

Single Boiler 50 - 110kW Cascade Boiler Applications up to 660kW



03

Sirius two WH

Wall Hung Stainless Steel Condensing Boilers

Single Boiler 50 - 110kW
Cascade Boiler Applications up to 660kW

Welcome...

to the UK's leading single source supplier of high efficiency, low carbon commercial heating and hot water solutions. Our brands include Potterton Commercial, Andrews Water Heaters and Baxi-SenerTec UK.

Potterton Commercial, boasting a long industry history, is at the forefront of commercial boiler production and development, epitomised by the Sirius, Eurocondense and Paramount ranges, packaged heating systems and the unique iHE commercial storage combination boiler.

BAX

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The Potterton Commercial Sirius two WH introduces a market leading modulation ratio of 9:1, with many additional key performance features, including:

- 5 year warranty*
- High seasonal efficiency
- Stainless steel heat exchanger
- Class A modulating pump option
- Reduced size and weight
- Weather compensating sensor supplied as standard with all boilers.

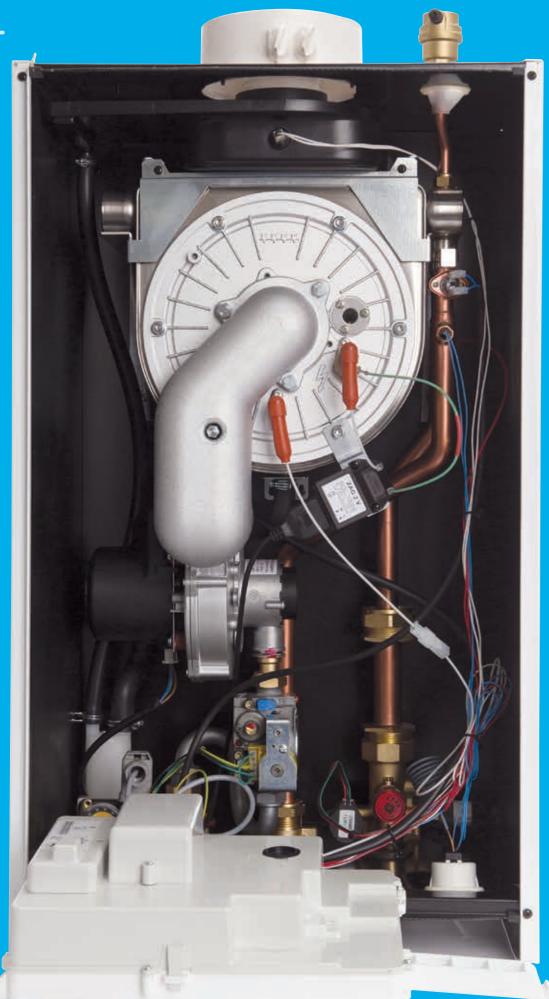
The Sirius two WH also benefits from simplicity of use and installation as well as a comprehensive range of accessories for both individual and cascade installations (see additional information from page 8 onwards).



*5 year warranty subject to nmissioning by Baxi Commercial. Terms and Conditions apply.



04



Product Features



Warranty

Our range of boilers are offered with an extended 5 year manufactures parts and labour warranty.

*subject to commissioning by Baxi Commercial. Terms and Conditions apply.



Modulation

The Sirius two WH boiler range offers an impressive modulation range, far exceeding the performance of other manufacturer's products. 9:1 modulation is a market leading performance and aids sizing of boilers to heat loads. It also aids in reducing running costs and improving building comfort, particularly in part-load conditions.



Reduced Size

The boiler dimensions have been significantly reduced in all models. The 50, 60 kW units are now comparable with a domestic boiler (H766mm x W450mm x D377mm). The larger output 70, 90 and 110 kW models are all much smaller than the previous design, therefore making installation easier to achieve and reducing the overall install footprint.



Reduced Weight

The boiler weight has been significantly reduced. Our 50 and 60 kW boilers have a dry weight of just 40Kg. Comparable with many small domestic appliances, this makes installation and transit easier to manage.



