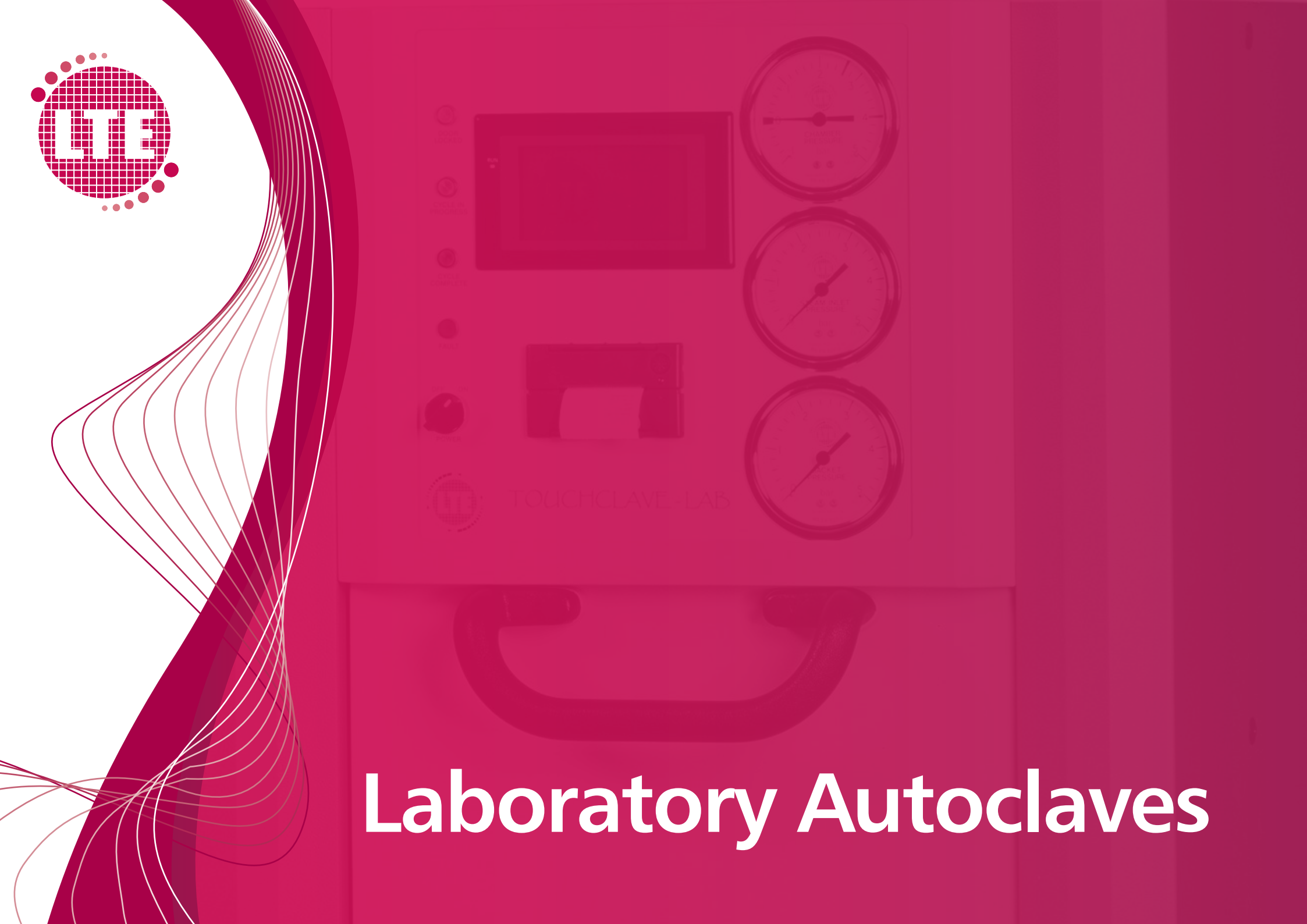

Laboratory Autoclaves

LTE Scientific Ltd is a leading designer and manufacturer of sterilizing autoclaves and other laboratory and medical processing equipment. From its UK base near Manchester, LTE products are sold all over the world to customers in the healthcare, research, pharmaceutical, biotech, food, agriculture, water and other sectors.

About LTE Scientific .....

LTE's Laboratory Autoclaves – an introduction

In the following pages you will find details of LTE's range of Laboratory Autoclaves for general purpose sterilizing applications in a laboratory environment.

LTE offers three ranges of Laboratory Autoclave for general purpose sterilizing applications:

Labclave 23	23-litre compact
Touchclave-R	chamber sizes from 40 to 160 litres
Touchclave-Lab	chamber sizes from 150 to 300 litres
Touchclave Systems-MP	chamber sizes from 326 to 1050 litres (11 to 36 cu.ft.)

Touchclave Systems-MP autoclaves can also be custom-built in chamber sizes up to 10,000 litres.

LTE also manufactures a range of Porous Load Autoclaves designed for Central Sterilizing Departments in hospitals and other critical processing applications. Details are contained in a separate brochure.

For further information, contact our sales team on +44 (0)1457 876221

Raising the Standard

All LTE Autoclaves are built to meet many national and International Standards.

