



# LABORATORY PRODUCTS





Aerial view of our manufacturing facility near Manchester



In-House design



On-Site Coded Welders



Manufactured in the UK to the highest standards

# INTRODUCTION

## LEADING SPECIALISTS IN LABORATORY AND MEDICAL STERILIZATION AND DECONTAMINATION SOLUTIONS

Established in 1947, LTE Scientific is a UK-based ISO9001 accredited manufacturer of sterilization, decontamination and temperature controlled equipment for the life science and medical sectors.

We have a proud heritage of delivering high quality, reliable products and delivering market leading service and after-sale care.

Our life science autoclaves, designed for sterilizing all types of laboratory-ware and discard are supplied with cylindrical or rectangular chambers and are available in capacities from 40-litres to over 1000-litres. Our bespoke service allows for chamber sizes up to 6000-litres.

As pioneers in the sterilization field, we are industry leaders when it comes to innovation and progression.

Our wide offering of ovens, incubators, cooled incubators and drying cabinets are all familiar sights in many laboratories around the world, providing reliable and accurate performance over a wide range of applications.

Our environmental rooms provide a bespoke solution for a wide range of temperature, humidity and light control applications, such as stability testing, incubation, packaging testing. We offer a full and free consultation service.

We are exclusive UK distributors of KEN Hygiene Systems and are the sole provider of their IQ washer-disinfectors.

Hopefully this brochure will give you a flavour of what we can offer, but if you have any further questions please do not hesitate to contact us.

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# A STRAIGHTFORWARD GUIDE TO CHOOSING YOUR AUTOCLAVE...

LTE offers a wide range of Laboratory Autoclaves for general purpose sterilizing applications, enabling customers to choose a model which best suits their application, and their volume and budgetary requirements.



Choosing the right autoclave and, more importantly, the options that can (or should) be fitted to it is extremely important and varies depending on application and throughput. You need to ensure that your autoclave is optimised for the load types you wish to process. To help you to make the right choice, we have produced this simple guide which cuts through all the jargon, tells you exactly what features each LTE range has, what the options are, and when those options should be applied.

The types and sizes of autoclave in each model range are shown below.

Types and Sizes	Touchclave-R	Touchclave-K	TC Systems-MP
Chamber profile	Round	Rectangular	Rectangular
Chamber size (litres):			
Front loading models	40, 60, 120, 160	150, 200, 300, 360, 450	435, 545, 636, 796, 1052
Top loading models	60, 120, 160	--	--
Steam source	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 three ranges some of the features which are standard or which may be ordered as additional options, depending on the application.

Features and Options	Touchclave-R	Touchclave-K	TC Systems-MP
Touchscreen Control System	■	■	■
Door system			
Sliding	☒	■	■
Pneumatic seal	■	■	■
Dual doors for pass-through	☒	☐ 300L+	☐
Single action	■	☒	☒
8 Cycle Programs	■	■	■
Storage and Retrieval of Cycle Data			
Internal Data Archiving	☐	■	■
Remote Data Archiving	☐	☐	☐
Data Printer	☐	☐	■
Cooling System	■	■	■
Pre/Post Vacuum System	☐	☐	■
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 (for drying)	Steam Jacket not available on Touchclave-R
Porous loads Clothing Wrapped instruments	Touchclave-K TC Systems-MP	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 (for drying)	Steam Jacket not available on Touchclave-R
High security applications (PL3, BS3, Cat3, Cat4)	All	Pre/Post Vacuum Cat.3 Effluent Retention	Cat.3 Effluent Retention is essential for this application

# TOUCHCLAVE-R

## IN-CHAMBER HEATING

Available in 40, 60, 120 and 160-litre capacities, with a choice of front or top loading.

Ideal for many laboratory sterilization applications, the Touchclave-R range is ideal for installation in laboratories which do not have access to a drain or water supply, due to the submerged in-chamber heater.

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

Touchclave-R models can also be modified to suit specific requirements such as operating from customers steam supplies or being fitted with an auto drain/fill system.

### KEY FEATURES:

- No-action 'push-n-seal' door with pneumatic seal and locking with safety switch
- 8-program Touchscreen control system
- Compact design
- 316L stainless steel pressure vessel
- Built-in air ballast system for faster processing of liquid loads
- Load-sensed process timer
- Fan cooling system
- Operating temperatures from 105°C to 137°C
- Water level Sensors to prevent operation if there is insufficient water.