1" Flow & return connections (on 50, 60 + 70kw outputs)

Important feature for replacement installations.

- Avoids boiler and system noise
- Avoids major system pipe work modifications making direct replacement easy.



Weather Compensation

In order to make life simpler for contractors, installers and specifiers alike, Potterton Commercial are pleased to supply a weather sensor within the boiler packaging of every unit. Building Regulations Part L requires all new installations to include weather compensation as a minimum level of system control.



Stainless Steel 316L Heat Exchanger

This new boiler range includes the latest stainless steel 316L heat exchanger technology, designed to assist in maximum combustion efficiency performance and reduce pollutant emissions. They are also eco-friendly, being 100% recyclable.

rius two WH 50 and 60 illustrated

Sirius two WH www.baxicommercial.co.uk Sirius two WH









Heat Exchanger

The advanced design of the air-gas premix unit, burner and the primary exchanger ensure high performance from the Sirius two WH range.



The premix unit is a new concept which, due to advances in design and a double non return valve technique, ensures that the burner constantly has an optimal air/gas ratio. Independent of the number of fan revolutions, this keeps consumption to a minimum, always guaranteeing correct combustion* and consequently, reduces emissions.

This new design approach enables the Sirius two WH range to achieve of a modulation ratio of 9:1, giving the boiler flexibility to adapt to broad variations in thermal load which is becoming an increasingly common requirement in new and refurbished buildings.

Within the Sirius two WH boilers between 50 and 70kW output, the stainless steel burner achieves uniform distribution of the air/gas mixture independently of its length through the use of an internal diffuser and special micro-perforation on the cylindrical surface. The Sirius two WH range features an entirely stainless steel primary exchanger comprising one single burner/fume chamber, which enables a compact form factor, even for high output models, and proves more versatile in installations with restricted spaces.

LPG (off mains gas) conversion kit options are also available for all models. (Please see page 12 for details).



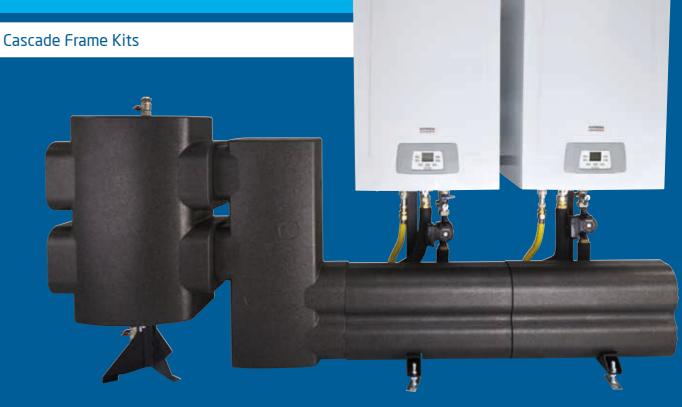
Duo Heat Exchanger

The 90 to 110 kW Sirius two WH range includes a metal fibre burner which produces a spread of very short flames for optimal heat radiation whilst minimising the formation of nitrogen oxides (NOx). The two highest powered generators employ a dual chamber heat exchanger constructed with stainless steel.

The two cylindrical fume chambers set vertically (burner chamber and condensation chamber) contain the stainless steel coils that carry the primary circuit water. In the upper chamber the hot exhaust gases transfer heat to the plant return water in the coils, bringing about condensation of the fumes themselves and thus transferring the latent heat to the water, preheating it prior to its entry into the burner chamber.

*As long as the boilers have been commissioned correctly





Compact and very flexible. The Sirius Cascade System can accommodate up to six boilers. Each delivering an industry-leading modulating range of 9:1 per boiler.

