

# Gate air curtains

## ELiS G

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## General characteristic



Gate air curtain ELiS G	
Max. range <sup>(1)</sup> [m]	7,5
Heating capacity <sup>(2)</sup> [kW]	22,9–33,1
Wydajność [m <sup>3</sup> /h]	4000–8600
Weight [kg]	43–67
Materials	steel + plastic
Colour	silver-graphite <sup>(3)</sup>

<sup>(1)</sup> Vertical range of isothermal stream, at velocity limit above 3 m/s

<sup>(2)</sup> At inlet air temperature 10°C and water temperature 90/70°C

<sup>(3)</sup> On request unit is available also in other colours

ELiS G air curtains are a highly-efficient industrial units, which reduce heat losses associated with air exchange between room and environment. Additionally, they successfully protect the room against insects and dust.

Casing made of galvanized steel and plastic elements. Adjustable air outlet  $\pm 10^\circ$  enables to set the right angle of the air stream. Curtains can be combined into larger groups and installed in horizontal or vertical position.

ELiS G air curtains:

- are available in 2 lengths: 1,5 m or 2 m
- are available in 3 versions:
  - Ⓐ – without heating elements (ambient) (N)
  - ⊕ – with water heat exchanger (W)
  - ⚡ – with electric heaters (E)
- are designed for horizontal as well as for vertical installation



ELiS G1-N/W/E-150



ELiS G1-N/W/E-200

### DESIGNATION OF ELiS G AIR CURTAINS

**G1-W-150**

1 2 3

- 1 | G1 – ELiS G, range of air curtain 7-7,5 m
- 2 | N – curtain without heat exchanger (ambient)  
W – curtain with water heat exchanger  
E – curtain with electric heaters
- 3 | 150/200 – length of air outlet



### CASING OF THE UNIT

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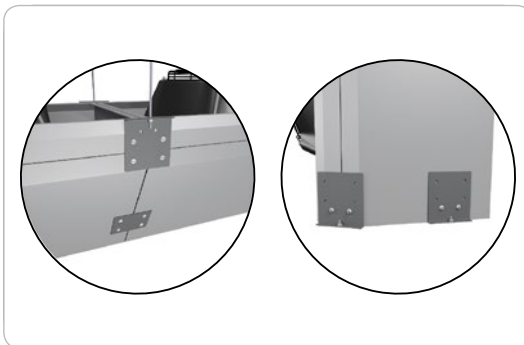
Made of galvanized steel and plastic elements.



### WIDE RANGE OF UNITS

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Air curtains with water heat exchanger, electric heaters and without heating elements (ambient) available in two dimensions 1,5 and 2 m.



### INSTALLATION HOLDERS AS STANDARD

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Curtains have installation elements as standard equipment.