Model	Capacity (litres)	Loading	Chamber Dims Dia x D (mm)	Overall Dims HWD (mm)	Weight (kg)	Shelves/positions
TCR/40/H	40	Front	350 x 415	725 x 600 x 775	120	1/1
TCR/60/H	60	Front	350 x 625	1400 x 625 x 1150	205	1/1
TCR/60/V	60	Top	350 x 625	1100 x 725 x 700	210	1/1
TCR/120/H	120	Front	500 x 610	1600 x 725 x 1350	260	2/2
TCR/120/V	120	Top	500 x 610	1100 x 725 x 700	265	1/1
TCR/160/H	160	Front	500 x 825	1600 x 725 x 1350	290	2/2
TCR/160/V	160	Top	500 x 825	1200 x 925 x 825	295	1/1

**MODELS**

Capacity/Loading	Standard	Pre/Post Vacuum System	Pre/Post Vacuum System, Boosted Heater
40-litre Front Loading	TCR/40/H1	TCR/40/H5	TCR/40/H5B
60-litre Front Loading	TCR/60/H1	TCR/60/H5	TCR/60/H5B
60-litre Top Loading	TCR/60/V1	TCR/60/V5	TCR/60/V5B
120-litre Front Loading	TCR/120/H1	TCR/120/H5	TCR/120/H5B
120-litre Top Loading	TCR/120/V1	TCR/120/V5	TCR/120/V5B
160-litre Front Loading	TCR/160/H1	TCR/160/H5	TCR/160/H5B
160-litre Top Loading	TCR/160/V1	TCR/160/V5	TCR/160/V5B

**OPTIONS AND ACCESSORIES**

Cat. No	Description
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/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/HST/01	Electric hoist for all top loading models*
TC/VOL/--	Conversion to 60Hz electrical supply (non-vacuum models)*
TC/MOR/--	Morrison discard box
TC/BAS/--	Basket

Items marked \* are factory fit options

# TOUCHCLAVE-LAB “K” SERIES

INTEGRAL STEAM GENERATOR/DIRECT STEAM

The ‘K’ Series is LTE’s top-line range of mid-sized rectangular chambered general purpose autoclaves. Available in 5 sizes from 150 to 450-litre capacities, with pass-through versions also available from 300-litres and above.



**KEY FEATURES:**

- 8-program touchscreen control system
- Integral silent air compressor
- Load-sensed process timer
- Internal data archiving
- Water jacketed chamber for exceptional cooling efficiency
- Water conservation system and exhaust condensate
- Pneumatically operated door lock and sealing system
- 316L stainless steel pressure vessel
- Anti-Bacterial Epoxy Powder Coating
- Small Footprint

Model	Capacity (litres)	Chamber Dims (mm)	Overall Dims HWD (mm)	Weight (kg)	Shelves/positions
TC/150/KE/KS	150	600 x 500 x 500	1850 x 750 x 1500	530	2/4
TC/200/KE/KS	200	600 x 500 x 660	1850 x 750 x 1650	560	2/4
TC/300/KE/KS	300	600 x 500 x 1000	1850 x 750 x 1650	680	2/4
TC/360/KE/KS	360	600 x 600 x 1000	1850 x 850 x 1650	720	2/4
TC/450/KE/KS	450	600 x 600 x 1250	1850 x 850 x 1900	820	2/4



**MODELS**

K Series		
Steam Generation Method	Integral	Direct
Standard	TC/XXX/KE1	TC/XXX/KS6
Enhancement Packages		
Pre/post vacuum system (50mbarA) and (for KE models) constant standby steam generator	TC/XXX/KE3	TC/XXX/KS7
Pre/post vacuum system (50mbarA) and (for KE models) constant standby steam generator	TC/XXX/KE5	TC/XXX/KS9

**OPTIONS AND ACCESSORIES**

Cat. No	Description
TC/ESB/01	Emergency Stop Button*
TC/AIR/--	Air Ballast System*
TC/AFP/01	Upgrade of Standard Load Probe to Armour-Flex Probe
TC/FIL/01	Cat. 3 effluent retention upgrade (including 0.2micron exhaust filter)*
TC/PWR/01	Pneumatic Powered Door with Safety Edge and E-Stop*
TC/ALR/01	Automatic Leak-Rate Cycle*
TC/PAS/--	Pass-through Chamber*
TC/TDP/01	Thermal Paper Printer
TC/GCR/01	Independent Graphic Recorder
TC/RDA/--	Remote Data Archiving - Various options: USB/Ethernet/Wifi (excluding PC)*

Items marked \* are factory fit options

A range of other options are also available including loading /carriage trolleys, stainless steel panel-work and various baskets and Discard boxes. Please contact LTE for more details.