Below are some of the applicable standards and codes

IS9001:2000	GAMP4*
UKAS*	PD5500
BS2646	Pressure Equipment Directive 97/23/EC
BS3970*	HSE Note PM73
BS6759 (safety valves)	EMC Directive 2004/108/EC
97/42/EC	Low Voltage Directive 2006/95/EC
HTM2010*	EN61010-1-2001
EN285*	EN55011
PM60*	EN61000-4
21CFR11*	EN13485

Those standards marked * may require the fitting of options or additional documentation/testing in order to comply.

Contents

A guide to choosing your autoclave...

LTE offers four ranges of Laboratory Autoclave for general purpose sterilizing applications, enabling customers to choose a model which best suits their application and their volume and budgetary requirements. The types and sizes of autoclave in each model range are shown below.

TYPES AND SIZES	Labclave 23	Touchclave-R	Touchclave-Lab		Touchclave Systems-MP
			F models	KE/KS models	
Chamber profile	Round	Round	Rectangular	Rectangular	Rectangular
Chamber size (litres):					
Front loading models	--	40, 60, 120, 160	150, 200, 300	150, 200, 300	326, 435, 566, 636, 796, 1052,
Top loading models	23	60,120,160	--	--	--
Steam source	In-chamber Water Heater	In-chamber Water Heater	In-chamber Water Heater	Fitted Generator or Direct Supply	Fitted Generator or Direct Supply

To further refine the choice of autoclave, the following table shows for each of the four ranges some of the features which are standard or which may be ordered as additional options, depending on the application.

FEATURES AND OPTIONS	Labclave 23	Touchclave-R	Touchclave-Lab		Touchclave Systems-MP
			F models	KE/KS models	
Touchscreen Control System	☒	■	■	■	■
Door system					
Sliding	☒	☒	■	■	■
Pneumatic seal	☒	■	■	■	■
Dual doors for pass-through	☒	☒	☒	☐ (300L Only)	☐
Single action	■	■	☒	☒	☒
Maximum no. of cycle programs					
8 programs	■ 8 + 1	■	■	■	■
20 programs	☒	☐	☐	☐	☐
Storage and Retrieval of Cycle Data					
Internal Data Archiving	☒	☐	■	■	■
Remote Data Archiving	☒	☒	☐	☐	☐
Data Printer	■	☐	☐	☐	■
Cooling System	■	■	■	■	■
Pre/Post Vacuum System	■ Post Only	☐	☐	☐	■
Air Ballast (to avoid volume loss or breakage in liquid loads)	☒	■	☐	☐	■
Load activated process timer	☒	■	■	■	■
SPF barrier	☒	☒	☐	☐	☐
Category 3 Effluent Retention & Filter	☒	☐	☐	☐	☐
Steam Jacket (for full drying of the load when vacuum is fitted)	☒	☒	☐	☐	■
Condensate Unit (to cool water discharge)	■	☐	■	■	■
Automatic Water Fill	☒	☐	☐	☒	☒
Automatic Drain	☒	☐	☐	☒	☒

KEY ■ Standard ☐ Optional ☒ Not available/applicable

To assist in specifying the most suitable autoclave for a particular application, the table below lists some typical sterilization applications, showing the models which are suitable and the features and options which are recommended for each application.

APPLICATIONS	Suitable models	Recommended	Comment
Media and fluids Fluid discard	All	Air Ballast	Especially recommended for sealed fluids
Plastic and glassware Tubing, pipette tips Plastic and mixed discard	All	Pre/Post Vacuum Steam Jacket	Steam Jacket not available on Touchclave–R or F models
Porous loads Clothing Wrapped instruments	Touchclave-Lab KE/KS Touchclave Systems	Pre/Post Vacuum Steam Jacket	Vacuum is essential for this application. Steam jacket will dry the load more effectively
Unwrapped instruments	All	Pre/Post Vacuum Steam Jacket	Steam Jacket not available on Touchclave–R or F models
High security applications (PL3, BS3, Cat.3, Cat.4)	All (Except Labclave 23)	Pre/Post Vacuum Cat.3 Effluent Retention	Cat.3 Effluent Retention is essential for this application

See page 16 for an explanation of the various options which can be fitted to your LTE autoclave to further enhance its performance.

Labclave 23 is LTE Scientific's low-cost 23-litre laboratory autoclave. Designed to offer effective and fast sterilization of many laboratory load types and taking up a floor area of just 460mm x 395mm, Labclave 23 has to be one of the most compact units available.

Labclave 23

Our standard equipment list is as follows:

Stainless Steel Pressure Vessel – manufactured from high grade 304L stainless steel.

Push-Button Door Closure – Our ingenious door closure system seals and locks the door at the push of a button. The servo-assisted motor ensures a positive seal every time.

Flexible Control System – 8 pre-set programs covering the most popular sterilization cycle. A 'free cycle' is also provided, allowing you to set your own specific cycle parameters quickly and easily. See table opposite for further details.

Printer – A complete record of every cycle is produced on the built-in thermal printer.

Post Vacuum System – Non-liquid cycles can achieve faster cycle times thanks to the built-in vacuum pump which will aid the cooling process and help dissipate moisture from the load.

Safety – pressure, temperature and timed door safety systems ensure that the door cannot be opened until the chamber has reached atmospheric pressure and 90ºC. A low water protection device is also fitted.

Air Cooled Condensate Unit – Allows the cooled condensate to be discharged directly to drain if required, although a waste container is provided as standard.

