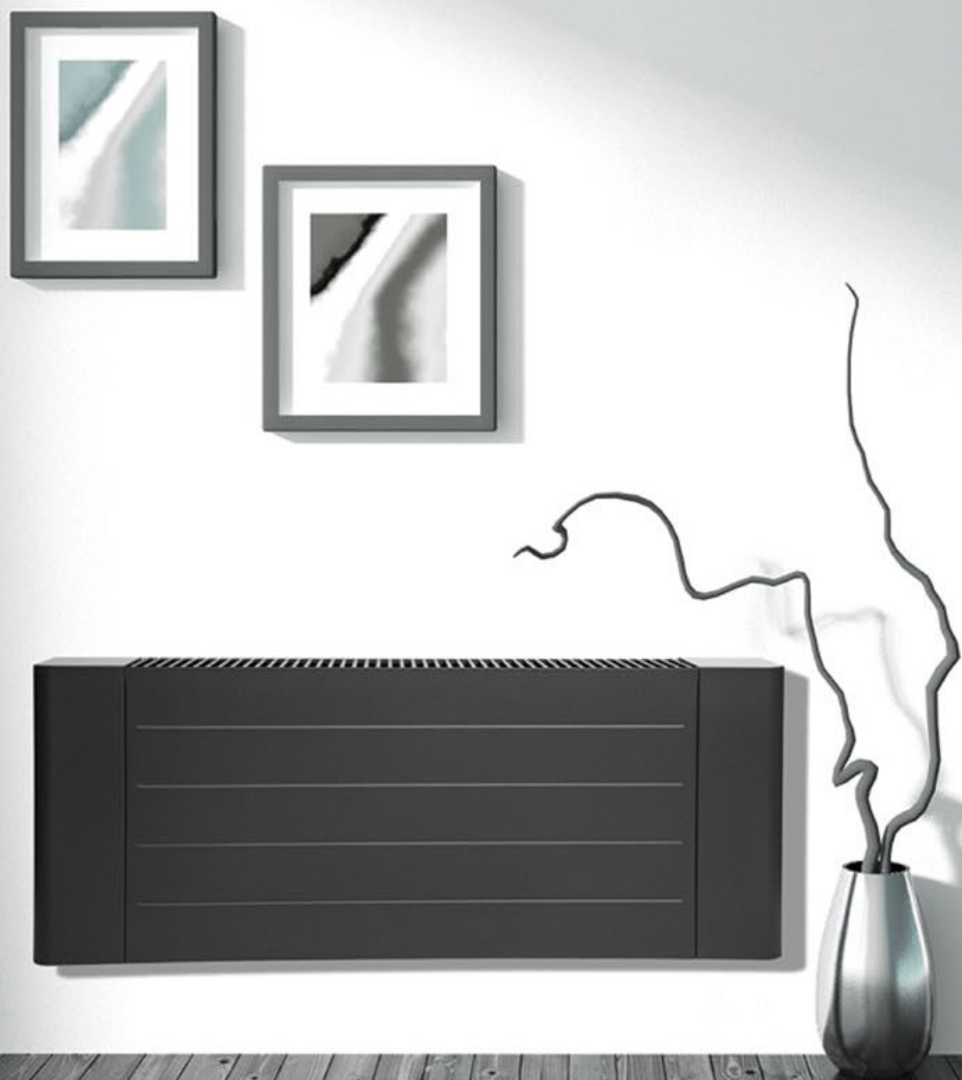


# LST WALL MOUNTED CONVECTORS

MDL: PROFESSIONAL GRADE HVAC SOLUTIONS





## NATURAL CONVECTION HEATERS

Convection heating systems operate by heat absorption via air particles flowing past a heat exchanger. The difference in density between cold and heated air creates a delicate current that flows from the bottom to the top of the unit.

Natural air circulation is created in the room, which facilitates uniform heating. With convection radiators, nominal air circulation occurs when the air rises from the bottom of the unit, thus a minimum separation distance should always be kept between the walls and other elements surrounding the convector.

VERANO's convection heaters are characterized by their low water capacity and low thermal inertia. This makes the convectors capable of appropriate and fast reaction to the changing heat demands of a room, compared to traditional radiators.

VERANO's convectors are easy to control due to their thermostatic valve that controls the flow of heating fluid through the heater.





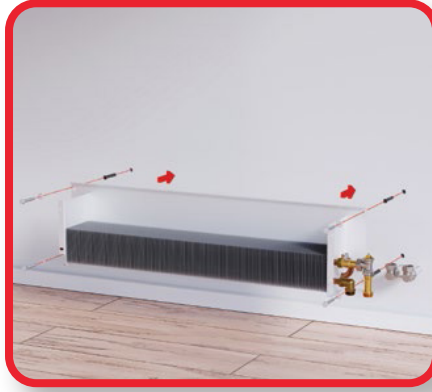


## OUR ADVANTAGES



### DURABILITY

The heat exchanger is composed of high-quality copper-aluminum, which guarantees corrosion resistance and low sensitivity to poor water quality.



### EASY TO ASSEMBLE AND SERVICE

With its universal design, the convector is easy to assemble and assures hassle-free maintenance.



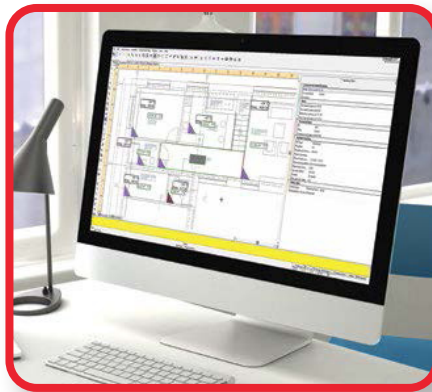
### THE SYSTEM FOR TEMPERATURE CONTROL

Dedicated and modern room controllers allow for full control.



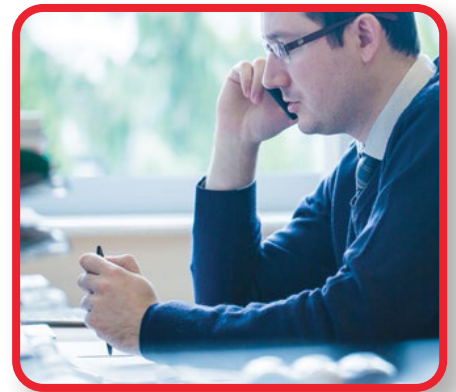
### COMPLY WITH THE EN 442 REQUIREMENTS

All VERANO convectors have been tested to the compulsory EN 442 harmonized standard. Our positive tests results are evidence of our products high quality.



### TOOLS FOR DESIGNERS

We offer full product support, including dedicated CPD seminars, as well as access to BIM drawings and libraries at the project design stage.



### TECHNICAL ADVICE

We provide help and expert advice throughout the project, from the design stage to the completion of construction.



### MODERN DESIGN

Our CALIENTE convector casings are based on a modern design, with panel casing and traditional grilles.



### WIDE SELECTION OF FINISHES

We offer a wide selection of convector units coming with grilles of various types and colours.

## CONFIRMED QUALITY

Wall-mounted convectors are designed for use in residential, office, service, hotel, sacral and sports utility buildings.

It is advised to consult our designers and/or Sales Engineers with the selection of radiators. Our sales engineers will help you select the optimal convector size and additional equipment which will allow for a seamless and energy-saving operation.



Through extensive research and development, in cooperation with the Technical Universities of Warsaw, Cracow and Lublin and the Polish Academy of Sciences, VERANO has developed and constructed a brand new and extremely efficient, high-end heating emitter.

The excellent heating parameters of VERANO products were confirmed during laboratory tests conducted at the HEATEST s.r.o. Notified Body.

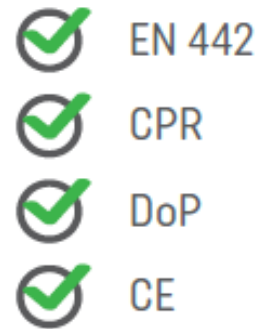
Tightness and pressure resilience tests were performed according to the EN-442 standard. With this testing, we have independent confirmation from accredited sources that a pressure of 1.69 MPa will not result in cracks or leaks in the convectors, even with a maximum permissible operating pressure of 1.0 MPa.

VERANO convectors are corrosion resistant and this has been proven through 1000 hour salt spray testing according to the PNEN ISO 4628 standard.

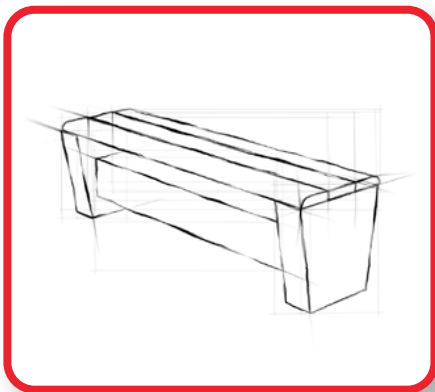
The STANDARD & CALIENTE units are fully compliant to A1 fire resistance. The VERANO convectors are manufactured in Poland, in accordance to EU regulations. The marketing of products takes place according to the Regulation (EU) 305/2011 of the European Parliament and of the Council laying down harmonized conditions for the marketing of construction products (CPR). Now certified in North America.

VERANO convectors hold all the documents required by European Union regulations:

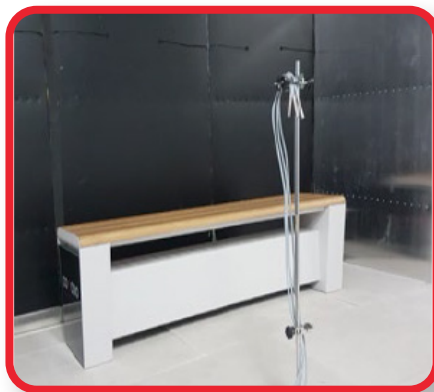
- Declaration of performance characteristics according to EN 442.
- PZH hygienic attestation.



