

WELCOME TO ROINTE DIGITAL SYSTEM LOW CONSUMPTION INTEGRAL HEATING



THE PROFESSIONAL HEATING SOLUTION WITH AN ALL-IN-ONE CONTROLLER





TECHNICAL

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OUR COMPANY

You're not ready until you understand that family is the most important thing. You're not ready until you figure out that the planet you live in is unique. You're not ready until you know that 25 years of experience are nothing. You're not ready if you think you are.

Over 25 years of experience of being pioneers in research, manufacturing and marketing of the Rointe Digital System guarantees that we are a leading company in the fields of low consumption electric heating and hot water systems.

Since first entering the market our company and our engineering department were totally dedicated to research and development and invested heavily in it. Today we can state with pride that we continue being pioneers in contributing to these sectors new and innovative technology.



José Dengra Founder and President of Rointe

In this sense, in Rointe we have been capable of evolving within all of the manufacturing processes from the injected aluminium of the radiators, new formulations for the thermal fluid, the source of heat, right up to the important advances that we have made to develop and patent our digital electronics which control the functions of the electric radiators and water heaters.

Our products only arrive to the final client via professional installers who don't trade with large stores nor in non-specialist shops. In addition all of our products are rigourously tested by the most prestigious laboratories in the countries which market the Rointe Digital System.

The market continuously demands products that are efficient, comfortable, safe, ecological and economic. The comprehensive controls made by Rointe guarantees the final client that they are buying a quality product that is calculated and installed by a true professional who can offer a satisfactory service with the personalized solutions required for correct heating and hot water.

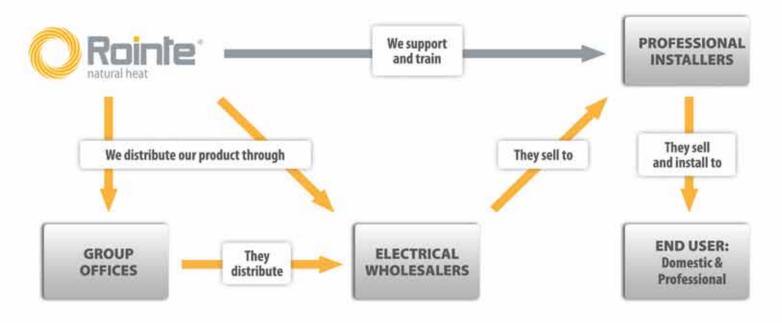
My most sincere thanks goes to the distributors, installers and the domestic and professional end users who with their testimonials, comments and opinions, motivate us to continue innovating. Thanks as well to the technical and commercial departments that work closely with the management to enable Rointe to offer the market efficient solutions.

Sincerely,

José Dengra

OUR DISTRIBUTION CHART

Here is our distribution chart, which is based exclusively on the professional channel. Our products only arrive to the final client via professional installers who don't trade with large stores nor in non-specialist shops.



ROINTE BUILDING THE FUTURE



GREEN HOMES **1N 2016**

Emissions of greenhouse gases, particularly carbon dioxide, are the main cause of climate change. The UK emitted more than 550 million tonnes of carbon dioxide (MtCO₂) in 2005. Energy use in buildings accounted for nearly half these emissions, and more than a quarter came from the energy we use to heat, light and run our homes.

Therefore, the UK government proposes to achieve a zero carbon goal in three steps: moving first, in 2010 to a 25% improvement in the energy/carbon performance set in building regulations; then second, in 2013 to a 44% improvement; then finally in 2016, to zero carbon. This means that, in a few years, the net carbon emissions from all energy use in the home will be zero.

The code for sustainable homes uses a 1 to 6 star rating system to communicate the overall sustainability performance of a new home. A home assessed as a 6 star will have achieved the highest sustainability rating.

DATE	2010	2013	2016
Energy efficiency improvement of the dwelling compared to 2006 (Part L Building Regulations)	25%	44%	Zero carbon
Equivalent standard within the Code	Code level 3	Code level 4	Code level 6

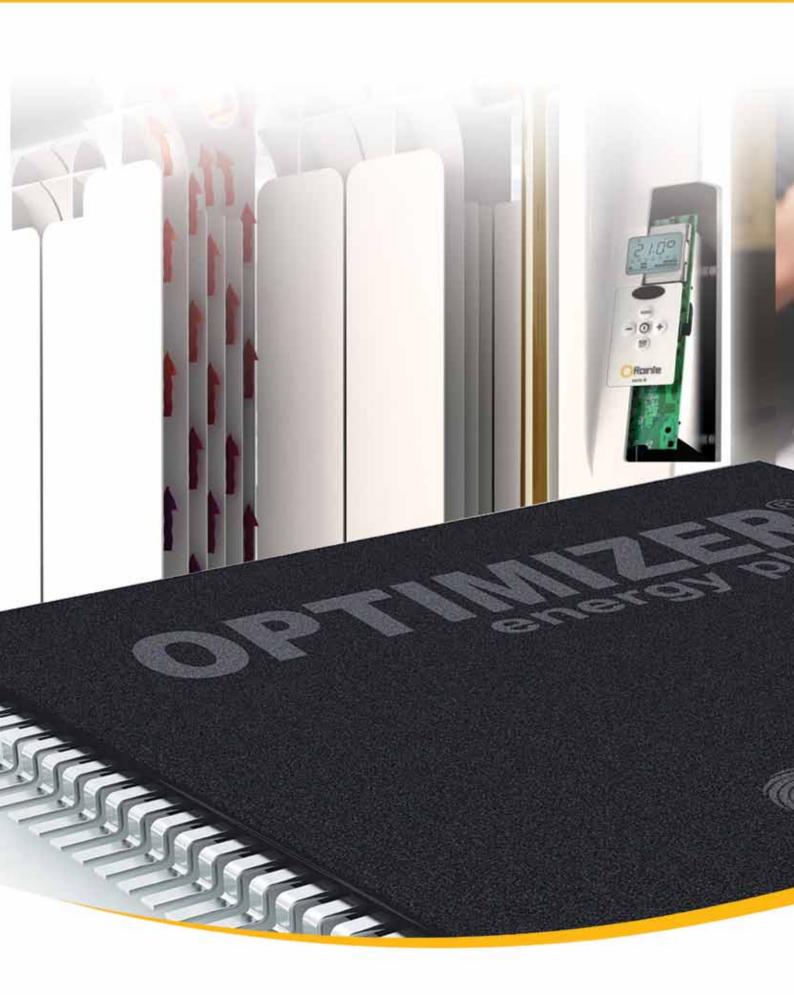
The objective of the part L of the building regulations deals with the energy efficiency requirements in the Building.



THE PART L IS DIVIDED INTO 4 SECTIONS:

- L1A Conservation of fuel and power in new dwellings.
- L1B Conservation of fuel and power in existing dwellings.
- L2A Conservation of fuel and power in new buildings other than dwellings.
- L2B Conservation of fuel and power in existing buildings other than dwellings.

In 2010 there came into effect a new revision of the part L for dwellings. The annual CO₂ emission rate is calculated using SAP2009, and must not exceed the target set by reference to a notional dwelling with an additional overall improvement of 25% relative to 2006 standards.



TECHNICAL



Aware of the current energy challenges facing society, Rointe's R&D department has made a firm commitment by researching the 3 essential values of the latest generation of digital heating: High Quality Component, Optimizer Energy Plus y ECOESE System.







We will also introduce the key factor to measure the performance of any heating system: the stability to obtain a comfortable ambience.

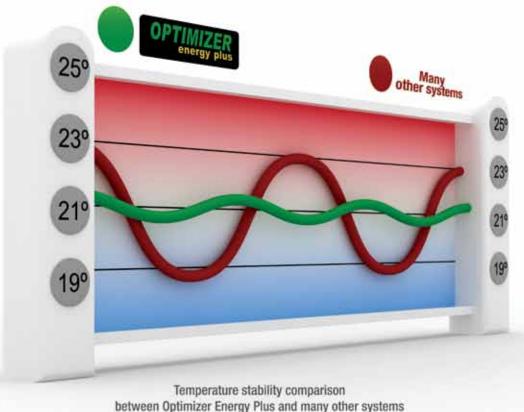


K Series control panel: the brain that controls our radiators

The internal research and market studies made by Rointe, and the lack of a regulation able to objectively compare and classify the different electric heating systems in the market, has led us to develop a criteria based on different parameters that have been tested in independent laboratories.

