

A new approach to heating water, a new benchmark in safety & performance



## CFEWH Series 3, 5 & 6

Point-of-use and  
Whole of House Solution

Electric Tankless Water Heaters



- Next generation technology
- On demand, continuous Flow
- Market leading temperature control
- Advanced energy control
- Disinfects the water
- No scale due to heating
- Scald prevention on all models
- Flexible installation and space saving

# Market leading safety, performance and flexibility

MicroHeat's direct energy transfer technology is applied to on-demand, continuous-flow, electric tankless water heating to deliver world first safety, temperature and energy control. Unlike conventional electric water heating, MicroHeat's technology does not rely on heating elements. Instead uses MicroHeat's patented direct energy transfer technology via the use of electrodes. This technology exploits the natural electrically conductive properties of water. Hence, does not suffer the same failures experienced by existing heating element technologies, such as overheating, dry firing, scale heating element burn out. The appliance delivers hot and warm water safely via an advanced digital control system that repeatedly monitors and reacts to changes in the characteristics of the water being heated many times a second. The technology does all that while simultaneously disinfecting the water by killing bacteria and viruses.

**Next generation technology** – The Technology combines molecular (ohmic) heating with advanced digital control technology. MicroHeat microprocessor includes highly complex algorithms and safety protocols that incorporate over 10,000 lines of code, making MicroHeat products the smartest and electronically the safest in any market.

**Market leading temperature control** - The Technology calculates the exact amount energy required every 100<sup>th</sup> of a second based on the water temperature increase required and flow rate. Ensuring the output temperature is accurate and safe even when water flow and or water pressure changes.

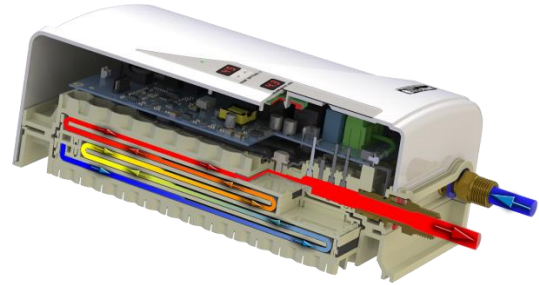
**Water disinfection** - The Technology disinfects the water by generating Hydroxyl Radicals formed naturally from the water. The electrode technology used allows the combination of voltage and water to produce the Hydroxyls at the electrode surface. Hydroxyls kill bacteria and viruses before converting back to water in milliseconds. Absolutely safe, clean and natural, without chemical additives.

**Water pressure and flow flexibility** – The appliance does not require complex pressure and flow management to protect the heating method as other products do. There is no low flow restriction and units operate either in open or closed outlet configurations, with gravity feed or low/high pressure pumps or mains pressure. Making application more flexible than other products on the market.

**Underfloor hydronic heating** – MicroHeat units can be installed in the underfloor hydronic heating circuits as the water heating method. This without the need for external cold water mixing, Accurate temperature control delivers the temperature required in the reticulated circuit by digitally controlling the power accordingly ensuring a safe and reliable, zoned hydronic system.

**Boosting existing water heating systems** – All units can accept hot water up to 140°F at the inlet. If the set temperature of the unit is less than the hot water coming in, the unit will simply not heat. The units can be used as a booster at the end of a long run to reduce heated water wait times, or as a pre/post booster combined with storage tanks.

**Thermo-mixing or tempering valves not required** – MicroHeat accurately applies only the energy needed to deliver the set temperature without dangerous hot water spiking that can cause scalding. Making appliances ideal for applications where tepid and scald free hot water is required by regulation. This delivers a maintenance free water heating capability without the need for costly tempering valves or thermo-mixing valves.



**No scale** - The Technology uses the water as the energy transfer method, unlike traditional heat exchange technology that have extremely hot heating elements. As such, the electrodes used will always only attain the same temperature as the heated water, that prevents scale forming on the electrodes. Scale forms on the very hot heating element surface when the heating element transfers its heat into the colder body of water. Since scale does not form on the electrodes, operational efficiency and product robustness is maintained.

