ADVECO
HOT WATER SPECIALISTS

# ASTUTE

## Intelligent Gas Fired Water Heaters For Commercial DHW Projects



# Astute®

## Intelligent Gas Fired Water Heaters From ADVECO




Astute® is a range of intelligent condensing gas fired water heaters designed to meet the stringent demands of commercial retrofit.

Astute is the smarter choice, providing universal connectivity, multiple flueing options and a host of intelligent functionality.

The patented double porcelain-coated helical or triple pass steel heat exchangers supply Astute with exceptional durability. And, with built-in smart monitoring technology Astute offers an easy to install, simple to maintain and cost-effective to operate water heater for commercial applications.

Gain peace of mind and keep business-critical hot water up and running with Astute.

# ADVANTAGE ASTUTE



**Triple-Pass Heat Exchanger**
Constructed with double porcelain-coated premium steel to minimise wear for extended tank life and maximised thermal efficiency (37 to 111kW)

**Helical Coil Exchanger**
Double porcelain-coated steel minimises corrosion for extended tank life and maximum thermal efficiency.

**Advanced Power Anodes**
Self-adjusting, non-sacrificial power anodes prevent wear with systematic monitoring of anode health and present remaining life on full-colour LCD unit display

**Multiple Water Connection Points**
Multiple water connections: top (1), front (2) and back (2) for 37 to 111 kW; top (2) and side (2) for 22 & 28kW variants to assist in replacing old water heaters, or water heaters from other manufacturers

**Variety of Flueing Options**
Ideal for replacement and new installs with a selection of the most versatile flueing choices

**Patented Built-in Condensate Neutraliser**
Built-in condensate neutraliser reduces water acidity for safe drainage at no additional cost

**LeakSense®**
Intelligent leak detection system provides early warning of the smallest leaks with real-time leak notifications as the water heater approaches end of life

**Integrated WiFi**
Gather performance updates and recieve alerts via full-colour LCD display

**EcoNet® Smart Monitoring**
Manage via your mobile device with the dedicated app

**Integrated BMS Connectivity**
Via BACnet (MS/TP)

A

FIVE YEARS TANK WARRANTY
TWO YEARS PARTS & LABOUR

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# Astute 22 to 28 kW

The Astute 22 and 28 kW gas water heaters are perfect for small businesses that need a smarter, more robust appliance.

A double porcelain-coated steel helical coil heat exchanger with minimum weld joint construction and a patented combustion system maximises durability and thermal efficiency.

With built-in smart monitoring technology and the industry's most accurate leak detection system for end of life protection, business owners can now manage and even prevent water heater problems, before they occur and avoid costly down-time.

Built with ease of retrofit in mind, Astute is the smart choice to keep businesses up and running.



GHE22-190
GHE28-190

GHE28-284



## 22 & 28kW - 190 litres

## 28kW - 284 litres




- Mulitple Water Connection For Easy Retrofit
- Versatile Flueing Options
- Helical Coil Heat Exchanger
- Built-in Condensate Neutraliser
- Protective Double-Porcelain Coating
- Advanced Power Anodes (3)
- LeakSense®
- Integrated Wi-Fi
- Integrated BMS Connectivity via BACnet (MS/TP)
- Smart Monitoring With EcoNet® App

**Plus**

- Health Alerts & Scheduling Capability
- Energy Usage Reports
- Water Usage Reports (optional)
- 5-Year Warranty (tank) and 2-years parts and labour

# ASTUTE 37 to 111 kW

The Astute 37 to 111 kW for large businesses with high hot water demands and high-efficiency requirements.

Full modulation optimises thermal efficiency and maximises energy savings.