The aim of these parameters is to achieve stability to maintain a comfortable ambience in a dwelling. The indicators used are the stability of the temperature, velocity of the air, the radiant heat and the equivalent ratio of consumption.

In the next pages we will learn all about these values and parameters.



OPTIMIZER ROINTE'S EXCLUSIVE ENERGY ENERGY SAVING PLUS TECHNOLOGY



The Optimizer Energy Plus is a digital software developed by Rointe's R&D department after several years of research, which allowed us to develop a processor that manages the energy efficiently, maintaining control of the ambient and fluid temperature, thus making the Optimizer Energy Plus a control system that is unique in the market for electric heating.

In the graph in the previous page you can see the evolution of the ambient temperature in a room controlled by a traditional system (red line) and controlled by the Optimizer Energy Plus (green line).

The Optimizer Energy Plus generates a temperature oscilation that is smaller than the traditional system due to regulating multiple starts and stops. Applying the Optimizer Energy Plus gives an ambient temperature variation of ± 0.25 °C compared with ± 2 °C of many other traditional systems. This smaller ambient temperature oscilation increases the sensation of comfort for the user of the Rointe Digital System.

The Optimizer Energy Plus also affects the temperature of the fluid, maintaining it at a stable temperature, having the effect of providing a greater energy saving.

EQUIVALENT RATIO GRAPH EQUIVALENT RATIO OF NO CONSUMPTION

EQUIVALENT RATIO OF CONSUMPTION 100% Nominal Power The management of the Optimizer Energy Plus, apart from the great stability of the temperatures, allow us to achieve a very low equivalent ratio of consumption respect to the nominal power of the apparel. That efficient management of the power is a key factor for obtaining a comfortable home.

HIGH QUALITY COMPONENT

SURFACE TEMPERATURE

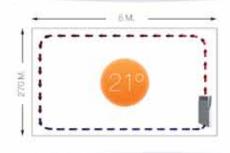
The quality and purity of the elements that make up the ROINTE DIGITAL SYSTEM, achieve a low surface contact temperature of 40°C with the room temperature set to 21°C, avoiding any accident with children or elderly people and allowing the installation in any private or public environment.





INJECTED ALUMINIUM

The aluminium elements which make up the ROINTE DIGITAL SYSTEM have been designed by computer fluids dynamic, a specialized application which allows the system to provide the maximum heat dissipation through the natural air convection.



THERMAL FLUID

The high performance of the thermal fluid used in the ROINTE DIGITAL SYSTEM, makes it possible that its molecular structure can work on an average temperature of 50°C; with its boiling point at 330°C, ensuring the properties of the fluid remain intact.



Average temperature of 50°C

at 330°C

HEATING ELEMENT

The heat comes from a enclosed heating element made of steel, which is compensated accordingly in watts per square centimetre. It has 110W per element, ensuring a long lifespan and a balanced heat transmission among the heating element, the thermal fluid and the aluminium element. It is situated in the lower part of the product, granting a perfect heat distribution along the whole surface, and 100% usefulness of the energy used.





ALUMINIUM FLUID HEATING ELEMENT CONTROL PANEL DIGITAL CONTROL

CONTROL PANEL

The control panel of the ROINTE DIGITAL SYSTEM is injected in ASA PC fireproof polycarbonate, high resistance material specially made to protect against ultraviolet rays, which avoids the colour degradation over time.



EXCLUSIVE



BIDIRECTIONAL DIGITAL CONTROL

ROINTE DIGITAL SYSTEM can be programmed by a remote control. This exclusive controller with infrared bi-directional technology, is able to programme the temperature of all the products of the ROINTE DIGITAL SYSTEM: radiators, towel rails and water heaters 24 hours a day 7 days a week.

PUTTING IT ALL TOGETHER

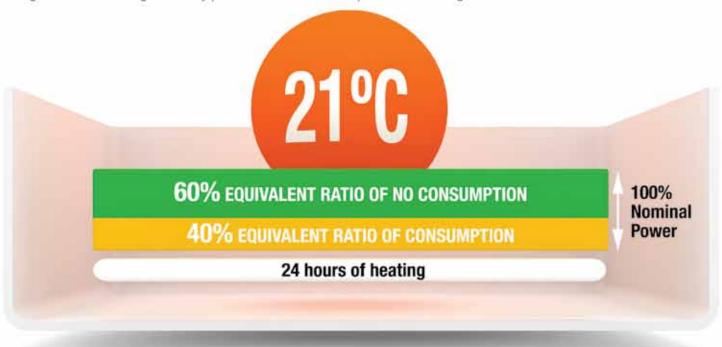
The sum of all these components of the highest quality bring us the K Series radiator, the flagship of our Rointe Digital System, giving you the best heat through the convection, which is produced in a natural way due to the special design of the fins of each element, allowing perfect heat distribution to all areas of the room, including the floor, maintaining the relative humidity within the comfort limits.



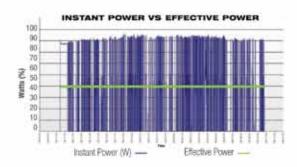
ROINTE DIGITAL SYSTEM

STABILITY TO OBTAIN A COMFORTABLE AMBIENCE

The K Series Radiator maintains the stability of a comfortable ambience thanks to the **Optimizer Energy Plus** which provides the system with the necessary energy in each moment. Our technology allows us to keep the set temperature within a ±0.25°C margin of variation during the steady period. A more stable temperature means higher comfort.

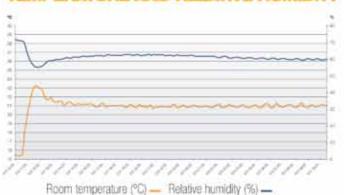


In the K Series radiator test, made in an independent laboratory, we used a 1,430W model to simulate the heating of a 12 m² room with the thermostat set to 21°C. The average power needed during the test was 560W, which represents a 40% of the nominal power. That is what we define as the equivalent ratio of consumption, as you can see in these graphs, which is technically defined as the effective power.



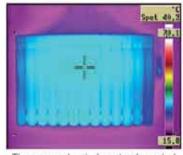
LABORATORY TESTS

EVOLUTION OF THE AVERAGE TEMPERATURE AND RELATIVE HUMIDITY



The objective for a heating system consists in reaching and maintaining a stable temperaure in the property being heated. With our products that stability is achieved within a short period of time with a variation of $\pm 0.25^{\circ}$ C. At the same time this obtains a correct relative humidity of the atmosphere within healthy limits.

SAFETY OF OUR PRODUCT (SURFACE TEMPERATURES)



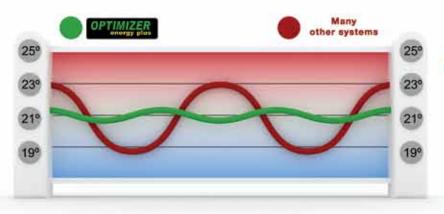
Thermography during steady period

During the test, with the temperature set to 21°C, we achieve a low surface contact temperature of only around 40°C, thus avoiding any accidents with children or elderly people and allowing the installation in any private or public environment.

MAIN PARAMETERS TO REACH THIS STABILITY

MORE COMFORT LESS ENERGY TEMPERATURE

TEMPERATURE
AIR SPEED
RELATIVE HUMIDITY
RADIANT TEMPERATURE



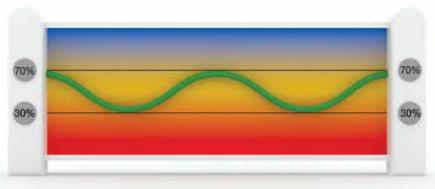
TEMPERATURE STABILITY

THE ROINTE DIGITAL SYSTEM is capable of stabilising the desired temperature of the client with a precision of $\pm 0.25^{\circ}$ C. According to the current regulations the recommended temperature for winter is 21°C.



