E.C.A®

TOGETHER FOR YEARS

HEATING SYSTEMS

E.C.A.®

TOGETHER FOR YEARS

Index

We are E.C.A.

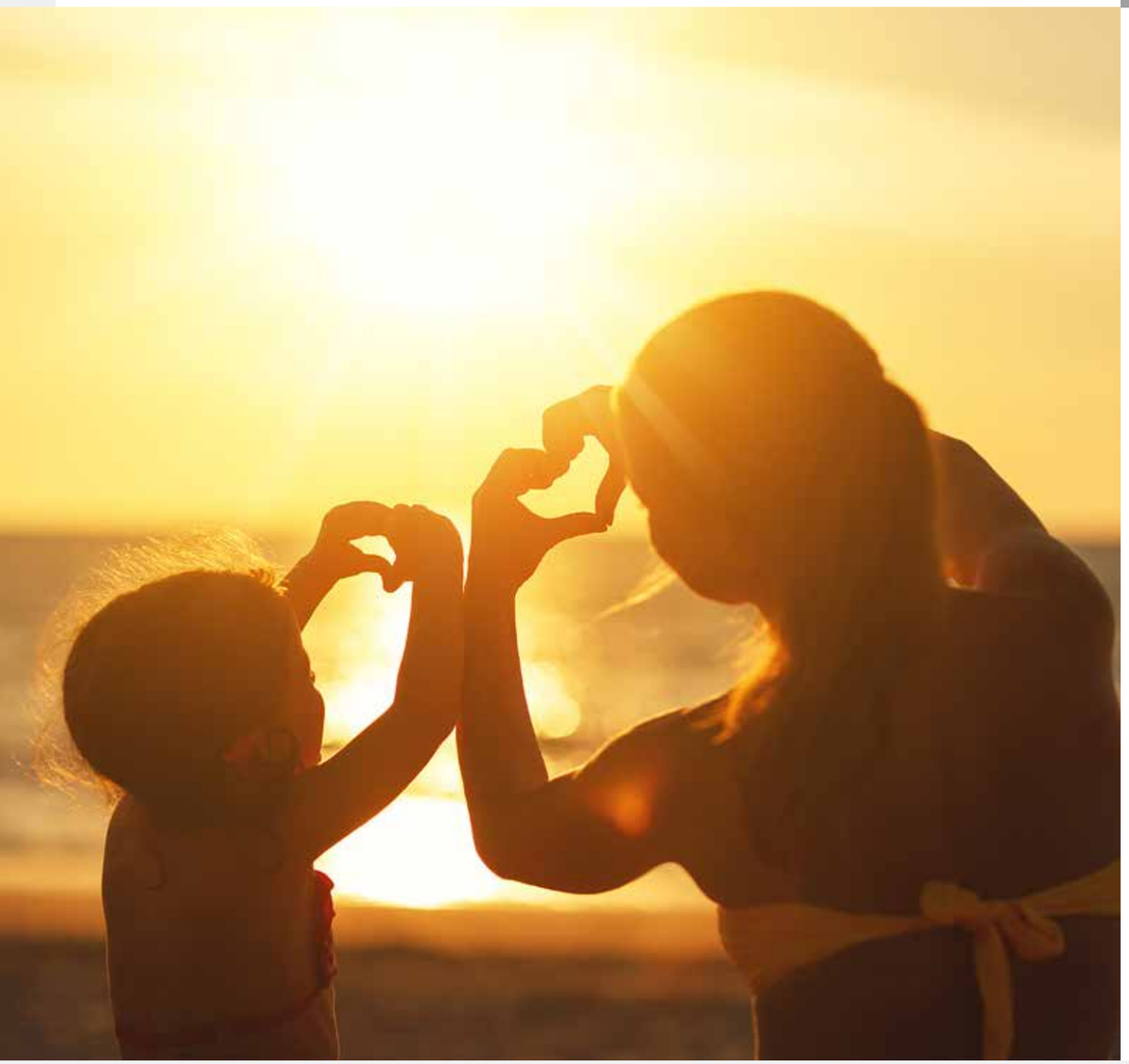
The Elginkan Group started production under trademark of E.C.A. in 1957.

The Group has reached its present product range by including in its activity matters, production and marketing of valves and sanitary fittings, ceramic sanitary wares central and individual heating and cooling equipment, gas and electrical water heaters, household appliances, cast iron products, molds, food and catering, construction, industrial raw materials, from the day it was founded.

While the Elginkan Group runs its activities with integrity from raw material to sales, the planning and execution of this chain is realized continuously and mainly with information dealing and managing within the company and among companies.

Today this group operates 14 factories and 21 companies in the heating and building industries. It is already presenting quality products to the consumer with trademarks such as E.C.A., SEREL, EMAS, ODÖKSAN, ELBA, AR and YAK. Eleks Dış Ticaret A.Ş. is the Elginkan Group's export company.

A brand new future with E.C.A.



E.C.A. is aware of the fact that the sustainability of life depends on the sustainability of natural resources. With an awareness of the environment and the future since 1953, it has been designing products encouraging economy in energy and resources by minimising its consumption of non-renewable natural resources, beginning at the production process. Especially in the products that have been developed during the last twenty years, water and heat saving has been adopted as a standard application, and the technologies and designs that are developed are shaped accordingly.

In all products it develops, from radiators to combi boilers and valves, it introduces the consumer to environment-friendly technologies that aim at preserving non-renewable natural resources, mainly thermal energy.

Having stood by the consumer with its quality for many years, E.C.A. aims for an ecologically unchanged future through its environment-friendly products.

“To be together for years...”

COMBI BOILERS

E.C.A.
CONFEO PREMIX

Technical Design Properties

- 14-20-24-28-30-35 kW capacities
- Usage ability with Natural Gas and LPG
- 92% efficiency
- ErP A energy efficiency class
- ErP regulation compatible
- Eco and Comfort modes for the Central Heating
- 1/4 modulation rate
- Low NOx and CO emissions
- With the help of a energy efficient automatic purger equipped circulation pump, less energy consumption and compatibility with every space.
- High combustion efficiency with stainless steel burner and low waste gas emission
- Protection of the fitting and combi boiler by the help of the automatic by-pass system
- Protection against freezing
- "Pump over-run" feature that prevents thermal piling up within the fitting

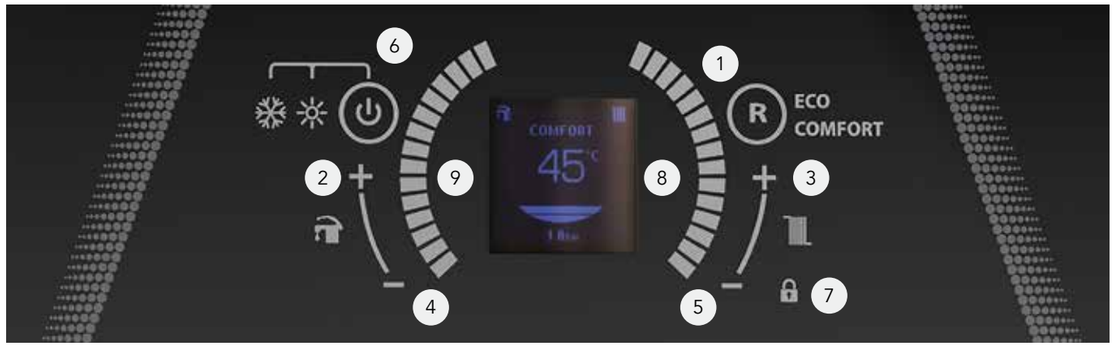
CAPACITY	14-20-24-28-30-35 kW
MODELS	Combi Boiler (HM) CH Only (HCH) System Boiler (HST)
FLUE TYPE	C and B Types
GAS TYPE	Natural Gas/ LPG

- Plated exchanger in order to get hot water at a high comfort level
- Feed forward feature of potable water and ability to get water at constant temperature via the turbine system
- Boost feature in domestic water (possibility to get more comfortable hot water by exceeding 15% device capacity)
- Minimal dimensions to fit in (678 mm x 410 mm x 288 mm)
- Full touch glass screen
- Special design with glass front panel
- Design that facilitates servicing and maintenance
- Predictive Maintenance Features (In cases where there is a risk of error, giving warning before error occurs)
- Error message voice alert system
- Silent operation (<47 dB)
- 2 functions in 1 electrode (ignition - ionization)
- Compact Full Hermetic Structure
- Single body for 60/100 mm and 80/125 chimneys.
- Child lock
- TSE, CE, WRAS and EAC approved
- Ability to connect on/off and opentherm room thermostat, external weather temperature sensor and timer
- Control availability with iOS and Android applications via the smart room thermostat (Optional)
- Pressured System Solar Energy Support (Optional)

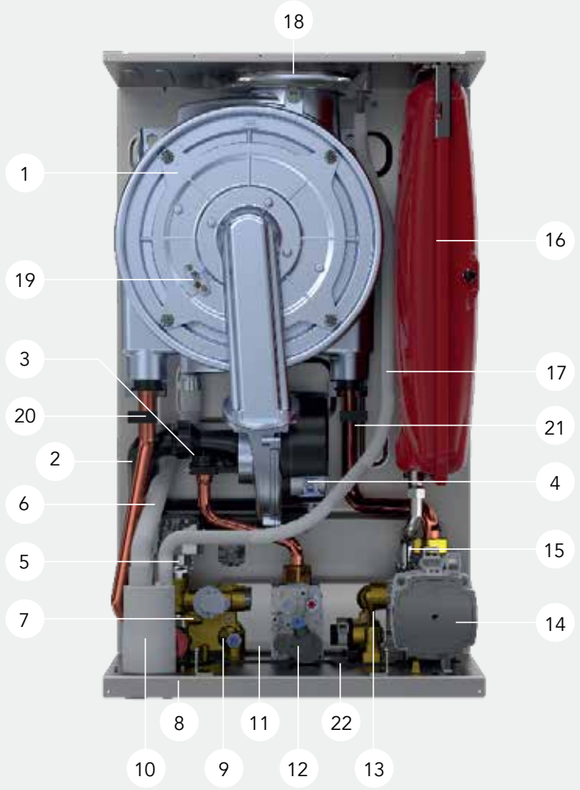
Superior Safety Systems

1. High Water Pressure (3 bar) safety unit protects both the central heating system and the combi boiler against overpressure
2. Low Water Pressure (0,4 bar) safety unit switches the combi boiler off when the water pressure is low
3. Expansion Tank (8 l) compensates expansion of the hot water circulating within the central heating system
4. Flame Loss Protection
5. Pump Blockage unit protects the pump against blockage risk after it remains idle for a long time
6. 3-Way Blockage Protection unit for monothermic models
7. Automatic Air Purger for the pump
8. Over Heating Protection Unit for DHW (71 °C)
9. Over Heating Protection Unit for Flue Gas (95 °C)
10. Over Heating Safety Unit for CH (95 °C)
11. Low Voltage Safety Unit (170 VAC)
12. Internal By-Pass System
13. Anti-Freeze Protection
14. Hall Effect Flow Sensor Detection
15. Ingress of Water Protection from Air Inlet Side of Chimney
16. Annual Maintenance Reminding System

How to Adjust…



1. **Reset Button** When a lockout error condition occurs (EXX), the error must first be corrected so that the error code can be removed from the LCD screen. After pressing the "Reset" key once, the device can switch back to normal operation state. The first time the device starts, it will start working in Comfort mode. Once the Reset button is pressed when operating in Comfort mode, the device will switch to Eco mode. Then when Reset button is pressed again, the unit will switch to Comfort mode.
2. **Domestic Hot Water Increase Temperature Button** The temperature of the domestic water can be increased up to 65 °C
3. **Button: Central Heating Water Increase Temperature Button The** temperature **of the hea**ting water can be increased up to 80 °C
4. **Button: Domestic Hot Water Decrease Temperature Button** The temperature of the domestic water can be decreased down to 30 °C
5. **Button: Central Heating Water Decrease Temperature Button** The temperature of the heating water can be decreased down to 30 °C
6. **Button: Position Selection Button (On/Off and Summer/Winter Switch Button)** Main functions; The position can be changed by pressing the position selection button once to change between the winter mode and the summer mode. If the button is pressed for 5 seconds, the device will switches into "standby" position. It will suffice to press the button once to get the device in operation position.
7. **Button: Child Lock Button** It is active when the Child Lock Button is kept pressed for 5 seconds and no touch button on the screen performs its function. Just press and hold for 5 seconds to remove it from the child lock.
8. **Button: Central Heating Slider Temperature Button** The temperature of the heating water can be adjust between 30°C – 80 °C
9. **Button: Domestic Hot Water Slider Temperature Button** The temperature of the domestic water can be adjust between 30°C – 65 °C



1. Main Exchanger
2. Silencer
3. Venturi
4. Fan
5. Motorized Valve
6. Condensing Water Hose
7. Outlet Manifold
8. 3 Bar Safety Valve
9. Pressure Sensor
10. Siphon
11. Plated Heat Exchanger
12. Gas Valve
13. Return Manifold
14. Pump
15. Flexible Connection Hose
16. Expansion Tank (8 liters)
17. Rainwater Hose
18. Rainwater Hood
19. Ignition Electrode
20. Supply Temp. Sensor
21. Return Temp. Sensor
22. DHW Flow Sensor

Technical Specifications

PRODUCT TYPE	UNIT	Confeo Premix 14 HM-HCH-HST	Confeo Premix 20 HM-HCH-HST	Confeo Premix 24 HM-HCH-HST	Confeo Premix 28 HM-HCH-HST	Confeo Premix 30 HM-HCH-HST	Confeo Premix 35 HM-HCH-HST
Gas Category	-	I2H, I3P, I2Esi, I2E(S), II2L3P, II2H3P, II2ELL3P, II2Esi3P					
Flue Types	-	C13(x), C33(x), C43(x), C53(x), C63(x), C83(x), B23, B33					
Gas Input Pressure (Natural Gas G20)	mbar	20					
Gas Input Pressure (Natural Gas G25)	mbar	20/25					
Gas Input Pressure (LPG G31)	mbar	37/50					
Capacity-Efficiency							
Minimum Heating Power (Min. 60°C)	kW	5,6	5,6	5,6	6,4	6,9	8
Maximum Heating Power (80/60°C)	kW	14,1	20,2	24,5	28	30	35
Minimum Heating Power (Min. 30°C)	kW	6,7	6,7	6,7	7,7	8,3	9,6
Maximum Heating Power (50/30°C)	kW	15	22,2	26	29,6	31,7	37
Minimum Heat Input (Qn)	kW	6,2	6,2	6,2	7,2	7,7	9
Maximum Heat Input (Qn)	kW	14,5	20,7	25,2	28,7	30,8	35,9
DHW Maximum Heat Input (Qn)	kW	25,2	25,2	27,2	31,5	33,5	35,9
ERP Informations							
Seasonal Space Heating Energy Efficiency Class	-	A	A	A	A	A	A
Water Heating Energy Efficiency Class/ Load Profile	-	A/XL	A/XL	A/XL	A/XL	A/XL	A/XL
Rated Heat Output (Prated)	kW	14,1	20,2	24,5	28	30	35
Seasonal Space Heating Energy Efficiency	%	92	92,11	92,21	92,71	92,03	92,85
Water Heating Energy Efficiency	%	90,7	90,7	83,6	83,9	82,8	82,8
Sound Power Level	db(A)	44	46	47	49	50	52
At rated heat output and high temperature regime(⍰4)	%	87,9	87,9	87,9	87,9	87,9	87,9
At 30% of rated heat output and low temperature regime (⍰1)	%	97,2	97,2	97,2	97,7	97,5	97,6
At Full Load elmax	kW	0,025	0,035	0,04	0,04	0,056	0,066
At Part Load elmin	kW	0,012	0,012	0,012	0,012	0,013	0,013
In standby Mode	kW	0,004	0,004	0,005	0,004	0,004	0,004
Standby Heat Loss	kW	0,065	0,065	0,065	0,065	0,065	0,065
Emissions of NOX Level	mg/kWh	33,35	38,06	32,27	21,29	37,4	25,05
Daily Electricity Consumption (Qelect)	kWh	0,2	0,2	0,21	0,22	0,24	0,212
Daily Fuel Consumption (Qfuel)	kWh	23,072	23,072	23,767	22,8	23,021	21,505
Gas Consumption							
Natural Gas (Min-Max Capacity)	m^3/h	0,65-1,53	0,65-2,2	0,65-2,65	0,75-3,02	0,81-3,25	0,94-3,79
LPG (Min-Max Capacity) (Propane)	kg/h	0,51-1,2	0,51-1,7	0,51-1,98	0,59-2,26	0,63-2,46	0,74-2,87
NOX Class	-	6	6	6	6	6	6
Central Heating							
Minimum Water Pressure	bar	0,4	0,4	0,4	0,4	0,4	0,4
Maximum Water Pressure	bar	3	3	3	3	3	3
Operation Range (@Radiator heating)	°C	30-80	30-80	30-80	30-80	30-80	30-80
Operation Range (@Underfloor heating)	°C	30-45	30-45	30-45	30-45	30-45	30-45
Maximum Limit Temperature	°C	< 90	< 90	< 90	< 90	< 90	< 90
Domestic Hot Water (only valid for HM)							
Minimum Flow for Operating	l/min	2,5 (±%10)	2,5 (±%10)	2,5 (±%10)	2,5 (±%10)	2,5 (±%10)	2,5 (±%10)
Minimum Flow for Closing	l/min	2,0 (±%10)	2,0 (±%10)	2,0 (±%10)	2,0 (±%10)	2,0 (±%10)	2,0 (±%10)
Maximum Flow Rate	l/min	10 ±%15 (ΔT = 36,1°C)	10 ±%15 (ΔT = 36,1°C)	12 ±%15 (ΔT = 32,4°C)	12 ±%15 (ΔT = 37,6°C)	12 ±%15 (ΔT = 40,0°C)	14 ±%15 (ΔT = 36,8°C)
Minimum Water Pressure	bar	0,4	0,4	0,4	0,4	0,4	0,4
Maximum Water Pressure	bar	10	10	10	10	10	10
Operation Range	°C	30-65	30-65	30-65	30-65	30-65	30-65
Maximum Limit Temperature	°C	≤ 71	≤ 71	≤ 71	≤ 71	≤ 71	≤ 71
General							
Electrical Supply	V AC-Hz	230 V AC-50 Hz					
Electrical Consumption (Max-Std Pump)	Watt	120	130	145	155	170	190
Electrical Consumption (Max-HE Pump)	Watt	65	80	85	110	130	165
Protection Class	-	IPX4D					
Expansion Vessel Capacity	l	8					
Weight (Net)	kg	31			32	32	34
Dimensions (HxWxD)	mm	678*410*288					
Flue Lengths							
C13 – 60/100 Max.	m	10	10	10	10	10	10
C13 – 80/125 Max.	m	20	20	20	20	20	20
C33 – 60/100 Max.	m	10	10	10	10	10	10
C33 – 80/125 Max.	m	20	20	20	20	20	20
C43 – 60/100 Max.	m	10	10	10	10	10	10
C53 – 60/100 Max.	m	10	10	10	10	10	10
C83 – 80/80 Max.	m	28	28	28	28	28	28
C83 – 80/80 Min.	m	3	3	3	3	3	3
B23 – 80 Max.	m	28	28	28	28	28	28
B33 – 60/100 Max.	m	10	10	10	10	10	10
Emission Values							
$C0_2$ Ratio (@Max-G20)	%	9,2 ± 0,2	9,2 ± 0,2	9,3 ± 0,2	9,5 ± 0,2	9,5 ± 0,2	9,5 ± 0,2
$C0_2$ Ratio (@Min-G20)	%	8,7 ± 0,2	8,7 ± 0,2	8,7 ± 0,2	8,9 ± 0,2	8,9 ± 0,2	8,9 ± 0,2
$C0_2$ Ratio (@Max-G31)	%	10,4± 0,2	10,4± 0,2	10,4± 0,2	10,6 ± 0,2	10,6 ± 0,2	10,6 ± 0,2
$C0_2$ Ratio (@Min-G31)	%	9,6 ± 0,2	9,6 ± 0,2	9,6 ± 0,2	9,9 ± 0,2	9,9 ± 0,2	9,9 ± 0,2
Boiler Circuit (only valid for HST)							
Operation Range	°C	30-65	30-65	30-65	30-65	30-65	30-65

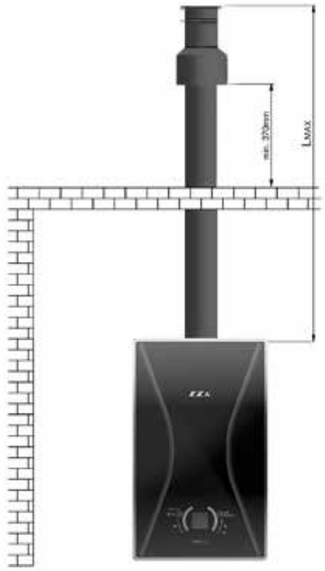
Chimney Applications

Horizontal & Vertical Applications

Horizontal Hermetic Flue Application

L max. distance with single elbow: 10 m, Ø60/100

L max. distance with single elbow: 20 m, Ø80/125



Vertical Hermetic Flue Application

L max. distance without elbow: 10 m, Ø60/100

L max. distance without elbow: 20 m, Ø80/125

Valve Connection Kit

Our Valve Connection Kit comprises of the following items:

3/4" Ball Valve Blue Butterfly Handle (Cold Water In)

1/2" Union (Hot Water Out)

3/4" Ball Valve with Yellow Handwheel (Gas)

1/2" Ball Valve with Blue Handwheel (Heating Return)

3/4" Ball Valve with Red Butterfly Handle (Heating Flow)

Optional Control Accessories

E.C.A. Poly Comfort 200W Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Comfort 200B Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400W Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400B Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Pure 100W Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Poly Pure 100W Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,2°C
- Room Control Temperature: 5°C-35°C

E.C.A. Programmable Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,2°C
- Daily, 4 different time frames

E.C.A.
PROTEUS PREMIX

H_2 20%

Superior Safety Systems

Technical Design Properties

- 14-20-24-28-30-35-45 kW capacities
- Usage ability with Natural Gas and LPG
- 92% efficiency
- ErP A energy efficiency class
- ErP regulation compatible
- Eco and Comfort modes for the Central Heating
- 1/6 modulation rate
- Low NOx and CO emissions
- With the help of a energy efficient automatic purger equipped circulation pump, less energy consumption and compatibility with every space.
- High combustion efficiency with stainless steel burner and low waste gas emission
- Protection of the fitting and combi boiler by the help of the automatic by-pass system
- Protection against freezing

CAPACITY	14-20-24-28-30-35-45 kW
MODELS	Combi Boiler (HM) CH Only (HCH) System Boiler (HST)
FLUE TYPE	C and B Types
GAS TYPE	Natural Gas/ LPG

- "Pump over-run" feature that prevents thermal piling up within the fitting
- Plated exchanger in order to get hot water at a high comfort level.
- Feed forward feature of potable water and ability to get water at constant temperature via the turbine system
- Minimal dimensions to fit in (678 mm x 410 mm x 288 mm)
- Large display, white LCD illumination integrated with ergonomically designed electronic card.
- Ergonomic control panel design
- Design that facilitates servicing and maintenance
- The rear cover of the control panel is flexible; thus, intervention without completely removing the cover is possible.
- Silent operation (<49 dB)
- 2 functions in 1 electrode (ignition - ionization)
- Compact Full Hermetic Structure
- Single body for 60/100 mm and 80/125 chimneys.
- TSE, CE and WRAS approved
- Ability to connect room thermostat, external weather temperature sensor and timer
- Ability to connect on/off and opentherm room thermostat, external weather temperature sensor and timer
- Pressured System Solar Energy Support (Optional)

1. High Water Pressure (3 bar) safety unit protects both the central heating system and the combi boiler against overpressure
2. Low Water Pressure (0,4 bar) safety unit switches the combi boiler off when the water pressure is low
3. Expansion Tank (8 l) compensates expansion of the hot water circulating within the central heating system
4. Flame Loss Protection
5. Pump Blockage unit protects the pump against blockage risk after it remains idle for a long time
6. 3-Way Blockage Protection unit for monothermic models
7. Automatic Air Purger for the pump
8. Over Heating Protection Unit for DHW (71 °C)
9. Over Heating Protection Unit for Flue Gas (95 °C)
10. Over Heating Safety Unit for CH (95 °C)
11. Low Voltage Safety Unit (170 VAC)
12. Internal By-Pass System
13. Anti-Freeze Protection
14. Hall Effect Flow Sensor Detection
15. Ingress of Water Protection from Air Inlet Side of Chimney
16. Annual Maintenance Reminding System

How to Adjust…

1.Position Selection Button The position can be changed by pressing the position selection button once to change between the winter mode and the summer mode. If the button is pressed for 3 seconds, the device will switches into "standby" position. It will suffice to press the button once to get the device in operation position.