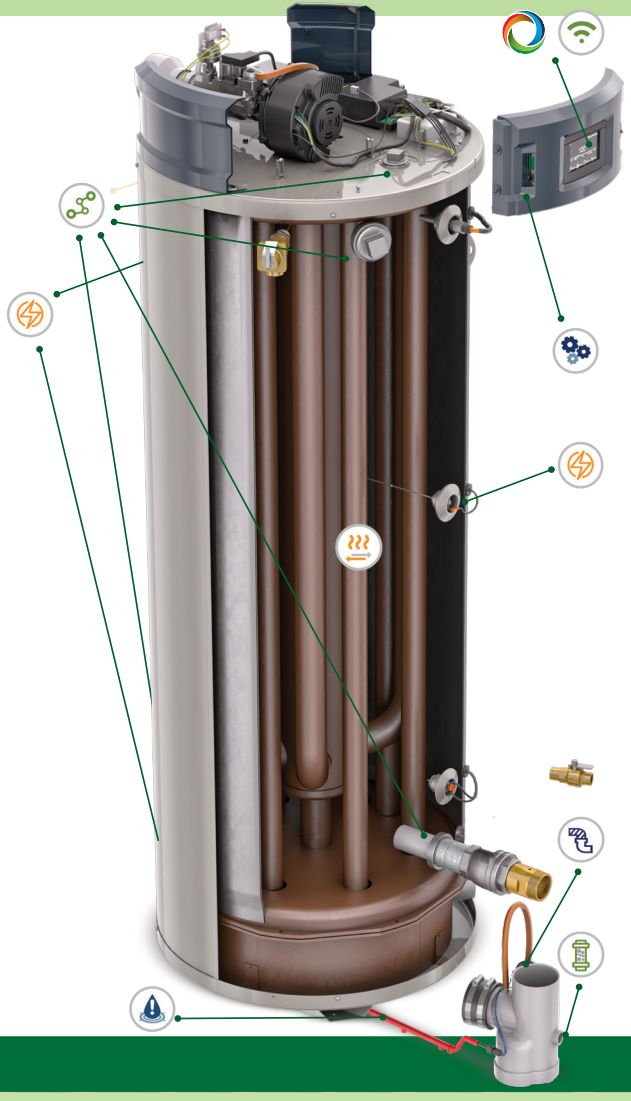
Astute 37 to 111kW water heaters are designed for durability, universal retrofit, faster service, and simplified maintenance for commercial applications.

With built-in smart monitoring technology and a patented, double porcelain-coated steel heat exchanger for extended tank life, Astute gives business owners peace of mind with assured year-round Domestic Hot Water (DHW).

GHE37 to 84 - 300
GHE37 to 111-380



## 37 to 84 kW - 300 litres
## 37 to 111 kW - 380 litres



- Mulitple Water Connection For Easy Retrofit
- Versatile Flueing Options
- Triple-Pass Heat Exchanger
- Built-in Condensate Neutraliser
- Protective-Double Porcelain Coating
- Advanced Power Anodes (3)
- LeakSense®
- Integrated Wi-Fi
- Integrated BMS Connectivity via BACnet (MS/TP)
- Smart Monitoring With EcoNet® App

**Plus**

- Health Alerts & Scheduling Capability
- Energy Usage Reports
- Water Usage Reports (optional)
- 5-Year Warranty (tank) and 2-years parts and labour

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# Meeting Buildings' Needs

In 2024 there were 1,755,000 recognised non-domestic buildings in England and Wales, 80% of which are expected to still be in use in 2050. The large proportion will have a gas grid connection and water heaters requiring replacement over the course of the next 10-15 years.

Despite the push for sustainable alternatives, problems with costs, infrastructure and design means many retrofit specifications are being revised back to gas when connections are available. More than half of organisations set their building budgets based on the past year's costs, an approach that does not accommodate major retrofit programmes.

As a result, when it comes to water heating, many organisations will opt for a like-for-like replacement as this is straightforward, better understood and lowers cost in terms of both capital and operational expenditure. Gas therefore remains the optimal choice for DHW for organisations with high, daily hot water demands, or site complexities such as a lack of external space which can curtail the use of heat pumps or solar thermal systems.

The ability to accept potential 20% hydrogen blend alternatives via the gas grid also means new highly efficient gas fired water heaters, such as Astute, are a sensible option for bridging to next-generation water heating technologies from the mid-2030s to the 2040s.