## RESEARCH AND DEVELOPMENT



The new casing of the wall and CALIENTE convectors, as well as the COMODO heating bench, were developed by an interdisciplinary team of designers and engineers. The aim of their work was to develop simple and timeless products that will easily fit every modern interior.



Heat output testing for the convector and the COMODO heating bench was carried out in a specially prepared climatic chamber, in accordance with the requirements of the European standard EN-442.



The COMODO heating bench qualified as a finalist of the 2016 Good Design [Dobry Wzór] competition, organized by the Institute of Industrial Design. The goal of the competition is to select the products and services, which stand out with their high quality of design, and support their manufacturers and retailers.

# WALL-MOUNTED CONVECTORS: STANDARD AND CALIENTE

There are two types of casings available for the wall-mounted convectors – STANDARD and CALIENTE. The units do not differ from each other internally and they both use the same technology principle - the casing variant does not influence the heating powers, hydraulic resistance and the connectors used.

The CALIENTE casings, designed in the spirit of modern elegance, additionally allow for the use of built-in, dedicated controller.

FEATURE	Available for casing type	
	STANDARD	CALIENTE
TRV head	•	•
Wireless TRV head	•	•
Wireless TRV head or thermal actuator built-in inside the casing	•	•
Built-in temperature controller and thermal actuator	-	•
Casing powder coating in any RAL colour	•	•
Selection of grille type	•	•
Glass masking panels	-	•
Detachable front casing panel	•	•
Connection type C (side) or V (bottom)	•	•
Wall-mounted or v type	•	•



Example of wall-mounted STANDARD type heaters



Example of wall-mounted CALIENTE type heaters



TRV head assembly (classic or wireless type), V-type heater connection



Assembly of TRV wireless head or thermal actuator inside the heater casing, V-type heater, bespoke heater

The classic or wireless TRV head is available for V-type (bottom connection) heaters. The TRV head is to be installed on the thermostatic valve which is built into the heater.

The in-casing assembly of the wireless TRV head or the thermal actuator is available for V-type (bottom connection) heaters and the bespoke heater version. The thermal actuator should be connected to the controller. For CALIENTE heaters with built in Controller, thermal actuator is to be installed inside the heater casing.

# TYPES OF GRILLES FOR STANDARD TYPE HEATER



Long oval (Standard)



Cross oval



Honeycomb



Oval

# TYPES OF GRILLES FOR CALIENTE TYPE HEATER



Modular grille



Roll-up aluminum grille, closed profile



Roll-up aluminum grille, double T-bar grille



Natural wood roll-up grille



Linear aluminum grille

The manufacturer reserves the right to make changes to the design, colour and specifications of the product shown. All images are for illustrative purposes only and some features such as grilles are optional accessories and not considered as standard equipment

## STANDARD CASING

The wall-mounted units with STANDARD casing are a classic convector variant in a smooth casing made of galvanized steel, with a grille that allows for unobstructed airflow. The convectors are available with bottom connection (V-type) or side connection (C-type). The detachable front panel facilitates easy access for cleaning and maintenance of the heat exchanger and connectors.

The standard heater casing finish is white RAL 9003 powder coat. We also offer other colours and grille types as an option. Non-standard finishes also include the installation of actuator or wireless head inside the convector casing.



**WALL-MOUNTED STANDARD CASING CONVECTOR**

Standard finish: RAL 9003 colour, Long Oval grille, thermostatic head installed outside the radiator casing.



**WALL-MOUNTED STANDARD CASING CONVECTOR**

Example of optional finish: RAL 9007 colour, honeycomb grille, actuator installed inside the radiator casing.

## CALIENTE CASING

The wall-mounted and standing units with CALIENTE casings are based on modern design, with panel casing, masking panels and grilles that allow unobstructed airflow. The convectors are available with bottom connection (V-type) or side connection (C-type). Detachable heater cover and grille facilitate cleaning and maintenance of heat exchanger and connectors.

The casing (painted with RAL 9003 white paint coat as a standard) and the masking panels (painted RAL 9005 black as a standard) are also optionally available in any desired RAL palette colour. The basic equipment includes black anodized modular aluminum grille.

The painted masking panels can also be replaced with a glass or a dedicated black or white controller. The modular aluminum grille can be replaced with other grille types.



**WALL-MOUNTED CALIENTE CASING CONVECTOR**

Standard finish: RAL 9003 colour, Long Oval grille, thermostatic head installed outside the radiator casing.



**WALL-MOUNTED CALIENTE CASING CONVECTOR**

Example of optional finish: casing with RAL 9007 color paint finish, black anodized modular grille, VER-34 controller and black glass masking panel. Assembly of thermal actuator inside the heater casing.



## ADDITIONAL ACCESSORIES FOR CALIENTE CASING CONVECTORS



The paint-coated masking panel can be replaced with black or white colour glass masking panel

The wall-mounted CALIENTE convectors can optionally include the built-in VER 34 controller (currently available only in Europe) in black or white





# WALL-MOUNTED CONVECTORS

## EQUIPMENT

### STANDARD EQUIPMENT (STANDARD CASING)

- Smooth casing made of zinc-magnesium galvanized steel, powder coated in white RAL 9003
- Copper-aluminum heat exchanger with air vent
- Built-in thermostatic valve (only for V-type connection heaters)
- Assembly kit
- 3/4" female threaded connectors in C-type (side connection) heaters
- 3/4" male threaded connectors in V-type (bottom connection) heaters

### ADDITIONAL EQUIPMENT (STANDARD CASING)

- Casing in any RAL colour
- Non-standard grille type
- Thermal actuator or wireless TRV head (installed inside the casing)

VERANO wall-mounted heaters are available as two connection types:

- V-Type - bottom connection
- C-Type - side connection

### STANDARD EQUIPMENT (CALIENTE CASING)

- Smooth casing made of zinc-magnesium galvanized steel, powder coated in white RAL 9003
- Copper-aluminum heat exchanger with air vent
- Built-in thermostatic valve (only for V-type connection heaters)
- Assembly kit
- Masking panels in RAL 9005 black
- Modular anodized aluminum grille, snap profile, black finish
- 3/4" female threaded connectors in C-type (side connection) heaters
- 3/4" male threaded connectors in V-type (bottom connection) heaters

### ADDITIONAL EQUIPMENT (CALIENTE CASING)

- Casing in any RAL colour
- Non-standard grille type
- Glass masking panels with or without built-in controller and thermal actuator
- Thermal actuator or wireless TRV head (installed inside the casing)

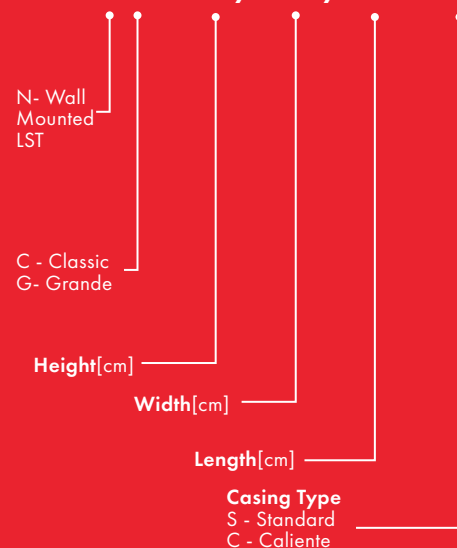
## DIMENSIONS

DIMENSIONS	[INCH]
Height	9, 12, 15, 23.5
Width	5.75, 8.25
Length	34.5 - 101.5

Non-standard (NS) length heaters can be made on order.

### ORDER CODE

**NC22-23/14.7/880-C-S**



# LST WALL MOUNTED CONVECTORS - 9 INCH HIGH

MDL#	HEIGHT H INCH	LENGTH L INCH	TYPE HX	WIDTH W INCH	180/160/65°F			
					HEATING BTU/H	FLOW- RATE USGPM	PRESSURE DROP FT-H <sub>2</sub> O	BTU/H PER FOOT
NC22-23/14.7/400	9	15.5	22	5.75	1635	0.16	0.05	3018
NC22-23/14.7/600	9	23.5	22		2218	0.22	0.09	1836
NC22-23/14.7/880	9	34.5	22		2724	0.27	0.14	1290
NC22-23/14.7/1080	9	42.5	22		3604	0.36	0.23	1291
NC22-23/14.7/1330	9	52.5	22		4681	0.47	0.37	1291
NC22-23/14.7/1530	9	60	22		5763	0.58	0.55	1356
NC22-23/14.7/1830	9	72	22		6840	0.68	0.76	1301
NC22-23/14.7/2080	9	82	22		7917	0.79	0.99	1301
NC22-23/14.7/2380	9	93.5	22		8999	0.90	1.25	1278
NC22-23/14.7/2580	9	101.5	22		10076	1.01	1.55	1307
NG23-23/21.0/400	9	15.5	23	8.25	2865	0.29	0.15	5289
NG23-23/21.0/600	9	23.5	23		4058	0.41	0.29	3358
NG23-23/21.0/880	9	34.5	23		5251	0.53	0.46	2471
NG23-23/21.0/1080	9	42.5	23		6444	0.64	0.68	2308
NG23-23/21.0/1330	9	52.5	23		7936	0.79	0.99	2189
NG23-23/21.0/1580	9	62	23		9427	0.94	1.37	2134
NG23-23/21.0/1830	9	72	23		10918	1.09	1.80	2080
NG23-23/21.0/2080	9	82	23		12431	1.24	2.28	2043
NG23-23/21.0/2330	9	91.5	23		13922	1.39	2.82	2025
NG23-23/21.0/2580	9	101.5	23		15413	1.54	3.40	2000