In-chamber heated model available on request.

## TOUCHCLAVE-SYSTEMS MP

### DIRECT STEAM/STEAM GENERATOR

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

Our MP range of general purpose rectangular chambered sterilizers are available in five standard sizes from 435 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 are fitted with a wide selection of features as standard, designed to ensure optimal performance.



#### KEY FEATURES:

- Automatic sliding doors with safety edge and auto-retract system. Floating door seals are employed as standard
- 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 (upgradeable to 20 programs)
- Internal data archiving with 5000 cycle capacity
- Thermal printer which provides all cycle details and operational data

## TECHNICAL INFORMATION

**Steam Source** - All Touchclave Systems are designed for direct steam. We have a range of steam generators available if required, as detailed below.

**Operating Range** - 105 to 137°C (0-2.3bar)

Model	Capacity (litres)	Door Movement	Chamber Dims HWD (mm)	Overall Dims HWD (mm)*	Weight Max (kg)
<b>Single-Entry Models</b>					
UCF15	435	Vertical	660 x 660 x 1000	1900 x 1270 x 2000	875
UCF20	545	Vertical	660 x 660 x 1250	1900 x 1270 x 2150	950
SCF21	636	Horizontal	965 x 660 x 1000	1900 x 1920 x 2000	950
SCF28	860	Horizontal	965 x 660 x 1350	1900 x 1920 x 2000	1200
SCF36	1052	Horizontal	1100 x 660 x 1450	2035 x 1920 x 2000	1400
<b>Pass-through (dual door) Models</b>					
2UCF15	435	Vertical	660 x 660 x 1000	1900 x 2000 x 1450	875
2UCF20	545	Vertical	660 x 660 x 1250	1900 x 2000 x 1800	950
2SCF21	636	Horizontal	965 x 660 x 1000	1900 x 2150 x 1600	950
2SCF28	860	Horizontal	965 x 660 x 1350	1900 x 2150 x 1950	1200
2SCF36	1052	Horizontal	1100 x 660 x 1450	2035 x 1970 x 2050	1400

\* Overall dims are typical sizes and may change dependent upon configuration

## OPTIONS AND ACCESSORIES

Cat. No	Description
RDA/--	Remote Data Archiving - Various options: USB/Ethernet/Wifi (excluding PC)*
CAT3	Cat. 3 effluent retention upgrade (including 0.2micron exhaust filter)*
CT/--	Carriage Trolley
LT/--	Loading Trolley
NANO/--	Eurotherm Nanodac 2/3-channel Graphic Recorder
RP/--	Impact Printer (single colour) - HTM2010
SPF/--	SPF Barrier
LTE40/60	LTE 40-60kw Steam generator
LTE70	LTE 70kw Steam generator
ABV / MBV	Blowdown Vessel (automatic & manual available)

**Loading Equipment** - In addition to our standard carriage/loading trolleys, we also offer Remeda semi and fully automatic loading systems. Our Remeda systems can also be tailored to retro-fit on to all brands of autoclave.

# POPULAR OPTIONS EXPLAINED

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.

### 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 -  
Standard on Touchclave Systems-MP 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 -  
Standard on Touchclave Systems-MP models.

### WATER JACKET COOLING SYSTEM

Speeds up the cooling stage of the sterilization cycle -  
Standard on all Touchclave-Lab 'K' Series and Systems-MP 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.

### 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.

### EXHAUST CONDENSATE UNIT

A re-circulating exhaust condensate unit is fitted on all Touchclave 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.

### EFFLUENT RETENTION

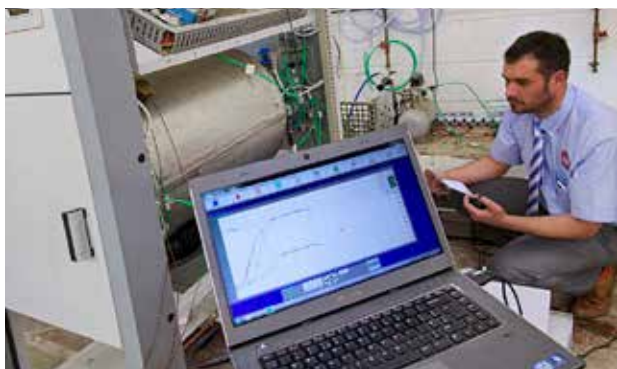
Used when processing potential or known P3 pathogens. Provides operator safety by filtering all non-condensable gases through a 0.2 micron filter prior to exhaust, whilst returning liquids to the chamber for sterilization, ensuring that nothing is exhausted without first being either filtered or sterilized.