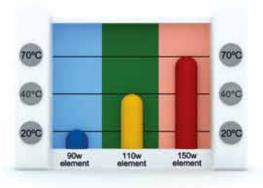
AIR SPEED

Being a system of natural air convection, the ROINTE DIGITAL SYSTEM maintains the value of air speed under 0.1 metres/second thus avoiding any kind of turbulence. Air speed must be lower than 0.2 metres/second for a stable 21°C temperature.



RELATIVE HUMIDITY

One of the big advantages of the ROINTE DIGITAL SYSTEM is it's low operating temperature which maintains a stable relative humidity within the comfort limits (between 30% and 70% according to the current regulations).



RADIANT TEMPERATURE

The ambience and radiant temperatures define, among other parameters, the comfortableness of an environment. And the radiant temperature is the one which is not influenced by any kind of air movement.

To obtain a comfortable ambience it is necessary that both temperatures are close. Rointe estimates that, for a similar radiant and ambience temperature, the power density should be an average of 110 W per element.



These are the internal procedures and parameters that reflect the basic criteria which Rointe Digital System is based on, such as EFFICIENCY, SAFETY and ECOLOGY.

Ecology

RENEWABLE ENERGIES: Part of the energy used by the Rointe Digital System comes from renewable energy sources, defined by their maximum respect to the environment.

NO COMBUSTION: The Rointe System requires neither a boiler, pipes or chimneys, nor solid, liquid or gaseous fuels, as there is no combustion in the heating process.

RoHS: All our range of products fulfill the most demanding making regulations, avoiding the use of dangerous components like lead and hexavalent chrome.

Safety

NO ESCAPES: In any kind of installation with water or gas pipes, there is always a concern about escapes that can occur due to the lime in the water, faults in the actual pipes or just because the age of the installation itself.

NO MAINTENANCE: Those heating systems subject to wear and tear or ageing due to their actual usage require continuous maintenance works, which are often very expensive.

NO HIGH TEMPERATURES: These products are designed to work at low surface temperatures, thus avoiding burns, specially in case of aged people or very young children.

Efficiency

THE ENERGY OPTIMIZER: The electronic optimizer incorporated in the actual radiator electronics, can reduce energy consumption, optimizing the on and off times of each radiator, achieving a significant saving in consumption and a perfect stability in the room temperature compared to other heating systems.

INDIVIDUALLY CONTROLLED: The success of a heating system is based on controllability. The Rointe System allows each room to be controlled individually or working in unison as a group. The control of each radiator of the Rointe System enables us to select the running times and temperature of every room individually, adding an extra saving to the system.

BALANCED PRODUCT: The perfectly studied balance between the heating element, the thermal fluid and the quality of the materials bring us a product with an incredibly high performance.

ROINTE DIGITAL SYSTEM CERTIFICATIONS

Directives and standard applied





The Digital Rointe system complies with the obligatory European electrical safety and electromagnetic compatibility regulations. The regulation 60335-2-30 applies the directive 2006/95 about electrical safety and the regulations EN55014 and EN61000 applies the directive 2004/108/CE about electromagnetic compatibility. Both rules ensure that the products are safe and will not emit electromagnetic interference affecting the environment. Rointe digital system also ensures that the surface temperature is below the limits established to prevent burns in children or elderly.

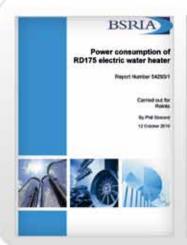
2004/108/CE

EN 55014-1:2006 EN 55014-2:1997 + A1:2001 EN 61000-3-2:2006 EN 61000-3-3:1995 + A1:2001 + A2:2005

006/95/CE

EN 60335-1:2002 + A11:2004 + A1:2004 + A12:2006 + A2:2006 EN 60335-2-50:2003 + A1:2004 + A2:2007 EN 50366:2003 + A1:2006 CE

Performance Tests







Rointe has tested its products in well respected european laboratories like BSRIA (Building Services Research and Information Association) in UK or CEIS (Centro de Ensayos, Innovación y Servicios - Centre for Testing, Innovation and Services) and CETENMA (Centro Tecnológico de la Energía y el Medio Ambiente - Energy and Environmental Technology Centre) in Spain.

Standard of Quality and Environment



Rointe has been certified under the ISO 9001:2000 quality standard since 2002. The said regulation lays down the parameters and processes of continual improvement of all processes within the company. These processes start from the design, procurement, production, marketing to after sales service.





These internal procedures and parameters reflect the basic criteria which Rointe system is based on, such as EFFICIENCY, SAFETY and ECOLOGY.

Rointe Products include components that comply with European Directive 2002/95/EC transposed by Royal Decree 208/2005 restricting the use of different materials which are pollutants such as lead, mercury, cadmium, chromium VI, PBB and PBDE in the production of Electrical and Electronic Equipment.





INFRARED M



RANGE OF PRODUCTS





SERIES LD OF APPLICATIONS

Domestic



Education



Health



Professional



60% EQUIVALENT RATIO OF NO CONSUMPTION 100% Nominal Power 40% EQUIVALENT RATIO OF CONSUMPTION

LOW CONSUMPTIONS

In the K Series radiator test, we used a 1,430W model to simulate the heating of a 12 m² room with the thermostat set to 21°C. The average power needed during the test was 560W, which represents a 40% of the nominal power. That is what we define as the equivalent ratio of consumption, as you can see in the graph.

If we multiply the nominal power by the equivalent ratio of consumption the result is the effective power.



TOTAL CONTROL

Your Rointe radiators are 24/7 programmable, both with their control panel and with our M Series remote.

Create a heating programme adapted to your own necessities: you will gain comfort and save time energy and money.



10 YEARS GUARANTEE

Install your Rointe heating and forget about problems or maintenance.

You have 10 years guarantee in aluminium and heating elements, and 2 years guarantee in electric and electronic components.















60% EQUIVALENT RATIO
100%
Nominal
Power

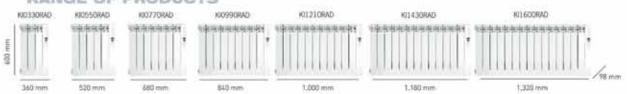




MODELS	KI0330RAD	KIOSSORAD	KIG770RAD	KI0990RAD	KI1210RAD	KI1436RAD	KITGOORAD
No. of elements	3	5	7	9	11	13	15
RECOMMENDED SIZING A	CCORDING T	O RTC IN M	7.M2			2000	
Mild weather RTC 0,75 m² / 0,23 m³	Up to 4 m² / 15 m²	Up to 7 m² / 23 m²	Up to 10 m²/32 m²	Up to 12 m² / 41 m²	Up to 15 m² / 50 m²	Up to 18 m² / 58 m²	Up to 20 m² / 67 m²
Cold weather RTC 0,80 m² / 0,26 m³	Up to 4 m ² / 13 m ²	Up to 6 m² / 21 m²	Up to 9 m² / 28 m²	Up to 11 m ^a / 36 m ^a	Up to 14 m² / 44 m²	Up to 16 m²/51 m²	Up to 19 m² / 59 m²
Very cold weather RTC 0,85 m ² / 0,30 m ³	Up to 4 m ² / 11 m ²	Up to 6 m² / 18 m²	Up to 8 m²/25 m²	Up to 11 m² / 31 m²	Up to 13 m² / 38 m²	Up to 15 m² / 45 m²	Up to 18 m² / 51 m
Extra cold weather RTC 0,90 m² / 0,33 m³	Up to 3 m² / 10 m²	Up to 6 m² / 16 m²	Up to 8 m² / 22 m²	Up to 10 m² / 28 m²	Up to 12 m² / 34 m³	Up to 15 m² / 40 m²	Up to 17 m² / 46 m
ELECTRICAL CHARACTERI	STICS						
Nominal power (W)	330	550	770	990	1,210	1,430	1,600
Effective power (W)*	132	220	308	396	484	572	640
Voltage (V)	230 V ~	230 V	230 V ~	230 V -	230 V ~	230 V ~	230 V ~
Current (A)	1.5	2.4	3.4	4.3	5.3	6.2	7.0
DIMENSIONS							
Width (mm)	360	520	680	840	1,000	1,180	1,320
Height (mm)	600	600	600	600	600	600	600
Depth (mm)	98	98	98	98	98	98	98
Installed depth (mm)	113	113	113	113	113	113	113
MECHANICAL CHARACTER	ISTICS						
Steel heating element	V	J	V	V	V	V	V
High purity aluminium	1	1	1	1	V	V	1
Thermal oil	1	V	1	V	V	V	V
ASA/PC Control Panel	/	/	/	V	V	V	V
Weight (kg)	10	14	18	22	26	30	34
RAL Colour	9010	9010	9010	9010	9010	9010	9010
Protection Grade	IP 21	IP 21	IP 21	IP 21	IP 21	IP 21	IP 21
PERFORMANCE AND SAFE	TY						
Optimizer Energy Plus™	V	V	1	V	J	1	V
Temperature stability (°C)	±0.25	±0.25	±0.25	±0.25	±0.25	±0.25	±0.25
Air speed (m/sec)	<0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Power per element (W/element)	110	110	110	110	110	110	110
Safety thermostat	V	V	V	V	V	V	V
Average surface temp. during steady state (°C)**	40°C	40°C	40°C	40°C	40°C	40°C	40°C
INSTALLATION							
Template, installation kit and safety bracket	V	V	V	V	V	V	V
CERTIFICATIONS							
2004/108/CE Electromagnetic Compatibility	V	1	V	V	V	V	V
2006/95/CE Electrical Safety	V	V	V	V	V	V	V

