



Sterling Sterilisers



Acuatic Vacuum User Instructions

Read these Instructions before using the Steriliser

Please take time to read these instructions before using the steriliser for the first time, then keep them in a safe convenient place for future reference.

After Sales Service

Sterling Sterilisers staff are available to provide verbal advice and assistance by phone during normal office hours and to answer written queries by post or email. For further information visit www.sterlingsterilisers.com

Symbol Explanation



This symbol confirms that the Acuatic Vacuum steriliser complies with Council Directive 93/42/EEC concerning medical devices as amended by Directive 98/79/EC, Directive 2000/70/EC, Directive 2001/104/EC and Regulation (EC) No 1882/2003. 0086 indicates that the Notified Body employed to check conformation with the above is BSI.



This symbol is used to highlight the fact that there are specific warnings or precautions associated with the steriliser that the reader should be aware of.



This symbol indicates that the number next to it is the serial number of the steriliser.



This symbol indicates that the information next to it is the date of manufacture and the name and address of the manufacturer.



This symbol indicates that the user should read the User Instructions.



This symbol indicates that in order to comply with EU Directive 2002/96/EC for Waste Electrical and Electronic Equipment (WEEE) the steriliser should be returned to Sterling Sterilisers or disposed of at an appropriate facility at the end of its working life in order to enable recovery and recycling in an environmentally sound manner.



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Thank you for choosing the Acuatic Vacuum steriliser from Sterling Sterilisers. We are confident that you have purchased the finest steriliser of its type which will provide you with many years of efficient, reliable service.

Features

- **Small** - the sterilisers feature very small footprints relative to their chamber sizes
- **Fast** - takes 12 to 30 minutes from start to finish not including drying - dependent on model and loading
- **Simple to use** - easy to understand full colour touch screen display
- **Easy close and easy open door** - push to close with vacuum assistance, touch button opening
- **Inbuilt Securilog data logger** - to encrypt and record cycle details onto a memory card
- **Separate internal clean and used water reservoirs** - water is only used once per cycle to ensure cleanliness
- **Easy to service and maintain** - keeps downtime and maintenance costs to a minimum
- **No internal heating element** - makes for easy cleaning of the chamber
- **Suitable for solid, hollow and/or pouched instruments** - all types of instrument commonly used in dental and chiropody surgeries
- **Low energy consumption per cycle** - keeps running costs to a minimum
- **Low water consumption per cycle** - keeps water production or purchase costs to a minimum
- **No rust construction** - even non pressure parts like the chassis are manufactured from stainless steel
- **Impossible to overheat** - innovative engineering eliminates downtime due to overheating
- **Easy water fill** - just pour into the filling spout
- **Easy water drain** - simple plug in drain hose
- **Used water auto drain (12 litre sterilisers only)** - connect a tube to the rear of the steriliser for automatic draining
- **Self monitoring** - an automatic control system continuously monitors cycle parameters to ensure effective, reliable and complete sterilisation

