GW2145

GW2145 TECHNICAL FEATURES	All versions
Electronic control	microprocessor
Standard programs stored	15, of which 9 pre-set and 6 modifiable
Clock and calendar	yes
Reprogrammable phases	10
Chamber internal temperature	from room temperature to 95°C
Accuracy	0,1°C
Temperature sensors in chamber	1 x PT 1000 CLASS B IEC 60751
Water heating	electrical, 2,3 kW on single-phase version
Steam condenser	no
Display	4 digits with segments and communication led icons
Detergent dosing system	max. 1 powder dispenser or 1 pump for liquid detergent
Detergent level sensor	optional
Liquid acid pump	yes
Safety lock	yes, with electromagnetic release and automatic opening
Safety devices	safety thermostats, door interlock
Alarm display	30, acoustic and visual
Troubleshooting menu	yes, using PC connection
AUXILIARY FUNCTIONS	
Traceability	storage of data for 100 most recently run programs
RS232 serial port for PC connection	yes, for connection to PC or printer
Cycle storage	yes, TRACELOG/Excel format
Cycle file download	yes, TRACELOG format
WATER SUPPLY	
Cold water inlet	yes
Demineralised water inlet	yes, < 20 µS/cm
Demineralised water booster pump	optional
Water softener incorporated	yes
Recirculation pump	200 l/min
DIMENSIONS LxDxH mm	
Overall (with built-in top)	450x620x850(830)
Chamber	380x480x590
Net weight (Kg)	61
STAINLESS STEEL	
Wash chamber	AISI 316L
Exterior covering	AISI 304
ELECTRICAL POWER SUPPLY	
Voltage/power	1/N/PE 230V ~ 50Hz 3,3 kW
NOISE LEVEL	max 50 dB

The machine bodies in the BASIC series must be equipped with racks and supports most suited to the specific treatment requirements of the different types of glassware used in the laboratory.
The various possible machine/rack configurations described below are meant as a guide to help you choose the most appropriate solution for the type of glassware used.

TWO SPRAYING LEVELS

This configuration has two washing levels with spray arms where supports for all types of glassware can be located (beakers, test tubes, flasks, plates and various other materials).

Photo:
D-CS1 upper rack: SB9 straight tine support for beakers and flasks to the left, SB14 spring tine support to the right. Each support occupies ½ the rack for machines with width of 45 cm.
D-CS2 lower rack: SB28 universal spring support for beakers and flasks, standard on 60-cm models, occupying all of the lower base but cannot be positioned on the upper rack.

TWO SPRAYING LEVELS

This configuration has two washing levels with spray arms where supports for all types of glassware can be located (beakers, test tubes, flasks, plates and various other materials).

Photo:
D-CS1 upper rack: the rack is fitted with 2 supports equipped with compartments (CP192 and CP222) to wash test tubes.
D-CS2 lower rack: SB9 support for beakers and flasks to the left, SB14 spring a support to the right. Each support occupies ½ the rack for machines with width of 45 cm to optimise the load on the rack.

ONE INJECTION LEVEL

The LM24 is secured to the lower D-CS2 rack using two special fastenings. This solution is suitable for washing narrow-necked glassware of different sizes. It has a capacity of 24 items and can wash both large items and small flasks or bottles. ULB 40 adaptor nozzles for pipettes can also be fitted. The maximum height of glassware is 500 mm.

Photo:
LM24 support

TWO SPRAYING/INJECTION LEVELS

In this configuration there are two washing levels: lower level with spray arms to hold various supports (beakers, test tubes, flasks). The D-CS1 upper rack is fitted with the 24-position LM22S injection base. This configuration allows simultaneous washing of narrow-necked and other types of glassware.

Photo:
D-CS2 lower rack: SB9 support for beakers and flasks to the left, SB14 spring a support to the right. Each support occupies ½ the rack for machines with width of 45 cm to optimise the load on the rack.

