



Rinnai Commercial - Continuous Flow Water Heaters

Ready for
BioLPG

Ready for
20% Hydrogen

Rinnai



Rinnai UK offers a solution for every application, from public health and NHS facilities to commercial properties like gyms and leisure centres to construction sites, sports arenas and music festivals.

Rinnai is proud to support an integral part of the future energy mix with independently tested water heaters capable of utilising the green gases of the future like hydrogen blends (20%) and renewable liquid fuels. With our enhanced combustion technologies, Rinnai continuous flow water heaters are providing a better experience for end-users and installers alike. Rinnai components are all vertically integrated meaning that they are manufactured by Rinnai, ensuring quality and performance.

Simply scan the QR code to visit real-life case studies where we have added serious value for the target markets below.



Hospital, health care and care homes



Leisure facilities and sports



Hotels and student accommodation



Education



Events



Laundry



Camping and caravans



Military



Catering and restaurants

Rinnai N Series Next Generation Commercial Water Heaters



The **Rinnai N Series** water heaters are the pinnacle in commercial water heating. The **N Series** is a fully modulating, fully condensing, stainless steel, continuous flow water heater.

The water heaters have been independently tested on hydrogen (I2HY20) and renewable liquid fuels like Bio LPG, meaning that when greener gases are widely available so will your water heating system.

The unique water heater design offers turndown ratios of 13:1 which reduces energy usage and carbon. The **N Series** range comes in 57.9kW and 47kW variants for both internal and external wall mounting. The **N Series** range is A-rated (96% gross efficiency) and can offer flow rates above 1500 litres of temperature accurate hot water per hour.



Ready for **BioLPG**



Ready for **20% Hydrogen**

The **N Series** is capable of being installed in a cascade arrangement meaning that multiple water heaters can be situated side by side to increase the flow rate and supply the most demanding applications. Newly incorporated features include flue damper, in-built sequencing controls, a stainless steel heat exchanger, easy gas conversion system and turbo-fan, resulting in flue runs in excess of 45 metres.

Our mission is to provide the best in class, added value water heating solutions at an economical price. The burner technology and turn down ratio ensure that significant carbon savings are achievable versus traditional gas-fired water heating systems.

Technical specification

INPUTS	GROSS EFFICIENCY	UP TO	LESS THAN	ERP
47 - 57.9kW	96%	1500 l/h	28mg/kWh NOx	A Rated

Rinnai Sensei: Features and Benefits

Features

- Independently tested for hydrogen blends of 20%
- Stainless steel heat exchanger
- Independently tested for Bio LPG
- 13:1 turndown ratio
- High capacity hot water flow rates up to 1500 l/hr at commercial temperatures
- 96% gross efficiency
- BMS integration and remote monitoring capacities
- Easy conversion gas orifice
- Built-in flue damper
- Turbo-fan system
- Switching Venturi
- Room sealed and common header flue options
- Cutting edge electronic controls system delivering temperature accurate hot water

Benefits

- Ready for future grid blending of hydrogen
- Increased durability and warranty
- Ready for drop in Bio Liquid Fuels
- Optimises gas usage (reduces carbon)
- Guarantees a temperature accurate supply of hot water even for the heaviest of users
- Best in class efficiency
- Easy integration to Building Management System (BMS) and remote monitoring capability
- Simplifies NG to LPG conversion
- Streamlines flue installation and removes the need for additional flue components
- Extended flue runs of 45+ metres
- Provides consistent mixture of gas and air to the burner for low turndown ratios
- Increased performance and efficiency
- Ease of use and unparalleled levels of control

NEW GREATER FLUE OPTIONS

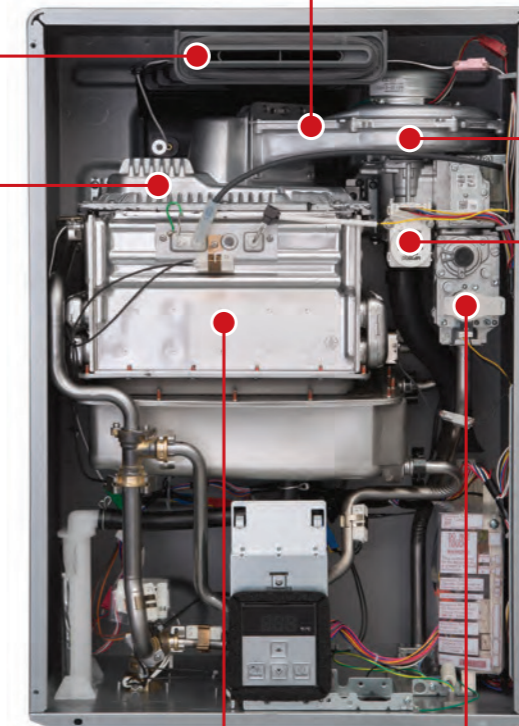
- Concentric internal model and external model available

NEW INTEGRATED FLUE DAMPER

- Located between turbo fan and combustion chamber
- No need for additional flue damper

NEW TURBO-FAN

- Enables longer flue runs
- Up to 30 metres flue runs (coaxial)
- Up to 45 metres (common header)



NEW FIBRE MESH PRE-MIX BURNER

- Provides even flame distribution for optimal performance for any demand

NEW SWITCHING VENTURI

- Provides consistent mixture of air and gas to the burner for low turn down ratios
- Self-compensates in areas with low or fluctuating gas pressures

NEW PRIMARY STAINLESS STEEL HEAT EXCHANGER

- Resists the corrosive nature of the condensate, which occurs early in the high-efficiency combustion process

NEW ZERO GOVERNOR GAS VALVE

- Optimises combustion performance by consistently delivering gas and air mixture



Model	N1300i (REU-N2635FFC)	N1300e (REU-N2635WC)	Unit
Appliance type	Condensing instantaneous water heater with automatic output variation		
Installation	Internal	External	
G20 Nat Gas min gas pressure	-0.10		mbar
G230 Air/Propane min gas pressure	-0.10		mbar
G30 Butane min gas pressure	-0.10		mbar
G31 Propane min gas pressure	-0.10		mbar
Flue system	Forced Room Sealed	Direct Forced Exhaust	-
Temperature range with water controller	37-50, 50,55,60,65,75		°C
Temperature range with push buttons	40,42,50,55,60,65,75,85		°C
Ignition	Direct Electronic ignition		-
Gas consumption & capacities min operation	[H _i =Net Calorific Value; H _s =Gross Calorific Value]		
G20 Nat Gas: Input Q _m : H _i /H _s Output P _m	4.00 / 4.40 4.20	4.00 / 4.40 4.20	kW
G20 Nat Gas flow normal operating conditions V _m	0.42	0.42	m ³ /h
G230 Air/Propane Input Q _m : H _i /H _s Output P _m	4.00 / 4.40 4.20	4.00 / 4.40 4.20	kW
G230 Air/Propane flow normal operating conditions V _m	0.33	0.33	m ³ /h
G30 Butane: Input Q _m : H _i /H _s Output P _m	4.60 / 5.00 4.80	4.60 / 5.00 4.80	kW
G30 Butane: flow normal operating conditions M _m	0.36	0.36	kg/h
G31 Propane: Input Q _m : H _i /H _s Output P _m	4.00 / 4.40 4.20	4.00 / 4.40 4.20	kW
G31 Propane: flow normal operating conditions M _m	0.31	0.31	kg/h
Gas consumption & capacities nominal operation	[H _i =Net Calorific Value; H _s =Gross Calorific Value]		
G20 Nat Gas: Input Q _n : H _i /H _s Output P _n	42.30 / 47.00 45.00	42.30 / 47.00 45.00	kW
G20 Nat Gas flow ref. conditions V _r	4.50	4.50	m ³ /h
G230 Air/Propane: Input Q _n : H _i /H _s Output P _n	43.20 / 47.00 45.00	43.20 / 47.00 45.00	kW
G230 Air/Propane flow ref. conditions V _r	3.50	3.50	m ³ /h
G30 Butane: Input Q _n : H _i /H _s Output P _n	43.40 / 47.00 45.00	43.40 / 47.00 45.00	kW
G30 Butane: flow normal operating conditions M _n	3.40	3.40	kg/h
G31 Propane: Input Q _n : H _i /H _s Output P _n	43.20 / 47.00 45.00	43.20 / 47.00 45.00	kW
G31 Propane: flow normal operating conditions M _n	3.40	3.40	kg/h
Fluegas Flowrate wet (Max. / Min. Load)	53/5	-	m ³ /h
Fluegas Flowrate dry (Max. / Min. Load)	46/4	-	m ³ /h
Flue Temp. (Max. / Min. Load)	<70	-	°C
CO ₂ conc. (Max. / Min. Load)	9.30 / 8.20	-	%
CO/CO ₂ (Max. / Min. Load)	107/0	-	ppm
CO/CO ₂ (Max. / Min. Load)	9.30 / 8.20	-	%
NO _x (Max. / Min. Load)	38.10 / 6.70	-	ppm
Country of destination	Refer to dataplate		-
Gas category and pressure	I12H3B/P // I12H3P // I12HM3B/P // I12HY20 G20: 20 mbar; G230: 20; G20.2 mbar G31: 37 mbar; G30: 30 mbar		-
Type	C ₁₃ ; C ₃₃ ; C ₅₃ ; C _{83P} ; B _{33P}	A ₃	-
Max water flowrate	35	35	l/min
Min operation flowrate	ON = 1.50 / OFF = 1.00 ¹		l/min
Min operating water pressure (P _{min})	0.10		bar
Water pressure (@nom/max flowrate - max) - (P _v)	3 - 10		bar
Electric consumption (remote/standby/antifrost)	230V/50Hz		-
Electric consumption (remote/standby/antifrost)	55 / 3 / 150	55 / 3 / 154	W
Noise	59	-	dB (A)
Ignition safety time TSAmax	3		sec.
Weight	28	28	kg
IP protection	IPx4D	IPx5D	-
Anti-freeze outside temperature protection	-20 ²	-20 ³	°C
NO _x (H _s)	27.40	27.40	mg/kWh