## SERVICE

The purchase of capital equipment is a decision for the long term. As a result, it is essential that your equipment operates efficiently, with as little downtime as possible.

Therefore, choosing the right company to maintain and test your equipment is almost as important as the initial purchase. LTE operates an independent Service Centre employing a nationwide 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, washer disinfectors, AERs and scope cabinets. 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 accredited to ISO 9001 & ISO 13485 and our engineers are qualified to HTM-0101 parts C & D to carry out testing on sterilizers and washer disinfectors. In addition, our Service Centre has UKAS accreditation for calibration and validation services.



### UKAS CALIBRATION AND VALIDATION

The Company is accredited by UKAS to carry out calibrations and validations covering temperature, pressure and time.

### MAINTENANCE SERVICE CONTRACTS

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-0101 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 Technical Support Team.

### INSTALLATION AND COMMISSIONING

Your LTE equipment will be installed to existing services by our fully trained engineers with minimum disruption. Our installation service includes functional testing of your equipment and commissioning can be tailored to suit your requirements.

### EMERGENCY BREAKDOWN SERVICE

In the event of a breakdown, LTE provides you with the assurance that we will be on site as quickly as possible to get you operational again.

### SUPPLY OF SPARE PARTS

We hold a large and comprehensive stock of spare parts to minimise down time.

## TRAINING

LTE has a dedicated Training Centre at our manufacturing facility in Greenfield, near Oldham consisting of a number of autoclaves from 40L machines to a large fixed installation autoclave which has been designed to replicate conditions on site with a plant room etc. A full set of test equipment consisting of a data logger, laptop and TQ soft is also available. We offer a range of standard and tailored courses for managers, technicians and operators of autoclaves.

## OP SERIES OVENS

The OP Series of ovens offers maximum flexibility and unparalleled performance for the ever-increasing demands of today's laboratory and process facility. Traditional quality and modern manufacturing techniques linked with LTE's built-in reliability mean that the OP Series represent excellent value.



### KEY FEATURES:

- Temperature range 40 to 250°C
- Sizes from 60 to 250-litres
- Class 2 Over-temperature protection
- Stainless steel radiused interiors
- Digital display of set and actual temperatures (plus programmed features on "M" Models)
- Choice of PID temperature control systems - "U" Uni program (single temperature) and "M" multi-program (allows up to 8 multiple-step cycles to be stored)
- Anti-bacterial epoxy powder coating
- Adjustable vent
- Choice of natural convection or fan circulated
- Communication port options

### TECHNICAL INFORMATION

Model	Capacity (litres)	Air Circulation	Internal Dims HWD (mm)	External Dims HWD (mm)	Fluctuation ± %	Spatial Variation (empty) ± %*	Shelves/ Positions
OP60-U/M	60	Natural Convection	400 x 400 x 400	590 x 735 x 575	Nat Conv 0.5	3.5	2/6
OP60-UF/MF	60	Fan Circulation	400 x 400 x 400	590 x 735 x 575	Fan Circ 0.25	1.0	2/6
OP100-U/M	100	Natural Convection	500 x 500 x 400	690 x 835 x 575	Nat Conv 0.5	3.5	2/8
OP100-UF/MF	100	Fan Circulation	500 x 500 x 400	690 x 835 x 575	Fan Circ 0.25	1.5	2/8
OP150-U/M	150	Natural Convection	600 x 500 x 500	790 x 835 x 675	Nat Conv 0.5	3.5	2/10
OP150-UF/MF	150	Fan Circulation	600 x 500 x 500	790 x 835 x 675	Fan Circ 0.25	1.5	2/10
OP250-U/M	250	Natural Convection	1000 x 500 x 500	1190 x 835 x 675	Nat Conv 0.5	4.0	3/18
OP250-UF/MF	250	Fan Circulation	1000 x 500 x 500	1190 x 835 x 675	Fan Circ 0.25	2.0	3/18

\* Performance tests carried out in ambient temperatures of 20 to 22°C

## SWALLOW LARGE CAPACITY OVENS

Swallow Large Capacity Ovens offer precise control and are designed to meet the ever increasing demands of the modern laboratory and process facility.