**Hard water models** – Product models are available for hard water environments where other water heating product will fail due to excessive scale that causes heating element burnout. Unlike other products that fail, MicroHeat units will continue to operate.

**No dry firing / burnout** - The Technology uses the water as the energy transfer method, unlike traditional heat exchange technology that use resistance heating elements. Heating element failure will occur if the unit is turned on without water, insufficient water, where there is air in the water. Where MicroHeat is concerned, even if there is no water or less water than required, there's no opportunity for failure.

**Voltage fluctuation** – MicroHeat applies the power to the water differently water heaters that use fixed resistance heating elements. As such MicroHeat product is immune to voltage fluctuation that would otherwise cause traditional heating elements to fail. In addition, when used in lower voltage installations such as 208VAC, the system will continue to apply the rated power.

**Whole house solutions** – MicroHeat units are able to be installed in tandem or can be manifolded in parallel in any power configuration to deliver whole house flow rate requirements. The power draw will be controlled to suit the heated water requirement of either single or multiple hot water fixtures.

**Power adjustment to reduce energy use** – All units have a feature that enables the installer/plumber to reduce the rated power after installation. This can assist the consumer to reduce energy consumption if so required.



# MicroHeat's leading installation flexibility

MicroHeat's Electric Tankless Water Heaters can be installed into more diverse installations than other Electric Tankless Water Heaters. MicroHeat's direct energy transfer method of heating water does not use heat exchange technology, hence does not experience thermal inertia. This technology advantage results in immediate and predictive temperature control. The list below tables mains water or gravity fed water supply applications or storage tank heating applications that the full range of MicroHeat products are ideally suited to.

## Applications

- |   |   |
|---|---|
| Handwashing   | Hospital/Aged Facility showers and hand basins    |
| Kitchen, bar, utility sinks                         | Fixed and variable flow                           |
| Single bathroom dwellings - warmer climates         | Ideal for multiple sensor or metering faucets     |
| Eyewash fountains - 90°F (unit can be software set) | Multi-outlet                                      |
| Fixtures without cold water mixing                  | Double flow rate by installing in tandem/parallel |
| Bidets  | Low flow showers                                  |
| Underfloor hydronic heating                         | Reticulation circuits                             |
| Boosting existing water heating supplies            | Boosting points off warm water ring mains         |
| Building/facilities management system capable       | Heats water from water tanks                      |
| Low pressure pump water supplies                    | Heats water from gravity fed systems              |
| Preheating water in advance of the central system   | Warm water for micro food processing              |
| in long hot water runs                              | Commercial hair washing                           |
| Preheat for dishwashers in hospitality              |   |
| Photographic dark room warm water                   |   |

MicroHeat's Electric Tankless Water Heaters have been installed and validated across the full breath of the building industry and DIY markets as follows.

## Residential | Commercial | Industrial | Institutional | Public

- |                   |                              |                                  |                       |
|-------------------|------------------------------|----------------------------------|-----------------------|
| Point-of-use      | Photographic darkroom        | Office buildings                 | Stores                |
| Bathroom basins   | Public and disabled ablution | Gas stations                     | Hotels/Motels         |
| Kitchen sinks     | Low/Medium/High rise         | Townhouses                       | Recreational Vehicles |
| Laundry areas     | Warehouses                   | Restaurants                      | Schools               |
| Showers           | Manufacturing facilities     | Production tool heating circuits | Kindergartens         |
| Whole of house    | Universities                 | Cabins/cottages                  | Sheds                 |
| Outdoor BBQ areas | Gyms                         | Factories                        | Micro bakeries        |
| Pool side studios | Hair salons                  | Churches                         | Farms                 |

Examples of installations showing how compact the units are and indicating that venting is not required.



