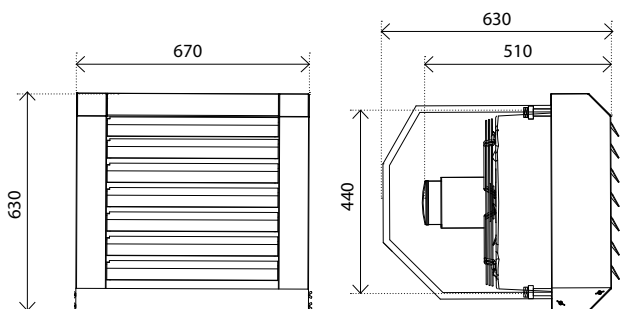


HINGED CASING

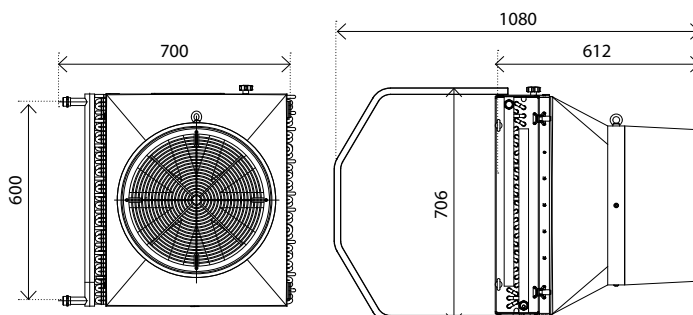
Quick access to the unit's interior thanks to buckles, which fasten the heat exchanger with fusor. The design of the unit makes the maintenance and service operations faster.

Dimensions

LEO AGRO



LEO AGRO SP



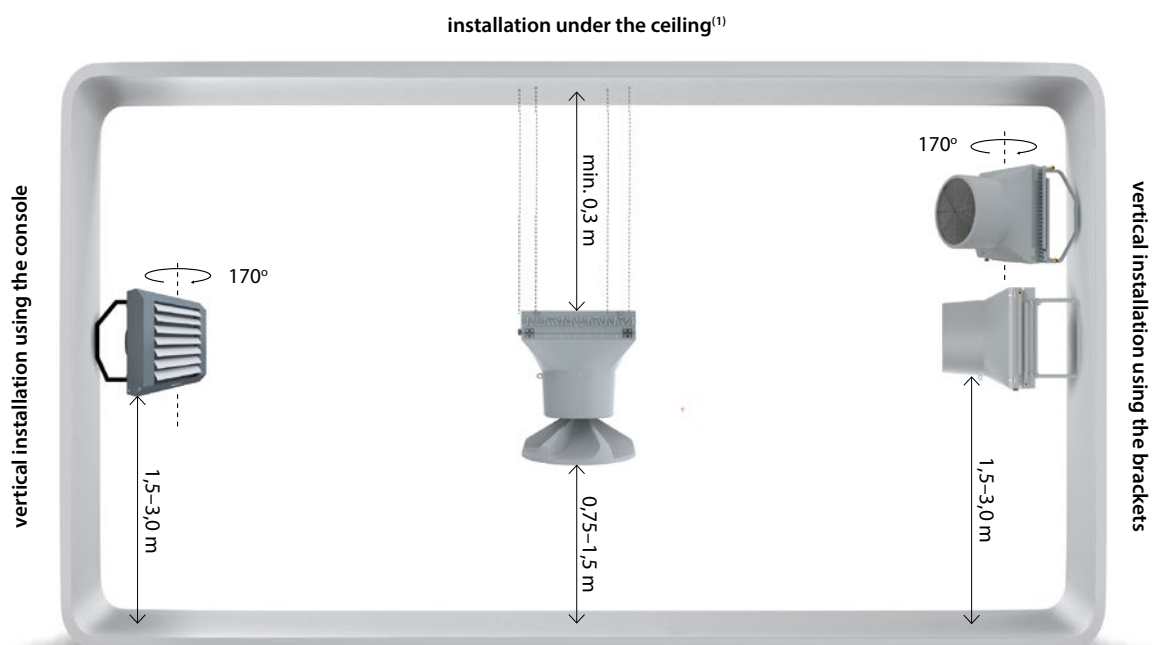
Technical data

	AGRO	AGRO SP
Max. air flow [m ³ /h]	3700	4600
Power supply [V/Hz]	230/50	
Max. current consumption [A]	1,8	2,5
Max. power consumption [W]	350	360
IP	66	
Max. acoustic pressure level ⁽¹⁾ [dB(A)]	51	62
Max. air stream range ⁽²⁾ [m]	22	28
Max. heating water temperature [°C]	130	95
Max. operating pressure [MPa]	1,6	
Weight of unit [kg]	21,8	27,3
Weight of unit filled with water [kg]	23,9	31,0

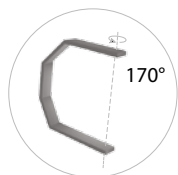
⁽¹⁾ Acoustic pressure level at the distance of 5 m from the unit, in the room of medium capability of sound absorption and 1500 m³ of cubature

⁽²⁾ Range of horizontal isothermal air stream, at 0,5 m/s velocity limit

Installation



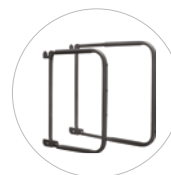
⁽¹⁾ Installation under the ceiling of LEO AGRO SP with 4-side air outlet



Rotary console

LEO AGRO / AGRO SP

Rotary console enables 170° rotation ensuring easy direction of the air stream and easy access to the unit from each side.



Installation brackets

LEO AGRO SP

Enable easy and quick installation of the unit. They also ensure optimum air flow around the unit.

Indexes

Name	brackets FX	console AGRO	console AGRO SP
Index	10563	10971	11774

Heating capacities

Tp1 °C	Tw1/Tw2 = 90/70°C				Tw1/Tw2 = 80/60°C				Tw1/Tw2 = 70/50°C				Tw1/Tw2 = 60/40°C				Tw1/Tw2 = 50/40°C			
	PT kW	Qw l/h	Δpw kPa	Tp2 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C	PT kW	Qw l/h	Δpw kPa	Tp2 °C
LEO AGRO																				
V = 3700 m³/h																				
0	43,0	1890	20,0	32,5	37,2	1630	16,0	28,0	31,3	1370	13,0	23,5	25,4	1110	11,0	19,0	23,8	2070	26,0	18,0
5	39,7	1750	17,0	35,5	34,0	1490	15,0	31,0	28,2	1230	11,0	26,5	22,4	980	9,0	22,0	20,8	1810	21,0	21,0
10	36,6	1610	15,0	38,5	30,9	1360	13,0	34,0	25,1	1100	10,0	29,5	19,4	840	7,0	25,0	17,8	1550	18,0	24,0
15	33,5	1470	15,0	41,5	27,8	1220	11,0	37,0	22,2	970	8,0	32,5	16,4	720	7,0	28,0	15,0	1300	13,0	27,0
20	30,4	1340	12,0	44,5	24,9	1090	10,0	40,0	19,2	840	6,0	35,5	13,5	590	5,0	31,0	12,1	1050	10,0	30,0
25	27,5	1210	10,0	47,5	21,9	960	8,0	43,0	16,3	710	6,0	38,5	10,7	460	5,0	34,0	9,3	810	6,0	33,0
30	24,5	1080	10,0	50,5	19,1	840	6,0	46,0	13,5	590	5,0	41,5	7,8	340	3,0	36,5	6,6	570	4,0	35,5
35	21,7	950	8,0	53,5	16,2	710	6,0	49,0	10,7	470	5,0	44,0	4,8	210	3,0	39,0	3,8	330	3,0	38,0
LEO AGRO SP																				
V = 4600 m³/h																				
0	56,2	2480	21,0	34,0	48,6	2140	16,0	29,5	41,0	1800	12,0	25,0	33,4	1450	10,0	20,5	31,2	2710	26,0	19,0
5	52,0	2290	18,0	37,0	44,5	1950	14,0	32,5	36,9	1620	10,0	28,0	29,4	1280	8,0	23,0	27,2	2370	21,0	22,0
10	47,8	2110	16,0	40,0	40,4	1780	12,0	35,5	33,0	1440	10,0	31,0	25,5	1110	8,0	26,0	23,4	2030	16,0	24,5
15	43,8	1930	13,0	43,0	36,4	1600	10,0	38,5	29,1	1270	8,0	33,5	21,6	940	6,0	29,0	19,6	1710	12,0	27,5
20	39,8	1750	11,0	46,0	32,6	1430	10,0	41,0	25,3	1110	8,0	36,5	17,9	780	4,0	31,5	15,9	1380	10,0	30,5
25	35,9	1580	9,0	49,0	28,7	1260	8,0	44,0	21,5	940	6,0	39,5	14,1	610	4,0	34,5	12,3	1070	7,0	33,0
30	32,1	1420	9,0	51,5	25,0	1100	7,0	47,0	17,8	780	4,0	42,0	10,3	450	4,0	37,0	8,7	750	6,0	36,0
35	28,4	1250	7,0	54,5	21,3	940	5,0	49,5	14,1	620	4,0	44,5	6,4	280	2,0	39,5	5,0	440	4,0	38,5

To obtain operating parameters concerning other water temperatures, please contact 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 – water stream flow in the heat exchanger

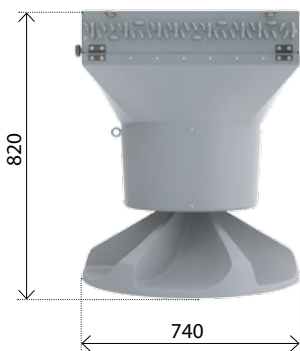
Δpw – water pressure drop in the heat exchanger

Accessories

AGRO SP 6-SIDE AIR OUTLET

Material: ABS

Colour: RAL 9007

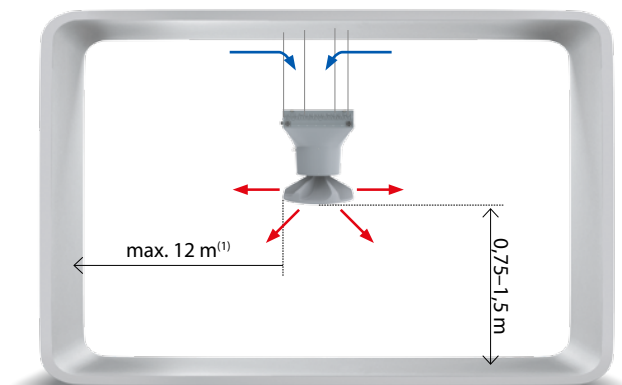


AGRO SP 6-side air outlet distributes the air when heater is installed under the ceiling.

Benefits of using AGRO SP 6-side air outlet:

- steady temperature distribution,
- better quality of bedding,
- lower concentration of ammonia,
- lower level of humidity in the room.

Air flow zone



⁽¹⁾ Range of horizontal isothermal air stream, at 0,5 m/s velocity limit

Indexes AGRO accessories

Name	AGRO SP 6-side air outlet
Index	10980

Control systems

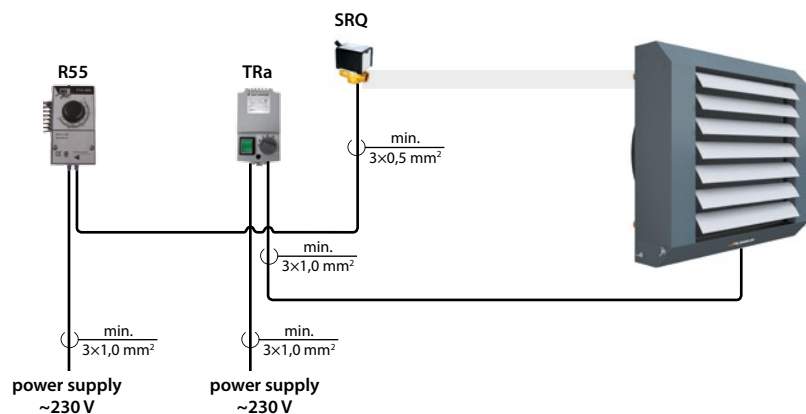
LEO AGRO / AGRO SP fan heaters

ON/OFF regulation

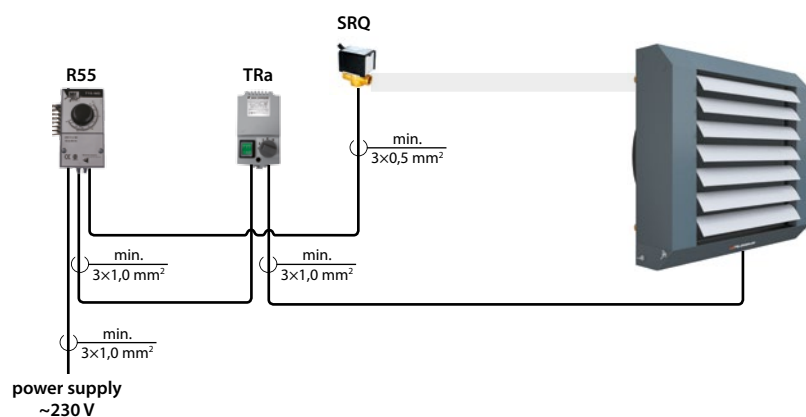
It is the simplest ON/OFF regulation system. Fan heater is controlled by room thermostat, which turns on the unit when measured temperature drops below a set temperature. Air flow is regulated by fan speed regulator.

FEATURES:

- low thermal inertia,
- low investment costs,
- easy to use,
- independent regulation of every single unit,
- gradual regulation of air flow.



- R55 thermostat controls SRQ2d valve,
- TRa fan speed regulator enables 5-step fan speed regulation,
- possibility of smooth (stepless) regulation, units can be controlled by ON/OFF regulation or smoothly (stepless) by central computer (microclimate controller).



- R55 thermostat controls SRQ2d valve and TRa fan speed regulator,
- TRa regulator enables 5-step fan speed regulation.

Indexes LEO AGRO/AGRO SP control systems

Name	R55	TRa	SRQ2d-¾	SRQ3d-¾
Index	10547	10531	10788	10805

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Air curtains and air curtain-fan heater combo units



Air curtains ELiS C



Air curtains ELiS C

Max. range ⁽¹⁾ [m]	3
Heating capacity ⁽²⁾ [kW]	12,4–22,4
Weight [kg]	19,0–35,1
Colour	white (RAL 9016)
Casing	steel

⁽¹⁾ Range of vertical isothermal air stream, at 1,5 m/s velocity limit

⁽²⁾ For C-W at inlet/outlet water temperature 90/70°C, inlet air temperature 10°C

Indexes ELiS C-W

Name	C-W-100	C-W-150	C-W-200
Index	14287	14288	14289

Indexes ELiS C-E

Name	C-E-100	C-E-150	C-E-200
Index	14290	14291	14292



Application:

ELiS C air curtains are dedicated for public buildings like markets, sports halls, stores, restaurants, etc. ELiS C units are designed for horizontal installation directly above the door openings, which height does not exceed 3 m.

Available types of units:

Available in 3 lengths: 1 m, 1,5 m or 2 m.

Available in 2 versions:

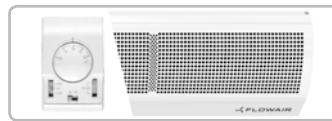
-  W – curtain with water heat exchanger
-  E – curtain with electric heaters

Special attributes



INSTALLATION BRACKETS

Curtain is equipped in standard with bracket, which enables horizontal installation of the unit.



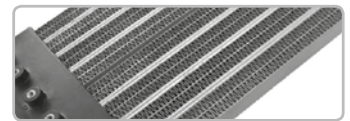
SIMPLE CONTROL

possibility of operation according to temperature, change of fan speed.



DIAGONAL FAN

Curtain is equipped with highly-efficient diagonal fan with 3-step motor.

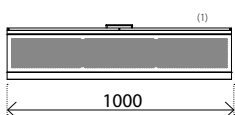


HEATING ELEMENTS

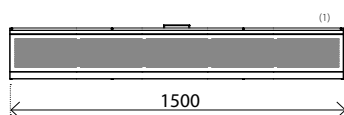
Air curtains can be equipped with PTC heating elements or water heat exchanger made of copper tubes and aluminum fins.

Dimensions

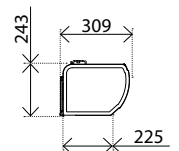
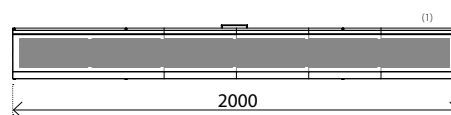
C-W-100



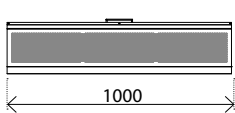
C-W-150



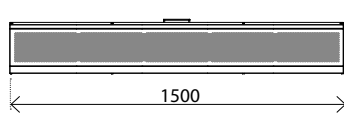
C-W-200



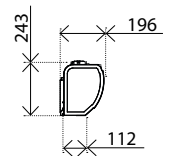
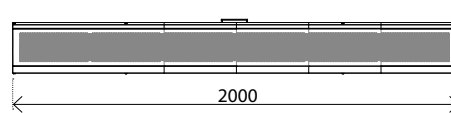
C-E-100



C-E-150



C-E-200



⁽¹⁾ Internal thread connection 3/4"

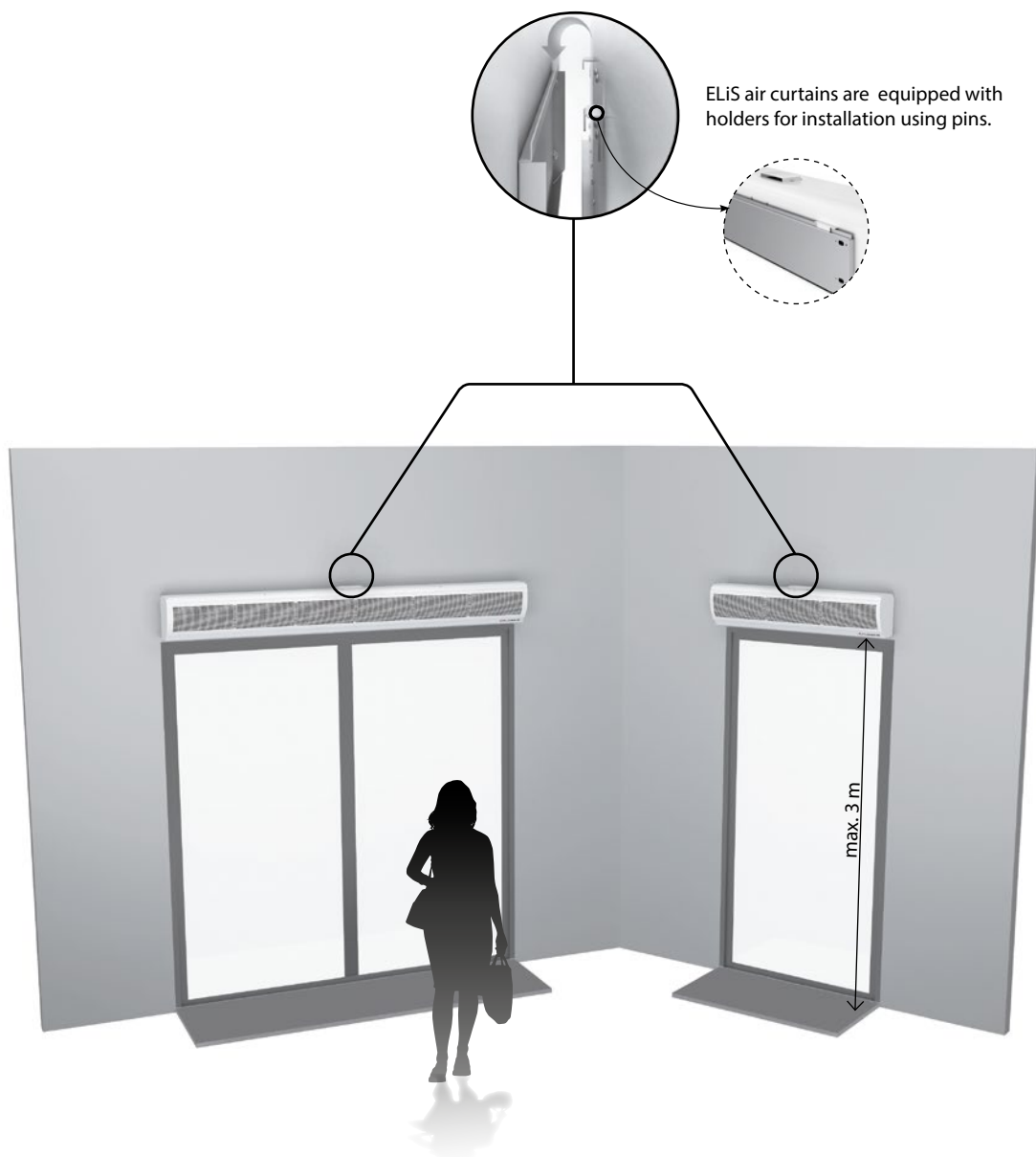
Technical data

	C-W-100	C-E-100	C-W-150	C-E-150	C-W-200	C-E-200
Power supply [V/Hz]	230/50	3x400/50	230/50	3x400/50	230/50	3x400/50
Max. current consumption [A]	0,14	6,5	0,21	10,0	0,26	13,0
Max. power consumption [kW]	0,38	7,5	0,4	11,5	0,44	15,5
IP	21					
Max. air flow steam of air curtain [m ³ /h]	1400	2100	3000	1300	1950	2700
Acoustic pressure level ⁽¹⁾ [dB(A)]	46,5	46,5	48,5	48,5	50,5	50,5
Max. air steam range ⁽²⁾ [m]	3					
Weight of unit [kg]	19,0	14,5	27,5	19,9	35,1	25,1