^{*} Effective power is the real power needed under predetermined parametres for heating a 12m² room with the temperature set to 21°C, according to tests developed by independent laboratories.
** Surface temperature achieved when the room temperature is set to 21°C.

RANGE OF PRODUCTS



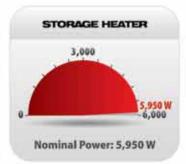
HOW DO THEY WORK? POWER COMPARISON BETWEEN FOUR DIFFERENT HEATING SYSTEMS

In the following graphs we compare the nominal power needed for a 20 m² dwelling according to the recommendation of the manufacturers:









The manufacturers of panel heaters and storage heaters recommend combining both systems to heat a house. A manufacturer's example: storage heater for living/dining rooms, kitchens and offices and panel heaters for bedrooms.

With the Rointe Digital System, any type of project can be heated entirely without having to complement it with another system.

The calculation of all these systems, is based on a climatic zone with a thermal coefficient of 436 Btu/m²

ANNUAL RUNNING COST COMPARISON



Thanks to our Optimizer Energy Plus technology, and according to the results of tests performed on our products by independent laboratories, we can guarantee that —with a correct sizing and installation of our products—you can save up to 60% of the Rointe running cost, as shown in the table here.

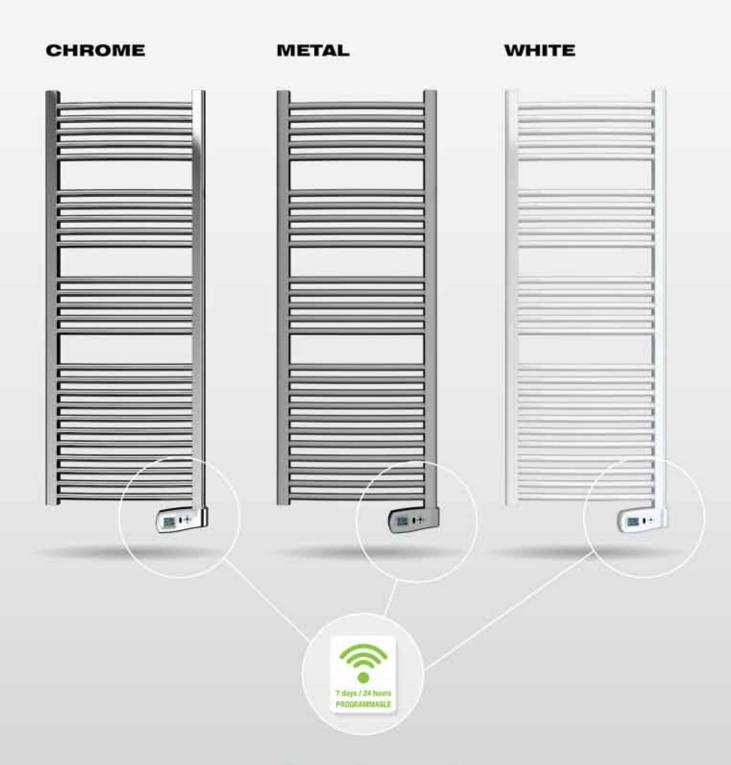
Comparison is made according to the following calculations:

ROINTE:Normal Electricity Tariff (£0.115)x 7 hours a day x 7 days a week x 30 weeksPANEL HEATER:Normal Electricity tariff (£0.115)x 7 hours a day x 7 days a week x 30 weeksSTORAGE HEATER:Economy 7 Tariff (£0.046)x 7 hours a day x 7 days a week x 30 weeksBOILER:Normal Gas Tariff (£0.038)x 7 hours a day x 7 days a week x 30 weeksReconversion = Total BTU ÷ 3.42 = Total W + heat loss transmission of 30%.



DIGITAL ELECTRIC TOWEL RAILS





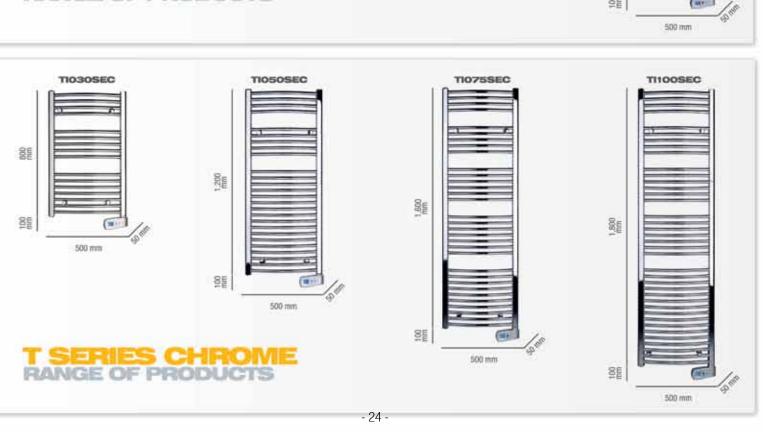




















MODELS C	hrome	TIOSOSEC	TI050SEC	TIO75SEC	TI100SEC
DIMENSIONS					
Height (mm) -without control panel-		800	1,200	1,600	1,800
Height (mm) -with control panel-		900	1,300	1,700	1,900
Width (mm)		500	500	500	500
Depth (mm)		50	50	50	50
Installed depth (mm)		100	100	100	100
MECHANICAL CHAR	ACTE	RISTICS			
Steel heating element		V	V	V	V
Thermal fluid		V	V	V	1
ASA/PC Control Panel		V	V	1	/
Weight (kg)		11	15	22	28
Colour			Chr	ome	
ELECTRICAL CHARA	CTER	STICS			
Nominal power (W)		300	300	500	750
Voltage (V)		230 V -	230 V	230 V -	230 V -
Current (A)		1.3	1.3	2.2	3.3
Class II		V	V	V	V
FUNCTIONS					
Digital Display		V	V	V	V
Manual / Automatic Fur	nction	V	V	V	V
ECO / Comfort Modes		V	V	1	V
Anti-frost		V	V	1	V
Programmable 7 days / 24 hours from towel rail control panel	the	V	V	V	V
Compatible with M Series remote		V	V	V	1
Working mode indicato	r.	V	V	1	V
Boost mode (2H)		V	V	1	V
SAFETY					
Fireproof silicon covering on wires		V	V	V	V
Protection grade		IP 44	IP 44	IP 44	IP 44
Safety thermostat		V	V	V	V
INSTALLATION					
Template		V	V	V	V
Installation kit		V	/	1	V
Recommended sizing (n²)	Up to 2	Up to 4	Up to 6	Up to 8
CERTIFICATIONS					
2004/108/CE Electromagnetic Compa	tibility	1	V	1	V
2006/95/CE Electrical S		J	V	V	V