Cooling Options – For maximum flexibility, 4 types of cooling method are available on the Labclave 23. See table opposite for further details.

Cycle Details

Cycle	Sterilizing Temp, ºC	Hold Time	Cooling	Post Vacuum Active	Max Load
1	121	15 mins	Fast	No	6kg Solid Materials 5kg Liquids
2	121	15 mins	Slow	No	
3	121	15 mins	Fast	Yes	
4	121	15 mins	Slow	Yes	
5	121	20 mins	Fast	Yes	
6	121	20 mins	Slow	No	
7	126	15 mins	Slow	No	
8	134	10 mins	Fast	Yes	
9 (Free Cycle)	105-135	1-99 mins	Slow/ Fast	Yes/No	

Technical and Ordering Information

Model	Cap'ty. litres	Loading	Printer	Chamber dims, mm	Overall dims, HWD mm	Basket	Weight, kg	Power, kW
TCL/ 23/1	23	Top	Included	236 dia x 530 D	930 x 460 x 395	Included	55	2.5

Ideal for many laboratory sterlization applications, the Touchclave-R range has been designed with flexibility and reliability in mind and is ideal for installation in laboratories which do not have access to a drain or water supply.

Touchclave-R

Equipped with features not normally seen on this type of sterilizer, Touchclave-R provides unrivalled performance and versatility

- No-action ‘push-n-seal’ door with pneumatic seal and locking.
- 8-program Touchscreen control system - See page 17 for details
- Compact design
- 316L stainless steel pressure vessel
- Built-in air ballast system for fast processing of liquid loads
- Load-sensed process timer
- Fan cooling system
- Operating temperatures from 105ºC to 137ºC

Submerged heaters within the chamber generate steam. The chamber water can be topped up either manually or automatically.

Sensors within the chamber prevent the cycle from starting or continuing if there is insufficient water.

A safety microswitch is fitted to the door which will only allow the cycle to start if the door is properly closed and locked.

At the end of the cycle, the door will not be released until both temperature and pressure have reached safe pre-set levels.

Seven models in four chamber sizes are offered, including a bench top model (40 litre front loading). The remaining models are floor standing, with three top loading and three front loading options. All floor standing models are easily moved on castors.

Touchclave-R models can be modified to suit specific requirements such as operating from customers steam supplies or being fitted with an auto drain/fill system. Ask our sales office for more details.

Touchclave-R Technical Information

Technical and Ordering Information

Model	Chamber litres	Loading	Chamber dims, mm Dia x D	Overall dims, mm HWD	Weight, kg	Shelves/positions
TCR/40/H	40	Front	350 x 415	710 x 580 x 720	120	1/1
TCR/60/H	60	Front	350 x 625	1400 x 550 x 970	205	1/1
TCR/60/V	60	Top	350 x 625	1000 x 710 x 540	210	1/1
TCR/120/H	120	Front	500 x 610	1680 x 700 x 1170	260	2/2
TCR/120/V	120	Top	500 x 610	1200 x 890 x 650	265	1/1
TCR/160/H	160	Front	500 x 825	1680 x 700 x 1170	290	2/2
TCR/160/V	160	Top	500 x 825	1200 x 890 x 650	295	1/1

Models and Options/Accessories

Capacity/Loading	40-litre	60-litre		120-litre		160-litre	
	Front	Front	Top	Front	Top	Front	Top
Standard	TCR/40/H1	TCR/60/H1	TCR/60/V1	TCR/120/H1	TCR/120/V1	TCR/160/H1	TCR/160/V1
Enhancement Packages							
Pre/Post vacuum system	TCR/40/H5	TCR/60/H5	TCR/60/V5	TCR/120/H5	TCR/120/V5	TCR/160/H5	TCR/160/V5
Pre/Post vacuum system boosted heater	TCR/40/H5B	TCR/40/H5B	TCR/60/V5B	TCR/120/H5B	TCR/120/V5B	TCR/160/H5B	TCR/160/V5B

Model	Accessories
TC/TDP/02	Thermal data printer
TC/IDA/01	Internal Data Archiving*
TC/AWF/01	Automatic water fill*
TC/ADD/01	Automatic drain for chamber water*
TC/FIL/01	Cat 3 effluent retention (0.2 µm filter)*
TC/CON/02	Air cooled condensate unit* (included on vacuum models)
TC/FIL/01	Cat. 3 effluent retention upgrade (including 0.2micron exhaust filter)*
TC/KWF/01	Media keep warm facility *
TC/CBD/01	Lockable storage cupboard/support stand for TCR/40/H, including 4 x castors
TC/HST/01	Electric hoist for all top loading models*
TC/VOL/01	Conversion to 60Hz electrical supply (non-vacuum models)*
TC/VOL/02	Conversion to 60hz electrical supply (vacuum models)*
TC/MOR/R0	Morrison discard box for TCR/40/M
TC/MOR/R1	Morrison discard box for TCR/60/H
TC/MOR/R2	Morrison discard box for TCR/120/H
TC/MOR/R3	Morrison discard box for TCR/160/H
TC/MOR/R4	Morrison discard box for TCR/60/V
TC/MOR/R5	Morrison discard box for TCR/120/V
TC/MOR/R6	Morrison discard box for TCR/160/H
TC/BAS/R0	Basket for TCR/40/H
TC/BAS/R1	Basket for TCR/60/H
TC/BAS/R2	Basket for TCR/120/H
TC/BAS/R3	Basket for TCR/160/H
TC/BAS/R4	Basket for TCR/60/V
TC/BAS/R5	Basket for TCR/120/V
TC/BAS/R6	Basket for TCR/160V

Items marked * are factory fit options

Site Services

Water

Potable water with a maximum hardness of 50ppm $CaCO_3$ is acceptable. Otherwise check with LTE for suitability. For automatic water fill versions, connection is via a 15mm diameter water inlet.