Standard heating output [BTU/H] according to the EN 442-1:2015-02 European Standard, room air temperature  $t_{ri} = 65^{\circ}\text{F}$

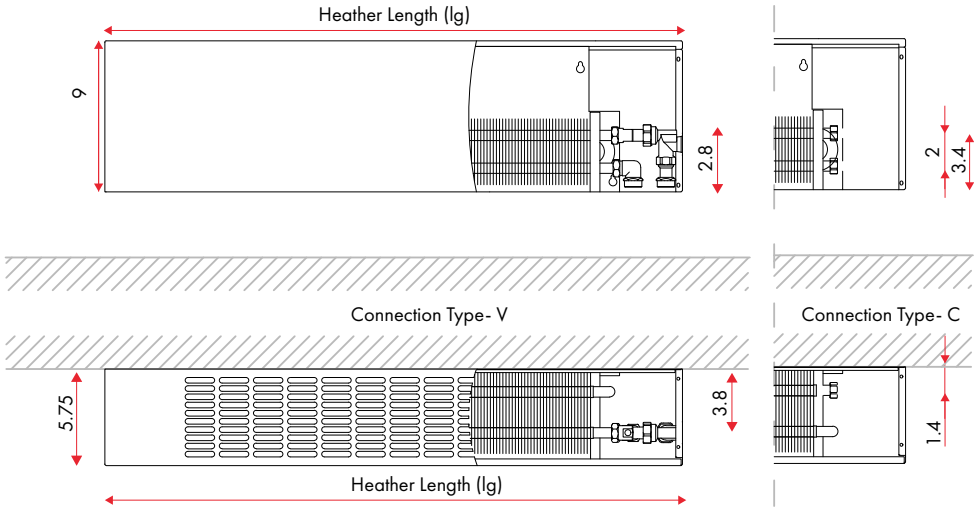
\* For quick heat output calculating software contact MDL Solutions or local rep.



# WALL-MOUNTED 9 INCH HIGH

## ORDER CODE: NC22-23/ 14.7/LG-C-S

### STANDARD

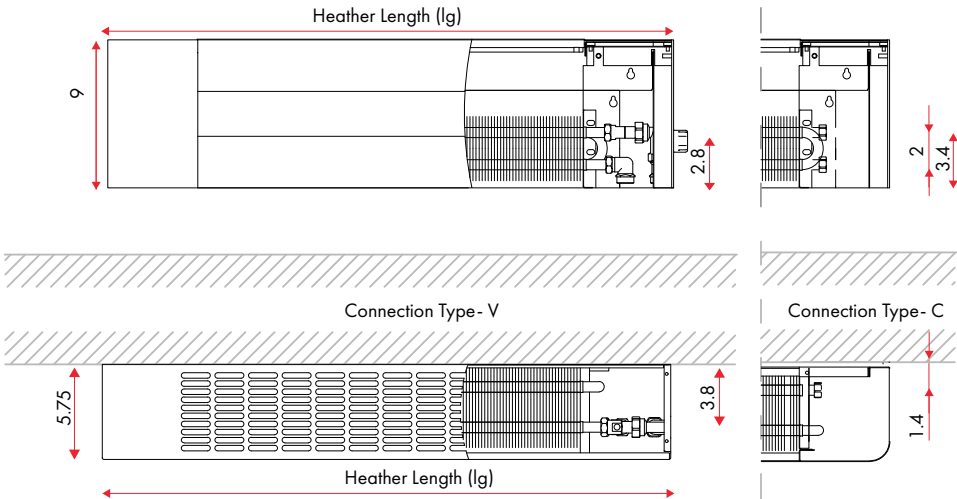


## ORDER CODE: NC22-23/ 14.7/LG-C-C

### CALIENTE

## DIMENSIONS

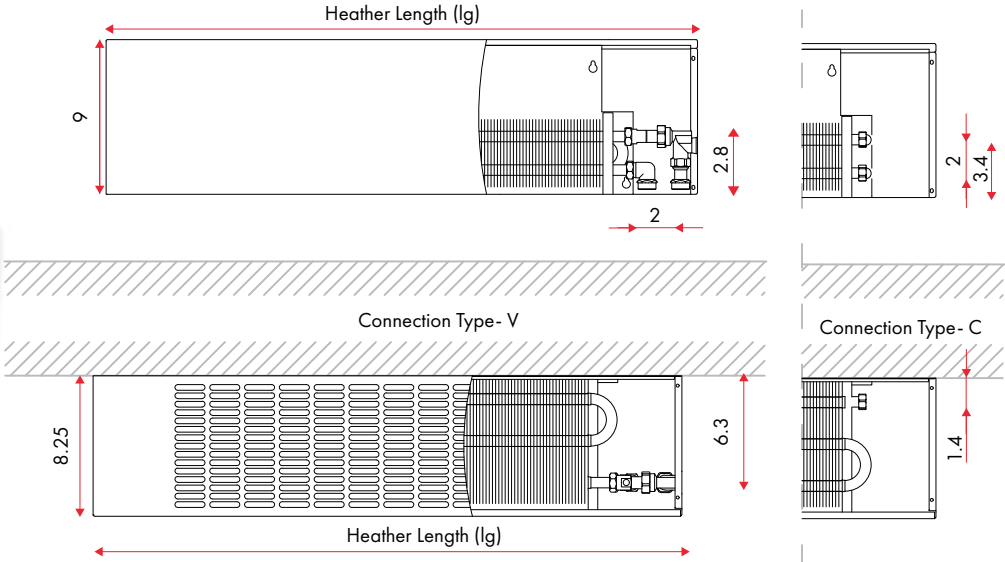
DIMENSIONS	[INCH]
Height	9
Width	5.75
Length	34.5 - 101.5



# WALL-MOUNTED 9 INCH HIGH

## ORDER CODE: NG23-23/21.0/LG-C-S

### STANDARD

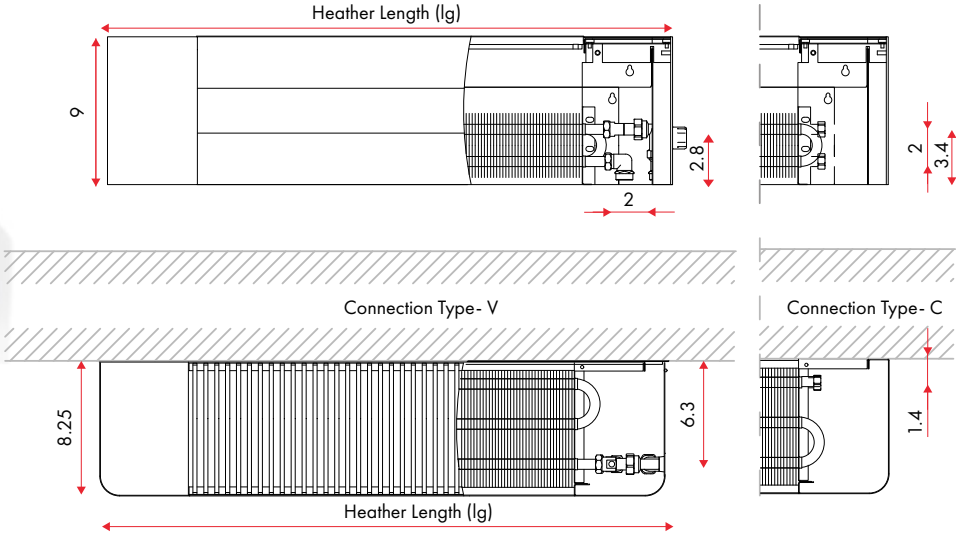


## ORDER CODE: NG23-23/21.0/LG-C-C

### CALIENTE

## DIMENSIONS

DIMENSIONS	[INCH]
Height	9
Width	8.25
Length	34.5 - 101.5



# LST WALL MOUNTED CONVECTORS - 12 INCH HIGH

MDL#	HEIGHT H INCH	LENGTH L INCH	TYPE HX	WIDTH W INCH	180/160/65°F			
					HEATING BTU/H	FLOW- RATE USGPM	PRESSURE DROP FT- H2O	BTU/H PER FOOT
NC22-30/14.7/400	12	15.5	22	5.75	2159	0.22	0.09	3986
NC22-30/14.7/600	12	23.5	22		3063	0.31	0.17	2535
NC22-30/14.7/880	12	34.5	22		3959	0.40	0.27	1863
NC22-30/14.7/1080	12	45.5	22		4863	0.49	0.40	1742
NC22-30/14.7/1330	12	52.5	22		5991	0.60	0.59	1653
NC22-30/14.7/1530	12	62	22		7110	0.71	0.81	1610
NC22-30/14.7/1830	12	72	22		8234	0.82	1.06	1568
NC22-30/14.7/2080	12	82	22		9362	0.94	1.35	1539
NC22-30/14.7/2330	12	91.5	22		10490	1.05	1.67	1526
NC22-30/14.7/2580	12	101.5	22		11614	1.16	2.01	1507
NC23-30/21.0/400	12	15.5	23	8.25	3726	0.37	0.25	2483
NC23-30/21.0/600	12	23.5	23		5285	0.23	0.47	4374
NC23-30/21.0/880	12	34.5	23		6835	0.84	1.10	3005
NC23-30/21.0/1080	12	42.5	23		8389	0.84	1.10	3005
NC23-30/21.0/1330	12	52.5	23		10334	1.03	1.62	2851
NC23-30/21.0/1580	12	62	23		12271	1.23	2.23	2778
NC23-30/21.0/1830	12	72	23		14212	1.42	2.93	2707
NC23-30/21.0/2080	12	82	23		16128	1.61	3.70	2651
NC23-30/21.0/2330	12	91.5	23		18127	1.81	4.59	2637
NC23-30/21.0/2580	12	101.5	23		20072	2.01	5.54	2604