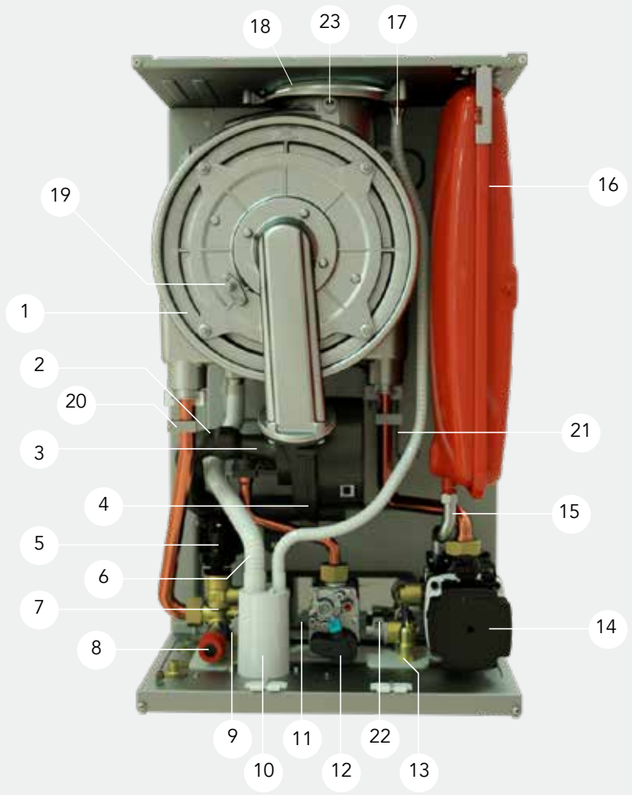
2.Reset Button When a lockout error condition occurs (EXX), the error must first be corrected so that the error code can be removed from the LCD screen. After pressing the "Reset" key once, the device can switch back to normal operation state. The first time the device starts, it will start working in Comfort mode. Once the Reset button is pressed when operating in Comfort mode, the device will switch to Eco mode. Then when Reset button is pressed again, the unit will switch to Comfort mode.

3.Domestic Hot Water Increase Temperature Button The temperature of the domestic water can be increased up to 65 °C

4.Central Heating Water Increase Temperature Button The temperature of the heating water can be increased up to 80 °C

5.Domestic Hot Water Decrease Temperature Button The temperature of the domestic water can be decreased down to 30 °C

6.Central Heating Water Decrease Temperature Button The temperature of the heating water can be decreased down to 30 °C



1. Main Exchanger
2. Silencer
3. Venturi
4. Fan
5. Motorized Valve
6. Condensing Water Hose
7. Outlet Manifold
8. 3 Bar Safety Valve
9. Pressure Sensor
10. Siphon
11. Plated Heat Exchanger
12. Gas Valve
13. Return Manifold
14. Pump
15. Copper Expansion Tube
16. Expansion Tank (8 liters)
17. Rainwater Hose
18. Rainwater Collection Reservoir
19. Ignition Electrode
20. Temperature Sensor for Supply Water
21. Temperature Sensor for Return Water
22. Turbine
23. Flue Gas Sensor

Technical Specifications

PRODUCT TYPE	UNIT	Proteus Premix 14 HM-HCH-HST	Proteus Premix 20 HM-HCH-HST	Proteus Premix 24 HM-HCH-HST	Proteus Premix 28 HM-HCH-HST	Proteus Premix 30 HM-HCH-HST	Proteus Premix 35 HM-HCH-HST	Proteus Premix 45 HM-HCH-HST
Gas Category	-	I2H, I2E, I3+, I3B/P, I3P, II2E3B/P, II2ELL3B/P, II2ELL3P, II2E3rP, II2H3B/P, II2H3P, II2L3P						
Flue Types	-	C13(x), C33(x), C43(x), C53(x), C63(x), C83(x), B23, B33						
Gas Input Pressure (Natural Gas G20)	mbar	20						
Gas Input Pressure (Natural Gas G25)	mbar	20/25						
Gas Input Pressure (G30)	mbar	30/50						
Gas Input Pressure (LPG G31)	mbar	37/50						
Capacity-Efficiency								
Minimum Heating Power (Min. 60°C)	kW	5,6	5,6	5,6	6,4	6,9	8	9,0
Maximum Heating Power (80/60°C)	kW	14,1	20,2	24,5	28	30	35	42,8
Minimum Heating Power (Min. 30°C)	kW	6,7	6,7	6,7	7,7	8,3	9,6	10,2
Maximum Heating Power (50/30°C)	kW	15	22,2	26	29,6	31,7	37	47,0
Minimum Heat Input (Qn)	kW	6,2	6,2	6,2	7,2	7,7	9	9,5
Maximum Heat Input (Qn)	kW	14,5	20,7	25,2	28,7	30,8	35,9	45,5
ERP Informations								
Seasonal Space Heating Energy Efficiency Class	-	A	A	A	A	A	A	A
Water Heating Energy Efficiency Class/ Declared Load Profile	-	A/XL	A/XL	A/XL	A/XL	A/XL	A/XL	A / XL
Rated Heat Output (Prated)	kW	20,2	20,2	24,5	28	30	35	42,8
Seasonal Space Heating Energy Efficiency	%	91,11	91,4	92,2	92,4	92	92,9	92,18
Water Heating Energy Efficiency	%	83,6	83,6	83,6	83,9	82,8	82,8	87,8
Sound Power Level	db(A)	49	49	49	49	49	49	53
At rated heat output and high temperature regime (η4)	%	87,9	87,9	87,9	87,9	87,9	87,9	87,9
At 30% of rated heat output and low temperature regime (η1)	%	97	97	97,2	97,4	97	97,9	97
At Full Load elmax	kW	0,028	0,035	0,04	0,051	0,056	0,066	0,08
At Part Load elmin	kW	0,012	0,012	0,012	0,012	0,013	0,013	0,013
In standby Mode	kW	0,004	0,004	0,004	0,004	0,004	0,004	0,0021
Standby Heat Loss	kW	0,065	0,065	0,065	0,065	0,065	0,065	0,07
Emissions of NOX Level	mg/kWh	25,91	27,2	25,91	21,29	25,91	25,91	34
Daily Electricity Consumption (Qelect)	kWh	0,423	0,423	0,194	0,22	0,24	0,24	0,15
Daily Fuel Consumption (Qfuel)	kWh	22,88	22,88	22,8	22,8	23,021	23,021	23,96
Gas Consumption								
Natural Gas (Min-Max Capacity)	m^3/h	0,65-1,53	0,65-2,2	0,65-2,65	0,75-3,02	0,81-3,25	0,94-3,79	0,95 - 4,65
LPG (Min-Max Capacity) (Propane)	kg/h	0,51-1,2	0,51-1,7	0,51-1,98	0,59-2,26	0,63-2,46	0,74-2,87	0,74 - 3,53
NOX Class	-	6	6	6	6	6	6	6
Central Heating								
Minimum Water Pressure	bar	0,4	0,4	0,4	0,4	0,4	0,4	0,8
Maximum Water Pressure	bar	3	3	3	3	3	3	3
Operation Range (@Radiator heating)	°C	30-80	30-80	30-80	30-80	30-80	30-80	30-80
Operation Range (@Underfloor heating)	°C	30-45	30-45	30-45	30-45	30-45	30-45	< 30-45
Maximum Limit Temperature	°C	< 90	< 90	< 90	< 90	< 90	< 90	< 90
Domestic Hot Water (only valid for HM)								
Minimum Flow for Operating	l/min	2 (±%10)	2 (±%10)	2 (±%10)	2 (±%10)	2 (±%10)	2 (±%10)	3 (±%10)
Minimum Flow for Closing	l/min	1,5 (±%10)	1,5 (±%10)	1,5 (±%10)	1,5 (±%10)	1,5 (±%10)	1,5 (±%10)	2 (±%10)
Maximum Flow Rate	l/min	10 ±%15 (ΔT = 34,7°C)	10 ±%15 (ΔT = 34,7°C)	10 ±%15 (ΔT = 34,7°C)	12 ±%15 (ΔT = 33,5°C)	12 ±%15 (ΔT = 35,8°C)	14 ±%15 (ΔT = 35,8°C)	21,7 ±%15 (ΔT = 30°C)
Minimum Water Pressure	bar	0,4	0,4	0,4	0,4	0,4	0,4	0,8
Maximum Water Pressure	bar	10	10	10	10	10	10	10
Operation Range	°C	30-65	30-65	30-65	30-65	30-65	30-65	30-60
Maximum Limit Temperature	°C	≤ 71	≤ 71	≤ 71	≤ 71	≤ 71	≤ 71	≤ 71
General								
Electrical Supply	V AC-Hz	231 V AC-50 Hz						230 V AC-50 Hz
Electrical Consumption (Max-Std Pump)	Watt	120	130	135	155	170	190	240
Electrical Consumption (Max-HE Pump)	Watt	60	70	80	110	130	165	180
Protection Class	-	IPX4D						
Expansion Vessel Capacity	l	8						12
Weight (Net)	kg	28,5			30	30	32	36
Dimensions (HxWxD)	mm	678*410*288						325x444x670
Flue Lengths								
C13 – 60/100 Max.	m	10	10	10	10	10	10	12
C13 – 80/125 Max.	m	20	20	20	20	20	20	22
C33 – 60/100 Max.	m	10	10	10	10	10	10	12
C33 – 80/125 Max.	m	20	20	20	20	20	20	22
C43 – 60/100 Max.	m	10	10	10	10	10	10	12
C53 – 60/100 Max.	m	10	10	10	10	10	10	12
C83 – 80/80 Max.	m	28	28	28	28	28	28	30
C83 – 80/80 Min.	m	3	3	3	3	3	3	4
B23 – 80 Max.	m	28	28	28	28	28	28	30
B33 – 60/100 Max.	m	10	10	10	10	10	10	12
Emission Values								
CO_2 Ratio (@Max-G20)	%	9,15 ± 0,2	9,2 ± 0,2	9,5 ± 0,2	9,5 ± 0,2	9,5 ± 0,2	9,5 ± 0,2	9,0 ± 0,2
CO_2 Ratio (@Min-G20)	%	8,9 ± 0,2	8,9 ± 0,2	8,9 ± 0,2	8,9 ± 0,2	8,9 ± 0,2	8,9 ± 0,2	8,4 ± 0,2
CO_2 Ratio (@Max-G31)	%	10,3 ± 0,2	10,3 ± 0,2	10,6 ± 0,2	10,6 ± 0,2	10,6 ± 0,2	10,6 ± 0,2	10,1 ± 0,2
CO_2 Ratio (@Min-G31)	%	9,7 ± 0,2	9,7 ± 0,2	9,9 ± 0,2	9,9 ± 0,2	9,9 ± 0,2	9,9 ± 0,2	9,5 ± 0,2
Boiler Circuit (only valid for HST)								
Operation Range	°C	30-65	30-65	30-65	30-65	30-65	30-65	30-65

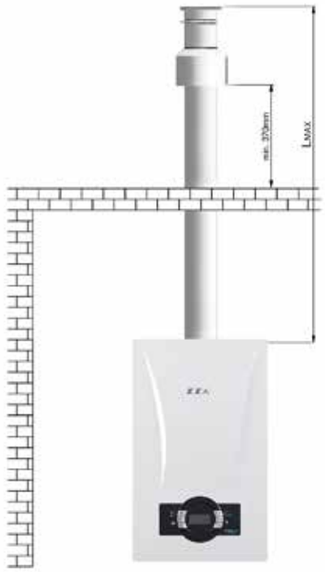
Chimney Applications

Horizontal & Vertical Applications

Horizontal Hermetic Flue Application

L max. distance with single elbow: 10 m, Ø60/100

L max. distance with single elbow: 20 m, Ø80/125



Vertical Hermetic Flue Application

L max. distance without elbow: 10 m, Ø60/100

L max. distance without elbow: 20 m, Ø80/125

Valve Connection Kit

Our Valve Connection Kit comprises of the following items:

3/4" Ball Valve Blue Butterfly Handle (Cold Water In)

1/2" Union (Hot Water Out)

3/4" Ball Valve with Yellow Handwheel (Gas)

1/2" Ball Valve with Blue Handwheel (Heating Return)

3/4" Ball Valve with Red Butterfly Handle (Heating Flow)

Optional Control Accessories

E.C.A. Poly Comfort 200W Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Comfort 200B Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400W Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400B Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Pure 100W Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Poly Pure 100W Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,2°C
- Room Control Temperature: 5°C-35°C

E.C.A. Programmable Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,2°C
- Daily, 4 different time frames

E.C.A.
PROTEUS PLUS BLUE

Technical Design Properties

- 11-13-16-20-24-28-33-37 kW capacities hermetic combi boiler (monothermic)
- Usage ability with Natural Gas and LPG
- 90,6% efficiency
- 1/3 modulation rate
- Low CO emission
- 3 way standard pump
- Control panel with touch screen
- Minimal dimensions to fit in (720x400x330 mm)
- Silent Operation (<49 dB for 11-13-16-20-24 kW; <52 dB for 28 kW; <54 dB for 33-37 kW)
- Design which provides easy service and maintenance
- Chimney kit types: C12(X), C32(X), C42(X), C52(X)(Hermetic)
- On/Off and modulating room thermostat control possibility

CAPACITY	11-13-16-20-24-28-33-37 kW
MODELS	Combi Boiler (HM)
FLUE TYPE	C Types
GAS TYPE	Natural Gas/ LPG

Superior Safety Systems

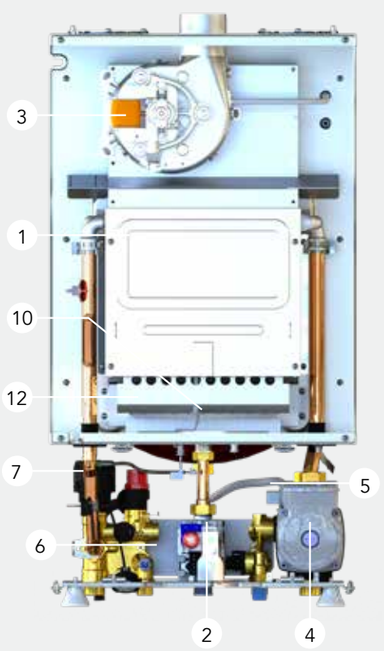
1. High Water Pressure (3 bar) safety unit protects both the central heating system and the combi boiler against overpressure
2. Low Water Pressure (0,8 bar) safety unit switches the combi boiler off when the water pressure is low
3. Hot Water Accumulation safety unit prevents thermal accumulation thanks to the by-pass and pump over-run systems
4. Expansion Tank (8 l) compensates expansion of the hot water circulating within the central heating system
5. EMC Filter removes electromagnetic interferences and ensures safety for the ignition process
6. Flame Loss Protection
7. Pump Blockage unit protects the pump against blockage risk after it remains idle for a long time
8. 3-Way Blockage Protection unit for monothermic models
9. 2-Stage Frost Safety Unit automatically operates depending on the water temperature values measured by the temperature sensors for central heating water and domestic water (only when the combi boiler is on stand-by mode)
10. Automatic Air Purger for the pump, Manual Air Purger for the expansion tank
11. Differential air pressure switch for flue gas exhaust safety
12. Over Heating Protection Unit for DHW (71 °C)
13. Over Heating Safety Unit for CH (95 °C)
14. Limit Thermostat to limit the temperature of the water outgoing from the exchanger at 105°C and to switch the combi boiler off
15. Low Voltage Safety Unit (160 VAC)
16. High Voltage Safety Unit (260 VAC)
17. Drain tap which enables discharging radiator circuit water in the combi boiler.

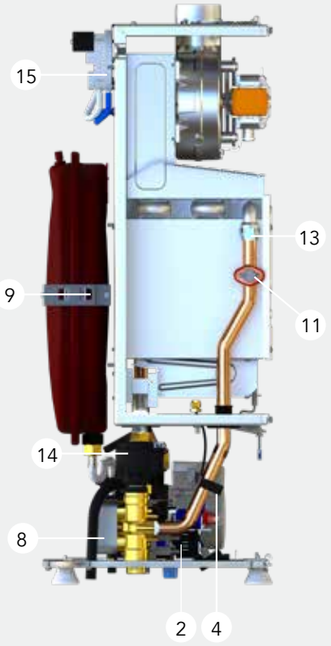
How to Adjust…

1. Position Selection Button: It enables opening/closing of your device, selection of summer/winter position, and resetting of the device.

2. Central Heating Water Temperature Adjusting Button: While the position selection button is in winter position, you can select a comfort temperature as you like in between 40° C - 80° C by turning the central heating water temperature adjusting button in between min. and max.

3. Domestic Hot Water Temperature Adjusting Button: While the position selection button is in summer or winter position, you can select a running water temperature in between 35°C - 64°C by turning the domestic hot water temperature adjusting button in between min. and max.





1. Main Exchanger
2. Gas Valve
3. Fan
4. Pump
5. Return Manifold
6. Supply Manifold
7. Supply NTC Temperature Sensor
8. Plated Heat Exchanger
9. Expansion Vessel
10. Ignition/Ionization Electrode
11. Limit Thermostat
12. Burner
13. Pipe Fitting Clip
14. Motorized Valve
15. APS

Technical Specifications

	PRP BLUE 11/13/16/20/24 HM					28 HM	33 HM	37HM	Unit
Category	II2H3B/P								
Type	C12(x) ,C32(x), *C42(x), *C52(x)								
Gas Type and Gas Supply Pressure	G20 (20 mbar) (Natural Gas), G31 (37 mbar) (LPG)								mbar
Efficiency	91					90,7	90,3	91,0	%
Power									
P Min. Heating power (thermal power)	8,2					9,5	11,3	12,3	kW
P Max. Heating power (thermal power)	11	13	16	20	23,3	28	32,5	36,04	kW
Q Thermal Load (min.)	9,2					10,5	12,5	13,5	kW
Q Thermal Load (max.)	12,1	14,3	17,9	22	25,6	30,5	35,3	39,6	kW
Gas Consumption									
LPG (at full power)	1,28	1,51	1,86	2,33	2,67	3,22	2,87	3,18	kg/h
LPG (at min. power)	0,96					1,12	1,01	1,1	kg/h
Natural gas (at full power)	0,94	1,12	1,37	1,72	2	2,15	3,67	4,08	m^3/h
Natural gas (at min. power)	0,72					0,88	1,3	1,4	m^3/h
Central Heating									
Minimum Water Pressure	0,8								bar
Maximum Water Pressure	3								bar
Maximum Water Temperature	90								°C
Temperature Setting range	30-80								°C
Domestic Hot Water									
Min. Flow Rate	3								l/min.
Max. Flow Rate Min.	10 (Δt=33,4°C)					12 (Δt=33,4°C)	14 (Δt=33,4°C)	14 (Δt=37,7°C)	l/min.
Water Pressure	0,3								bar
Max. Water Pressure	10								bar
Hot Water Range	35-64								°C
General									
Electric Supply	230 V AC-50Hz								VAC- Hz
Electric Consumption	140					140	152		watt
Protection Class	IPx4D								
Expansion Tank	8								Liter
Dimension (HxWxD)	720x400x330								mm
Weight (without packaging)	33					34		35	kg
Nox Class	2						3		
Pipe Connectipons									
CH	3/4								Inch
DHW	1/2								Inch
Gas	3/4								Inch

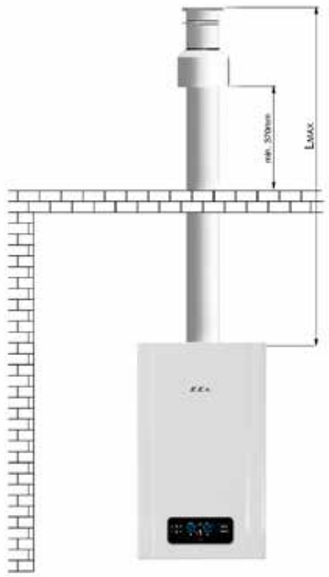
Chimney Applications

Horizontal & Vertical Applications

Horizontal Hermetic Flue Application

L max. distance with single elbow: 4 m, Ø60/100

L max. distance with single elbow: 6 m, Ø80/125



Vertical Hermetic Flue Application

L max. distance without elbow: 5 m, Ø60/100

L max. distance without elbow: 8 m, Ø80/125

Valve Connection Kit

Our Valve Connection Kit comprises of the following items:

3/4" Ball Valve Blue Butterfly Handle (Cold Water In)

1/2" Union (Hot Water Out)

3/4" Ball Valve with Yellow Handwheel (Gas)

1/2" Ball Valve with Blue Handwheel (Heating Return)

3/4" Ball Valve with Red Butterfly Handle (Heating Flow)

Optional Control Accessories

E.C.A. Poly Comfort 200W Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Comfort 200B Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400W Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400B Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Pure 100W Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Poly Pure 100W Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,2°C
- Room Control Temperature: 5°C-35°C

E.C.A. Programmable Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,2°C
- Daily, 4 different time frames

E.C.A.
GERDA

Technical Design Properties

- 11-13-16-20-24-28-33-37 kW capacities hermetic combi boiler (monothermic and storage)
- Usage ability with Natural Gas and LPG
- 90,6% efficiency
- 1/3 modulation rate
- Low CO emission
- 3 way standard pump
- LCD screen which shows the adjustment buttons and functions on remote control panel which has an ergonomic design.
- Minimal dimensions to fit in (720x400x330 mm)
- Silent Operation (<49 dB for 11-13-16-20-24 kW; <52 dB for 28 kW; <54 dB for 33-37 kW)
- Design which provides easy service and maintenance
- Chimney kit types: C12(X), C32(X), C42(X), C52(X) (Hermetic)
- On/Off and modulating room thermostat control possibility

CAPACITY	11-13-16-20-24-28-33-37 kW
MODELS	Combi Boiler (HM-HST)
FLUE TYPE	C Types
GAS TYPE	Natural Gas/ LPG

Superior Safety Systems

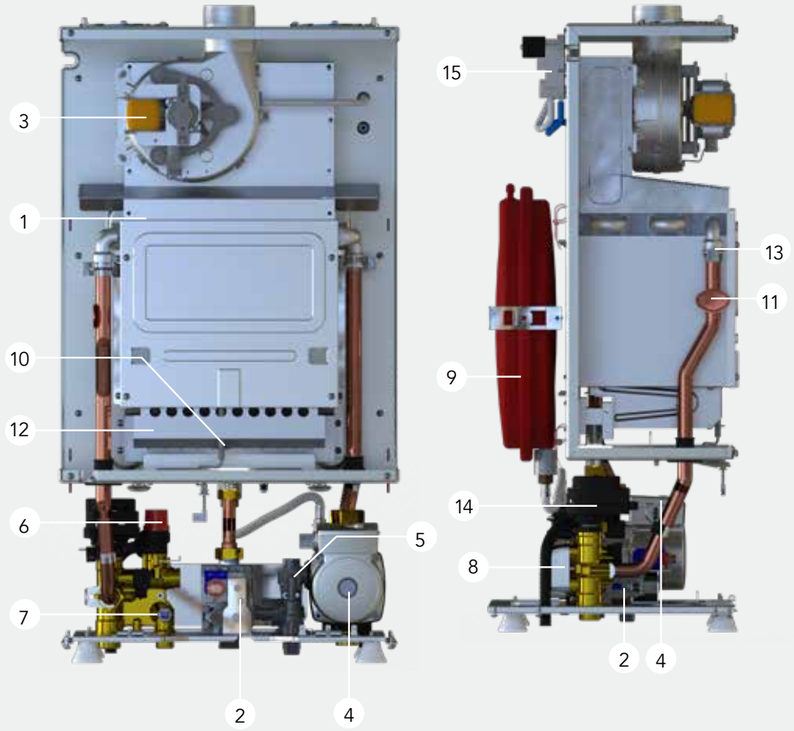
1. High Water Pressure (3 bar) safety unit protects both the central heating system and the combi boiler against overpressure
2. Low Water Pressure (0,8 bar) safety unit switches the combi boiler off when the water pressure is low
3. Hot Water Accumulation safety unit prevents thermal accumulation thanks to the by-pass and pump over-run systems
4. Expansion Tank (6 l) compensates expansion of the hot water circulating within the central heating system (8 l for 28-33 Kw)
5. EMC Filter removes electromagnetic interferences and ensures safety for the ignition process
6. Flame Loss Protection
7. Pump Blockage unit protects the pump against blockage risk after it remains idle for a long time
8. 3-Way Blockage Protection unit for monothermic models
9. 2-Stage Frost Safety Unit automatically operates depending on the water temperature values measured by the temperature sensors for central heating water and domestic water (only when the combi boiler is on stand-by mode)
10. Automatic Air Purger for the pump, Manual Air Purger for the expansion tank
11. Differential air pressure switch for flue gas exhaust safety
12. Over Heating Protection Unit for DHW (71 °C)
13. Over Heating Safety Unit for CH (95 °C)
14. Limit Thermostat to limit the temperature of the water outgoing from the exchanger at 105°C and to switch the combi boiler off
15. Low Voltage Safety Unit (160 VAC)
16. High Voltage Safety Unit (260 VAC)
17. Drain tap which enables discharging radiator circuit water in the combi boiler.

How to Adjust…

1.Position Selection Button: It enables opening/closing of your device, selection of summer/winter position.

2.Central Heating Water Temperature Adjusting Button: While the position selection button is in winter position, you can select a comfort temperature as you like in between 30° C - 80° C by turning the central heating water temperature adjusting button in between min. and max.

3.Domestic Hot Water Temperature Adjusting Button: While the position selection button is in summer or winter position, you can select a running water temperature in between 35°C - 64°C by turning the domestic hot water temperature adjusting button in between min. and max.



1. Main Exchanger
2. Gas Valve
3. Fan
4. Pump
5. Return Manifold
6. Supply Manifold
7. Supply NTC Temperature Sensor
8. Plated Heat Exchanger
9. Expansion Vessel
10. Ignition/Ionization Electrode
11. Limit Thermostat
12. Burner
13. Pipe Fitting Clip
14. Motorized Valve
15. APS

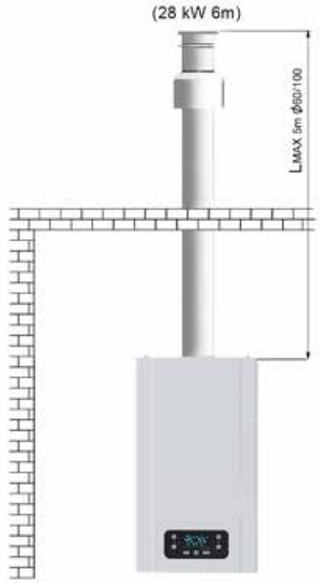
Technical Specifications

	GERDA 11/13/16/20/24 HM					28 HM	33HM	37HM	Unit
Category	II2H3B/P								
Type	C12(x) ,C32(x), *C42(x), *C52(x)								
Gas Type and Gas Supply Pressure	G20 (20 mbar) (Natural Gas), G31 (37 mbar) (LPG)								mbar
Efficiency	90,6					90,7	90,3	91,0	%
Power									
P Min. Heating power (thermal power)	8,2					9,5	11,3	12,3	kW
P Max. Heating power (thermal power)	11	13	16	20	23,3	28	32,5	36,04	kW
Q Thermal Load (min.)	9,2					10,5	12,5	13,5	kW
Q Thermal Load (max.)	12,1	14,3	17,6	22	25,6	30,5	35,3	39,6	kW
Gas Consumption									
LPG (at full power)	0,94	1,12	1,37	1,72	2	2,51	2,87	3,18	kg/h
LPG (at min. power)	0,72					0,88	1,01	1,1	kg/h
Natural gas (at full power)	1,28	1,51	1,86	2,33	2,67	3,22	3,67	4,08	m^3/h
Natural gas (at min. power)	0,96					1,12	1,3	1,4	m^3/h
Heating Circuit									
Minimum Water Pressure	0,8								bar
Maximum Water Pressure	3								bar
Maximum vWater Temperature	90								°C
Temperature Setting range	40-80								°C
Hot Running Water									
Min. Flow Rate	3								l/min.
Max. Flow Rate Min.	10 (Δt=33,4°C)					12 (Δt=33,4°C)	14 (Δt=33,4°C)	14 (Δt=37,7°C)	l/min.
Water Pressure	0,3								bar
Max. Water Pressure	10								bar
Hot Water Range	35-64								°C
General									
Electric Supply	230 V AC-50Hz								VAC- Hz
Electric Consumption	140					140	152		watt
Protection Class	IPx4D								
Expansion Tank	6					8			Liter
Dimension (HxWxD)	720x400x330								mm
Weight (without packaging)	32					33	34	35	kg
Nox Class	2						3		
Pipe Connections									
CH	3/4								Inch
DHW	1/2								Inch
Gas	3/4								Inch

Chimney Applications

Horizontal & Vertical Applications

Horizontal Hermetic Flue Application
L max. distance with single elbow: 4 m, Ø60/100
L max. distance with single elbow: 6 m, Ø80/125



Vertical Hermetic Flue Application
L max. distance without elbow: 5 m, Ø60/100
L max. distance without elbow: 8 m, Ø80/125

Valve Connection Kit

Our Valve Connection Kit comprises of the following items:

3/4" Ball Valve Blue Butterfly Handle (Cold Water In)
1/2" Union (Hot Water Out)
3/4" Ball Valve with Yellow Handwheel (Gas)
1/2" Ball Valve with Blue Handwheel (Heating Return)
3/4" Ball Valve with Red Butterfly Handle (Heating Flow)

Optional Control Accessories

E.C.A. Poly Comfort 200W Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Comfort 200B Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400W Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400B Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Pure 100W Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Poly Pure 100W Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,2°C
- Room Control Temperature: 5°C-35°C

E.C.A. Programmable Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,2°C
- Daily, 4 different time frames

E.C.A.
GELIOS PLUS

Technical Design Properties

- 11-13-16-20-24-28-33-37 kW capacities hermetic combi boiler (monothermic)
- Usage ability with Natural Gas and LPG
- 90,6% efficiency
- 1/3 modulation rate
- Low CO emission
- 3 way standard pump
- LCD screen which shows the adjustment buttons and functions on remote control panel which has an ergonomic design.
- Minimal dimensions to fit in (720x400x330 mm)
- Silent Operation (<49 dB for 11-13-16-20-24 kW; <52 dB for 28 kW; <54 dB for 33-37 kW)
- Design which provides easy service and maintenance
- Chimney kit types: C12(X), C32(X), C42(X), C52(X) (Hermetic)
- On/Off thermostat and smart thermostat control possibility

CAPACITY	11-13-16-20-24-28-33-37 kW
MODELS	Combi Boiler (HM)
FLUE TYPE	C Types
GAS TYPE	Natural Gas/ LPG

Superior Safety Systems

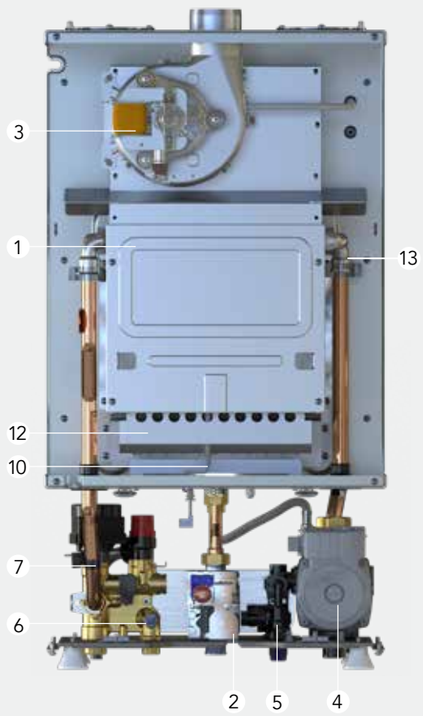
1. High Water Pressure (3 bar) safety unit protects both the central heating system and the combi boiler against overpressure
2. Low Water Pressure (0,8 bar) safety unit switches the combi boiler off when the water pressure is low
3. Hot Water Accumulation safety unit prevents thermal accumulation thanks to the by-pass and pump over-run systems
4. Expansion Tank (6 l) compensates expansion of the hot water circulating within the central heating system (8 l for 28-33 Kw)
5. EMC Filter removes electromagnetic interferences and ensures safety for the ignition process
6. Flame Loss Protection
7. Pump Blockage unit protects the pump against blockage risk after it remains idle for a long time
8. 3-Way Blockage Protection unit for monothermic models
9. 2-Stage Frost Safety Unit automatically operates depending on the water temperature values measured by the temperature sensors for central heating water and domestic water (only when the combi boiler is on stand-by mode)
10. Automatic Air Purger for the pump, Manual Air Purger for the expansion tank
11. Differential air pressure switch for flue gas exhaust safety
12. Over Heating Protection Unit for DHW (71 °C)
13. Over Heating Safety Unit for CH (95 °C)
14. Limit Thermostat to limit the temperature of the water outgoing from the exchanger at 105°C and to switch the combi boiler off
15. Low Voltage Safety Unit (160 VAC)
16. High Voltage Safety Unit (260 VAC)
17. Drain tap which enables discharging radiator circuit water in the combi boiler.

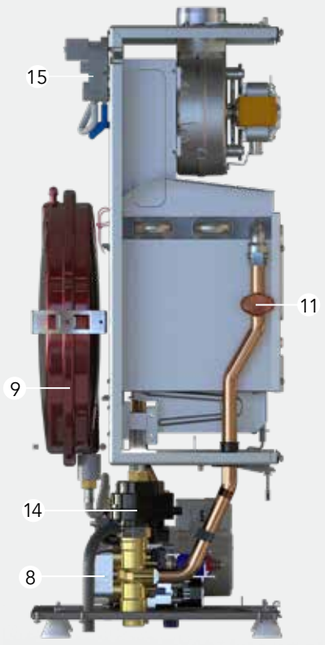
How to Adjust…

1.Position Selection Button: It enables opening/closing of your device, selection of summer/winter position, and resetting of the device.

2.Central Heating Water Temperature Adjusting Button: While the position selection button is in winter position, you can select a comfort temperature as you like in between 30° C - 80° C by turning the central heating water temperature adjusting button in between min. and max.

3.Domestic Hot Water Temperature Adjusting Button: While the position selection button is in summer or winter position, you can select a running water temperature in between 35°C - 64°C by turning the domestic hot water temperature adjusting button in between min. and max.





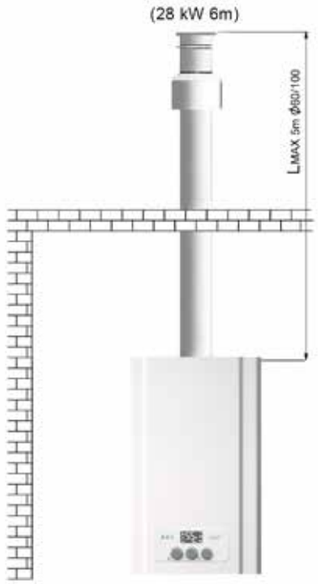
1. Main Exchanger
2. Gas Valve
3. Fan
4. Pump
5. Return Manifold
6. Supply Manifold
7. Supply NTC Temperature Sensor
8. Plated Heat Exchanger
9. Expansion Vessel
10. Ignition/Ionization Electrode
11. Limit Thermostat
12. Burner
13. Pipe Fitting Clip
14. Motorized Valve
15. APS

Technical Specifications

	GELIOS PLUS 11/13/16/20/24 HM					28 HM	33 HM	37 HM	Unit
Category	II2H3B/P								
Type	C12(x) ,C32(x), *C42(x), *C52(x)								
Gas Type and Gas Supply Pressure	G20 (20 mbar) (Natural Gas), G31 (37 mbar) (LPG)								mbar
Efficiency	90,6					90,7	90,3	91,0	%
Power									
P Min. Heating power (thermal power)	8,2					9,5	11,3	12,3	kW
P Max. Heating power (thermal power)	11,3	13	16	20	23,3	28	32,5	36,04	kW
Q Thermal Load (min.)	9,2					10,5	12,5	13,5	kW
Q Thermal Load (max.)	12,8	14,8	17,9	22,3	25,6	30,5	35,3	39,6	kW
Gas Consumption									
LPG (at full power)	1,07	1,23	1,5	1,88	2,15	2,51	2,87	3,18	kg/h
LPG (at min. power)	0,75					0,88	1,01	1,1	kg/h
Natural gas (at full power)	1,38	1,58	1,93	2,41	2,76	3,22	3,67	4,08	m^3/h
Natural gas (at min. power)	0,96					1,12	1,3	1,4	m^3/h
Heating Circuit									
Minimum Water Pressure	0,8								bar
Maximum Water Pressure	3								bar
Maximum Water Temperature	90								°C
Temperature Setting range	30-80								°C
Hot Running Water									
Min. Flow Rate	3								l/min.
Max. Flow Rate Min.	10 (Δt=33,4°C)					12 (Δt=33,4°C)	14 (Δt=33,4°C)	14 (Δt=37,7°C)	l/min.
Water Pressure	0,3								bar
Max.Water Pressure	10								bar
Hot Water Range	35-64								°C
General									
Electric Supply	230 V AC-50Hz								VAC- Hz
Electric Consumption	119					156	165		watt
Protection Class	IPx4D								
Expansion Tank	6					8			Liter
Dimension (HxWxD)	720x400x330								mm
Weight (without packaging)	32					33	34	35	kg
Nox Class	2						3		
Pipe Connections									
CH	3/4								Inch
DHW	1/2								Inch
Gas	3/4								Inch

Chimney Applications

Horizontal & Vertical Applications



Horizontal Hermetic Flue Application

L max. distance with single elbow: 4 m, Ø60/100

L max. distance with single elbow: 6 m, Ø80/125

Vertical Hermetic Flue Application

L max. distance without elbow: 5 m, Ø60/100

L max. distance without elbow: 8 m, Ø80/125

Valve Connection Kit

Our Valve Connection Kit comprises of the following items:

3/4" Ball Valve Blue Butterfly Handle (Cold Water In)

1/2" Union (Hot Water Out)

3/4" Ball Valve with Yellow Handwheel (Gas)

1/2" Ball Valve with Blue Handwheel (Heating Return)

3/4" Ball Valve with Red Butterfly Handle (Heating Flow)

Optional Control Accessories

E.C.A. Poly Comfort 200W Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Comfort 200B Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400W Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400B Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Pure 100W Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Poly Pure 100W Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,2°C
- Room Control Temperature: 5°C-35°C

E.C.A. Programmable Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,2°C
- Daily, 4 different time frames

ELECTRIC COMBI BOILER


E.C.A.
38
ARCEUS


E.C.A.
ARCEUS

Technical Design Properties

- Monothermic heating with 12-15-18-24-27 kW capacities
- All capacities (6kW, 9kW, 12kW, 15kW, 18kW, 24kW, 27kW) will be available as CH Only and Storage Heating
- Usage ability with single phase for 6kW, 9kW, 12kW, 15kW
- GREEN GOOD DESIGN award with modern exterior design
- No need for gas supply thus, installation is possible for rural areas.
- 100% heating efficiency due to no combustion loss
- Eco and Comfort modes for the Domestic Water Heating
- ErP regulation compatible
- Minimal dimensions to fit in (678 mm x 410 mm x 288 mm)
- Modulation range up to 1/12
- Extra leak current test to specify leakage current of resistors while the tank is electric insulated and charged with water
- No NOx and CO emissions. Clean cities by using clean energy source
- High life durability thanks to high temperature alloy material of resistor

CAPACITY	6-9-12-15-18-24-27 kW
MODELS	Combi Boiler (MT) CH Only (CH) System Boiler (ST)

- High strength with stainless steel material heating tank
- Protection of the fitting and combi boiler by the help of the automatic by-pass system
- Protection against freezing
- "Pump over-run" feature that prevents thermal piling up within the fitting
- Plated exchanger in order to get hot water at a high comfort level
- Feed forward feature of potable water and ability to get water at constant temperature via the turbine system
- On/Off, Reset and mode selection all together on one button for ease of use
- Design that facilitates servicing and maintenance
- Error message alert system
- Silent operation
- Sensitive temperature control with Double NTC system
- Relay control boards allocated separately for each resistor groups to decrease service cost
- Increased field life thanks to the randomized relay board controlling function
- Easy fault diagnosis thanks to the diagnosis menu
- Ease of meeting customer demands on site thanks to the wide parameter menu
- Extra automatic air purger placed on top of heating tank to prevent dry heating of resistors

Superior Safety Systems

1. 3-Phase Circuit breaker placed inside of appliance cut off high current.
2. 3-Phase contactor is placed to stop heating for error states.
3. High Water Pressure (3 bar) safety unit protects both the central heating system and the combi boiler against overpressure
4. Low Water Pressure (0,4 bar) safety unit switches the combi boiler off when the water pressure is low
5. Expansion Tank (8 l) compensates expansion of the hot water circulating within the central heating system.
6. Pump Blockage unit protects the pump against blockage risk after it remains idle for a long time
7. 3-Way Blockage Protection unit for monothermic models
8. Automatic Air Purger for the pump
9. Over Heating Protection Unit for DHW (71 °C)
10. Over Heating NTC protection (98 °C)
11. Over Heating Safety Unit for CH (95 °C)
12. Low Voltage Safety Unit (170 VAC)
13. Internal By-Pass System
14. Anti-Freeze Protection
15. Hall Effect Flow Sensor Detection
16. Annual Maintenance Reminding System

How to Adjust…

1.Domestic Water Temperature Decrease Button With the domestic water temperature decrease button, the temperature of the domestic water can be decreased to 30°C

2.Domestic Water Temperature Increase Button With the domestic water temperature increase button, the temperature of the domestic water can be increased to 65°C

3.Reset/Mode Selection Button Using mode can be changed by pressing the mode selection button to change between the winter mode and the summer mode. If the button is pressed for 3 seconds, the device will switch to the "stand by" position. It will be enough to press the button once to set the device in operation position.

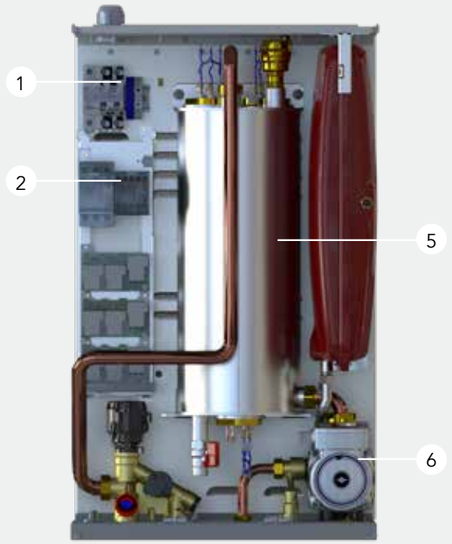
4.Heating Circuit Temperature Decrease Button With the central heating circuit temperature decrease button, the temperature of the heating water in the central heating circuit can be decreased to 30°C.