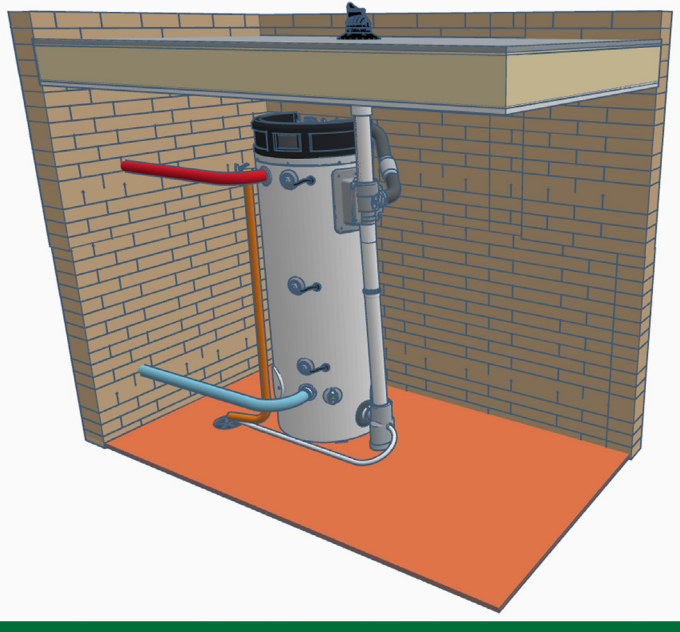


# Designed For Retrofit

Upgrading to new condensing gas-fired appliances remains an option without fear of breaching new building regulations, and Astute, designed for universal retrofit, offers multiple water connections and versatile flueing options to enable easy replacement of any water heater on the market.

**Multiple Connection Points** – Multiple water connections (inlet and outlet) at the top, side & back (37 to 111kW) top & side (22 to 28 kW) of the unit simplify installation for replacement of any model.

**Variety of Flueing Options**–room sealed concentric or B23 open flue.





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# Robust & Intelligent Water Heating

Maximise energy savings with up to 97% combustion efficiency and by optimising energy use by scheduling water heating for when it is most needed.

Astute proves robust and reliable, even in the most corrosive soft water areas, making it a cost-effective alternative to more expensive stainless steel water heaters.

Steel helical heat exchanger (22 to 28 kW) or patented triple pass steel heat exchangers (37 to 111 kW) with a minimum of weld joints. Heat exchanger and tank are double porcelain coated to minimise wear for extended tank life and maximum thermal efficiency.

The built-in condensate neutraliser reduces water acidity for safe drainage.



# Advanced Diagnostics & Connectivity

Advanced diagnostics allow for proactive, ongoing self-monitoring of Astute's most vital components. By monitoring the systematic health of the Astute, any potential issues are quickly detected.

Astute can optionally be equipped with reporting of energy and water usage for improved operational management.

Self-adjusting, non-sacrificial power anodes provide systematic monitoring of anode health and remaining life on full-colour LCD unit display.

Preventative alerts and maintenance reminders help to extend the life of the tank by up to five years longer when compared to similar specified appliances.

Astute also offers integrated building management systems (BMS) connectivity via BACnet (MS/TP) for system monitoring and alerts.



# ECONET® Smart Energy

EcoNet® Smart Monitoring Technology with Integrated WiFi
Exclusive technology provides performance updates and alerts via mobile devices and full-colour LCD display.

## Real-Time Alerts

Remotely monitors tank health and provides more control with the ability to receive real-time and preventative maintenance alerts to learn immediately about any service needs or unexpected leaks for multiple sites via the EcoNet App

## Smart Monitoring

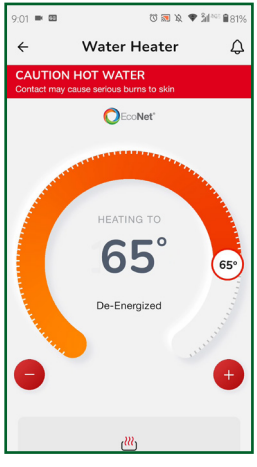
Exclusive technology provides both performance updates and alerts in addition to monitoring the unit's most vital components remotely on a mobile device via the EcoNet App

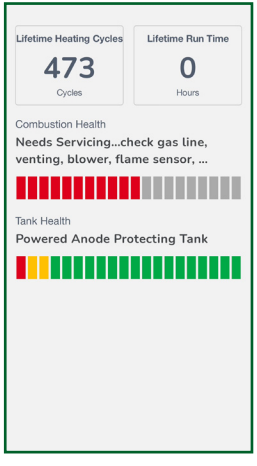
## Energy Saving

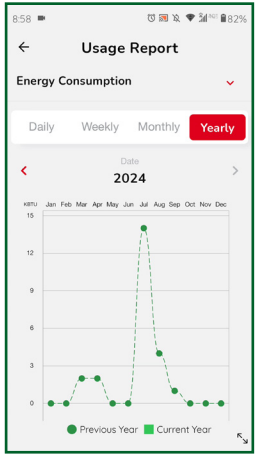
Energy-saving scheduling feature adjusts to heat water only during peak operating hours when your business needs it most

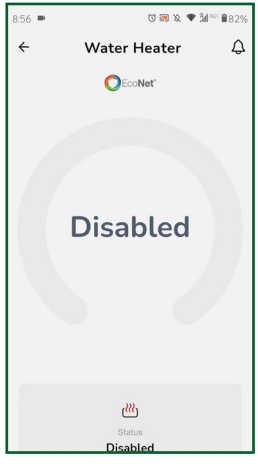
## Remote Customisation

Allows the updating of settings via the EcoNet App to customise the tank's operation based on your business' needs.