Standard heating output [BTU/H] according to the EN 442-1:2015-02 European Standard, room air temperature  $t_r = 65^{\circ}\text{F}$

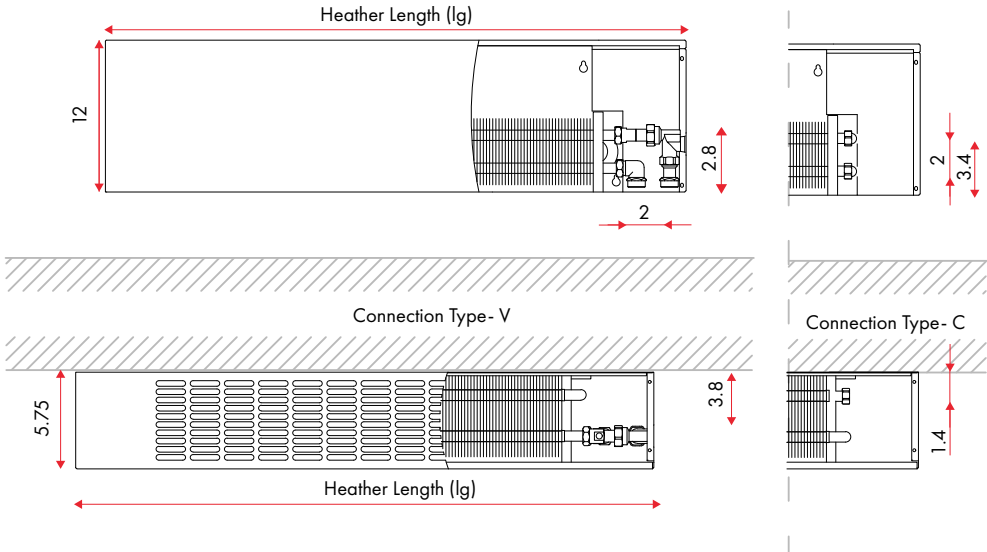
\* For quick heat output calculating software contact MDL Solutions or local rep.



# WALL-MOUNTED 12 INCH HIGH

## ORDER CODE: NC22-30/ 14.7/LG-C-S

### STANDARD

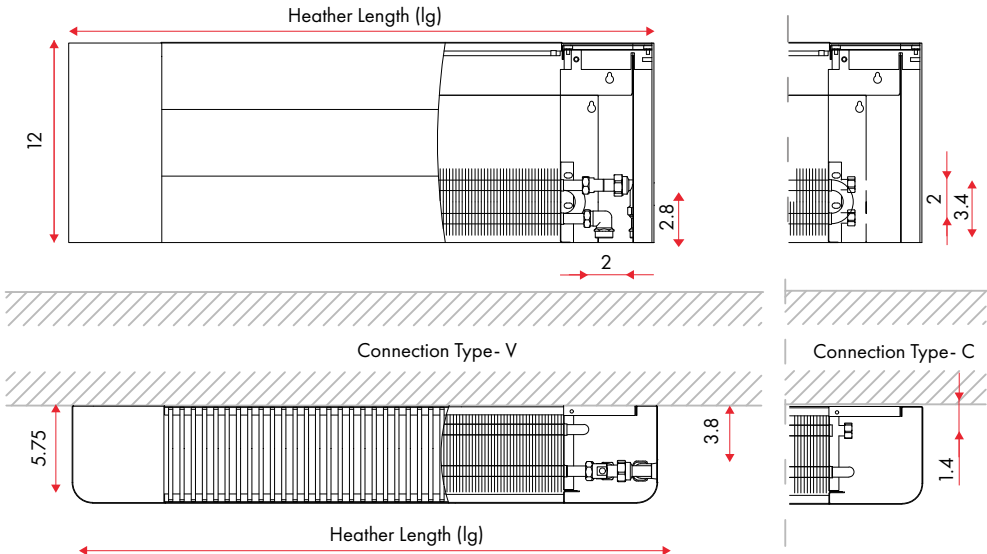


# ORDER CODE: NC22-30/ 14.7/LG-C-C

## CALIENTE

### DIMENSIONS

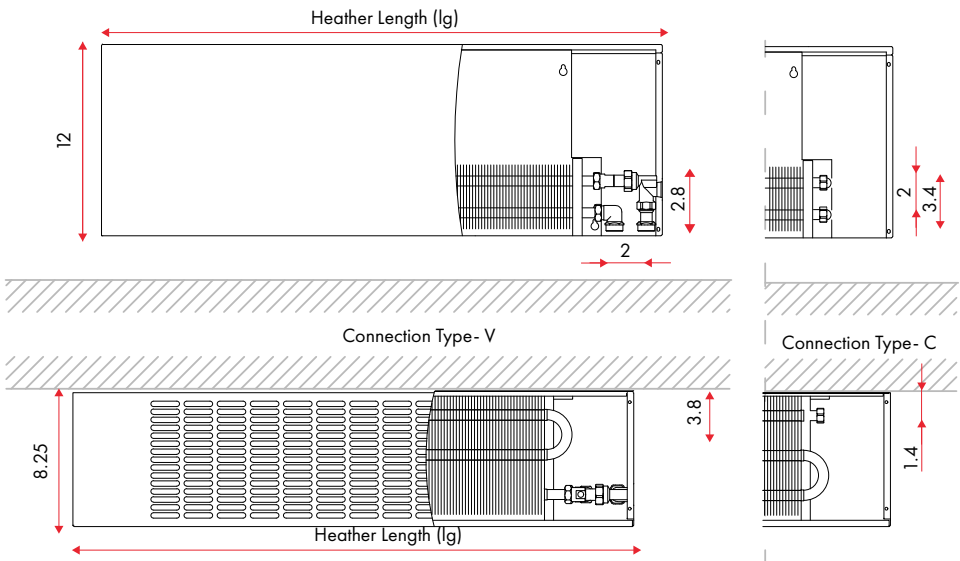
DIMENSIONS	[INCH]
Height	12
Width	5.75
Length	34.5 - 101.5



# WALL-MOUNTED 12 INCH HIGH

## ORDER CODE: NG23-30/21.0/LG-C-S

### STANDARD

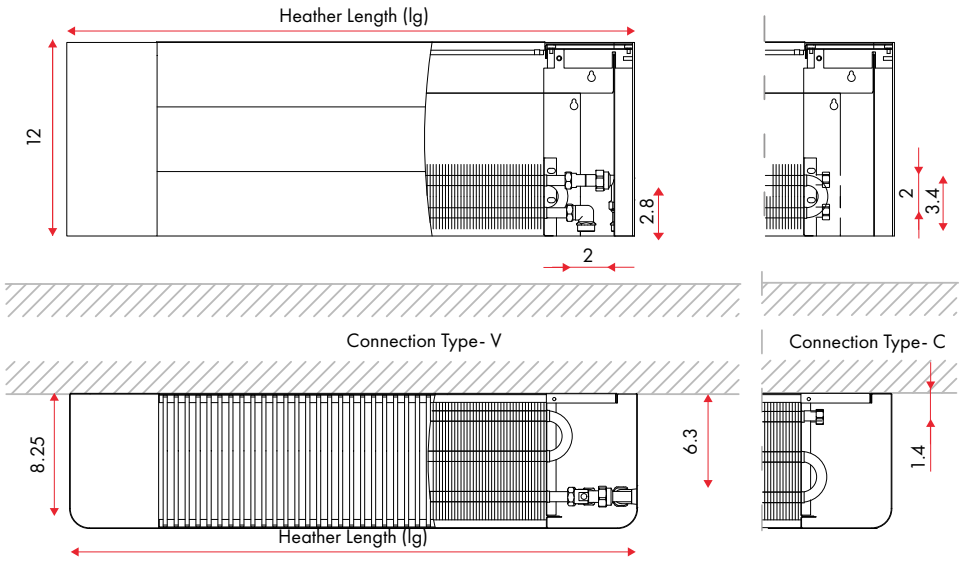


# ORDER CODE: NG23-30/21.0/LG-C-C

## CALIENTE

# DIMENSIONS

DIMENSIONS	[INCH]
Height	12
Width	8.25
Length	34.5 - 101.5



# LST WALL MOUNTED CONVECTORS - 15.5 INCH HIGH

MDL#	HEIGHT H INCH	LENGTH L INCH	TYPE HX	WIDTH W INCH	180/160/65°F			
					HEATING BTU/H	FLOWRATE USGPM	PRESSURE DROP FT-H2O	BTU/H PER FOOT
NC22-40/14.7/400	15.5	15.5	22	5.75	2400	0.24	0.11	4431
NC22-40/14.7/600	15.5	23.5	22		3401	0.34	0.21	2815
NC22-40/14.7/880	15.5	34.5	22		4398	0.44	0.33	2070
NC22-40/14.7/1080	15.5	42.5	22		5404	0.54	0.49	1936
NC22-40/14.7/1330	15.5	52.5	22		6654	0.67	0.72	1836
NC22-40/14.7/1530	15.5	62	22		7905	0.79	0.99	1790
NC22-40/14.7/1830	15.5	72	22		9151	0.92	1.29	1743
NC22-40/14.7/2080	15.5	82	22		10402	1.04	1.64	1710
NC22-40/14.7/2380	15.5	91.5	22		11652	1.17	2.03	1695
NC22-40/14.7/2580	15.5	101.5	22		13013	1.30	2.48	1688
NG23-40/21.0/400	15.5	15.5	23	8.25	4117	0.41	0.29	4832
NG23-40/21.0/600	15.5	23.5	23		5839	0.58	0.56	4832
NG23-40/21.0/880	15.5	34.5	23		7549	0.75	0.91	3552
NG23-40/21.0/1080	15.5	42.5	23		9267	0.93	1.33	3320
NG23-40/21.0/1330	15.5	52.5	23		11418	1.14	1.95	3150
NG23-40/21.0/1580	15.5	62	23		13557	1.36	2.68	3070
NG23-40/21.0/1830	15.5	72	23		15703	1.57	3.52	2991
NG23-40/21.0/2080	15.5	82	23		17825	1.78	4.45	2930
NG23-40/21.0/2330	15.5	91.5	23		20030	2.00	5.52	2913
NG23-40/21.0/2580	15.5	101.5	23		22181	2.22	6.67	2878