Drain

Not required on standard units although we always recommend connection to 100mm drain where possible. For models fitted with auto-drain and/or vacuum a 100mm drain is required. See site services sheet for full details.

Electrical

See Table Below. Prices based on 220/240V (1-Phase) and 380/440V (3-Phase), 50Hz. For other voltages/frequencies, see options or check with LTE.

	Front Loading Models				Top Loading Models		
	TCR / 40 / H	TCR / 60 / H	TCR / 120 / H	TCR / 160 / H	TCR / 60 / V	TCR / 120 / V	TCR / 160 / V
1-Phase	2.5kW / 13A	5.5kW / 25A	7.5kW / 35A	8.5kW / 35A	5.0kW / 20A	6.5kW / 30A	7.5kW / 35A
1-Phase Boosted	3.5kW / 20A	7kW / 32A	N / A	N / A	6kW / 30A	N / A	N / A
3-Phase Boosted	N / A	N / A	9kW / 20A / ph	10.5kW / 20A / ph	N / A	9kW / 20A / ph	9kW / 20A / ph

The Touchclave-Lab ‘K’ Series is LTE’s top-line range of mid-sized rectangular chambered general purpose autoclaves, available in 150, 200 or 300-litre capacities, with a 300-litre pass-through version also available.

Touchclave-Lab ‘K’ Series

A wide range of features are included in the ‘K’ Series as standard to enhance machine performance and cycle efficiency. These include:

- 8-program touchscreen control system – see page 17 for details
- Internal data archiving – see page 17 for details
- Water jacketed chamber for exceptional cooling efficiency
- Water conservation system and exhaust condensate
- Load-sensed process timer
- Pneumatically operated door lock and sealing system
- Integral silent air compressor

In addition, a wide range of options are available for the Touchclave-Lab range to suit individual customer requirements. See pages 12-13 to see what other options you may need.

‘K’ Series models are designed to operate using either a steam generator situated beneath the chamber, or via the customers own direct steam supply. This arrangement maximises the usable chamber volume and provides a clean, unencumbered chamber, free from heaters and water.

Unless the door is properly closed and locked, the cycle cannot be started.
At the end of the cycle, the door will not be released until both temperature and pressure have reached safe pre-set levels.

All models incorporate an easy-glide vertical sliding door and all models (except the pass-through version) have been designed to fit through as standard width door.

Designed to offer a rectangular chamber and a high level of standard features at a more affordable price, our Touchclave-Lab ‘F’ Series represents excellent value for money.

Touchclave-Lab ‘F’ Series

The ‘F’ Series is available in 150, 200 or 300-litre capacities and boasts the following standard features.

- 8-program touchscreen control system – see page 17 for details
- Internal data archiving – see page 17 for details
- Pneumatically operated door lock and sealing system
- Load-sensed process timer
- Integral silent air compressor

In addition, a wide range of options are available for the Touchclave-Lab range to suit individual customer requirements. See page 12-13 to see what other options you may need.

Submerged heaters within the chamber generate steam. The chamber water can be topped up periodically, either manually or automatically.

Sensors within the chamber prevent the cycle from starting or continuing if there is insufficient water.

Unless the door is properly closed and locked, the cycle cannot be started.
At the end of the cycle, the door will not be released until both temperature and pressure have reached safe pre-set levels.

All models incorporate an easy-glide vertical sliding door and all models have been designed to fit through as standard width door.

Touchclave-Lab Technical Information

Technical and Ordering Information

Model	Chamber litres	Loading	Steam Generation	Chamber dims, mm HWD	Overall dims, mm HWD	Weight, kg	Shelves/ positions
TC/150/F	150	Front	In-Chamber	600 x 500 x 500	1815 x 720 x 1100	370	2/4
TC/150/KE	150	Front	Integral Steam Generator	600 x 500 x 500	1815 x 720 x 1100	400	2/4
TC/150/KS	150	Front	Direct Steam Supply	600 x 500 x 500	1815 x 720 x 1100	360	2/4
TC/200/F	200	Front	In-Chamber	600 x 500 x 660	1815 x 720 x 1200	450	2/4
TC/200/KE	200	Front	Integral Steam Generator	600 x 500 x 660	1815 x 720 x 1200	480	2/4
TC/200/KS	200	Front	Direct Steam Supply	600 x 500 x 660	1815 x 720 x 1200	440	2/4
TC/300/F	300	Front	In-Chamber	600 x 500 x 1000	1815 x 720 x 1350	620	2/4^
TC/300/KE	300	Front	Integral Steam Generator	600 x 500 x 1000	1815 x 720 x 1350	650	2/4^
TC/300/KS	300	Front	Direct Steam Supply	600 x 500 x 1000	1815 x 720 x 1350	610	2/4^