⁽¹⁾ Acoustic pressure level measured for optimum installation height, on second step of efficiency, in the room with medium capability of sound absorption, capacity 500 m³, at distance of 3 m from the unit

⁽²⁾ Range of vertical isothermal air stream, at 1,5 m/s velocity limit

Installation



Heating capacities

ELiS C-W-100									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m³/h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	1050/1250/1400	14,2/15,8/17,0	625/698/749	15,4/18,8/21,3	40,0/37,5/36,0	12,2/13,6/14,6	537/599/643	12,0/14,7/16,7	34,5/32,5/31,0
5		13,3/14,8/15,9	587/655/703	13,7/16,7/19,0	42,5/40,0/38,5	11,3/12,7/13,6	498/556/596	10,5/12,8/14,5	37,0/35,0/33,5
10		12,4/13,8/14,9	547/611/655	12,1/14,7/16,7	45,0/42,5/41,0	10,4/11,6/12,5	458/512/549	9,1/11,0/12,5	39,5/37,5/36,5
15		11,5/12,8/13,8	507/566/608	10,5/12,9/14,6	47,0/45,0/44,0	9,5/10,6/11,4	418/467/501	7,7/9,4/10,6	41,5/40,0/39,0
20		10,6/11,8/12,7	467/522/560	9,1/11,1/12,6	49,5/47,5/46,5	8,6/9,6/10,3	378/422/453	6,4/7,8/8,9	44,0/42,5/41,5
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	1050/1250/1400	10,3/11,5/12,3	449/501/538	9,0/11,0/12,5	29,0/27,0/26,0	8,3/9,3/9,9	361/403/432	6,4/7,8/8,8	23,5/22,0/21,0
5		9,4/10,5/11,2	410/457/491	7,7/9,3/10,6	31,5/29,5/28,5	7,4/8,2/8,8	322/359/385	5,2/6,3/7,1	26,0/24,5/23,5
10		8,5/9,4/10,1	370/413/443	6,4/7,8/8,8	33,5/32,0/31,5	6,5/7,2/7,7	282/314/337	4,1/5,0/5,6	28,0/27,0/26,5
15		7,5/8,4/9,0	330/368/395	5,2/6,3/7,2	36,0/35,0/34,0	5,5/6,2/6,6	241/269/288	3,1/3,8/4,3	30,5/29,5/29,0
20		6,6/7,4/7,9	289/323/346	4,1/5,0/5,7	38,5/37,5/36,5	4,6/5,1/5,5	199/222/238	2,2/2,7/3,1	32,5/32,0/31,5

ELiS C-W-150									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m³/h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	1600/1850/2100	21,9/24,1/26,1	968/1062/1150	16,6/19,6/22,7	40,5/38,5/36,5	18,9/20,8/22,5	832/912/988	13,0/15,3/17,7	35,0/33,0/31,5
5		20,6/22,6/24,4	908/996/1078	14,8/17,5/20,2	43,0/41,0/39,5	17,6/19,3/20,8	772/846/916	11,3/13,4/15,4	37,5/35,5/34,5
10		19,2/21,1/22,8	847/930/1006	13,0/15,4/17,8	45,5/43,5/42,0	16,2/17,7/19,2	710/779/843	9,8/11,5/13,3	40,0/38,0/37,0
15		17,8/19,5/21,1	786/862/933	11,4/13,4/15,5	47,5/46,0/44,5	14,8/16,2/17,5	649/712/770	8,3/9,8/11,3	42,0/40,5/39,5
20		16,4/18,0/19,5	724/794/860	9,8/11,6/13,4	50,0/48,5/47,0	13,4/14,6/15,8	587/643/696	6,9/8,2/9,4	44,5/43,0/42,0
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	1600/1850/2100	15,9/17,5/18,9	696/764/826	9,7/11,5/13,2	29,5/28,0/26,5	12,9/14,1/15,3	561/615/666	6,9/8,1/9,3	24,0/22,5/21,5
5		14,5/15,9/17,2	636/697/754	8,3/9,8/11,2	32,0/30,5/29,0	11,5/12,6/13,6	500/548/593	5,6/6,6/7,6	26,0/25,0/24,0
10		13,1/14,4/15,6	574/630/681	6,9/8,1/9,4	34,0/33,0/32,0	10,0/11,0/11,9	438/480/519	4,4/5,2/6,0	28,5/27,5/26,5
15		11,7/12,8/13,9	512/562/608	5,6/6,6/7,6	36,5/35,5/34,5	8,6/9,4/10,2	375/411/445	3,4/4,0/4,5	31,0/30,0/29,5
20		10,3/11,3/12,2	449/493/533	4,5/5,2/6,0	39,0/38,0/37,0	7,1/7,8/8,5	311/341/368	2,4/2,8/3,3	33,0/32,5/32,0

ELiS C-W-200									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m³/h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	2300/2600/3000	31,4/34,0/37,1	1386/1498/1638	39,4/45,4/53,5	40,5/38,5/36,5	27,2/29,4/32,1	1194/1290/1411	30,9/35,6/41,9	35,0/33,5/31,5
5		29,5/31,9/34,8	1301/1406/1538	35,1/40,5/47,6	43,0/41,0/39,5	25,2/27,3/29,8	1108/1198/1310	27,0/31,1/36,6	37,5/36,0/34,5
10		27,5/29,8/32,5	1215/1313/1436	31,0/35,7/42,0	45,0/43,5/42,0	23,3/25,1/27,5	1022/1105/1207	23,3/26,9/31,6	40,0/38,5/37,0
15		25,6/27,6/30,2	1128/1219/1333	27,1/31,2/36,7	47,5/46,0/44,5	21,3/23,0/25,1	935/1010/1104	19,9/22,9/26,8	42,0/41,0/39,5
20		23,6/25,5/27,9	1040/1125/1229	23,4/26,9/31,7	50,0/48,5/47,0	19,3/20,8/22,8	847/915/1000	16,6/19,1/22,4	44,5/43,5/42,0
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	2300/2600/3000	22,9/24,8/27,1	1003/1084/1185	23,3/26,8/31,5	29,5/28,0/26,5	18,7/20,2/22,0	813/879/961	16,6/19,1/22,4	24,0/23,0/22,0
5		21,0/22,7/24,8	917/991/1084	19,8/22,8/26,8	32,0/30,5/29,5	16,7/18,0/19,7	727/786/859	13,6/15,6/18,3	26,5/25,5/24,5
10		19,0/20,5/22,4	830/897/981	16,6/19,1/22,4	34,5/33,0/32,0	14,7/15,9/17,3	639/691/755	10,8/12,4/14,5	29,0/28,0/27,0
15		17,0/18,3/20,0	743/802/877	13,6/15,6/18,2	36,5/35,5/34,5	12,6/13,6/14,9	550/595/650	8,3/9,5/11,1	31,0/30,5/29,5
20		14,9/16,1/17,6	654/706/772	10,8/12,4/14,6	39,0/38,0/37,0	10,6/11,4/12,5	460/497/543	6,0/6,9/8,1	33,5/33,0/32,0

To obtain operating parameters concerning other water temperatures, please contact Sales Office.

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

	C-E-100			C-E-150			C-E-200		
	1 st step	2 nd step	3 rd step	1 st step	2 nd step	3 rd step	1 st step	2 nd step	3 rd step
Power supply [V/Hz]	3x400/50								
Rated current ⁽¹⁾ [A]	8,8	9,1	9,4	13,7	14,0	14,5	18,1	18,5	18,7
Heating capacity ⁽¹⁾ [kW]	6,1	6,4	6,5	9,5	9,7	10,0	12,5	12,8	13,0
Air temperature rise for curtain (ΔT) ⁽¹⁾ [°C]	18	16	15	18	16	15	18	16	15

⁽¹⁾ At inlet air temperature 10°C

TS regulation



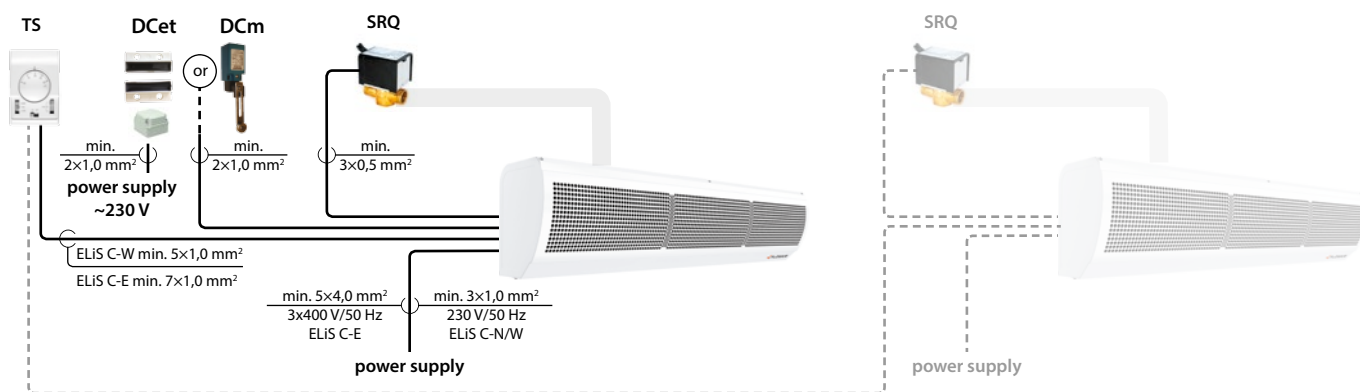
3-step fan speed regulator with thermostat

Controlling options	
Manual 3-step air flow regulation	✓
Controlling options	
Heating / Ventilation	✓
Operation depending on door contact and temperature	✓
Weekly programmer	
BMS	
Switch-off delay	
Idle speed mode	
Integration with FLOWAIR System	
Max. number of connected units	
Via controller	2
Via 1 splitter RX	6 ⁽¹⁾
Via 2 splitters RX	12 ⁽¹⁾
Via 3 splitters RX	18 ⁽¹⁾
Type of fan	
AC – standard 3-step fan	✓

⁽¹⁾ Concerns ELiS C-W

ELiS C air curtains

TS regulation



Indexes ELiS C control systems

Name	TS	DCm	DCet	SRQ2d-¾	SRQ3d-¾
Index	10996	14207	14261	10788	10805

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Air curtains ELIS T



Air curtains ELIS T

Max. range ⁽¹⁾ [m]	4
Heating capacity ⁽²⁾ [kW]	10,1–27,4
Air flow [m³/h]	1900–5300
Weight [kg]	20,7–37
Colour	grey (similar to RAL 9007)
Casing	steel, plastic EPP (expanded polypropylene), aluminium

⁽¹⁾ Range of vertical isothermal air stream, at velocity limit above 2 m/s

⁽²⁾ For T-W at inlet/outlet water temperature 90/70°C, inlet air temperature 10°C

Indexes ELIS T-N

Name	T-N-100	T-N-150	T-N-200
Index	14258	14259	14260

Indexes ELIS T-W

Name	T-W-100	T-W-150	T-W-200
Index	14252	14253	14254

Indexes ELIS T-E

Name	T-E-100	T-E-150	T-E-200
Index	14255	14256	14257




Application:

Representative buildings as well as industrial buildings. ELIS T curtains are designed for horizontal installation directly above the door openings and for vertical installation on both sides of door opening.

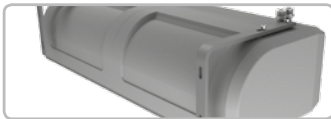
Available types of units:

Available in 3 lengths: 1 m, 1,5 m or 2 m.

Available in 3 versions:

-  N – curtain without heat exchanger (ambient)
-  W – curtain with water heat exchanger
-  E – curtain with electric heaters

Special attributes



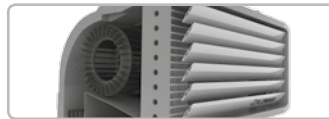
SIMPLE CONSTRUCTION

Simple and lightweight construction thanks to combination of metal and plastic elements.



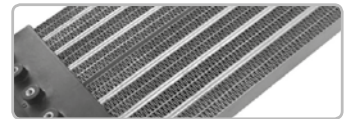
BMS CONTROL SYSTEM

Control system makes it possible to connect the units to the intelligent building management system (BMS).



DIAGONAL FAN

Curtain is equipped with highly-efficient diagonal fan with 3-step motor.

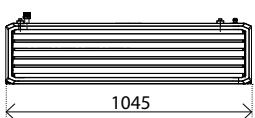


HEATING ELEMENTS

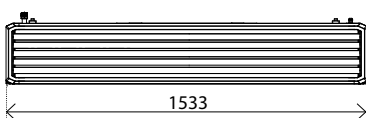
Air curtains can be equipped with PTC heating elements or water heat exchanger made of copper tubes and aluminum fins.

Dimensions

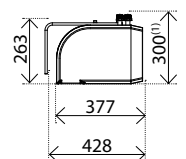
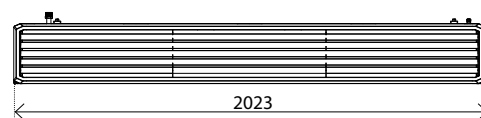
T-N/W/E-100



T-N/W/E-150



T-N/W/E-200



⁽¹⁾ Concerns ELIS T-W

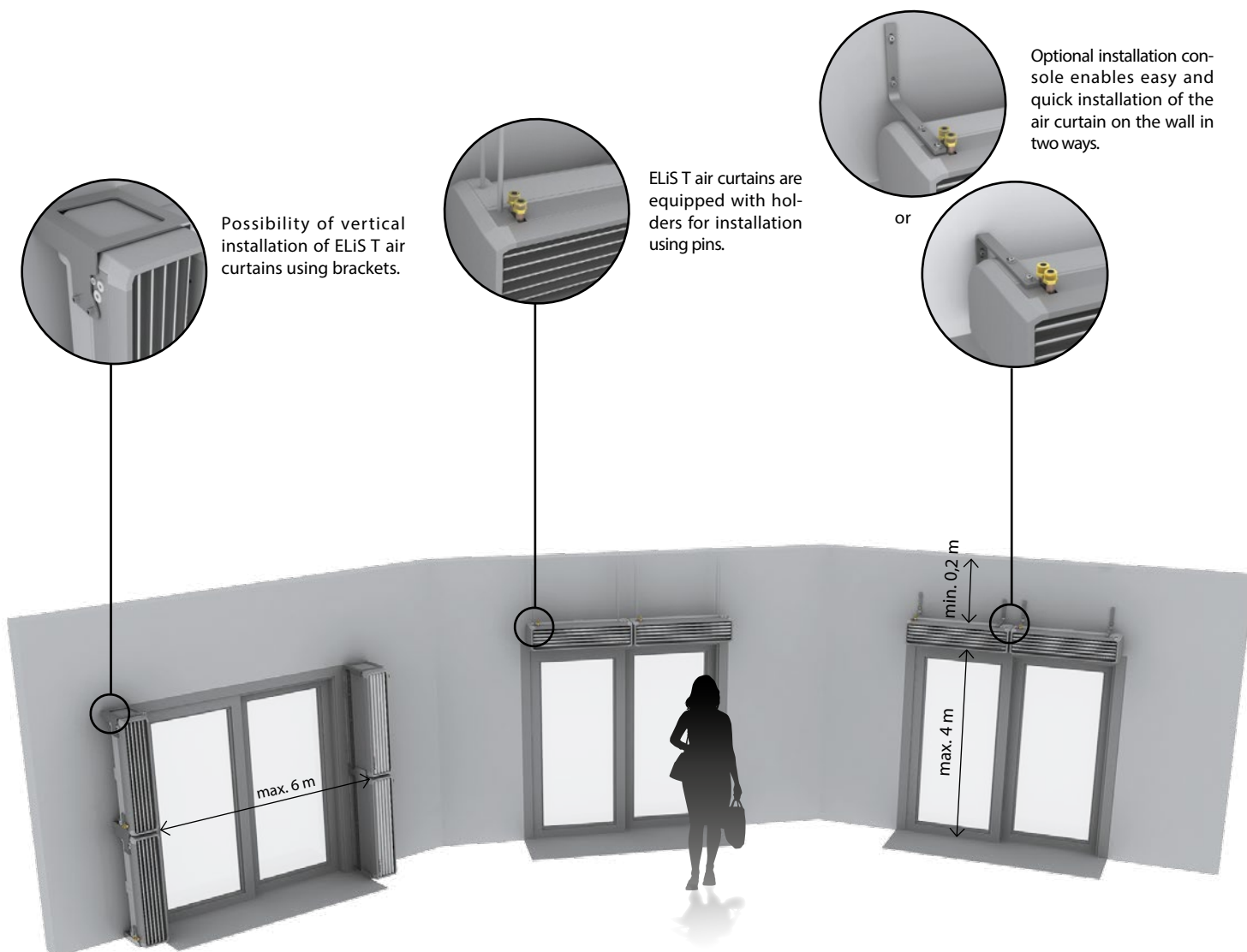
Technical data

	T-N-100	T-W-100	T-E-100	T-N-150	T-W-150	T-E-150	T-N-200	T-W-200	T-E-200
Power supply [V/Hz]	230/50	230/50	3x400/50	230/50	230/50	3x400/50	230/50	230/50	3x400/50
Max. current consumption [A]	1,8	1,7	11	1,9	1,8	16,6	2,1	2	22,4
Max. power consumption [kW]	0,39	0,38	7,5	0,42	0,4	11,5	0,46	0,44	15,5
IP	21								
Max. air flow steam of air curtain [m ³ /h]	2900	2300	2300	4000	3900	3900	5300	5100	5100
Acoustic pressure level ⁽¹⁾ [dB(A)]	59	60	59	60	61	60	61	61	61
Max. air steam range ⁽²⁾ [m]	4								
Weight of unit [kg]	20,7	22,1	24	27	29,5	31,5	31,5	34,3	37

⁽¹⁾ Acoustic pressure level measured for optimum installation height, on second step of efficiency, in the room with medium capability of sound absorption, capacity 500 m³, at distance of 3 m from the unit

⁽²⁾ Range of vertical isothermal air stream, at velocity limit above 2 m/s

Installation



Indexes brackets

Name	brackets ELIS	brackets MPK
Index	14250	14262

Heating capacities

ELIS T-W-100									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m ³ /h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	1900/2100/2300	11,7/12,3/12,9	516/544/571	1,7/1,8/2	18/17,5/17	9,8/10,3/10,8	430/454/476	1,2/1,4/1,5	15/14,5/14
5		10,9/11,5/12	480/507/531	1,5/1,6/1,8	22/21,5/21	9/9,5/9,9	394/415/436	1,1/1,2/1,3	19/18,5/18
10		10,1/10,6/11,1	444/469/492	1,3/1,4/1,5	25,5/25/24,5	8,1/8,6/9	357/377/395	0,9/1/1,1	22,5/22/21,5
15		9,3/9,8/10,2	408/430/451	1,1/1,2/1,3	29/28,5/28	7,3/7,7/8,1	321/338/355	0,7/0,8/0,9	26/25,5/25
20		8,4/8,9/9,3	372/392/411	0,9/1/1,1	33/32,5/32	6,5/6,8/7,1	283/299/314	0,6/0,6/0,7	30/29,5/29
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	1900/2100/2300	7,8/8,3/8,7	342/361/379	0,8/0,9/1	12/11,5/11	5,7/6/6,3	248/262/276	0,5/0,5/0,6	9/8,5/8
5		7/7,4/7,7	305/322/338	0,7/0,8/0,8	16/15,5/15	4,8/5/5,3	207/220/232	0,4/0,4/0,4	12,5/12/11,5
10		6,1/6,5/6,8	267/282/296	0,5/0,6/0,7	19,5/19/18,5	3,7/3,9/4,2	159/172/183	0,2/0,3/0,3	16/15,5/15
15		5,2/5,5/5,8	229/242/254	0,4/0,5/0,5	23/22,5/22	1,9/2/2,1	85/87/89	0,1/0,1/0,1	18,5/18/17,5
20		4,3/4,6/4,8	188/199/210	0,3/0,3/0,4	27/26,5/26	1,6/1,6/1,7	70/71/73	0,1/0,1/0,1	22,5/22/22

ELIS T-W-150									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m ³ /h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	3100/3500/3900	20,6/21,9/23,2	907/968/1026	5,8/6,5/7,2	19,5/18,5/17,5	17,5/18,7/19,8	769/821/870	4,4/4,9/5,5	17/16/15
5		19,2/20,5/21,7	848/905/959	5,1/5,8/6,4	23/22/21	16,2/17,3/18,3	710/758/802	3,8/4,3/4,7	20,5/19,5/18,5
10		17,9/19,1/20,2	789/842/892	4,5/5/5,6	27/26/25	14,8/15,8/16,7	650/694/735	3,2/3,6/4	24,5/23,5/22,5
15		16,5/17,7/18,7	730/779/824	3,9/4,4/4,8	31/30/29	13,4/14,3/15,2	591/630/667	2,7/3,1/3,4	28/27/26
20		15,2/16,2/17,2	670/715/757	3,3/3,7/4,1	34,5/33,5/32,5	12,1/12,9/13,6	530/566/599	2,2/2,5/2,8	32/31/30
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	3100/3500/3900	14,4/15,4/16,3	631/674/714	3,2/3,6/4	14/13/12	11,3/12/12,8	492/525/556	2,1/2,4/2,6	11/10/9
5		13,1/13,9/14,8	572/610/646	2,6/3/3,3	18/17/16	9,9/10,6/11,2	431/460/487	1,7/1,9/2,1	15/14/13
10		11,7/12,5/13,2	511/546/578	2,2/2,4/2,7	22/21/20	8,5/9/9,6	369/394/417	1,3/1,4/1,6	18,5/17,5/16,5
15		10,3/11/11,6	450/481/509	1,7/1,9/2,1	25,5/24,5/23,5	7/7,5/7,9	305/327/346	0,9/1/1,1	22,5/21,5/20,5
20		8,9/9,5/10	389/415/439	1,3/1,5/1,6	29,5/28,5/27,5	5,5/5,9/6,2	239/256/272	0,6/0,7/0,07	26/25/24