, U	HE TO			
MODELS	TI030SEB	TIO50SEB	TIO75SEB	THOOSEB
Meta	TID30SEM	TI050SEM	TI075SEM	TI100SEM
DIMENSIONS Height (mm)		0.0000	- Justin	100000000
-without control panel-	800	1,200	1,600	1,800
Height (mm) -with control panel-	900	1,300	1,700	1,900
Width (mm)	500	500	500	500
Depth (mm)	50	50	50	50
Installed depth (mm)	100	100	100	100
MECHANICAL CHARACTER	RISTICS			
Steel heating element	V	V	V	V
Thermal fluid	V	V	V	V
ASA/PC Control Panel	V	1	1	/
Weight (kg)	11	15	22	28
Colour White		RAL S	100 Feb.	
Metal		Me	tal	
ELECTRICAL CHARACTER	ISTICS			
Nominal power (W)	300	500	750	1,000
Voltage (V)	230 V -	230 V -	230 V ~	230 V -
Current (A)	1.3	2.2	3.3	4.4
Class II	V	V	V	V
FUNCTIONS	1			
Digital Display	V	V	V	V
Manual / Automatic Function	V	V	V	/
ECO / Comfort Modes	/	V	/	/
Anti-frost	V	1	V	V
Programmable 7 days / 24 hours from the towel rail control panel	V	V	1	V
Compatible with M Series remote	V	/	1	1
Working mode indicator	1	1	1	1
Boost mode (2H)	V	1	1	1
SAFETY				
Fireproof silicon covering on wires	V	V	V	V
Protection grade	IP 44	IP 44	IP 44	IP 44
Safety thermostat	1	V	V	V
INSTALLATION				
Template	V	1	V	1
Installation kit	1	1	V	V
Recommended sizing (m²)	Up to 3	Up to 5	Up to 7	Up to 10
CERTIFICATIONS				
2004/108/CE Electromagnetic Compatibility	V	V	V	1
2006/95/CE Electrical Safety	J	1	1	1
Lavaron of Libertical Guisty	V	Y	V	V



Rointe RD Series has a touch panel, allowing the user to control the device in an easy and intuitive way.

From the panel you can select the temperature of the water and, at first sight, know: the currently selected temperature (from anti-frost to 80°C), the hot water availability, the working mode (on or stand-by), if the heating element is working and if the water heater is programmed (through the M Series remote control).

The comfort of Domestic Hot Water

Keeping the water within the heater at a set temperature depends on many factors such as location, materials, insulation and controllability.

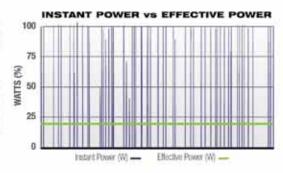
The Rointe water heaters have installed the exclusive technology Optimizer Energy Plus that ensures a stable interior water temperature in the periods between water usage.

How does it work?

Rointe had tested independently over 24 hours a 75 litres 2,000W RD Series water heater over 24 hours, with the temperature set to 80°C and with a water usage profile of 120 litres/day.

Thanks to its **Optimizer Energy Plus**, the tests resulted in a consumption of only 20% of the nominal power. That is what we define as the equivalent ratio of consumption. If we multiply the nominal power by the equivalent ratio of consumption the result is the effective power







Programmable Power

Now all the Rointe range of products is programmable through the M Series infrared remote control.

This bi-directional device will allow you to programme 7 days a week, 24 hours a day, the functionallity of your water heater, selecting its working mode and the water temperature depending on your own needs. Thanks to this feature you will increase your comfort and optimize to the maximum the energy consumption. Programme and save time, water and energy.



DISEASE

Total Safety

Legionnaires' disease is a form of penumonia which can affect anybody, but it principally affects those who are susceptible because of age, illness, immunosuppression, smoking, etc.

Our RD Series is designed with safety in mind, and all the anti legionnaires' disease regulations are complied with.

LOW CONSUMPTION DIGITAL ELECTRIC UNIVENITED WATER HEATERS









80% EQUIVALENT RATIO OF NO CONSUMPTION

20% EQUIVALENT RATIO OF CONSUMPTION

100% **Nominal** Power



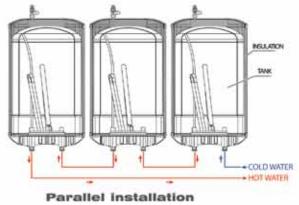


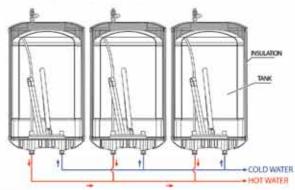


INSTALLATION DIAGRAMS

Where there is an increased hot water requirement, it is possible to install the Rointe water heaters in parallel, or in series. When we have an installation in parallel, we have the advantage of a greater hot water capacity, while with an installation of heaters in series we have the advantage of a reduced use of the heating elements within each heater.

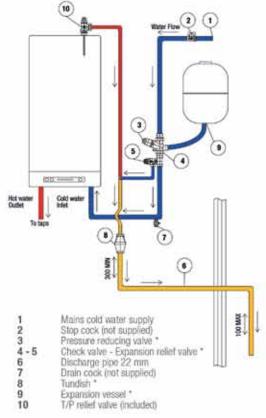
Series installation





^{*} Illustrative diagrams, only for guidance; for a correct installation please refer to UK regulations.

Connection arrangement



Available in optional Installation Kit.

ACCESSORIES

MODE	LS	KITROOT	KITRD02	KITRO03
For si	zes (litres)	RDI050, RDI075	RDI100, RDI150	RDI200
EAN C	ODE	8436045911322	8436045911339	8436045911346
Expar	sion vessel	8 litres (0.1 MPa)	12 litres (0.1 MPa)	18 litres (0.1 MPa)
Tundi	sh	15 mm - 25 mm	15 mm - 25 mm	15 mm - 25 mm
p	Pressure reducing valve	0.35 MPa	0.35 MPa	0.35 MPa
Unvented Group	Relief valve	0.6MPa	0.6 MPa	0.6 MPa
5	Check valve	V	V	V

SUPPORT TRIPOD



Available for the RDI150 and RDI200 models, it is recommended to improve stability due to the high weight of the water heaters when