ONE MIXED INJECTION LEVEL

This configuration allows simultaneous washing of narrow-necked glassware (flasks, and beakers) and 12 pipettes with a maximum height of 510 mm. This is an ideal solution for washing various types of glassware simultaneously without having to use dedicated separate racks with a greater capacity.

Photo:
LPM24 support

TWO SPRAYING/INJECTION LEVELS

In this configuration there are two washing levels: the upper level is fitted with the KP60 seventy-item base for centrifuge vials and test tubes. The lower level is free.

Photo:
D-CS1 upper rack: KP60 base.
D-CS2 lower rack: SB9 support for beakers and flasks to the left, SB14 spring a support to the right.

TWO INJECTION LEVELS

LM46 support consisting of two injection levels for a capacity of 46 items. This version maximises the injection washing capacity. The maximum height of glassware is 225 mm. Recommended for flasks (ISO1042) with volume of 5 to 200 ml, bottles (ISO 4796) up to 1000 ml and flasks up to 1000 ml.

Photo:
LM46 support composed of 22-positions on upper rack and 24-positions on lower rack.

Note: the configurations shown on these two pages are only available with models of 45 cm.

MACHINE OPTIONALS

ICRP

Supplementary celing sprayer made of stainless steel AISI 316L. Its operation improves the washing performance of glassware with complex shapes.

IC5090

On the basis of demineralized water conductivity used during the last rinse phase, it allows to detect any impurities and to activate also further rinse phases for achieving a perfect rinse with low conductivity.

WD-PRINTE

External printer.
WD-PAPER Thermal paper roll. Diameter 50 mm, width 57 mm.

WD-LAN

All models of Smeg's glassware-washers may be provided with an optional data communication card including a LAN port to connect the thermal disinfection washer to the local network.
The connection provides remote communication with the device due to the provided software, which then displays all the information given by thermal disinfection washer on your PC. All the operating parameters can also be changed without having to do so directly on the machine.

PAD

Booster pump for non-pressurised demineralised water.
Allows feeding the machine with demineralised water drawn from a non-pressurised tank positioned at a minimum height of 85 cm from the ground.

PAD 2

Booster pump for non-pressurised demineralised water.
Allows feeding the machine with demineralised water drawn from a non-pressurised tank positioned on the ground.

ADU

Universal peristaltic pump for liquid additive
• For the dosing of a liquid additive, for ex: alcaline detergent, caustic soda or antifoam
• With st/steel suction tube
• Suitable for tanks of 2l, 5l, 10l

WD-VDS

Double discharge valve that allows separating and ducting the polluted wastewater from the first washing cycles from the final rinsing water. This wastewater separation device is composed of 1/2 inch valves with Viton membrane and valve opening is controlled by the machine microprocessor.

STAINLESS STEEL BASES AND FRAMES

B9040L

Base for 90 cm wide models only.
The base brings the machine loading level up to an ergonomic height approximately 70 cm from the ground. Entirely made of stainless steel. A detergent compartment with anti-drip bottom and front door with push-pull opening is integrated in the base.
Dimensions l x d x h = 900x530x400 mm
B6040L (not shown in the photo): for 60 cm wide models only.
Dimensions l x d x h = 600x530x400 mm

B9040QWC

Base with integrated demineralised water boiler. For 90 cm wide models only. A boiler is housed in the base to preheat the demineralised water to reduce cycle times.
Dimensions: l x d x h = 900x530x400 mm

T9040

Frame for 90 cm wide models only.
The frame brings the machine loading level up to an ergonomic height approximately 70 cm from the ground. The frame also facilitates cleaning the machine underneath. Entirely made of stainless steel.
Dimensions l x d x h = 900x530x400 mm
T6040 (not shown in the photo): frame for 60cm models only.
Dimensions l x p x h = 600x530x400 cm

To obtain high quality washing standards, it is fundamentally important to used correctly treated water. In the prewash, washing and neutralisation phases, softened water should always be used. Underbench models range have an efficient built-in water softner capable of reducing the hardness of the supply water so as to prevent the classic formation of whitish stains inside the chamber and on the instruments.
Smeg also supplies a range of high-performance WS water softeners which are compact and easy to install. Equally important is the rinsing of the instruments with demineralised water in order to eliminate any contaminants remaining in the washing chamber. For this purpose, Smeg has the compact and efficient WP3000 mixed resin bed demineraliser.