Parts Supplied with the Acuatic Vacuum steriliser

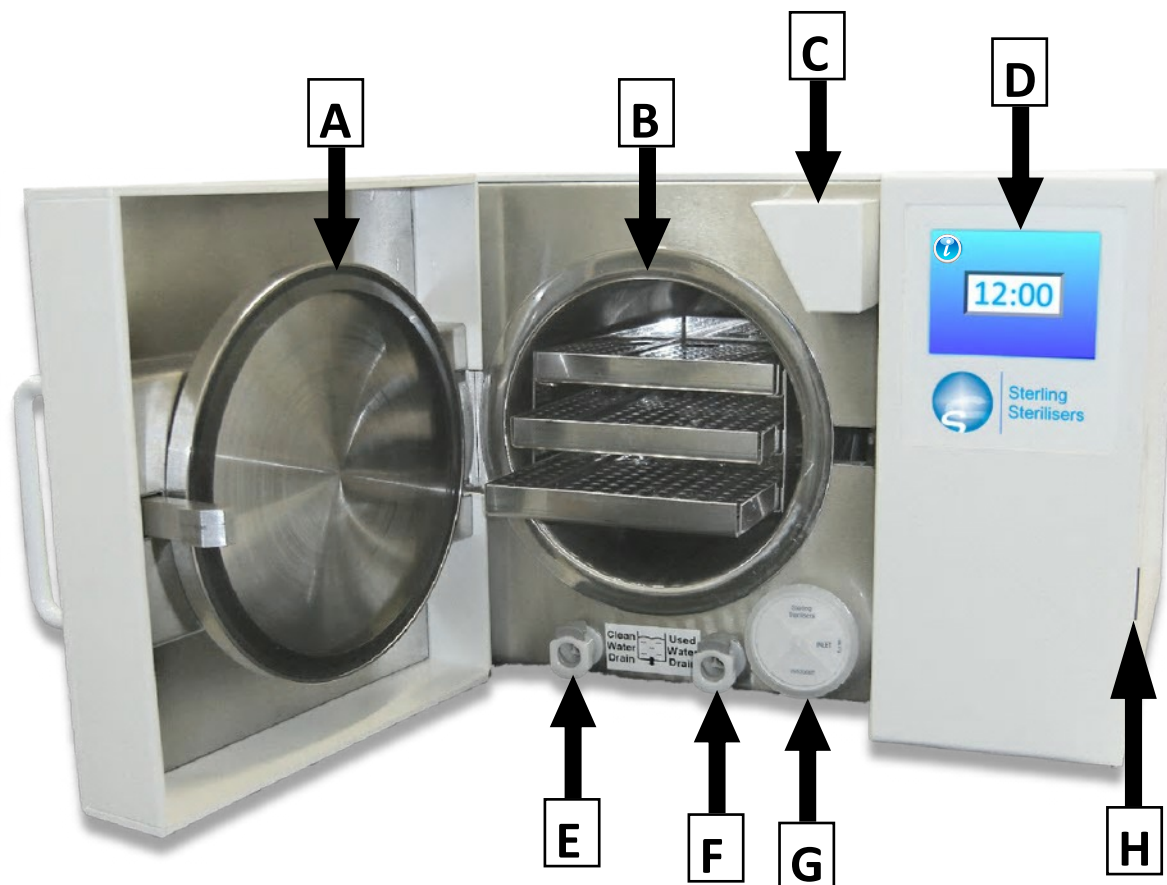
- These instructions
- Trays, tray rack and tray handle
- Drying rack
- Helix tester
- Drain tube(s)
- SD memory card and USB adaptor

Guarantee

No other steriliser manufacturer offers the security and assurance of a guarantee quite like the one supplied by Sterling Sterilisers. We're so confident in the quality and reliability of our sterilisers that we offer a one year parts and labour guarantee and a five year, fully transferable, unlimited usage parts guarantee. For full details of the guarantee see www.sterlingsterilisers.com.

Pressure Vessel

The parts of the steriliser that are subject to steam pressure comply with the Pressure Systems Safety Regulations 2000.



- A** - door seal
- B** - chamber with tray rack and trays
- C** - water filling spout
- D** - touch screen display
- E** - clean water drain
- F** - used water drain
- G** - HEPA microbiological air intake filter
- H** - data logger