### KEY FEATURES:

- Microprocessor control system, offering precise temperature control, fast heat-up times and almost undetectable overshoot.
- The process timers and delayed start timers are each programmable from 1 minute to 99 hours 59 minutes.
- All models allow up to 3 time/temperature profiles to be programmed within one cycle.
- All models fan circulated for greater accuracy.
- Swallow ovens meet fully the requirements of IEC 010-2-010 Class 2.
- Temperature range 40 to 250°C

### TECHNICAL INFORMATION

Model/Cat. No	Capacity (litres)	Internal Dims HWD (mm)	External Dims HWD (mm)	Fluctuation ± %	Spatial Variation (empty) +%*	Shelves/Positions
Swallow 480 - LO/SWL/20/1	480	1000 x 720 x 670	1270 x 870 x 865	0.2	4.0	3/19
Swallow 750 - LO/SWL/42/1	750	1000 x 1120 x 670	1270 x 1270 x 865	0.2	5.0	3/19
Swallow 1000 - LO/SWL/50/1	1000	1270 x 870 x 865	1655 x 1270 x 1025	0.2	6.0	3/23

## DRYING CABINETS

LTE offers a wide selection of laboratory drying cabinets. From bench-top to large floor-standing models. We also offer a range of energy efficient drying cabinets. With capacities from 100 to 1000-litres, there will be a model to suit your particular requirements.



### FILTERED AIR DRYING CABINET

- The fine filter reduces the amount of contamination entering the cabinet, thereby ensuring a cleaner environment for freshly washed items
- The temperature is thermostatically controlled and the system is protected by an over-temperature cut-out device

### ECONOMY DRYING CABINET

- Efficient drying at an economical price
- Fan extraction models draw the moist air upwards and direct it to the outside
- Single or double toughened glass doors are provided, dependent on the model

### SLIDING DOOR DRYING CABINET

- For straightforward natural convection drying, this bench or wall-mounted range represents excellent value for money
- There is a choice of stainless steel or epoxy coated finish

### TECHNICAL INFORMATION

Drying Cabinet Type	Cat. No	Capacity (Litres)	Air Circulation	Max Temp (°C)	Internal Dims HWD (mm)	External Dims HWD (mm)	Shelves/ Positions
Filtered Air	322/0105/00	534	Fan Circulation	65	1115 x 785 x 610	1380 x 790 x 660	3/6
Economy	322/0106/00	545	Natural Convection	65	1480 x 625 x 590	1675 x 650 x 700	4/28
	322/0108/00		Fan Circulation				
Economy	322/0107/00	1000	Natural Convection	65	1480 x 1150 x 590	1675 x 1175 x 700	4/28
	322/0109/00		Fan Circulation				
Sliding Door Epoxy Coated	322/0103/00	100	Natural Convection	85	425 x 775 x 300	540 x 860 x 360	2/21
	322/0104/00	180	Natural Convection		555 x 995 x 325	670 x 1080 x 390	2/35
Sliding Door Stainless Steel	322/0101/00	100	Natural Convection	85	425 x 775 x 300	540 x 860 x 360	2/21
	322/0102/00	180	Natural Convection		555 x 995 x 325	670 x 1080 x 390	2/35



### ECO-DRYING CABINET

Our range of sustainable eco-drying cabinets will significantly reduce power usage (and therefore running costs) when compared to a standard glassware drying cabinet.

Complete with digital temperature controller and electronic 7-day timer, the eco-Drying Cabinet range is designed to offer market leading operational efficiencies over standard drying cabinets, yet remain economically priced.

In empty chamber tests, our DL100E used only 0.1kW to heat from ambient 22°C to 60°C, and then only 0.125kWh to maintain that temperature.