¹ Minimum water flowrate may vary depending on the temperature setting and the inlet water temperature.

² When NOT installed in an area of negative pressure

³ When protected from direct wind exposure.

Model	N1600i (REU-N3237FFC)	N1600e (REU-N3237WC)	Unit
Appliance type	Condensing instantaneous water heater with automatic output variation		
Installation	Internal	External	
G20 Nat Gas min gas pressure	-0.10		mbar
G230 Air/Propane min gas pressure	-0.10		mbar
G30 Butane min gas pressure	-0.10		mbar
G31 Propane min gas pressure	-0.10		mbar
Flue system	Forced Room Sealed	Direct Forced Exhaust	-
Temperature range with water controller	37-50, 50,55,60,65,75		°C
Temperature range with push buttons	40,42,50,55,60,65,75,85		°C
Ignition	Direct Electronic ignition		-
Gas consumption & capacities min operation	[H _i =Net Calorific Value; H _s =Gross Calorific Value]		
G20 Nat Gas: Input Q _m : H _i /H _s Output P _m	4.00 / 4.40 4.20	4.00 / 4.40 4.20	kW
G20 Nat Gas flow normal operating conditions V _m	0.42	0.42	m ³ /h
G230 Air/Propane Input Q _m : H _i /H _s Output P _m	4.00 / 4.40 4.20	4.00 / 4.40 4.20	kW
G230 Air/Propane flow normal operating conditions V _m	0.33	0.33	m ³ /h
G30 Butane: Input Q _m : H _i /H _s Output P _m	4.60 / 5.00 4.80	4.60 / 5.00 4.80	kW
G30 Butane: flow normal operating conditions M _m	0.36	0.36	kg/h
G31 Propane: Input Q _m : H _i /H _s Output P _m	4.00 / 4.40 4.20	4.00 / 4.40 4.20	kW
G31 Propane: flow normal operating conditions M _m	0.31	0.31	kg/h
Gas consumption & capacities nominal operation	[H _i =Net Calorific Value; H _s =Gross Calorific Value]		
G20 Nat Gas: Input Q _n : H _i /H _s Output P _n	52.10 / 57.90 55.50	52.10 / 57.90 55.50	kW
G20 Nat Gas flow ref. conditions V _r	5.50	5.50	m ³ /h
G230 Air/Propane: Input Q _n : H _i /H _s Output P _n	53.30 / 57.90 55.50	53.30 / 57.90 55.50	kW
G230 Air/Propane flow ref. conditions V _r	4.40	4.40	m ³ /h
G30 Butane: Input Q _n : H _i /H _s Output P _n	53.40 / 57.90 55.50	53.40 / 57.90 55.50	kW
G30 Butane: flow normal operating conditions M _n	4.20	4.20	kg/h
G31 Propane: Input Q _n : H _i /H _s Output P _n	53.30 / 57.90 55.50	53.30 / 57.90 55.50	kW
G31 Propane: flow normal operating conditions M _n	4.10	4.10	kg/h
Fluegas Flowrate wet (Max. / Min. Load)	65/5	-	m ³ /h
Fluegas Flowrate dry (Max. / Min. Load)	57/4	-	m ³ /h
Flue Temp. (Max. / Min. Load)	<70	-	°C
CO ₂ conc. (Max. / Min. Load)	9.30 / 8.10	-	%
CO/CO ₂ (Max. / Min. Load)	122 / 6	-	ppm
CO/CO ₂ (Max. / Min. Load)	9.30 / 8.10	-	%
NO _x (Max. / Min. Load)	40.10 / 5.40	-	ppm
Country of destination	Refer to dataplate		-
Gas category and pressure	I12H3B/P // I12H3P // I12HM3B/P // I12HY20 G20: 20 mbar; G230: 20 mbar; G20.2 G31: 37 mbar; G30: 30 mbar		-
Type	C ₁₃ ; C ₃₃ ; C ₅₃ ; C _{83P} ; B _{33P}	A ₃	-
Max water flowrate	35	35	l/min
Min operation flowrate	ON = 1.50 / OFF = 1.00 ¹		l/min
Min operating water pressure (P _{min})	0.10		bar
Water pressure (@nom/max flowrate - max) - (P _v)	3 - 10		bar
Electric consumption (remote/standby/antifrost)	230V/50Hz		-
Electric consumption (remote/standby/antifrost)	75 / 3 / 150	75 / 3 / 154	W
Noise	59	-	dB (A)
Ignition safety time TSAmax	3		sec.
Weight	29	29	kg
IP protection	IPx4D	IPx5D	-
Anti-freeze outside temperature protection	-20 ²	-20 ³	°C
NO _x (H _s)	27.40	27.40	mg/kWh

¹ Minimum water flowrate may vary depending on the temperature setting and the inlet water temperature.

² When NOT installed in an area of negative pressure

³ When protected from direct wind exposure.

Product Fiche

	Rinnai UK		Unit
Supplier's name	Rinnai UK		
Supplier's model	N1300i (REU-N2635FFC-E)	N1300e (REU-N2635WC-E)	
Load profile	XL	XL	
Water heating energy efficiency class	A	A	
Water heating energy efficiency class Water heating energy efficiency (η_{wh})	86.9	86.9	%
Annual electricity consumption (AEC)	19.5	19.5	kWh/annum
Annual fuel consumption (AFC) - (Hs)	17.1	17.1	GJ/annum
Temperature setting ¹	55	55	°C
Indoor sound power level (LWA)	59	-	db