^ Shelves on these models are fitted with a no-tip auto-stop function and can be pulled out upto half-way

Models and Options/Accessories

K Models

Capacity/Steam Generation Method	150-litres		200-litres		300-litres	
	Integral steam generator	Direct steam	Integral steam generator	Direct steam	Integral steam generator	Direct steam
Standard	TC/150/KE1	TC/150/KS6	TC/200/KE1	TC/200/KS6	TC/300/KE1	TC/300/KS6
Enhancement Packages						
Pre/post vacuum system (50mbar) and (for KE models) constant standby steam generator	TC/150/KE3	TC/150/KS7	TC/200/KE3	TC/200/KS7	TC/300/KE3	TC/300/KS7
Pre/post vacuum system (50mbarA) with steam jacket and (for KE models) constant standby steam generator	TC/150/KE5	TC/150/KS9	TC/200/KE5	TC/200/KS9	TC/300/KE5	TC/300/KS9

F Models

Capacity/Steam Generation Method	150-litres	200-litres	300-litres
	In-Chamber Heaters		
Standard	TC/150/F1	TC/200/F1	TC/300/F1
Enhancement Packages			
Standard-Plus *(includes automatic water fill and condensate unit)*	TC/150/F7	TC/200/F7	TC/300/F7
Standard Plus with pre/post vacuum system (50mbarA)	TC/150/F6	TC/200/F6	TC/300/F6
Standard Plus with water jacket	TC/150/F4	TC/200/F4	TC/300/F4
Standard-Plus with pre/post vacuum system (50mbarA) and water jacket	TC/150/F2	TC/200/F2	TC/300/F2

Model	Accessories
TC/TDP/01	Thermal data printer
TC/INK/01	Ink data printer
TC/RDA/01	Remote data archiving with RS232 connection (PC to be supplied by others)*
TC/RDA/02	Remote data archiving with RS485 connection (PC to be supplied by others)*
TC/ADD/01	Automatic drain for chamber water * (F Models fitted with Standard Plus option only)
TC/FIL/01	Cat. 3 effluent retention upgrade (including 0.2micron exhaust filter)*
TC/KWF/01	Media keep warm facility* (F Models only)
TC/AIR/01	Air Ballast (using customers compressed air supply)*
TC/AIR/02	Air Ballast (with uprated internal air compressor and receiver)*
TC/AFP/01	Upgrade of standard probe to armour-flex probe
TC/MEM/01	Increased Cycle Memory (20 programs)*
TC/MOD/01	Modem Link*
TC/CSG/K1	Constant standby steam generator for non-vacuum KE150*
TC/CSG/K2	Constant standby steam generator for non-vacuum KE200*
TC/KSG/K3	Constant standby steam generator for non-vacuum KE300*
TC/VOL/	Conversion to 60Hz electrical supply (non-vacuum models)* - Add 05 for K models and 03 for F models
TC/VOL/	Conversion to 60hz electrical supply (vacuum models)* - Add 06 for K models and 04 for F models
TC/ROG/01	Modified steam generator for RO/De-mineralised water feed* (KE Models only)
TC/SSP/02	Stainless steel primary pipework (orbitally welded, tri-clover fittings)*
TC/PAS/01	Pass-through chamber *(K300 models only)
TC/MOR/01	Morrison discard box size 1 (230 x 430 x 230mm HWD)
TC/MOR/02	Morrison discard box size 2 (230 x 430 x 315mm HWD)
TC/BAS/01	Basket size 1 (230 x 430 x 230mm HWD)
TC/BAS/02	Basket size 2 (230 x 430 x 315mm HWD)

Items marked * are factory fit options

A range of other options can be ordered through our sales office including loading and carriage trolleys, stainless steel panel-work and chart recorders

Touchclave-Lab Site Services

Water

Potable water with a maximum hardness of 50ppm $CaCO_3$ is acceptable. Otherwise check with LTE for suitability. For automatic water fill/permanently piped versions, connection is via a 15mm diameter water inlet.

Drain

For 'F' models fitted with auto-drain and/or vacuum, and all 'K' models a 100mm drain is required. A drain is not required on standard 'F' models although we would always recommend connection where possible. See site services sheet for full details.

Electrical

See Table Below. Prices based on 220/240V (1-Phase) and 380/440V (3-Phase), 50Hz. For other voltages/frequencies, see options or check with LTE.

	Power Requirements	
	Non-Vacuum Models	Vacuum Models
TC/150/F	3-Phase, 10.5kW, 20A/phase N+E	3-Phase, 14.25kW, 25A/phase
TC/150/KE	3-Phase, 15kW, 25A/phase N+E	3-Phase, 30kW, 50A/phase N+E
TC/200/F	3-Phase, 15kW, 25A/phase N+E	3-Phase, 19.5kW, 30A/phase N+E
TC/200/KE	3-Phase, 15kW, 25A/phase N+E	3-Phase, 30kW, 50A/phase N+E
TC/300/F	3-Phase, 22.5kW, 35A/phase N+E	3-Phase, 28.5kW, 45A/phase N+E
TC/300/KE	3-Phase, 30kW, 45A/phase N+E	3-Phase, 39kW, 63A/phase N+E
All KS Models	1-Phase, 13A	3-Phase, 16A/phase N+E

LTE Touchclave Systems Autoclaves provide versatility, clear and easy to use operator controls, comprehensive data retrieval options, and excellent levels of sterility assurance.