Feature

- Compact, modular, floor-standing framework
- Accommodates 2 to 6 boilers in cascade
- Adjustable mounting feet
- Hydraulically sized flow and return manifolds
- Victaulic pipe joints (all pipe fittings)
- Robust insulation kits for flow and return headers (inc. hydraulic manager)
- "Class A" primary circulator pumps (all boilers)
- Omega-flex Trac-pipe gas pipework
- Steel gas manifold pipework with welded brackets
- Hydraulic system manager, (including air, dirt and magnetic filtration and flow management)
- Concentric and conventional flue options
- Optional commissioning service

- Saves space, reduces installation time
- Suitable for a wide range of applications
- Safe and stable for uneven surfaces
- Matches the designed total boiler flow rate, whatever the system load
- Quick and easy jointing, saves time and effort
- Minimises heat loss
- ErP ready
- Quick, safe, reliable assembly
- Robust, durable flow, return and gas headers
- Protects boiler components by ensuring clean system water and removes air, preventing noise
- Flexible siting, easy installation
- Provided by our nationwide team of Gas Safe trained engineers

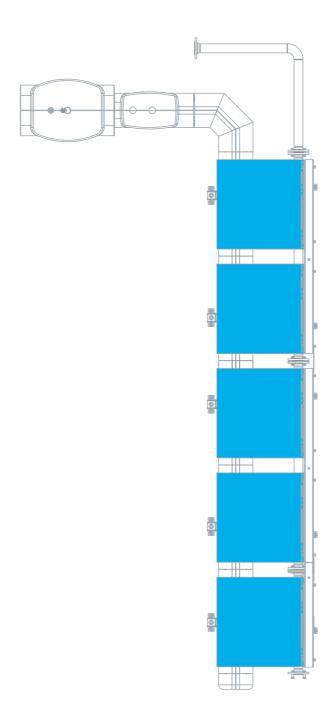


In Line Configurations

Max Kw Output	Part No.	Hydraulic Manager	Configuration
100Kw	5141019	X	2 x 50Kw
	5141060	•	2 x 50Kw
120Kw	5141019	X	2 x 60Kw
	5141060	✓	2 x 60Kw
140Kw	5141019	X	2 x 70Kw
	5141060	•	2 x 70Kw
150Kw	5141020	X	3 x 50Kw
	5141061	✓	3 x 50Kw
180Kw	5141020 5141061 5141023 5141064	x .x .x	3 x 60Kw 3 x 60Kw 2 x 90Kw 2 x 90Kw
200Kw	5141021	X	4 x 50Kw
	5141062	~	4 x 50Kw
210Kw	5141020	X	3 x 70Kw
	5141061	•	3 x 70Kw
220Kw	5141023	X	2 x 110Kw
	5141064	✓	2 x 110Kw
240Kw	5141021	X	4 x 60Kw
	5141062	•	4 x 60Kw
270Kw	5141024	X	3 x 90Kw
	5141065	✓	3 x 90Kw
280Kw	5141021	X	4 x 70Kw
	5141062	✓	4 x 70Kw
330Kw	5141024	X	3 x 110Kw
	5141065	✓	3 x 110Kw
360Kw	5141025	X	4 x 90Kw
	5141066	•	4 x 90Kw
440Kw	5141025	X	4 x 110Kw
	5141066	✓	4 x 110Kw
450Kw	5141026	X	5 x 90Kw
	5141067	•	5 x 90Kw
540Kw	5141027	X	6 x 90Kw
	5141068	~	6 x 90Kw
550Kw	5141026	X	5 x 110Kw
	5141067	•	5 x 110Kw
660Kw	5141027	X	6 x 110Kw
	5141068	✓	6 x110Kw

In-line Example (Plan View)

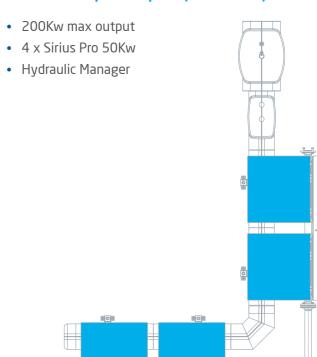
- 450Kw max output
- 5 x Sirius Pro 90Kw
- Hydraulic Manager