### HIGHLY-EFFICIENT FANS

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



### BMS CONTROL SYSTEM

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

## Dimensions

G1-N/W/E-150



G1-N/W/E-200



## Technical data

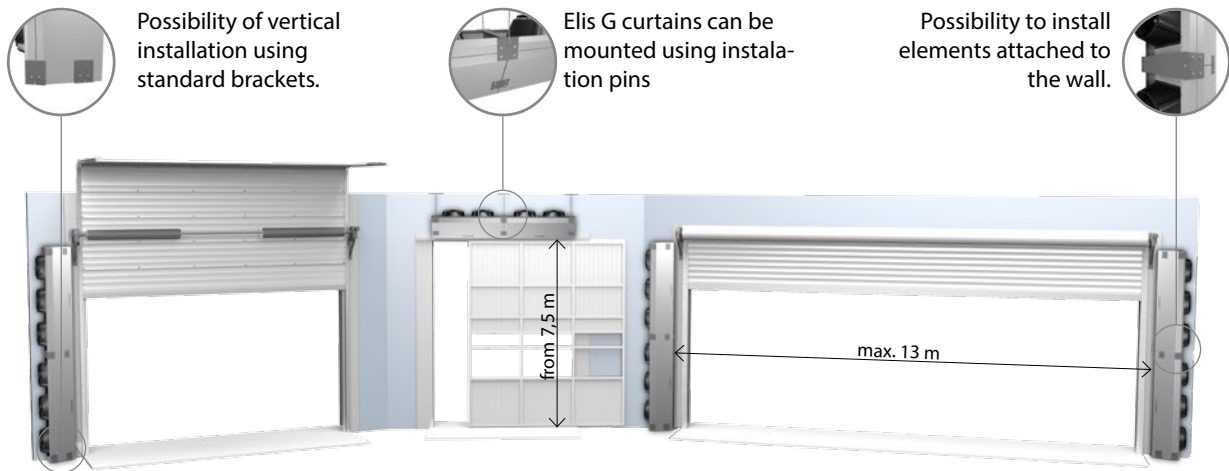
	G1-W/N/E-150			G1-W/N/E-200		
	1 <sup>st</sup> step	2 <sup>nd</sup> step	3 <sup>rd</sup> step	1 <sup>st</sup> step	2 <sup>nd</sup> step	3 <sup>rd</sup> step
Fan	2 x axial, 3-step, single phase, AC			3 x axial, 3-step, single phase, AC		
Power supply of fans [V/Hz]	230/50					
Max. current consumption of fans [A]	2,0	2,6	2,8	3,0	3,9	4,2
Power consumption of fans [kW]	0,4	0,52	0,64	0,6	0,78	0,96
IP	54			54		
Max. acoustic pressure level <sup>(1)</sup> [dB(A)]	49	54	60	51	56	62
	G1-W-150			G1-W-200		
	1 <sup>st</sup> step	2 <sup>nd</sup> step	3 <sup>rd</sup> step	1 <sup>st</sup> step	2 <sup>nd</sup> step	3 <sup>rd</sup> step
Heat source	Cu-Al, one row					
Air flow stream of curtain [m <sup>3</sup> /h]	4000	5100	6200	5100	6200	8100
Range of air stream <sup>(2)</sup> [m]	3,5	5,0	7,0	3,5	5,0	7,0
Power of electric heaters (heating capacity) [kW]	22,9	26,4	29,5	24,9	28,2	33,1
Air temperature rise for curtain (ΔT) <sup>(3)</sup> [°C]	16,5	15,0	13,5	15,5	14,5	12,5
Max. water pressure [MPa]	1,6					
Max. water temperature [°C]	130					
Connection ["]	¾"					
Weight of unit [kg]	47,4			62,0		
Weight of unit filled with water [kg]	49,7			64,3		
	G1-E-150			G1-E-200		
	1 <sup>st</sup> step	2 <sup>nd</sup> step	3 <sup>rd</sup> step	1 <sup>st</sup> step	2 <sup>nd</sup> step	3 <sup>rd</sup> step
Heat source	6 x PTC heating board			9 x PTC heating board		
Air flow stream of curtain [m <sup>3</sup> /h]	4100	5200	6300	5200	6300	8200
Range of air stream <sup>(2)</sup> [m]	3,5	5,0	7,0	3,5	5,0	7,0
Power of electric heaters (heating capacity) [kW]	9,0	10,5	12,0	16,5	18,5	20,0
Air temperature rise for curtain (ΔT) <sup>(3)</sup> [°C]	12	9	7	12	9	7
Power supply [V/Hz]	3x400 / 50					
Rated current [A]	13	15	17	23	26	29
Weight of unit [kg]	49,8			67		
	G1-N-150			G1-N-200		
	1 <sup>st</sup> step	2 <sup>nd</sup> step	3 <sup>rd</sup> step	1 <sup>st</sup> step	2 <sup>nd</sup> step	3 <sup>rd</sup> step
Air flow stream of curtain [m <sup>3</sup> /h]	4300	5400	6500	5400	6500	8600
Range of air stream <sup>(2)</sup> [m]	4	5,5	7,5	4	5,5	7,5
Weight of unit [kg]	43			58		