5.Central Heating Circuit Temperature Increase Button With the central heating circuit temperature increase button, the temperature of the heating water in the central heating circuit can be increased to 80°C.

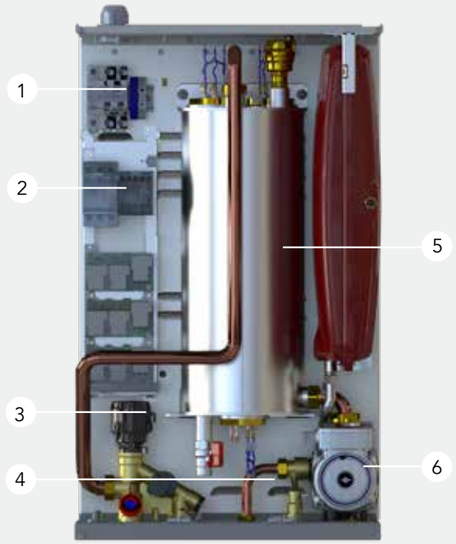
Technical Specifications

DEVICE TYPE		ARCEUS EK 6	ARCEUS EK 9	ARCEUS EK 12	ARCEUS EK 15	ARCEUS EK 18	ARCEUS EK 24	ARCEUS EK 27
Nominal Power (kW)		6	9	12	15	18	24	27
Minimum Heating Power (kW)		2	3	2	2	2	2	3
Supply Power Voltage		1~ 230 VAC	1~ 230 VAC	1~ 230 VAC	1~ 230 VAC	3~ 400 VAC	3~ 400 VAC	3~ 400 VAC
		3~ 400 VAC	3~ 400 VAC	3~ 400 VAC	3~ 400 VAC			
Nominal Current (A)		1~ 26,1	1~ 39,1	1~ 52,2	1~ 65,3	26,1	34,8	39,1
		3~ 8,7	3~ 13,1	3~ 17,4	3~21,7			
Power Cord Cross Section (mm²)		1~ 3x6	1~ 3x10	1~ 3x10	1~ 3x16	3~ 5x6	3~ 5x6	3~ 5x10
		3~ 5x2,5	3~ 5x2,5	3~ 5x4	3~ 5x6			
Protection Class		IPX4D	IPX4D	IPX4D	IPX4D	IPX4D	IPX4D	IPX4D
Sound Level (dB)		42	42	38	38	38	38	38
Net Weight (kg)		26	26	27	27	29	29	29
Gross Weight (kg)		29	29	30	30	32	32	32
Dimensions (HxWxD)		678x410x288	678x410x288	678x410x288	678x410x288	678x410x288	678x410x288	678x410x288
Central Heating Seasonal Energy Efficiency		39,4	39,5	39,6	39,8	39,8	39,9	39,9
Energy Efficiency Class	Domestic Hot Water Load Profile - Efficiency Class	-	-	M-C	L-C	L-C	XL-C	XL-C
	Central Heating	D	D	D	D	D	D	D
Maximum DHW Flow Rate (L/min)		-	-	7	8	9	10	10
ΔT for Maximum DHW Flow (°C)		-	-	24,6	26,9	28,7	34,4	38,7

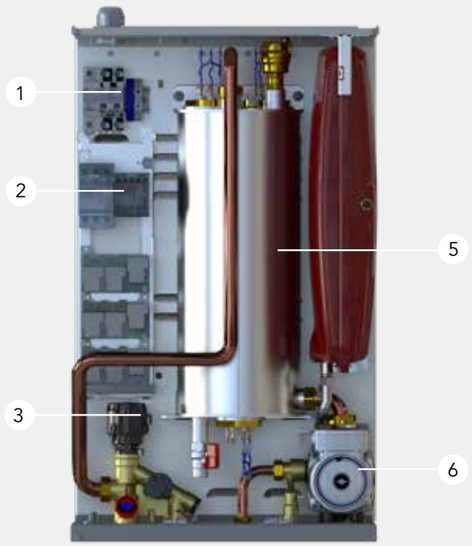
Model CH



Model MT



Model ST



1. Circuit Breaker
2. Contactor
3. 3 Way Valve
4. Plate Heat Exchanger
5. Heating Tank
6. Circulation Pump

Optional Control Accessories

E.C.A. Poly Comfort 200W Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Comfort 200B Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400W Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400B Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Pure 100W Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Poly Pure 100W Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,2°C
- Room Control Temperature: 5°C-35°C

E.C.A. Programmable Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,2°C
- Daily, 4 different time frames

CENTRAL HEATING SYSTEMS

E.C.A.
FELIS

Superior Safety Systems

Technical Design Properties

- 50-65-100-125-150 kW capacities
- Usage ability with Natural Gas and LPG
- 92% efficiency
- ErP A energy efficiency class
- %19-100 modulation rate
- Integrated back flow preventer

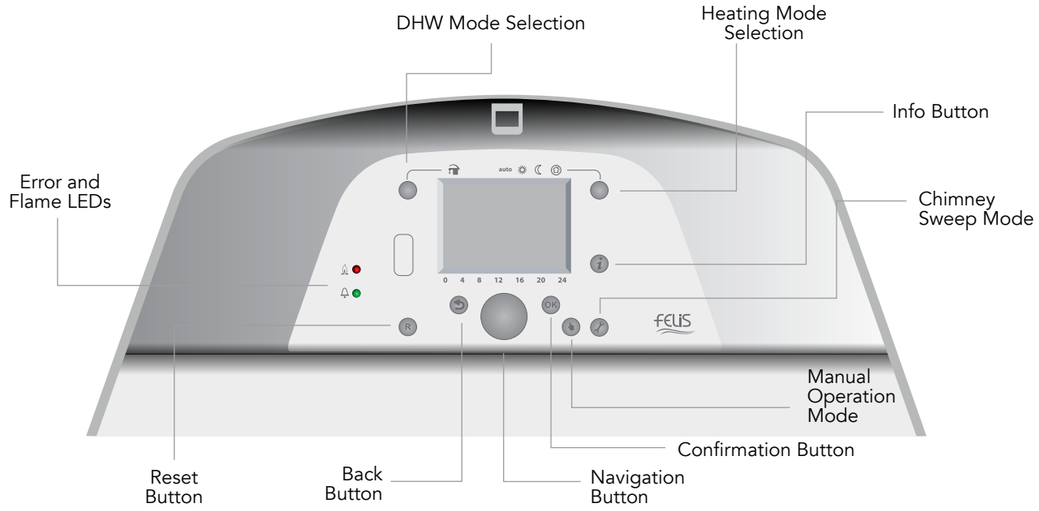
CAPACITY	50-65-100-125-150 kW
MODELS	High Capacity Boiler
FLUE TYPE	C and B Types
GAS TYPE	Natural Gas / LPG

- Stainless steel heat exchanger
- Storage tank support for DHW heating
- 6 Bar Operation Pressure
- Silent Operation (<51 dB)
- TSE and CE certificates
- Compatible with select room controllers (room thermostat, outdoor temperature sensor)
- Cascade option up to 16 boilers

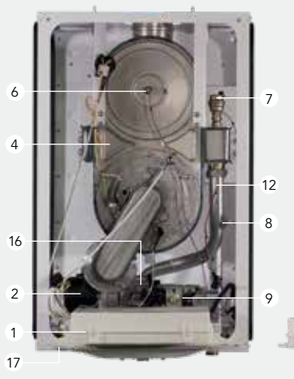
1. High Water Pressure Protection (3 bar for 50 Kw, 4,5 bar for 65 Kw and 6 bar for 100-125-150 Kw)
2. Low Water Pressure Protection (0,8 bar)
3. Flame Loss Protection
4. Over Heating Protection for Flue Gas (95 °C)
5. Over Heating Protection for CH Water Circuit (85 °C)
6. Safety Limit Thermostat for Burner Door (260 °C)
7. Safety Limit Thermostat for Water Side (105 °C)
8. Low Voltage Safety Unit (170 VAC)
9. Anti-Freeze Protection
10. Automatic Air Vent
11. Annual Maintenance Reminding System

How to Adjust…

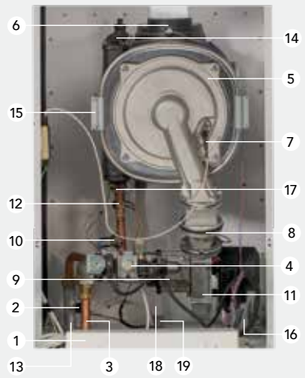
E.C.A. Felis condensing boiler gives extensive information to the user about the status of the appliance and system with its wide LCD screen and multi-language support while allowing full control on the appliance.



Felis 100/125/150



1 Display panel and motherboard box
2 Fan
3 Siphon hose
4 Heat exchanger
5 Heat exchanger hanging plate
6 Flue gas sensor
7 Auto air purger
8 Safety limit thermostat
9 Gas valve
10 Pressure sensor
11 Flue flap
12 Boiler outlet pipe (hot)
13 NTC temperature sensor (output)
14 NTC temperature sensor (input)
15 Boiler inlet pipe (cold)
16 Venturi
17 Siphon cover



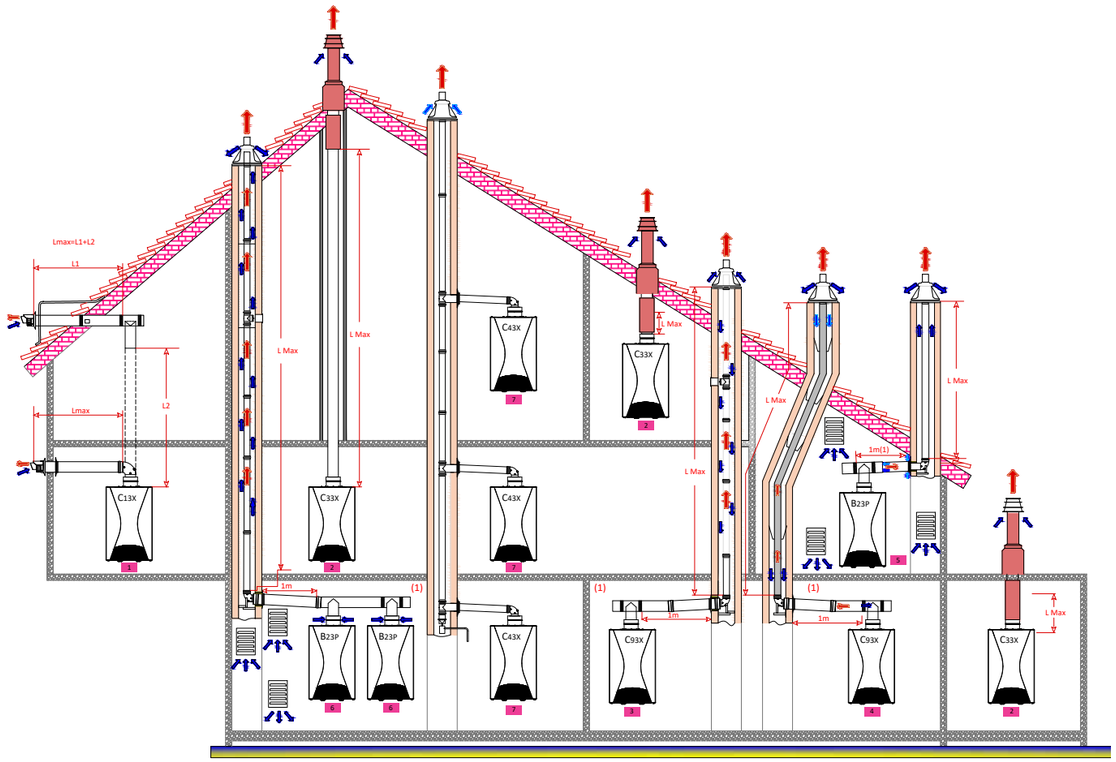
1 Display panel and motherboard box
2 Pressure sensor
3 Gas inlet pipe
4 Gas valve
5 Heat exchanger
6 Flue gas sensor
7 Ignition and ionization electrode
8 Flue flap
9 Venturi
10 Safety limit thermostat
11 Fan
12 NTC temperature sensor (output)
13 Boiler outlet pipe (hot)
14 Air purger
15 Heat exchanger hanger bracket
16 Boiler inlet pipe (cold)
17 NTC temperature sensor (input)
18 Siphon hose
19 Siphon cover

Technical Specifications

PRODUCT TYPE	UNIT	FELIS FL 50 HM	FELIS FL 65 HM	FELIS FL 100 HM	FELIS FL 125 HM	FELIS FL 150 HM
General						
Gas Category		I_{2H}, I_{2E}	$II_{2H3B/P}$	I_{2H}, I_{2E}	$II_{2H3B/P}$	I_{2H}, I_{2E}
Flue Types		C13(x), C33(x), C43(x), C63(x), C93(x),B23P				
Hermetic Type		Fully Hermetic				
Gas Inlet Pressure (G20)	mbar	20				
Gas Inlet Pressure (G30)	mbar	-	29	-	29	-
Gas Inlet Pressure (G31)	mbar	-	37	-	37	-
Electrical Supply	V AC-Hz	230 VAC-50 Hz				
Electric Consumption	Watt	75	117	143	228	306
Protection Class		IPX4D				
Weight (Net)	kg	42	53	66	74	89
Water Volume	L	3	4,5	6,5	8	9,5
Dimensions (net) (HxWxD)	mm	835x501x525	835x501x590	835x501x590	835x501x660	835x501x730
Dimensions (gross) (HxWxD)	mm	1055x665x595	1055x665x650	1055x665x650	1055x665x720	1055x665x790
Capacity-Efficiency						
Max. Heat Input (max)	kW	47,05	68,05	96,70	120,71	140,77
Min. Heat Input (min) (G20)	kW	8,18	13,50	20,09	24,20	26,57
Min. Heat Input (min) (G30/G31)	kW	-	14,70	-	31,20	-
Min. Heating Power - (60°C min)	kW	7,84	13,03	19,4	22,54	25,75
Max. Heating Power - 80/60°C	kW	45,55	66,04	94,05	116,75	135,67
Min. Heating Power - (30°C min)	kW	9,09	14,89	22,34	26,29	29,82
Max. Heating Power - 50/30°C	kW	49,91	73,36	102,00	129,01	150,43
ErP Information						
Seasonal Space Heating Energy Efficiency Class		A				
Seasonal Space Heating Energy Efficiency (ns)		91,8	91,4	91,8	92	91,8
Rated Heat Output (Prated)	kW	45,6	68,05	96,7	120,7	140,8
Sound Power Level	dB(A)	53	53	53	51	51
At rated heat output and high temperature regime (⍰4)	%	86,4	84,3	87,8	87,1	87,5
At 30% of rated heat output and low temperature regime (⍰1)	%	97,2	97,5	97,4	97,1	97,2
At full load (elmax)	Watt	75	115	139	226	297
At part load (elmin)	Watt	16	22	33	35	27
In Standby mode (Psb)	Watt	4	4	4	3	4
Heat loss: Standby mode	kW	0,411	0,939	1,564	0,644	1,6
NOx emissions	mg/kWh	37,82	28,13	26,4	42,91	34,06
Annual energy consumption	kWh	39713	57390	83085	102765	118623
Space Heating Annual Energy Consumption	GJ	143	207	299	370	427
Gas Consumption						
Natural Gas (@Min-Max Capacity)	m3/h	0,882 - 5,120	1,464 - 7,384	2,179 - 10,506	2,513 - 13,100	2,878 - 15,148
LPG - G30 (@Min-Max Capacity)	kg/h	-	0,832-4,038	-	1,817-6,767	-
LPG - G31 (@Min-Max Capacity)	kg/h	-	1,117-5,216	-	2,289-9,143	-
NOx Class		6				
Central Heating						
Min. Water Pressure	bar	0,8				
Max. Water Pressure	bar	3	4,5	6		
Operation Range (@Radiator Heating)	°C	30-85				
Max. Limit Temperature	°C	85				
Emission Values						
CO_2 @ max capacity (G20)	%	9,69 ± 0,2	9,32 ± 0,2	9,38 ± 0,2	9,50 ± 0,2	9,83 ± 0,2
CO_2 @ min capacity (G20)	%	8,60 ± 0,2	8,54 ± 0,2	8,52 ± 0,2	8,75 ± 0,2	8,89 ± 0,2
CO_2 @ max capacity (G30)	%	-	11,63 ± 0,2	-	10,92 ± 0,2	-
CO_2 @ min capacity (G30)	%	-	10,49 ± 0,2	-	10,11 ± 0,2	-
CO_2 @ max capacity (G31)	%	-	10,95 ± 0,2	-	10,12 ± 0,2	-
CO_2 @ min capacity (G31)	%	-	10,31 ± 0,2	-	9,60 ± 0,2	-
Flue Gas Temperature	°C	<82	<75,4	<75,6	<76,8	<74,4
Flue Gas Flow Rate (min-max)	g/s	3,52 - 17,59	5,28 - 22,17	9,35 - 45,08	9,90 - 48,93	12,1 - 54
Flues						
Flue Diameter	mm	80 / 125		100 / 150		
C13 (x) - Max. Flue Length (Horz.)	m	10	10	11	11	11
C33 (x) - Max. Flue Length (Vert.)	m	12	12	13	13	13
B23P - Max. Flue Length	m	11	11	12	12	12

* Maximum flue lengths are given for straight connections. Each 90° elbow equals to 1,5m, each 45° elbow equals to 1m flue length.

Chimney Applications



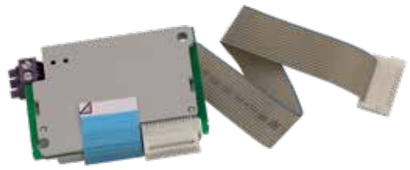
(1) Per 1 meter chimney addition on the horizontal, the maximum length of the vertical chimney is reduced by 1,2 meters.

1. C_13x: Applications with fresh air/exhaust gas connection and coaxial horizontal flue (may also called as forced flow/ discharge).
2. C_33x: Applications with fresh air/exhaust gas connection and coaxial vertical flue (flue through the roof).
3. C_43x: Applications using fresh air/exhaust gas connection as horizontal flue through the building's main chimney with coaxial flue connection.
4. C_93x (formerly C_33x): Applications with a single discharge duct using fresh air/exhaust gas connection and coaxial flue in boiler room (combusting air enters to in opposite direction of exhaust gas outlet in flue duct).
5. C_93x: Applications with a single flex discharge duct using fresh air/exhaust gas connection and coaxial flue in boiler room (combusting air enters to in opposite direction of exhaust gas outlet in flue duct).
6. B_23P: Connection to flue duct (combusting air is obtained from boiler room)
7. B_23P: Valid for cascade applications.

Optional Control Accessories

AF12 Cascade Module Set

- In cascade systems, it provides the communication between the master and slave appliances.
- It is mounted on the motherboard.



AF13 Outside Air Sensor

- It measures the outside air temperature and adjusts the operation of the appliances at the demanded temperature.
- It is connected to the motherboard via dual cable from sensor input. Its connections should be made with 1,5 mm2 copper cable. The maximum allowable cable length is 120 meters.
- It is an NTC type sensor.
- It can operate between -50 / +70 °C.
- It has a tolerance of +1 / -1 K.

AF14 Cascade Temperature Sensor

- It is an NTC type sensor.
- It can operate in the range of -30 to 125 °C.
- It has a tolerance of +1/-1 K.
- Connections should be made with copper cable in 1 mm cross section and cable length should not exceed 80 meters.

AF15 DHW Tank Temperature Sensor

- The sensor is used to measure the temperature of the DHW tank, solar energy systems and/ or the temperature of the hydraulic separator/heat exchanger.
- The temperature is measured by the immersion type NTC through the DHW tank and the connection is made via the sensor input to the motherboard.
- It can operate in the range 0 – 95 °C.
- It has a tolerance of +0,5 / -0,5 K.
- It has a length of 2 m.

AF16 Zone Control Kit

- It provides control of pump and sensors of 3-way motor control in applications of heating systems with mixing valves. One AF16 is required for each 3-way motorized valve. With this control board, the operating condition of the heating circuit is adjusted depending on the demanded temperature and the operating principle of the 3-way motor valve.
- Since it is not included in the standard packaging of the appliance, it must be requested separately.

AF17 Room Unit (Digital)

- It is used for programming of the appliance and remote setting of heating requests.
- The operation mode setting, time program and heating setting on the digital display can be set via the room unit.

AF18 Room Unit

- It is used for programming of the appliance and remote setting of heating requests.
- Temperature adjustments are made by means of the rotary switch on the room unit.
- The operating mode is selected by means of the button located in the upper right corner.
- The button located at the bottom right of the appliance is for switching the appliance off when the place is not used. (It is necessary to press the same button again to resume.)
- Wiring of up to 200 meters can be made between the main unit and the room unit.

AF19 Web Server Communication Module

- It enables remote access, reporting and monitoring of appliances from the system, where there is internet connection.
- Online communication between the computer and the module is provided via ethernet cable connection. By logging in to the system with the created username and password, the simulation of the system, instantaneous values, operation/fault status, is monitored through computer.
- At the desired time, a graph can be created about the requested values and the report can be taken.

WATER HEATER

E.C.A.
PHOENIX

Superior Safety Systems

Technical Design Properties

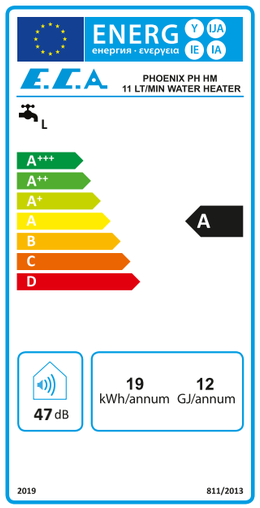
- Low NOx hermetic water heater
- 19 kW heating capacity
- Complies with current ErP regulations with low emissions
- Modulating fan
- Domestic water capacity of 11 liters / minute
- Electronic ignition system
- Electronic flow sensor
- Use with natural gas and LPG
- 5 different superior safety system
- LCD control panel with instant water temperature monitoring
- TSE and CE Certificated
- Dimensions of the device: 640 x 360 x 240 mm

1. Flue Gas Safety (Bad combustion prevention)
2. Flame Loss Safety (Flame availability check with ionisation electrode)
3. Overheating Water Temperature Safety (85 °C)
4. NTC Overheating Safety (71 °C)
5. Low Voltage Safety (170 VAC)
6. Fan Rpm Control via Hall Effect Sensor Signals.
7. Prevention of Dry Combustion Thanks to the Flow Sensor. (Combustion is not allowed belove 2,5lt/min water flowrate)
8. Frost Protection (5°C Electrical supply to the boiler must be maintened in order to frost protection to work)
9. Overload Working Safety (system off, factory setting is 6 hours continious operation)

How to Adjust…

ON/OFF & Temperature Setting Knob Functions

- The appliance is turned ON/OFF using the knob by pushing it.
- Set the water temperature between 35 °C and 60 °C by rotating.
- Reset the appliance if the error cause a lock out condition by pushing 3 seconds under fault condition.
- Auto or Manuel calibration adjustment. (for authorized technical person)
- Entering parameters menu and parameter adjustment. (for authorized technical person)



LCD Display

Water heater functions, water temperature (set and actual values), fault/error conditions can be seen on LCD

Fan symbol: Shown in case choosing the flue lenght value.

