



T-EDGE 10 & T-EDGE 11 DATA SHEET

Table Top Steam Sterilizer



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1. GENERAL DESCRIPTION



The T-Edge autoclave is a state-of the art Class B Tabletop Steam Sterilizer. The autoclave is fully automatic (a computerized control unit ensures a fully automatic sterilization cycle, control and monitoring of physical parameters and a clear documentation of the sterilization cycle. Drying is performed with the door closed).

This autoclave uses steam as a sterilizing agent.

The steam is produced by warming up a controlled amount of water inserted to a pipe heating element, and then to the chamber. This technique saves energy and water consumption.

The autoclave is equipped with a Pipe heating element and with chamber heaters to maintain the steam inside the chamber.

The autoclave is equipped with a vacuum system which supports and improves:

- Removal of residual air from packs and porous load and most kinds of tubes (rubber, plastic etc.) by vacuum at the first stage of the cycle.
- Steam penetration into the load; resulting in effective sterilization.
- Temperature uniformity.
- Post sterilization drying phase.

A touchscreen is used for monitoring and control purposes.

The device has a built -in USB port to enable the operation of an external optional barcode printer:

- The barcode printer can print labels with a unique cycle ID barcode, operator name, sterilization, and expiry dates.
- One barcode printer can be connected to the machine.
- The printer connection to the machine, by using a USB socket, with a dedicated cable.
- Barcode printer power supply voltage can range between 100-240V.
- A barcode printer is an optional addition to the autoclave.

The device features built-in memory to record up to 999 sterilization cycles. These can be exported to a USB device to be transferred to a PC.

The device has a built-in Network Port for use with optional Tuttnauer's R.P.C.R software when connected to your local network.



The autoclave has two optional configurations (available upon request):

- Basic: Demineralized water is supplied by a manually filled reservoir, demineralized water overflow outlet on the rear cover (device catalog number: AMS10-230-PED-T, AMS11-230-PED-T)
- Automatic: Demineralized water direct inlet from the water supply system, demineralized water overflow, and wastewater outlet on the rear cover (device catalog number: AMS10-230-W-PED-T, AMS11-230-W-PED-T)

Note: This Data Sheet includes information on the following T-Edge models:

1. T-Edge 10 for 230V reference models AMS10-230-PED-T, AMS10-230-W-PED-T.
2. T-Edge 11 for 230V reference models AMS11-230-PED-T, AMS11-230-W-PED-T

All information in this document applies to all models unless indicated otherwise.

1.1. Intended Use & Users

The T-Edge 10 & T-Edge 11 tabletop autoclaves are designed for the sterilization of medical and surgical goods such as wrapped and unwrapped, solid, hollow, and porous loads used in healthcare facilities (e.g., hospitals, nursing homes, extended care facilities, freestanding surgical centers, clinics, and medical and dental clinics).

It is intended for use by hospitals and medical personnel.

All autoclave users must receive training in the proper usage from an experienced employee. Every new employee must undergo a training period under an experienced employee.

1.2. Configuration Summary

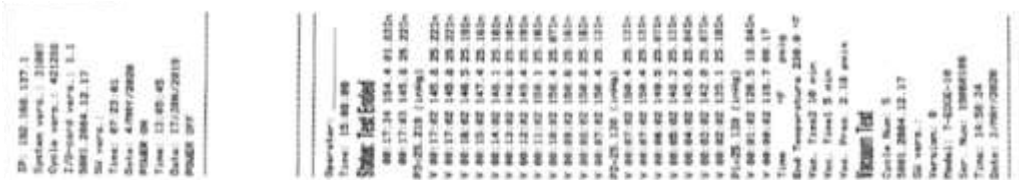
- Chamber volume
 - T-Edge 10 - 23 liters
 - T-Edge 11 – 27.2 liters
- Working pressure meets ASME (USA) and PED (Europe) requirements.
- Working pressure 15 to -335 kpa / 2.17-48.5 psi.
- Sterilization temp. range 121 °C to 134 °C (according to the sterilization program).
- USB, Ethernet and WIFI communication ports
- User friendly control system with a high-resolution 131mm x 84.5 mm tactile touchpad
- PT100 sensors
- Stainless steel chamber

1.3. Printers (Optional)

The printer(s) are optional and can be purchased/ordered from Tuttnauer by the customer; the printers can easily be installed and connected to the autoclave following the instructions given in the T-Edge Manuals. Printer details: Date, Time: Ser. Num: Model: Version: Cycle Num: Cycle Name: Ster. Temp: Ster. Time: Dry Time: End Temperature Cycle Ended".

The options include:

- One printer connected to the autoclave that can be loaded with thermal paper roll, or with label roll. The user can direct the printer to switch between printing on thermal paper roll or label roll.
- Two printers connected to the autoclave, one loaded with thermal paper roll, and the second printer with label roll.



example of a typical printout



Printer printing barcodes



Printer with thermal paper

1.4. Environment

This device is for indoor use only!

The ambient temperature range shall be 5°C - 40°C and the relative humidity of up to 80% - 85%.

1.5. Environment Emission Information

1. The peak sound level generated by the autoclave is 67 dBA with background noise of 48 dBA during sterilization stage, and 65 dBA during drying stage.
2. The total heat per hour transmitted by the autoclave is < 200 W/h. (172 kcal)

1.6. Electrical Utility Requirements

Power supply:

- Check and verify a 1 phase, 230VAC ±10%, 50/60Hz, 9A -1960W supply.

Electrical net: Check and verify that the electrical net is protected by a current leakage safety relay.

Mineral-free water inlet: Optional - 1/2" BSP automatic (option for automatic filling).

