

Petrie

# BAMWA

BATCH AIR & MICROWAVE ASSISTED OVEN



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TECHNOLOGIES LIMITED

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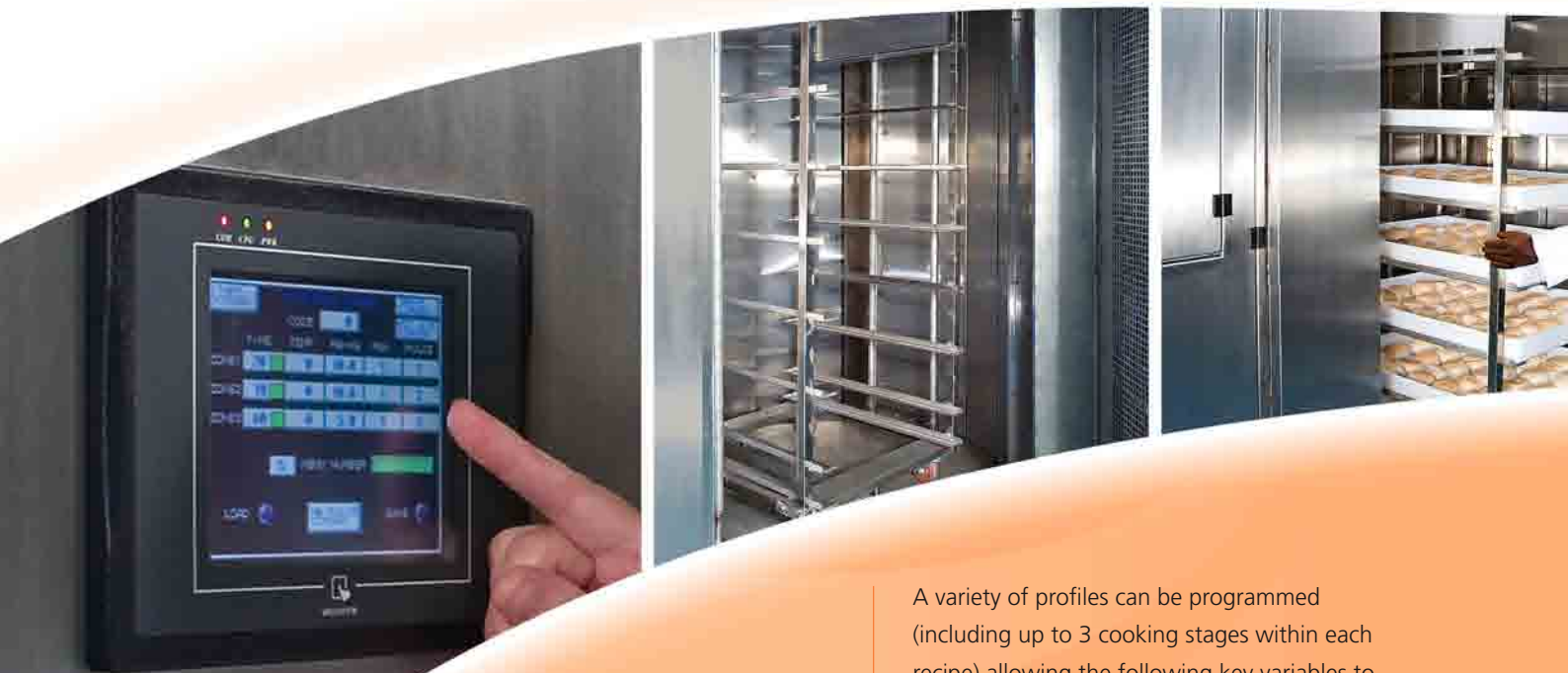
## BATCH AIR & MICROWAVE ASSISTED OVEN

The innovative Petrie Batch Air & Microwave Assisted (BAMWA) oven is designed to enhance the thermal performance and flexibility of batch rotating ovens, using microwave energy to make heating fast, controllable and energy-efficient.

As a result of many years of research and development in the practical application of dielectric heating, this new oven sets the industry standard for use in a wide range of commercial processes.

Dielectric heating (microwave energy/radio frequency energy) offers the advantage of even and consistent volumetric heating, combined with high controllability and low energy consumption.

The oven also benefits from being similar in operation to conventional batch rotating ovens. The product is placed into microwave-proof cookware, loaded onto a stainless steel trolley and rolled into the oven via a full height access door. In addition, the oven may also be used as a conventional baking oven utilising standard metallic cookware, providing that the microwave input has been disabled.



Rapid product switching is a key benefit, with operators having the ability to select from up to 10 user-defined cooking profiles stored within the oven's programmable logic controller (PLC) via a touch screen mounted on the front of the oven.

A variety of profiles can be programmed (including up to 3 cooking stages within each recipe) allowing the following key variables to be set:

- **Air speed**
- **Air temperature (ambient to 250°C)**
- **Process time**
- **Microwave power level (0-20kW)**
- **Microwave pulsing**

## Advantages

The use of microwave power in combination with convection heating offers significant advantages to the operator, for example:

- **Reduced process time (reductions of 10 to 70% are typical dependent upon application).**
- **Reduced energy consumption due to improved thermal efficiency and reduced process time.**
- **Greater yields.**
- **Wide range of process applications from food to polymer materials.**

In addition, the use of microwave energy allows rapid creation and development of novel and new products.