WP3000
RESIN COLUMN WATER PURIFIER
The WP3000 water purifier is used to produce deionised water at 0.8-1 μS/cm, suitable for the final rinsing of instrument washers. The system uses mixed bed resins (disposable) which can also retain silica. When the resins run out, they can simply be replaced with the MI700WP kit.
The resin cartridge is made out of stainless steel, as is the entire machine.

Net capacity of cartridge: 15 litres.
Dimensions: l x d x h = 300x600x850 mm.

MI700WP
Anion/cation mixed bed resins kit for the WP3000 water purifier. Total exchange capacity 42700 litres/°F* end of cycle at 5μS/cm (*Hardness in French degrees). Supplied with used resin disposal bag.

WS9E, WS11E, WS14E, WS17E
WATER TREATMENT SYSTEMS
The WSE series of appliances are technological water softeners capable of completely eliminating lime from water.
The resins are regenerated using normal sodium chloride.
Available in versions with flow rates of up to 2700 litres/hour.
The models are fitted with an electronically controlled head which can be programmed depending on the hardness of the water. They provide backflow regeneration based on the volume of water (bearing in mind the resin saturation rate) and proportional brine in order to optimise water and salt consumption.

	WS9E	WS11E	WS14E	WS17E
MAXIMUM FLOW RATE	1600 l/h (16.7 l/min)	1800 l/h (43 l/min)	2000 l/h (43 l/min)	2200 l/h (43 l/min)
NOMINAL FLOW RATE	1000 l/h (16.7 l/min)	1500 l/h (43 l/min)	1600 l/h (43 l/min)	1800 l/h (43 l/min)
RESIN CAPACITY IN LITRES	9	11	14	17
EXCHANGE CAPACITY (m³/°F)	54	66	84	102
CYCLE CAPACITY AT 40°F	1350	1650	2250	2700
PROGRAMMABLE RESIDUAL HARDNESS	0-10° F	0-10° F	0-10° F	0-10° F
REGENERATING AGENT TYPE	NaCl SALT	NaCl SALT	NaCl SALT	NaCl SALT
REGENERATING AGENT CONSUMPTION	0.9 kg/cycle	1.0 kg/cycle	1.2 kg/cycle	1.8 kg/cycle
DIMENSIONS ØxH (mm)	300 x 470 x 540	300 x 470 x 660	300 x 470 x 815	300 x 470 x 1070
SALT TANK DIMENSIONS L x P x H (mm)	INTEGRATED	INTEGRATED	INTEGRATED	INTEGRATED
CAPACITY LITRES (SALT)	about 15	about 20	about 30	about 40
CONNECTIONS	1"	1"	1"	1"

To achieve excellent washing results and optimise the thermal disinfection of laboratory instruments, specific detergents should be used. Smeg has a complete range of alkaline detergents (for use during the washing phase) and neutralising acid detergents (for use during the neutralisation phase) especially designed to guarantee efficient cleaning and optimise the efficiency of the final thermal disinfection phase.

ALKALINE DETERGENTS

ph 13,9 — **DETERGLASS:** universal alkaline powder detergent with phosphates without oxidizing surfactants and without chlorine compounds.
Application field: general chemistry, food analysis, organoleptic protein.
10 kg pack, 2-5 g/liter.

ph 13,1 — **DETERLIQUID C2:** liquid alkaline phosphates free detergent without oxidizing surfactants and without chlorine compounds. For the removal of proteins, environment, blood, albumin and serum.
Application field: general chemistry, food analysis, organoleptic, proteins, microbiology, virology, histology and cytology, dyes, organic and inorganic chemistry.
5 liter container, 2-4 ml/liter.

ph 12,5 — **DETERLIQUID D2:** liquid alkaline detergent with active chlorine, phosphate free and without surfactants. For the removal of environments, organic and mineral oil, grease, agar residuals, proteins.
Application field: microbiology, virology histology and cytology, dyes, inorganic and organic chemistry, petrol chemistry.
5 liter container, 2-4 ml/liter.

ph 11,5 — **DETERLIQUID SP:** liquid alkaline detergent without phosphates or chlorine compound.
For the removal of reactive inorganic chemistry and organic.
Application field: microbiology, inorganic and organic chemistry, petrol chemistry.
5 liter container, 2-4 ml/liter.