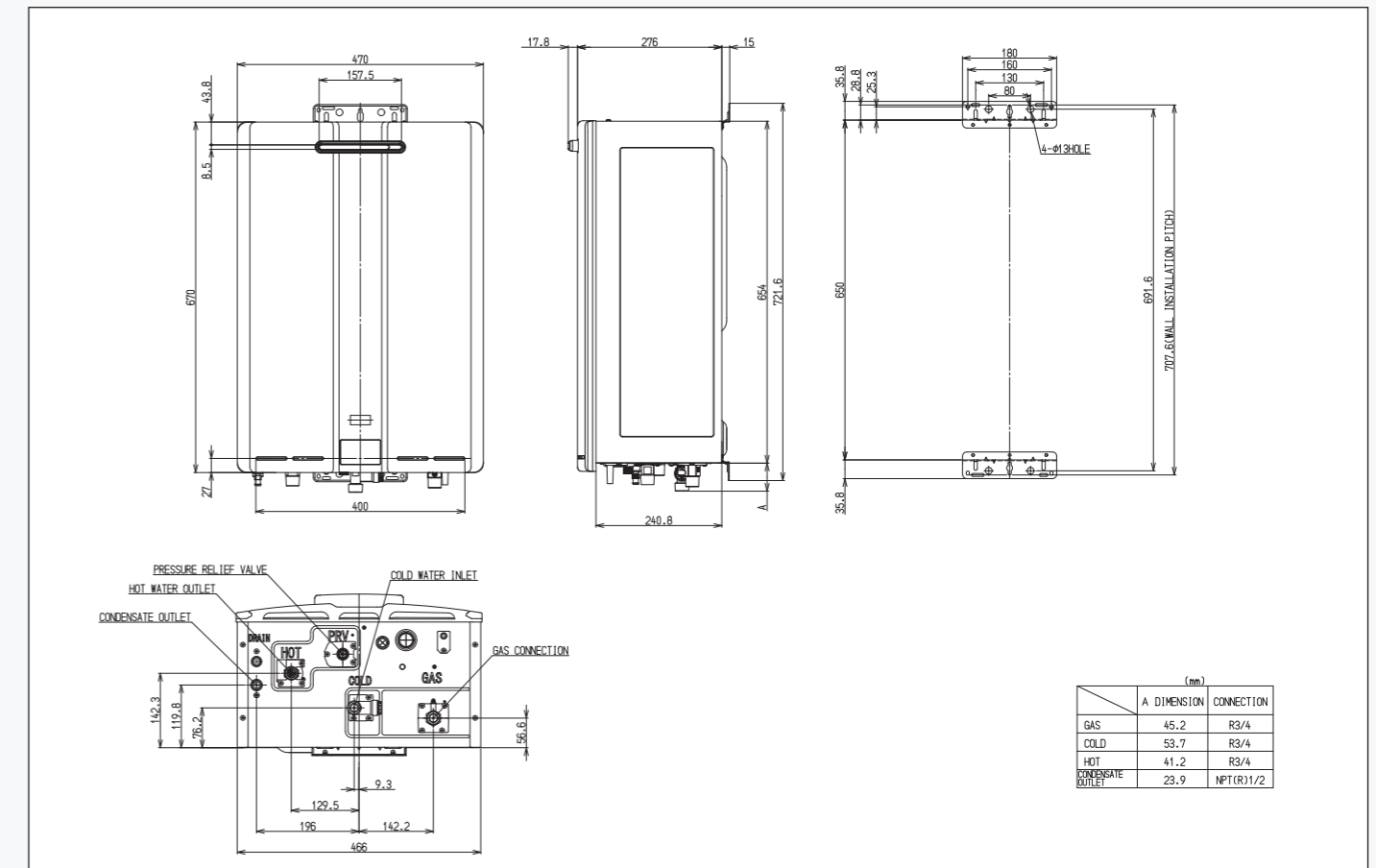
Values tested with appliance set @60°C - Gas: G20mbar - High calorific value (Hs) - According to Reg. UE 812/2013.
¹40°C with water control connected.

	Rinnai UK		Unit
Supplier's name	Rinnai UK		
Supplier's model	N1600i (REU-N3237FFC-E)	N1600e (REU-N3237WC-E)	
Load profile	XXL	XXL	
Water heating energy efficiency class	A	A	
Water heating energy efficiency class Water heating energy efficiency (η_{wh})	85.7	85.7	%
Annual electricity consumption (AEC)	22.3	22.3	kWh/annum
Annual fuel consumption (AFC) - (Hs)	22.4	22.4	GJ/annum
Temperature setting ¹	55	55	°C
Indoor sound power level (LWA)	59	-	db

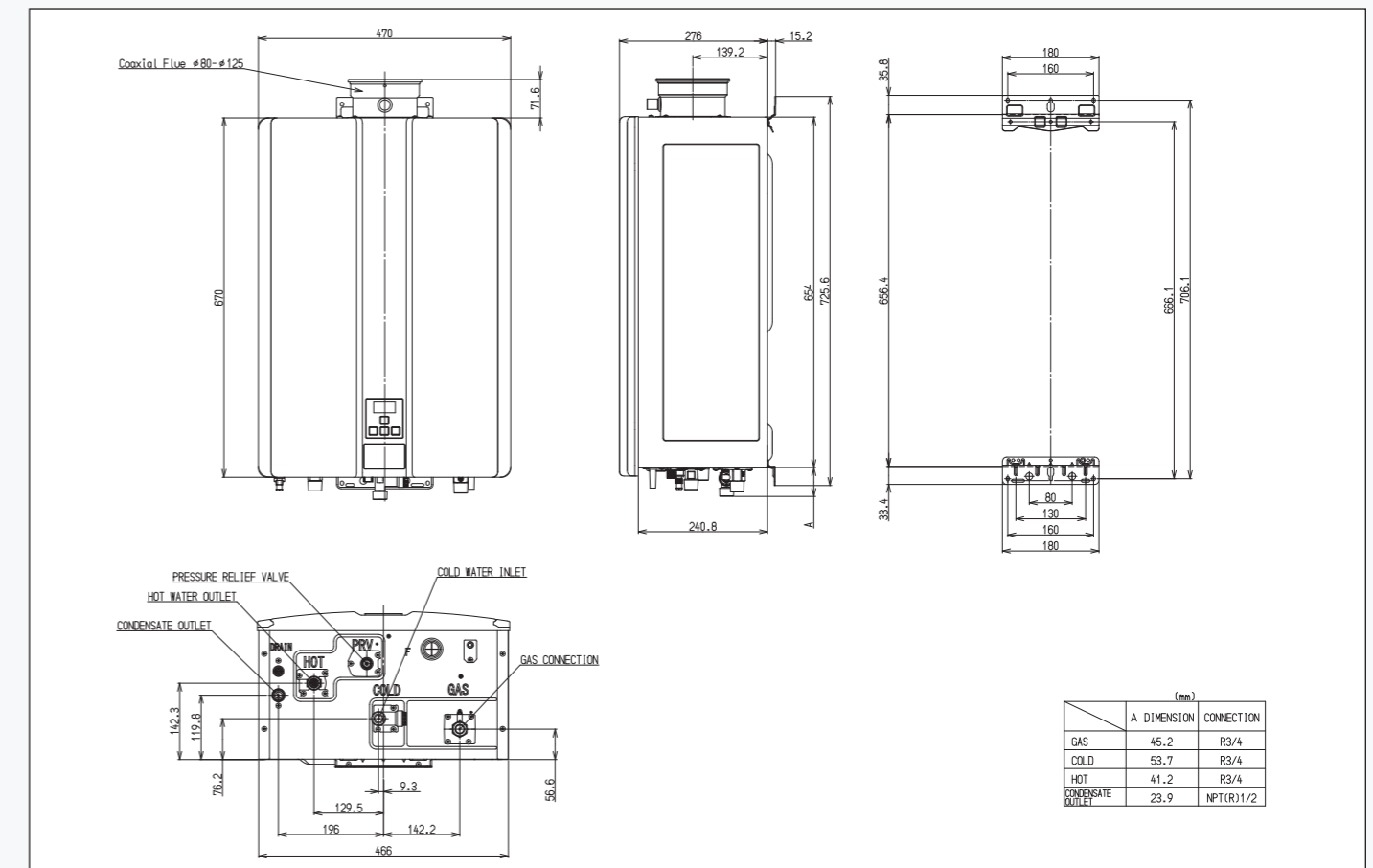
Values tested with appliance set @60°C - Gas: G20mbar - High calorific value (Hs) - According to Reg. UE 812/2013.
¹40°C with water control connected.



Product Dimensions - Model N1300e and Model N1600e



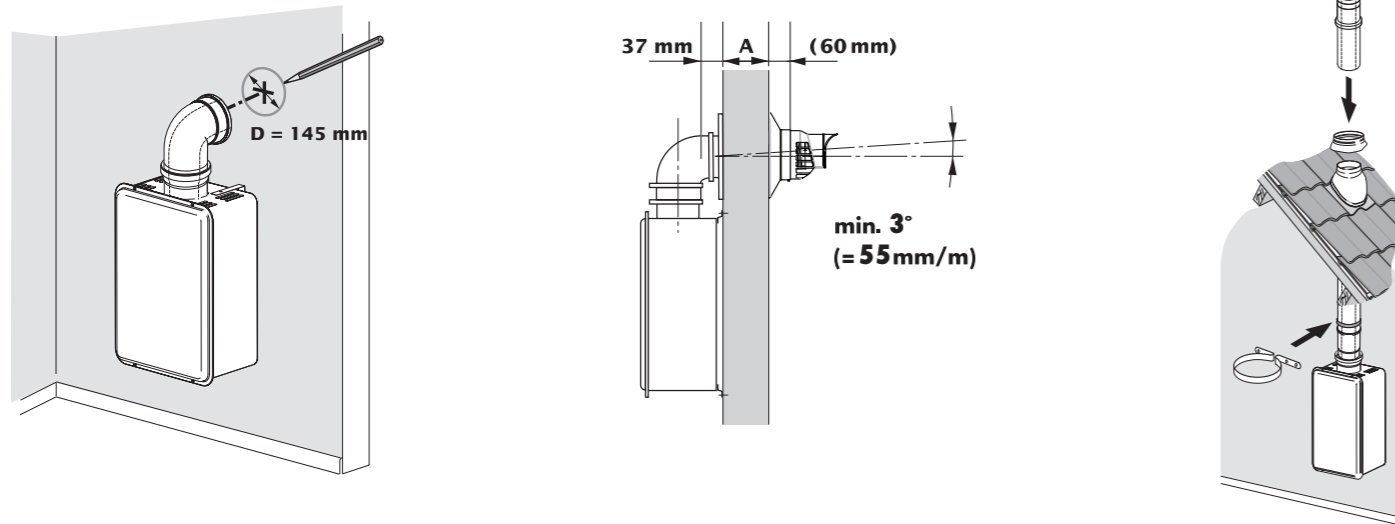
Product Dimensions - Model N1300i and Model N1600i



Flueing and Ancillaries

The most flexible flueing in the industry...