Corner Group Configurations

Max Kw Output	Part No.	Hydraulic Manager	Configuration
200Kw	5141063 5141022	У Х	4 (2+2) x 50Kw 4 (2+2) x 50Kw
240Kw	5141063 5141022	×	4 (2+2) x 60Kw 4 (2+2) x 60Kw
280Kw	5141063 5141022	×	4 (2+2) x 70Kw 4 (2+2) x 70Kw
360Kw	5141069 5141028	×	4 (2+2) x 90Kw 4 (2+2) x 90Kw
440Kw	5141069 5141028	×	4 (2+2) x 110Kw 4 (2+2) x 110Kw
450Kw	5141070 5141029	×	5 (2+3) x 90Kw 5 (2+3) x 90Kw
540Kw	5141071 5141030 5141072 5141031 5141073 5141032	× × × ×	6 (3+3) x 90Kw 6 (3+3) x 90Kw 6 (2+4) x 90Kw 6 (2+4) x 90Kw 6 (2+2+2) x 90Kw 6 (2+2+2) x 90Kw
550Kw	5141070 5141029	×	5 (2+3) x 110Kw 5 (2+3) x 110Kw
660Kw	5141071 5141030 5141072 5141031 5141073 5141032	× × × ×	6 (3+3) x 110Kw 6 (3+3) x 110Kw 6 (2+4) x 110Kw 6 (2+4) x 110Kw 6 (2+2+2) x 110Kw 6 (2+2+2) x 110Kw

Corner Group Examples (Plan View)

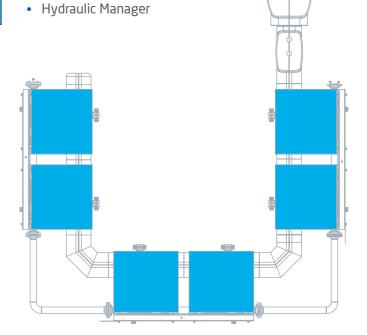


- 660Kw max output
- 6 x Sirius Pro 110Kw

Kit Components

All cascade frame kits come with the below items as standard:

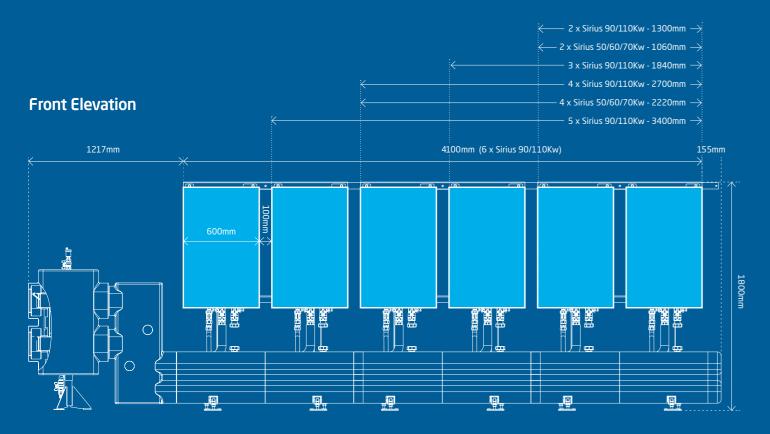
- Floor Standing Boiler Frame
- Flow / Return Pipework Headers
- Gas Pipework Header
- Isolation Valve kit for Flow / Return
- Gas Isolation Valve kit
- Grundfos Primary Loop Pumps (controlled by boilers)
- Prefabricated Push fit Pipework Insulation
- Connection Kit to Low Loss Header*
- Low Loss Header*



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^{*}subject to package option selected





Side Elevation S22mm 138mm 100mm 520.5mm



System Requirements

The Potterton Commercial Sirius two WH range is suitable for systems with a minimum working pressure of 1 bar (10m static head) with a maximum working pressure of 4 bar.