# LeakSense®

Available as standard on all Astute models, LeakSense® is an intelligent, always on, leak detection system.

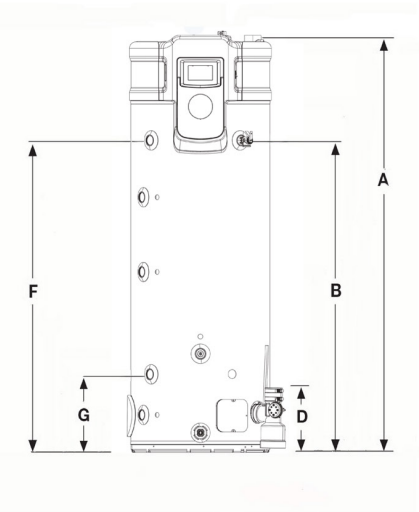
LeakSense is capable of catching the smallest of leaks in as little as 15 seconds. The Astute then issues real-time leak notifications via the EcoNet® app, and a warning on the appliance's LCD display.

Designed to address issues typically experienced after 12-15 years of continuous operation, if an alert is issued for the first signs of a possible leak owner/operators can begin planning for replacement without unwarranted or unexpected downtime, assuring continuity of business -critical DHW services.

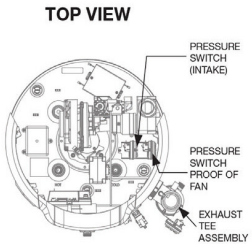


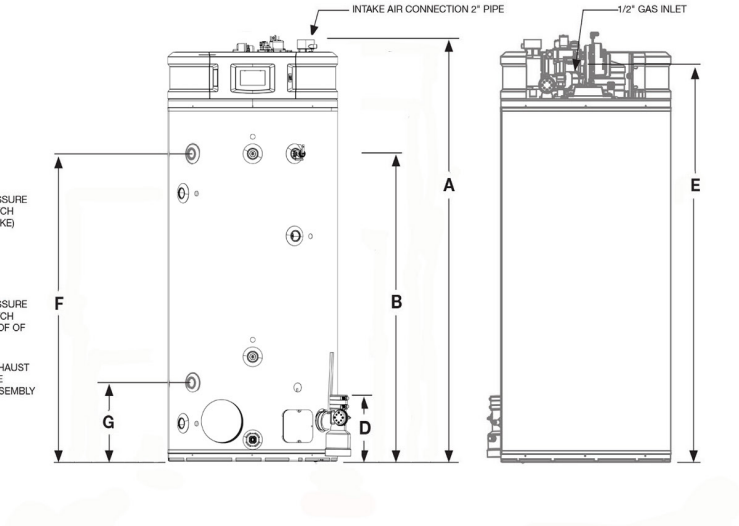



# Dimensions




ASTUTE GHE 22 & 28 / 190

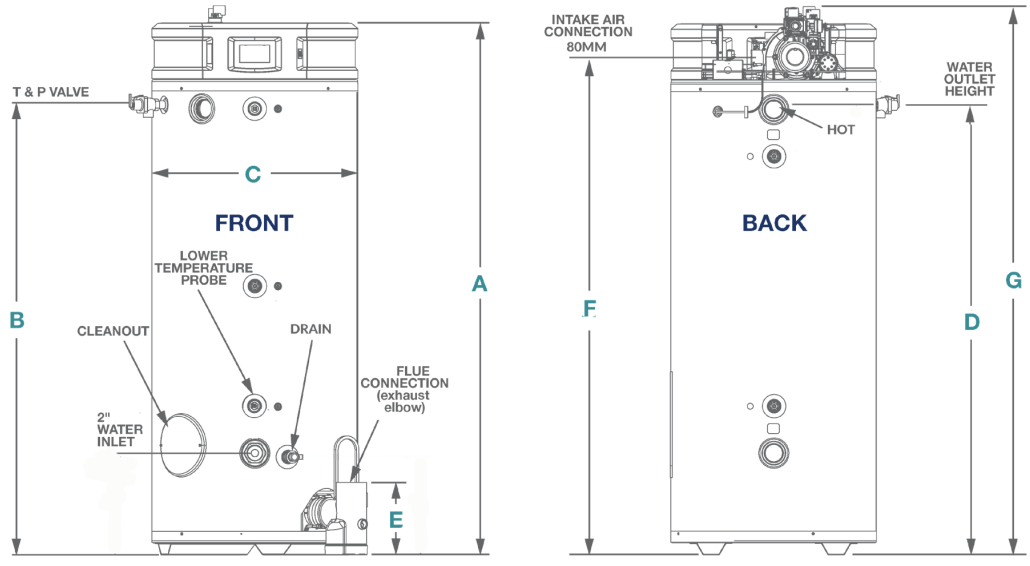



ASTUTE GHE 28 / 284

| MODEL SIZE LITRES | UNITS | HEIGHT A | HT. TO SIDE T&P B | DIAM. C | EXHAUST CONN. D | HT. TO GAS CONN. E | SIDE OUTLET F | SIDE INLET G |
|---|---|---|---|---|---|---|---|---|
| 190 | MM | 1632 | 1219 | 533 | 229 | 1534 | 1219 | 305 |
| 284 | MM | 1582 | 1187 | 667 | 229 | 1534 | 1187 | 305 |

# Dimensions




**ASTUTE GHE 37-84/300**
**ASTUTE 37-111/380**

| MODEL SIZE LITRES | UNITS | HT. TO GAS CONN. A | HT. TO SIDE T&P B | DIAM. C | HT. TO WATER OUTLET D | HT. TO FLUE CONN. E | HT. TO AIR INTAKE CONN F | HEIGHT G |
|---|---|---|---|---|---|---|---|---|
| 300 | MM | 1724 | 1459 | 668 | 1536 | 269 | 1616 | 1780 |
| 380 | MM | 1956 | 1695 | 668 | 1773 | 269 | 1846 | 1969 |

# Range Specifications

| Technical Specifications | | ASTUTE GHE22-190 | ASTUTE GHE28-190 | ASTUTE GHE28-284 | ASTUTE GHE37-300 | ASTUTE GHE45-300 | ASTUTE GHE56-300 | ASTUTE GHE84-300 |
|---|---|---|---|---|---|---|---|---|