Failure symbol: Shown in case error conditions.

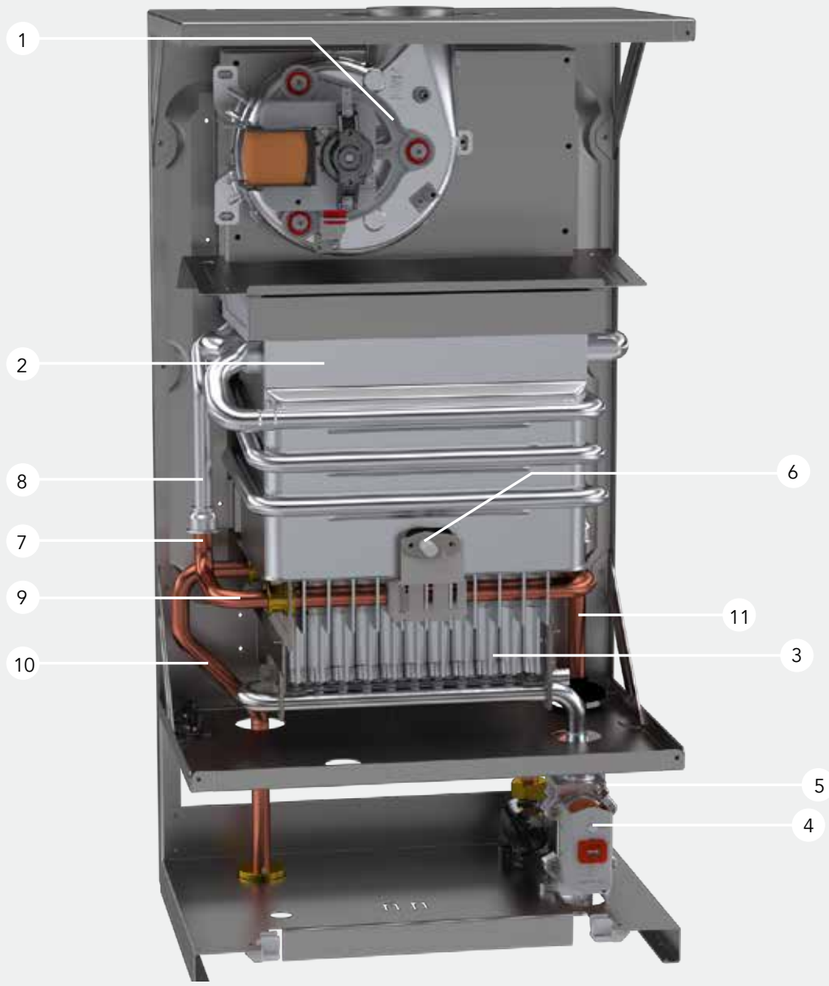
Flame symbol: Indicates flame avaibility.

If thermal load is below %50 then only one segment is shown.

Solar panel symbol: Indicates solar connections.

Tap symbol: Indicates water flow.

C symblol: Indicates actual temperature measurement.



1. Fan With Hall Effect Sensor
2. Heat Exchanger
3. Water Cooled Low NOx Burner
4. Electric Gas Valve
5. Flow Sensor
6. Ignition and Ionisation Electrode
7. Overheating Safety Switch
8. NTC Sensor
9. Burner Inlet Pipe
10. Water Outlet Pipe
11. Water Inlet Pipe

Technical Specifications

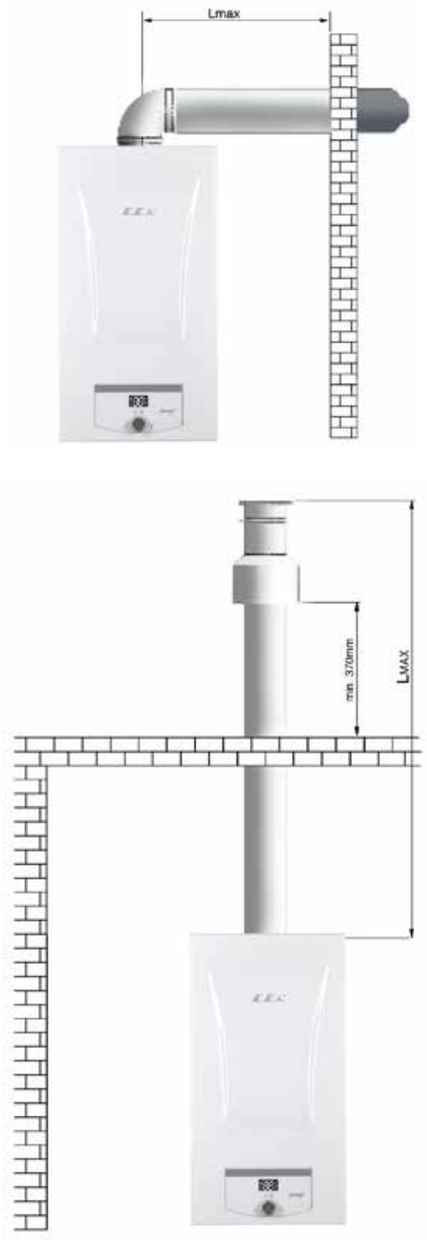
PRODUCT TYPE	UNIT	HERMETIC WATER HEATER
Gas Category		$II_{2H3B/P}$, II_{2H3P}
Type of Gas		Gas (G20) - LPG (G30-G31)

Performances		
Minimum Heating Power (Pmin)	kW	7,37
Maximum Heating Power (Pmax)	kW	18,94
Minimum Heat Input (Qn)	kW	8,5
Maximum Heat Input (Qn)	kW	22
Gas Consumption*		
Natural Gas (Max. Load)	m^3/h	2,28
Natural Gas (Min. Load)	m^3/h	0,9
LPG (Max. Load)	Kg/h	1,78
LPG (Min. Load)	Kg/h	0,7
Gas Supply Pressure		
Natural Gas	mbar	20
LPG (G31)	mbar	37
LPG (G30)	mbar	30
Domestic Hot Water		
Minimum Water Flowrate	l/min	2,5
Maximum Water Flowrate	l/min	11 (Δt=25)
Minimum Operation Pressure	bar	0,2
Maximum Operation Pressure	bar	10
Temperature Setting Rage	^0C	35-60
General		
Power Supply	VAC-Hz	230V AC-50Hz
Electrical Consumption	Watt	30
NOx Class		6
Dimensions (HxWxD)	mm	640X360X240
Weight (Net)	kg	16

*Gas consumption based on, Natural gas: Hu=9,59 kWh/m^3

Chimney Applications

Horizontal & Vertical Applications



Horizontal Hermetic Flue Application L max. distance with single elbow: 4 m, 60/100
Vertical Hermetic Flue Application L max. distance without elbow: 5 m, 60/100

RADIATORS

High Heat Output Maximum Efficiency

It can be adjusted to the needs of the Every radiator features two convector fins welded directly to each waterway to ensure the highest possible heat output. All radiators are pressure tested at 13 bar.

Comfort, Economy & Elegance

Residences, Schools Hospitals, Hotels... In short, everywhere

High Quality Paint Finish

All radiators are finished in white epoxy polyester powder paint(RAL9010). Additionally, special colours are available for big demands. Every radiator undergoes a multi stage pre-treatment nanoceramic zirconium coating followed by an epoxy polyester powder coating.

Wide Range

There is a wide range of panel radiators- heights range from 300 mm to 900 mm and lengths range from 400 mm to 3000 mm.

Factory Fitted Top Grill & Side Panels

All our panel radiators come complete with factory fitted top grills and side panels except Type P.

High Durability

All E.C.A. radiators are manufactured under the ISO 9001 quality system, ISO 14001 Environmental Management System, ISO 45001 Health and Safety Management System and ISO 50001 Energy Management System. Each durable radiator is fully guaranteed against all defects caused by faulty materials or manufacture.

Packaging & Easy Installation

All radiators are supplied in strong protective packaging with reinforced cardboard edges. Each radiator is bubble wrapped and then shrink wrapped with strong polystyrene. The pack is clearly marked with type and size and the installation kit is sealed inside with protective packaging. The installation kit includes all wall mounting brackets, plugs, vents and wall plugs and a vent key. Everything for easy installation is included in the pack.

E.C.A. Integrity Panel Radiators

E.C.A. Integrity is a brand new central heating panel radiator thanks to its shape providing visual integrity and its easy to open covers.

E.C.A. Integrity panel radiators facilitates your life in ‘new’ ways thanks to its ‘brand new properties’. The trendsetting properties of the E.C.A. Integrity panel radiators provide you with a more aesthetical living space, more freedom, more economy, and perfect hygiene.

E.C.A. Integrity panel radiators can be easily cleaned thanks to their detachable covers, so that they are an ideal solution for such places as kindergartens, schools, hospitals, consulting rooms, polyclinics and restaurants where hygiene is important.

Liberty

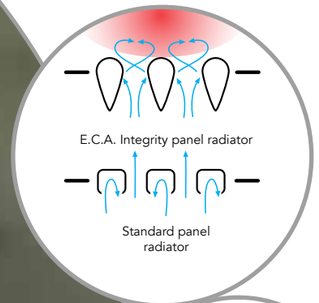
Easy to open cover system

Integrity

Aesthetical shape providing integrity

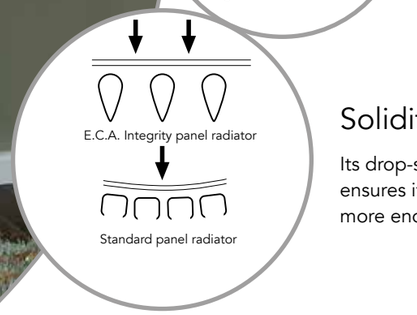
Healthy

Advantage of cleaning thanks to its easy to open covers



Thriftily

Its drop-shaped grill increases the air circulation and facilitates the heat transfer to save from energy costs.



Solidity

Its drop-shaped grill ensures its body to be more endurable.

Compact (6 Hole) Panel Radiators

Provide bottom entry connection to the radiators for underground pipe installations. It is proper to use with thermostatic radiator valves. Thermostatic radiator valve is used to regularise the heat level in the radiators for convenient temperature with regard to the room heating, with help of the thermostatic head they give more economic and efficient result of heating. Ventil Compact (6 Hole) radiators are produced suitable for ventils to be placed on right or left side of the radiators.

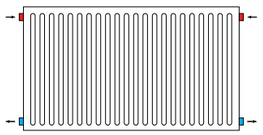
Multi Compact (8 Hole) Radiators

Connect this radiator through the lower fitting located on the right side, left side or center axis of its panel. If you use the central fitting, the panel will center the connection point. The central axis fitting will also allow you to install a thermostat core for 8 hole (middle compact) panel radiators which increase the heating capacity by 2 to 3%, so that the radiators will be able to keep the ambient temperature at a comfortable level.

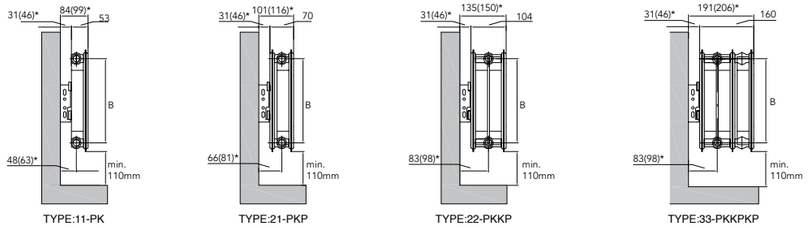
Standard Panel Radiator

KM 95430

TYPE	300		400		500		550		600		700		800		900	
	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m
11(PK)	8.65	1.80	11.40	2.23	14.14	2.65	15.45	3.08	16.90	3.50	19.64	3.87	22.39	4.23	25.14	4.60
21(PKP)	14.11	3.40	18.83	4.15	23.39	4.90	25.28	5.65	27.95	6.40	32.51	7.07	37.07	7.73	41.63	8.40
22(PKKP)	16.03	3.40	21.38	4.33	26.72	5.25	28.64	6.18	31.98	7.10	37.24	7.67	42.49	8.23	47.75	8.80
33(PKKPKP)	23.97	5.30	32.06	6.35	39.93	7.40	42.80	8.45	47.80	9.50	55.67	10.80	63.54	12.10	71.41	13.40



* This is valid for installation on the 45 mm side of the console

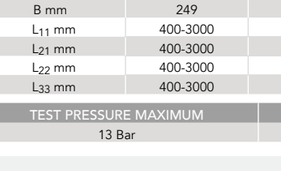


TYPE:11-PK TYPE:21-PKP TYPE:22-PKKP TYPE:33-PKKPKP

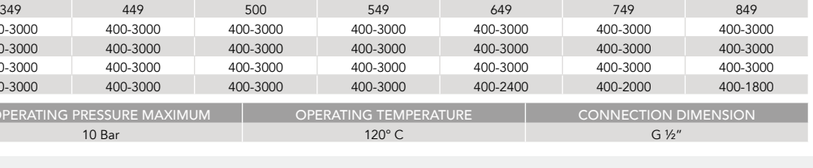
Height mm	300	400	500	550	600	700	800	900
B mm	249	349	449	500	549	649	749	849
L_{11} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{21} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{22} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{33} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-2400	400-2000	400-1800

Compact Panel Radiator

TYPE	300		400		500		550		600		700		800		900	
	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m
11(PK)	8.91	1.83	11.66	2.28	14.26	2.72	15.71	3.17	17.16	3.60	19.91	3.99	22.65	4.38	25.40	4.77
21(PKP)	14.37	3.42	19.08	4.20	23.52	4.97	25.54	5.74	28.20	6.50	32.76	7.14	37.32	7.88	41.88	8.40
22(PKKP)	16.28	3.42	21.63	4.38	26.72	5.32	28.89	6.27	32.23	7.20	37.49	7.74	42.74	8.38	48.00	8.80
33(PKKPKP)	24.22	5.32	32.31	6.40	39.94	7.47	43.05	8.54	48.05	9.60	55.92	11.46	63.79	12.25	71.66	13.40



* This is valid for installation on the 45 mm side of the console

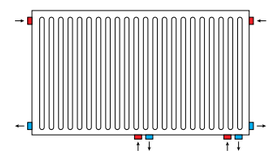


TYPE:11-PK TYPE:21-PKP TYPE:22-PKKP TYPE:33-PKKPKP

Height mm	300	400	500	550	600	700	800	900
B mm	249	349	449	500	549	649	749	849
L_{11} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{21} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{22} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{33} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-2400	400-2000	400-1800

Multi Compact Panel Radiator

TYPE	300		400		500		550		600		700		800		900	
	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m
11(PK)	9.62	2.01	12.45	2.46	15.14	2.90	16.64	3.35	18.13	3.78	20.97	4.12	23.81	4.56	26.65	4.95
21(PKP)	15.07	3.60	19.87	4.38	24.40	5.15	26.46	5.92	29.17	6.68	33.82	7.32	38.47	8.06	43.12	8.58
22(PKKP)	16.89	3.60	22.33	4.56	27.51	5.50	29.73	6.45	33.11	7.38	38.46	7.92	43.80	8.56	49.15	8.98
33(PKKPKP)	24.83	5.50	33.01	6.58	40.73	7.65	43.88	8.72	48.93	9.78	56.89	11.64	64.85	12.43	72.81	13.58



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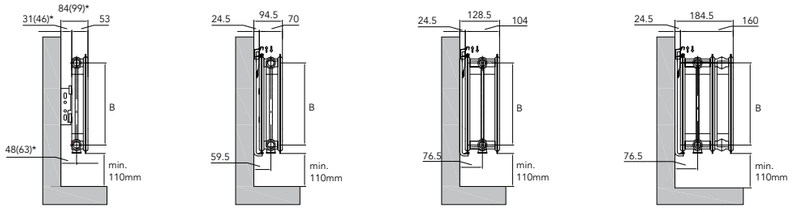
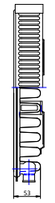


TYPE:11-PK TYPE:21-PKP TYPE:22-PKKP TYPE:33-PKKPKP

Height mm	300	400	500	550	600	700	800	900
B mm	249	349	449	500	549	649	749	849
L_{11} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{21} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{22} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{33} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-2400	400-2000	400-1800

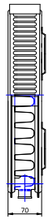
TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

TYPE11



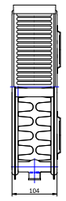
HEIGHT	ΔT 30° C		ΔT 50° C		ΔT 60° C		n	K_M
	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm		
300	279	240	520	447	649	558	1,21758	4,44099
400	358	308	671	577	840	722	1,22896	5,48255
500	432	371	814	700	1020	877	1,24034	6,35657
550	467	401	882	758	1107	952	1,24603	6,73715
600	500	430	948	815	1191	1024	1,25172	7,08304
700	566	486	1075	924	1351	1162	1,25688	7,86839
800	627	539	1194	1027	1503	1292	1,26203	8,56755
900	684	588	1306	1123	1646	1415	1,26719	9,18675

TYPE21



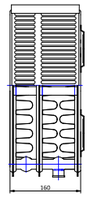
HEIGHT	ΔT 30° C		ΔT 50° C		ΔT 60° C		n	K_M
	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm		
300	402	345	762	655	957	823	1,25232	5,67640
400	504	433	961	826	1209	1040	1,26236	6,88463
500	600	516	1150	989	1450	1247	1,27239	7,92471
550	647	556	1242	1068	1568	1348	1,27741	8,39077
600	692	595	1332	1145	1683	1447	1,28243	8,82465
700	781	672	1508	1296	1907	1639	1,28682	9,81970
800	868	746	1679	1443	2124	1826	1,29122	10,74537
900	952	818	1845	1586	2337	2009	1,29561	11,60967

TYPE22



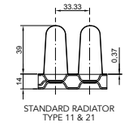
HEIGHT	ΔT 30° C		ΔT 50° C		ΔT 60° C		n	K_M
	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm		
300	510	438	966	831	1214	1043	1,25122	7,23082
400	653	561	1242	1068	1563	1344	1,25976	8,99494
500	788	678	1507	1295	1899	1633	1,26830	10,54957
550	853	734	1635	1406	2062	1773	1,27257	11,25665
600	917	788	1760	1514	2222	1910	1,27684	11,92048
700	1041	895	2005	1723	2532	2177	1,28178	13,31395
800	1161	998	2240	1926	2832	2435	1,28671	14,59373
900	1276	1097	2467	2121	3123	2685	1,29165	15,76764

TYPE33

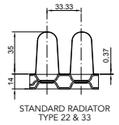


HEIGHT	ΔT 30° C		ΔT 50° C		ΔT 60° C		n	K_M
	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm		
300	678	583	1339	1151	1707	1468	1,33116	7,33176
400	875	752	1719	1478	2188	1881	1,32231	9,74497
500	1059	910	2071	1781	2631	2262	1,31346	12,15151
550	1146	985	2237	1923	2839	2441	1,30903	13,35274
600	1230	1058	2396	2060	3039	2613	1,30460	14,55277
700	1390	1195	2695	2317	3414	2935	1,29575	16,94963
800	1540	1324	2971	2555	3757	3230	1,28690	19,34273
900	1679	1443	3225	2772	4071	3500	1,27805	21,73256

*550mm height obtained through calculation and do not have NF quality mark.
*Compact panel radiators do not have quality certificate.
*Multi compact panel radiators do not have quality certificate.
The ϕ values given in the table are for 1000 mm products.



STANDARD RADIATOR TYPE 11 & 21



STANDARD RADIATOR TYPE 22 & 33

HEIGHT mm	Type 11			Type 21			Type 22			Type 33		
	Km	n	ϕ W/m	Km	n	ϕ W/m	Km	n	ϕ W/m	Km	n	ϕ W/m
300	4,44099	1,21758	520	5,67640	1,25232	762	7,23082	1,25122	966	7,33176	1,33116	1339
400	5,48255	1,22896	671	6,88463	1,26236	961	8,99494	1,25976	1242	9,74497	1,32231	1719
500	6,35657	1,24034	814	7,92471	1,27239	1150	10,54957	1,26830	1507	12,15151	1,31346	2071
550	6,73715	1,24603	882	8,39077	1,27741	1242	11,25665	1,27257	1635	13,35274	1,30903	2237
600	7,08304	1,25172	948	8,82465	1,28243	1332	11,92048	1,27684	1760	14,55277	1,30460	2396
700	7,86839	1,25688	1075	9,81970	1,28682	1508	13,31395	1,28178	2005	16,94963	1,29575	2695
800	8,56755	1,26203	1194	10,74537	1,29122	1679	14,59373	1,28671	2240	19,34273	1,28690	2971
900	9,18675	1,26719	1306	11,60967	1,29561	1845	15,76764	1,29165	2467	21,73256	1,27805	3225

TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

To calculate heat capacities at various extreme temperatures in accordance with EN 442 standard:
Standard heat capacity of a model is calculated using the following formula:

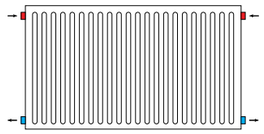
$\phi = K_m . \Delta T^n$

The KM and n values shown in the table are used for calculating the capacity at various input/output water and ambient temperature.