LIQUID ACID NEUTRALISERS

ph 2,5 — **ACIDGLASS P2:** organic phosphoric acid neutralizer.
Application field: general chemistry, inorganic and petrol chemistry
5 liter container, 2-3 ml/liter.

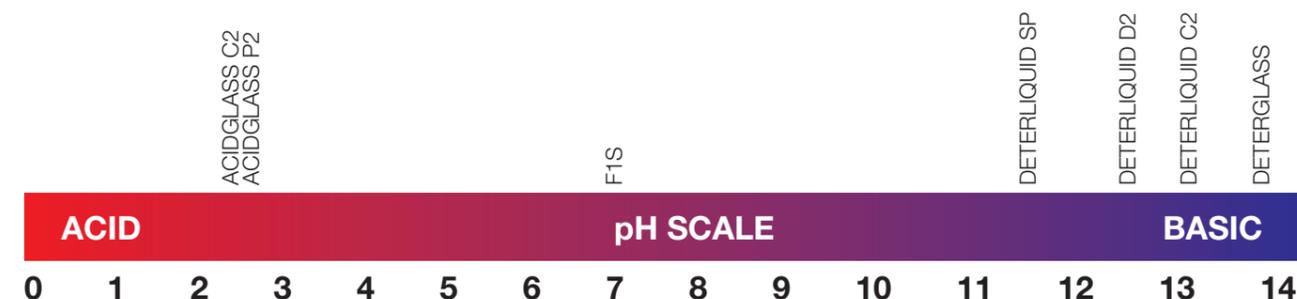**ph 2,4** — **ACIDGLASS C2:** weak organic acid neutralizer.
Application field :universal, environmental analysis
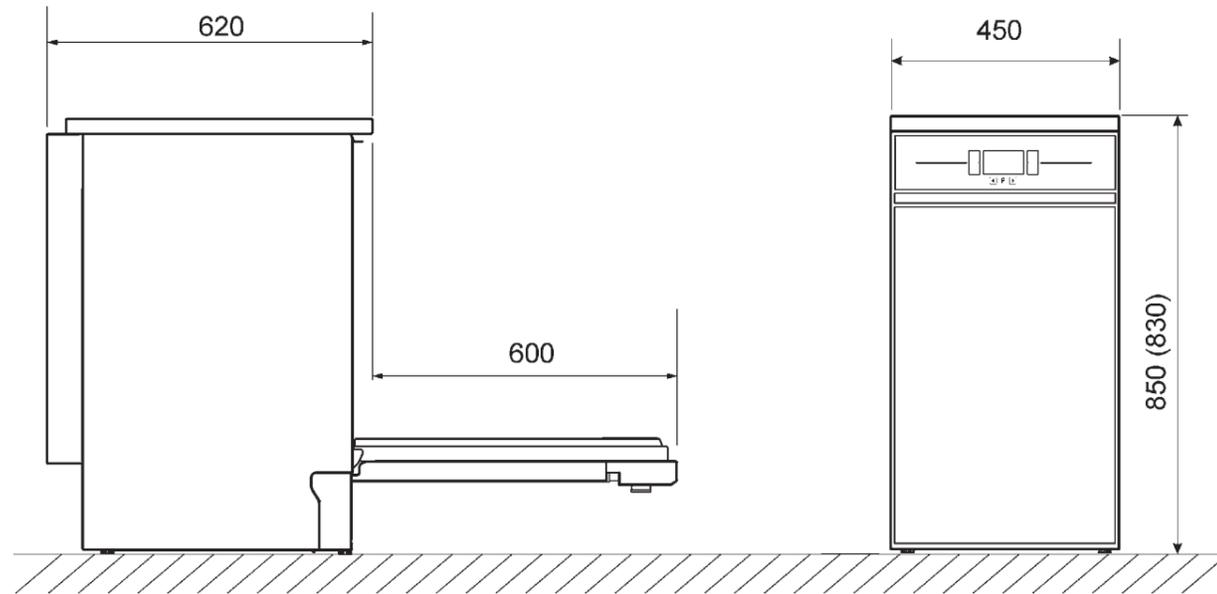5 liter container, 1-2 ml/liter.