Touchclave Systems-MP

Our MP range of general purpose rectangular chambered sterilizers are available in six standard sizes and sixteen models from 326 to 1052 litres. Larger sized units up to 10,000 litres can also be provided. All models can be configured for either single entry or pass-through. All Touchclave Systems models are fitted with a wide selection of features as standard, all designed to ensure optimum performance. These include:

- Automatic sliding doors with safety edge and auto-retract system. Floating door seals are employed as standard, but where required, a clamped option can be fitted.
- Pre/post vacuum system which employs a high efficiency liquid ring vacuum pump.
- Air ballast system for fast and safe processing of fluids
- Water jacket for exceptional cooling efficiency
- Steam jacket for optimum drying performance
- 8-program user-friendly touchscreen control system (expandable to 20 programs if required - see page 17 for details
- Internal data archiving with 5000 cycle capacity– see page 17 for details
- Thermal or impact printer which provides all cycle details and operational data

Touchclave Systems MP models are all designed to work from the customers central steam supply. Alternatively they can be supplied with electrically heated integral or stand alone steam generators.

Touchclave Systems are available with a wide range of options, allowing you to build up the machine specification to meet your individual needs. For example all models can be configured for high security applications which usually involves the fitting of effluent retention and a bio seal if pass-through. Where there is a clean steam requirement, Touchclave Systems sterilizers can be supplied with polished chambers, stainless steel pipework and clean steam generators.

Touchclave Systems-MP Technical Information

Technical and Ordering Information

All Touchclave Systems-MP models include a thermal printer, pre/post vacuum (<50mbarA) and air ballast as standard. All models are designed for direct steam. Steam generators are detailed below if required.

Models and Options/Accessories

Catalogue No.	Chamber litres/cu.ft	Loading	Door Movement	Chamber dims, mm HWD	Overall dims, mm HWD*	Weight, kg
Single Entry Models						
UCF10	326/11	Front	Vertical	660 x 660 x 750	1800 x 1250 x 1690	800
SCF10	326/11	Front	Horizontal	660 x 660 x 750	1762 x 1880 x 1690	800
UCF15	435/15	Front	Vertical	660 x 660 x 1000	1800 x 1250 x 1850	875
SCF15	435/15	Front	Horizontal	660 x 660 x 1000	1762 x 1880 x 1850	875
UCF20	545/20	Front	Vertical	660 x 660 x 1250	1800 x 1250 x 2130	950
SCF21	636/21	Front	Horizontal	965 x 660 x 1000	1762 x 1880 x 1850	950
SCF28	796/28	Front	Horizontal	965 x 660 x 1250	1762 x 1880 x 2130	1200
SCF36	1052/36	Front	Horizontal	1100 x 660 x 1450	1762 x 1880 x 2390	1400
Pass-Through (dual door) Models						
2UCF10	326/11	Front	Vertical	660 x 660 x 750	1800 x 1250 x 1280	800
2SCF10	326/11	Front	Horizontal	660 x 660 x 750	1762 x 1880 x 1310	800
2UCF15	435/15	Front	Vertical	660 x 660 x 1000	1800 x 1250 x 1530	875
2SCF15	435/15	Front	Horizontal	660 x 660 x 1000	1762 x 1880 x 1560	875
2UCF20	454/20	Front	Vertical	660 x 660 x 1250	1800 x 1250 x 1810	950
2SCF21	636/21	Front	Horizontal	965 x 660 x 1000	1762 x 1880 x 1560	950
2SCF28	796/28	Front	Horizontal	965 x 660 x 1250	1762 x 1880 x 1810	1200
2SCF36	1052/36	Front	Horizontal	1100 x 660 x 1450	1762 x 1880 x 1997	1400

Operating Range – 105 to 137ºC (0-2.3bar)

Other options including stainless steel pipework, clean steam generators, compressors etc are all available. Please contact our sales office with your specific requirements.

* All external dimensions are approximate. Systems-MP models can usually be adapted to meet site-specific conditions.

	Accessories
CT1	Carriage Trolley – Epoxy coated, white – for all models up to 636 litres
LT1	Loading Trolley – Stainless steel. Base plus one shelf – for all models up to 636 litres
CT2	Carriage Trolley – Epoxy coated, white – for all models from 636 to 1052 litres
LT2	Loading Trolley – Stainless steel. Base plus one shelf – for all models from 636 to 1052 litres
SH1	Additional shelves for LT1 – stainless steel
SH2	Additional shelves for LT2 – stainless steel
DB	Discard box (HTM2010) – 250 x 305 x 305mm HWD
CD	Clamping door mechanism – per side
POL	Polished chamber to 0.63µm
SIDE	Side panels – all models
AC3	Air compressor
RG	Repeater gauge set for plant room
SPF	Bio Seal
CAT3	Cat. 3 filter and effluent retention
MBS	Manual blowdown separator
ABS	Automatic blowdown separator
SG36	36kW steam generator
SG45	45kW steam generator
SG55	55kW steam generator
SG70	70kW steam generator
3CR	3-pen chart recorder
PCR	Graphic recorder (various connectivity options)
RDA	Remote data archiving – includes software and 10m cable. Excludes PC
MOD	Modem link
DTC	Dual touchscreens (for pass-through models) – allows operation from both sides
BCO	Barcode reader and software

When choosing your autoclave, careful consideration needs to be given to the options you may need in order to optimise the autoclave's performance and safety. Below, we briefly explain the purpose of the more popular options.