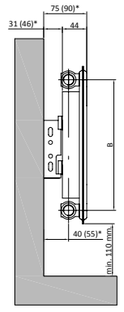
Example:
Calculation of capacity of Type 22 600x1000 product at water temperature 80/50°C and ambient temperature 22°C:
t_g, Input water temperature = 80 °C
t_r, Output water temperature = 50 °C
t_o, Ambient temperature to = 22 °C
t_m, Average temperature= $(t_g + t_r) / 2 = (80 + 50) / 2 = 65$ °C
ΔT, Extreme temperature = $t_m - t_o = 65 - 22 = 43$ °C
Using the formula; $\phi = 11{,}92048 \times 43^{1{,}277} = 1452$ W/m

Smart Panel Radiator

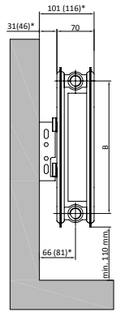
TYPE	300		400		500		600		700		800		900	
	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m
11(PK)	7,79	1,80	10,29	2,23	12,79	2,65	15,30	3,50	17,80	3,87	20,30	4,23	22,81	4,60
21(PKP)	13,16	3,40	17,35	4,15	21,54	4,90	25,72	6,40	29,91	7,07	34,10	7,73	38,29	8,40
22(PKKP)	14,60	3,40	19,28	4,33	23,96	5,25	28,63	7,10	33,31	7,67	37,99	8,23	42,67	8,80
33(PKKPKP)	21,68	5,30	28,68	6,35	35,52	7,40	42,49	9,50	49,47	10,80	56,44	12,10	63,41	13,40



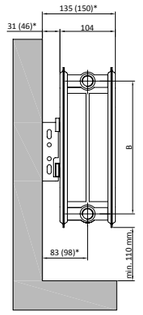
* This is valid for installation on the 45 mm side of the console



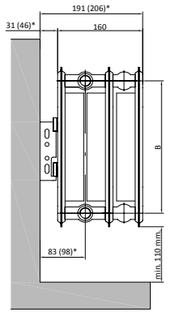
TYPE:11-PK



TYPE:21-PKP



TYPE:22-PKKP

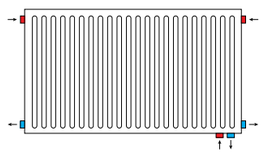


TYPE:33-PKKPKP

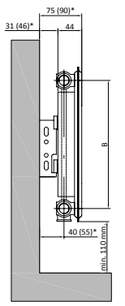
Height mm	300	400	500	600	700	800	900
B mm	249	349	449	549	649	749	849
L_{11} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{21} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{22} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{33} mm	400-3000	400-3000	400-3000	400-3000	400-2400	400-2000	400-1800

Smart Compact Panel Radiator

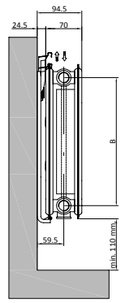
TYPE	300		400		500		600		700		800		900	
	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m
11(PK)	8,10	1,83	10,62	2,28	13,14	2,72	15,66	3,60	18,18	3,99	20,70	4,38	23,23	4,77
21(PKP)	13,49	3,42	17,69	4,20	21,90	4,97	26,10	6,50	30,31	7,14	34,52	7,88	38,72	8,40
22(PKKP)	14,93	3,42	19,63	4,38	24,32	5,32	29,02	7,20	33,71	7,74	38,41	8,38	43,10	8,80
33(PKKPKP)	22,01	5,32	29,03	6,40	35,89	7,47	42,88	9,60	49,87	11,46	56,86	12,25	63,85	13,40



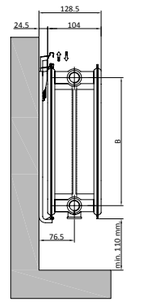
* This is valid for installation on the 45 mm side of the console



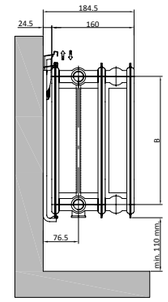
TYPE:11-PK



TYPE:21-PKP



TYPE:22-PKKP



TYPE:33-PKKPKP

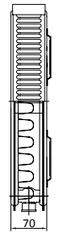
Height mm	300	400	500	600	700	800	900
B mm	249	349	449	549	649	749	849
L_{11} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{21} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{22} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{33} mm	400-3000	400-3000	400-3000	400-3000	400-2400	400-2000	400-1800

TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½″

TYPE11

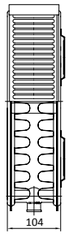
HEIGHT	ΔT 30° C		ΔT 50° C		ΔT 60° C		n	K_M
	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm		
300	245	211	476	410	604	519	1,3009	2,93617
400	321	276	625	537	793	682	1,3066	3,76649
500	392	337	767	659	974	837	1,3122	4,51985
600	460	395	901	775	1146	986	1,3179	5,19753
700	525	451	1029	885	1309	1126	1,3195	5,89863
800	586	504	1151	990	1464	1259	1,3211	6,55262
900	644	554	1265	1088	1610	1385	1,3227	7,16087

TYPE21



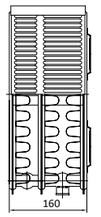
HEIGHT	ΔT 30° C		ΔT 50° C		ΔT 60° C		n	K_M
	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm		
300	377	324	732	630	928	798	1,2993	4,54169
400	480	413	932	801	1181	1015	1,2985	5,79647
500	578	497	1121	964	1420	1221	1,2978	6,99268
600	671	577	1302	1119	1649	1418	1,2970	8,14542
700	757	651	1475	1269	1872	1610	1,3060	8,91243
800	839	721	1642	1412	2087	1795	1,3149	9,58187
900	917	789	1803	1551	2296	1974	1,3239	10,15841

TYPE22



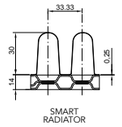
HEIGHT	ΔT 30° C		ΔT 50° C		ΔT 60° C		n	K_M
	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm		
300	468	402	923	794	1177	1012	1,3301	5,07625
400	602	517	1181	1016	1502	1292	1,3203	6,74569
500	730	627	1425	1226	1810	1556	1,3106	8,45620
600	853	734	1658	1426	2102	1807	1,3008	10,22205
700	966	831	1881	1617	2385	2051	1,3033	11,48291
800	1075	924	2094	1801	2657	2285	1,3057	12,66758
900	1179	1014	2299	1977	2919	2510	1,3082	13,77219

TYPE33



HEIGHT	ΔT 30° C		ΔT 50° C		ΔT 60° C		n	K_M
	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm		
300	663	570	1269	1092	1601	1376	1,2725	8,74023
400	839	721	1615	1388	2040	1754	1,2824	10,69625
500	1004	863	1943	1671	2459	2115	1,2923	12,38286
600	1161	998	2257	1941	2862	2461	1,3022	13,84063
700	1313	1129	2560	2201	3248	2793	1,3069	15,41166
800	1459	1255	2852	2452	3622	3115	1,3115	16,85921
900	1600	1376	3134	2695	3984	3426	1,3162	18,19457

The ϕ values given in the table are for 1000 mm products.



HEIGHT mm	Type 11			Type 21			Type 22			Type 33		
	Km	n	ϕ W/m	Km	n	ϕ W/m	Km	n	ϕ W/m	Km	n	ϕ W/m
300	2,93617	1,3009	476	4,54169	1,2993	732	5,07625	1,3301	923	8,74023	1,27253	1269
400	3,76649	1,3066	625	5,79647	1,2985	932	6,74569	1,3203	1181	10,69625	1,28242	1615
500	4,51985	1,3122	767	6,99268	1,2978	1121	8,4562	1,3106	1425	12,38286	1,29231	1943
600	5,19753	1,3179	901	8,14542	1,297	1302	10,22205	1,3008	1658	13,84063	1,3022	2257
700	5,89863	1,3195	1029	8,91243	1,306	1475	11,48291	1,3033	1881	15,41166	1,30686	2560
800	6,55262	1,3211	1151	9,58187	1,3149	1642	12,66758	1,3057	2094	16,85921	1,31152	2852
900	7,16087	1,3227	1265	10,15841	1,3239	1803	13,77219	1,3082	2299	18,19457	1,31618	3134

TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½″

To calculate heat capacities at various extreme temperatures in accordance with EN 442 standard:
Standard heat capacity of a model is calculated using the following formula:

$\phi = K_m . \Delta T^n$

The KM and n values shown in the table are used for calculating the capacity at various input/output water and ambient temperature.

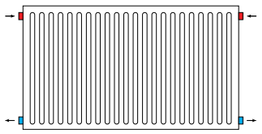
Example:
Calculation of capacity of Type 22 600x1000 product at water temperature 80/50°C and ambient temperature 22°C:
t_g, Input water temperature = 80 °C
$t_ç$, Output water temperature = 50 °C
t_o, Ambient temperature to = 22 °C
t_m, Average temperature= $(t_g+t_ç) / 2 = (80 +50) / 2 = 65$ °C
ΔT, Extreme temperature = $t_m - t_o = 65-22 = 43$ °C
Using the formula; $\phi = 10,22205 \times 43^{1,3008} = 1363$ W/m

Hygienic
Panel Radiators

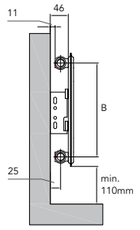
Hygienic radiators can be produced by all dimensions of the standard product. It doesn’t nestle any convector. Thereby this product can be cleaned very easily since it does not nestle the convection. This feature of the product makes it preferable in hospitals, pharmacies, health institutions, schools, kindergartens and food factories.

Hygienic Panel Radiator

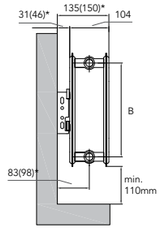
TYPE	300		400		500		550		600		700		800		900	
	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m
10 (P)	6.32	1,80	8.19	2,23	10.06	2,65	10.98	3,08	11.93	3,50	13.80	3,87	15.67	4,23	17.54	4,60
20W(PP)	12.24	3,40	16.07	4,33	19.78	5,25	21.63	6,18	23.49	7,10	27.20	7,67	30.90	8,23	34.61	8,80
30(PPP)	18.26	5,30	23.94	6,35	29.48	7,40	32.26	8,45	35.03	9,50	40.58	10,80	46.13	12,10	51.68	13,40



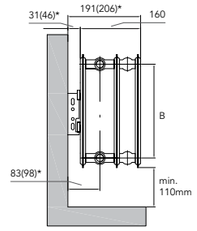
* This is valid for installation on the 45 mm side of the console



TYPE:10-P



TYPE:20W-PP

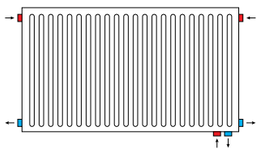


TYPE:30-PPP

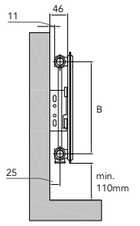
Height mm	300	400	500	550	600	700	800	900
B mm	249	349	449	500	549	649	749	849
L_{10} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{20} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{30} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-2400	400-2000	400-1800

Hygienic Compact Panel Radiator

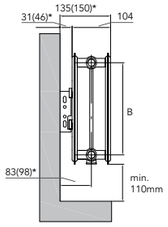
TYPE	300		400		500		550		600		700		800		900	
	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m
10 (P)	6.58	1,83	8.45	2,28	10.29	2,72	11.24	3,17	12.19	3,60	14.06	3,99	15.93	4,38	17.80	4,77
20W(PP)	12.49	3,42	16.32	4,38	19.99	5,32	21.88	6,27	23.74	7,20	27.45	7,74	31.16	8,38	34.86	8,80
30(PPP)	18.51	5,32	24.19	6,40	29.69	7,47	32.51	8,54	35.28	9,60	40.83	11,46	46.38	12,25	51.93	13,40



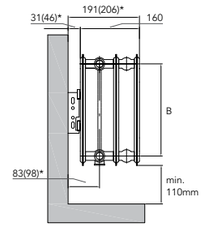
* This is valid for installation on the 45 mm side of the console



TYPE:10-P



TYPE:20W-PP

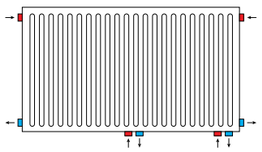


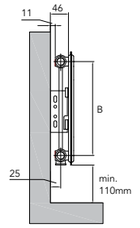
TYPE:30-PPP

Height mm	300	400	500	550	600	700	800	900
B mm	249	349	449	500	549	649	749	849
L_{10} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{20} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{30} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-2400	400-2000	400-1800

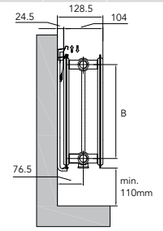
Hygienic Multi Compact Panel Radiator

TYPE	300		400		500		550		600		700		800		900	
	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m
10 (P)	7.28	2,01	9.25	2,46	11.17	2,90	12.17	3,35	13.17	3,78	15.13	4,12	17.09	4,56	19.05	4,95
20W(PP)	13.10	3,60	17.02	4,56	20.78	5,50	22.72	6,45	24.62	7,38	28.42	7,92	32.22	8,56	36.01	8,98
30(PPP)	19.12	5,50	24.89	6,58	30.48	7,65	33.34	8,72	36.16	9,78	41.80	11,64	47.44	12,43	53.08	13,58

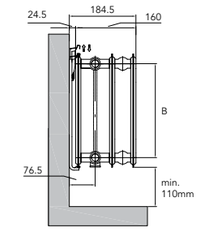




TYPE:10-P



TYPE:20W-PP



TYPE:30-PPP

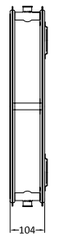
Height mm	300	400	500	550	600	700	800	900
B mm	249	349	449	500	549	649	749	849
L_{10} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{20} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000	400-3000
L_{30} mm	400-3000	400-3000	400-3000	400-3000	400-3000	400-2400	400-2000	400-1800

TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

TYPE10

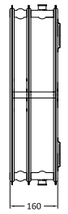
HEIGHT	ΔT 30° C		ΔT 50° C		ΔT 60° C		n	K_M
	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm		
300	185	159	352	302	442	380	1,2531	2,61303
400	234	201	444	381	557	479	1,2508	3,32613
500	282	243	534	459	670	576	1,2484	4,03979
550	306	263	579	498	726	625	1,2473	4,39983
600	330	284	624	536	783	673	1,2461	4,76309
700	376	324	714	614	897	771	1,2529	5,30873
800	423	364	805	692	1013	871	1,2597	5,82899
900	470	404	897	772	1130	972	1,2665	6,32720

TYPE20W



HEIGHT	ΔT 30° C		ΔT 50° C		ΔT 60° C		n	K_M
	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm		
300	320	275	619	532	783	674	1,2913	3,96110
400	403	347	780	671	987	849	1,2904	5,00900
500	482	415	932	802	1179	1014	1,2895	6,00610
550	520	447	1004	863	1270	1092	1,2891	6,47910
600	557	479	1075	925	1360	1169	1,2886	6,95210
700	626	538	1212	1042	1535	1320	1,2946	7,65620
800	692	595	1344	1156	1704	1465	1,3006	8,29310
900	754	649	1470	1264	1865	1604	1,3066	8,86020

TYPE30



HEIGHT	ΔT 30° C		ΔT 50° C		ΔT 60° C		n	K_M
	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm		
300	442	380	864	743	1097	944	1,3103	5,13280
400	551	474	1077	926	1368	1176	1,3118	6,36070
500	655	563	1281	1102	1628	1400	1,3133	7,52130
550	705	607	1380	1187	1754	1508	1,3141	8,07720
600	756	650	1479	1272	1880	1617	1,3148	8,63310
700	853	734	1671	1437	2124	1827	1,3162	9,70050
800	947	815	1857	1597	2361	2031	1,3177	10,71720
900	1040	894	2040	1754	2595	2231	1,3192	11,70440

* 550 mm height obtained through calculation.
*Hygienic panel radiators do not have quality certificate.

The ϕ values given in the table are for 1000 mm products.

HEIGHT mm	Type 10			Type 20			Type 30		
	Km	n	ϕ W/m	Km	n	ϕ W/m	Km	n	ϕ W/m
300	1.8585	1.3255	332	3.9611	1.2913	619	5.1328	1.3103	864
400	2.5720	1.3121	436	5.0089	1.2904	780	6.3607	1.3118	1077
500	3.3383	1.2987	537	6.0061	1.2895	932	7.5213	1.3133	1281
550	3.7425	1.2920	586	6.4791	1.2891	1004	8.0771	1.3141	1380
600	4.1468	1.2853	633	6.9521	1.2886	1075	8.6330	1.3148	1479
700	4.6503	1.2907	725	7.6562	1.2946	1212	9.7005	1.3162	1671
800	5.1057	1.2961	813	8.2931	1.3006	1344	10.7171	1.3177	1857
900	5.5093	1.3015	896	8.8602	1.3066	1470	11.7044	1.3192	2040

TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

To calculate heat capacities at various extreme temperatures in accordance with EN 442 standard:
Standard heat capacity of a model is calculated using the following formula:

$\phi = K_m . \Delta T^n$

The KM and n values shown in the table are used for calculating the capacity at various input/output water and ambient temperature.

Example:
Calculation of capacity of Type 20W 600x1000 product at water temperature 80/50°C and ambient temperature 22°C:
t_g, Input water temperature = 80 °C
$t_ç$, Output water temperature = 50 °C
t_o, Ambient temperature to = 22 °C
t_m,Average temperature= $(t_g+t_ç) / 2 = (80 +50) / 2 = 65$ °C
ΔT, Extreme temperature = $t_m - t_o = 65-22 = 43$ °C
Using the formula; $\phi = 6{,}9521 . 43^{1.2886} = 885$ W/m

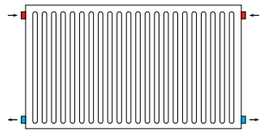
Flat Surface Panel Radiators

Flat surface panel radiators are produced with heights 300-400-500-600-700-800-900 and lengths varying from 400 mm to 2000 mm. Flat surface panel radiators get comfort and style together. Flat surfaces could be dismounted upon request and the radiator can be used as a standard radiator. One can also mount the flat surface easily to a standard radiator.

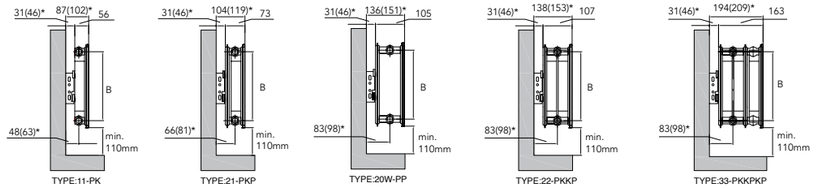
Flat Surface Standard Panel Radiator

NF quality certification is only for type 21 and type 22 products.

TYPE	300		400		500		550		600		700		800		900	
	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m
11(PK)	11.24	1,80	14.82	2,23	18.41	2,65	20.42	3,08	22.00	3,50	25.59	3,87	29.18	4,23	37.77	4,60
21(PKP)	16.70	3,40	22.25	4,15	27.65	4,90	30.26	5,65	33.06	6,40	38.46	7,07	43.86	7,73	49.26	8,40
20W(PP)	14.83	3,40	19.50	4,33	24.05	5,25	26.61	6,18	28.60	7,10	33.15	7,67	37.69	8,23	42.24	8,80
22(PKKP)	18.62	3,40	24.81	4,33	30.99	5,25	33.62	6,18	37.09	7,10	43.18	7,67	49.28	8,23	55.38	8,80
33(PKKPKP)	26.55	5,30	35.49	6,35	44.19	7,40	47.72	8,45	52.91	9,50	61.62	10,80	70.33	12,10	79.04	13,40



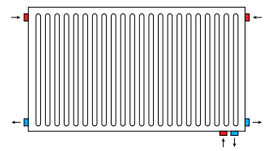
* This is valid for installation on the 45 mm side of the console



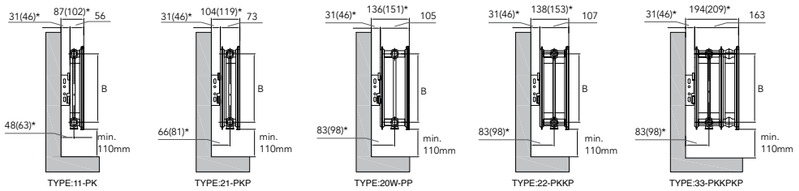
Height mm	300	400	500	550	600	700	800	900
B mm	249	349	449	500	549	649	749	849
L_{11} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{21} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{20} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{22} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{33} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-1800

Flat Surface Compact Panel Radiator

TYPE	300		400		500		550		600		700		800		900	
	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m
11(PK)	11.50	1,83	15.09	2,28	18.53	2,72	20.69	3,17	22.27	3,60	25.85	3,99	29.44	4,38	33.03	4,77
21(PK)	16.96	3,42	22.51	4,20	27.79	4,97	30.51	5,74	33.31	6,50	38.71	7,14	44.11	7,88	49.51	8,40
20W(PP)	15.08	3,42	19.75	4,38	24.26	5,32	26.86	6,27	28.85	7,20	33.40	7,74	37.95	8,38	42.49	8,80
22(PKKP)	18.87	3,42	25.06	4,38	30.99	5,32	33.87	6,27	37.34	7,20	43.43	7,74	49.53	8,38	55.63	8,80
33(PKKPKP)	26.81	5,32	35.74	6,40	44.21	7,47	48.03	8,54	53.16	9,60	61.87	11,46	70.58	12,25	79.29	13,40



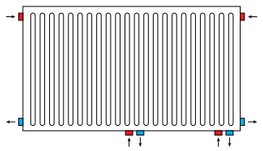
* This is valid for installation on the 45 mm side of the console



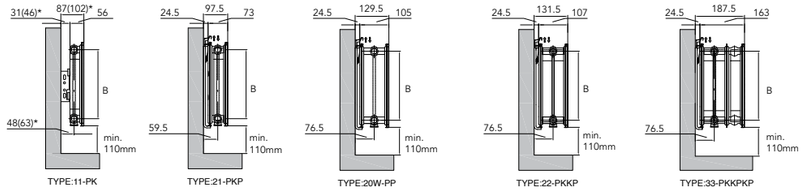
Height mm	300	400	500	550	600	700	800	900
B mm	249	349	449	500	549	649	749	849
L_{11} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{21} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{20} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{22} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{33} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-1800

Flat Surface Compact Panel Radiator

TYPE	300		400		500		550		600		700		800		900	
	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m	Weight kg/m	Water Volume l/m
11(PK)	12.20	2,01	15.88	2,46	19.41	2,90	21.62	3,35	23.24	3,78	26.92	4,12	30.60	4,56	34.28	4,95
21(PKP)	17.66	3,60	23.30	4,38	28.67	5,15	31.44	5,92	34.28	6,68	39.77	7,32	45.26	8,06	50.75	8,58
20W(PP)	15.69	3,60	20.45	4,56	25.05	5,50	27.70	6,45	29.73	7,38	34.57	7,92	39.01	8,56	43.64	8,98
22(PKKP)	19.48	3,60	25.76	4,56	31.78	5,50	34.70	6,45	38.22	7,38	44.40	7,92	50.59	8,56	56.78	8,98
33(PKKPKP)	27.42	5,50	36.44	6,58	45.00	7,65	48.86	8,72	54.04	9,78	62.84	11,64	71.64	12,43	80.44	13,58