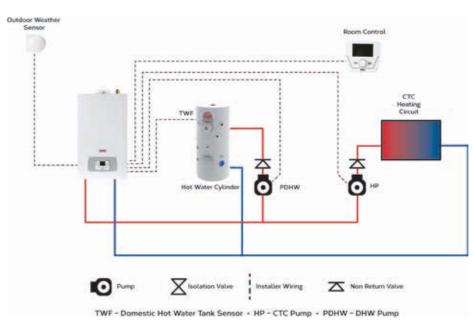
The Potterton Commercial Sirius two WH range is suitable for systems with a minimum working pressure of 1 bar (10m static head), with a maximum working pressure of 4 bar.

All installations should comply with all relevant codes of practice, British Standards and current Building Regulations. The maximum efficiency of the Sirius two WH can be achieved when it is installed on a fully condensing system with suitable distribution design temperatures. A typical heating system layout can be seen in the diagram below.

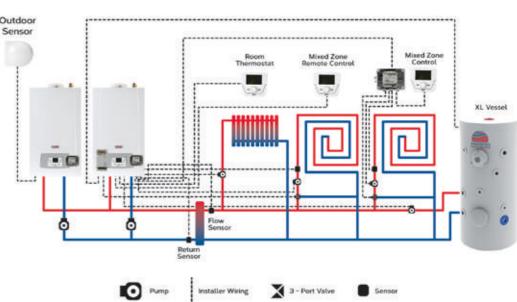
In weather compensated systems, the outside sensor will dictate the heating flow temperature to match the heating demand of the building (if the heating curve is correctly selected). The overriding room control will shut down the boiler(s) if the building meets the set-point temperature.

The room control will also provide optimum start/stop and night set-back for the heating circuits.

Single boiler with DHW and Constant Temperature Circuit



Cascade option for two or more boilers





Electronic Controls

The Sirius two WH incorporates the latest generation of intelligent boiler controls, resulting in simple and reliable management of the boiler through a control panel with a large, easy to read LCD display.

In addition, the integral controls enable compatibility with a wide variety of system configurations, including mixed temperature systems and Low to Zero Carbon technologies. This provides great flexibility and ensures the Sirius two WH range can be designed into a wide range of applications.

Standard Features:

- Management of modulating primary circuit pumps
- Automatic troubleshooting diagnostic display
- Weather compensation (weather sensor supplied)
- Automatic summer/winter changeover with connected weather sensor
- Full BMS integration via volt free connections, providing enable, run and fault control
- · Option for installation in multiple zone control and mixed circuits

Optional Modular Boiler Controls

Control Type	Description	Sales Code
Wired Remote Control	Digital Room Controller capable of functioning as a programmer setting heat parameters including heating circuit, domestic hot water and boiler cascade. Also can be configured as a room thermostat for full control and modulation.	5140905
DHW Temperature Sensor	Immersion type temperature sensor for the operation of the Domestic Hot Water (DHW) function.	5104701
Extension Module	The mutlifunctional unit is directly connected to the boiler for control of a variable temperature (VT) heating circuit including valves and pumps.	5140909
Flow Temperature Sensor	Surface mounted strap-on temperature sensor for monitoring actual pipework temperatures. For Cascade operation both flow and return pipework is recommended to be monitored.	5103867
BM Bus Communication Module	An electronic device for the communication via Bus (two cables -MB/DB) for boilers in Cascade or separate zone controllers.	5140908
Zone Controller Kit	Heating Circuit controller for remote operation from the boiler. Recommended for multiple zone systems and used in conjunction with Bus communication module.	5140910
Integral Primary Pump	Integrated Class 'A' modulating primary pump. Designed for operation on △T of 20oC. Specifically sized to fit inside the boiler.	5140903- WH50, 60 & 70 5140904- WH90 & 110
LPG Conversion Kit	Kit for the conversion to LPG (G31)-please refer to Installation Manual for complete procedure including parameter changes.	5140911-WH50 5140912-WH60 5140913-WH70 5140914-WH90 5140915-WH110

Flue

Boiler	Flue Size	Number of Bends 87°				
		1	2	3	4	
WH50	Ø 80/125	9m	8m	7m	6m	
WH60	Ø 80/125	9m	8m	7m	6m	
WH70	Ø 80/125	9m	8m	7m	6m	
WH90	Ø 100/150	9m	8m	7m	6m	
WH110	Ø 100/150	9m	8m	7m	6m	