ELIS T-W-200									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m ³ /h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	3000/4100/5100	23,5/28/31,4	1037/1234/1387	8,5/11,7/14,5	23/20/18	20,2/24/26,9	885/1052/1183	6,5/9/11,1	19/17/15
5		22/26,2/29,4	972/1155/1299	7,5/10,3/12,8	27/24/22	18,6/22,2/24,9	819/974/1095	5,7/7,8/9,6	23,5/21/19,5
10		20,5/24,4/27,4	906/1077/1211	6,6/9,1/11,3	30/27/26	17,1/20,4/22,9	753/895/1005	4,9/6,7/8,2	27/24,5/23
15		19/22,6/25,4	840/998/1122	5,8/7,9/9,8	34/31/29	15,6/18,6/20,8	686/815/916	4,1/5,6/7	30/28/27
20		17,5/20,8/23,4	774/919/1033	5/6,8/8,4	38/35/33	14,1/16,7/18,8	619/735/826	3,4/4,7/5,8	33,5/32/30,5
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	3000/4100/5100	16,8/19,9/22,4	733/872/980	4,8/6,6/8,1	16,5/14,5/12,5	13,3/15,8/17,8	581/690/776	3,3/4,5/5,5	13/11,5/10
5		15,2/18,1/20,6	667/792/891	4/5,5/6,8	20/18/16	11,8/14/15,7	513/610/686	2,6/3,6/4,4	16,5/15/14
10		13,7/16,3/18,3	600/713/801	3,3/4,6/5,6	23,5/21,5/20,5	10,2/12,1/13,6	445/529/595	2/2,7/3,4	20/19/18
15		12,2/14,5/16,2	532/632/710	2,7/3,7/4,5	27/25/24	8,6/10,2/11,5	376/447/502	1,5/2/2,5	23,5/22,5/21,5
20		10,6/12,6/14,4	464/551/619	2,1/2,9/3,5	30,5/28,5/27,5	7/8,3/9,4	304/362/408	1/1,4/1,7	26,5/25,5/25

To obtain operating parameters concerning other water temperatures or air curtains with more heating capacity, please contact 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 – water stream flow in the heat exchanger
Δpw – water pressure drop in the heat exchanger



	T-E-100			T-E-150			T-E-200		
	1 st step	2 nd step	3 rd step	1 st step	2 nd step	3 rd step	1 st step	2 nd step	3 rd step
Power supply [V/Hz]	3x400/50								
Rated current ⁽¹⁾ [A]	10,2	10,5	11	15,9	16,1	16,6	21,5	21,8	22,4
Heating capacity ⁽¹⁾ [kW]	7,1	7,3	7,5	11	11,2	11,5	14,9	15,1	15,5
Air temperature rise for curtain (ΔT) ⁽¹⁾ [°C]	12	12	11	13	12	12	14	14	13

⁽¹⁾ At inlet air temperature 10°C

Indexes ELIS T control system

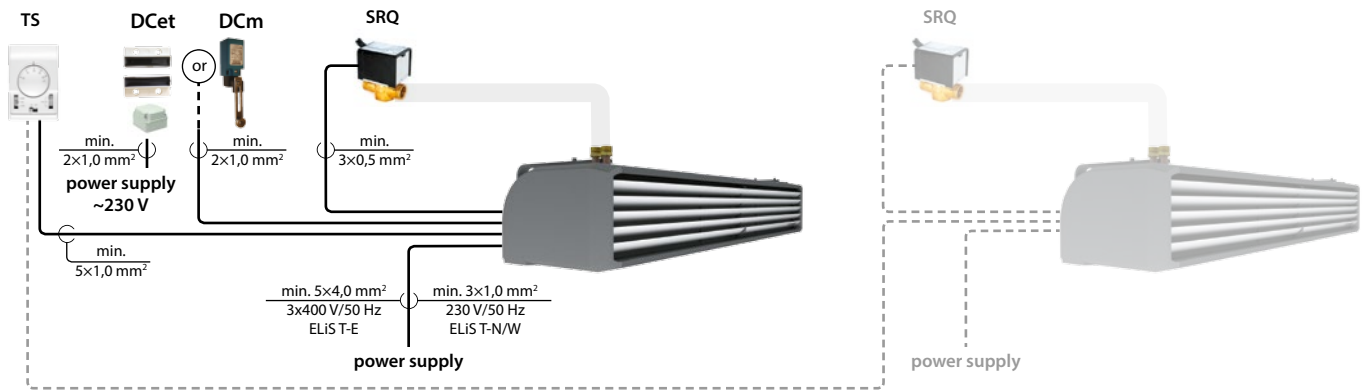
Name	T-box	DRV ELIS	TS	DCm	DCet	DCe	SRQ2d-½	SRQ3d-½
Index	10799	90541	10996	14207	14261	14212	10803	10804

Control systems

	TS regulation	T-box regulation
	 3-step fan speed regulator with thermostat	 Intelligent controller with touch screen
Controlling options		
Manual 3-step air flow regulation	✓	✓
Controlling options		
Heating / Ventilation	✓	✓
Operation depending on door contact and temperature	✓	✓
Weekly programmer		✓
BMS		✓
Switch-off delay		✓
Idle speed mode		✓
Integration with FLOWAIR System		✓
Max. number of connected units		
Via controller	2	31
Via 1 splitter RX	6	n/a
Via 2 splitters RX	12	n/a
Via 3 splitters RX	18	n/a
Type of fan		
AC – standard 3-step fan	✓	✓

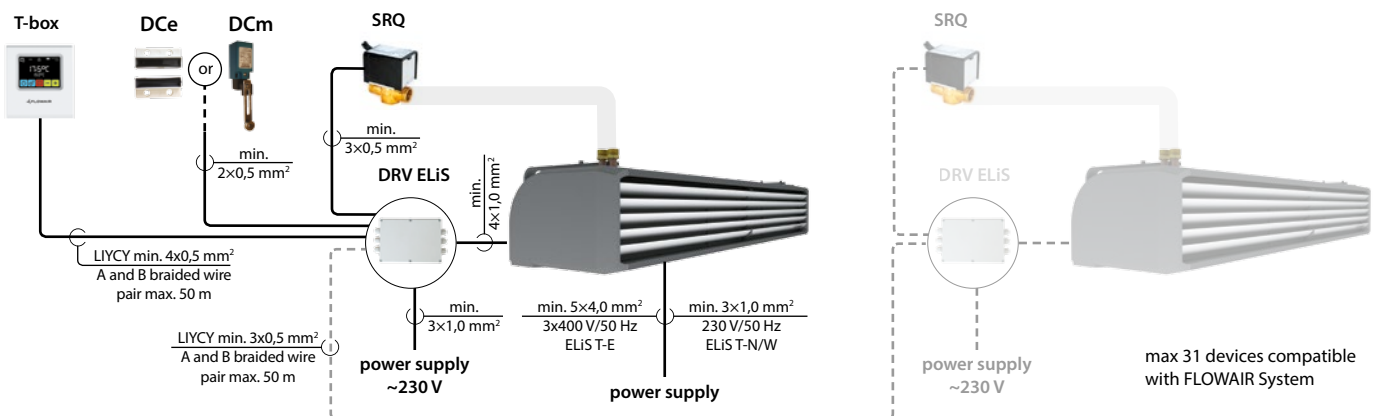
ELiS T air curtains

TS regulation



ELiS T air curtains

T-box regulation



Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Air curtains ELiS B



Air curtains ELiS B

Max. range ⁽¹⁾ [m]	5
Heating capacity ⁽²⁾ [kW]	10,9–27,7
Air flow [m³/h]	2200–6600
Weight [kg]	31,7–53,2
Colour	white (RAL 9016)
Casing	steel, plastic, EPP (expanded polypropylene), aluminium

⁽¹⁾ Range of vertical isothermal air stream, at velocity limit above 2 m/s

⁽²⁾ For B-W at inlet/outlet water temperature 90/70°C, inlet air temperature 10°C




Application:

Representative rooms like stores, restaurants, showrooms etc. ELiS B units are designed for installation in suspended ceilings. Their advantage is the possibility of installation in existing ceiling without cutting additional holes.

Available types of units:

Available in 3 lengths: 1 m, 1,5 m or 2 m.

Available in 3 versions:

-  N – curtain without heat exchanger (ambient)
-  W – curtains with water heat exchanger
-  E – curtain with electric heaters

Indexes ELiS B-N

Name	B-N-100	B-N-150	B-N-200
Index	14281	14282	14283

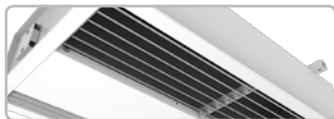
Indexes ELiS B-W

Name	B-W-100	B-W-150	B-W-200
Index	14275	14276	14277

Indexes ELiS B-E

Name	B-E-100	B-E-150	B-E-200
Index	14278	14279	14280

Special attributes



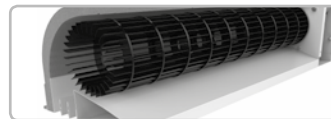
SIMPLE CONSTRUCTION

Simple and lightweight construction thanks to combination of metal and plastic elements.



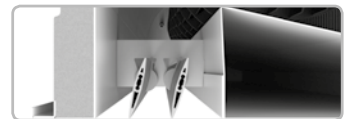
BMS CONTROL SYSTEM

Control system makes it possible to connect the units to the intelligent building management system (BMS).



DIAGONAL FAN

Curtain is equipped with highly-efficient diagonal fan with 3-step motor.

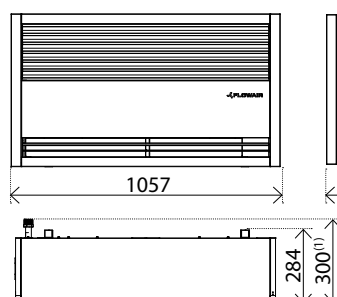


AIR BLADES

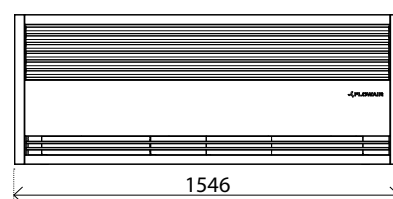
Adjustment of air stream to door opening thanks to regulated air outlet.

Dimensions

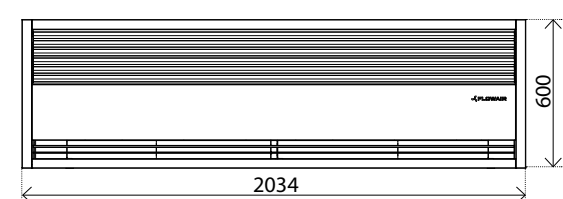
B-N/W/E-100



B-N/W/E-150



B-N/W/E-200



⁽¹⁾ Concerns ELiS B-W

Technical data

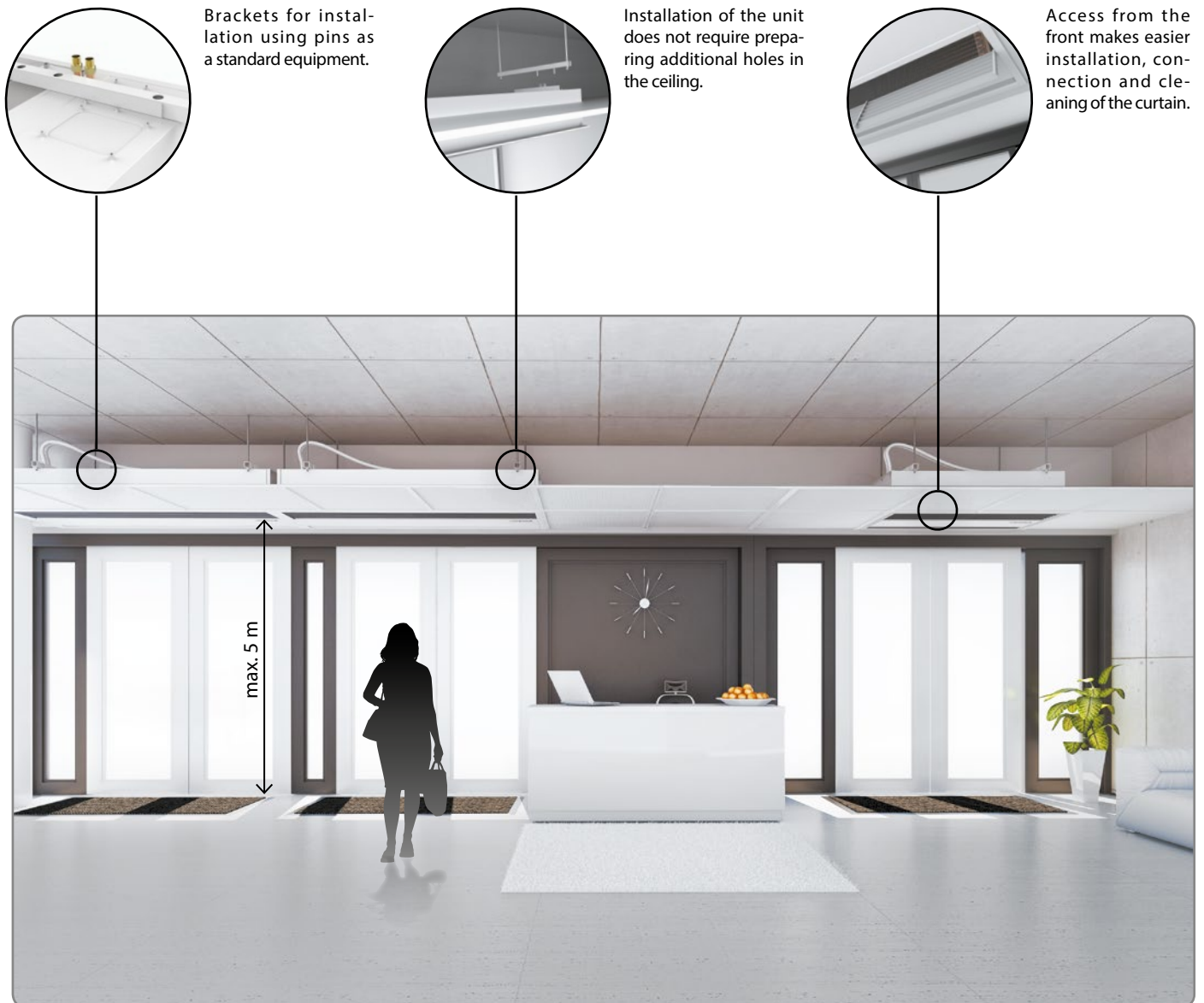
	B-N-100	B-W-100	B-E-100	B-N-150	B-W-150	B-E-150	B-N-200	B-W-200	B-E-200
Power supply [V/Hz]	230/50	230/50	3x400/50	230/50	230/50	3x400/50	230/50	230/50	3x400/50
Max. current consumption [A]	1,9	1,5	11	2	1,6	16,6	2,2	1,7	22,4
Max. power consumption [kW]	0,42	0,34	7,5	0,44	0,36	11,5	0,49	0,38	15,5
IP	21								
Max. air flow stream of air curtain [m ³ /h]	3500	2600	2600	4800	4000	4000	6600	5200	5200
Acoustic pressure level ⁽¹⁾ [dB(A)]	58	60	58	59	60	59	61	63	61
Max. air stream range ⁽²⁾ [m]	5								
Weight of unit [kg]	31,7	32,3	34,5	38,9	41,2	42,4	47,2	50	53,2

⁽¹⁾ Acoustic pressure level measured for optimum installation height, on second step of efficiency, in the room with medium capability of sound absorption, capacity 500 m³, at distance of 3 m from the unit

⁽²⁾ Range of vertical isothermal air stream, at velocity limit above 2 m/s

Installation

ELiS B air curtains are equipped as a standard with holders, which enable installation on suspended ceilings. Casing of the unit was designed to enable installation in already existing ceilings, without cutting bigger holes or service hatches.



Heating capacities

ELiS B-W-100									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m³/h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	2200/2500/2600	12,6/13,5/13,8	558/597/609	1,9/2,2/2,3	17,0/16,0/15,5	10,6/11,3/11,5	465/497/507	1,4/1,6/1,7	14,0/13,5/13,0
5		11,8/12,6/12,8	519/555/566	1,7/1,9/2,0	21,0/20,0/19,5	9,7/10,4/10,6	426/455/464	1,2/1,3/1,4	18,0/17,5/17,0
10		10,9/11,6/11,9	480/513/524	1,5/1,6/1,7	24,5/23,5/24,5	8,8/9,4/9	386/413/395	1,0/1,1/1,1	21,5/21,0/21,5
15		10,0/10,7/10,9	441/471/481	1,3/1,4/1,5	28,0/27,5/27,0	7,9/8,5/8,6	347/370/378	0,8/0,9/1,0	25,5/25,0/24,5
20		9,1/9,7/9,9	402/429/438	1,1/1,2/1,2	32,0/31,5/31,0	7,0/7,5/7,6	306/328/334	0,7/0,8/0,8	29,5/29,0/28,5
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	2200/2500/2600	8,5/9,0/9,2	370/396/404	1,0/1,1/1,2	11,5/11,0/10,5	6,2/6,6/6,8	269/289/295	0,6/0,6/0,7	8,5/8,0/7,5
5		7,5/8,1/8,2	330/353/360	0,7/0,8/0,9	15,0/14,5/14,0	5,2/5,6/5,7	226/243/249	0,4/0,4/0,5	12,0/12,0/11,5
10		6,6/7,1/7,2	290/310/316	0,6/0,6/0,7	19,0/18,5/18,0	4,1/4,5/4,6	178/193/198	0,3/0,3/0,3	15,5/15,0/15,0
15		5,7/6,1/6,2	248/266/271	0,5/0,5/0,6	22,5/22,0/21,5	2,0/2,1/2,1	88/90/91	0,1/0,1/0,1	18,0/17,5/17,5
20		4,7/5,0/5,1	204/220/225	0,3/0,4/0,4	26,0/25,5/25,0	1,6/1,7/1,7	72/74/74	0,1/0,1/0,1	22,5/22,0/22,0

ELiS B-W-150									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m³/h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	3200/3500/4000	20,9/21,9/23,5	923/968/1039	5,9/6,5/7,4	19,6/18,5/17,5	17,8/18,7/20,0	783/821/881	4,5/4,9/5,6	16,5/16,0/15,0
5		19,6/20,5/22,0	863/905/972	5,3/5,6/6,6	23,0/22,5/21,5	16,4/17,3/18,5	722/758/813	3,9/4,3/4,9	20,0/19,5/18,5
10		18,2/19,1/20,5	803/842/904	4,6/5,0/5,7	27,0/26,0/25,0	15,0/15,8/17,0	662/694/745	3,3/3,6/4,1	24,0/23,0/22,5
15		16,8/17,6/19,0	742/779/835	4,0/4,4/5,0	30,5/30,0/30,0	13,7/14,3/15,4	601/630/676	2,8/3,0/3,5	27,5/27,0/26,5
20		15,5/16,2/17,4	682/715/767	3,4/3,7/4,2	34,0/33,5/32,5	12,3/12,9/13,8	539/566/607	2,3/2,5/2,8	31,0/30,5/30,0
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	3200/3500/4000	14,7/15,4/16,5	642/674/723	3,3/3,6/4,0	13,5/13,0/12,5	11,5/12,0/13,0	500/525/563	2,2/2,4/2,7	10,5/10,0/9,5
5		13,3/13,9/15,0	581/610/655	2,7/3,0/3,4	17,5/16,5/16,0	10,1/10,5/11,5	438/460/494	1,7/1,9/2,1	14,5/14,0/13,5
10		11,9/12,5/13,4	520/546/585	2,2/2,4/2,8	21,0/20,5/20,0	8,6/9,0/9,7	375/394/423	1,3/1,4/1,6	18,0/17,5/17,0
15		10,5/11,0/11,78	458/481/516	1,8/1,9/2,2	24,5/24,0/23,5	7,1/7,5/8,1	311/327/351	0,9/1,0/1,1	21,5/21,0/21,0
20		9,0/9,5/10,2	395/415/445	1,4/1,5/1,7	28,0/27,5/27,5	5,6/5,9/6,3	243/256/276	0,6/0,7/0,7	25,0/24,5/24,5