Options Explained

Vacuum. Provides efficient air removal at the beginning of the cycle, ensuring that steam will penetrate deep into the load and not be affected by trapped air pockets. Vacuum air removal is considerably faster than gravity systems. During the cooling stage, vacuum can be used to help dissipate heat from the load and in some cases can aid in the removal of some moisture from the load – fitted as standard on Labclave 23 (Post only) and Touchclave Systems-MP models and as an option on all other models.

Air Ballast. Fluid loads, especially sealed container, normally need to be cooled slowly in order to prevent breakage or volume loss. Air ballast provides an over pressure in the chamber during cooling which allows the fluids to be cooled faster and with a greatly reduced risk of breakage or volume loss – fitted as standard on all Touchclave-R and Systems-MP models and available as an option on other ranges except Labclave 23.

Water Jacket Cooling System. Speeds up the cooling stage of the sterilization cycle - fitted as standard on all Touchclave-Lab 'K' Series and Systems-MP models and as an option on Touchclave-Lab 'F' Series models.

Steam Jacket. This feature is standard on Touchclave Systems-MP models and can be added to Touchclave-Lab 'K' Series models when fitted with vacuum. The steam jacket keeps the chamber hot in between cycles, and assists during the drying stage by flashing-off residual water in or around the load. This options is required where dry loads are required.

Constant Standby Steam Generator. Maintains the steam generator at pressure, ensuring that steam is available on demand, even for the first cycle of the day. Can also prove more economical than continually heating generator water from cold or warm. Available on Touchclave-Lab 'K' models.

Modem Link. This is a useful feature which allows real time information to be viewed by our technical and service team, thus minimizing potential down time.

Water Conservation. All Touchclave Systems MP, Touchclave-Lab 'K' Series models and water-jacketed 'F' Series models incorporate a water tank, which re-circulates the cooling water until it reaches a pre-set temperature when it is then drained and replaced. This feature significantly reduces water usage during the cycle.

Exhaust Condensate Unit. A re-circulating exhaust condensate unit is fitted on all Systems-MP and Touchclave Lab 'K' models, enabling discharge water temperatures to be kept below 70°C to avoid damage to plastic pipes and the environment. On vacuum models this feature also serves to protect the vacuum pump from live steam. Condensate units can be optionally fitted to Touchclave 'F' and 'R' models.

Effluent Retention. Used when processing potential or known P3 pathogens. Provides operator safety by filtering all non-condensable gases through a 0.2 micron filter prior to exhaust, whilst returning liquids to the chamber for sterilization, ensuring that nothing is exhausted without first being either filtered or sterilized.

Touchclave-R, Touchclave-Lab and Systems MP sterilizers are equipped with a control system which incorporates a powerful PLC combined with an easy to use touch-screen through which all commands, real-time cycle data, program data and alarms are inputted and displayed. The screen allows users to see the cycle status easily – even from a distance.

Control System

This versatile system gives users a choice of selecting from a menu of load-specific cycles or developing/editing their own cycle profile. 8 cycles can be stored into the memory as standard, and optional memory expansion is available to increase the number of available cycles to 20.

A cycle menu is brought up on screen, allowing the required cycle to be selected. For those who need their cycles to be traceable, there is a facility to input operator ID and Batch information at this stage. There is also a facility to program a delayed cycle start, which is particularly useful for maximising the use of the sterilizer.

All touchscreen systems are protected by a multi-level password system which prevents unauthorized access to control and service screens without suitable clearance.

A range of printers and recorders are available for those who require a hard copy of cycle data in addition to the data archiving.

Touchclave Touch Screen Systems incorporate a self-diagnostic system which will highlight any abnormality in the cycle. As an option, a modem can be fitted to the control system which will allow our technical team to view real-time cycle data from a remote location, enabling us in many cases to advise quickly on operational issues, thus minimising possible down-time.

Data Archiving

All Touchclave-Lab and MP models are equipped with automatic electronic data archiving. This comprises of an internal data storage facility which allows up to 5000 cycles to be stored on a single flash-card. Internal data archiving can be fitted to Touchclave 'R' models as an option.

As a further enhancement, a remote cycle data archiving facility can be added so that all cycle data, including any fault or alarm conditions, can be downloaded to a PC and permanently recorded.

Main features of Touchclave data archiving:

As Standard

- Cycle data and status are stored within the PLC Controller on a replaceable flash card. Dependent on the configuration, up to 5000 cycles may be recorded here.
- The recorded cycle data and status include "checksum" data to facilitate data validation.
- A new cycle cannot be started until the data from the previous cycle have been recorded.

As an Option

- Cycle data may be downloaded to a remote personal computer, translated and formatted into HTML files, and either printed or permanently archived.
- During each transfer, the integral Touchclave checksum is verified, ensuring that the original data has not been corrupted or modified.
- The transfer of data stored with the Touchclave System is automatically started whenever the associated PC application is launched. The PC does not need to be on-line during autoclaving.