Common Concentric Flue Components

Model	Sales Code	Size	Description		
WH 50/60/70	5136146	Ø80/125	Horizontal concentric flue.	0	
WH 90/110	5136170	Ø100/150	Inc: terminal & wall plates		
WH 50/60/70	5136147	Ø80/125	Vertical concentric flue kit	†	
WH 90/110	5136171	Ø100/150	vertical concentric ride kit	-	
WH 50/60/70	5136148	Ø80/125	1 metre concentric extension		
WH 90/110	5136159	Ø100/150	1 metre concentric extension		
WH 50/60/70	5136149	Ø80/125	0.5 metre concentric extension		
WH 90/110	5136160	Ø100/150	0.5 metre concentric extension		
WH 50/60/70	5136151	Ø80/125	87° Concentric elbow		
WH 90/110	5136162	Ø100/150	67 Concentric elbow		
WH 50/60/70	5136150	Ø 80/125	45° Concentric elbow		
WH 90/110	5136161	Ø100/150	45 Concentific elbow	0	
WH 50/60/70	5136152	Ø 80/125	Wall stand off brackets		
WH 90/110	5136163	Ø100/150	Wall Stand Off Diackets		
WH 50/60/70	E105	Ø80/125	Terminal cage guard		
WH 90/110	E630	Ø100/150	remina cage guaru		
WH 50/60/70	E065	Ø80/125	Flat roof flashing		
WH 90/110	E207	Ø100/150	r iac root riastillig		
WH 50/60/71	E066	Ø80/125	Pitched roof flashing		
WH 90/111	E208	Ø100/150	Littlied foot flastiflik		



External Flue

Starter Kit includes:

5138541

80/125 External Wall Starter Kit and 80/125 87⁰ Elbow

80/125 External Wall Start Kit includes:

- Through Wall piece with bottom elbow
- Air Intake
- 80/125-100/150 adaptor
- 100/150 flue terminal
- Bottom Wall Support
- Wall Brackets x2Fixings x3

5138542

100/150 External Wall Starter Kit, 110/160 to 100/150 Adaptor and 100/150 87⁰ Elbow

100/150 External Wall Starter Kit includes:

- Through Wall piece with bottom elbow
- · Air Intake
- 100/150 flue terminal
- Bottom Wall Support
- Wall Brackets x2
- Fixings x3



Model	WH50	WH60	WH70	WH90	WH110
Starter Kit	5138541	5138541	5138541	5138542	5138542
1 metre extension	5138545	5138545	5138545	5138545	5138545
0.5 metre extension	5138546	5138546	5138546	5138546	5138546
45 ⁰ Elbow (x2)	5138547	5138547	5138547	5138547	5138547
Inspection Tee	5138548	5138548	5138548	5138548	5138548

Plume Management Kit

Starter Kit includes:

5136902

- Horizontal Terminal (610mm) including clamp
- Wall Plate 125mm (220x220mm) x2
- 90⁰ Elbow 80mm x2
- 1 mtr extension 80mm including wall bracket
- Bird guard 80mm
- Nose piece 80mm (150mm)
- Does not include initial elbow on boiler

5138512

- Horizontal Terminal (600mm) including clamp
- Wall Plate 150mm (220x220mm) x2
- 87⁰ Elbow 100mm x2
- 1 mtr extension 100mm including wall bracket
- Bird guard 100mm
- Nose piece 100mm (170mm)
- Does not include initial elbow on boiler



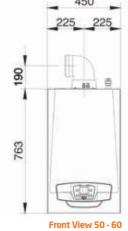
Model	WH50	WH60	WH70	WH90	WH110
Starter Kit	5136902	5136902	5136902	5138512	5138512
1 mtr extension -80	5138537	5138537	5138537	-	-
1 mtr extension -100	-	-	-	5138540	5138540
45 deg Elbow -80	5138536	5138536	5138536	-	-
45 deg Elbow -100	-	-	-	5138539	5138539
90 deg Elbow -80	5138535	5138535	5138535	-	-
90 deg Elbow -100	-	-	-	5138538	5138538