SPECIAL ADDITIVES

ph 7 — **F1S:** antifoam additive. Surfactant products for washing (soap and shampoo) and additives for petrochemical washing cycles .
Application fields: cleaning industry, petrochemical washing cycles
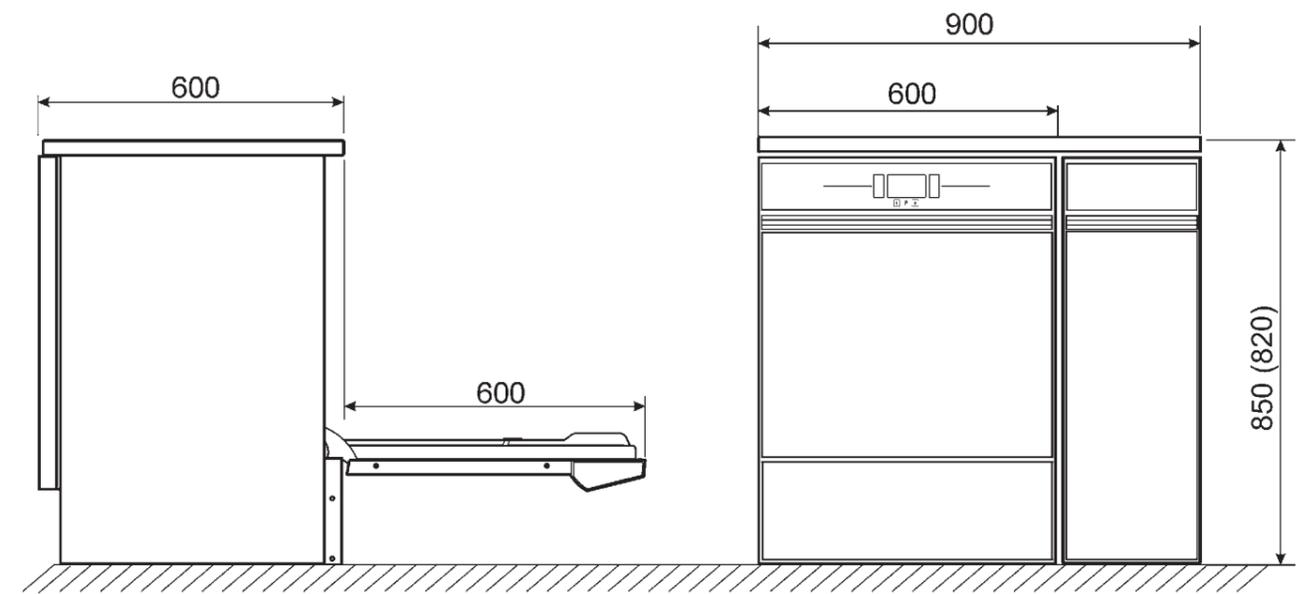1 liter , 0,2-0,5 mi/liter.