General Safety

- Read these User Instructions carefully before using your steriliser and keep them for future reference.
- There are no user serviceable parts internally. Never remove the steriliser casing or try to insert objects through holes or openings.
- The steriliser is heavy. The Acuatic Vacuum 4 is 16 kg and the Acuatic Vacuum 12 is 21 kg. Exercise caution and seek assistance when lifting, moving or carrying a steriliser.
- Do not stack anything on top of the steriliser.
- Ensure that nothing rests on the steriliser mains lead and that the mains lead is not located where it can be stepped on or tripped over. Ensure that no part of the mains lead is under the steriliser when in use.
- Do not attempt to service the steriliser yourself. This should only be carried out by a properly trained service engineer.
- If you drop or damage the steriliser arrange to have it checked by a qualified service engineer before you use it again.
- Keep the steriliser on a flat, stable surface.
- Ensure the steriliser is never used by untrained or unauthorised personnel.
- The steriliser should not be kept in damp or wet conditions or in a zone of risk associated with flammable anaesthetics.
- On completion of a cycle the sterilised instruments, the internal surfaces of the steriliser and the steriliser door may be hot. Do not touch these parts until cooling has taken place and exercise care when handling just sterilised instruments. The tray handle should always be used to remove trays from the steriliser.



Safety features

- **Electric door lock** - door opening is disabled during a cycle.
- **Pressure door lock** - door opening is disabled at all times when the pressure in the steriliser chamber is greater than atmospheric pressure.
- **Pressure relief valve** - prevents over pressurisation of the steriliser.
- **Control** - the steriliser is fitted with sophisticated control software. All parameters are constantly monitored and satisfactory completion of a cycle is not possible unless sterilisation has taken place.
- **Door switch** - prevents a cycle from being started unless the door is closed properly.
- **Overheat protection** - the heating elements are self-controlling and cannot overheat.

Ambient Conditions

The steriliser is limited for use under the following conditions:-

- At an ambient temperature of between 2 and 40°C
- At a maximum relative humidity of 80% up to 31°C decreasing linearly to 50% at 40°C.

Processing Limitations

The steriliser should not be used to process:-

- Paper except for pouches specifically designed for sterilising
- Fluids
- Porous items - except when using a B-type cycle
- Items that are not suitable for sterilising at 134°C

Daily Testing

- Put a TST test strip into the Helix tester that is supplied with the Acuatic Vacuum steriliser. Put the Helix tester in the steriliser and run a cycle. The test is passed if the TST test strip changes colour.

Daily Maintenance

- Clean the door seal using a lint free cloth and soapy water.
- Check the door seal for any signs of damage and replace if necessary.
- Clean the face of the chamber that the door seal closes onto.
- Drain both reservoirs at the end of each day and leave empty overnight.

Servicing

- Arrange to have the steriliser serviced by a trained service engineer every six months.

Annual Inspection

- In order to comply with Health and Safety legislation you should arrange to have your steriliser inspected for pressure safety by a "competent person" once a year.

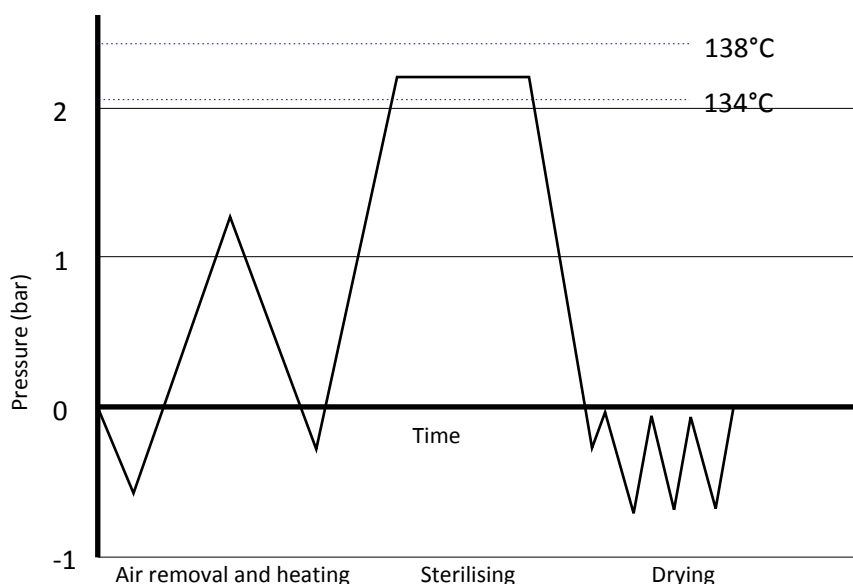


Only use chlorine free cleaning products.