## Options

The BAMWA oven is completely flexible for convection heating by electric or natural gas heating and comes supplied with one stainless steel trolley.

Additional options are:

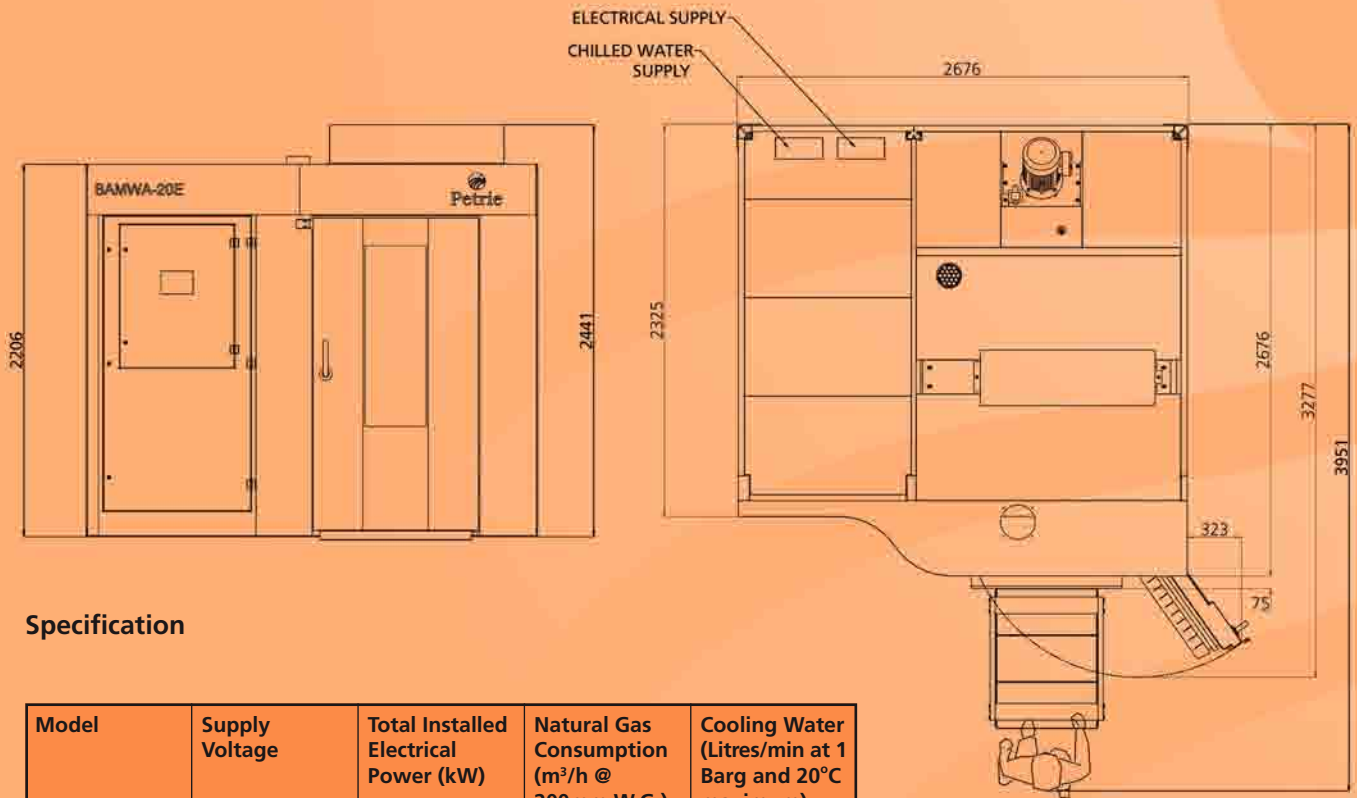
- **A range of high temperature, microwave compatible cookware.**
- **Water injection module to facilitate humidity control.**



## Installation

The BAMWA oven is supplied in two modules (Power & Control, Main Oven) to assist transport through factory areas with restricted access. Once the two modules have been transported to the final location, they are simply bolted together to form a single unit.

The oven is an extremely adaptable unit, with an overall weight of less than 3,000kg depending on option, and can be accommodated in a variety of locations, including multi-story buildings.



### Specification

Model	Supply Voltage	Total Installed Electrical Power (kW)	Natural Gas Consumption (m <sup>3</sup> /h @ 200mm W.G.)	Cooling Water (Litres/min at 1 Barg and 20°C maximum)
BAMWA-20E	400V/3Ph	90.0	–	6.0
BAMWA-20G	400V/3Ph	35.0	5.7	6.0

### Company overview

Petrie Technologies, a member of the NIS Group of companies based in Chorley, UK, has specialised in the design, development and manufacture of process heating systems since 1850. As a result, we are now recognised as market leaders in the practical application of dielectric heating for commercial use, and have developed a range of innovative products used by many organisations throughout the world.

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