<sup>(1)</sup> Acoustic pressure level measured in the room with average sound absorption, capacity 500 m<sup>3</sup>, at distance of 3 m from the unit

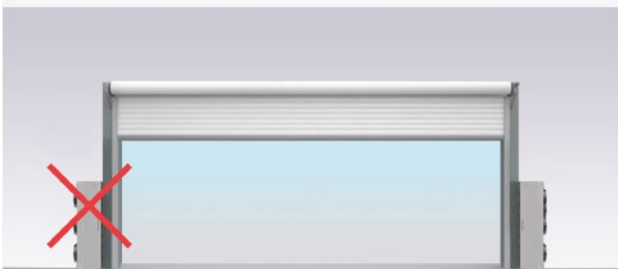
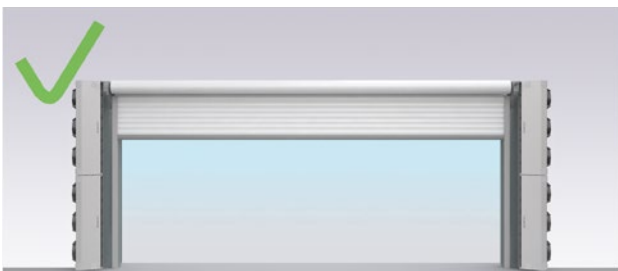
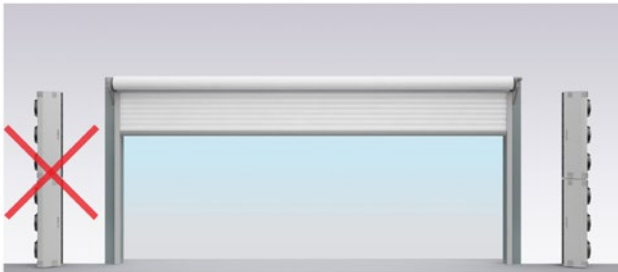
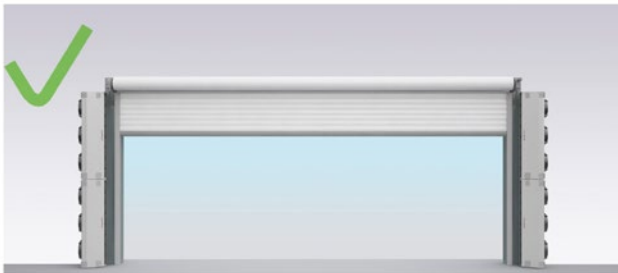
<sup>(2)</sup> Vertical range of isothermal stream, at velocity limit above 3 m/s

<sup>(3)</sup> For operation at 3<sup>rd</sup> step, at inlet air temperature 10°C, for G-W at inlet/outlet water temperature 90/70°C

## Installation





## Correct installation



The key to the correct operation of the unit is to ensure an effective air barrier protecting the entire entrance to the building. ELIS G curtains are adapted to chaining, so covering wider door openings is not a problem. Incorrect installation may result in heat losses during the winter and chill losses in the air-conditioned rooms during the summer.



## Control systems

	TS control	T-box control
		
<b>Controlling options</b>		
Manual 3-step air flow control	✓	✓
<b>Modes</b>		
Heating / Ventilation	✓	✓
Operation depending on door sensor and temperature	✓	✓
Weekly programmer		✓
BMS	✓	✓
Curtain switch off delay		✓
Idle speed mode		✓
Integration with FLOWAIR SYSTEM		✓
<b>Max. number of connected units</b>		
Via controller	1	31 <sup>(1)</sup>
<b>Type of controller</b>		
TS – 3-step fan speed controller with thermostat	✓	
T-box – intelligent controller with touch screen		✓
<b>Type of fan</b>		
AC – standard 3-step fan	✓	✓

<sup>(1)</sup> possibility to connect up to 31 units by RX splitters

### TS control



ELiS G air curtain is equipped with a control system, which enables the connection of:

- DCm/DCet mechanical door sensor (with additional relay)
- TS 3-step fan speed controller with thermostat.