Do not permit any person other than qualified personnel to supply parts for, service or repair your Acuatic Vacuum steriliser.

Cycle Chart

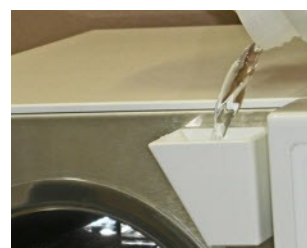
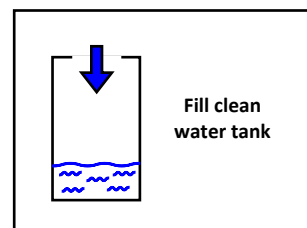


Getting Started

- Place the steriliser on a flat, level, strong, heat resistant and water resistant surface.
- Ensure a clearance of 50 mm to the top and both sides of the steriliser for adequate ventilation.
- Ensure that nothing that can be affected by heat is above or behind the steriliser.
- Plug into the mains. The mains plug should be easily accessible should it be necessary to disconnect the steriliser from the mains electrical supply for any reason.
- Switch the power on. The steriliser is now ready for use.

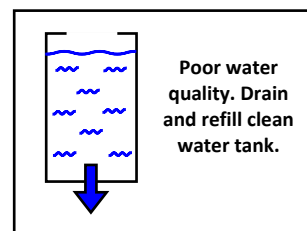
Filling

- When the clean water reservoir is empty, the display will ask for the reservoir to be filled.
- To fill, pour water into the filling spout. The steriliser will be ready for use as soon as the minimum water level in the clean water reservoir has been reached. This will be indicated by the “Fill clean water tank” display being replaced by the time display.
- Filling of the clean water reservoir can be continued until the filling spout is full.



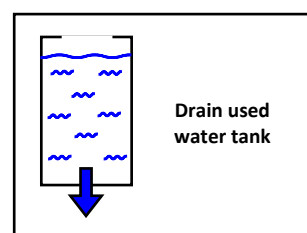
Water Quality

- The steriliser should be filled with distilled, reverse osmosis or purified water.
- If the water used is low in dissolved solids it will be acceptable to the steriliser. The steriliser will not allow a cycle to be run with poor quality water.
- If poor quality water or tap water is used the steriliser display will ask for the clean water tank to be drained and then refilled with good quality water.



Draining

- When the used water reservoir is full the display will ask for it to be drained. This will need to be done before the steriliser will allow the next cycle to be run.
- It is recommended that both water tanks are drained at the end of each working day and left to dry overnight in order to keep the microbiological count as low as possible. The clean water tank should then be filled at the start of the next working day.
- Both water tank drains are located on the front of the steriliser. To drain either tank, plug the drain pipe into the appropriate drain connector and allow the water to drain into a sink or suitable container.
- For 12 litre units there is an additional used water drain connection on the rear of the steriliser. To aut drain the used water, simply plug in a drain tube to this connection



Stand-by

- With the door open the steriliser is in stand-by mode and will display the time, chamber temperature and atmospheric pressure. To adjust the time displayed, press and hold the time display and a time adjustment display will pop up.
- Pressing the “i” button will display the date, cycle count information, water conductivity information and the “Options” button from where you can adjust the amount of drying time or run an air leakage test. To change the date press where the date is displayed and a date adjustment display will pop up.
- Pressing the orange triangle button will show the Securilog data logger display.
- Pressing the “Door” button brings on the vacuum pump to assist in closing the door.