ELiS B-W-200									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m³/h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	4000/4300/5200	27,6/28,7/31,8	1217/1266/1402	11,4/12,2/14,7	20,5/19,5/18,0	23,6/24,6/27,7	1038/1080/1195	8,7/9,4/11,3	17,5/17,0/15,5
5		25,8/26,9/29,7	1140/1186/1312	10,0/10,8/13,0	24,0/23,5/22,0	21,9/22,7/25,2	961/999/1106	7,6/8,2/9,8	21,1/20,5/19,5
10		24,0/25,0/27,7	1063/1105/1223	8,9/9,5/11,5	27,5/27,0/25,7	20,1/20,9/23,1	883/918/1016	6,5/7,0/8,4	25,0/24,5/22,5
15		22,3/23,2/25,7	985/1024/1133	7,7/8,3/10,0	32,5/30,5/29,5	18,3/19,0/21,0	804/836/925	5,5/5,9/7,1	28,5/28,0/27,0
20		20,5/21,4/23,6	907/943/1043	6,6/7,1/8,8	35,0/34,5/33,0	16,5/17,2/19,0	725/754/834	4,6/4,9/5,9	32,0/31,5/30,5
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	4000/4300/5200	19,7/20,5/22,5	860/894/990	6,4/6,9/8,3	14,5/14,0/13,0	15,6/16,3/18,0	681/708/784	4,6/4,7/5,6	11,5/11,0/10,5
5		17,9/18,6/20,5	782/813/900	5,4/5,8/6,9	18,0/17,5/17,0	13,8/14,4/15,9	602/626/693	3,5/3,7/4,5	15,0/15,0/14,0
10		16,1/16,7/18,5	703/731/809	4,5/4,7/5,7	21,5/21,5/20,5	12,0/12,5/13,8	522/543/601	2,7/2,9/3,5	18,5/18,5/18,0
15		14,5/14,8/16,4	624/649/717	3,6/3,8/4,6	25,5/25,0/24,5	10,1/10,5/11,6	441/458/507	2,0/2,1/2,6	22,5/22,0/21,5
20		12,4/12,9/14,3	544/565/625	2,8/3,0/3,6	29,0/28,5/28,0	8,2/8,5/9,5	357/372/412	1,4/1,5/1,8	26,0/25,5/25,0

To obtain operating parameters concerning other water temperatures or air curtains with more heating capacity, please contact 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 – water stream flow in the heat exchanger

Δpw – water pressure drop in the heat exchanger

	B-E-100			B-E-150			B-E-200		
	1 step	2 step	3 step	1 step	2 step	3 step	1 step	2 step	3 step
Power supply [V/Hz]	3x400/50								
Rated current of unit ⁽¹⁾ [A]	10,2	10,5	11	15,9	16,1	16,6	21,5	21,8	22,4
Heating capacity ⁽¹⁾ [kW]	7,1	7,3	7,5	11	11,2	11,5	14,9	15,1	15,5
Air temperature rise for curtain (ΔT) ⁽¹⁾ [°C]	12	12	11	13	12	12	14	14	13

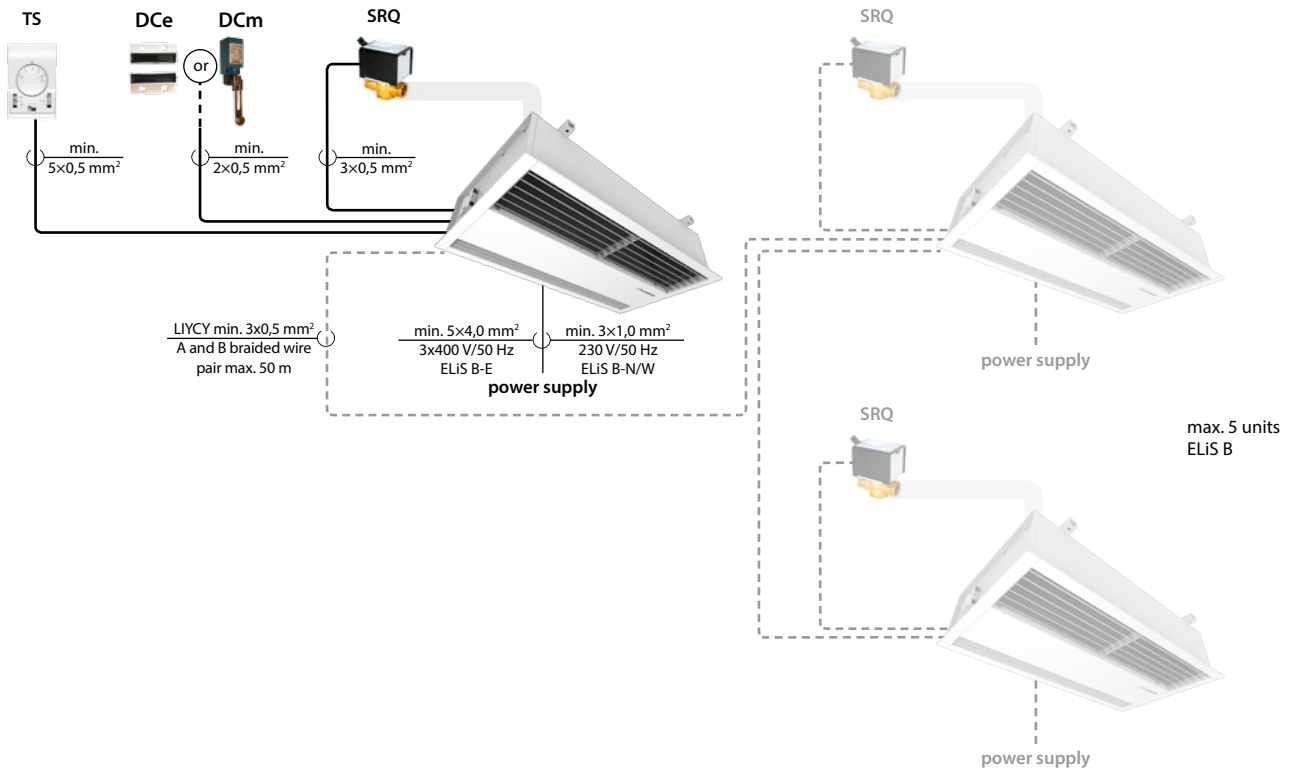
⁽¹⁾ At inlet air temperature 10°C

Control systems

	TS regulation	T-box regulation
		
	3-step fan speed regulator with thermostat	Intelligent controller with touch screen
Controlling options		
Manual 3-step air flow regulation	✓	✓
Controlling options		
Heating / Ventilation	✓	✓
Operation depending on door contact and temperature	✓	✓
Weekly programmer		✓
BMS	✓	✓
Switch-off delay		✓
Idle speed mode		✓
Integration with FLOWAIR System		✓
Max. number of connected units		
Via controller	5	31
Via 1 splitter RX	n/a	n/a
Via 2 splitters RX	n/a	n/a
Via 3 splitters RX	n/a	n/a
Type of fan		
AC – standard 3-step fan	✓	✓

ELiS B air curtains

TS regulation

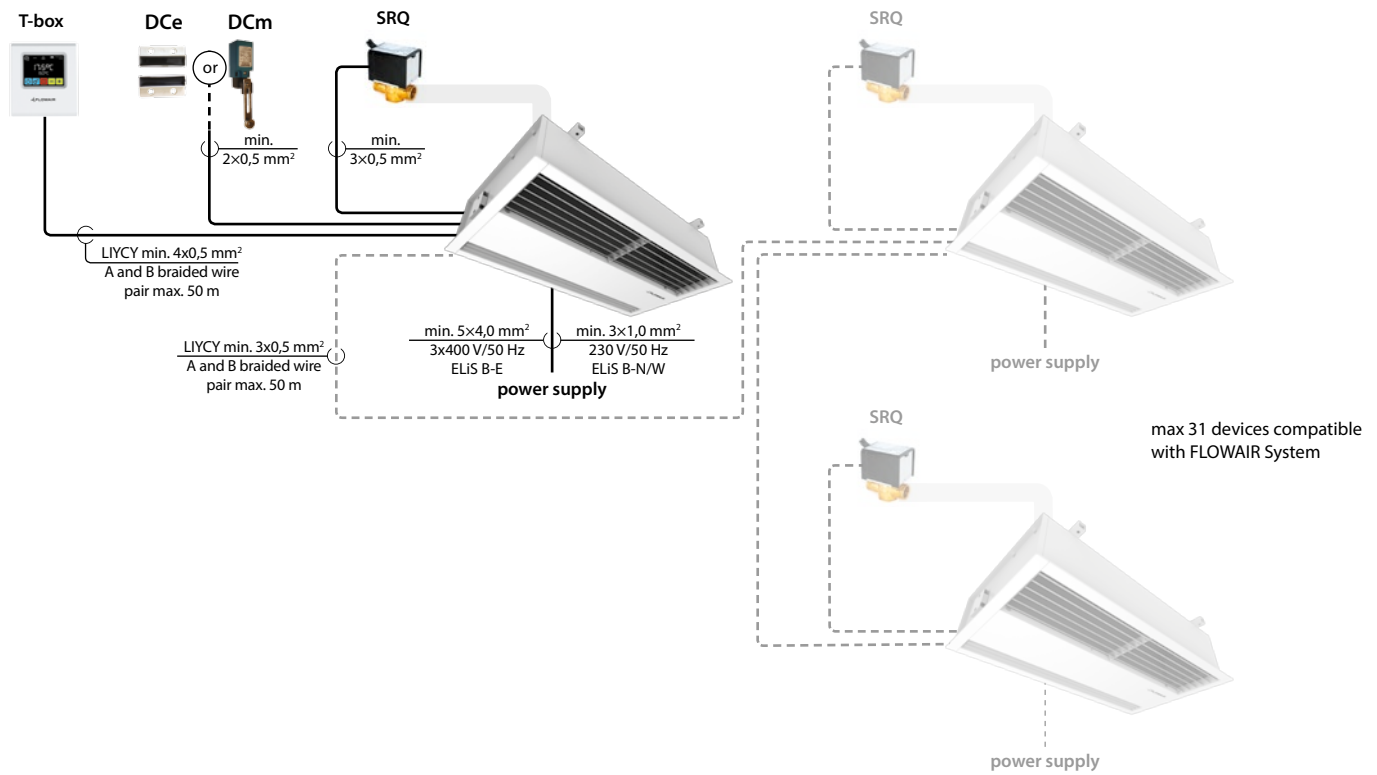


Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Control systems

ELiS B air curtains

T-box regulation



Indexes ELiS B control systems

Name	T-box	TS	DCm	DCe	SRQ2d-½	SRQ3d-½
Index	10799	10996	14207	14212	10803	10804

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Air curtains ELiS A



Air curtains ELiS A

Max. range ⁽¹⁾ [m]	3
Heating capacity ⁽²⁾ [kW]	12,3–28,0
Air flow [m ³ /h]	850–3500
Weight [kg]	18,4–39,0
Colour	grey (RAL 9006) / white (RAL 9010)
Casing	steel, plastic

⁽¹⁾ Range of vertical isothermal air stream, at velocity limit above 2 m/s

⁽²⁾ For A-W at inlet/outlet water temperature 90/70°C, inlet air temperature 10°C




Application:

Representative rooms like stores, restaurants, showrooms etc. ELiS A units are designed for horizontal installation directly above door openings. They form an air stream, which reduces losses associated with air exchange between the building and its surroundings.

Available types of units:

Available in 3 lengths: 1 m, 1,5 m or 2 m.

Available in 3 versions:

-  N – curtain without heat exchanger (ambient)
-  W – curtain with water heat exchanger
-  E – curtain with electric heaters

Indexes ELiS A-N grey/white

Name	A-N-100	A-N-150	A-N-200
Index	14235/14263	14236/14264	14237/14265

Indexes ELiS A-W grey/white

Name	A-W-100	A-W-150	A-W-200
Index	14233/14266	14230/14267	14238/14268

Indexes ELiS A-E grey/white

Name	A-E-100	A-E-150	A-E-200
Index	14239/14269	14240/14245	14241/14251

Special attributes



SIMPLE CONSTRUCTION

Adjustable air outlet enables the user to set the right angle of the air stream.



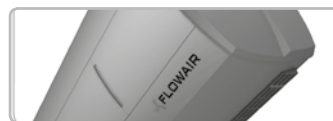
QUIET FANS

Radial fans are closed in the casing made of light, durable and sound-absorbing material. They are characterized by quiet operation and low power consumption in relation to their efficiency.



BMS CONTROL SYSTEM

Advanced control system makes it possible to chain the units and to easily control them by the intelligent building management system (BMS).

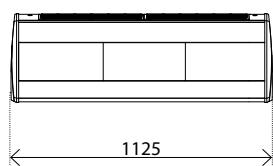


MODERN DESIGN

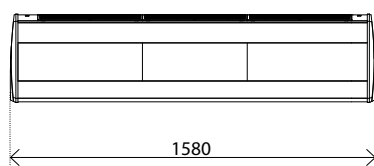
Modern design of the unit came into existence in cooperation with an experienced team of industrial designers.

Dimensions

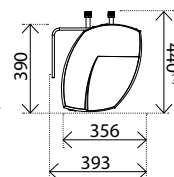
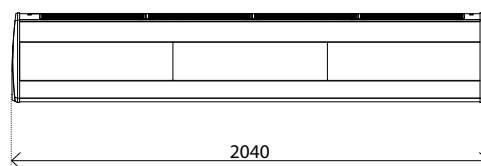
A-N/W/E-100



A-N/W/E-150



A-N/W/E-200



⁽¹⁾ Concerns ELiS A-W

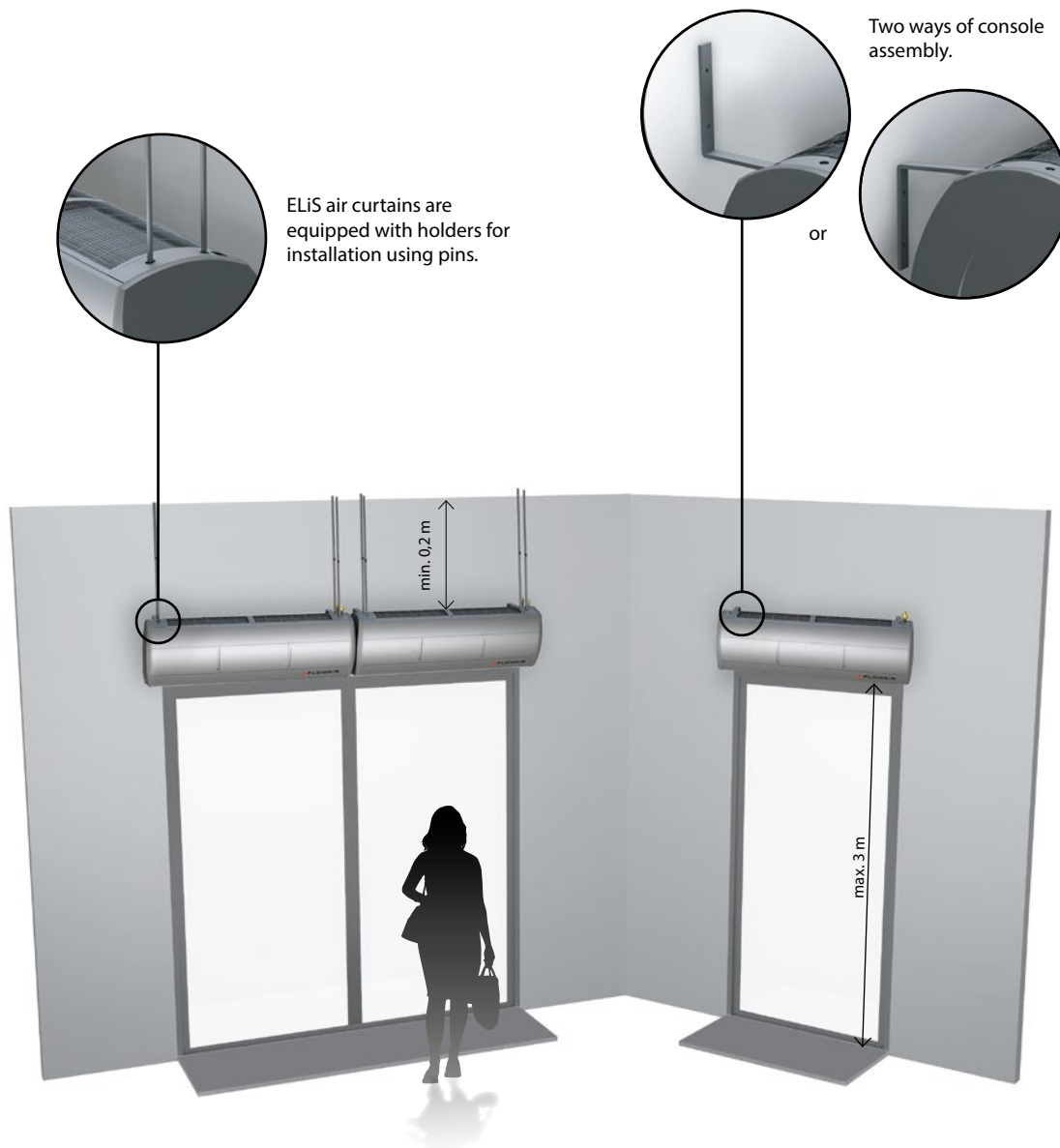
Technical data

	A-N-100	A-W-100	A-E-100	A-N-150	A-W-150	A-E-150	A-N-200	A-W-200	A-E-200
Power supply [V/Hz]	230/50		3x400/50	230/50		3x400/50	230/50		3x400/50
Max. current consumption [A]	0,72		10	1,1		15,5	1,45		21,5
Max. power consumption [kW]	0,17		7	0,25		10,7	0,34		15
IP	21								
Max. air flow stream of air curtain [m ³ /h]	1500			2500			3500		
Acoustic pressure level ⁽¹⁾ [dB(A)]	43			46			48		
Max. air stream range ⁽²⁾ [m]	3								
Weight of unit [kg]	18,4	20,9	21,4	25,3	28,3	28,5	33,6	37,1	39

⁽¹⁾ Acoustic pressure level measured for optimum installation height, on second step of efficiency, in the room with medium capability of sound absorption, capacity 500 m³, at distance of 3 m from the unit

⁽²⁾ Range of vertical isothermal air stream, at velocity limit above 2 m/s

Installation



Indexes brackets

Name	brackets ELiS
Index	14250

The key to the correct operation of the unit is to ensure air barrier on entire door opening plane. ELiS A are ready for chaining, so covering wider door openings is not a problem.