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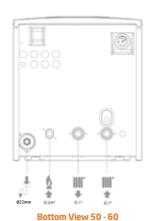


Dimensions

Sirius two WH 50 - 60

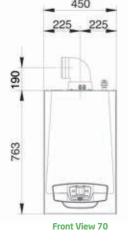




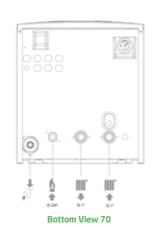


Side View 50 - 60

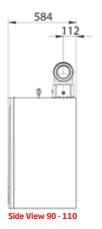
Sirius two WH 70

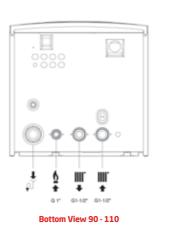






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Key

Gas - Gas inlet G ¾"

MR - Heating system flow (G1 - G1 ½") with cylinder connection option

RR - Heating system return (G1 - G1 ½") with cylinder connection option

SC - Condensing trap that can be installed on a Ø21mm pipe

Technical Specification

recimed Specification		Sirius two 50 WH	Sirius two 60 WH	Sirius two 70 WH	Sirius two 90 WH	Sirius two 110 WH
Potterton Commercial Sales Codes	Potterton Commercial Sales Codes		5138529	5138530	5138531	5138532
Heating Performance						
Output 80 / 60°C Min - Max (NG) Output 50 / 30°C Min - Max (NG) Input (Net) (NG) Output 80 / 60°C Min - Max (LPG) Output 50 / 30°C Min - Max (LPG) Input (Net) (LPG) Efficiency @ 80 / 60°C - 100% Load Efficiency @ 50 / 30°C - 30% Load Seasonal Efficiency - Part L2 Gas Consumption (Natural Gas) Gas Consumption (LPG) Inlet Gas Pressure (Natural Gas) Inlet Gas Pressure (LPG)	kW kW kW kW kW % Gross % Gross m3/h Kg/h mbar mbar	5.0 - 45 5.4 - 48.6 5.1 - 46.3 5.0 - 45 5.4 - 48.6 5.1 - 46.3 87.6 96.9 95.1 0.54 - 4.90 0.4 - 3.60 20 37	6.1 - 55 6.6 - 59.4 6.3 - 56.6 6.1-55 6.6 - 59.4 6.3 - 56.6 87.6 96.9 95.1 0.67 - 5.98 0.49 - 4.40 20 37	7.2 - 65 7.8 - 70.2 7.4 - 66.9 7.2 - 65 7.8 - 70.2 7.4 - 66.9 87.6 96.9 95.1 0.78 - 7.07 0.57 - 5.20 20 37	9.4 - 85.0 10.2 - 91.8 9.7 - 87.4 12.2 - 85.0 13.1 - 91.8 12.5 - 87.4 87.6 96.7 95 1.03 - 9.25 0.97 - 6.60 20 37	11.4 - 102 12.3 - 110.2 11.7 - 104.9 11.4 - 102 12.3 - 110.2 11.7 - 104.9 87.6 96.7 95 1.24 - 11.10 0.91 - 7.92 20 37
Flue						
Max. Mass Flow Rate of Flue Min. Mass Flow Rate of Flue Max. Flue Gas Pressure @ Outlet Min. Flue Gas Pressure @ Outlet CO ² Content - Natural Gas CO ² Content - LPG Flue Gas Temperatures @ 80/60°C NOx Level (Dry @ 0% O ₂) High Level Ventilation* (BS 6644) Low Level Ventilation* (BS 6644)	Kg/s Kg/s mbar mbar % °C cmg/kWh cm² cm²	0.021 0.002 270 10 8.5 - 9.0 9.5 - 10.0 92 29.8 206 103	0.026 0.003 270 10 9.0 - 9.0 9.4 - 10.1 96 34.1 251 126	0.031 0.004 270 10 8.5 - 9.0 9.5 - 10.0 76 34.8 297 149	0.04 0.005 200 10 8.5 - 9.0 9.9 - 10.0 70 36.5 388 194	0.047 0.005 200 10 9.0 - 9.2 9.5 - 10.0 70 24.7 466 233
Water						
Water Flow Rate @ 20°C △T Water Flow Rate @ 15°C △T Hydraulic Resistance @ 20°C △T Hydraulic Resistance @ 15°C △T Water Content Max. Operating Pressure Min. Operating Pressure Max. Flow Temperature	m³/hr m³/hr kPa kPa Litres bar bar °C	1.93 2.58 48 85 4 1 80	2.36 3.15 55 92 5.034 4 1	2.79 3.73 45 30 6 4 1	3.65 4.87 22 35 9 4 1	4.39 5.85 22 36 10 4 1
General						
Dry Weight Dimension W x D x H Noise (@ 1m from boiler)	Kg mm dBA	40 450x377x766 48.6	40 450x377x766 47.5	50 450x505x766 48.5	83 600x584x952 49.5	93 600x584x952 48.8
Input and Output Connections						
Flow & Return Connection Size Flow & Return Connection Type Gas Connection Size Gas Connection Type Condensate Outlet Connection Flue Connection Size (Flue Size)	mm inch mm mm	1" Male Thread 3/4" Male Thread Ø22 80/125	1" Male Thread 3/4" Male Thread Ø22 80/125	1" Male Thread 3/4" Male Thread Ø22 80/125	1 ½" Male Thread 1" Male Thread - 110/160 (100/150)	1 ½" Male Thread 1" Male Thread - 110/160 (100/150)
Electrical						
Electrical Connection Power Consumption (with boiler pump) (without boiler pump)	V/Hz W W	230/50 190 80	230/50 210 95	230/50 210 95	230/50 275 130	230/50 320 165