The purchase of capital equipment is a decision for the long term. It is essential that your equipment operates efficiently, with as little downtime as possible. Choosing the right company to maintain and test your equipment is almost as important as the initial purchase.

LTE Service Centre

LTE's Service Centre employs a team of skilled service engineers, who are supported by technical engineers based at our headquarters. In addition to supporting our own equipment, we are able to offer a variety of services on other manufacturers' laboratory equipment and sterilizers ranging from surgical bench top products to large capacity installations. We ensure that large stocks of spare parts are always available and pride ourselves on the speed and quality of response that we are able to offer.

LTE is ISO 9001:2000 approved and its engineers are qualified 'Test Persons' to HTM 2010 and 2030. In addition, our Service Centre is UKAS accredited for calibration and validation services.

Our extensive customer care portfolio includes:

- Service Contracts
  We offer contracts for regular servicing of your equipment. Regular servicing by our Service Centre will ensure maximum performance from your equipment with minimum interruption. Our service contracts can be tailored to meet your specific requirements. Where required, testing to either HTM 2010/2030 or UKAS can be added to the contract. Contract customers receive discounts on spare parts and call out charges, prioritised response and access at all times to our factory-based Technical Support Team

- Testing
  In the NHS, maintenance requirements are governed by HTM 2010 & 2030. Service and testing schedules at LTE fully comply with these regulations. The work is carried out by fully trained and qualified Test Persons to ensure machines are fully validated and that machine performance is optimised to maximise efficiency

- Calibration & Validation
  LTE is accredited by UKAS to carry out calibrations and validations covering temperature, pressure and time. Calibrations can be carried out independently or as part of a service contract

- Steam Quality Testing
  Carried out as part of the annual testing under HTM2010 and 2031 or as a separate test

- Thermometric Load Tests
  Load and validation tests of sterilizing equipment verify the effectiveness of the operating cycle in achieving the required result. 12-point thermometric testing is carried out and recorded on a data acquisition system to profile and validate the cycle for the chosen parameters

- Install & Commission
  Your LTE equipment will be installed to existing site services by our fully trained engineers with minimum disruption. Our installation service includes functional testing of your equipment. Further commissioning work can be tailored to suit your requirements

- Breakdown Service
  In the event of a breakdown, LTE provides you with telephone support and advice, along with the assurance that we will be on site as quickly as possible to get you operational again

- Training
  Operator training is offered as part of our installation package. Additional training can be arranged and designed around your particular requirements and budget

- Mods & Upgrades
  It is often possible to modify or upgrade your existing equipment, for example, by adding new control systems or improving mechanical controls. You can discuss your requirements with our technical support team.

LTE Scientific is one of Europe's leading designers and manufacturers of medical and laboratory equipment. In addition to the products listed in this catalogue, LTE also offers the following for which catalogues are also available:

Other LTE products

Medical Sterilizers and Equipment

Ranging from 6 litres to 10,000 litres LTE manufactures a wide range of steam sterilizers specifically for medical applications.

Our Mediclave range offers a number of models in 6, 18 and 23-litre capacities, all designed for use in the dental, chiropody and general surgical markets.

Touchclave-PL and Systems-PL ranges are all designed for use in CSSD/HSDU. Standard sizes are from 150-litres to 1052-litres, although larger units can also be provided. In addition to CSSD/HSDU applications, our Touchclave-PL has also been supplied into the veterinary market.

Touchclave-R/PL models range from 60 to 160-litres. This range offers a larger capacity alternative to the traditionally small benchtop market and is ideal for processing larger instruments, such as those found in the veterinary market.

Scope-Store. Our range of endoscope storage and drying cabinets has been designed to offer unparalleled levels of traceability and safety. Six models are available in total with 5, 8 and 10-scope capacities. We also offer the choice of vertical or shelf-loaded versions. All '+' models offer touchscreen controls, user PIN access and recording of air-flow through each loaded endoscope.

Solution and Blanket Warming Cabinets. Designed for use in hospital theatres, treatment rooms and wards, this range of products maintains ointments, infusion fluids and blankets at body temperature

Laboratory Equipment

Ovens. Natural and fan convection OP ovens operate from 40 to 250ºC and are available in sizes from 60 to 1000 litres.

Incubators. Natural and fan circulated IP incubators are available in capacities from 60 to 1000 litres. Temperature range is from Amb+5 to 80ºC.

Cooled Incubators. With temperatures from +2 to +50ºC, our Qualicool range is ideal for BOD testing and other low temperature techniques. Sizes range from 70 to 500 litres

Freeze-Dryers. The Lyotrap is a range of laboratory freeze-dryers, designed to provide cost-effective freeze-drying using common techniques such as shelves, flasks, ampoules and vials. Ice capacities are from 3 to 18kg. Larger industrial systems can be built to specific customer requirements.

Drying Cabinets. Designed for the effective drying of glassware and plastics, this range is available in sizes from 100 to 1000 litres.

Environmental Rooms. Our tailor-made rooms are designed for ICH-standard product stability testing in the pharmaceutical industry and also for large scale incubation. Both temperature and RH levels are controlled to close tolerances. In addition, light controls can also be incorporated into rooms where required.

For a brochure or more details on any of the above products,
please contact our sales office on 01457 876221, or visit www.lte-scientific.co.uk

Notes

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LTE is a progressive company and reserves the right to alter the specification of its products without notice. E&OE

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