Heating capacities

ELIS A-W 100									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m³/h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	850/1150/1500	14,4/17,7/21,0	637/781/927	4,4/6,4/8,8	47/43/39	12,4/15,2/18,0	545/668/793	3,4/5,0/6,8	40/37/33
5		13,3/16,4/19,4	588/721/857	3,8/5,5/7,6	49/45/41	11,3/13,9/16,5	497/610/724	2,9/4,2/5,7	43/39/36
10		12,3/15,0/17,9	541/663/788	3,3/4,8/6,5	51/47/44	10,3/12,6/15,0	451/553/657	2,4/3,5/4,8	45/41/39
15		11,2/13,7/16,3	494/606/721	2,8/4,0/5,5	53/50/47	9,2/11,3/13,5	405/497/591	2,0/2,9/4,0	47/44/41
20		10,2/12,5/14,8	448/550/654	2,3/3,4/4,6	55/52/49	8,2/10,1/12,0	360/442/526	1,6/2,4/3,2	49/46/44
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	850/1150/1500	10,4/12,7/15,1	453/555/659	2,5/3,7/5,0	34/31/28	8,3/10,1/12,0	360/442/525	1,8/2,5/3,4	27/24/22
5		9,3/11,4/13,5	407/498/592	2,1/3,0/4,1	36/33/30	7,2/8,9/10,5	315/386/459	1,4/2,0/2,7	29/27/25
10		8,3/10,1/12,0	361/443/526	1,7/2,4/3,3	38/35/33	6,2/7,6/9,0	269/331/394	1,0/1,5/2,0	31/29/27
15		7,2/8,9/10,5	316/388/461	1,3/1,9/2,6	40/37/35	5,1/6,3/7,5	224/276/329	0,8/1,1/1,5	33/31/30
20		6,2/7,6/9,1	271/334/397	1,0/1,5/2,0	42/40/38	4,1/5,1/6,1	177/220/264	0,5/0,7/1,0	34/33/32

ELIS A-W 150									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m³/h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	1650/2100/2500	17,9/20,7/22,9	791/914/1011	5,3/6,9/8,3	32/29/27	15,3/17,7/19,6	672/777/861	4/5,6/6,3	27/25/23
5		16,8/19,4/21,4	740/855/946	4,7/6,1/7,4	35/32/30	14,1/16,3/18,1	621/718/795	3,5/4,5/5,5	30/28/26
10		15,6/18/20	688/795/881	4,1/5,3/6,5	38/35/34	13/15/16,6	569/658/728	3/3,9/4,7	33/31/30
15		14,4/16,7/18,5	636/735/814	3,5/4,6/5,6	41/38/37	11,8/13,6/15	517/597/661	2,5/3,2/3,9	36/34/33
20		13,2/15,3/17	584/674/748	3/3,9/4,8	43/41/40	10,6/12,2/13,5	464/532/593	2/2,7/3,2	39/37/36
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	1650/2100/2500	12,7/14,6/16,2	554/640/709	2,9/3,8/4,6	23/21/19	10/11,5/12,8	434/502/556	1,9/2,5/3	18/16/15
5		11,5/13,3/14,7	502/580/643	2,4/3,2/3,8	26/24/22	9/10,1/11,2	381/441/489	1,5/2/2,4	21/19/18
10		10,3/11,9/13,2	450/520/576	2/2,6/3,1	28/27/26	7,5/8,7/9,7	328/380/421	1,2/1,5/1,8	23/22/21
15		9,1/10,5/11,6	397/459/508	1,6/2,1/2,5	31/30/29	6,3/7,3/8	273/316/351	0,8/1,1/1,3	26/25/24
20		7,84/9,1/10	343/397/439	1,2/1,6/1,9	34/33/32	4,9/5,7/6,4	214/250/279	0,6/0,7/0,9	29/28/27



ELIS A-W 200									
Tp1	V	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2
°C	m³/h	kW	l/h	kPa	°C	kW	l/h	kPa	°C
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C				
0	2400/2900/3500	25,7/29/32,2	1135/1271/1419	12/14,5/18	32/29/27	22/24,7/27,6	970/1086/1212	9/11,1/13,6	27/25/23
5		24/27/30	1063/1191/1329	10,4/13/16	35/32/30	20,4/22,9/25,5	898/1006/1122	7,8/9,7/11,8	30/28/27
10		22,5/25,1/28	992/1110/1240	9,2/11,3/14	38/36/34	18,8/21/23,5	825/924/1031	6,7/8,3/10,1	33/31/30
15		20,8/23,3/26	918/1027/1147	7,9/9,8/12	40/38/37	17,1/19,1/21,4	751/841/939	5,7/7/8,5	36/34/33
20		19/21,4/24	844/945/1054	6,8/8,4/10,3	43/42/40	15,4/17,3/19,2	677/758/845	4,7/5,8/7	39/37/36
Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C				
0	2400/2900/3500	18,4/20,6/23	805/902/1007	6,6/8,1/10	23/21/20	14,7/16,5/18,4	641/717/801	4,5/5,5/6,7	18/17/16
5		16,8/18,8/21	733/821/916	5,6/6,9/8,4	26/24/23	13/14,6/16,3	568/636/709	3,6/4,5/5,4	21/20/19
10		15,1/16,9/18,9	660/739/824	4,6/5,7/6,9	29/27/26	11,3/12,7/14,1	493/552/616	2,8/3,5/4,2	24/23/22
15		13,4/15/16,7	586/655/731	3,7/4,6/5,6	31/30/29	9,6/11/12	418/468/522	2/2,6/3,1	27/26/25
20		11,7/13/14,6	510/571/637	2,9/3,5/4,3	34/33/32	7,8/8,7/9,8	340/381/425	1,4/1,8/2,2	30/29/28

To obtain operating parameters concerning other water temperatures, please contact 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 – water stream flow in the heat exchanger
Δpw – water pressure drop in the heat exchanger

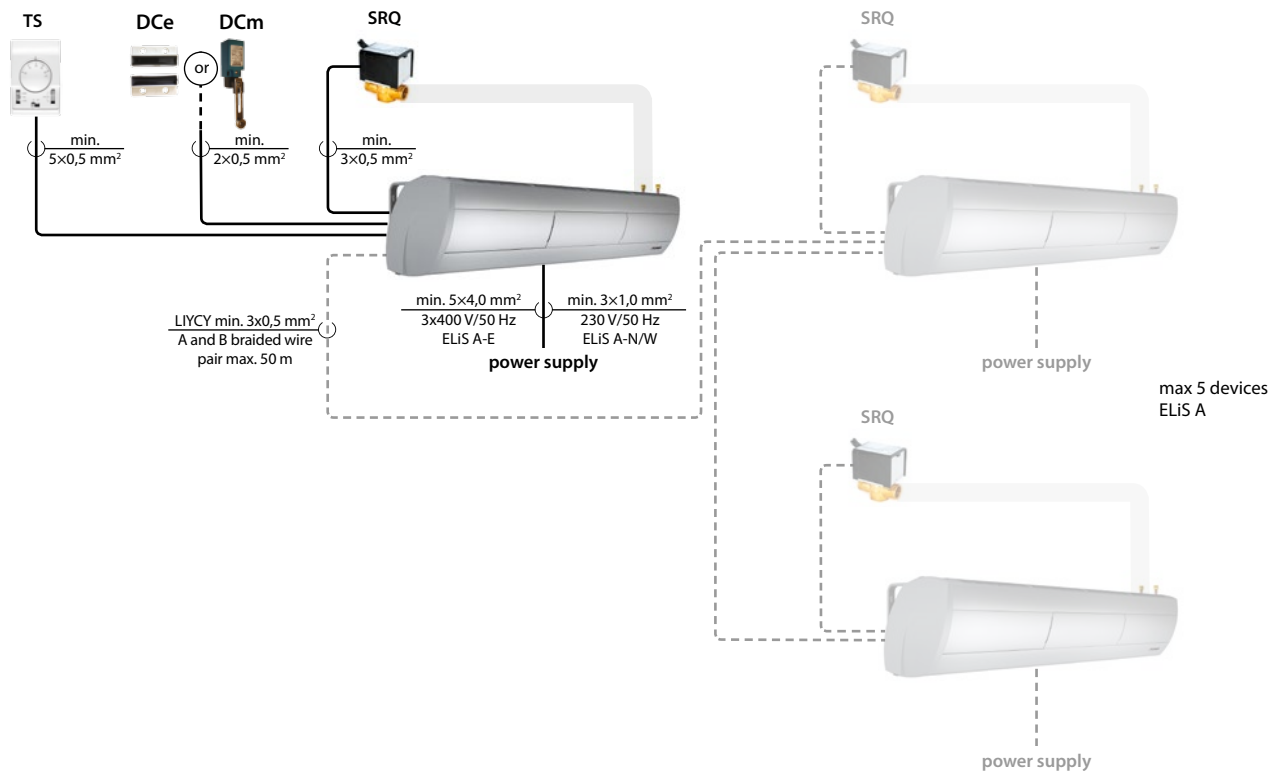
	A-E-100			A-E-150			A-E-200		
	1 step	2 step	3 step	1 step	2 step	3 step	1 step	2 step	3 step
Power supply [V/Hz]	3x400/50								
Rated current of unit ⁽¹⁾ [A]	9,5	9,8	10	14,8	15,2	15,5	20,7	21,2	21,5
Heating capacity ⁽¹⁾ [kW]	6,6	6,8	7	10,2	10,5	10,7	14,4	14,7	15
Air temperature rise for curtain (ΔT) ⁽¹⁾ [°C]	27	26	25	24	22	21	22	20	18

⁽¹⁾ At inlet air temperature 10°C

	TS regulation	T-box regulation
		
	3-step fan speed regulator with thermostat	Intelligent controller with touch screen
Controlling options		
Manual 3-step air flow regulation	✓	✓
Controlling options		
Heating / Ventilation	✓	✓
Operation depending on door contact and temperature	✓	✓
Weekly programmer		✓
BMS	✓	✓
Switch-off delay		✓
Idle speed mode		✓
Integration with FLOWAIR System		✓
Max. number of connected units		
Via controller	5	31
Via 1 splitter RX	n/a	n/a
Via 2 splitters RX	n/a	n/a
Via 3 splitters RX	n/a	n/a
Type of fan		
AC – standard 3-step fan	✓	✓

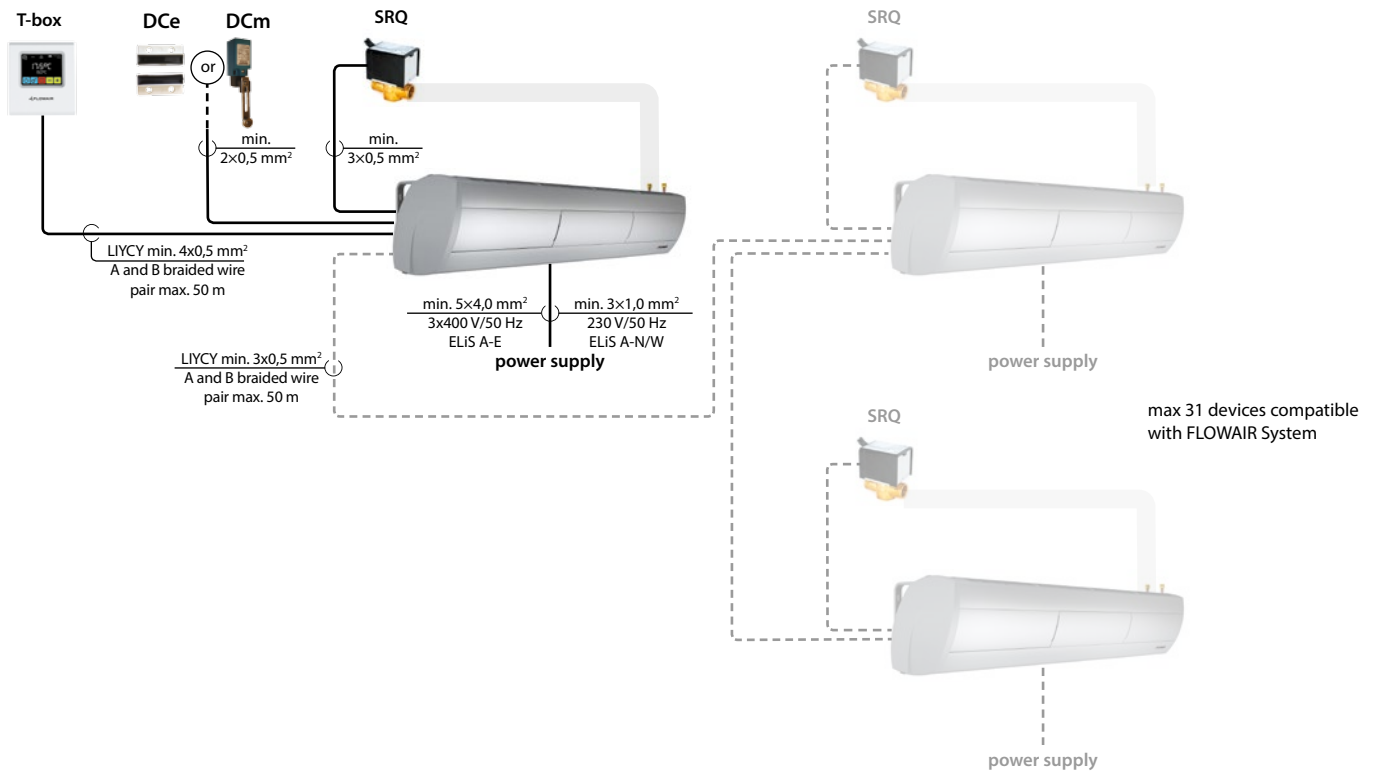
ELiS A air curtains

TS regulation



Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

ELiS A air curtains T-box regulation

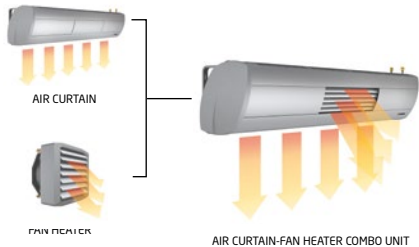


Indexes ELiS A control systems

Name	T-box	TS	DCm	DCe	SRQ2d-½	SRQ3d-½
Index	10799	10996	14207	14212	10803	10804

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Air curtains ELiS DUO



Air curtains ELiS DUO

Max. range ⁽¹⁾ [m]	2,5
Heating capacity ⁽²⁾ [kW]	15,5–29
Air flow [m³/h]	1200–3700
Weight [kg]	23,9–41,1
Colour	grey (RAL 9006) / white (RAL 9010)
Casing	steel, plastic

⁽¹⁾ Range of vertical isothermal air stream, at velocity limit above 2 m/s

⁽²⁾ For DUO-W at inlet/outlet water temperature 90/70°C, inlet air temperature 10°C



Application:

Buildings with high aesthetic values, wherever there is a need of heating the room and ensuring air barrier on door opening simultaneously, e.g. in small grocery stores, gas stations etc. ELiS DUO is an 2-in-1 unit, designed to operate indoors. Its main task is to protect door opening. Additionally, the auxiliary air stream enables to heat the room.

Available types of units:

Available in 2 lengths: 1 m or 2 m.

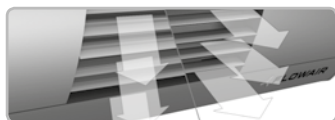
Available in 2 versions:

-  W – curtain with water heat exchanger
-  E – curtain with electric heaters

Indexes ELiS DUO grey/white

Name	DUO-W-100	DUO-W-200	DUO-E-100
Index	14000/14270	–/14243	14014/14272

Special attributes



ADJUSTABLE AIR STREAM

Air deflectors installed in the outlet of heater section enable to direct the warm air into the occupied area. Variable angle of defletors ensures to adjust the air barrier to the door opening plane.



QUIET FANS

Radial fans are housed in the casing made of light, durable and sound-absorbing material. They are characterized by quiet operation and low power consumption in relation to their efficiency.



BMS CONTROL SYSTEM

Advanced control system makes it possible to chain the units and to easy control them by the intelligent building management system (BMS) as well as by dedicated controllers.

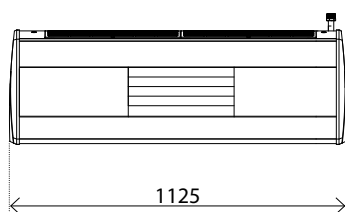


MODERN DESIGN

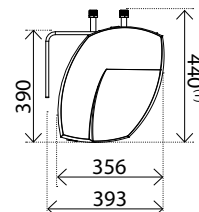
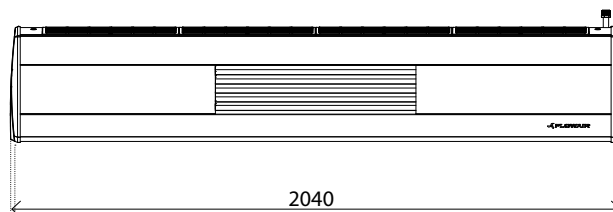
Modern design of the unit came into existence in cooperation with an experienced team of industrial designers.

Dimensions

DUO-/W/E-100



DUO-/W/E-200



⁽¹⁾ Concerns ELiS DUO-W

Technical data

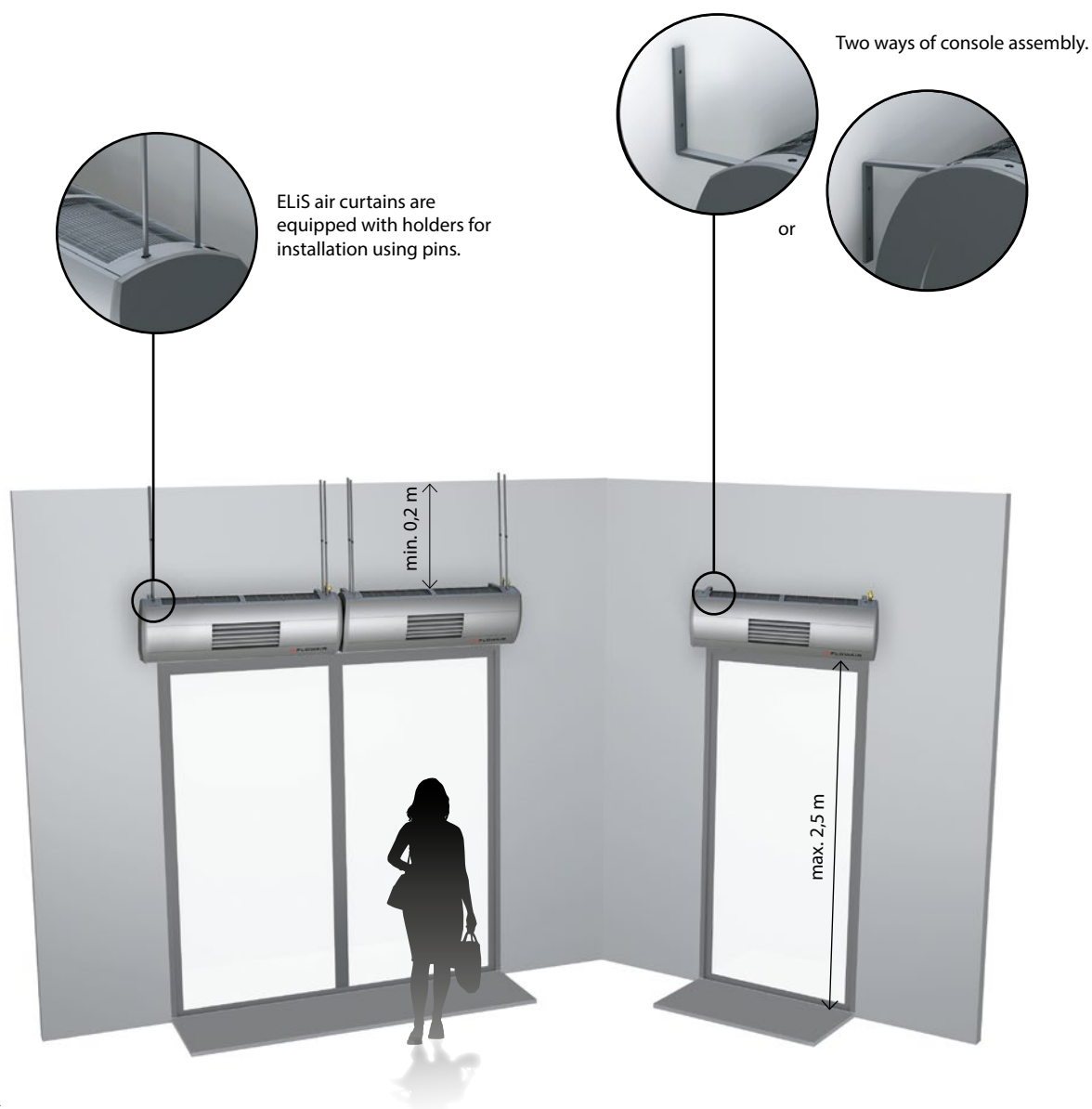
	ELIS DUO-W-100	ELIS DUO-E-100	ELIS DUO-W-200
Power supply [V/Hz]	230/50	3x400/50	230/50
Max. power supply [A]	1,1	14,7	1,85
Max. power consumption [kW]	0,25	10,1	0,43
IP		21	
Max. air flow stream of air curtain [m ³ /h]	1400		3000
Max. air flow stream of fan heater [m ³ /h]		700	
Acoustic pressure level ⁽¹⁾ [dB(A)]	46		49
Max. air steam range of air curtain ⁽²⁾ [m]	2,5		2,5
Max. air steam range of fan heater ⁽³⁾ [m]		8	
Weight of unit [kg]	23,9	28,5	41,1

⁽¹⁾ Acoustic pressure level measured for optimum installation height, on second step of efficiency, in the room with medium capability of sound absorption, capacity 500 m³, at distance of 3 m from the unit

⁽²⁾ Range of vertical isothermal air stream, at velocity limit above 2 m/s

⁽³⁾ Range of horizontal isothermal air stream, at 0,5 m/s velocity limit

Installation



Indexes brackets

Name	brackets ELIS
Index	14250

Heating capacities

ELiS DUO-W-100										
Air curtain part					Fan heater part					
Tp1 °C	V m³/h	PT kW	Qw l/h	Δpw kPa	Tp2 °C	V m³/h	PT kW	Qw l/h	Δpw kPa	Tp2 °C
Tw1/Tw2 = 90/70°C										
0	800/1100/1400	12,1/14,9/17,2	max. 1141	max. 12,8	42/37/34	400/550/700	6,1/7,4/8,6	max. 1141	max. 12,8	42/37/34
5		11,2/13,7/15,9			44/40/37		5,6/6,9/8,0			44/40/37
10		10,3/12,6/14,7			47/43/40		5,2/6,3/7,3			47/43/40
15		9,4/11,6/13,4			49/46/43		4,7/5,8/6,7			49/46/43
20		8,6/10,5/12,2			52/48/46		4,3/5,3/6,1			52/48/46
Tw1/Tw2 = 80/60°C										
0	800/1100/1400	10,4/12,8/14,8	max. 976	max. 9,9	36/32/29	400/550/700	5,2/6,4/7,4	max. 976	max. 9,9	36/32/29
5		9,5/11,7/14,8			38/35/32		4,8/6,4/6,8			38/35/32
10		8,6/10,6/12,3			41/38/35		4,3/5,3/6,1			41/38/35
15		7,8/9,5/11,1			43/40/38		3,9/4,8/5,5			43/40/38
20		6,9/8,5/9,8			46/43/41		3,4/4,2/4,9			46/43/41
Tw1/Tw2 = 70/50°C										
0	800/1100/1400	8,7/10,7/12,4	max. 811	max. 7,3	30/27/24	400/550/700	4,3/5,3/6,2	max. 811	max. 7,3	30/27/24
5		7,8/9,6/11,1			32/30/27		3,9/4,8/5,6			32/30/27
10		6,9/8,5/9,9			35/32/30		3,5/4,3/4,9			35/32/30
15		6,1/7,5/8,7			37/35/33		3/3,7/4,3			37/35/33
20		5,2/6,4/7,5			39/37/36		2,6/3,2/3,7			39/37/36
Tw1/Tw2 = 60/40°C										
0	800/1100/1400	7,0/8,5/9,9	max. 646	max. 5,0	24/21/20	400/550/700	3,5/4,3/4,9	max. 646	max. 5,0	24/21/20
5		6,1/7,5/8,6			26/24/22		3,0/3,7/4,3			26/24/22
10		5,2/6,4/7,4			29/27/25		2,6/3,2/3,7			29/27/25
15		4,3/5,3/6,2			31/29/28		2,2/2,7/3,1			31/29/28
20		3,5/4,3/5,0			33/32/31		1,7/2,1/2,5			33/32/31