Control system provides 2 operating modes:

- continuous mode – fan operation independent of temperature setting. Thermostat gives signal for heating.
- thermostatic mode – fan operation depending on thermostat setting.

#### CHAINING OF CURTAINS:

It is possible to connect one ELiS G air curtains to a single TS controller

### T-box control



ELiS G air curtains can be equipped with external control module DRV ELiS, which enables connection of:

- DCm/DCe door sensor,
- T-box intelligent controller with touch screen

Controller enables to choose 2 operating modes:

- Configuration 1 - curtain operation when overriding signal comes from door sensor as well as from T-box controller.
- Configuration 2 - curtain operation when overriding signal comes from door sensor, while T-box controller is responsible for fan speed regulation and heating engagement.

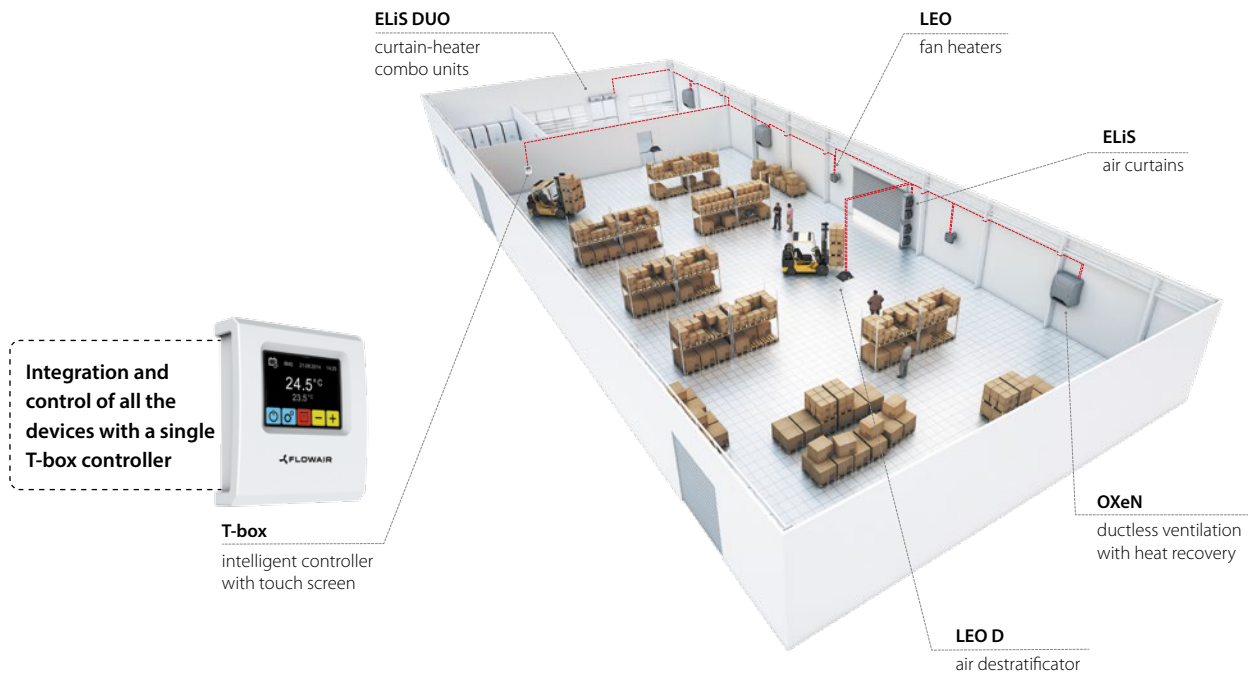
Additionally, for both configurations it is possible to select idle speed mode and switch-off delay time, as well as heating signal. It is also possible to graduate fan speed (3 steps of fan speed).