Standard heating output [BTU/H] according to the EN 442-1:2015-02 European Standard, room air temperature  $t_{ri} = 65^{\circ}\text{F}$

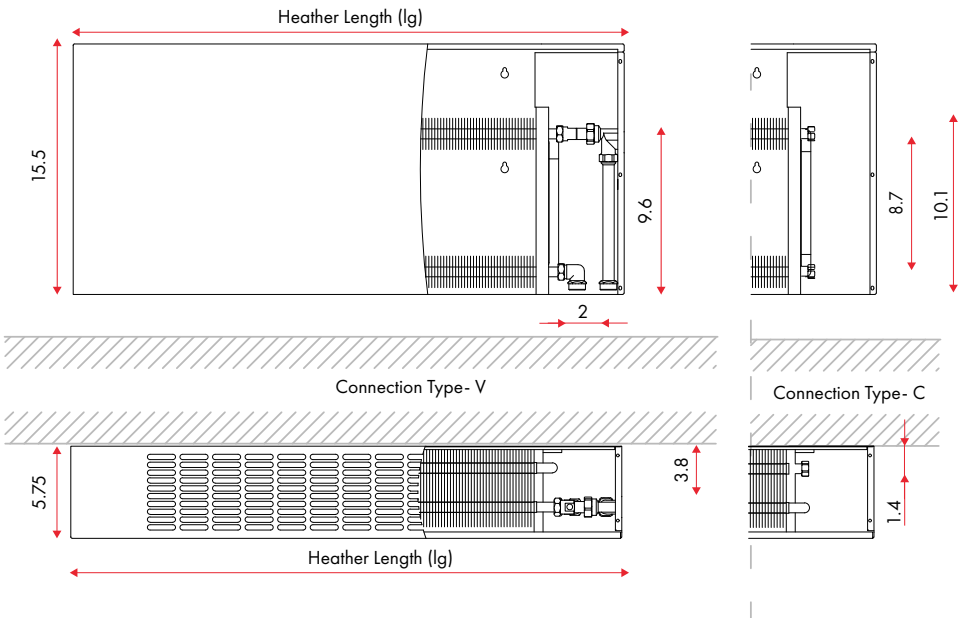
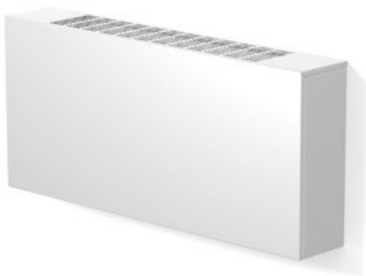
\* For quick heat output calculating software contact MDL Solutions or local rep.



# WALL-MOUNTED 15.5 INCH HIGH

## ORDER CODE: NC22-40/ 14.7/LG-C-S

### STANDARD

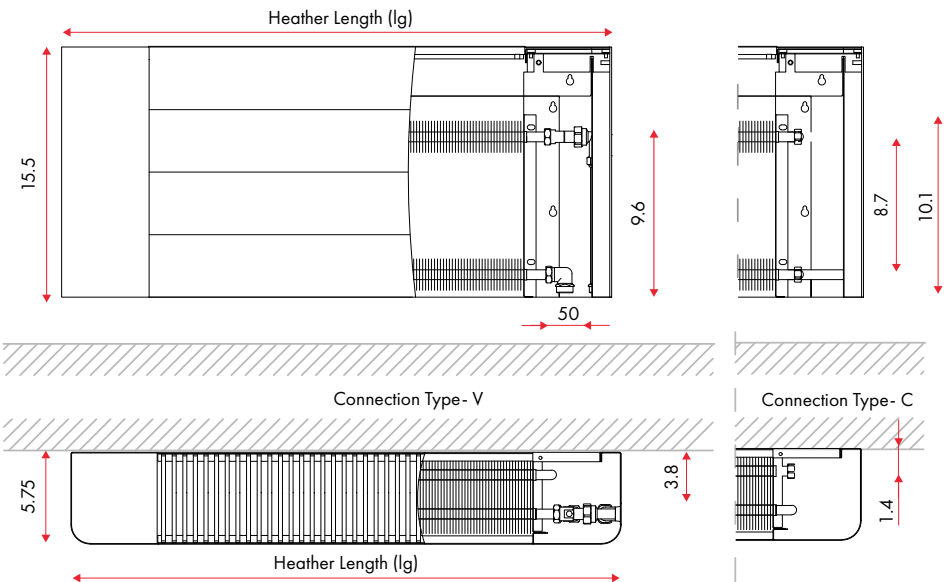


# ORDER CODE: NC22-40/ 14.7/LG-C-C

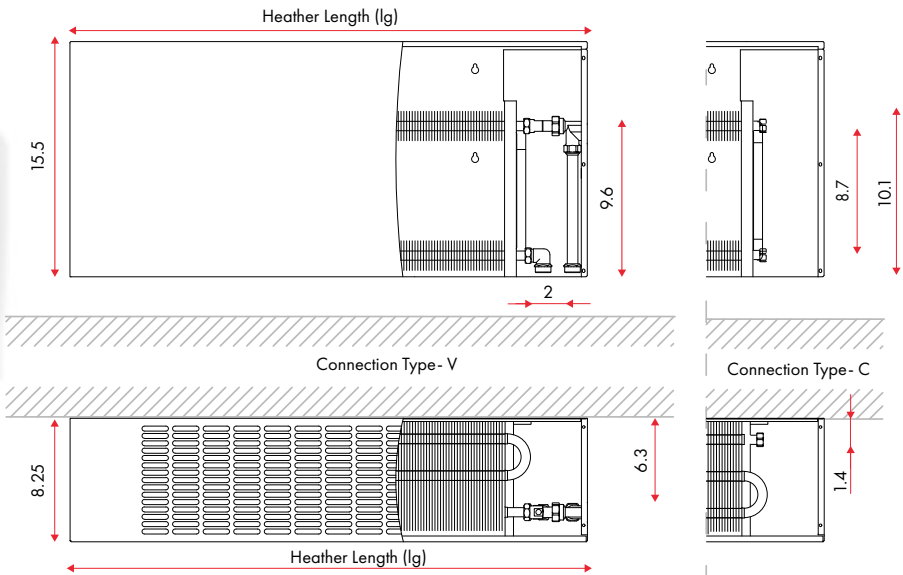
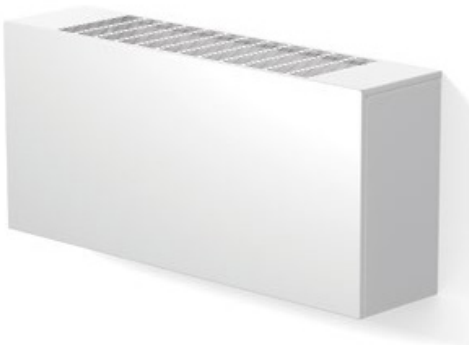
## CALIENTE