The Rinnai Sensei range uses smaller, lighter, less expensive concentric flues. Flue runs of up to 45m are achievable and common flue systems are available to streamline installations of multiple Rinnai Sensei water heaters.



*Contact us for more information on flue configurations as we can support you with specifications.

AWFKM-01	Condensing (80/125) Std Horizontal Flue Kit L:74cm Exc Terminal
AWFKM-07	Condensing (80/125) Std Vertical Flue Kit L:44cm Exc Terminal
AWFKM-03	Condensing (80/125) 87 degree Bend
AWFKM-02 (1 Pair)	2 off Condensing (80/125) 45 degree Bends
AWFKM-05	Condensing (80/125) 500mm Flue (Can be cut to required length)
AWFKM-06	Condensing (80/125) 1000mm Flue
AWFKM-08	Plume Management Kit
AWF50-10	Roof/Attic Pipe Clamp
AWF50-12	Stand-off Pipe Clamp
AWF50-08	Flat Roof Flashing Plate
AWF50-25	Ubiflex Universal Tile (15-55 degrees)

Controls

RINNAI LEGIONELLA PROTECTION SYSTEM	
AW-PURE	Rinnai Auto Pasteurisation Unit
ERROR INDICATION	
AWBMS-01	Error Indication Switch
RINNAI GATEWAY SYSTEM	
AW-TGGATEWAY	Rinnai BACnet/Modbus Gateway (For KM Series)
ELECTRICAL SEQUENCING (MAXIMUM 2 HEATERS)	
AWEZC-01	Ez Connect Cable

To see our complete range of controls scan the QR code



Potable Water Unvented System Kits

Valve Kits

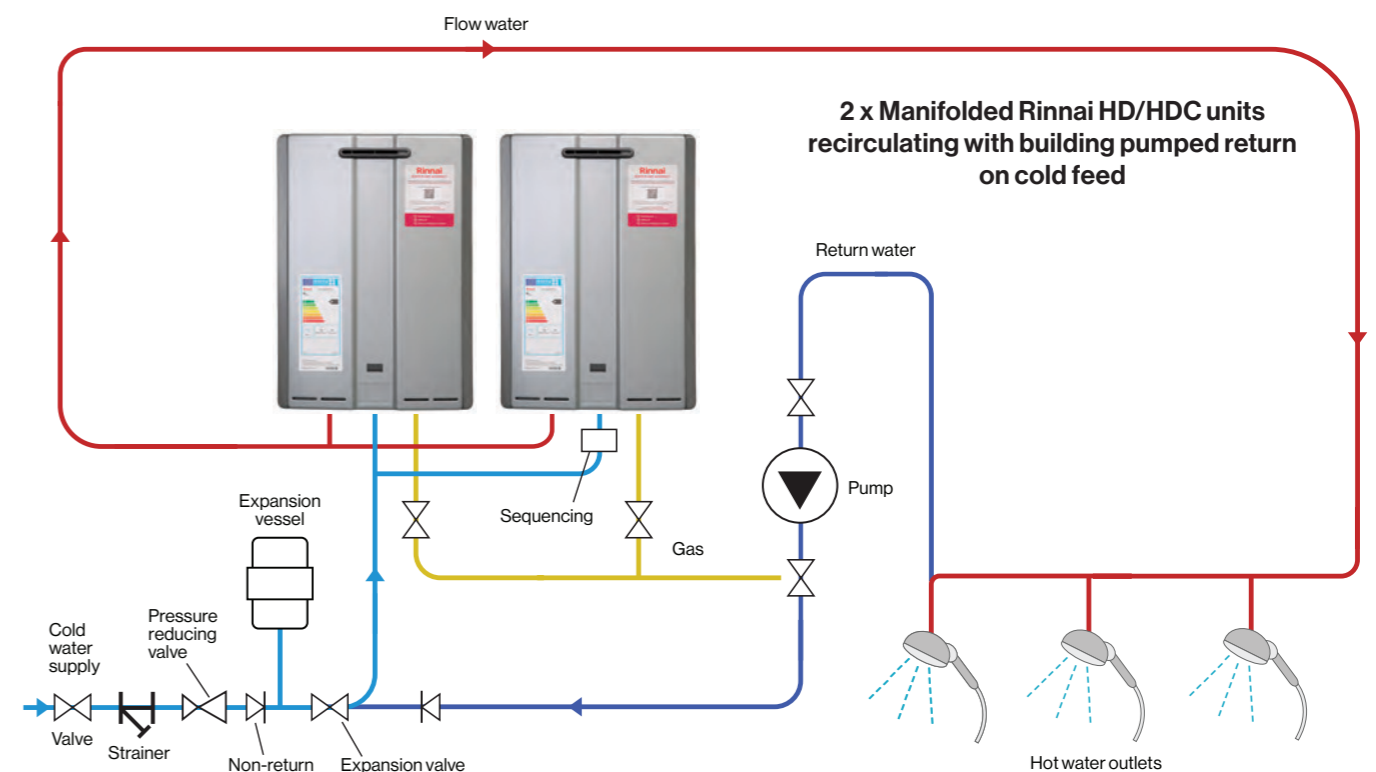
We can supply you with any combination of valves or expansion vessels to suit your hot water solution.

Rinnai Code	Description
AWUV-01	Rinnai 3/4" Valve Kit
AWUV-02	Rinnai 1" Valve Kit
AWUV-03	Rinnai 1 1/4" Valve Kit
AWUV-04	Rinnai 1 1/2" Valve Kit
AWUV-05	Rinnai 2" Valve Kit
AWV-ISOLATION	Rinnai Infinity Valve Pack (Shut off valves)

Expansion Vessels

Rinnai Code	Description
AWBUFF-12	Rinnai 12L Vessel
AWBUFF-19	Rinnai 19L Vessel
AWBUFF-35	Rinnai 35L Vessel
AWBUFF-50	Rinnai 50L Vessel
AWBUFF-80	Rinnai 80L Vessel
AWBUFF-100	Rinnai 100L Vessel

Rinnai Sensei water heaters can deliver temperature accurate hot water, so when used in conjunction with the valve packs and expansion vessels above they can seriously reduce the risk of onsite legionella (in the domestic hot water circuit) whilst also aiding G3 unvented systems compliance.



Rinnai Infinity VCM Commercial Water Heaters



The **Rinnai Infinity VCM** range consists of internal and external water heaters. The internal model is a room sealed, wall hung, natural gas or LPG fired continuous flow water heater. The water heaters have also been independently tested on hydrogen blends and renewable liquid fuels like Bio LPG.

The **Infinity Low NOx HD55i Internal** is capable of supplying more than 820 litres per hour raised 50°C. Making it an ideal choice for high capacity system specifications as up to 25 units can be cascaded to supply any application.

The **Infinity Low NOx** range incorporates patented burner technology meaning that the appliances produce less than 20Mg/kWh NOx future-proofing the systems against legislative changes.

The **Rinnai Infinity Low NOx HD55e** water heater is an external wall-mounted, continuous flow water heater, capable of running on natural gas or LPG and supplying more than 820 litres/hr.

The mixture of power and flexibility ensures that the **Infinity Low NOx** commercial water heater is ideal for light commercial to large industrial sites.