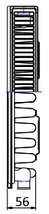
* This is valid for installation on the 45 mm side of the console



Height mm	300	400	500	550	600	700	800	900
B mm	249	349	449	500	549	649	749	849
L_{11} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{21} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{20} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{22} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000
L_{33} mm	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-2000	400-1800

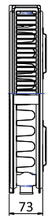
TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

TYPE11



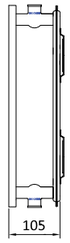
HEIGHT	ΔT 30° C			ΔT 50° C			ΔT 60° C		
	Watt/m	Kcal/hm	Btu/m	Watt/m	Kcal/hm	Btu/m	Watt/m	Kcal/hm	Btu/m
300	252	217	860	480	413	1640	603	519	2059
400	321	276	1095	618	531	2109	776	667	2649
500	386	332	1317	752	647	2569	946	813	3228
550	417	359	1423	817	703	2790	1027	883	3507
600	448	385	1528	882	758	3011	1109	953	3785
700	512	440	1746	1006	865	3434	1267	1090	4326
800	574	494	1960	1127	969	3849	1422	1223	4856
900	636	547	2171	1246	1072	4254	1575	1355	5378

TYPE21



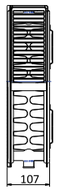
HEIGHT	ΔT 30° C			ΔT 50° C			ΔT 60° C		
	Watt/m	Kcal/hm	Btu/m	Watt/m	Kcal/hm	Btu/m	Watt/m	Kcal/hm	Btu/m
300	377	324	1285	711	611	2426	892	767	3045
400	460	395	1569	880	756	3001	1109	954	3786
500	536	461	1829	1040	894	3547	1317	1132	4496
550	572	492	1952	1117	961	3812	1419	1220	4843
600	607	522	2072	1194	1026	4072	1519	1307	5187
700	682	587	2328	1343	1155	4583	1711	1471	5840
800	756	650	2578	1490	1281	5083	1898	1632	6480
900	828	712	2824	1634	1405	5574	2082	1791	7110

TYPE20W



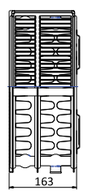
HEIGHT	ΔT 30° C			ΔT 50° C			ΔT 60° C		
	Watt/m	Kcal/hm	Btu/m	Watt/m	Kcal/hm	Btu/m	Watt/m	Kcal/hm	Btu/m
300	307	264	1048	585	503	1996	740	636	2526
400	383	329	1306	737	634	2515	933	802	3184
500	452	389	1543	881	758	3006	1114	958	3804
550	484	417	1653	949	816	3238	1200	1032	4098
600	516	443	1760	1016	874	3467	1285	1105	4388
700	582	501	1987	1145	985	3907	1451	1247	4953
800	647	557	2208	1270	1092	4333	1610	1385	5498
900	709	610	2420	1389	1195	4739	1762	1516	6017

TYPE22



HEIGHT	ΔT 30° C			ΔT 50° C			ΔT 60° C		
	Watt/m	Kcal/hm	Btu/m	Watt/m	Kcal/hm	Btu/m	Watt/m	Kcal/hm	Btu/m
300	489	420	1668	931	801	3176	1171	1007	4000
400	613	527	2091	1180	1015	4027	1491	1282	5091
500	727	625	2481	1416	1218	4833	1797	1545	6136
550	781	672	2666	1531	1316	5223	1946	1673	6644
600	834	717	2845	1642	1413	5604	2092	1799	7143
700	946	813	3227	1860	1599	6345	2367	2036	8082
800	1054	907	3598	2069	1779	7060	2632	2264	8986
900	1160	997	3958	2272	1954	7751	2888	2483	9859

TYPE33



HEIGHT	ΔT 30° C			ΔT 50° C			ΔT 60° C		
	Watt/m	Kcal/hm	Btu/m	Watt/m	Kcal/hm	Btu/m	Watt/m	Kcal/hm	Btu/m
300	670	576	2284	1275	1097	4350	1612	1387	5505
400	841	723	2870	1620	1393	5528	2052	1765	7007
500	1001	860	3414	1949	1676	6650	2473	2127	8444
550	1074	924	3666	2105	1810	7182	2674	2299	9129
600	1147	987	3914	2260	1944	7711	2874	2472	9812
700	1301	1119	4441	2559	2201	8732	3259	2803	11126
800	1449	1246	4943	2843	2445	9701	3627	3119	12383
900	1593	1370	5434	3119	2682	10642	3986	3428	13610

TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

The ϕ val s given in the table are for 1000 mm products.

* 550 mm height obtained through calculation. * Thermal capacity data have not been certified.

* Flat surface radiator have NF quality certificate except Type 11&Type 20W & Type 33

4D
Panel Radiators

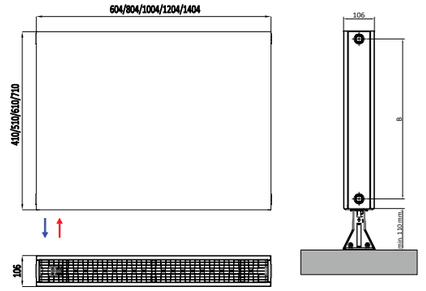
There are 4 different height options from 400 mm to 700 mm and 5 different length options from 600 mm to 1400 mm. 4D panel radiators will bring aesthetics and elegance to your home and office with its plane surface on all 4 sides.

4D Panel Radiator

Height (mm)	TYPE	Width (mm)	Heat Output									Length (mm)	Manifold Gauge/B (mm)	Water Volume (lt/m)	Weight (kg/m)
			ΔT 30° C			ΔT 50° C			ΔT 60° C						
			Kcal/hm	Watt/m	Btu/m	Kcal/hm	Watt/m	Btu/m	Kcal/hm	Watt/m	Btu/m				
400	T22	106	437	508	1735	849	987	3369	1075	1250	4269	604-1404	50 & 349	4,38	25
500			525	610	2083	1019	1185	4044	1291	1501	5125	604-1404	50 & 449	5,32	38
600			647	752	2568	1256	1461	4986	1592	1851	6319	604-1404	50 & 549	7,20	45
700			690	802	2738	1339	1557	5316	1697	1973	6736	604-1404	50 & 649	7,74	52

H 600mm is derived according to thermal capacity test results.

4D panel radiators do not have quality certificate.



TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

Cover
Panel Radiators

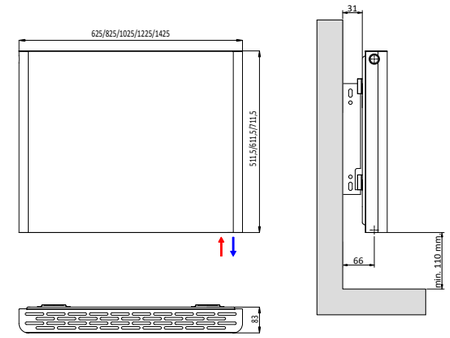
There are 3 different height options from 500 mm to 700 mm and 5 different length options from 600 mm to 1400 mm. It's compatible with thermostatic core.

Cover Panel Radiator

Height (mm)	TYPE	Width (mm)	Heat Output									Length (mm)	Manifold Gauge (mm)	Water Volume (lt/m)	Weight (kg/m)
			ΔT 30° C			ΔT 50° C			ΔT 60° C						
			Kcal/hm	Watt/m	Btu/m	Kcal/hm	Watt/m	Btu/m	Kcal/hm	Watt/m	Btu/m				
500	T21	83	403	469	1600	800	931	3177	1022	1189	4059	625-1425	50	4,97	28
600			490	570	1945	973	1131	3861	1242	1445	4932	625-1425	50	6,50	33
700			521	605	2067	1034	1202	4104	1320	1535	5241	625-1425	50	7,14	39

H 600mm is derived according to thermal capacity test results.

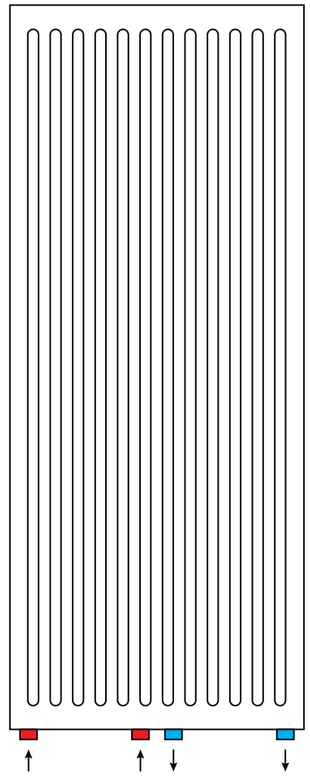
Cover panel radiators do not have quality certificate.



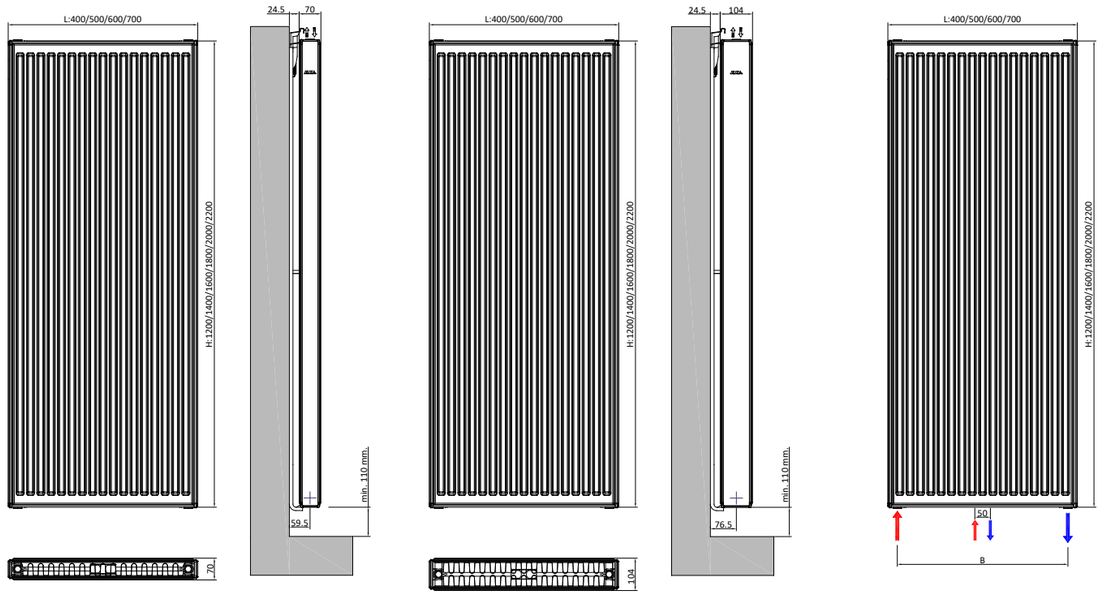
TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

Vertical
Panel Radiators

E.C.A. panel radiators which bring new good looks to our homes with its elegant design which combines technology and aesthetics bring living areas heating and aesthetics together with its vertical water channel model which has recently been added to the product range. It will make your home look elegant with the options of vertical plane surface with or without a mirror. It offers 6 height options from 1200 mm up to 2200 mm and 4 different length options from 400 mm to 700 mm. In radiators with mirrors, cracking and shattering of the mirror is prevented thanks to a special film layer.



Vertical Standard Panel Radiator



TYPE 21 TYPE 22

HOT WATER HEATING RADIATORS, CONVECTORS AND RADIANT MOUNTED CEILING PANELS - NF 047
www.marque-nf.com

KM 95430

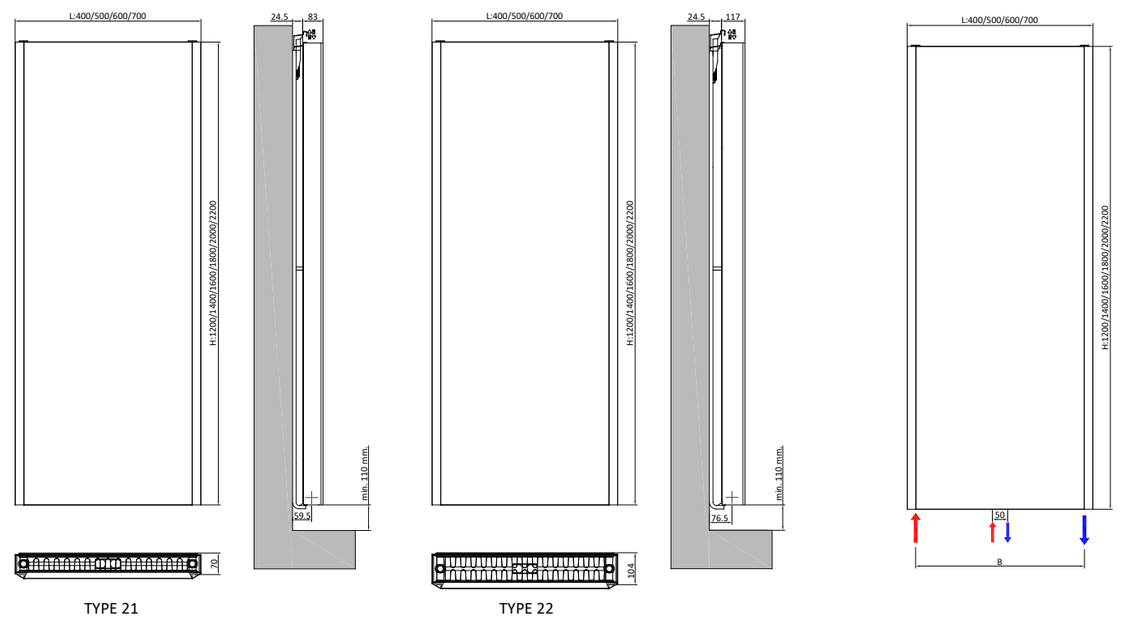
Height (mm)	TYPE	Width (mm)	Heat Output ΔT 30° C Kcal/hm	ΔT 30° C Watt/m	ΔT 50° C Kcal/hm	ΔT 50° C Watt/m	ΔT 60° C Kcal/hm	ΔT 60° C Watt/m	Km	n	Length (mm)	Manifold Gauge/B (mm)	Water Volume (lt)	Weight (kg)
1200	T21	70	974	1132	1975	2297	2543	2957	10,19790	1,38476	400 - 700	50 & L -51	12,9	54
1400			1097	1276	2237	2601	2884	3353	11,13330	1,39406		50 & L -51	14,7	63
1600			1213	1411	2485	2889	3209	3731	11,92560	1,40336		50 & L -51	16,2	72
1800			1349	1569	2721	3164	3495	4064	14,69820	1,37315		50 & L -51	18	81
2000			1478	1719	2946	3425	3767	4381	17,45640	1,34948		50 & L -51	19,8	90
2200			1605	1866	3160	3674	4024	4679	20,54280	1,32580		50 & L -51	21,6	96

Height (mm)	TYPE	Width (mm)	Heat Output ΔT 30° C Kcal/hm	ΔT 30° C Watt/m	ΔT 50° C Kcal/hm	ΔT 50° C Watt/m	ΔT 60° C Kcal/hm	ΔT 60° C Watt/m	Km	n	Length (mm)	Manifold Gauge/B (mm)	Water Volume (lt)	Weight (kg)
1200	T22	104	1254	1458	2490	2896	3181	3699	15,13260	1,34309	400 - 700	50 & L -51	12,9	63
1400			1381	1605	2786	3240	3580	4163	14,95290	1,37485		50 & L -51	14,7	72
1600			1502	1746	3081	3582	3981	4629	14,60010	1,40660		50 & L -51	16,5	81
1800			1716	1995	3375	3924	4296	4996	22,05870	1,32442		50 & L -51	18	90
2000			1867	2171	3671	4268	4673	5433	24,06690	1,32364		50 & L -51	20,1	99
2200			2019	2348	3969	4615	5051	5874	26,10240	1,32285		50 & L -51	21,9	108

TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

The ϕ values given in the table are for 1000 mm products.

Vertical Plane Surface Panel Radiator



TYPE 21 TYPE 22

HOT WATER HEATING RADIATORS, CONVECTORS AND RADIANT MOUNTED CEILING PANELS - NF 047
www.marque-nf.com

KM 95430

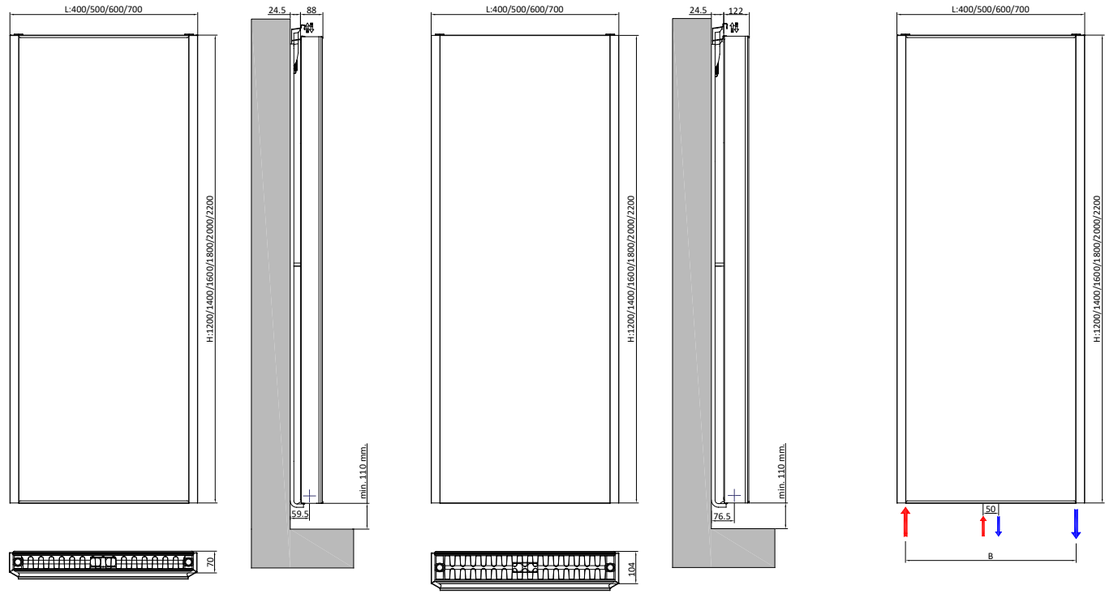
Height (mm)	TYPE	Width (mm)	Heat Output ΔT 30° C Kcal/hm	ΔT 30° C Watt/m	ΔT 50° C Kcal/hm	ΔT 50° C Watt/m	ΔT 60° C Kcal/hm	ΔT 60° C Watt/m	Km	n	Length (mm)	Manifold Gauge/B (mm)	Water Volume (lt)	Weight (kg)
1200	T21	83	835	971	1686	1960	2166	2519	9,02242	1,37550	400 - 700	50 & L -51	12,9	66
1400			931	1082	1892	2200	2437	2834	9,61376	1,38880		50 & L -51	14,7	77
1600			1018	1184	2083	2422	2689	3127	10,08666	1,40110		50 & L -51	16,2	87
1800			1113	1294	2259	2627	2909	3382	11,61522	1,38580		50 & L -51	18	96
2000			1206	1402	2422	2816	3106	3612	13,49581	1,36520		50 & L -51	19,8	107
2200			1294	1505	2571	2990	3286	3821	15,53839	1,34450		50 & L -51	21,6	117

Height (mm)	TYPE	Width (mm)	Heat Output ΔT 30° C Kcal/hm	ΔT 30° C Watt/m	ΔT 50° C Kcal/hm	ΔT 50° C Watt/m	ΔT 60° C Kcal/hm	ΔT 60° C Watt/m	Km	n	Length (mm)	Manifold Gauge/B (mm)	Water Volume (lt)	Weight (kg)
1200	T22	117	1147	1333	2254	2621	2869	3336	14,80437	1,32320	400 - 700	50 & L -51	12,9	75
1400			1266	1472	2495	2901	3178	3696	16,08739	1,32790		50 & L -51	14,7	86
1600			1381	1606	2729	3173	3479	4046	17,27518	1,33260		50 & L -51	16,5	96
1800			1471	1710	2958	3439	3795	4413	16,31477	1,36780		50 & L -51	18	105
2000			1597	1857	3182	3700	4070	4732	18,85566	1,34950		50 & L -51	20,1	117
2200			1725	2006	3405	3959	4340	5047	21,67288	1,33120		50 & L -51	21,9	129

TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

The ϕ values given in the table are for 1000 mm products.

Vertical Panel Radiator with Mirror



Height (mm)	TYPE	Width (mm)	Heat Output						Km	n	Length (mm)	Manifold Gauge/B (mm)	Water Volume (lt)	Weight (kg)
			ΔT 30° C		ΔT 50° C		ΔT 60° C							
			Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m						
1200	T21	88	835	971	1686	1960	2166	2519	9,02242	1,37550	400 - 700	50 & L -51	12,9	77
1400			931	1082	1892	2200	2437	2834	9,61376	1,38880		50 & L -51	14,7	89
1600			1018	1184	2083	2422	2689	3127	10,08666	1,40110		50 & L -51	16,2	101
1800			1113	1294	2259	2627	2909	3382	11,61522	1,38580		50 & L -51	18	112
2000			1206	1402	2422	2816	3106	3612	13,49581	1,36520		50 & L -51	19,8	124
2200			1294	1505	2571	2990	3286	3821	15,53839	1,34450		50 & L -51	21,6	137

Height (mm)	TYPE	Width (mm)	Heat Output						Km	n	Length (mm)	Manifold Gauge/B (mm)	Water Volume (lt)	Weight (kg)
			ΔT 30° C		ΔT 50° C		ΔT 60° C							
			Kcal/hm	Watt/m	Kcal/hm	Watt/m	Kcal/hm	Watt/m						
1200	T22	122	1147	1333	2254	2621	2869	3336	14,80437	1,32320	400 - 700	50 & L -51	12,9	86
1400			1266	1472	2495	2901	3178	3696	16,08739	1,32790		50 & L -51	14,7	98
1600			1381	1606	2729	3173	3479	4046	17,27518	1,33260		50 & L -51	16,5	110
1800			1471	1710	2958	3439	3795	4413	16,31477	1,36780		50 & L -51	18	121
2000			1597	1857	3182	3700	4070	4732	18,85566	1,34950		50 & L -51	20,1	135
2200			1725	2006	3405	3959	4340	5047	21,67288	1,33120		50 & L -51	21,9	149

TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

The ϕ values given in the table are for 1000 mm products.
Vertical Panel Radiator With Mirror do not have quality certificate.