Front View 90 - 110



To find out more about heateam Commercial Service and to book a service visit, call:

0845 070 1058

or email: heateam@baxicommercialdivision.com (Lines open Mon to Thurs 08.30 - 17.00 and Friday 08.30 - 16.30)



Baxi Commercial provides aftercare support through heateam Commercial Service

heateam Commercial Service, part of Baxi Commercial offers aftercare for all your commercial boilers and water heaters including LZC technologies. Our aftercare services include annual servicing and breakdown support, backed up by our National network (mainland UK only) of Gas Safe registered engineers. What's more our engineers are fully trained to support the full product range of Baxi Commercial and only use original parts from Baxi Genuine Parts.

It is important that all of your commercial heating equipment and LZC technologies are serviced annually to ensure correct operation and to prolong their life.

heateam Commercial Service can provide:

- Annual service 6 or 12 monthly
- Breakdown support
- Bespoke maintenance plans
- Re-commissioning
- Nationwide engineer coverage (mainland UK only)
- Specially trained Gas Safe registered engineers
- Support full Baxi Commercial product range
- Support other manufacturers products
- Parts supplied by Baxi Genuine Parts

www.baxicommercial.co.uk Tel: 0845 070 1058







Commercial Sales Technical & Service Enquiries

0845 070 1055 **General:** Sales: 0845 070 1056 0845 070 1057 Technical: heateam: 0845 070 1058 0845 070 1059 Fax:

enquiries@baxicommercial.com **Email:** Web: www.baxicommercial.co.uk

Spares

Potterton commercial spares are available nationwide through the Baxi Genuine Parts network of approved stockists.

Alternatively please contact:-

Baxi Genuine Parts, Brooks House, Coventry Road, Warwick CV34 4LL Tel: 0844 871 1540



Applications and Installations

Our experienced technical support team are available to offer advice on any aspect of heating system design and boiler installation.

Please contact: 0845 070 1057



Wood Lane, Erdington, Birmingham B24 9QP



Sales: 0845 070 1056 Technical: 0845 070 1057



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which may affect the accuracy of the information in this leaflet.





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