Ready for **20% Hydrogen**



Ready for **BioLPG**

Features and Benefits

Features

- Independently tested for Hydrogen blends of 20%
- High capacity flow rates (in excess of 820 l/hr)
- Independently tested for Bio LPG
- 19:1 turndown ratio
- Copper finned heat exchanger technology
- ERP A Rated
- Internal and external models available
- Lightweight, compact and solid construction
- Room sealed and wide range of flue options
- Natural gas & LPG models available
- Frost protection fitted as standard
- Low NOx performance less than 20 ppm

Benefits

- Ready for future grid blending of hydrogen
- Satisfies even the heaviest hot water demand
- Ready for drop in Bio Liquid fuels
- Optimises gas usage
- Excellent for heat transfer, reliable and low maintenance
- Best in class efficiency
- Installation flexibility
- One man lift, easy install and robust structure
- 80/125 coaxial flue system with extended flue run capability
- No need for conversion kits
- Protect appliances against the damaging effects of cold weather
- Best in class NOx performance

Technical specification

INPUT	UP TO	LESS THAN	ERP
58.4kW	820 l/h	20mg/kWh NOx	A Rated



Model	HD55i (REU-VCM2837FFUDHD-E)	HD55e (REU-VCM2837WDHD-E)	Unit
Installation	Internal	External	
G20 Nat Gas Press Low / High	1,57 / 7,33	1,39 / 6,18	mbar
G230 Air/Propane Press Low / High	1,88 / 8,40	1,75 / 7,80	mbar
G31 Propane / G30 Butane Press Low / High	2,14 / 11,80	2,28 / 11,00	mbar
Flue System	Forced Room Sealed	Direct Forced Exhaust	
Temp. Range Controllers	37-46,48,50,55, (HD:60,65,75)	37-46,48,50,55, (HD:60,65,75)	°C
Temp. via dip switches	40, 42, 50, 55, 60, 65, 75, 85	40, 42, 50, 55, 60, 65, 75, 85	°C
Ignition	Direct Electronic Ignition		
Gas consumption & capacities min operation	[H _i =Net Calorific Value; H _s =Gross Calorific Value]		-
G20 Nat Gas: Input Q _m : H _i /H _s Useful output P _m	2.72/3.02 2.33	2.72/3.02 2.33	kW
G20 Nat Gas flow normal operating conditions V _m	0,29	0,29	m³/h
G230 Air/Propane Input Q _m : H _i /H _s Useful output P _m	2.78/3.02 2.33	2.78/3.02 2.33	kW
G230 Air/Propane flow normal operating conditions V _m	0,23	0,23	m³/h
G30 Input Q _m : H _i /H _s Useful output P _m	3.16/3.43 2.64	3.16/3.43 2.64	kW
G30 flow normal operating conditions M _m	0,25	0,25	kg/h
G31 Input Q _m : H _i /H _s Useful output P _m	2.78/3.02 2.33	2.78/3.02 2.33	kW
G31 flow normal operating conditions M _m	0,22	0,22	kg/h
Gas Consumption & Capacities nominal condit.	[H _i =Net Calorific Value; H _s =Gross Calorific Value]		
G20 Nat Gas: Input Q _n : H _i /H _s Useful output P _n	52.6/58.4 48.5	52.6/58.4 48.5	kW
G20 Nat Gas flow ref. conditions V _r	5,6	5,6	m³/h
G230 Air/Propane: Input Q _n : H _i /H _s Useful output P _n	53.7/58.4 48.5	53.7/58.4 48.5	kW
G230 Air/Propane flow ref. conditions V _r	4,4	4,4	m³/h
G30 Input Q _n : H _i /H _s Useful output P _n	61.3/66.4 55.1	61.3/66.4 55.1	kW
G30 flow normal operating conditions M _n	4,8	4,8	kg/h
G31 Input Q _n : H _i /H _s Useful output P _n	53.7/58.4 48.5	53.7/58.4 48.5	kW
G31 flow normal operating conditions M _n	4,2	4,2	kg/h
Country of destination	Refer to dataplate		
Gas category and pressure	II2H3P, II2H3B/P, II2HM3B/P, II2HY20 G20-20mbar, G230-20mbar, G31-37mbar, G30-30mbar; G20.2		
Type	C13,C33,C53	A3	
Max Flow	37	37	L/min
Min Operation Flow	ON=1,5 * / OFF=1,0 *	ON=1,5 * / OFF=1,0 *	L/min
Operating Water Pressure (P _w)	1,0 * - 10	1,0 * - 10	Bar
Power Supply	230V/50Hz		
Electric Consumption (1 remote)	97	65	W
Electric Consumption standby (1 remote)	2	2	W
Electric Consumption (antifrost)	120	104	W
Ignition Safety Time T _{S(Amax)}	4,2	4,2	Sec.
Weight	21	20	kg
IPx Protection	-	IPX4	-
Anti-freeze outside temperature	-20°C **	-20°C ***	°C
NOx at Max Input GCV O2 0% G20	52	52	mg/kWh
Load Profile	XL	XL	
Water Heating Efficiency η _{wh}	82.4	82.4	%
Daily Fuel Consumption Q _{fuel}	24.178	24.178	kWh
Daily Electrical Consumption Q _{elec}	0.036	0.036	kWh
Sound Power Level L _{WA}	67	-	dB

* Minimum operation pressure and flow based on temperature setpoint and inlet conditions.

** When the water heater is not installed in an area of negative pressure.

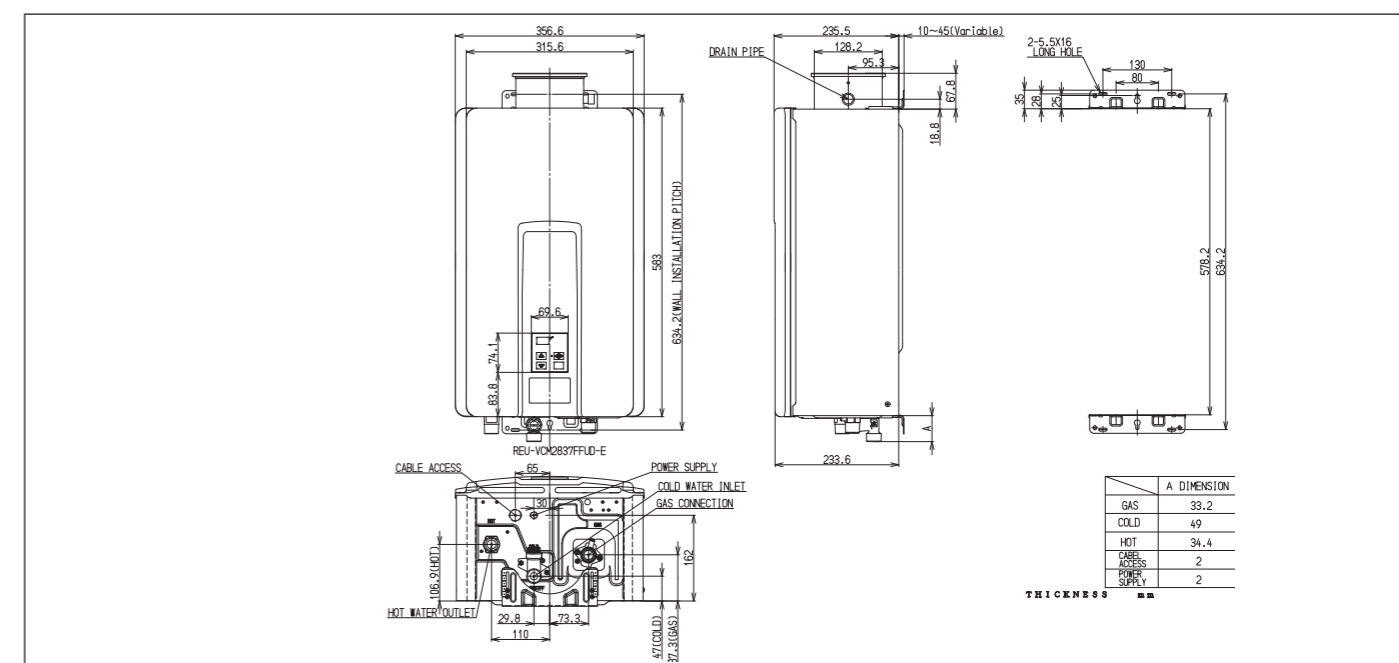
*** When protected from direct wind exposure.