Press here to display extra information



Instrument Preparation

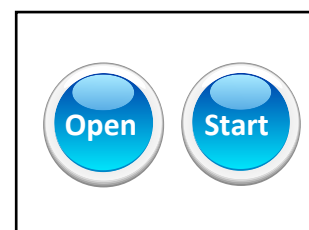
- Ensure instruments are cleaned and rinsed before sterilising. The use of a washer disinfectant or ultrasonic bath is recommended.
- The perforated trays supplied with the steriliser should always be used. Paper or tray liners that could block the tray perforations should not be used.
- The drying rack should be used for processing pouched instruments.
- Do not overload trays and ensure that pouches or instruments do not touch each other or the chamber walls.



Oil lubricated handpieces must be pouched in order to prevent oil from entering the steriliser.

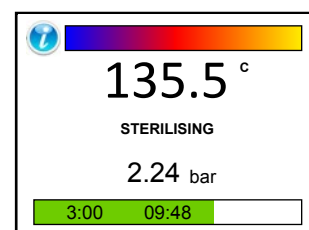
Starting a Cycle

- Load the steriliser with the instruments to be sterilised.
- Close the door.
- The steriliser is now in “ready” mode and the display will show “Open” and “Start” buttons.
- Pressing “Open” will open the door.
- Pressing “Start” will start a cycle.



Processing

- When a cycle is running the display will show the cycle time elapsed, the operating temperature and pressure and the cycle status.
- When in the “Sterilising” part of the cycle a countdown timer counting down from 3 minutes will be displayed on the left hand part of the green timer bar.
- Towards the end of the cycle a countdown timer will be displayed on the right hand part of the green timer bar to countdown the last 3 minutes of the cycle before the door can be opened.
- Once a cycle has started it can only be interrupted by switching the steriliser off.



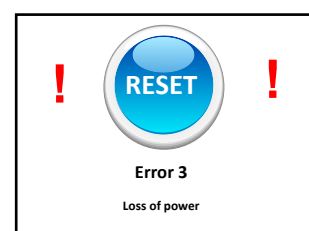
Cycle Completion

- When the cycle has finished the display will show “Cycle completed”. The door can be opened at this point by pressing the “Open” button.
- If the door is not opened, drying will continue until the drying timer has timed out.



Error Messages

- If the cycle should fail to complete for any reason an error message will be displayed. Each error message is numbered and explained with a short message.
- Contact your local service engineer or Sterling Sterilisers Ltd in the event of any fault occurring. Please provide as much information as possible with regard to the problem including the number and description of any error message displayed.

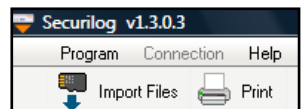


Securilog Data Logger

- The inbuilt Securilog data logger securely records encrypted cycle data onto a memory card. The cycle data can be copied to and read from a computer once the Securilog application has been installed to that computer.
- To record cycle data ensure that an SD memory card formatted with the FAT16 file system is inserted in the steriliser. The steriliser is supplied with a suitable card fitted. If no card is inserted or if the card is faulty or corrupted the display will flash **"Insert SD Card"** when the steriliser is in stand-by with the door closed.
- To install the Securilog application to your computer, remove the SD memory card from the steriliser following the removal procedure on the next page, insert it into the USB adaptor provided and plug into a USB slot on your computer. The SD memory card should appear as a "Removable Disk". If for example the SD memory card appears as drive "D", open it and run the file named [Securilog Installation Application](#).
- To make the Securilog application easy to locate and run after it has been installed to your computer, be sure to keep the "Add shortcut to desktop" checkbox ticked.
- To import cycle data from the SD memory card to your computer, run the Securilog application by double clicking the Securilog icon on your desktop. Remove the SD memory card from the steriliser following the removal procedure on the next page, insert it into the USB adaptor provided and plug into a USB slot on your computer.
- Click on "Import Files" from within the Securilog application. The Securilog application should automatically find the SD card and import the cycle data from the card to your computer. If the SD card is not automatically detected, a file browser window will open. Single click the memory card drive which is "Removable Disk (D:)" in the example shown on the right. Then click "OK". This will import the data from the SD card which can then be removed from the PC and inserted back into the steriliser.
- Each recorded cycle will have its own entry in the table shown below and can be clicked on to show individual cycle detail on the right hand side of the screen which can then be analysed and printed if required.