Icon Design Panel Radiators

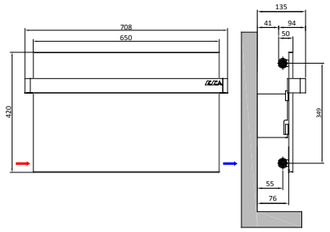
Icon Panel Radiators will bring delicacy to your bathroom and kitchen with its various design and colour options. Smart chrome towel rail will be pleasing to the eye as well as providing easy use.

There are different colour options that will bring charm to the place they're in.

Icon Panel Radiator

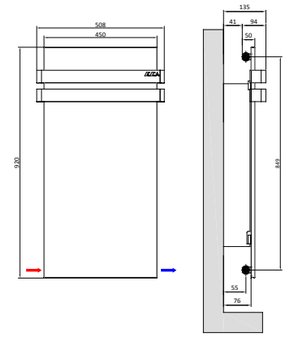
Icon Panel Radiator (400mmx600mm)	Weight (kg)	Water Volume (lt)	Heat Output								Manifold Gauge/B (mm)
			ΔT 30° C		ΔT 50° C		ΔT 60° C		Km	n	
			Kcal/h	Watt	Kcal/h	Watt	Kcal/h	Watt			
	9	1,3	113	132	212	246	265	308	2,04393	1,22477	349

The warranty for chrome towel rail is 3 years.
Icon panel radiators do not have quality certificate.



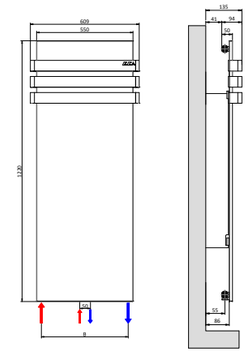
Icon Panel Radiator (900mmx400mm)	Weight (kg)	Water Volume (lt)	Heat Output								Manifold Gauge/B (mm)
			ΔT 30° C		ΔT 50° C		ΔT 60° C		Km	n	
			Kcal/h	Watt	Kcal/h	Watt	Kcal/h	Watt			
	14	1,7	167	195	314	365	393	457	2,93607	1,23306	849

The warranty for chrome towel rail is 3 years.
Icon panel radiators do not have quality certificate.



Icon Panel Radiator (1200mmx500mm)	Weight (kg)	Water Volume (lt)	Heat Output								Manifold Gauge/B (mm)
			ΔT 30° C		ΔT 50° C		ΔT 60° C		Km	n	
			Kcal/h	Watt	Kcal/h	Watt	Kcal/h	Watt			
	18	3	239	278	464	540	589	685	3,37101	1,29776	50 & 449

The warranty for chrome towel rail is 3 years.
Icon panel radiators do not have quality certificate.



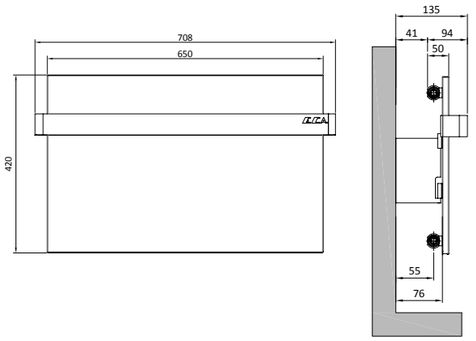
TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

Icon Electric Panel Radiator

Icon Panel Radiator (400 mm x 600 mm)	Weight (kg)	Electrical Power (W)
	10	300

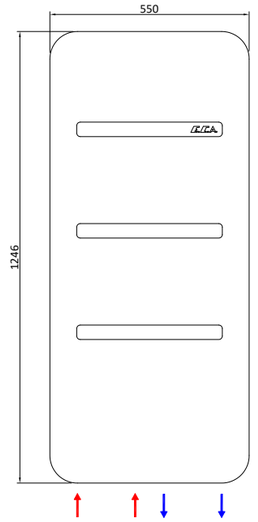
The warranty for chrome towel rail is 3 years.

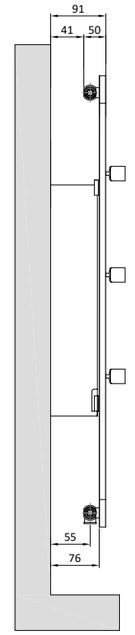
Icon electric panel radiators provide extra comfort for your living areas.



Smooth

It's slim design with rounded lines provide the perfect solution for restricted spaces such as bathrooms and kitchens.





TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"

	Weight (kg)	Water Volume (lt)	Heat Output								Manifold Gauge (mm)
			ΔT 30° C		ΔT 50° C		ΔT 60° C		Km	n	
			Kcal/h	Watt	Kcal/h	Watt	Kcal/h	Watt			
Smooth Panel Radiator (1200mmx500mm)	20	3	244	284	457	531	571	664	4,40929	1,22465	50 & 449

The warranty for chrome towel rail is 3 years.
Smooth panel radiators do not have quality certificate.
It provides ease of use thanks to the towel rack on the product.

X-Air Radiators

E.C.A. X-Air radiator is suited for houses and flats when you want more output from a radiator in low-temperature systems. With the integrated fans, the convection heat is distributed better throughout the entire room, and the temperature setting can be lower as a result. The integrated fans operate silently and increase the performance of the radiators with increased convection.

Fan Control

- Adjustable room temperature
- 4 different fan speed (1-2-3 boost)
- Manuel mode control
- Automatic return to fan speed 1 after 120 minutes in boost mode
- Soundless

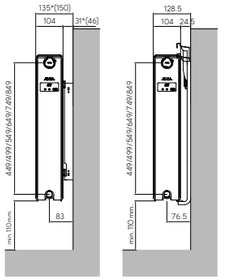
Digital Control

- Aesthetic-digital control panel
- Automatic and manuel mod
- Easy control

Sound Levels and Energy Consumption

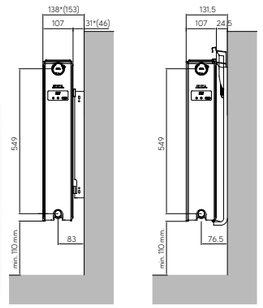
L(mm)	Static		Comfort		Boost	
	Sound Level (dB)	Energy Consumption (W)	Sound Level (dB)	Energy Consumption (W)	Sound Level (dB)	Energy Consumption (W)
600	13,7	0,6	28,3	7,6	33,4	9,1
700	14,6	0,6	29,4	9,1	34,5	10,9
800	15,5	0,6	30,4	10,7	35,6	12,8
900	16,3	0,6	31,3	12,2	36,5	14,6
1000	17,1	0,6	32,1	13,7	37,3	16,4
1100	17,8	0,6	32,9	15,2	38,1	18,2
1200	18,5	0,6	33,6	16,7	38,8	20
1300	19,2	0,6	34,3	18,3	39,5	21,9
1400	19,8	0,6	34,9	19,8	40,1	23,7
1500	20,4	0,6	35,5	21,3	40,7	25,5
1600	21	0,6	36,1	22,8	41,3	27,3
1700	21,5	0,6	36,6	24,4	41,8	29,2
1800	22,1	0,6	37,1	25,9	42,4	31
1900	22,6	0,6	37,6	27,4	42,9	32,8
2000	23,1	0,6	38,1	28,9	43,3	34,6

Standard



Height x Length	°C	Static Mode			Silent Comfort Mode			Silent Boost Mode			Water Volume	Weight
(mm)		ϕ (W)	Km	n	ϕ (W)	Km	n	ϕ (W)	Km	n	(lt)	(kg)
500	45/35/20	411	8,22326	1,3056	733	21,58767	1,1765	807	25,46322	1,1535	24,95	6,3
	40/35/20	345			626			691				
	35/30/20	222			421			469				
550	45/35/20	447	9,00748	1,3036	797	24,2888	1,1654	878	28,43884	1,1448	27,95	6,83
	40/35/20	376			682			753				
	35/30/20	242			461			512				
600	45/35/20	483	9,79504	1,3015	859	27,06752	1,1542	945	31,42634	1,136	30,95	7,35
	40/35/20	406			736			812				
	35/30/20	262			499			554				
700	45/35/20	549	10,86047	1,3093	945	28,72453	1,1662	1042	33,75045	1,1449	36,95	8,4
	40/35/20	461			809			894				
	35/30/20	297			546			608				
800	45/35/20	610	11,80211	1,3172	1016	29,76365	1,1783	1120	35,3301	1,1539	42,95	9,45
	40/35/20	512			868			960				
	35/30/20	329			584			651				
900	45/35/20	670	12,64769	1,325	1071	30,28547	1,1903	1180	36,24307	1,1628	48,95	10,5
	40/35/20	561			914			1011				
	35/30/20	359			612			683				

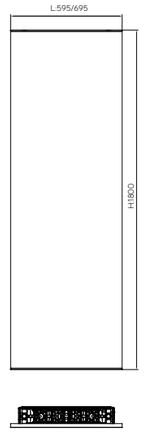
Flat

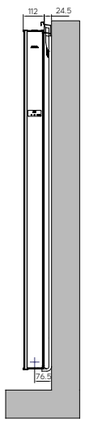


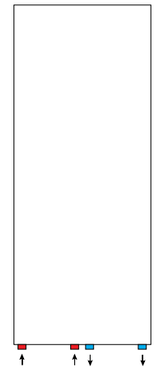
Height x Length	°C	Static Mode			Silent Comfort Mode			Silent Boost Mode			Water Volume	Weight
(mm)		ϕ (W)	Km	n	ϕ (W)	Km	n	ϕ (W)	Km	n	(lt)	(kg)
600	45/35/20	454	9,22488	1,3006	822	25,94675	1,1536	898	29,06051	1,1451	35,35	7,35
	40/35/20	382			705			770				
	35/30/20	246			478			524				

TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	70° C	G ½"

Vertical with Mirror



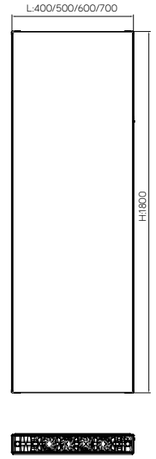


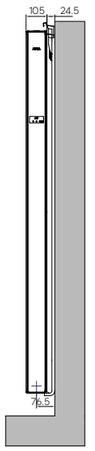


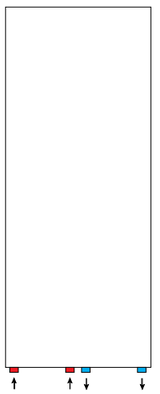
Towel hanger is optional.

Height x Length	°C	Static Mode			Silent Comfort Mode			Silent Boost Mode			Water Volume	Weight	Manifold Gauge/B
(mm)		ϕ (W)	Km	n	ϕ (W)	Km	n	ϕ (W)	Km	n	(lt)	(kg)	(mm)
1800 x 500	45/35/20	408	5,27195	1,4517	739	20,42326	1,1977	788	22,35552	1,1891	9	59,6	50 & L -51
	40/35/20	336			629			672					
	35/30/20	206			421			451					
1800 x 600	45/35/20	490	6,32634	1,4517	886	24,507912	1,1977	945	26,826624	1,1891	10,8	71,5	50 & L -51
	40/35/20	403			755			807					
	35/30/20	247			505			541					

Vertical





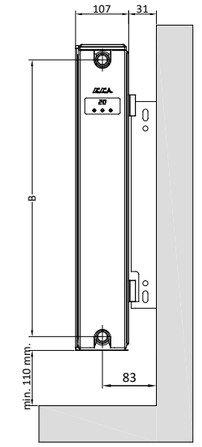


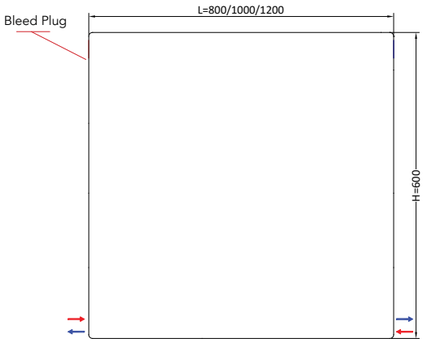
Height x Length	°C	Static Mode			Silent Comfort Mode			Silent Boost Mode			Water Volume	Weight	Manifold Gauge/B
(mm)		ϕ (W)	Km	n	ϕ (W)	Km	n	ϕ (W)	Km	n	(lt)	(kg)	(mm)
1800 x 500	45/35/20	408	5,27195	1,4517	739	20,42326	1,1977	788	22,35552	1,1891	9	51,6	50 & L -51
	40/35/20	336			629			672					
	35/30/20	206			421			451					
1800 x 600	45/35/20	490	6,32634	1,4517	886	24,507912	1,1977	945	26,826624	1,1891	10,8	61,9	50 & L -51
	40/35/20	403			755			807					
	35/30/20	247			505			541					

TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	70° C	G ½"

Hybrid

There are 3 different length options from 800 mm to 1200 mm.
Hybrid panel radiators also operate electrically and conventionally at the same time.

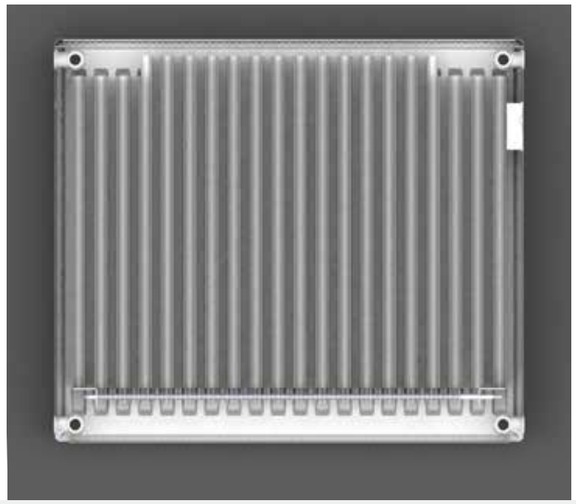




You can set the temperature with aesthetical digital display.

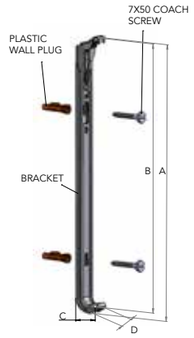
Height (mm)	Type	Length (mm)	Weight (kg)	Water Volume (lt)	Electrical Power (W)	Manifold Gauge/B (mm)
600	T22	800	30	5,7	1300	549
		1000	37	7,1	1700	
		1200	44	8,5	2000	

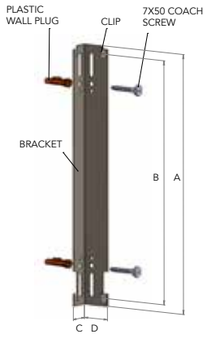
TEST PRESSURE MAXIMUM	OPERATING PRESSURE MAXIMUM	OPERATING TEMPERATURE	CONNECTION DIMENSION
13 Bar	10 Bar	120° C	G ½"



Installation Kit

Height	300 mm	400 mm	500 mm	550 mm	600 mm	700 mm	800 mm	900 mm
A mm	110	210	310	360	410	510	610	710
B mm	85	185	285	335	385	485	585	685
C mm	30	30	30	30	30	30	30	30
D mm	45	45	45	45	45	45	45	45





Height	300 mm	400 mm	500 mm	600 mm	700 mm	800 mm	900 mm
A mm	309	409	509	609	709	809	909
B mm	298	398	498	598	698	798	898
C mm	33.5	33.5	33.5	33.5	33.5	33.5	33.5
D mm	32	32	32	32	32	32	32

- Compatible with PKP, PP, PKKP, PPP and PKKPKP types
- Allows radiator mounting in areas with french windows
- High corrosion resistance
- Compliant with European norms
- High durability

Consoles

For Vertical Radiators

Accessories

Color Chart

Crocodile 9010


Crocodile 9005

Crocodile 1013

RAL 9010

RAL 9016


Metallic Red


PE55QC5987103CMX


PE55QC6215103CMX


PE55QC1301103CMX


PE55Q+33030102CMX


PE55QC7762103CMX


Metallic Black


PE55Q+1778101CMX


PE55QC7048103CMX


PE55QC1035103CMX


PE58QC4011189GLX


PE55QC7715103CMX


PE55QC17949102CMX


PE55Q+1779101CMX


PE58Q+1700187HRX


PE55QC7148103CMX


PE58QC5025189GLX


PE55Q+6779101CMX


PE55Q+5570103CMX


PE55Q+8355103CMX


PE55Q+8870103CMX


PE55Q+8880103CMX


PE55Q+8860103CMX


PE55Q+1775101CMX


PE58QC5026189GLX

CAST IRON RADIATORS

Cast Iron Radiators

- Manufactured with superior and quality considerations.
- Long lasting.
- High thermal efficiency.
- Ensure maintaining of temperature for longer periods.
- Resistant to corrosion.
- Leakproof through intermediate joints.
- Specially designed edges and corners and resistance to impact.
- All our flat surface cast iron radiators have the NF 137 certification.
- Standard Applicable TS EN 442
- RAL7038, RAL9003 and RAL9010 primer paint can be applied for all type of radiators.

HOT WATER HEATING RADIATORS, CONVECTORS AND RADIANT MOUNTED CEILING PANELS - NF 047
www.marque-nf.com
For Flat Surface Radiators

Column Cast Iron Radiators

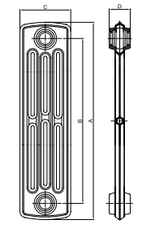
Curtain Column Cast Iron Radiators

Flat Surface Cast Iron Radiators

Technical Specifications

COLUMN CAST IRON RADIATORS

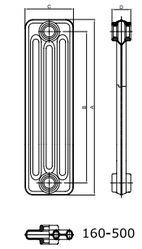
Types	Single Section								Thermal Efficiences					
	Dimensions				Connection Dimension	Heating Surface	Water Volume	Weight	ΔT=50°C		ΔT=30°C		Average Water Temperature (°C)	
	A	B	C	D									70°C	80°C
	mm	mm	mm	mm	Inch	m²	liter	kg	watt	kcal/h	watt	kcal/h	watt	watt
144/200	300	200	144	60	1 1/4"	0,101	0,52	3,43	47,3	40,7	26,1	22,4	46,42	57,56
144/350	447	350	144	60	1 1/4"	0,150	0,65	4,85	67,2	57,8	34,9	30,0	66,50	84,35
144/500	598	500	144	60	1 1/4"	0,210	0,95	5,64	88,3	75,9	45,4	39,0	86,10	109,55
144/600	700	600	144	60	1 1/4"	0,251	0,95	6,25	106,5	91,6	57,4	49,4	104,47	130,69
144/650	748	650	144	60	1 1/4"	0,260	1,10	7,10	104,9	90,2	52,2	44,9	104,90	134,86
144/800	898	800	144	60	1 1/4"	0,320	1,20	8,60	127,4	109,5	64,0	55,0	121,00	155,25
221/350	420	350	221	60	1 1/4"	0,230	1,00	7,11	96,5	83,0	49,4	42,5	94,20	119,49
221/500	598	500	221	60	1 1/4"	0,320	1,30	8,58	126,5	108,8	64,2	55,2	123,80	157,50
221/600	700	600	221	60	1 1/4"	0,374	1,27	9,10	156,9	134,9	83,1	71,5	153,78	193,60
221/800	898	800	221	60	1 1/4"	0,480	1,80	12,69	182,4	156,8	91,8	78,9	179,70	230,26



144-500

CURTAIN CAST IRON RADIATORS

Types	Single Section								Thermal Efficiences					
	Dimensions				Connection Dimension	Heating Surface	Water Volume	Weight	ΔT=50°C		ΔT=30°C		Average Water Temperature (°C)	
	A	B	C	D									70°C	80°C
	mm	mm	mm	mm	Inch	m²	liter	kg	watt	kcal/h	watt	kcal/h	watt	watt
70/500	580	500	70	60	1 1/4"	0,120	0,48	3,43	52,5	45,1	26,9	23,1	52,50	66,44
160/350	430	350	160	60	1 1/4"	0,185	0,80	4,81	73,3	63,0	37,7	32,4	72,30	92,23
160/500	580	500	160	60	1 1/4"	0,255	1,10	5,98	94,4	81,2	48,3	41,5	95,40	121,71
160/900	980	900	160	60	1 1/4"	0,440	1,50	9,86	146,9	126,3	73,5	63,2	142,60	182,46

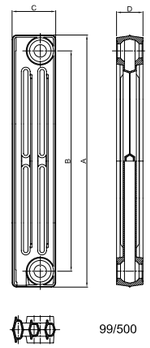


160-500

FLAT SURFACE CAST IRON RADIATORS

For Flat Surface Radiators

Types	Single Section								Thermal Efficiences					
	Dimensions				Connection Dimension	Heating Surface	Water Volume	Weight	ΔT=50°C		ΔT=30°C		Average Water Temperature (°C)	
	A	B	C	D									70°C	80°C
	mm	mm	mm	mm	Inch	m²	liter	kg	watt	kcal/h	watt	kcal/h	watt	watt
99/350	420	350	99	60	1"	0,145	0,61	3,65	61,1	52,5	31,4	27,0	58,50	74,21
99/500 S	570	500	99	60	1"	0,200	0,75	4,84	79,1	68,0	40,7	35,0	78,20	99,25
99/623	693	623	99	60	1"	0,240	0,80	5,90	93,2	80,1	47,9	41,2	91,20	115,75
99/623 S	686	623	92	60	1"	0,238	0,82	4,97	88,3	75,9	45,69	39,3	86,56	109,86
99/623NEW	694	623	92	60	1"	0,240	0,82	5,50	88,7	76,3	45,7	39,4	86,60	109,90
99/813	883	813	99	60	1"	0,310	1,00	8,00	114,0	98,0	58,7	50,5	111,50	142,13
134/350	420	350	134	60	1"	0,185	0,78	4,60	76,5	65,8	38,8	33,4	73,20	92,95
134/500	570	500	134	60	1"	0,240	0,88	6,21	99,3	85,4	50,3	43,3	97,30	123,72
134/623	693	623	134	60	1"	0,310	1,09	6,81	118,0	101,5	59,7	51,3	115,50	147,32
134/813	883	813	134	60	1"	0,400	1,32	10,66	146,0	123,7	73,7	63,4	143,90	184,85



99/500

OPERATING AND TEST CONDITIONS FOR CAST IRON RADIATORS

Heater Installation Type	Max. Operating Pressure*		Max. Operating Temperatures C°	Test Pressures (Cold Water) bar
	Bar	mSS		
Hot Water or Steam	9	92	120	12-14

*Each section is tested as single and assembled under a pressure of 12-14 bars twice

Notes:

Elginkan

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