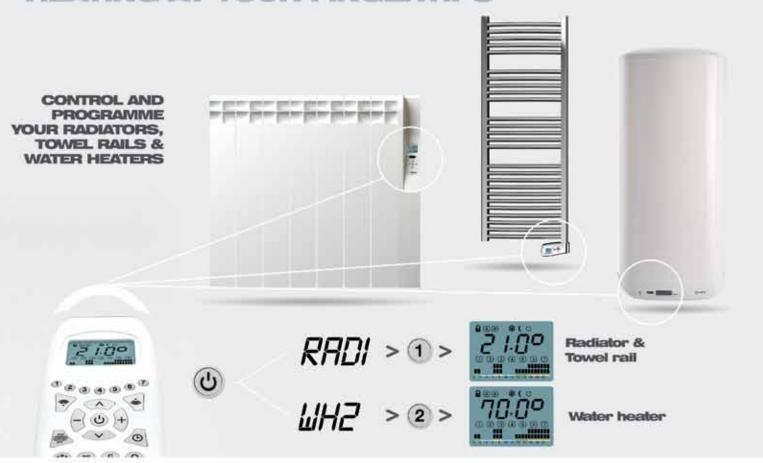
TPRD001
White
600 mm
8436045911315

RD SERIES CHARACTERISTICS

MODELS	HD1050	RDI075	ROI100	R01150	B01200
Volume (L)	50	75	100	150	200
ELECTRICAL CHARACTERISTICS					
No. of heating elements x Power (W)	2 x 1,200	2 x 1,200	2 x 1,500	2 x 1,500	2 x 1,500
Nominal power (W)	2,400	2,400	3,000	3,000	3,000
Effective power (W)*	480	480	600	600	600
/oltage (V)	230 V	230 V ~	230 V -	230 V -	230 V -
Current (A)	10.4	10.4	13	13	13
Safety thermostat	V	V	V	1	V
DIMENSIONS					
A (mm) - Height	640	860	1,100	900	1,070
3 (mm) - Height plus intakes	680	925	1,170	960	1,120
(mm) - Front width	404	404	404	580	580
) (mm) - Side width	404	404	404	580	580
(mm) - Installed depth	420	420	420	620	620
(mm) - Depth intake-wall	120	120	120	178	178
(mm) - Wall support holes distance	340	573	768	490	670
f (mm) - Lower wall holes to intake	215	230	275	355	355
(mm) - Higher wall holes to intake	555	803	1,043	845	1,025
(mm) - Intakes distance	160	160	160	235	235
(mm) - Horizontal width between holes	350	350	350	350	350
NSTALLATION	500	900	5879	950	range
Placement	Vertical	Vertical	Vertical	Vertical	Vertica)
	1/2"	1/2"	1/2"	3/4*	3/4*
Nater intake (inches) Recommended sizing			(45)	12.0	
depending on the range of users	1-2	2-4	2-5	3-6	3-6
nstallation kit (optional)	KITRD01	KITRD01	KITRD02	KITRD02	KITRD03
Support tripod (optional)				V	V
MECHANICAL CHARACTERISTICS					
Working pressure (MPa)	0.9	0.9	0.9	0.9	0.9
namelled steel tank	1	V	V	V	V
Magnesium protective anode	V	V	V	V	V
Polyurethane insulation CFC free	1	1	V	/	V
Veight (kg)	18	25	32	44	56
Protection grade	IP.44	IP:44	IP 44	IP:44	IP 44
UNCTIONS					
Digital touch display	V	1	1	1	V
Selectable temperature: 40-80° C	V	1	V	V	V
Anti-frost	V	1	V	V	V
Programmable 7 days / 24 hours (with M Series remote -optional, not included-)	1	1	1	J	1
eries remote -optional, not included-) .egionnaire's disease free	1	1	1	1	1
Nater capacity indicator	./	1	1	./	./
SAFETY AND PERFORMANCE	y	٧	V	y	W.
Optimizer Energy Plus™	1	V	V	V	V
Cold water entry diffuser	,	V	./	./	
	76		150	200	200
Nater availability at 40°C	75	112	150	225	300
feating time (15 to 65°C)	73 min.	110 min.	117 min.	175 min.	235 min.
T/P relief valve	/	/	V	V	V
ERTIFICATIONS					
2004/168/CE Electromagnetic Compatibility	1	1	V	V	V
The state of the s					

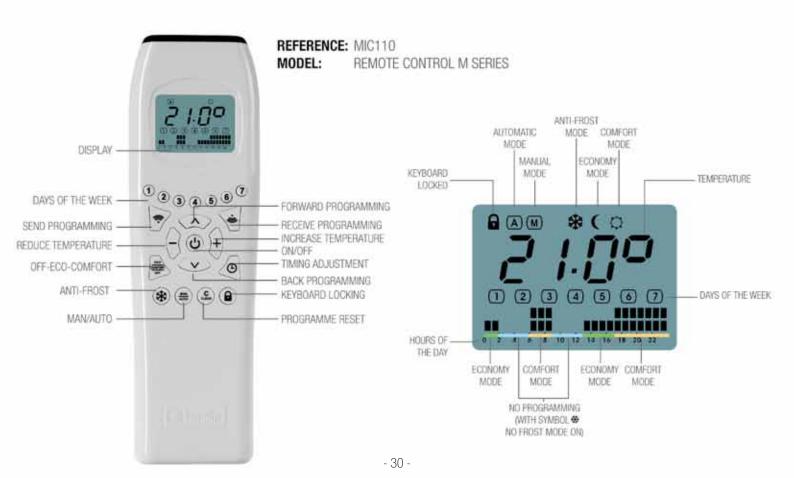
^{*} Effective power is the real power needed under predetermined parametres for obtaining the hot water for a 4 people family with a draw off profile of 120 litres/day and the water heater temperature set to 80°C, according to tests developed by independent laboratories.

OUR ALL-IN-ONE CONTROLLER HEATING AT YOUR FINGERTIPS



M SERIES CHARACTERISTICS

The whole Rointe range of products are programmable through our bidirectional M Series remote, which allows you to send and receive programmes between all of them. Its wireless infrared connection is designed to create the programming in the M Series control and, once satisfied with it, send it to the apparatuses with the user's confirmation.





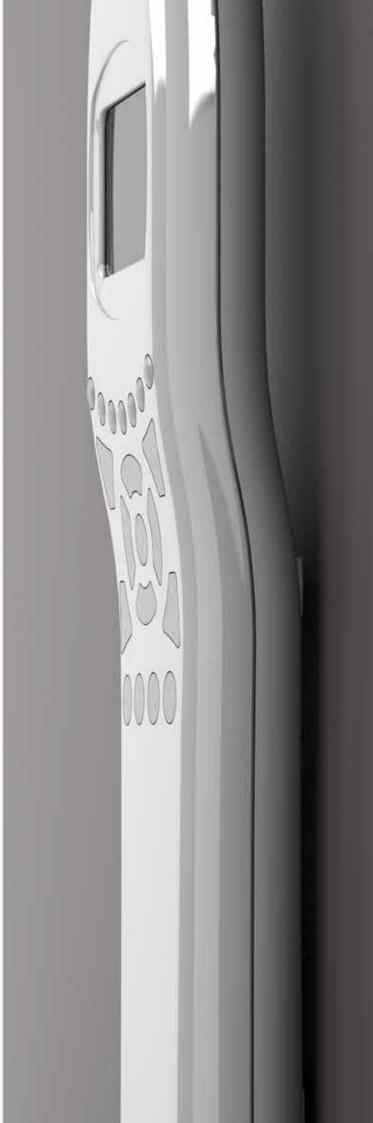












R&D RAW IVIATERIALS PRODUCTION LOGISTICS CUSTOMER SERVICE



R&D

Our R&D Department investigates towards the developing of new and exclusive technologies, in order to improve the quality of our products and obtain the lowest consumption.



RAW MATERIALS

The "High Quality Component" procedure gives us a reliable and safe process in the acquisition of raw materials, doing some exhaustive tests to the raw materials and rejecting those components that do not meet our quality requirements.

PRODUCTION

All our production processes are automated, with multiple quality controls, which gives us the certainty that the production is always within the parameters of the system. As an assurance of the production control, every product carries a unique code which allows us to trace it throughout production.



INTEGRATED CONTROL

LOGISTICS

In ROINTE's Logistics Department we care about each and every detail of our products, storing and distributing them in the more efficient way. We trace the whole process in order to control the location of the product in every moment, increasing the confidence and satisfaction of our clients.















CUSTOMER SERVICE

In our after sales service we guarantee you quality and satisfaction for the end user. This quality comes assured by the low level of recorded problems, which reduces year after year, and the very high value that our clients award us in the satisfaction surveys that we periodically make.



CALCULATIONS





required, we need to distinguish between m2 and m3.

For ceilings up to 3 metres high we will use the RTC (m2) and for higher ceilings the RTC (m3).

R.T.C. DEPENDING ON THE CLIMATIC MAP

CLIMATE	R.T.C. (m²)	R.T.C. (m³)
Mild weather	0.75 element/m ²	0.23 element/m ³
Cold weather	0.80 element/m ²	0.26 element/m ³
Very cold weather	0.85 element/m ²	0.30 element/m ³
Extra cold weather	0.90 element/m ²	0.33 element/m ³

HOW TO OBTAIN THE RECOMMENDED RADIATOR SIZING

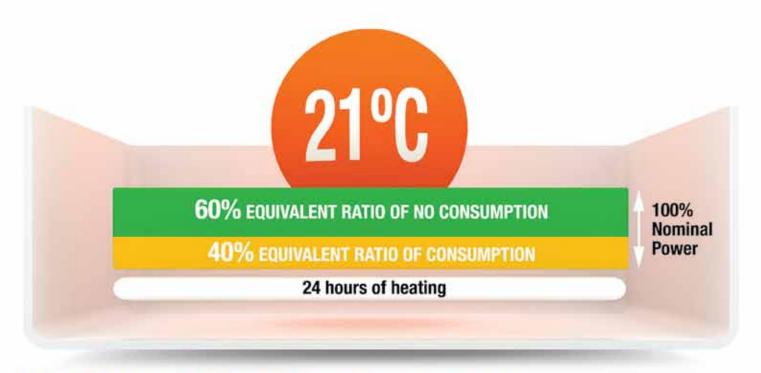
The following formulas relate the elements needed with the RTC and the area in m² of the dwelling. Remember to use the correct coefficient depending on the ceiling height (see table above).