ACIDGLASS C2 / ACIDGLASS P2							F1S				DETERLIQUID SP	DETERLIQUID D2	DETERLIQUID C2	DETERGLASS

ACID | **pH SCALE** | **BASIC**

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |

GW2145

GW4190

GW1160 - GW0160 - GW4060
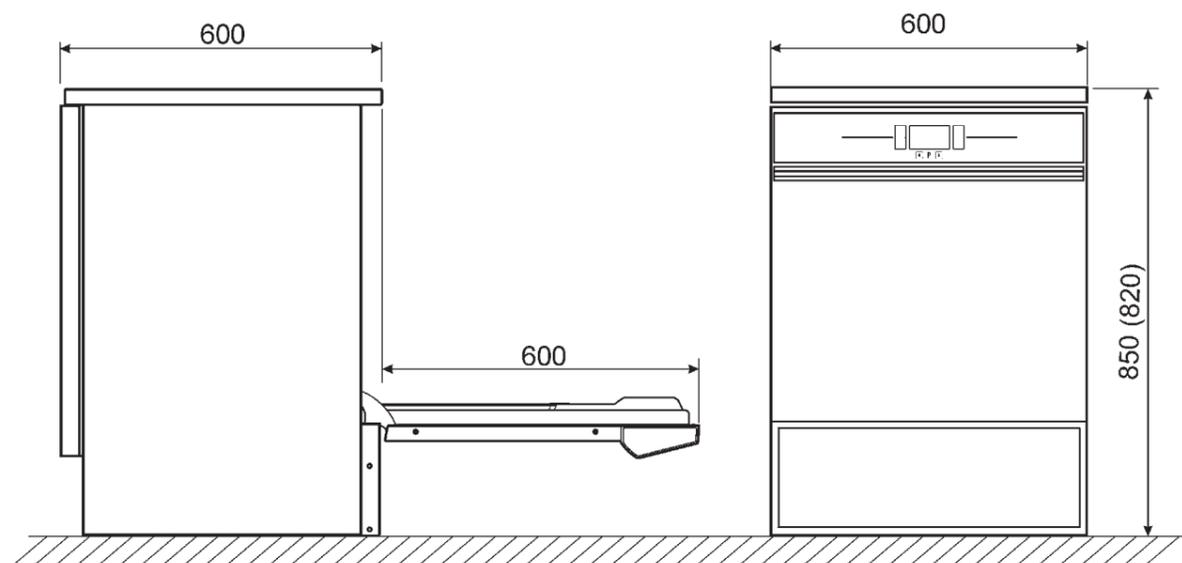
GW3060
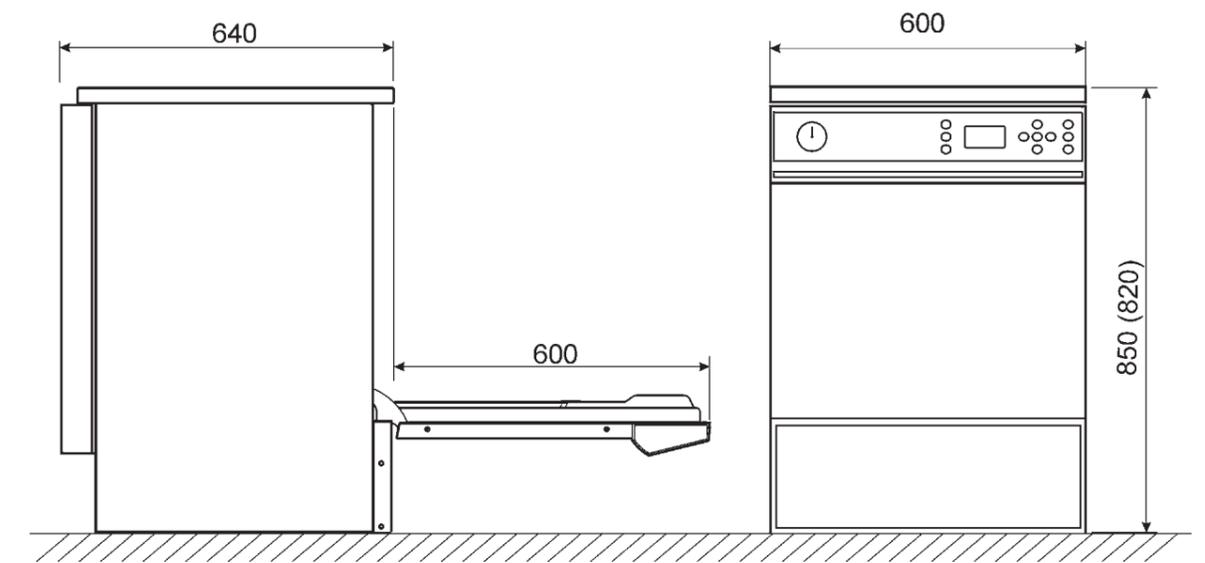
	GW0160	GW2145	GW1160	GW4060
Internal dimensions(LxDxH mm)	520x515x545	380x480x590	520x515x545	520x515x545
External dimensions (LxDxH mm)	600x605x850 (830 with built-in top)	450x620x850 (830 with built-in top)	600x605x850 (830 with built-in top)	900x605x850 (830 with built-in top)
Standard programs stored	7	9	9	9
Modifiable programs	no	6	6	6
Detergent dosing system	Powder dispenser or peristaltic pump			
Neutralizing dosing system	Peristaltic pump			
Max nr.of dosing pumps	2	2	3	3
Volume detergent control	optional			
Detergent cabinet	no	no	no	no
Display	With segments and communication led icons			
Control panel	Membrane keyboard			
Steam condesator	no	no	optional	optional
Drying system	Thermodynamic	Thermodynamic	Thermodynamic	Forced hot air through "drying system"
Pre-filter class C	n.a.	n.a.	n.a.	yes
Cold water supply	yes			
Hot water supply	n.a.	n.a.	n.a.	n.a.
Demineralized water supply	yes			
Integrated water softener	yes			
Washing pump	400l/min	200l/min	400l/min	400l/min
Conductivity control	n.a.			
Printer	no	optional	optional	optional
Door interlock	yes			
Net weight (kg)	72	61	74	77
Conformity	2006/95/CEE,93/68/CEE, 2004/108/CEE			
Supply/Max power	1/N/PE/230V-50Hz-2,8 KW As an alternative: 3/N/PE/400V-50Hz-7,0KW	1/N/230V 50Hz-3,3 kW	1/N/PE/230V-50Hz-2,8 KW As an alternative: 3/N/PE/400V-50Hz-7,0KW	1/N/PE/230V-50Hz-2,8 KW As an alternative: 3/N/PE/400V-50Hz-7,0KW
Possibility of 60Hz supply	yes			
Equipped with plug	no	yes	no	no