Product Fiche

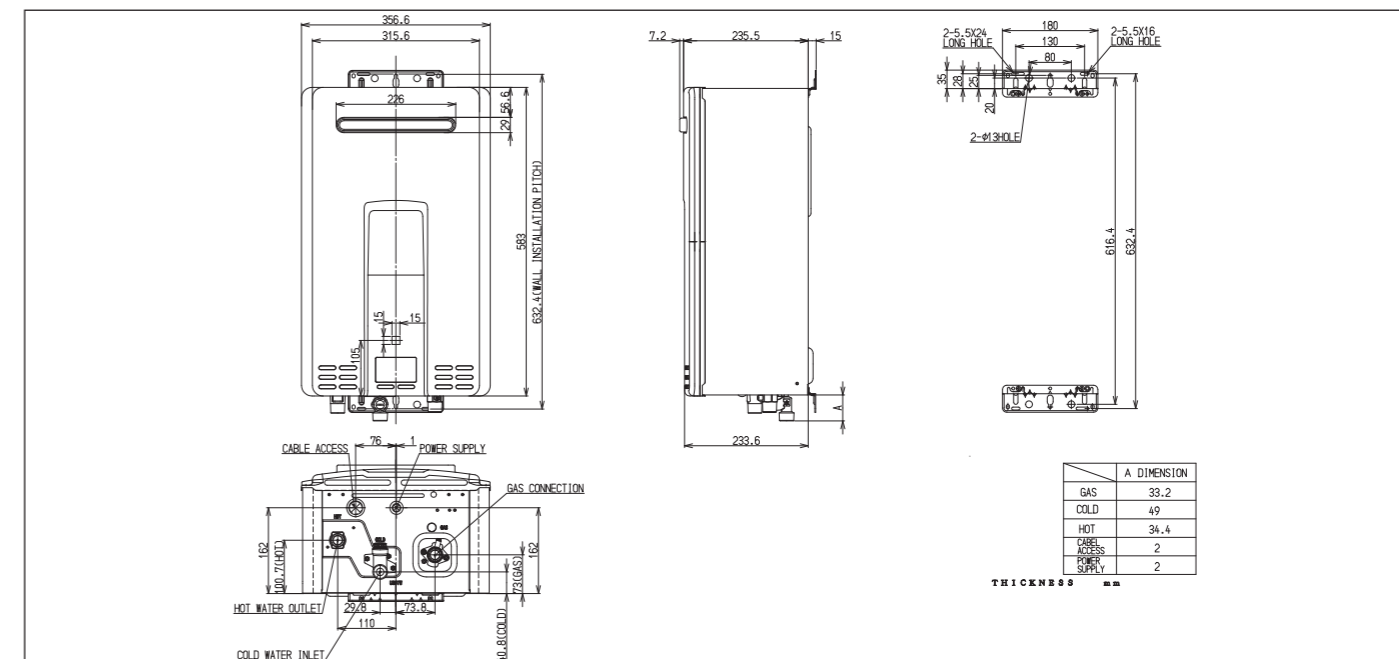
Supplier's name	Rinnai UK Ltd	
Model name	HD55i (REU-VCM2837FFUDHD-E)	HD55e (REU-VCM2837WDHD-E)
Declared Load Profile on Energy Label	XL	XL
Energy Efficiency Class	A	A
Water Heating Efficiency η _{wh} (%)	82.4	82.4
Annual Electricity Consumption AEC (kWh/annum)	8	8
Annual Fuel Consumption AFC (GJ/annum)	18	18
Second Load Profile	XXL	XXL
Energy Efficiency Class	B	B
Water Heating Efficiency η _{wh} (%)	76.8	77.7
Annual Electricity Consumption AEC (kWh/annum)	14	12
Annual Fuel Consumption AFC (GJ/annum)	25	25
Default Thermostat Setting (°C)	55/HD Range 65	55/HD Range 65
Sound Power Level L _{WA} (dB)	67	-

* Values are tested with Natural Gas, G20, and temperature setting at 60°C under the reg. 812/2013 and calculated based on the gross calorific value (H_s).

Product Dimensions - Model 55i



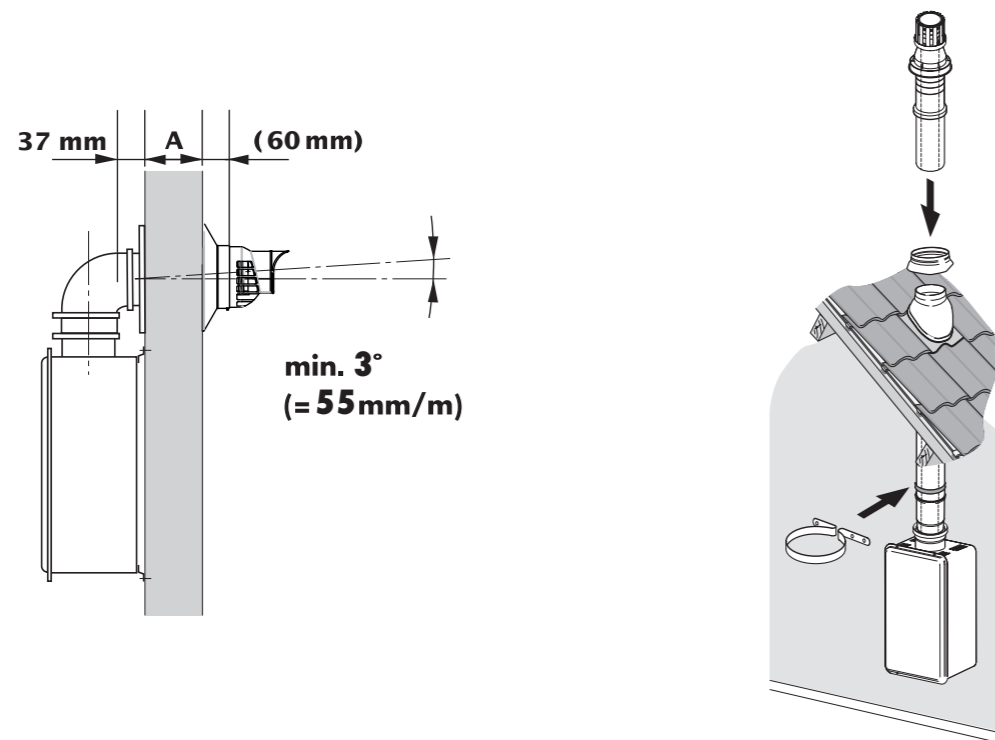
Product Dimensions - Model 55e



Flueing and Ancillaries

The Infinity VCM series uses small diameter, lightweight flue components.

All flue components are push-fit and easy to install. Extended flue runs are achievable, horizontal and vertical flue kits come complete in easy to install packages. There is no need for additional room ventilation with the Rinnai Infinity range adding to the ease of installation and reducing overall project costs.



Rinnai code	Description
AWF50-01	HD55i Horizontal Flue Kit (VRM) length 53cm ex terminal
AWF50-07	HD55i Vertical Flue Kit (VRM) length 49cm ex terminal
AWF50-05	500mm Flue Extension (can be cut to required length)
AWF50-06	1000mm Flue Extension
AWF50-03	90° Flue Elbow Male/Female
AWF50-02 (1Pair)	2 off 45° Flue Elbows Male/Female
AWF50-10	Roof/Attic Pipe Clamp
AWF50-12	Stand off Pipe Clamp
AWF50-08	Flat Roof Flashing Plate
AWF50-25	Ubiflex Universal Tile (15-55 degrees)
AWF50-14	Sipon Pack for condensate trap
AWG-02	Water Heater Terminal Guard
AWV-ISOLATION	Rinnai Infinity Valve Pack (Shut-off valves)

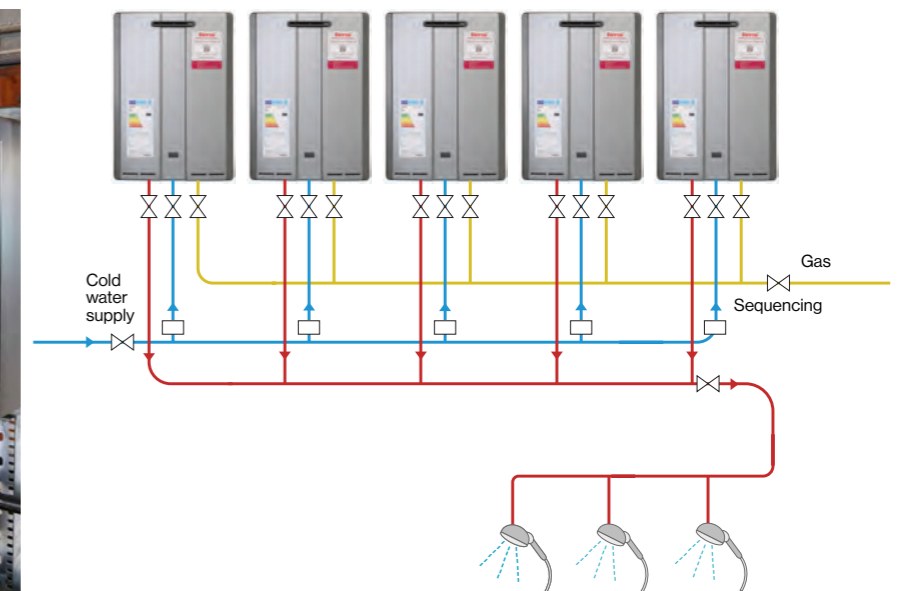
Infinity and Sensei Plus

Rinnai Infinity PLUS and Sensei Plus are custom made water heating solutions that bring together multiple units of our award winning continuous flow water heaters into single, easy to handle modules.