# DIMENSIONS

DIMENSIONS [INCH]	
Height	15
Width	5.75
Length	34.5 - 101.5



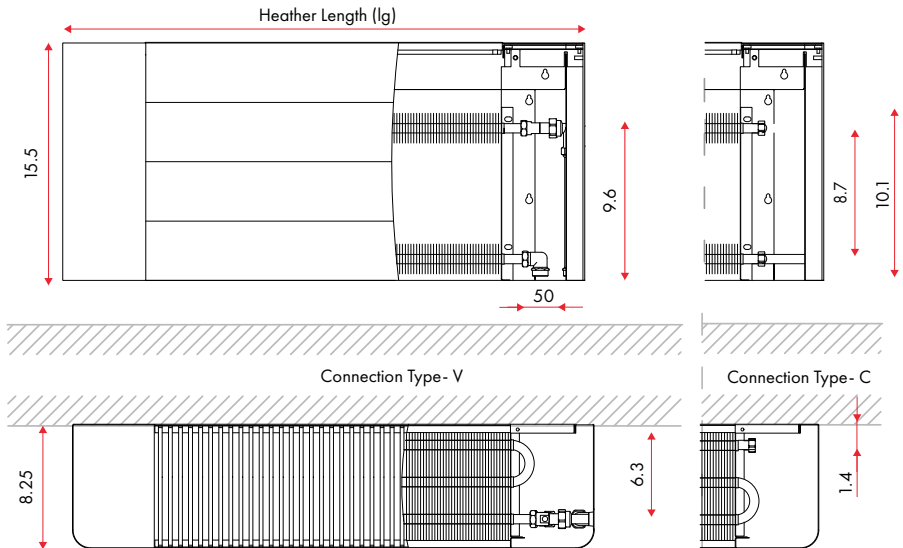
WALL-MOUNTED 15.5 INCH HIGH  
ORDER CODE: NG23-40/21.0/LG-C-S  
STANDARD



ORDER CODE: NG23-40/21.0/LG-C-C  
CALIENTE

DIMENSIONS

DIMENSIONS	[INCH]
Height	15
Width	8.25
Length	34.5 - 101.5



# LST WALL MOUNTED CONVECTORS - 23.5 INCH HIGH

MDL#	HEIGHT H INCH	LENGTH L INCH	TYPE HX	WIDTH W INCH	180/160/65°F			
					HEATING BTU/H	FLOWRATE UsGPM	PRESSURE DROP FT-H2O	BTU/H PER FOOT
NC22-60/14.7/400	15.5	15.5	22	5.75	2919	0.29	0.16	5389
NC22-60/14.7/600	15.5	23.5	22		4132	0.41	0.30	3420
NC22-60/14.7/880	15.5	34.5	22		5349	0.53	0.48	2517
NC22-60/14.7/1080	15.5	42.5	22		6565	0.66	0.70	2352
NC22-60/14.7/1330	15.5	52.5	22		8082	0.81	1.03	2230
NC22-60/14.7/1530	15.5	62	22		9599	0.96	1.41	2179
NC22-60/14.7/1830	15.5	72	22		11124	1.11	1.86	21119
NC22-60/14.7/2080	15.5	82	22		12641	1.26	2.35	2078
NC22-60/14.7/2380	15.5	91.5	22		14158	1.42	2.90	2059
NC22-60/14.7/2580	15.5	101.5	22		15678	1.57	3.51	2034
NC22-60/21.0/400	15.5	15.5	23	8.25	4693	0.47	0.38	8664
NG23-60/21.0/600	15.5	23.5	23		6654	0.67	0.72	5507
NG23-60/21.0/880	15.5	34.5	23		8608	0.86	1.16	4051
NG23-60/21.0/1080	15.5	42.5	23		10566	1.06	1.69	3785
NG23-60/21.0/1330	15.5	52.5	23		13006	1.30	2.48	3558
NG23-60/21.0/1580	15.5	62	23		15455	1.55	3.42	3499
NG23-60/21.0/1830	15.5	72	23		17900	1.79	4.48	3410
NG23-60/21.0/2080	15.5	82	23		20375	2.04	5.70	3349
NG23-60/21.0/2330	15.5	91.5	23		22820	2.28	7.03	3319
NG23-60/21.0/2580	15.5	101.5	23		25273	2.53	8.50	3279

Standard heating output [BTU/H] according to the EN 442-1:2015-02 European Standard, room air temperature  $t_{ei} = 65^{\circ}\text{F}$

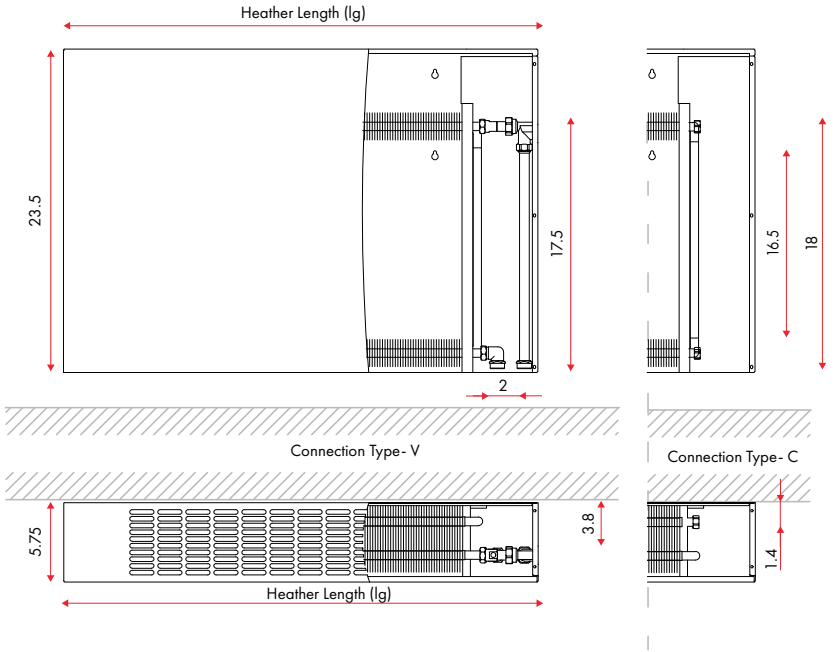
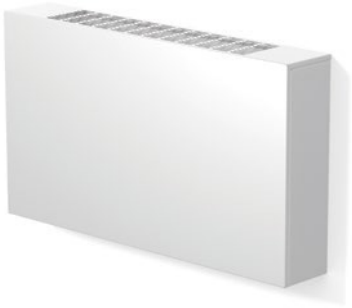
\* For quick heat output calculating software contact MDL Solutions or local rep.



# WALL-MOUNTED 23.5 INCH HIGH

## ORDER CODE: NC22-60/14.7/LG-C-S

### STANDARD



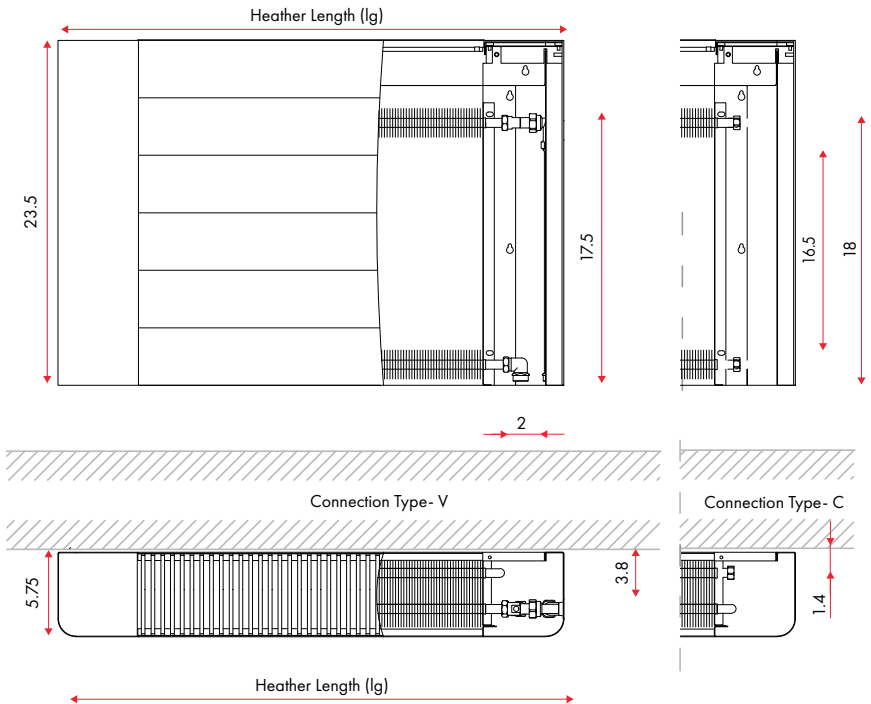
## ORDER CODE: NC22-60/14.7/LG-C-C

### CALIENTE

## DIMENSIONS

DIMENSIONS	[INCH]
Height	23.5
Width	5.75
Length	34.5 - 101.5

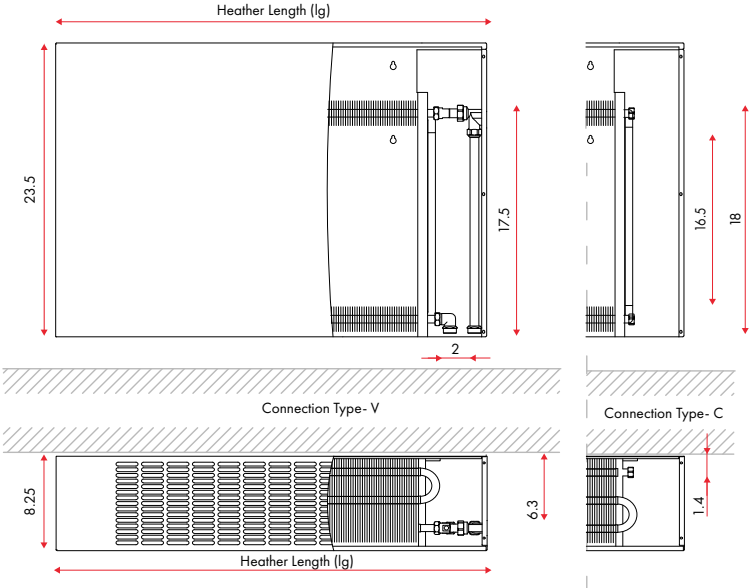
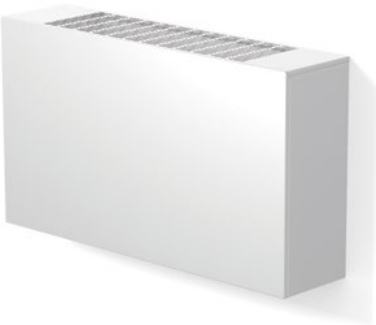
Non-standard heater length available on request