Do not remove power or take the SD memory card out of the steriliser when it is running a cycle. If you do, this may result in corruption of the data on the memory card.



Securilog v1.3.0.3						
Program Connection Help						
Memory Card: 0% used						
Import Files Print Date Filter Search <Search Text>						
File Name / Model + Serial	Encrypted	Date Range / Date + Time	Cycle	Result	Message	
Acuatic_1110006_081011.LOG	Yes	08-10-2011	1 - 4	1/4 Fail (2)		
Acuatic Vacuum 12 1110006	Yes	08-10-2011 06:50:56	1	Pass		
Acuatic Vacuum 12 1110006	Yes	08-10-2011 07:16:50	2	Pass		
Acuatic Vacuum 12 1110006	Yes	08-10-2011 08:12:04	3	Fail	Error 3	
Acuatic Vacuum 12 1110006	Yes	08-10-2011 08:12:42	4	Pass		

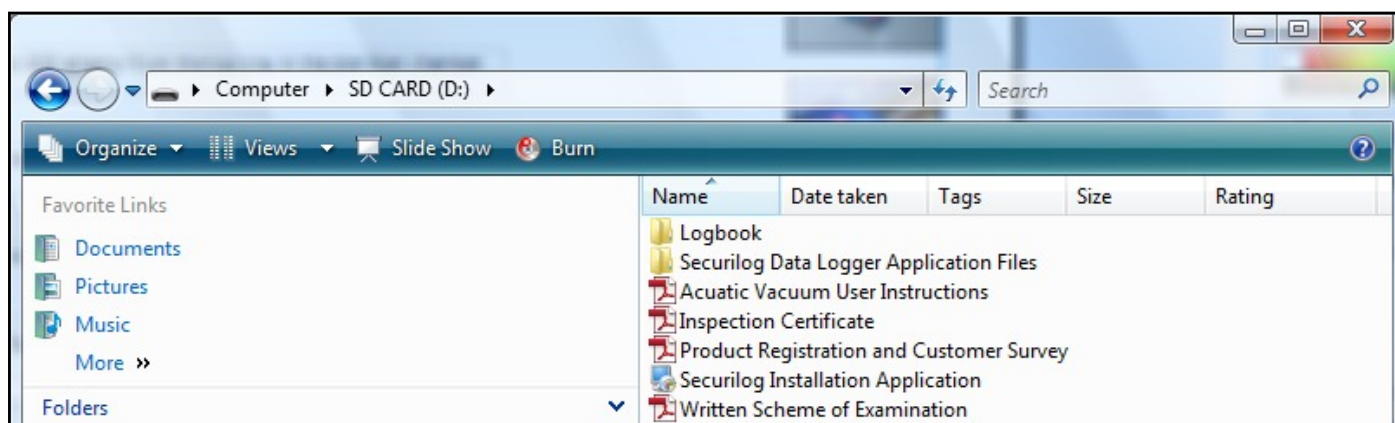
Acuatic_1110006_081011.LOG	
Securilog v2.3 - Acuatic - 1110006 - Acuatic_1110006_081011.LOG	
***** Acuatic Vacuum 12 *****	
Serial number	1110006
Cycle number	4
08-Oct-11 08:12:42	
Cycle started	00:00
First vacuum	01:18
First pressurisation	04:19
Second vacuum	06:06
Levelling	10:27
Sterilising	10:37
Venting	13:37
Drying	14:21
Cycle completed	19:26
Total time above 134 C	03:30
Average sterilising temperature	135.9
Approximate water usage	330ml
Power used (kWh)	0.243
optional drying time used	40:05
***** Cycle Passed *****	