ELiS DUO-W-200										
Air curtain part					Fan heater part					
Tp1 °C	V m³/h	PT kW	Qw l/h	Δpw kPa	Tp2 °C	V m³/h	PT kW	Qw l/h	Δpw kPa	Tp2 °C
Tw1/Tw2 = 90/70°C										
0	1700/2250/3000	19/23/26,6	max. 1465	max. 18,9	34/30/27	400/550/700	4,7/5,8/6,6	max. 1465	max. 18,9	34/30/27
5		17,8/21,1/24,9			36/33/30		4,4/5,3/6,2			36/33/30
10		16,6/19,7/23,2			39/36/33		4,1/4,9/5,8			39/36/33
15		15,4/18,2/21,5			42/39/36		3,8/4,6/5,4			42/39/36
20		14,2/16,8/19,8			45/42/40		3,5/4,2/5,0			45/42/40
Tw1/Tw2 = 80/60°C										
0	1700/2250/3000	16,3/19,4/22,8	max.1252	max.14,5	29/26/23	400/550/700	4,1/4,8/5,7	max.1252	max.14,5	29/26/23
5		15,1/17,9/21,1			32/29/26		3,8/4,5/5,3			32/29/26
10		13,8/16,5/19,7			34/32/29		3,5/4,1/4,9			34/32/29
15		12,6/15/17,7			37/35/33		3,2/3,8/4,4			37/35/33
20		11,2/13,6/16			40/38/36		2,8/3,4/4,0			40/38/36
Tw1/Tw2 = 70/50°C										
0	1700/2250/3000	13,6/16,2/19	max. 1039	max. 10,6	24/21/19	400/550/700	3,4/4/4,7	max. 1039	max. 10,6	24/21/19
5		12,3/14,6/17,3			27/24/22		3,1/3,7/4,3			27/24/22
10		11,1/13,2/15,6			30/27/26		2,8/3,3/3,9			30/27/26
15		9,8/11,8/13,8			32/30/29		2,5/2,9/3,5			32/30/29
20		8,6/10,3/12,1			35/33/32		2,2/2,6/3,0			35/33/32
Tw1/Tw2 = 60/40°C										
0	1700/2250/3000	10,8/12,9/15,1	max. 826	max. 7,2	19/17/15	400/550/700	2,7/3,2/3,8	max. 826	max. 7,2	19/17/15
5		9,6/11,4/13,4			22/20/19		2,4/2,9/3,4			22/20/19
10		8,4/9,9/11,7			25/23/22		2,1/2,5/2,9			25/23/22
15		7,1/8,4/9,9			27/26/25		1,8/2,1/2,5			27/26/25
20		5,8/6,9/8,2			30/29/28		1,4/1,7/2			30/29/28

To obtain operating parameters concerning other water temperatures, please contact 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 – water stream flow in the heat exchanger

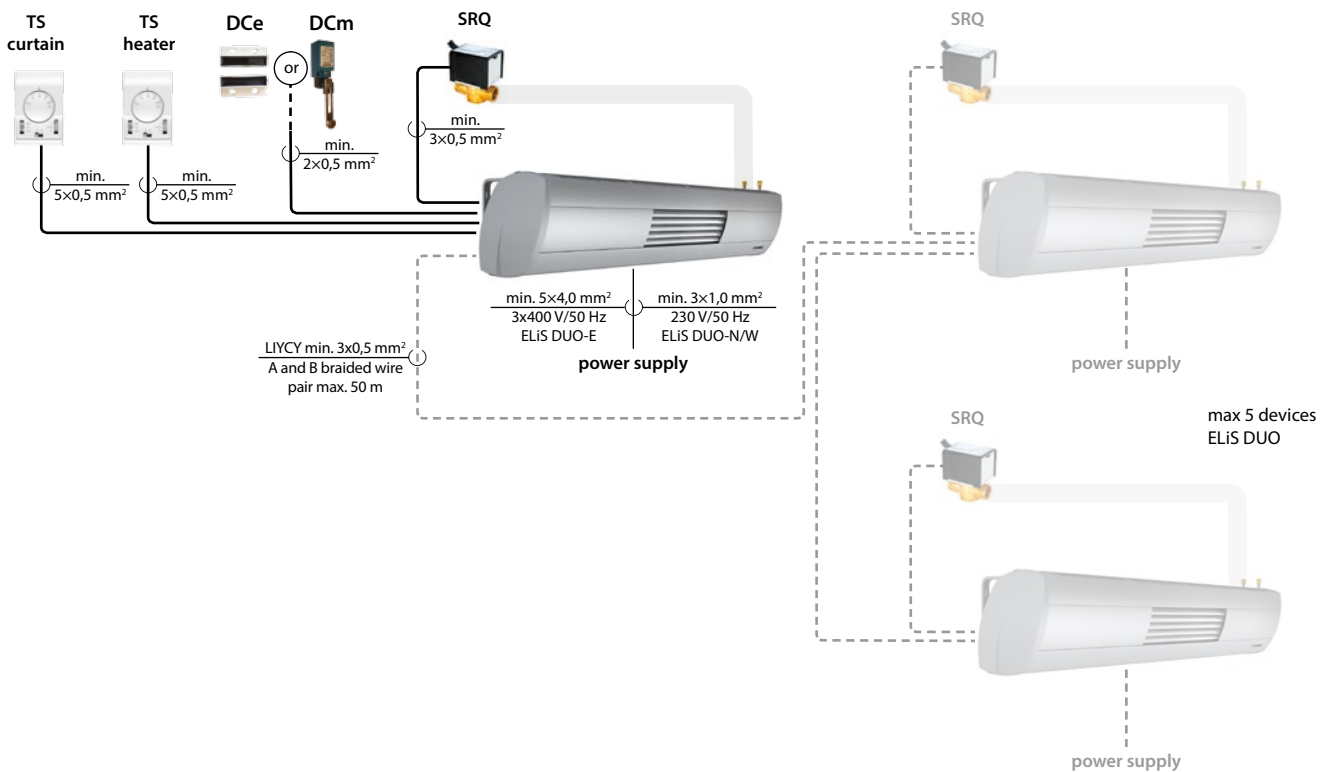
Δpw – water pressure drop in the heat exchanger

ELiS DUO-E-100									
	Curtain section			Heater section			Curtain-heater combo unit		
	1 step	2 step	3 step	1 step	2 step	3 step	1 step	2 step	3 step
Power supply [V/Hz]	3x400/50								
Rated current of unit ⁽¹⁾ [A]	9,1	9,4	9,9	4,2	4,5	4,8	13,3	13,9	14,7
Heating capacity ⁽¹⁾ [kW]	6,3	6,5	6,8	2,9	3,1	3,3	9,2	9,6	10,1
Air temperature rise for curtain (ΔT) ⁽¹⁾ [°C]	23	21	20	23	21	20	23	21	20

⁽¹⁾ At inlet air temperature 10°C

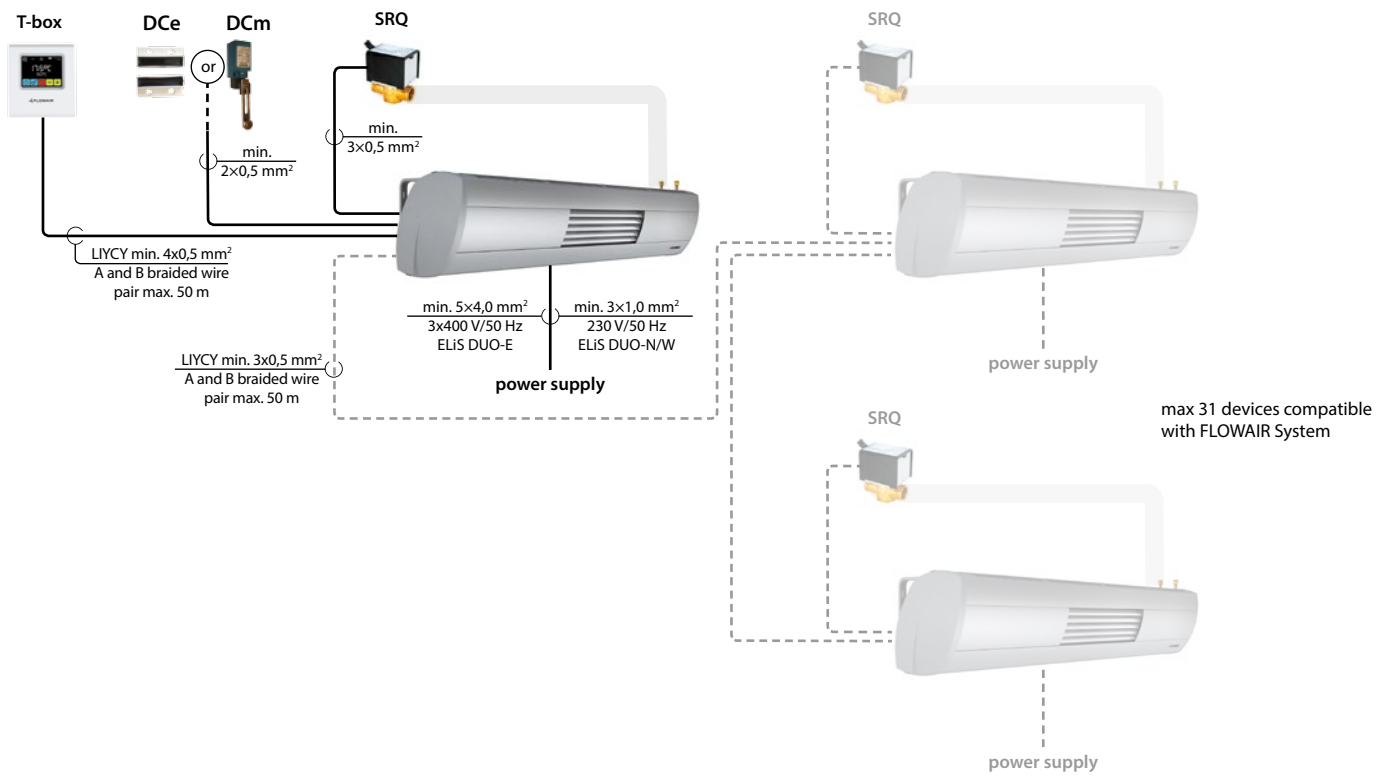
	TS regulation	T-box regulation
	 3-step fan speed regulator with thermostat	 Intelligent controller with touch screen
Controlling options		
Manual 3-step air flow regulation	✓	✓
Controlling options		
Heating / Ventilation	✓	✓
Operation depending on door contact and temperature	✓	✓
Weekly programmer		✓
BMS	✓	✓
Switch-off delay		✓
Idle speed mode		✓
Integration with FLOWAIR System		✓
Max. number of connected units		
Via controller	5	31
Via 1 splitter RX	n/a	n/a
Via 2 splitters RX	n/a	n/a
Via 3 splitters RX	n/a	n/a
Type of fan		
AC – standard 3-step fan	✓	✓

ELIS DUO air curtain-fan heater combo unit TS regulation



Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

ELiS DUO air curtain-fan heater combo unit T-box regulation



Indexes ELiS DUO control systems

Name	T-box	TS	DCm	DCE	SRQ2d-½	SRQ3d-½
Index	10799	10996	14207	14212	10803	10804

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Air curtains ELiS G



Air curtains ELiS G

Max. range ⁽¹⁾ [m]	7,5
Heating capacity ⁽²⁾ [kW]	29,5–33,1
Air flow [m ³ /h]	6200–8600
Weight [kg]	43–67
Colour	silver-graphite
Casing	steel, plastic

⁽¹⁾ Range of vertical isothermal air stream, at velocity limit above 3 m/s

⁽²⁾ At inlet/outlet water temperature 90/70°C, inlet air temperature 10°C




Application:

Industrial buildings like: warehouses, logistics centers etc. ELiS G units are designed for vertical as well as horizontal installation in relation to the gate opening.

Dostępne typy urządzeń:

Available types of units: 1,5 m or 2 m.

Available in 3 versions:

-  N – curtain without heat exchanger (ambient)
-  W – curtain with water heat exchanger
-  E – curtain with electric heaters

Indexes ELiS G1-N

Name	G1-N-150	G1-N-200
Index	14220	14221

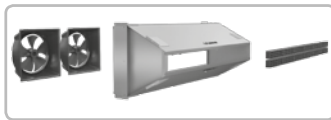
Indexes ELiS G1-W

Name	G1-W-150	G1-W-200
Index	14224	14225

Indexes ELiS G1-E

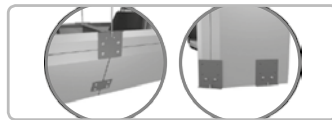
Name	G1-E-150	G1-E-200
Index	14226	14227

Special attributes



CASING OF THE UNIT

Made of galvanized steel and plastic elements.



INSTALLATION HOLDERS AS STANDARD

Curtains have installation elements as standard equipment.



HIGHLY-EFFICIENT FANS

The curtain comes with highly-efficient 3-step axial fans, with protection degree IP54.

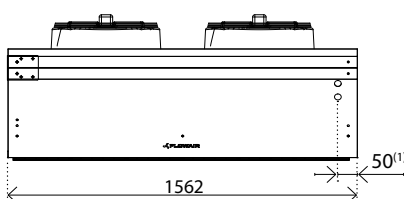


BMS CONTROL SYSTEM

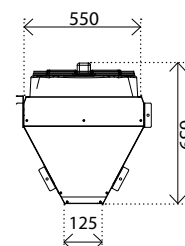
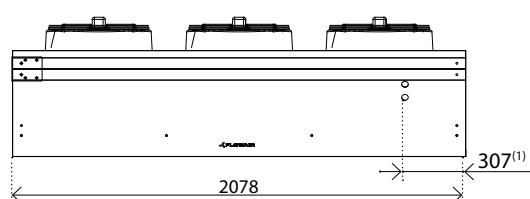
Curtains are equipped with simple power and control system with possibility of optional connection to BMS.

Dimensions

G1-150



G1-200



⁽¹⁾ Concerns ELiS G-W

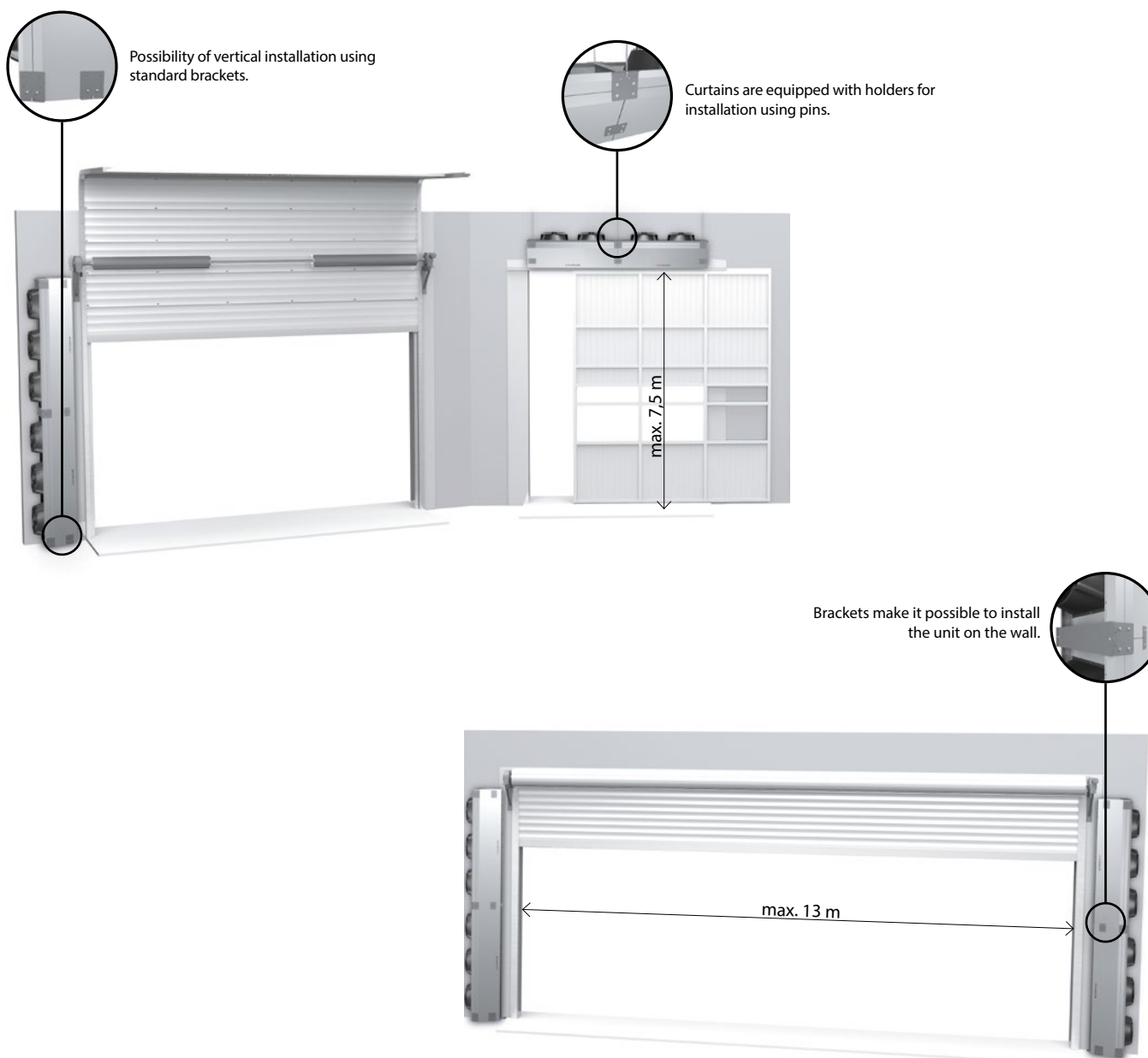
Technical data

	G1-N-150	G1-W-150	G1-E-150	G1-N-200	G1-W-200	G1-E-200
Power supply [V/Hz]	230/50		3x400/50	230/50		3x400/50
Max. current consumption [A]	2,8		17,0	4,2		29
Max. power consumption [kW]	0,64		12,0	0,96		20
IP	54			54		
Max. air flow stream of air curtain [m ³ /h]	6500	6200	6300	8600	8100	8200
Max. acoustic pressure level ⁽¹⁾ [dB(A)]	54			56		
Max. air stream range ⁽²⁾ [m]	7,5	7	7	7,5	7	7
Weight of unit [kg]	43	47,4	49,8	58	62	67

⁽¹⁾ Acoustic pressure level measured for optimum installation height, on second step of efficiency, in the room with medium capability of sound absorption, capacity 500 m³, at distance of 3 m from the unit

⁽²⁾ Range of vertical isothermal air stream, at velocity limit above 3 m/s

Installation



Heating capacities

ELiS G 150																
Tp1	PT	Qw	Δpw	Tp2	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	kW	l/h	kPa	°C
V = 4000 m³/h (1st step)																
	Tw1/Tw2 = 90/70°C				Tw1/Tw2 = 80/60°C				Tw1/Tw2 = 70/50°C				Tw1/Tw2 = 60/40°C			
0	27,0	1190	5	19,0	23,2	1020	5	16,0	19,5	850	4	13,5	15,7	680	4	11,0
5	25,0	1100	6	22,5	21,2	930	5	20,0	17,5	770	3	17,5	13,7	600	3	14,5
10	22,9	1010	5	26,5	19,2	850	4	24,0	15,6	680	4	21,0	11,8	520	2	18,5
15	21,0	920	4	30,5	17,3	760	5	27,5	13,6	600	3	22,5	10,0	430	4	22,5
20	19,0	840	4	34,0	15,4	680	4	31,5	11,8	520	2	29,0	8,1	350	3	26,0
V = 5100 m³/h (2nd step)																
	Tw1/Tw2 = 90/70°C				Tw1/Tw2 = 80/60°C				Tw1/Tw2 = 70/50°C				Tw1/Tw2 = 60/40°C			
0	31,2	1370	7	17,0	26,8	1180	5	14,5	22,4	980	5	12,0	18,0	790	3	10,0
5	28,8	1270	6	21,0	24,5	1070	6	18,5	20,1	880	4	16,0	15,8	690	4	14,0
10	26,4	1170	5	25,0	22,2	970	5	22,5	17,9	780	3	20,0	13,6	590	3	17,5
15	24,1	1060	6	29,0	19,9	880	4	26,5	15,7	690	4	24,0	11,4	500	2	21,5
20	21,9	960	5	33,0	17,7	780	3	30,5	13,5	590	3	28,0	9,3	410	3	25,5
V = 6200 m³/h (3rd step)																
	Tw1/Tw2 = 90/70°C				Tw1/Tw2 = 80/60°C				Tw1/Tw2 = 70/50°C				Tw1/Tw2 = 60/40°C			
0	34,8	1530	9	15,5	29,9	1310	7	13,5	25,0	1090	6	11,0	20,1	880	4	9,0
5	32,1	1420	8	19,5	27,3	1200	6	17,5	22,4	980	5	15,5	17,6	770	3	13,0
10	29,5	1300	6	23,5	24,8	1090	6	21,5	20,0	870	4	19,5	15,1	660	4	17,0
15	27,0	1190	5	28,0	22,2	980	5	25,5	17,5	770	3	23,5	12,7	550	3	21,0
20	24,5	1080	6	32,0	19,8	870	4	29,5	15,1	660	4	27,5	10,4	450	4	25,0

ELiS G 200																
Tp1	PT	Qw	Δpw	Tp2	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	kW	l/h	kPa	°C
V = 5100 m³/h (1st step)																
	Tw1/Tw2 = 90/70°C				Tw1/Tw2 = 80/60°C				Tw1/Tw2 = 70/50°C				Tw1/Tw2 = 60/40°C			
0	29,3	1290	6	17,5	25,3	1110	6	15,5	21,1	920	5	13,0	17,0	740	5	10,5
5	27,1	1190	5	21,5	23,0	1010	5	19,0	19,0	830	4	16,5	14,9	650	4	14,0
10	24,9	1100	6	25,5	20,9	920	4	23,0	16,9	740	5	20,5	12,8	560	3	18,0
15	22,7	1000	5	29,5	18,8	820	4	27,0	14,8	650	4	24,5	10,8	470	4	22,0
20	20,6	910	4	33,5	16,7	730	5	31,0	12,8	560	3	28,5	8,8	380	3	25,5
V = 6200 m³/h (2nd step)																
	Tw1/Tw2 = 90/70°C				Tw1/Tw2 = 80/60°C				Tw1/Tw2 = 70/50°C				Tw1/Tw2 = 60/40°C			
0	33,2	1460	8	16,0	28,5	1250	6	14,0	23,9	1040	6	11,5	19,2	840	4	9,4
5	30,6	1350	7	20,0	26,0	1140	5	18,0	21,4	940	5	15,5	16,8	730	5	13,5
10	28,2	1240	6	24,5	23,6	1040	6	22,0	19,0	830	4	19,5	14,5	630	4	17,5
15	25,7	1130	5	28,0	21,2	930	5	26,0	16,7	730	5	23,5	12,1	530	3	21,5
20	23,3	1030	5	32,0	18,9	830	4	30,0	14,4	630	4	27,5	9,9	430	4	25,0
V = 8100 m³/h (3rd step)																
	Tw1/Tw2 = 90/70°C				Tw1/Tw2 = 80/60°C				Tw1/Tw2 = 70/50°C				Tw1/Tw2 = 60/40°C			
0	38,9	1720	9	14,5	33,5	1470	8	12,0	28,0	1220	6	10,0	22,4	980	5	8,0
5	36,0	1580	7	18,5	30,5	1340	7	16,5	25,1	1100	6	14,5	19,6	860	4	12,5
10	33,1	1460	8	22,5	27,7	1220	6	20,5	22,3	980	5	18,5	16,9	740	5	16,5
15	30,2	1330	7	26,5	24,9	1090	6	24,5	19,6	860	4	22,5	14,2	620	3	20,5
20	27,4	1210	6	31,0	22,1	970	5	28,5	16,9	740	5	26,5	11,6	500	2	24,5



To obtain operating parameters concerning other water temperatures or air curtains with more heating capacity, please contact Sales Office.