# WALL-MOUNTED 23.5 INCH HIGH

## ORDER CODE: NG23-60/21.0/LG-C-S

### STANDARD



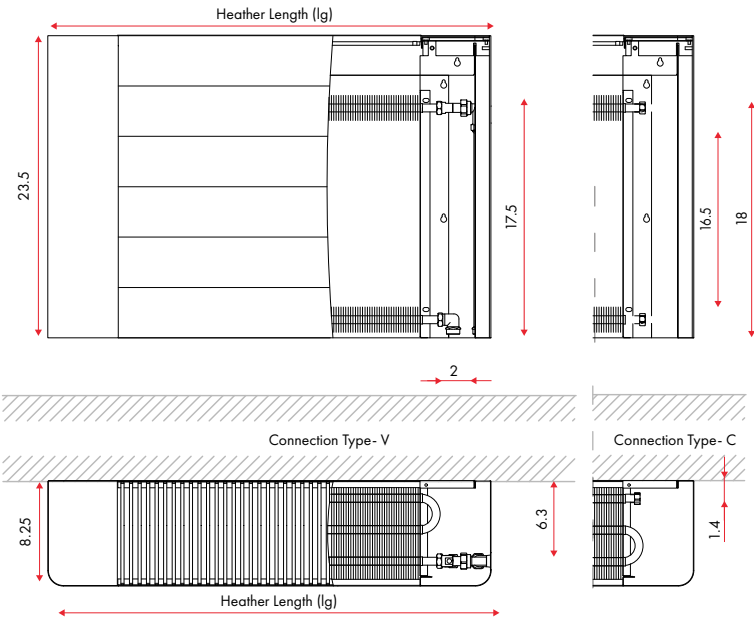
# ORDER CODE: NG23-60/21.0/LG-C-S

### CALIENTE

## DIMENSIONS

DIMENSIONS	[INCH]
Height	23.5
Width	8.25
Length	34.5 - 101.5

Non-standard heater length available on request



# HEATER SELECTION

**Example calculations for the following convector:** N-C22-60/14,7/133

Heat output for 75/65/20°:  $\phi = 1577 \text{ W}$

Installation temperatures:  $t_z/t_p/\theta_i = 65/55/20^\circ\text{C}$

## EXAMPLE 1

### Based on the corrective factors

Refer to the right corrective factor for project installation temperatures - flow and return temperature and room air temperature. In this case, corrective factor is 0.753. Next, multiply the heat output value for standard installation

parameters 75/65/20°C by corrective factor: Heat output for 65/55/20°C:  $\phi = 1577 \cdot 0,753 = 1200 \text{ W}$ .

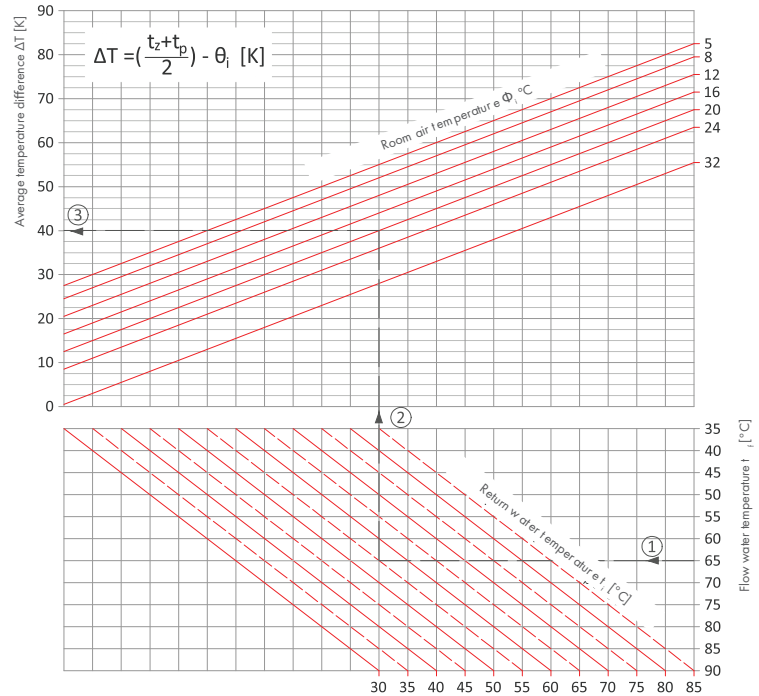
## EXAMPLE 2

### Based on heating output formula for different installation temperatures

Calculate/read the average temperature difference for respective parameters, using the graph.

The graph allows for easy readout of the average temperature difference  $\Delta T$  for the selected parameters of heating water  $t_f$  and  $t_r$ , depending on the room temperature  $\theta_i$ .

1. First draw a horizontal line from flow temperature  $t_f = 65^\circ\text{C}$  to its crossing with the slanted line of outlet temperature  $t_r = 55^\circ\text{C}$
2. Then draw a vertical line from the crossing point with the slanted line of room temperature  $\theta_i = 20^\circ\text{C}$ .
3. Draw a horizontal line and read the temperature difference of  $\Delta T = 40 \text{ K}$ . Then use the equation for heating output of convectors for different conditions, for the Caliente N-C22-60/14,7/133 heater it will be:  $\phi = 11,0649 \cdot \Delta T^{1,2705} [\text{W}]$
4. Heating power for the selected parameters 65/55/20°C:  $\phi = 11,0649 \cdot 40^{1,2705} = 1200 \text{ W}$ .

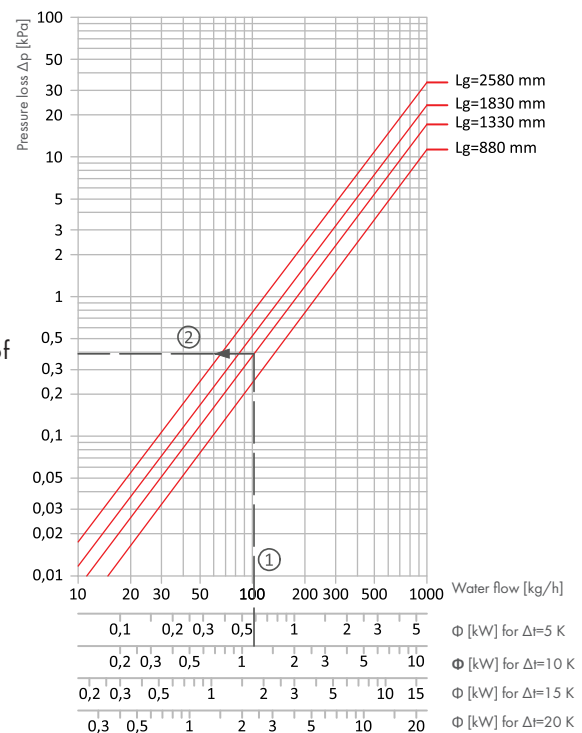


# PRESSURE LOSS READOUT

Based on radiator selection data presented above we selected the heating output of 1200 W for 65/55/20°C temperatures.

Cooling temperature (the difference between flow and return temperatures) is  $\Delta t = 10^\circ\text{C}$ .

1. Using the axis for 10°C cooling temperature draw a vertical line from 1.20kW heat output to its crossing with the slanted line representing the length of the convector  $L_k = 1330 \text{ mm}$ .
2. Draw a horizontal line from that crossing and read the pressure  $\Delta p = 0,39 \text{ kPa}$ .



the

loss



# VER-34 CONTROLLER

The VER-34 controller is designed to work with wall-mounted CALIENTE convectors . It allows the user to set the room temperature . Once this temperature is reached, the controller closes the heater valve via a thermal actuator. The room temperature is measured with a built-in sensor.

In idle mode, the controller screen displays the current room temperature. After pressing the PLUS or MINUS button the set temperature will be displayed. The value of the set temperature can be adjusted by pressing the PLUS and MINUS buttons.

The built-in light intensity sensor adjusts the screen brightness to the current room conditions.

*Currently, this feature is only available in Europe.*



## CONTROLLERS FOR FLOOR-MOUNTED RADIATORS

- S-C22 type, white or black VERSC22B or VERSC22C
- S-G23 type, white or black VERSG23B or VERSG23C
- S-G24 type, white or black: VERSG24B or VERSG24C

## CONTROLLERS FOR WALL-MOUNTED CONVECTORS

- N-C22 type, white or black VERNC22B or VERNC22C
- N-G23 type, white or black VERNG23B or VERNG23C

All controllers are to be supplied with 24 V DC voltage.