ELEMENTS CALCULATION M²

ELEMENTS CALCULATION M3

R.T.C. x m² = elements needed

R.T.C. x m³ = elements needed



WORK OUTPUT DURING STABLE CONDITIONS

The drawn power of a product can be calculated by measuring the average power used relative to the total nominal power under certain pre-determined conditions. In the case of the Rointe products, a 1,430W radiator with the temperature set to 21°C was tested in an independent laboratory and, thanks to its Optimizer Energy Plus technology, an average consumption of 560W was achieved. This is a drawn power of 40% compared with the nominal power, and that is what we call "equivalent ratio of consumption/no consumption".

SIZING REFERENCE TABLES

In the following tables you will find calculations already made for different areas and climatic zones:

ESTIMATED RADIATOR SIZING IN Ma

NO. OF ELEM.	MILD WEATHER	COLD WEATHER	VERY COLD WEATHER	EXTRA COLD WEATHER
	Up to 4 m ³	Up to 4 m ²	Up to 4 m ²	Up to 3 m ²
	Up to 7 m²	Up to 6 m ²	Up to 6 m ²	Up to 6 m ²
	Up to 10 m ²	Up to 9 m²	Up to 8 m ²	Up to 8 m ²
	Up to 12 m²	Up to 11 m ³	Up to 11 m²	Up to 10 m²
	Up to 15 m ²	Up to 14 m²	Up to 13 m²	Up to 12 m²
	Up to 18 m ²	Up to 16 m ²	Up to 15 m²	Up to 15 m ²
	Up to 20 m ²	Up to 19 m ²	Up to 18 m ²	Up to 17 m ^p

ESTIMATED RADIATOR SIZING IN M3

NO. OF ELEM.	MILD WEATHER	COLD WEATHER	VERY COLD WEATHER	EXTRA COLD WEATHER	
	Up to 15 m ³	Up to 13 m³	Up to 11 m ^a	Up to 10 m ³	
	Up to 23 m ³	Up to 21 m ³	Up to 18 m ^a	Up to 16 m ³	
	Up to 32 m ^a	Up to 28 m ²	Up to 25 m ^a	Up to 22 m ³	
	Up to 41 m ³	Up to 36 m³	Up to 31 m²	Up to 28 m ³	
	Up to 50 m ²	Up to 44 m ³	Up to 38 m ^a	Up to 34 m ³	
	Up to 58 m ³	Up to 51 m ⁹	Up to 45 m ^a	Up to 40 m ¹	
	Up to 67 m ³	Up to 59 m ³	Up to 51 m ³	Up to 46 m ²	

SIZING OF THE REST OF THE RANGE OF PRODUCTS

In the following tables there are approximate sizings for the range of towel rails and water heaters. In any case, these are approximate figures, and we always recommend to call a qualified technician to prepare an exact calculation for the most suitable installation for any home or business.

RECOMMENDED TOWEL RAILS SIZING ACCORDING TO THE ROOM SIZE

AREA	POWER	MODEL.	SERIES
Up to 3 m ²	300 W	TI030SEB/SEM	
Up to 5 m ²	500 W	TI050SEB/SEM	T Series
Up to 7 m ²	750 W	TI075SEB/SEM	White / Metal
Up to 10 m ²	1,000 W	THOOSEB/SEM	
Up to 2 m²	300 W	TIOSOSEC	
Up to 4 m ²	300 W	TI050SEC	T Series
Up to 6 m²	500 W	TIO75SEC	Chrome
Up to 8 m ²	750 W	TI100SEC	

RECOMMENDED WATER HEATER SIZING ACCORDING TO PEOPLE & FITTINGS

FITTINGS	RECOMMENDED SIZE	Nº PEOPLE
Utility / Sink / Shower	50 L	1 - 2
Utility / Sink / Shower	75 L	2-3
Utility / Sink / Small Bath	100 L	2-5
Utility / Sink / Shower / Small Bath	150 / 200 L	3 - 6

SAMPLE HOME CALCULATION IN MP AND MP





Estimated calculation for an 80 m² dwelling, located within a cold area of the UK, providing 12 hours/day-night heating maintaining the radiators temperature set to 21 °C. The water heater would be working 24 hours a day, with a draw-off profile of 120 litres/day and the temperature set to 80°C. Note that these are approximate figures and should be considered as average depending on the location, orientation and height.

£1.32

Calculation example in m2 (ceiling lower than 3 metres)

DISTRIBUTION	M ²	RTC	NO. OF ELEMENTS	NO. OF RADIATORS	NOMINAL POWER	PERF. RATIO	POWER POWER
Dining room	19	0.85	15	1 x KI1600RAD	1,600 W	40%	640 W
Kitchen	14	0.85	11	1 x KI1210RAD	1,210 W	40%	484 W
Corridor	9	0.85	7	1 x KI770RAD	770 W	40%	308 W
Bathroom	6	0.85	5	1 x KI550RAD	550 W	40%	220 W
Room 1	12	0.85	11	1 x KI1210RAD	1,210 W	40%	484 W
Room 2	10	0.85	9	1 x KI990RAD	990 W	40%	396 W
Room 3	10	0.85	9	1 x KI990RAD	990 W	40%	396 W
	80 m ²	2	67	7	7,320 W		2,928 W
Water heater 75L				1 x RDI075	2,400 W	20%	480 W
NOMINAL POWE	RINST	ALLED	/ EFFECTIVE PC	WER USED	9.720 W		3,408 W

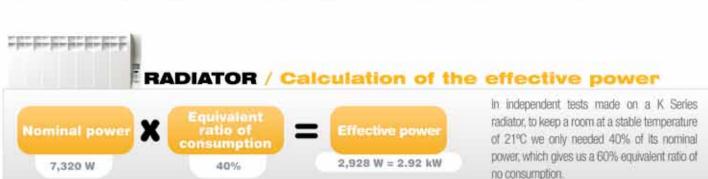
Calculation example in m3 (ceiling higher than 3 metres)

DISTRIBUTION	Mª	RTC	NO. OF ELEMENTS	NO. OF RADIATORS	NOMINAL POWER	PERF. RATIO	POWER POWER
Dining room	76	0.30	22	2 x KI1210RAD	2,420 W	40%	968 W
Kitchen	56	0.30	15	1 x KI1600RAD	1,600 W	40%	640 W
Corridor	36	0.30	11	1 x KI1210RAD	1,210 W	40%	484 W
Bathroom	24	0.30	7	1 x KI770RAD	770 W	40%	308 W
Room 1	48	0.30	15	1 x KI1600RAD	1,600 W	40%	640 W
Room 2	40	0.30	13	1 x KI1430RAD	1,430 W	40%	572 W
Room 3	40	0.30	13	1 x KI1430RAD	1,430 W	40%	572 W
	320 m	3	96	8	10,460 W		4,184 W
Water heater 75L			15.5	1 x RDI075	2,400 W	20%	480 W
NOMINAL POWE	R INST	ALLED	EFFECTIVE PO	WER USED	12,860 W		4,664 W

CONSUMPTION CALCULATION

Calculation formula for elements / nominal power





Calculation of the daily/monthly cost





Calculation of the daily/monthly cost



Please remember that these are approximate figures and should be considered as average. For a study designed for your dwelling, please contact a professional installer.

Installation recommendations

- 1) Stairs and corridors: as there is a high risk or heating loss, increase your calculations +15%.
- For kitchens: as it is an area with hot apparatuses, decrease your calculations -10%.
- 3) Avoid obstacles and distribute the radiators regularly, e.g. for a 21 m² living room where you need 18 elements, install two radiators of 9 elements with an equidistant separation between them.

SATISFIED CUSTOMERS IS WHAT REALLY MATTERS

Here you will have the opportunity to read a small extract from different interviews we have made to electrical wholesaler managers, counter staff, electrical installers and final users that have experience with the Rointe products. The opinions and feeback of our customers are incredibly important for us, as they are the perfect guide to discover how our products are reaching the market and what we have to do to become a better company.

Electrical Wholesalers

Branch Manager (Worcestershire)

Why did you and your company decide to begin to market Rointe Digital Heating Systems?