#### KEY FEATURES:

- Energy savings of at least 50% when compared to standard glassware drying cabinets
- Insulated on 5 sides
- Low heat output
- Digital PID temperature control
- Programmable 7-day timer
- Anti-bacterial epoxy coating to exterior



### TECHNICAL INFORMATION

Cat. No	Capacity (Litres)	Air Circulation	Max Temp (°C)	Internal Dims HWD (mm)	External Dims HWD (mm)	Shelves/Positions
DL100E	100	Natural Convection	80	425 x 775x 300	670 x 950 x 400	2/21
DL180E	180	Natural Convection	80	555 x 995 x 325	800 x 1175 x 425	2/35

#### TYPICAL ENERGY USAGE AT 75 (°C)

Cat. No	Energy used in 1 hr (kWh)	Energy used in 8 hr (kWh)	Energy used in 24 hr (kWh)
DL100E	0.188	1.50	4.50
DL180E	0.349	2.79	8.37

#### HEAT UP TIMES & ENERGY USAGE (DL100E)

Set Temp	Load	Energy used (kWh)	Time taken/ mins
22 - 75°C	No	0.09	15

Tests carried out at an ambient temperature of 22°C

## IP SERIES INCUBATORS

The IP Series of incubators offers maximum flexibility and unparalleled performance for the ever-increasing demands of today's laboratory and process facility. Traditional quality and modern manufacturing techniques linked with LTE's built-in reliability mean that the IP Series represent excellent value.

### KEY FEATURES:

- Temperature range 30 to 80°C
- Sizes from 60 to 250-litres
- Class 2 Over-temperature protection
- Stainless steel radiused interiors
- Digital display of set and actual temperatures (plus programmed features on "M" Models)
- Choice of PID temperature control systems - "U" Uni program (single temperature) and "M" multi-program (allows up to 8 multiple-step cycles to be stored)
- Anti-bacterial epoxy powder coating
- Adjustable vent
- Choice of natural convection or fan circulated
- Communication port options



### TECHNICAL INFORMATION

Model	Capacity (litres)	Air Circulation	Internal Dims HWD (mm)	External Dims HWD (mm)	Fluctuation ± %	Spatial Variation (empty) ± %*	Shelves/Positions
IP60-U/M	60	Natural Convection	400 x 400 x 400	590 x 735 x 575	Nat Conv 0.5	2.75	2/6
IP60-UF/MF	60	Fan Circulation	400 x 400 x 400	590 x 735 x 575	Fan Circ 0.25	1.5	2/6
IP100-U/M	100	Natural Convection	500 x 500 x 400	690 x 835 x 575	Nat Conv 0.5	2.75	2/8
IP100-UF/MF	100	Fan Circulation	500 x 500 x 400	690 x 835 x 575	Fan Circ 0.25	1.5	2/8
IP150-U/M	150	Natural Convection	600 x 500 x 500	790 x 835 x 675	Nat Conv 0.5	4.0	2/10
IP150-UF/MF	150	Fan Circulation	600 x 500 x 500	790 x 835 x 675	Fan Circ 0.25	1.5	2/10
IP250-U/M	250	Natural Convection	1000 x 500 x 500	1190 x 835 x 675	Nat Conv 0.5	5.0	3/18
IP250-UF/MF	250	Fan Circulation	1000 x 500 x 500	1190 x 835 x 675	Fan Circ 0.25	2.0	3/18

\* Performance tests carried out in ambient temperatures of 20 to 22°C

## SWALLOW LARGE CAPACITY INCUBATORS

Swallow Large Capacity incubators offer precise control and are designed to meet the ever increasing demands of the modern laboratory and process facility.



### KEY FEATURES:

- Microprocessor control system, offering precise temperature control, fast heat-up times and almost undetectable overshoot
- The process timers and delayed start timers are each programmable from 1 minute to 99 hours 59 minutes
- All models allow up to 3 time/temperature profiles to be programmed within one cycle
- All models fan circulated for greater accuracy
- Swallow incubators meet fully the requirements of IEC 1010-2-010 Class 2
- Temperature range: Ambient +5 to 100°C

### TECHNICAL INFORMATION

Model/Cat. No	Capacity (litres)	Internal Dims HWD (mm)	External Dims HWD (mm)	Fluctuation $\pm$ %	Spatial Variation (empty) $\pm$ %*	Shelves/Positions
Swallow 480 - LI/SWL/20/1	480	1000 x 720 x 670	1270 x 870 x 865	0.2	1.5	3/19
Swallow 750 - LI/SWL/42/1	750	1000 x 1120 x 670	1270 x 1270 x 865	0.2	2.0	3/19
Swallow 1000 - LI/SWL/50/1	1000	1270 x 870 x 865	1655 x 1270 x 1025	0.2	2.6	3/23

## IC SERIES COOLED INCUBATORS

The IC range of cooled incubators from LTE deliver exceptional performance and value. All models offer accurate temperature performance and space-efficient storage capacities with the IC200 model being an under-bench or bench-top model providing an impressive net chamber capacity of 92-litres, making it one of the largest under-bench/bench-top cooled incubators available.