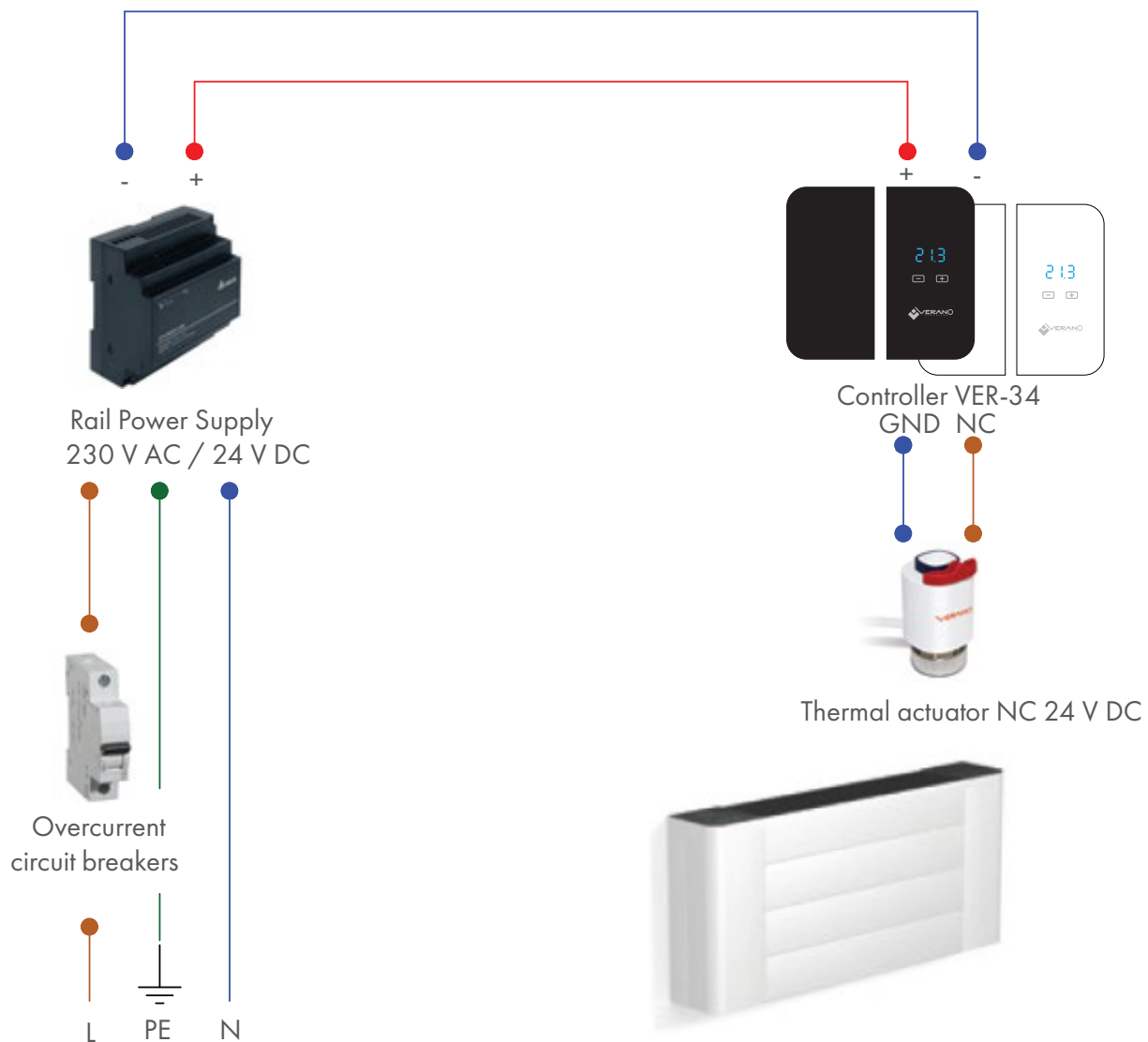
SST24 actuator: 24 V AC/DC power supply; PVC 2x0.75 mm 1m connection cable, M30x1.5

# THERMOSTATIC HEADS FOR VERANO LST WALL-MOUNTED CONVECTORS

NAME	DESCRIPTION	
Thermostatic head SH Diamant White Cat. No. 600100001	Schlösser thermostatic heads with connection thread M30x1.5 cooperate with all Schlösser valves as well as with other valves with inserts M30x1.5 and closing dimension 0.5 inches	
Thermostatic head SH Diamant Plus White-Chrome Cat. No. 600100011		
Thermostatic head SH Brillant White-Chrome Cat. No. 600200001		
Thermostatic head SH Brillant White Cat. No. 600200002		
Thermostatic head SH Brillant Chrome Cat. No. 600200003		
Thermostatic head SH Brillant Satin Cat. No. 600200004		
Thermostatic head SH Brillant Steel Cat. No. 600200005		
Thermostatic head SH Brillant Gold Cat. No. 600200007		
Programmable TRV GP60	Fully programmable thermostatic head	



# ELECTRICAL CONNECTION DIAGRAM



Connection diagram for the VER-34 controller and SST24 actuator and the CALIENTE convector.

The VER-34 controller requires 24 V DC power supply. Connection of the power cable and the actuator circuit should be executed, as per the attached diagram. Due to the use of the VER-34 controller the power should be connected to the right side of the convector.

## WARNING!

Electrical work should only be done by a skilled electrician who can confirm their certification. The power can only be connected after the correctness of the entire connection diagram has been verified. The control accessories should be powered with use of 24 V DC voltage. It is prohibited to power the control accessories directly from 230 V AC grid.

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**PROTOKOL  
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PRODUCT PERFORMANCE ASSESSMENT  
REPORT**

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in accordance with regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (construction product regulation – CPR), annex V, par. 1.4 (System 3), as amended

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Otápná tělesa  
Connectors

S-G23-45,342

pro použití v budovách  
for the use in buildings

dle / in accordance with  
CSN EN 442-1 ed. 2: 2015

kteř byla vyrobena výrobcem nebo pro výrobce / manufactured by or manufactured for

**VERANO Ryszard Miazga,**  
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31-06-2017

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**VERANO**  
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**DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH**  
nr 002-2017-07-01

1. Nazwa i nazwa handlowa wyrobu budowlanego:  
Konwektor stojący z rur obrobionych – ławka grzewcza (zgodnie z rys. G.8):  
S-G23-45,342

2. Oznaczenie typu wyrobu budowlanego:  
Oznakowanie typu wyrobu (wg pkt.1), nazwy producenta oraz partii produkcyjnej, znajduje się na etykietach umieszczonych na obudowie grzejnika oraz dodatkowo na etykietach znajdujących się na opakowaniu wyrobu.

3. Zamierzone zastosowanie lub zastosowania:  
Przeznaczenie przez producenta zamierzone zastosowanie wyrobu budowlanego zgodnie z normą PN-EN 442-1:2015-02. W instalacjach grzewczych w budynkach. Grzejniki i konwektory zamontowane na ścianie w instalacjach centralnego ogrzewania budynków, zasilane wodą grzewczą z zewnętrznych źródeł ciepła.

4. Nazwa i adres siedziby producenta oraz miejsca produkcji wyrobu:  
**VERANO Ryszard Miazga**  
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www.v-k.pl, info@v-k.pl

5. Nazwa i adres siedziby upoważnionego przedstawiciela:  
nie dotyczy

6. Krajowy system zastosowany do oceny i weryfikacji stałości właściwości użytkowych:  
System 3.

7. Norma zharmonizowana:  
PN-EN 442-1:2015-02

8. Jednostka oceny technicznej:  
Nazwa akredytowanej jednostki certyfikującej: HEATEST, s.r.o.  
Numer akredytacji: 2693  
Numer certyfikatu: 2693-CPR-0003-2017

**HEATEST, s. r. o.**  
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notified laboratory 2693

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Otápná tělesa  
Connectors

S-C12-1615,9; S-G14-1028,4  
S-G23-1615,9; S-G23-1622,2; S-G24-1628,4  
S-G23-2315,9; S-G23-2322,2; S-G24-2328,4  
S-G23-3015,9; S-G23-3022,2; S-G24-3028,4

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Protokol zhotovili / Edited by:  
Zastupitel certifikované laboratoře 2693  
Representative of the notified laboratory 2693

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Ing. Vojtěch Hrnčík, vedoucí ZL, jednatel

31-06-2017

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**VERANO**  
Ryszard Miazga

**DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH**  
nr 001-2017-07-01

1. Nazwa i nazwa handlowa wyrobu budowlanego:  
Konwektor stojący z rur obrobionych (zgodnie z rys. G.8):  
S-C12-1615,9; S-G14-1028,4  
S-G23-1615,9; S-G23-1622,2; S-G24-1628,4  
S-G23-2315,9; S-G23-2322,2; S-G24-2328,4  
S-G23-3015,9; S-G23-3022,2; S-G24-3028,4

2. Oznaczenie typu wyrobu budowlanego:  
Oznakowanie typu wyrobu (wg pkt.1), nazwy producenta oraz partii produkcyjnej, znajduje się na etykietach umieszczonych na obudowie grzejnika oraz dodatkowo na etykietach znajdujących się na opakowaniu wyrobu.

3. Zamierzone zastosowanie lub zastosowania:  
Przeznaczenie przez producenta zamierzone zastosowanie wyrobu budowlanego zgodnie z normą PN-EN 442-1:2015-02. W instalacjach grzewczych w budynkach. Grzejniki i konwektory zamontowane na ścianie w instalacjach centralnego ogrzewania budynków, zasilane wodą grzewczą z zewnętrznych źródeł ciepła.

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6. Krajowy system zastosowany do oceny i weryfikacji stałości właściwości użytkowych:  
System 3.

7. Norma zharmonizowana:  
PN-EN 442-1:2015-02

8. Jednostka oceny technicznej:  
Nazwa akredytowanej jednostki certyfikującej: HEATEST, s.r.o.  
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Otápná tělesa  
Connectors

N-G23-2314,7; N-G23-2321,0;  
N-G23-3014,7; N-G23-3021,0;  
N-G23-4014,7; N-G23-4021,0  
N-G23-4014,7; N-G23-4021,0

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12-07-2017

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**DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH**  
nr 001-2017-07-12

1. Nazwa i nazwa handlowa wyrobu budowlanego:  
Konwektor naddłany z rur obrobionych (zgodnie z rys. G.8):  
N-C22-2314,7; N-G23-2321,0  
N-C22-3014,7; N-G23-3021,0  
N-C22-4014,7; N-G23-4021,0  
N-C22-4014,7; N-G23-4021,0

2. Oznaczenie typu wyrobu budowlanego:  
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7. Norma zharmonizowana:  
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8. Jednostka oceny technicznej:  
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Numer akredytacji: 2693  
Numer certyfikatu: 2693-CPR-0005-2017

# VERANO<sup>®</sup>

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