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

	G1-E-150			G1-E-200		
	1 st step	2 nd step	3 rd step	1 st step	2 nd step	3 rd step
Power supply [V/Hz]	3x400/50					
Rated current ⁽¹⁾ [A]	13	15	17	23	26	29
Heating capacity ⁽¹⁾ [kW]	9,0	10,5	12,0	16,5	18,5	20,0
Air temperature rise ΔT ⁽¹⁾ [°C]	12	9	7	12	9	7

⁽¹⁾ At inlet air temperature 10°C

Control systems

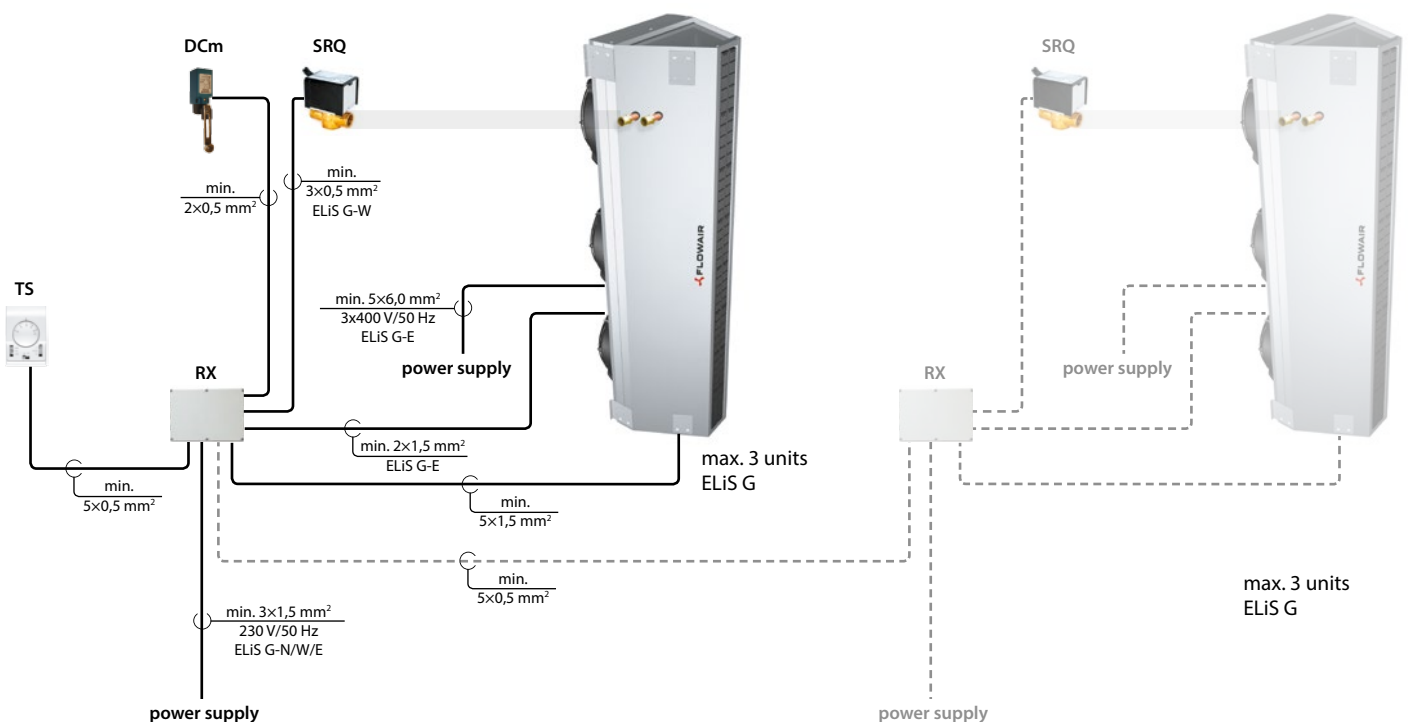
	TS regulation	T-box regulation
	 3-step fan speed regulator with thermostat	 Intelligent controller with touch screen
Controlling options		
Manual 3-step air flow regulation	✓	✓
Controlling options		
Heating / Ventilation	✓	✓
Operation depending on door contact and temperature	✓	✓
Weekly programmer		✓
BMS		✓
Switch-off delay		✓
Idle speed mode		✓
Integration with FLOWAIR System		✓
Max. number of connected units		
Via controller	1	31
Via 1 splitter RX	3	n/a
Via 2 splitters RX	6	n/a
Via 3 splitters RX	9	n/a
Type of fan		
AC – standard 3-step fan	✓	✓

Control systems

ELIS G gate curtains

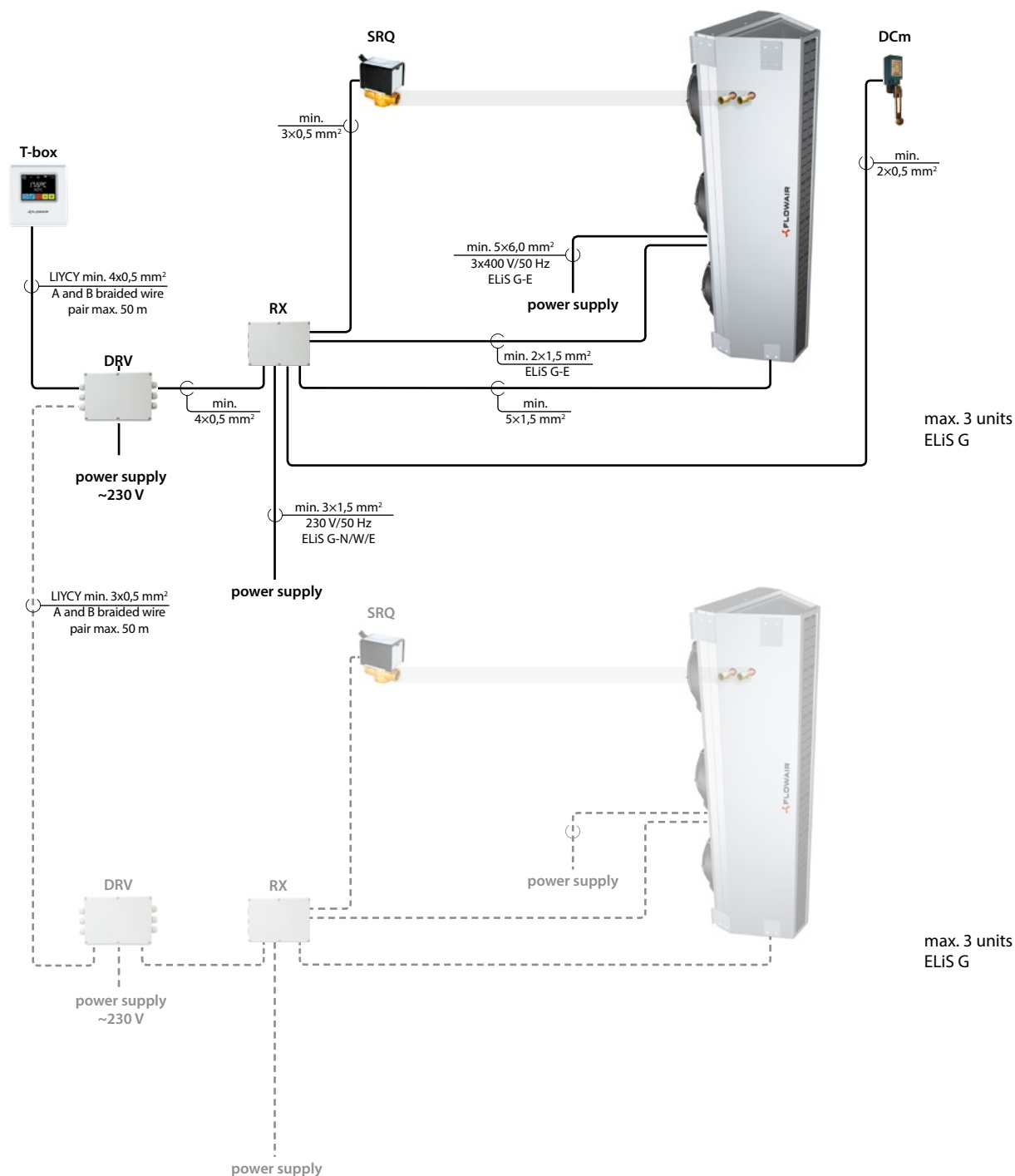
TS regulation

Curtain control is provided by the overriding controller – DCm door contact. In addition, it is possible to connect a valve to the system, which shuts-off the water supply.



Control systems

ELiS G gate curtains T-box regulation



Indexes ELiS G control system

Name	TS	T-box	RX	DCm	SRQ2d-¾	SRQ3d-¾	DRV ELiS
Index	10996	10799	11779	14207	10788	10805	90541

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.

Ductless ventilation with heat recovery



Ventilation unit OXeN



Ventilation unit OXeN

Air flow [m ³ /h]	150–1200
Heat recovery efficiency [%]	up to 78,9
Weight [kg]	67,2–73,4
Casing	EPP (expanded polypropylene)
Colour	grey

Application:

Medium cubature buildings, where fresh air supply is demanded and where air duct installation is unjustified, e.g. gas stations, stores, workshops, warehouses, sports halls etc.

Available types of units:

- N** X2-N-1.2-V – unit without additional air heating, for installation on the wall,
- +** X2-W-1.2-V – unit with air heating by water heater, for installation on the wall,
- N** X2-N-1.2-H – unit without additional air heating, for installation under the ceiling,
- +** X2-W-1.2-H – unit with air heating by water heater, for installation under the ceiling.

OXeN ventilation unit is:

- the easiest way to create a mechanical ventilation system with heat recovery,
- a ductless ventilation system, which allow significant reduction of investment costs,
- a highly-efficient heat recovery system, which reduces operation costs.

Indexes OXeN

Name	X2-N-1.2-V	X2-W-1.2-V	X2-N-1.2-H	X2-W-1.2-H
Index	30018	30019	30035	30032

Special attributes



X²-FLOW

High efficiency of heat recovery was achieved thanks to use of two cross heat exchangers. They are made of aluminium, and are highly-resistant to corrosion.



MULTI-FAN TECHNOLOGY

Two sections of diagonal fans, each section consisting of 3 fans, ensure regular distribution of air stream on entire surface of the heat exchanger, silent operation and lower power consumption.



ECODESIGN

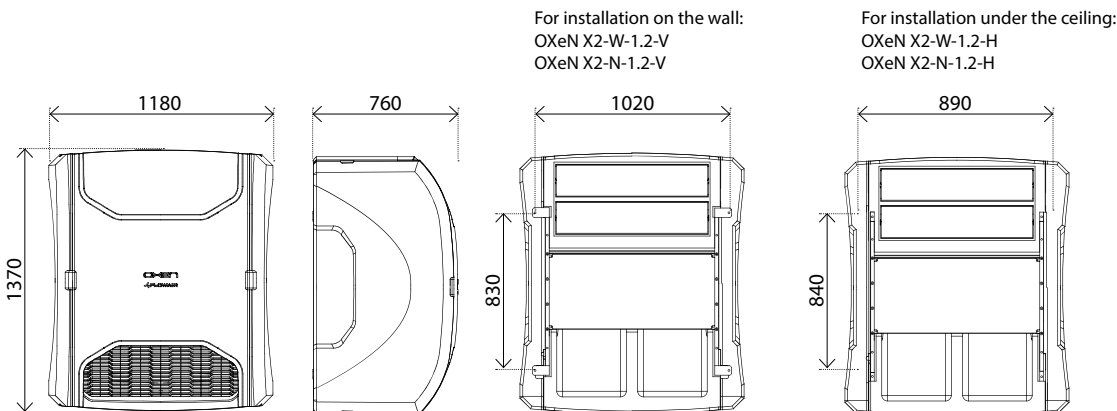
OXeN ventilation unit meets all of the requirements for minimum efficiency of heat recovery and ecodesign of ventilation systems contained in the EU Commission Regulation No. 1253/2014 of 7 July 2014 on the implementation of the Directive of The European Parliament and Council No. 2009/125/EC.



AWARDED SOLUTIONS

Oxen ventilation unit has been recognized as a model of complex designing by the chapters of most prestigious competitions in the world of design. Experts praised the project for the quality, innovation and ergonomics.

Dimensions



Technical data

	X2-W-1.2-V	X2-N-1.2-V	X2-W-1.2-H	X2-N-1.2-H
Max. air flow stream inlet/outlet ⁽¹⁾ [m ³ /h]	1200			
Air stream range ⁽²⁾ [m]	15			
Acoustic pressure level ⁽³⁾ [dB(A)]	49			
Power supply [VAC/Hz]	230/50			
Max. current consumption [A]	1,9			
Max. power consumption [W]	420			
Weight of unit [kg]	69,6	67,2	72,6	70,2
Weight of unit filled with water [kg]	70,4	–	73,4	–
Operating temperature [°C]	5–45			
IP	42			
Filter class	EU4			
Thermal efficiency dry/wet ⁽⁴⁾ [%]	68,4 / 78,9			

⁽¹⁾ Air flow during operation with EU4 filter and OxS air inlet

⁽²⁾ Range of horizontal isothermal air stream, at 0,2 m/s velocity limit

⁽³⁾ Acoustic pressure level at the distance of 5 m from the unit, in the room of medium capability of sound absorption and 500 m³ of cubature

⁽⁴⁾ According to directive 2009/125/EC measured with balanced mass flow, an indoor-outdoor dry air temperature difference of 20 K

Parameters of water heat exchanger

Tp1	PT	Qw	Δpw	Tp2	PT	Qw	Δpw	Tp2	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	kW	l/h	kPa	°C	kW	l/h	kPa	°C				
Tw1/Tw2 = 90/70°C					Tw1/Tw2 = 80/60°C					Tw1/Tw2 = 70/50°C					Tw1/Tw2 = 60/40°C					Tw1/Tw2 = 50/30°C				
-5	13,3	587	12,1	28	11,6	507	9,6	24	9,8	429	7,3	19	8,0	350	5,3	15	6,2	270	3,5	10				
0	12,5	552	10,9	31	10,8	473	8,5	27	9,0	394	6,3	22	7,2	315	4,4	18	5,4	235	2,7	13				
5	11,7	518	9,7	34	10,0	438	7,4	30	8,2	359	5,3	25	6,4	280	3,6	21	4,6	199	2,0	16				
10	10,9	483	8,5	37	9,2	404	6,4	33	7,4	324	4,4	28	5,6	244	2,8	24	3,7	161	1,4	19				
15	10,2	449	7,5	40	8,4	369	5,4	35	6,6	289	3,6	31	4,8	208	2,1	27	2,8	122	0,9	22				
20	9,4	414	6,5	43	7,6	334	4,5	38	5,8	253	2,9	34	3,9	171	1,5	30	1,3	56	0,2	23				