# MicroHeat CFEWH Range Specifications

## CFEWH Series 3 Range of Water Heaters

The Series 3 is the newest product from MicroHeat. This plug and play, point-of-use product range is targeted at the low flow and DIY markets, yet has additional flexibility for global markets. The product can be installed into power grids across the world without changing the unit configuration. Meaning the any of the Series 3 products can be connected to either Live/Live/Ground or Live/Neutral/Ground electricity power supplies. The unit has in built Bluetooth® connectivity making it smart phone compatible for temperature setting, energy usage and diagnostics.



All units have a digital display with temperature setting capability that allows the user to set the desired water temperature in single degree increments.

ITEM	MODEL		
	CFEWH Series 3-3	CFEWH Series 3-4	CFEWH Series 3-5
Wattage	2.4 kW	3.6 kW	4.8 kW
Phase Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Voltage	208 / 240 V	208 / 240 V	208 / 240 Volt
Amperage	11 / 10 A	17 / 15 A	23 / 20 A
Min. recommended circuit breaker size	15 / 10 A	20 / 15 A	25 / 20 A
Min. recommended wire size	14 AWG	12 AWG	10 AWG
Max. flow rate based on temperature increase	+ 9°F (5°C)	1.8 gpm (6.9 l/min)	2.72 gpm (10.3 l/min)
	+ 18°F (10°C)	0.9 gpm (3.4 l/min)	1.36 gpm (5.2 l/min)
	+ 27°F (15°C)	0.6 gpm (2.3 l/min)	0.9 gpm (3.4 l/min)
	+ 34°F (20°C)	0.45 gpm (1.7 l/min)	0.68 gpm (2.6 l/min)
	+ 48°F (27°C)	0.33 gpm (1.3 l/min)	0.50 gpm (1.9 l/min)
Switch on flow rate	0.26 GPM (1.0 l/min)		
Temperature settable	+ / - 1°F		
Maximum temp. settings available	Tepid Water 68 - 98°F (20°C - 37°C) / Hot Water 122°F (50°C) / 140°F (60°C)		
Weight	7.7 lb (3.5 kg)		
Dimensions	L 13.32" (33.8 cm) x W 6.34" (16.1 cm) x H 3.44" (8.7 cm)		
Maximum inlet temperature	140°F (60°C)		
Working pressure	116 psi (8 bar)		
Plumbing connection	½" NPT		

For specifications on the CFEWH Series 5 and 6 refer following page.

## Estimates of market flow rates for various fixture types

The below flow rates are indicative only and based on a single fixture. The map shows average low ground water temperatures across the US. To determine model and flow rates refer to the specification tables for temperature increase and add to the ground water temperature relevant to the area in the US.

If there are multiple fixtures required to deliver the full flow at the same time, then add the flow rate estimates together.

### Single Lavatory Sink – Outlet temp. 90°F

Flow rate range (0.5 – 1.5 gpm)

### Shower – Outlet temp. 110°F

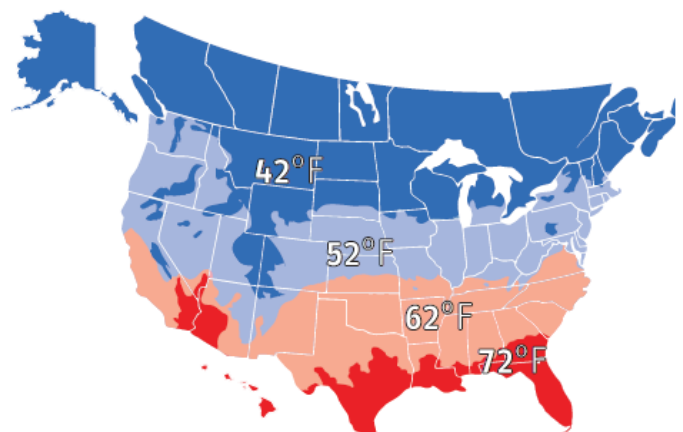
Flow rate range (1.0 – 2.5 gpm)

### Kitchen Sink – Outlet temp. 120°F

Flow rate range (1.0 – 2.2 gpm)

### Utility / Janitor's Sink – Outlet temp. 120°F

Flow rate range (1.0 – 2.2 gpm)



## CFEWH Series 5 and 6 Range of Water Heaters

The MicroHeat Series 5 and 6 product range can be installed in point-of-use and whole of house applications across the building and construction industries. The units can be installed individually or in tandem/parallel to double the overall available flow rate delivered to the property.