### KEY FEATURES:

- Temperature range 2 to 50°C
- Sizes from 92 to 516 litres
- Stainless steel or white epoxy finish
- Low GWP, all models use refrigerants R290 or R600a
- PID temperature control
- ABS easy clean interior
- Class 2 Over-temperature protection



### TECHNICAL INFORMATION

Model	Capacity (litres)	Exterior Finish	Internal Dims W - HxD (mm)	External Dims HWD (mm)	Variation*	Shelves
IC200	92	White Epoxy	Width 460 A 260 x 330 B 260 x 445	830 x 595 x 640 (+95 for castors)	At +5°C: ± 0.35°C	3
		Stainless Steel			At 37°C: ± 0.8°C	
IC300	176	White Epoxy	Width 460 A 260 x 330 B 665 x 445	1325 x 595 x 640	At +5°C: ± 0.6°C	4
		Stainless Steel			At 37°C: ± 1.0°C	
IC400	294	White Epoxy	Width 460 A 260 x 330 B 1240 x 445	1900 x 595 x 640	At +5°C: ± 0.6°C	6
		Stainless Steel			At 37°C: ± 1.0°C	
IC600	516	White Epoxy	Width 460 Height 1470 Depth 660	2000 x 695 x 870	At +5°C: ± 0.6°C	4
		Stainless Steel			At 37°C: ± 1.0°C	

\* Tests carried out in empty chambers on cabinets with solid doors using 12 x temperature probes in free space.



## ENVIRONMENTAL ROOMS AND CHAMBERS

LTE Scientific is one of the UK's largest providers of environmentally controlled rooms and chambers for the pharmaceutical and scientific sectors. With a range of standard and bespoke solutions, our products are designed to meet the most demanding performance criteria to give you the best results possible.

As each environmental room tends to be a bespoke solution tailored around customer requirements, we take a consultative approach to every project. Starting with a thorough design brief and ensuring that our solutions fits in perfectly with your operational and site requirements.



### APPLICATIONS INCLUDE:

- Stability testing for pharmaceutical products
- Shelf life testing in the food sector
- Packaging trials
- Large scale incubation
- Large scale BOD testing
- Preservation testing
- Storage and testing of hazardous materials

### KEY FEATURES:

- Modular Construction
- Environmental Control
- Temperature parameters from -20 to 70°C
- Relative humidity ranges from 20-90%RH
- Precise temperature & humidity tolerance
- Temperature chart recorder
- Alarms and protection circuits
- Internal lighting

### OPTIONS AND ACCESSORIES

#### Description

Remote Data Archiving - Various options to provide a tailored solution

Data Recording Systems - Including 21CFR11 compliant devices

Sliding Doors

## KEN IQ WASHER-DISINFECTORS

As exclusive UK distributor for leading Danish company KEN Hygiene Systems, LTE are the sole provider of the IQ range of washer disinfectors, suitable for the research and general laboratory sectors.

Available in a range of sizes from the benchtop/under bench IQ3 up to the floor standing IQ5 with its large chamber capacity of over 285 Litres.

The IQ range offers exceptional load and wash efficiency, one of the fastest cycle times on the market, low energy consumption and excellent space savings to offer an economically friendly washer, offering optimal disinfection efficiency.

### KEY FEATURES:

- Small footprint
- Low water consumption
- Low energy usage
- Low chemical usage
- Low noise levels
- Full process validation
- Flexible shelf and rack systems
- Easy clean glass surfaces



### TECHNICAL AND ORDERING INFORMATION

Model	Operative Volume (litres)	Total Volume (litres)	Chamber Dims HWD (mm)	Overall Dims HWD (mm)	Weight Max. (kg)	Max Din Baskets*
IQ3L	150	170	490 x 540 x 555	840 x 600 x 630	105	4 x 2
IQ3L side cabinet	150	170	490 x 540 x 555	840 x 900 x 630	135	4 x 2
IQ4L	195	225	595 x 540 x 610	1810 x 600 x 700	165	8
IQ5L	235	285	690 x 550 x 625	1985 x 665 x 715	236	12

\* Based on 480 x 250 x 50mm (W,D,H) DIN baskets.



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