Securilog SD memory card

- The SD memory card that is supplied with your steriliser is used to store documentation and cycle data that is recorded from the inbuilt Securilog data logger.
- To remove the SD memory card from the steriliser the following procedure should be followed to ensure that the card can be removed safely with no risk of data corruption.
- Open the steriliser door. Press the “orange triangle” Securilog button to access the Securilog display.
- The “Securilog LED” should be green, indicating that the SD card is inserted and ready to record. Press the “Securilog Button” and wait for the “Securilog LED” to go white. The SD card can then be removed safely.
- The SD card contains the following pdf files which can be read or printed:-
 1. These User Instructions.
 2. A Written Scheme of Examination for compliance with the Pressure Systems Safety Regulations 2000.
 3. An Inspection Certificate to confirm that the steriliser has been designed, manufactured and tested in accordance with the Medical Devices Directive.
 4. A Product Registration and Customer Survey form. Please take the time to print this out, complete it and return it to Sterling Sterilisers so that we can keep our records up to date and use your feedback to further develop our product to better suit future needs.
- The SD card also contains the Securilog Installation Application which is used to install the Securilog application to your computer as described on the previous page plus the associated Securilog Data Logger Application Files.
- Finally, the SD card contains a Logbook folder which contains both spreadsheet and pdf versions of the steriliser logbook which can be used to record the steriliser details and ongoing maintenance, testing and inspection records.
- The SD card should be reinserted into the steriliser prior to running the next cycle to ensure that no data goes unrecorded. On reinsertion the “Securilog LED” should go green indicating once again that the SD card is inserted and ready to record.



Ensure that the tab on the SD memory card is not in the “Lock” position as this will prevent the card from recording cycle data.



Feature		Acuatic 4	Acuatic 12
Dimensions	Width	345 mm	415 mm
	Height	270 mm	315 mm
	Length	440 mm	440 mm
	Weight	16 kg	21 kg
	Chamber diameter	150 mm	218 mm
	Chamber length	230 mm	320 mm
	Chamber volume	4 litres	12 litres
Trays	Number	3	4
	Width	125 mm	183 mm
	Length	225 mm	284 mm
	Maximum loading per tray	1 kg	1.5 kg
Clearances	Top and sides	50 mm	
	Rear	None required	
Cycle type	S-type vacuum	For solid, hollow or tubular instruments, unwrapped or pouched	
Cycle time		12 to 20 minutes*	20 to 30 minutes*
Sterilising	Temperature	134°C to 138°C	
	Time	3 minutes	
Limits	Design pressure	-1 to 3 bar	
	Design temperature	2 to 144°C	
Display Resolution	Temperature	0.1°C	
	Pressure	0.01 bar	
Display Accuracy	Between 75 and 150°C	± 2°C	
	Between 134 and 138°C	+0 / -1.5°C	
Electrical	Voltage	230 V ac ± 10%	
	Current	Variable up to 13 A	
	Power	Variable up to 3 kW	
	Frequency	50 Hz	
	Plug top fuse	13 A	
	Internal fuse	1 A	
	Energy used per cycle	0.1 to 0.2 kWh*	0.15 to 0.4 kWh*
Water	Water used per cycle	100 to 200 ml*	150 to 400 ml*
	Clean water reservoir volume	1 litre	
	Used water reservoir volume	1 litre	
Cycle Recording	Type	Inbuilt "Securilog" data logger	
	Recording media	SD Memory card	
	Capacity	Lifetime of steriliser	
Certification	Council Directive 93/42/EEC	Medical Devices	

* Cycle time and exact electrical and water usage per cycle is dependent on steriliser model, loading and cycle start temperature. Cycle times quoted do not include drying which can be set to anywhere between 0 and 60 minutes.



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CE
0086

Notified Body
BSi
British Standards