The PLUS system incorporates water heaters, skid systems, pipework and electrical connections providing the complete pre-fabricated turnkey solution. All that is needed are the final connections to the associated services. Infinity and Sensei PLUS have been developed to guarantee the maximum amount of affordable, ecologically friendly, safe and temperature accurate hot water required at any one time by even the most demanding commercial users.

Each PLUS module comprises either two or three Rinnai Infinity or Sensei units and as any number of modules can be manifolded, the capacity is infinite even where demand for instantaneous hot water peaks massively at certain times of the day. The PLUS arrangement also assists with energy and compliance initiatives as the PLUS arrangement maximises system modulation and by smart controls optimises system efficiencies.

	N1600i/e (N3237)					N1300i/e (N2632)					
Gross efficiency	96%					96%					
Number of units	1	2	3	4	5	1	2	3	4	5	
Nat Gas kW output	55.5	111	166.5	222	277.5	45	90	135	180	225	
Temperature rise by litres per											
50 degrees C	Minute	15.9	31.8	47.7	63.6	79.5	12.9	25.8	38.7	51.6	64.5
	Hour	954	1908	2862	3816	4770	774	1548	2322	3096	3870
60 degrees C	Minute	13.2	26.4	39.6	52.8	66.0	10.7	21.4	32.1	42.8	53.5
	Hour	792	1584	2376	3186	3960	642	1284	1926	2568	3210
70 degrees C	Minute	11.4	22.8	34.2	45.6	57.0	9.2	18.4	27.6	36.8	46.0
	Hour	684	1368	2052	2736	3420	552	1104	1656	2208	2760
80 degrees C	Minute	9.9	19.8	29.7	39.6	49.5	8.1	16.2	24.3	32.4	40.5
	Hour	594	1188	1782	2376	2970	486	972	1458	1944	2430



Infinity VCM PLUS specification charts

Gross efficiency		83.0%				
Number of units		1	2	3	4	5
Nat Gas kW input		58.4	116.8	175.2	233.6	292.0
Nat Gas kW output		48.5	97.0	145.5	194.0	242.5
Temperatures rise by Litres per		HD55i or HD55e				
50°C	Second	0.23	0.46	0.69	0.92	1.15
	Minute	13.9	27.7	41.6	55.4	69.3
	Hour	831	1,663	2,494	3,326	4,157
55°C	Second	0.21	0.42	0.63	0.84	1.05
	Minute	12.6	25.2	37.8	50.4	63
	Hour	756	1,512	2,268	3,024	3,780
60°C	Second	0.19	0.38	0.58	0.77	0.96
	Minute	11.5	23.1	34.6	46.2	57.7
	Hour	693	1,386	2,079	2,771	3,464
65°C	Second	0.178	0.36	0.53	0.71	0.89
	Minute	10.7	21.3	32.0	42.6	53.3
	Hour	640	1,279	1,919	2,558	3,198
70°C	Second	0.165	0.33	0.49	0.66	0.82
	Minute	9.9	19.8	29.7	39.6	49.5
	Hour	594	1,188	1,782	2,376	2,969
75°C	Second	0.15	0.31	0.46	0.62	0.77
	Minute	9.2	18.5	27.7	37.0	46.2
	Hour	554	1,109	1,663	2,217	2,771



Sensei Storage and Infinity VCM Storage System



In situations where a very large demand of hot water is required, Rinnai Infinity PLUS storage offers a cost effective solution.

Using a modular system of either internal or external Rinnai VCM or Sensei condensing water heaters and a stainless steel storage vessel, demands in excess of 20,000 litres per hour can be satisfied.

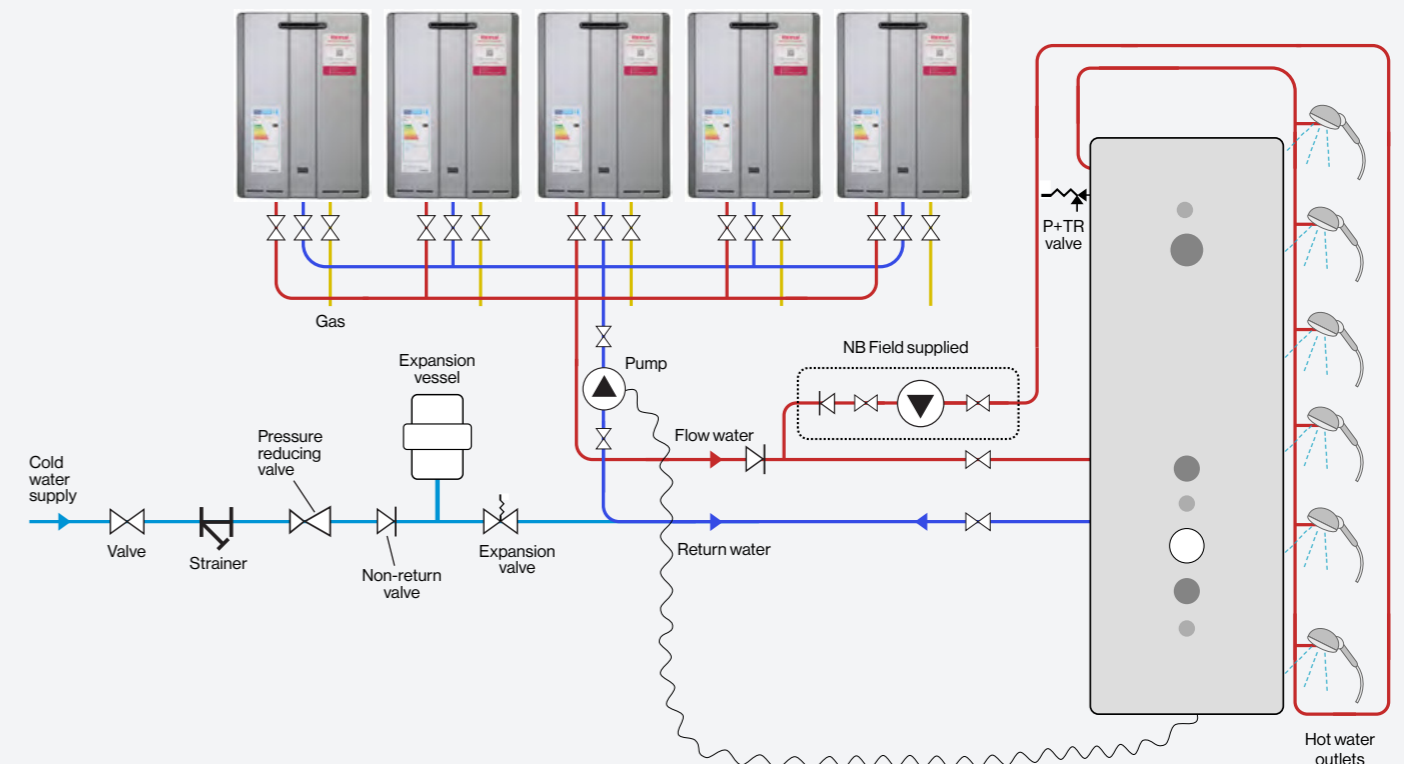
Rinnai's stainless steel storage vessels do not require electric immersion heating elements and these items may be supplied as an optional extra if required.

The modular system offers the additional benefit of operational cover should a water heater fail or easy access and isolation of a unit for servicing.