#### CHAINING OF CURTAINS:

Control system is adapted to chaining the curtains via RX splitter connected to DRV ELiS control module.



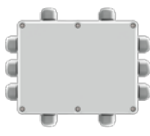
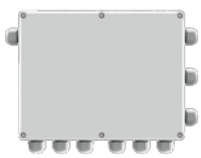



# FLOWAIR System

FLOWAIR SYSTEM is a complete offer of heating and ventilation devices integrated with one T-box controller enabling you to control all the units from one location.



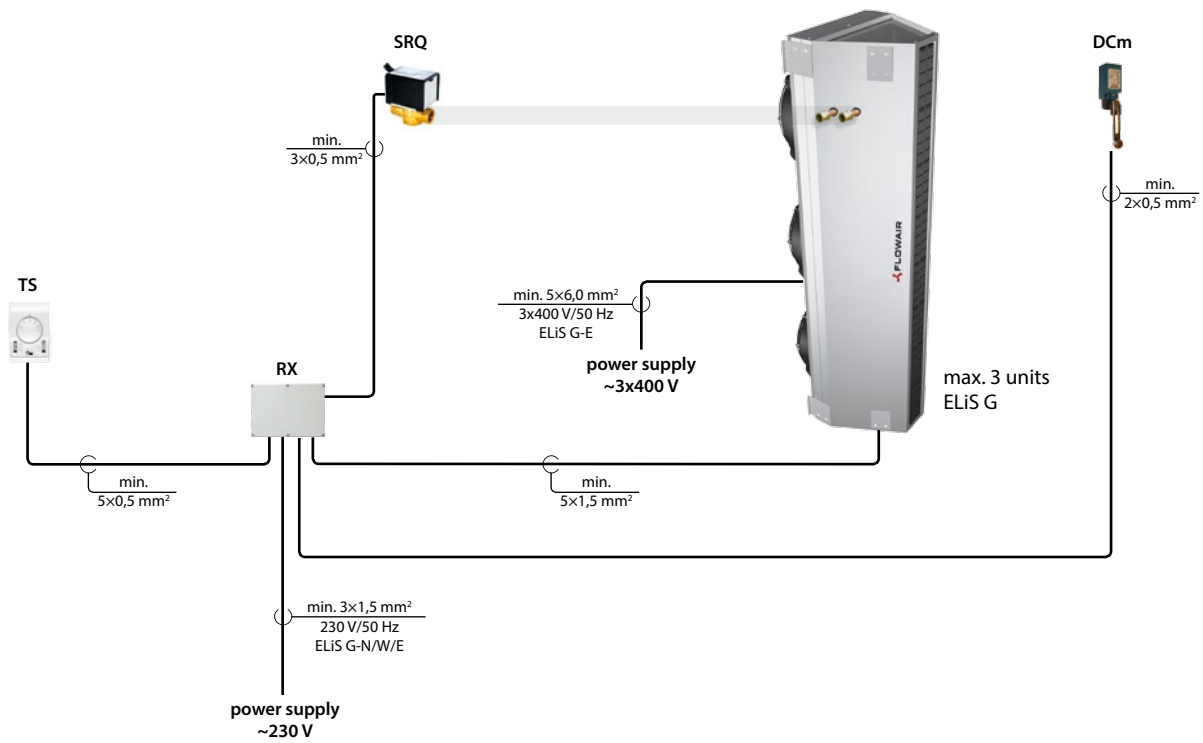


## Elements of control system

Category	Name	Picture	Description
Controller	TS 3-step fan speed controller with thermostat		Protection degree: IP30 Power supply:: 230V/50Hz Temperature adjustment range: +10 ... +30°C Operating temperature range: 0 ... +40°C Contacts load: 5 A Max. wire diameter: 1,5 mm <sup>2</sup>
	T-box intelligent controller with touch screen		Protection degree: IP 20 Power supply: 24 VDC Operating temperature range: -10 ... +60°C Temperature adjustment range: +5 ... +35°C
Control boards	DRVV Control module		Protection degree: IP 54 Power supply: 230V/50Hz Dimensions: 230x180x55 mm Operating temperature range: -10 ... +60 °C Max. wire diameter: 2,5 mm <sup>2</sup>
	RX signal splitter		Protection degree: IP 54 Power supply: 230V/50Hz Dimensions: 275x200x85 mm Operating temperature range: -10 ... +60°C Number of supported units: 3 Max. wire diameter: 2,5 mm <sup>2</sup>
Door sensor	DCm mechanical door sensor		Operating temperature range: -10 ... +80°C Protection degree: IP65 Material: plastic Length of connection wire: none Jumpers: 1xNC i 1xNO Contacts load: inductive 3 A, resistance 10 A Max. contacts voltage: 300 VAC or 250 VDC
Valves with actuator	SRQ2d two-way valve 3/4" with actuator		Protection degree: IP20 Power supply: 200–240 V 50/60 Hz Max. water temperature: +93°C Max. water pressure: 1,6 MPa Kvs: 6,5 m <sup>3</sup> /h Installation: on water outlet pipe Opening/closing time:18s/5s Dimensions (HxWxD): 108x86x66 mm
	SRQ3d three-way valve 3/4" with actuator		Protection degree: IP20 Power supply: 200–240 V 50/60 Hz Max. water temperature: +93°C Max. water pressure:2,0 MPa Kvs: 6,5 m <sup>3</sup> /h Installation: on water inlet pipe Opening/closing time: 18s/5s Dimensions (HxWxD): 118x86x66 mm