	GW4190	GW3060	GW4090
Internal dimensions(LxDxH mm)	520x515x545	520x515x545	520x515x545
External dimensions (LxDxH mm)	900x605x850 (830 with built-in top)	600x640x850 (830 with built-in top)	900x640x650 (830 with built-in top)
Standard programs stored	9	20	20
Modifiable programs	6	10(expandable to 50)	10(expandable to 50)
Detergent dosing system	Powder dispenser or peristaltic pump	Powder dispenser or peristaltic pump	Peristaltic pump
Neutralizing dosing system	Peristaltic pump		
Max nr.of dosing pumps	3	4	4
Volume detergent control	optional		
Detergent cabinet	yes	no	yes
Display	With segments and communication led icons	Backlit graphic LCD display 128x64 pixel	Backlit graphic LCD display 128x64 pixel
Control panel	Membrane keyboard		
Steam condensator	optional		
Drying system	Forced hot air through "drying system"	Thermodynamic	Forced hot air through "drying system"
Pre-filter class C	yes	n.a	yes
Cold water supply	yes	yes	yes
Hot water supply	n.a.	yes	yes
Demineralized water supply	yes	yes	yes
Integrated water softener	yes	yes	yes
Washing pump	400l/min	400l/min	400l/min
Conductivity control	n.a	optional	optional
Printer	optional	optional	optional
Door interlock	yes	yes	yes
Net weight (kg)	83	76	83
Conformity	2006/95/CEE,93/68/CEE, 2004/108/CEE		
Supply/Max power	1/N/PE/230V-50Hz-2,8 KW As an alternative: 3/N/PE/400V-50Hz-7,0KW		
Possibility of 60Hz supply	yes		
Equipped with plug	no		