| Heat Input (Gross) | kW | 22.7 | 29.5 | 29.5 | 38.8 | 47.7 | 59.2 | 88.8 |
| Heat Output (Gross) | kW | 22 | 28 | 28 | 37 | 45 | 56 | 84 |
| Combution Efficiency (Gross) | % | 97% | 95% | 95% | 95% | 94% | 95% | 95% |
| Storage Capacity | L | 189 | 189 | 284 | 303 | 303 | 303 | 303 |
| Gas Inlet Size | | 1/2" BSP F | 1/2" BSP F | 1/2" BSP F | 3/4" BSP F | 3/4" BSP F | 3/4" BSP F | 3/4" BSP F |
| Gas Inlet Pressure (Natural Gas / LPG) | mbar | 17-25 / 25-45 | | | | 17-25 / 25-45 | | |
| Gas Flow Rate (Natural Gas) | $m^3/h$ | 2.1 | 2.7 | 2.7 | 3.5 | 4.3 | 5.4 | 8.1 |
| DHW Peak Hour Flow ΔT=50°C | L | 527 | 630 | 707 | 881 | 1018 | 1206 | 1686 |
| DHW cont. recovery ΔT=50°C | L/h | 377 | 480 | 480 | 634 | 771 | 960 | 1440 |
| Power Supply | V/Hz/A | 230/50/0.5 | | | | 230/50/2.0 | | |
| Working Pressure | bar | 6.5 (standard equipment) | | | | 6.5 (standard equipment)<br>10 (with PN10 high pressure kit) | | |
| Flue Sizes and Lengths<br>Max. 6 bends<br>Concentric: -1.5m/45°, -2.5m/90°<br>Parallel: -1m/45°, -2m/90° | B23 | 80/125mm PP: 15m | | | | 80/125mm PP: 15m; 100/150mm PP: 40m | | |
| | C13/C33 | 80mm PP: 18m inlet, 23m outlet | | | | 80mm PP: 18m inlet, 23m outlet | | |
| | C53 | 100mm PP: 36m inlet, 41m outlet | | | | 100mm PP: 36m inlet, 41m outlet | | |
| Weight Empty / Full | kg | 102/291 | 102/291 | 115/399 | 256/559 | 256/559 | 256/559 | 256/599 |
| Dimensions H x D | mm | 1632 x Ø533 | | 1582 x Ø667 | | 1724 x Ø668 | | |
| Plumbing Connection Options | Cold Inlets<br>Hot Outlets | 1x 3/4" F (side), 1x 3/4" M (top)<br>1x 3/4" F (side), 1x 3/4" M (top) | | | | 2x 2" F (side)<br>2x 2" F (side), 1x 1 1/2" F (top) | | |
| Plumbing Connection Heights | Cold Inlets<br>Hot Inlets | 305<br>1219 | | 305<br>1187 | | 330<br>1536 | | |
| Standard Unvented kit | | WUV75/18 | | | | WUV75/18 | | |