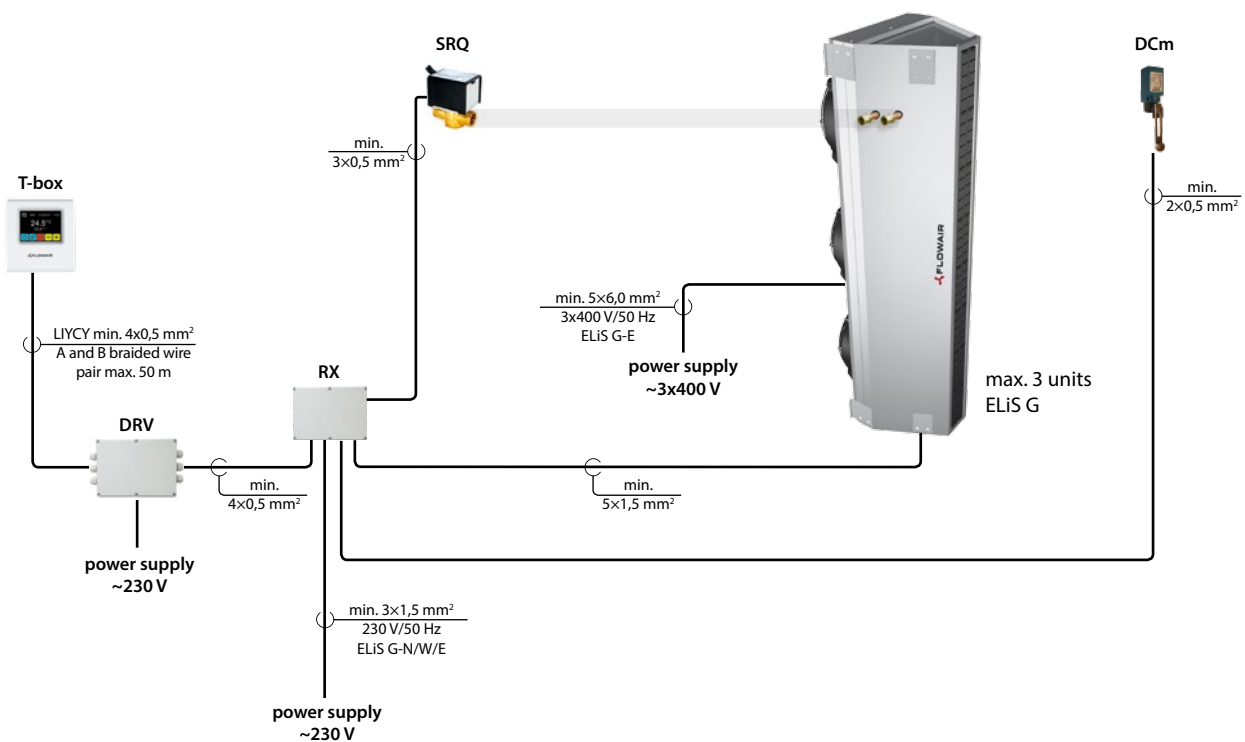
## Connection diagram

### TS control



## Connection diagram

### T-box control



## Heating capacities

### ELiS G with water heat exchanger

#### 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
<b>V = 4000 m<sup>3</sup>/h (1<sup>st</sup> step / 40%<sup>(1)</sup>)</b>																
	<b>Tw1/Tw2 = 90/70°C</b>				<b>Tw1/Tw2 = 80/60°C</b>				<b>Tw1/Tw2 = 70/50°C</b>				<b>Tw1/Tw2 = 60/40°C</b>			
<b>0</b>	27,0	1190	5	19,0	23,2	1020	5	16,0	19,5	850	4	13,5	15,7	680	4	11,0
<b>5</b>	25,0	1100	6	22,5	21,2	930	5	20,0	17,5	770	3	17,5	13,7	600	3	14,5
<b>10</b>	22,9	1010	5	26,5	19,2	850	4	24,0	15,6	680	4	21,0	11,8	520	2	18,5
<b>15</b>	21,0	920	4	30,5	17,3	760	5	27,5	13,6	600	3	22,5	10,0	430	4	22,5
<b>20</b>	19,0	840	4	34,0	15,4	680	4	31,5	11,8	520	2	29,0	8,1	350	3	26,0
<b>V = 5100 m<sup>3</sup>/h (2<sup>nd</sup> step / 60%<sup>(1)</sup>)</b>																
	<b>Tw1/Tw2 = 90/70°C</b>				<b>Tw1/Tw2 = 80/60°C</b>				<b>Tw1/Tw2 = 70/50°C</b>				<b>Tw1/Tw2 = 60/40°C</b>			
<b>0</b>	31,2	1370	7	17,0	26,8	1180	5	14,5	22,4	980	5	12,0	18,0	790	3	10,0
<b>5</b>	28,8	1270	6	21,0	24,5	1070	6	18,5	20,1	880	4	16,0	15,8	690	4	14,0
<b>10</b>	26,4	1170	5	25,0	22,2	970	5	22,5	17,9	780	3	20,0	13,6	590	3	17,5
<b>15</b>	24,1	1060	6	29,0	19,9	880	4	26,5	15,7	690	4	24,0	11,4	500	2	21,5