All units have a digital display with temperature setting capability that allows the user to set the desired water temperature in single degree increments.



ITEM		MODEL					
		CFEWH Series 5-6	CFEWH Series 5-8	CFEWH Series 5-9	CFEWH Series 5-10	CFEWH Series 6-11	CFEWH Series 6-13
Wattage		6.0 kW	7.2 kW	8.4 kW	9.6 kW	11 kW	13 kW
Phase Frequency		50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Voltage		208 / 240 V	208 / 240 V	208 / 240 V	240 V	208 / 240 V	240 V
Amperage		29 / 25 A	35 / 30 A	40 / 35 A	40	53 / 46 A	54 A
Min. recommended circuit breaker size		30 / 25 A	35 / 30 A	40 / 35 A	40 A	55 / 50 A	55 A
Min. recommended wire size		10 AWG	8 AWG	8 AWG	8 AWG	6 AWG	6 AWG
Max. flow rate based on temperature increase	+ 18°F (10°C)	2.27 gpm (8.6 l/min)	2.72 gpm (10.3 l/min)	3.18 gpm (12.0 l/min)	3.63 gpm (13.8 l/min)	4.16 gpm (15.8 l/min)	4.49 gpm (17 l/min)
	+ 48°F (27°C)	0.84 gpm (3.2 l/min)	1.0 gpm (3.8 l/min)	1.17 gpm (4.5 l/min)	1.34 gpm (5.1 l/min)	1.54 gpm (5.8 l/min)	1.82 gpm (6.9 l/min)
	+ 63°F (35°C)	0.65 gpm (2.5 l/min)	0.78 gpm (2.9 l/min)	0.9 gpm (3.4 l/min)	1.04 gpm (3.9 l/min)	1.19 gpm (4.5 l/min)	1.4 gpm (5.3 l/min)
	+ 81°F (45°C)	0.5 gpm (1.9 l/min)	0.6 gpm (2.3 l/min)	0.7 gpm (2.7 l/min)	0.8 gpm (3.1 l/min)	0.92 gpm (3.5 l/min)	1.09 gpm (4.1 l/min)
Switch on flow rate		0.39 GPM (1.5 l/min)					
Temperature settable		+ / - 1°F					
Maximum temp. settings available		Tepid Water 68 - 98°F (20°C - 37°C) / Hot Water 122°F (50°C) / 140°F (60°C)					
Weight		10 lb (4.7 kg)					
Dimensions		L 12.4" (31.5 cm) x W 8.3" (21 cm) x H 4.7" (12 cm)					
Max. inlet temperature		140°F (60°C)					
Working pressure		116 psi (8 bar)					
Plumbing connection		½" NPT and ¾" NPT models available					

## Installing the CFEWH in Tandem or Parallel

CFEWH units can be installed in Tandem or Parallel to double the available centralised hot water flow, providing whole of house hot water solutions.

Using the table above, maximum achievable flow rates can be doubled based on the water temperature increase required. For example, if a flow rate of 2gpm with a temperature increase of 81°F is required, two (2) Series 6-13 units can be installed in either tandem or parallel. Noting the electrical supply required.

Or combine the models as required to deliver the flow rate needed, and simply add the power rating. For example. if a flow rate of 2.6gpm with a temperature increase of 63°F is required, combine a Series 6-11 with a Series 6-13 in ether tandem or parallel. Noting the electrical supply required.