| Technical Specifications | | ASTUTE GHE37-380 | ASTUTE GHE45-380 | ASTUTE GHE57-380 | ASTUTE GHE70-380 | ASTUTE GHE84-380 | ASTUTE GHE97-380 | ASTUTE GHE111-380 |
|---|---|---|---|---|---|---|---|---|
| Heat Input (Gross) | kW | 38.8 | 47.7 | 59.2 | 74.0 | 88.8 | 103.6 | 116.9 |
| Heat Output (Gross) | kW | 37 | 45 | 57 | 70 | 84 | 97 | 111 |
| Combustion Efficiency (Gross) | % | 95% | 94% | 96% | 95% | 95% | 94% | 95% |
| Storage Capacity | L | 379 | 379 | 379 | 379 | 379 | 379 | 379 |
| Gas Inlet size | inch | 3/4" BSP F | 3/4" BSP F | 3/4" BSP F | 3/4" BSP F | 3/4" BSP F | 3/4" BSP F | 3/4" BSP F |
| Gas Inlet Pressure (Natural Gass / LPG) | mbar | 17–25 / 25-45 | | | | | | |
| Gas Flow Rate (Natural Gas) | $m^3/h$ | 3.5 | 4.3 | 5.4 | 6.7 | 8.1 | 9.4 | 10.6 |
| DHW Peak Hour Flow ΔT=50°C | L | 992 | 1059 | 1265 | 1488 | 1728 | 1951 | 2191 |
| DHW cont. recovery ΔT=50°C | L/h | 634 | 771 | 977 | 1200 | 1440 | 1663 | 1903 |
| Power Supply | V/Hz/A | 230/50/2 | | | | | | |
| Working Pressure | bar | 6.5 (standard equipment) / 10 (with PN10 high pressure kit) | | | | | | |
| Flue Sizes and Lengths<br>Max. 6 bends<br>Concentric: -1.5m/45°, -2.5m/90°<br>Parallel: -1m/45°, -2m/90° | B23 | 80mm PP: 41m; 100mm PP: 56m | | | | | 80mm PP: 19m; 100mm PP: 30m | |
| | C13/C33 | 80/125mm PP/PP: 15m;<br>100/150mm PP/Galv: 40m | | | | | 80/125mm PP: 15m<br>100/150mm PP/Galv: 40m | |
| | C53 | 80mm PP: 18m inlet, 23m outlet;<br>100mm PP: 36m inlet, 41m outlet | | | | | 80mm PP: 15m inlet, 19m outlet<br>100mm PP: 21m inlet, 25m outlet | |
| Weight Empty / Full | kg | 295/674 | 295/674 | 295/674 | 295/674 | 295/674 | 295/674 | 295/674 |
| Dimensions H x D | mm | 1959 x Ø668 | | | | | | |
| Plumbing Connection Options | Cold Inlets<br>Hot Outlets | 2x 2" F (side)<br>2x 2" F (side), 1x 1 1/2" F (top) | | | | | | |
| Plumbing Connection Heights | Cold Inlets mm<br>Hot Outlets mm | 330<br>1773 | | | | | | |
| Standard unvented kit | | WUV100/25 | | | | | | |

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HOT WATER SPECIALISTS

EXPERTLY ENGINEERED FOR YOU



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