Rinnai's Infinity PLUS storage represents a very competitive and energy efficient hot water solution for larger heavy duty applications.

Rinnai Condensing Water Heaters can be used to maintain the temperature in a large storage vessel.

This approach could be used where the hot water requirement exceeds the flow capacity of the manifolded units, or where there is an intermittent demand for hot water in buildings such as hotels, hospitals, apartments, etc.



A Rinnai Infinity PLUS storage system includes:

- Delivery to site
- A number of VCM or Sensei condensing water heaters (larger systems available on request)
- An equal number of standard flue kits (internal heaters only)
- An equal number of pipe cover boxes (external heaters only)
- Common header flue kits are available to further streamline installation (contact us for details)

- Hot water storage vessel (300L, 500L, 800L or 1000L Stainless steel)
- Hot water storage vessel valve pack (Double check valve, two isolation valves)

- An equal number of continuous flow water heater valve packs (Isolation valves for cold water, hot water, gas inlet)
- A primary pump with valves
- An unvented kit (1" or 1½" pipework) with:
 - Isolation valve
 - Pressure reducing valve with gauge
 - Strainer
 - Double check valve
 - Safety relief valve, 6 bar

- Expansion vessel, 50L or 80L
- 2 Drain cocks, ½"
- 1 Tundish, 1¼"
- 1 Temperature and pressure relief valve
- 1 Control thermostat
- 1 Overheat thermostat

For system design support call
0300 373 0660
 or scan the QR code



SENSEI Plus Storage flow rates

N1300i						
Number of water heaters	Plus 300 (300 litre vessel)			Plus 500 (500 litre vessel)		
	1st Hour	Continuous	Storage Recovery Time	1st Hour	Continuous	Storage Recovery Time
	50°C ΔT			50°C ΔT		
	Minutes			Minutes		
1	1073	773	24	-	-	-
2	1847	1546	12	-	-	-
3	2620	2319	8	-	-	-
4	-	-	-	3593	3092	10
5	-	-	-	4366	3865	8

SENSEI Plus Storage flow rates

N1600i						
Number of water heaters	Plus 300 (300 litre vessel)			Plus 500 (500 litre vessel)		
	1st Hour	Continuous	Storage Recovery Time	1st Hour	Continuous	Storage Recovery Time
	50°C ΔT			50°C ΔT		
	Minutes			Minutes		
1	1254	954	19	-	-	-
2	2208	1908	10	-	-	-
3	3162	2862	7	-	-	-
4	-	-	-	4316	3816	8
5	-	-	-	5270	4770	7

Infinity VCM Plus storage flow rates

HD55i						
Number of water heaters	Plus 300 (300 litre vessel)			Plus 500 (500 litre vessel)		
	1st Hour	Continuous	Storage Recovery Time	1st Hour	Continuous	Storage Recovery Time
	50°C ΔT			50°C ΔT		
	Minutes			Minutes		
1	1133	833	22	-	-	-
2	1966	1666	11	-	-	-
3	2799	2499	8	-	-	-
4	-	-	-	3832	3332	9
5	-	-	-	4665	4165	8

Note: All recovery times have been rounded up to the nearest minute.

Individual unit performance charts

$\Delta T^{\circ}\text{C}$	N1300i		N1600i		HD55	
	L/MIN	L/HOUR	L/MIN	L/HOUR	L/MIN	L/HOUR
25	25.8	1547	31.8	1907	27.8	1667
30	21.5	1289	26.5	1589	23.2	1389
35	18.4	1105	22.7	1362	19.8	1191
40	16.1	967	19.9	1192	17.4	1042
45	14.3	859	17.7	1060	15.4	926
50	12.9	773	15.9	954	13.9	833
55	11.7	703	14.4	867	12.6	758
60	10.7	644	13.2	795	11.6	695
65	9.9	595	12.2	734	10.7	641
70	9.2	552	11.4	681	9.9	595
75	8.6	516	10.6	636	8.7	521

Bio LPG Explainer

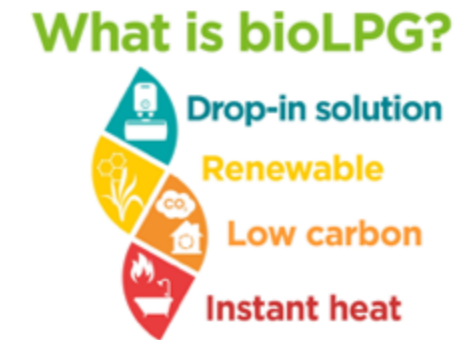
Decarbonise with Bio LPG

You may have seen the news and heard about the Governments ambitious plans for a Net Zero future.

Rinnai is a major supplier of LPG fired products and we wanted to keep you informed about how your LPG fired water heating systems can support this transition.

LPG is the lowest carbon, conventional fuel for businesses off the gas grid, bringing huge benefits, not just on carbon, but air quality, compared to traditional off-grid fuels oil and coal.

The industry however recognises this does not go far enough in tackling climate change, which is why the LPG manufacturers launched its ambitious plan to transition to 100% renewables by 2040 back in 2019, to support the Government's target for a Net Zero future by 2050.



- **So what is bioLPG?** BioLPG is a convenient and non-intrusive 'drop-in' solution to decarbonisation for a variety of rural off-grid businesses.
- **Drop-in:** can be used with existing infrastructure, such as your water heaters. Rinnai water heaters are BioLPG ready now, meaning that there is no technical adjustments required when you switch from LPG to BioLPG. Which also means no expensive system upgrades are needed in order to start using it.
- **Renewable:** made from a diverse mix of sustainable biological feedstocks and processes.
- **Low carbon:** up to 90% carbon emissions reduction and carries the same low NOx, SOx and PM as conventional LPG.
- **Instant heat:** provides on-demand heat and hot water, compared to low-temperature systems such as heat pumps. Saves on high volumes of storage to satisfy higher temperature applications.
- **Next steps:** As the industry transitions to bioLPG, the aim is to enable existing LPG users to gradually begin using BioLPG alongside their existing supply during the 2020s and 2030s.

Greening of the gas grid - Hydrogen

The government has made public its plans for Hydrogen to be an integral part of the energy mix in the coming years.

Rinnai products will be supporting the industry as we start evolving to a 20% blended Hydrogen/ natural gas grid and then to a 100% Hydrogen network.

Natural gas supplies over 80% of commercial buildings in the UK. However, the natural gas industry recognises that to tackle climate change the gas grid must decarbonise, which is why the Government and the gas operators are working together to ensure that the future gases in the pipeline are low to zero carbon.

Simply scan the QR code to see our 100% hydrogen ready appliances



So, what is Hydrogen?

Hydrogen is the most abundant element on the planet and produces no carbon when combusted, meaning that it can heavily decarbonise the gas network. The UK government announced a Hydrogen strategy that backs, Hydrogen as an energy vector of the future and commits the UK to developing a “world class, Hydrogen economy”. The strategy also takes a “twin-track” approach meaning that Hydrogen development will be supported in both blue and green variants.

- **Drop-in:** The initial 20% Hydrogen and methane blends can be used with the existing gas grid infrastructure, and water heaters. Rinnai water heaters are 30% blend ready now, meaning that there are no technical adjustments required when Hydrogen blends start entering the network.
- **Low to Zero Carbon:** the initial 20% blends will reduce carbon across the estate of gas appliances by 7% and when 100% Hydrogen is available this will reduce carbon to zero. Rinnai has advanced product development that means appliances that are 100% ready will be strategically phased in to support grid conversion.
- **Instant heat:** provides on-demand heat and hot water, compared to low-temperature systems such as heat pumps and reducing the requirement for storage when using higher temperature technologies. This means there is no remedial or power upgrade works required to maintain the service provided by your gas fired system.
- **Next steps:** As the industry transitions to Hydrogen, the aim is to enable existing on-grid buildings to gradually begin using blended gas during the 2020s until 100% hydrogen is available in the 2030s.

Rinnai are members of the Northwest Hydrogen alliance and offer several CPD and training course available on this important future topic.



Hydrogen | Hybrids | Heat Pumps



To see how these combinations can impact your projects carbon footprint contact us today on **0300 373 0660** or scan the QR code.



Rinnai can offer the complete package, designed with capital expenditure, operational expenditure and carbon reductions in mind. We can supply the complete solution.

Simply scan the QR code and ask us a question!



Rinnai HD
CONDENSING

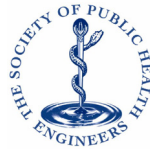
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