V – air flow

PT – heating capacity

Tp1 – inlet air temperature

Tp2 – outlet air temperature

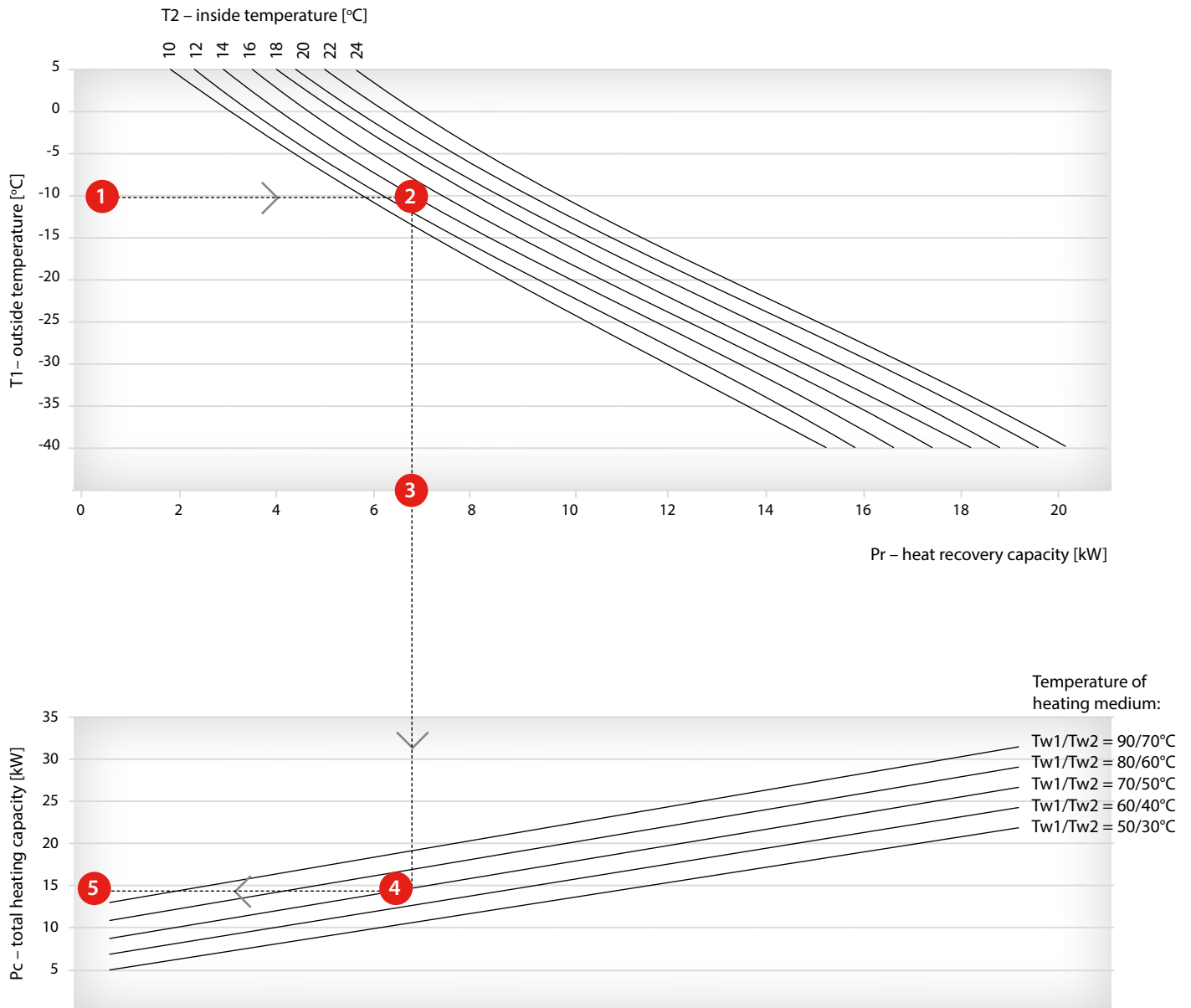
Tw1 – inlet water temperature

Tw2 – outlet water temperature

Qw – water stream flow in the heat exchanger

Δpw – water pressure drop in the heat exchanger

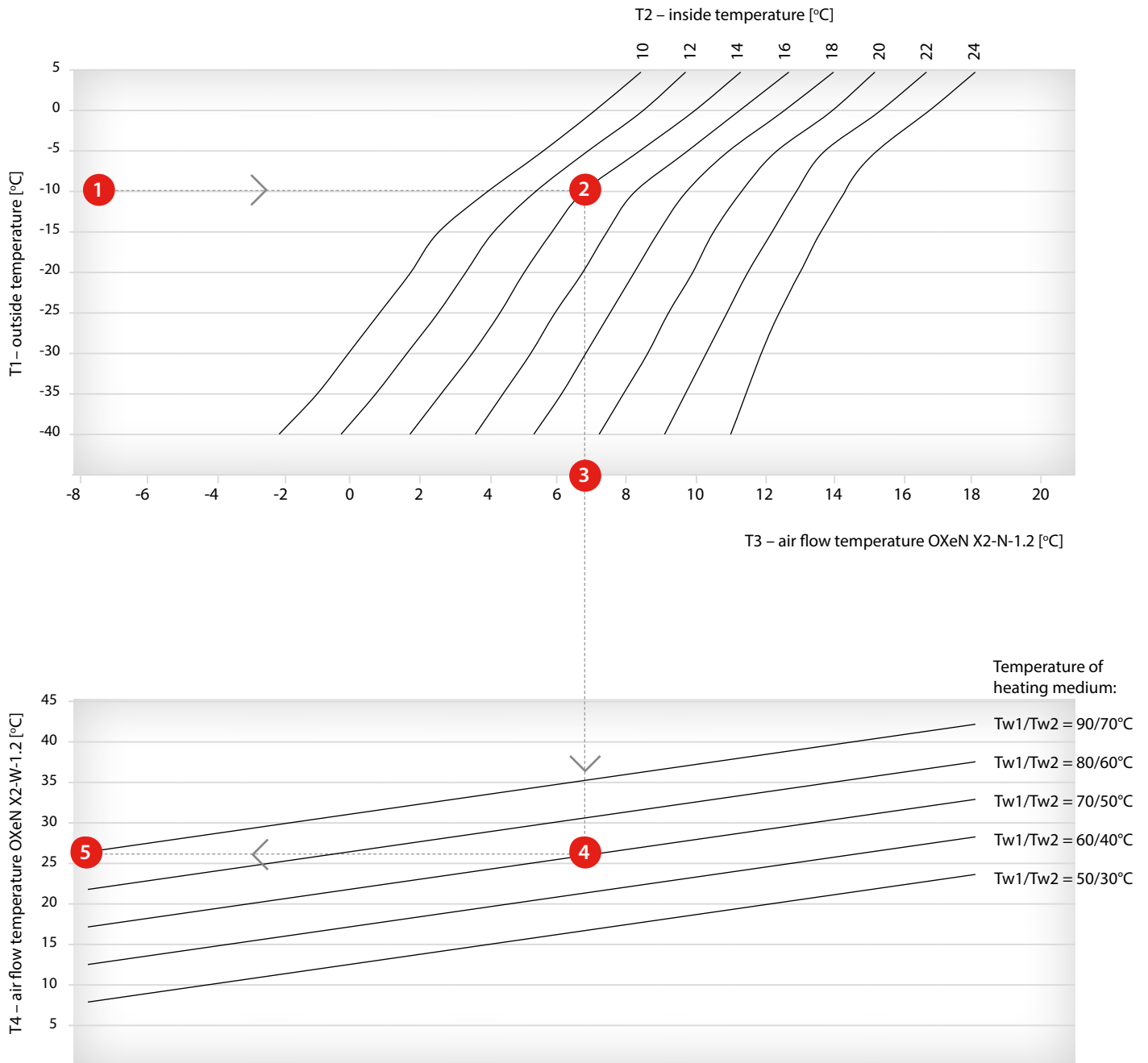
Nomogram of heating capacity – for max. air flow 1200 m³/h



1. Specify outside temperature
2. Specify inside temperature
3. Read the capacity of heat recovery Pr (total heating capacity of OXeN without water heat exchanger X2-N-1.2)
4. Specify heating medium temperature
5. Read the total heating capacity Pc (for OXeN with water heat exchanger X2-W-1.2)

Air parameters: supplied air RH 90%, removed air RH 30%, air flow 1200 m³/h

Nomogram of air flow temperature – for max. air flow 1200 m³/h

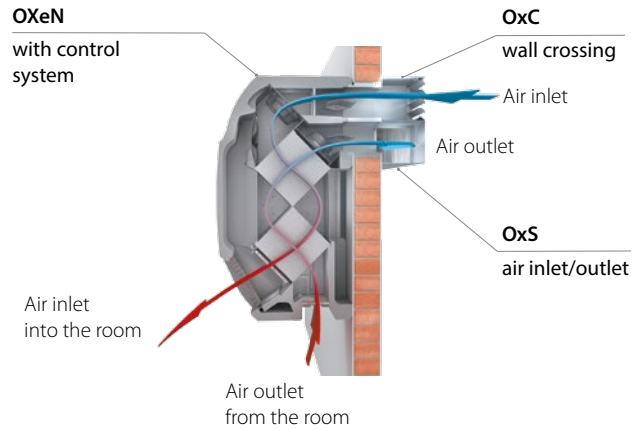
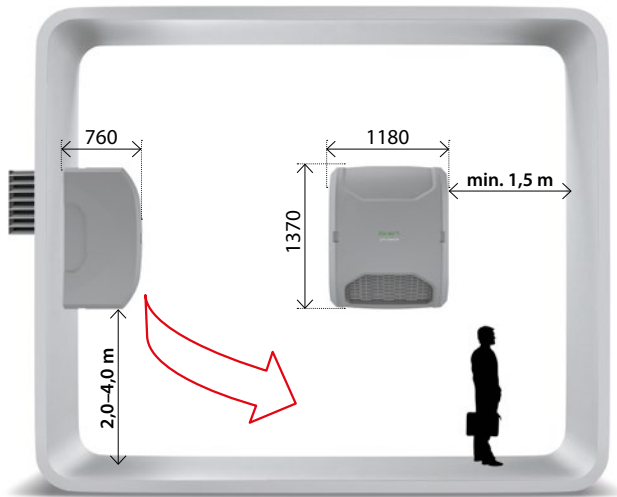


1. Specify outside temperature
2. Specify inside temperature
3. Read the air flow temperature for OXeN without water heat exchanger
4. Specify heating medium temperature
5. Read the air flow temperature for OXeN with water heat exchanger

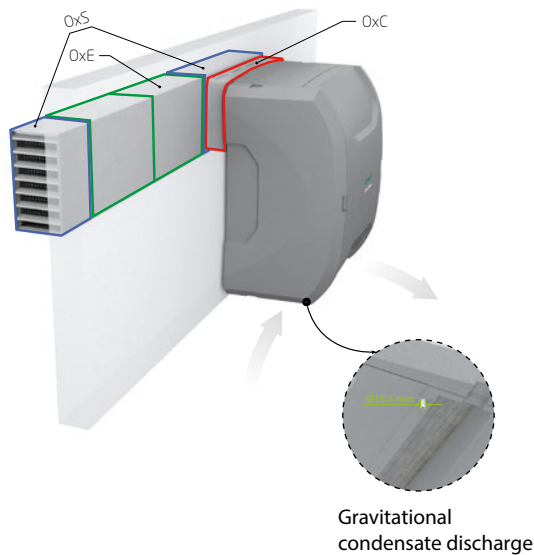
Air parameters: supplied air RH 90%, removed air RH 30%, air flow 1200 m³/h

Installation on the wall

Installation options

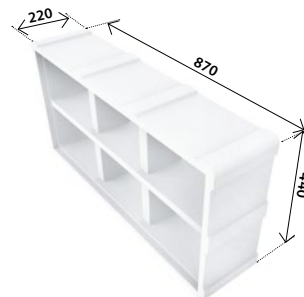


Elements for installation



OxC – wall crossing, element connecting unit with OXS air inlet/outlet
 Material: EPS
 Weight: 0,7 kg
 Index: 30022 (1 pc. in set)

Max. wall thickness for single OXS is 190 mm; for thicker walls use several OXS elements.

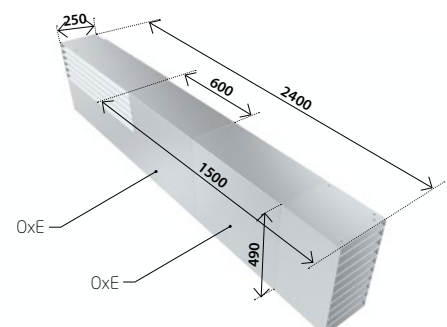
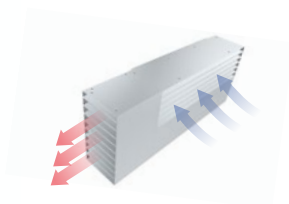
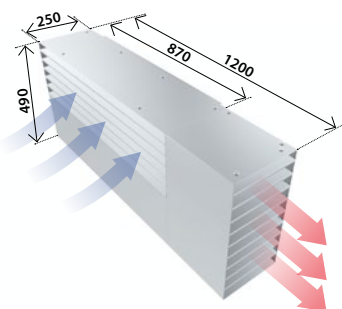


OXS – wall-mounted air inlet/outlet
 Material: galvanized steel
 Weight: 18,4 kg
 Index: 30020

Possibility to install the air outlet on the left or on the right side.

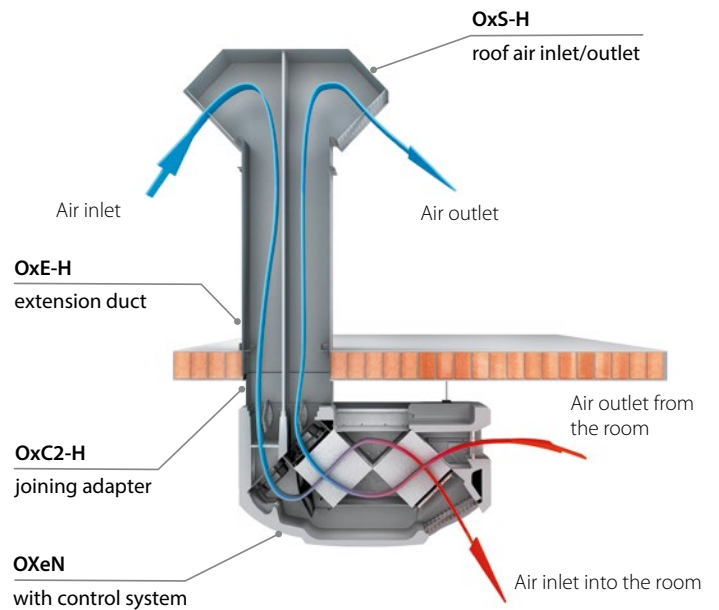
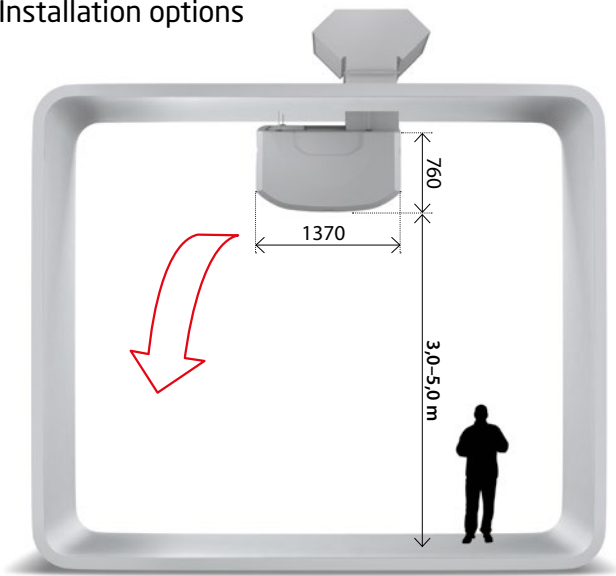
OxE – extension duct – air outlet
 Material: galvanized steel
 Weight: 6,1 kg
 Index: 30021

In order to maintain the 1,5m distance between air inlet and outlet, use two OxE elements. Max. 5 OxE elements can be connected together.

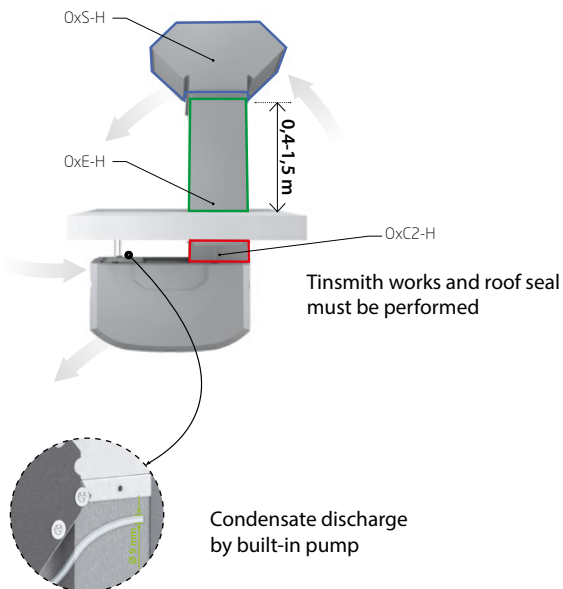


Installation under the ceiling

Installation options



Elements for installation

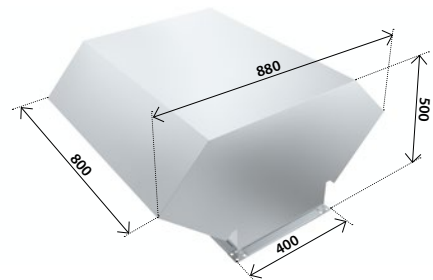


OxS-H – roof-mounted air inlet/outlet

Material: galvanized steel

Weight: 14,8 kg

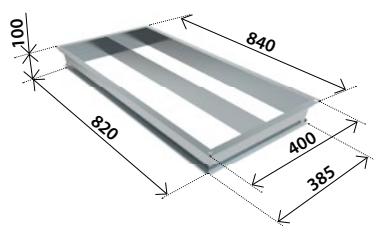
Index: 30034



OxC2-H – Adapter, joins the unit with OxE-H extension duct (1 pc. in set)

Material: galvanized steel

Weight: 3,5 kg



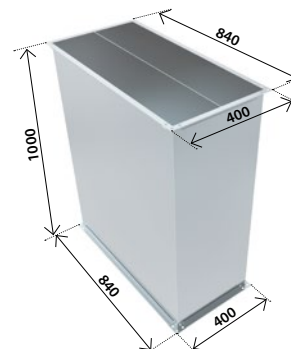
OxE-H – extension duct

Material: galvanized steel

Weight: 19,0 kg

Index: 30036

Max. 5 OxE-H elements can be connected together.

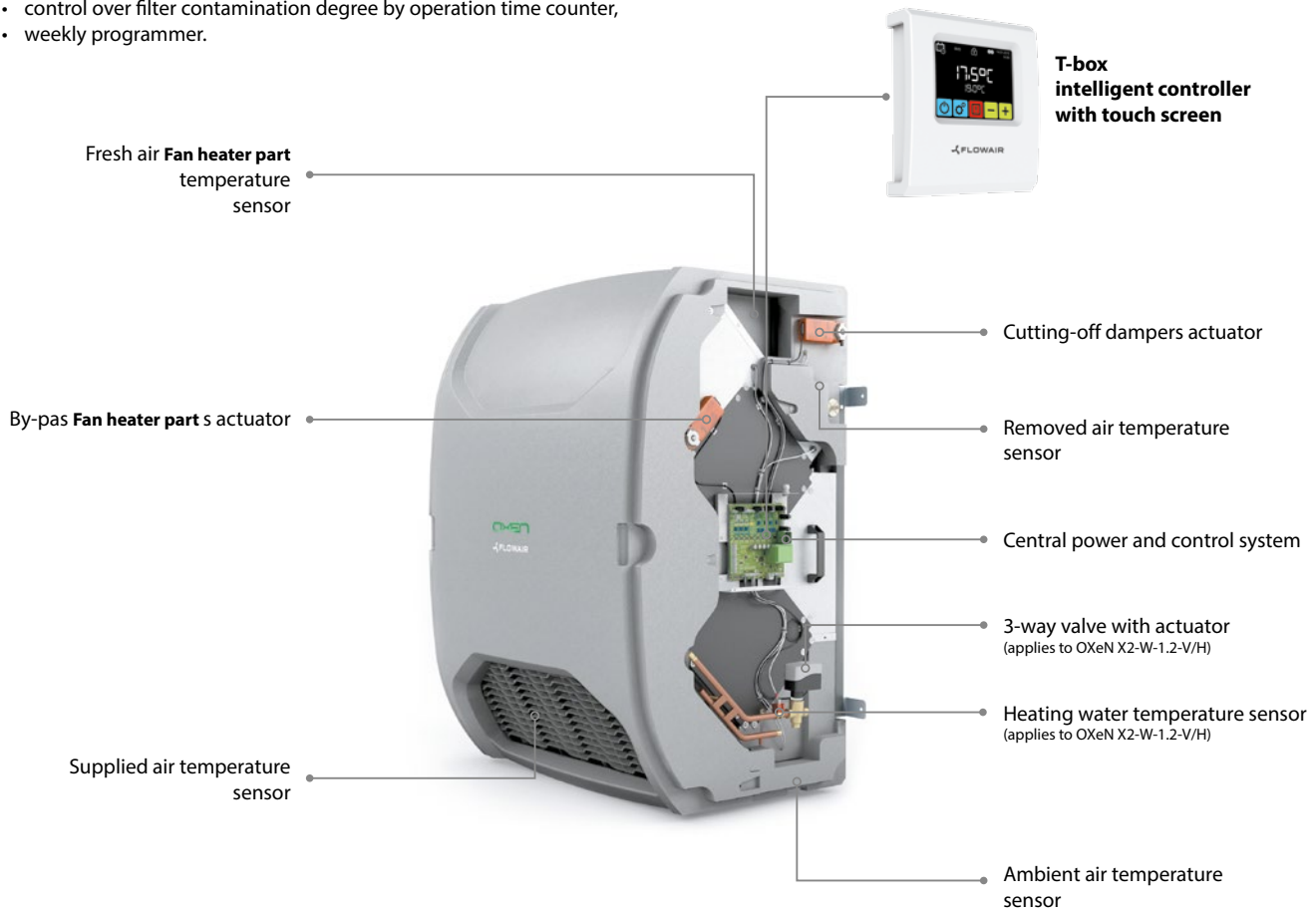


Control systems

Unit is equipped with a complete control and protection system. Control of operation parameters is performed by the T-box controller.

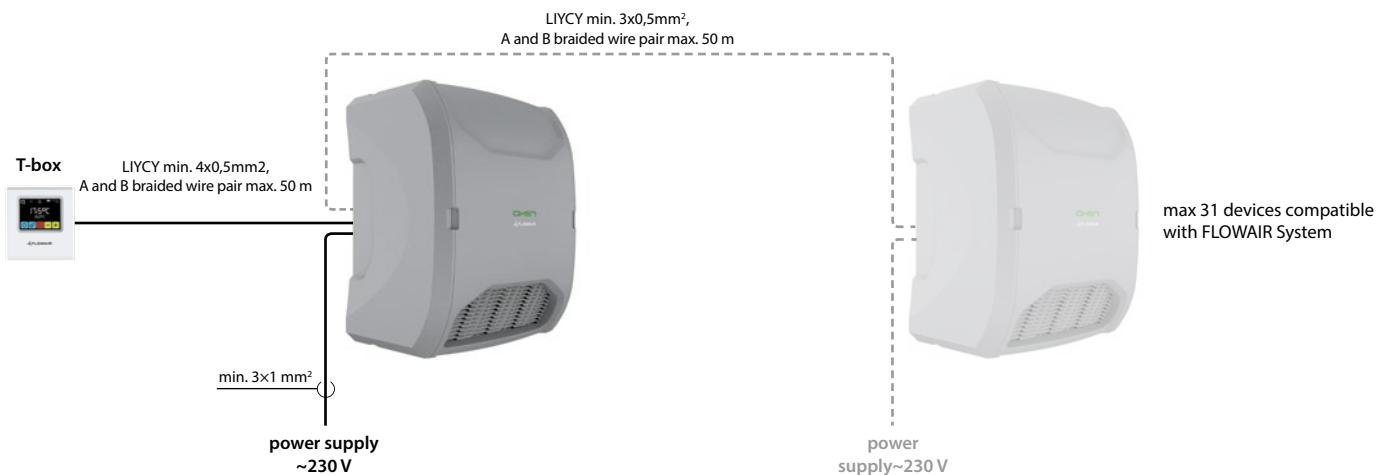
Basic functions:

- stepless regulation of air flow,
- maintaining steady temperature of air supplied into the room,
- operation mode without heat recovery – by-pass,
- control over filter contamination degree by operation time counter,
- weekly programmer.



OXeN ventilation unit

T-box regulation



Indexes OXeN

Name	T-box
Index	10799

Accurate diagrams of electrical connections are presented in documentation available on the website www.flowair.com.



CONTACT

Our knowledgeable and qualified sales consultants will help you to choose the best type and quantity of units to best match the unique requirements of the building.

DISTRIBUTOR

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