<b>20</b>	21,9	960	5	33,0	17,7	780	3	30,5	13,5	590	3	28,0	9,3	410	3	25,5
<b>V = 6200 m<sup>3</sup>/h (3<sup>rd</sup> step / 100%<sup>(1)</sup>)</b>																
	<b>Tw1/Tw2 = 90/70°C</b>				<b>Tw1/Tw2 = 80/60°C</b>				<b>Tw1/Tw2 = 70/50°C</b>				<b>Tw1/Tw2 = 60/40°C</b>			
<b>0</b>	34,8	1530	9	15,5	29,9	1310	7	13,5	25,0	1090	6	11,0	20,1	880	4	9,0
<b>5</b>	32,1	1420	8	19,5	27,3	1200	6	17,5	22,4	980	5	15,5	17,6	770	3	13,0
<b>10</b>	29,5	1300	6	23,5	24,8	1090	6	21,5	20,0	870	4	19,5	15,1	660	4	17,0
<b>15</b>	27,0	1190	5	28,0	22,2	980	5	25,5	17,5	770	3	23,5	12,7	550	3	21,0
<b>20</b>	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
<b>V = 5100 m<sup>3</sup>/h (1<sup>st</sup> step / 40%<sup>(1)</sup>)</b>																
	<b>Tw1/Tw2 = 90/70°C</b>				<b>Tw1/Tw2 = 80/60°C</b>				<b>Tw1/Tw2 = 70/50°C</b>				<b>Tw1/Tw2 = 60/40°C</b>			
<b>0</b>	29,3	1290	6	17,5	25,3	1110	6	15,5	21,1	920	5	13,0	17,0	740	5	10,5
<b>5</b>	27,1	1190	5	21,5	23,0	1010	5	19,0	19,0	830	4	16,5	14,9	650	4	14,0
<b>10</b>	24,9	1100	6	25,5	20,9	920	4	23,0	16,9	740	5	20,5	12,8	560	3	18,0
<b>15</b>	22,7	1000	5	29,5	18,8	820	4	27,0	14,8	650	4	24,5	10,8	470	4	22,0
<b>20</b>	20,6	910	4	33,5	16,7	730	5	31,0	12,8	560	3	28,5	8,8	380	3	25,5
<b>V = 6200 m<sup>3</sup>/h (2<sup>nd</sup> step / 60%<sup>(1)</sup>)</b>																