Because of the way the environment is today and obviously everybody's looking on the green side of things, obviously with the energy reduction as well and the savings on household bills, obviously a lot of people out there are looking to save energy and the most important thing is, with the economic climate being as what it is, we have found that it's become an easy product to sell. [...]

Do believe that the electricity bills of your clients now have to pay have reduced considerably since having Rointe heating installed?



Drastically. Most of the feedbacks we are getting people are very happy with the system, its easily controllable, it is reducing their energy bills and obviously we are getting a lot more referrals from people because of that.

Branch Manager (East Sussex)

Do you feel that the old systems in the market place are very outdated?

Absolutely, there's 25 year old, 30 year old technology, you know; what else do we do these days where we use the same technology for 30 years and nothings improved?, it's bizarre. But that's the case with storage heaters. [...]

Do you and your company consider that the low consumption Rointe Digital heating System is extremely professional for the installer and transmits confidence to the end user?

Absolutely yes, and also to my staff in my business as well, it definitely does that. It's the first time that I think we've been able to go proactively into a heating market with a product that we all believe in and this, that message, is easily explained across, and you can actually see it sort of taking effect with your customers who are using the product and selling it themselves. It's the first time that we can go out to a market confidently it think, professionally, because before that it was just literally a "me too" product with the storage heater. [...]

Can you and your company tell us what future you see with the low consumption Rointe Digital Heating Systems?

I think it's going to be the way forward, I think there's obviously the gas is only on the increase, it's getting harder and harder to come by. Developers, Local Authorities are all trying to move away from it, it seems. There's going to be a push for greener products and I think Rointe is perfectly placed in the market to take over that easily because of the installation side of it and I really don't think that the storage heater offer that alternative.



Installers

Electrical Contractor (Nottinghamshire)

Do you and your company consider Rointe as a Professional System for the installer and gives confidence for the end user?

It is very professional for the installer, the ease of the installation is second to none, you can't ask for a better system and the customers are very happy because they can control it. [...]

Hassle free installation, I mean the key is as an installer is to get the installation done and not to return, you know, we haven't got to worry about leaking pipes, we haven't got to worry about maintenance or service issues it's basically to us it's a beautiful system.

Absolutely, ... previously installed systems could take up to two, three, four days, even a full week and there's a lot of disruption to the actual customer themselves. So, Rointe, generally for two man team work you can get it done in a day with very little disruption compared to other systems. [...]

Is Rointe the most cost effective form of heating for the properties you have installed electric heating?

I would say yes, I'm yet to see or hear of another product meets the criteria and also... which ticks the right boxes for us and we've searched high and low international to find a product like this [...]



Electrical Contractor (Worcester)

What level of electrical consumption do you believe that your customers could have paid each month with these heating systems that you used to install before you used to install, now that you install the Rointe digital heating systems.

They depended on the size of the installations. Running costs would be a lot higher than what the Rointe system is. Possibly 50/60%.

Did you find that your clients complained about the fact that they're old heating system was using a lot of energy and therefore was expensive to run?

It wasn't so much a complaint with the old system being expensive to run and not compliant with what they actually needed. It was more of when we eventually persuaded them to put in the Rointe systems, the difference on the fitted item of the Rointe compared with the old system is so phenomenal that they are very very pleased.



Do you and your company consider that that the heating systems that you used to install before finding out about the low consumption Rointe digital heating system were very professional for the installer and had a good reputation with the end user?

They did, in their time, being the only thing that was on the market at the time, then you can only install what's available. Rointe, I will tell you Rointe, when I first heard about Rointe and the system that we were putting in, I didn't believe it, got to be honest with you, I didn't believe it. And as you know, I took the thing to pieces and asked for the BSRIA report, the lot, I went through it and it actually does what it says on the tin. It is a very good product.

End Users

Care Home manager (South Yorkshire)

Why did you decide to change your heating system for Rointe?

To be more cost efficient and much more environmentally friendly as well. And much more, so that we could have more control over the system. [...]

Have you noticed a better, comfortable heat with the new Low Consumption Rointe Digital System?

We have a constant and comfortable heat of 20, 21 degrees. There are always never cold spots. [...]



Do you believe that the electrical consumption has reduced since the Rointe System was installed? Yes it's definitely reduced, greatly. [...]

We've had two severe winters, did the Rointe heaters cope with the extreme weathers in this area?

Yes we had a very nice, warm Care Home, while everybody else froze. [...]

And finally would you recommend the Rointe Digital Heating System to your family and friends?

I'd recommend it to everybody, basically. [...]

Hotel manager

What sort of comments have you had from guests? Are they happy with the radiators?

Everybody likes the style of them because they are classy looking and we've had... we're not likely to get comments for the difference in heat because they're not in both rooms at the same time, but a guest walks into the room, the heating comes on and the room heats up quicker so all those terms are excellent.

And how do you find the controllability of the radiator particularly in the corridors? Do you find them very easy to program?

Perfect in the corridors. We use the remote control system where all the settings are put into the remote control and you just have to point it at the radiator and press a button so our housekeeping staff can have a remote control set for the corridors, they can have a remote control set for the rooms, nobody has actually to go into the controls and reprogram it because it's all in the remote controls.

Do you find that the Rointe system is a far more professional system than the old heaters that you used to use?

Oh yes, without a doubt.



ROINTE'S CASE STUDIES SAMPLES OF OUR WORK ALL AROUND UK

BENTON HOUSE CARE HOME

The Benton House Care Home in Doncaster used to have an old storage heater system. They were unable to control this system, found that it was expensive to run and they suffered a lot of breakdowns.

Their electrical contractor introduced the low consumption Rointe Digital System to them. This system appeared to suit their needs so they sent information to Rointe to produce a full heating study. This study helped the care home to judge the installation costs and potential running costs.

Finding that the Rointe Digital system suited their requirements and that it could save on electricity costs, the care home applied for and received a Carbon Trust Loan and had the system installed with very little disruption.

After benefitting from a comfortable ambience in every room and reduced electricity bills for more than 16 months other homes within the care home group have also now installed the Rointe Digital System.

CHEAM SCHOOL

Benton House EMI Case Hea

Early in 2010, the maintenance team of Cheam School in Hadley was introduced by their electrical wholesaler to the Rointe Digital System. They were looking for an alternative to the poor heating system that they had in the school at the moment. This was a combination of off peak heaters, convector heaters and hot water system.

They were impressed when they discovered that the Rointe Digital Heating System perfectly met their specific requirements being a school, with different needs for dormitories and for the classrooms.

Being fully programmable, they would program each heater independently according to the needs of the place or the occupants, or more generally for the weekends or the off school periods. For instance, dormitories to be at 18°C from 7pm until 8am.

Being lockable they would avoid any issue with pupils playing with the settings, so, their team would do the programming with the remote control and lock the radiator.

Being so easy to install, the disruption would be reduced to minimum.

With the information obtained and forwarded to the head office, the Rointe Technical Team were able to do a full heating study of requirements.

Soon after the order was confirmed and, after 1 year since the installation of the Rointe Digital Heating System, they confirmed to Rointe that they are fully satisfied with the performance of the radiators, their controllability, and the high degree of comfort provided, as well as with the electricity bills having been significantly reduced.



BRITISH EVIBASSIES

The electrical contracting company in charge of the maintenance of the British Embassies in some Asian countries was asked to replace the old heating systems in the houses of the ambassadors and the guards. These systems suffered due to regular blackouts and although there are back up generators, in one case the generator couldn't cope.

The contractors knew that it was an important responsibility to be right with their choice, not only for the reasons above, but because the embassies are governmental dependent entities, and also because they officially represent Great Britain, so how comfortable the embassy personnel and any guest feel is part of the image of the country in the world.

The Rointe Digital Heating System was selected among other systems to be installed in the British Embassies of Turkey, Armenia and Tajikistan, in a first phase.

The heating requirements were calculated by Rointe Technical Department based on the features on each climatic area. A lot of technical data, such as approximate oil levels for each radiator had to be provided as they were sent by air to these countries.

The resulting installations were successful with minimum disruption and a noticable reduction in heating costs and global carbon footprint, so much so that the contracting company recently received a testimonial letter stating this and explaining that their generator can now cope!



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