	<b>Tw1/Tw2 = 90/70°C</b>				<b>Tw1/Tw2 = 80/60°C</b>				<b>Tw1/Tw2 = 70/50°C</b>				<b>Tw1/Tw2 = 60/40°C</b>			
<b>0</b>	33,2	1460	8	16,0	28,5	1250	6	14,0	23,9	1040	6	11,5	19,2	840	4	9,4
<b>5</b>	30,6	1350	7	20,0	26,0	1140	5	18,0	21,4	940	5	15,5	16,8	730	5	13,5
<b>10</b>	28,2	1240	6	24,5	23,6	1040	6	22,0	19,0	830	4	19,5	14,5	630	4	17,5
<b>15</b>	25,7	1130	5	28,0	21,2	930	5	26,0	16,7	730	5	23,5	12,1	530	3	21,5
<b>20</b>	23,3	1030	5	32,0	18,9	830	4	30,0	14,4	630	4	27,5	9,9	430	4	25,0
<b>V = 8100 m<sup>3</sup>/h (3<sup>rd</sup> step / 100%<sup>(1)</sup>)</b>																
	<b>Tw1/Tw2 = 90/70°C</b>				<b>Tw1/Tw2 = 80/60°C</b>				<b>Tw1/Tw2 = 70/50°C</b>				<b>Tw1/Tw2 = 60/40°C</b>			
<b>0</b>	38,9	1720	9	14,5	33,5	1470	8	12,0	28,0	1220	6	10,0	22,4	980	5	8,0
<b>5</b>	36,0	1580	7	18,5	30,5	1340	7	16,5	25,1	1100	6	14,5	19,6	860	4	12,5
<b>10</b>	33,1	1460	8	22,5	27,7	1220	6	20,5	22,3	980	5	18,5	16,9	740	5	16,5
<b>15</b>	30,2	1330	7	26,5	24,9	1090	6	24,5	19,6	860	4	22,5	14,2	620	3	20,5
<b>20</b>	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, please contact Sales Office.

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

<sup>(1)</sup> percentage setting of T-box controller



## Heating capacities

### ELiS G with electric heaters

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

<sup>(1)</sup> At inlet air temperature 18°C