Drain water outlet: Waste outlet (may connect a fix connection).

1.7. Utility Requirements

1.7.1 Consumption

| Property | | Dimension | |
|------------------------------|--|---|--|
| | | T-Edge 10 | T-Edge 11 |
| Mineral-free water reservoir | Max. water volume | Overflow (up to the float) – 3.8lit | Overflow (up to the float) – 4.6lit |
| | Min. water volume | 1lit | |
| | The volume used by the sterilization cycle/load having the highest steam consumption | Recorded 800ml were required to sterilize full load of porous type using "wrapped 121". | 900ml for Wrapped 273F + virus protect |
| Used (waste) water reservoir | Max. water volume | Max vol. – 4.0lit Float –3.7lit max allowed for start cycle | |

The steam is produced by warming up a controlled amount of water inserted to a pipe heating element, and then to the chamber. This technique saves energy and water consumption.

1.8. Water Quality Requirements

Suggested Maximum Limits of Contaminants in Water for Steam Sterilization per EN13060

| Substance | Feed Water | Condensate |
|---|-------------------------------------|---------------|
| Evaporate residue | ≤ 10 mg/l | ≤ 1.0 mg/l |
| SiO ₂ | ≤ 1 mg/l | ≤ 0.1 mg/l |
| Iron | ≤ 0.2mg/l | ≤ 0.1mg/l |
| Cadmium | ≤ 0.005 mg/l | ≤ 0.005 mg/l |
| Lead | ≤ 0.05 mg/l | ≤ 0.05 mg/l |
| Rest of heavy metals except iron, cadmium, lead | ≤ 0.1 mg/l | ≤ 0.1 mg/l |
| Chloride (Cl) | ≤ 2 mg/l | ≤ 0.1 mg/l |
| Phosphate | ≤ 0.5 mg/l | ≤ 0.1 mg/l |
| Conductivity (at 20°C) | ≤15 µs/cm | ≤ 3 µs/cm |
| pH value | 5 to 7.5 | 5 to 7 |
| Hardness | ≤ 0.02 mmol/l | ≤ 0.02 mmol/l |
| Appearance | Colorless, clean, without sediments | |

Tap water could contain chemicals and/or endotoxins and should not be recommended unless filtered or treated. Some chemicals that are used to treat tap water can be damaging to the sterilizer and/or load, and endotoxins, if present, could transfer to the load and compromise sterility assurance. Therefore, distilled water is recommended for tabletop sterilizers. Additional information about water quality is available in AAMI TIR34

2. DIRECTIVES AND STANDARDS

The T-Edge autoclave meets the provisions of the following Directives and is constructed in compliance with the following Standards:

- **Medical Device Directive 93/42/EEC as amended by 2007/47/EC**
- **Medical Device Single Audit Program** – companion document, doc# MDSAP AU G0002.1.004 rev. 13-04-2017Ft
- **MDSAP audit approach** - doc# MDSAP AU P0002.005
- **FDA QSR 21 CFR part 820 & part 11**
- **Australian Therapeutic Goods** - (Medical Devices) Regulations 2002
- **Brazilian Good Manufacturing Practices** - (RDC ANVISA 16/2013, 67/2009, 56/2001, 23/2012)
- **Japanese QMS Ordinance** - (MHLW MO 169)
- **Canadian MDR (CMDR)** – SOR/98-282 (2018), consolidated
- **Global Unique Device Identification Database (GUDID)** - Guidance for Industry and Food and Drug Administration Staff
- **ISO 9001: Quality Management System**
- **EN ISO 13485: Quality Management System – Medical Devices**

- **ISO 14001:** Environmental management system
- **ISO 17025:** General requirements for the competence of testing and calibration laboratories
- **EN ISO 14971:** Medical devices – Application of risk management for medical devices
- **ASME Code** Section I and Section VIII. Div. I
- **PED 2014/68/EU**
- **Chinese Regulations** Special Equipment Licensing Office
- **EN 13060:** Small Steam Sterilizer
- **ANSI/AAMI/ST55:** Tabletop Steam Sterilizer
- **ISO 17665:** Sterilization of health care products –Moist heat
- **ANSI/AAMI/ST79:** Comprehensive guide to steam sterilization and sterility assurance in health care facilities
- **IEC 61010-1 / UL 61010-1:** Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements
- **IEC 61010-2-040:** Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-040: Requirements for sterilizers and washer-disinfectors used to treat medical materials
- **EN 613261-1:** EMC Requirements for Electrical Equipment
- **IEC 62304:** Medical Device Software – Software life cycle processes

3. SAFETY FEATURES

The device safety features are independent as requested by ASME and PED standards.

The chamber door has the following features protecting personnel from hazards:

1. Two door switches that indicate that the door is closed. Without this indication steam is not introduced into the chamber.
2. An electrical door locking pin that blocks door opening during operation.

The following safety devices are installed in the autoclave to optimize its safe operation:

1. Safety thermostat, to prevent over-heating of the chamber heating elements.
2. Safety cut-off switch to prevent over-heating of the pipe heating element.
3. A pressure safety valve to prevent over-pressurizing of the chamber.

3.1. Device Placement and Operating Conditions

1. Verify that the dimensions of the surface of the counter are at least 55cm x 60cm
2. Check and verify that the counter carrying the autoclave is a rigid and leveled surface and can carry a load of 75kg
3. If placed in a cabinet, verify that the rear of the cabinet is open to allow ventilation.
Recommended cabinet sizes:
 - **T-Edge 10** - Width - 58-60cm; Height –56.5-57.5cm; Min. Depth - 63.2-64cm
 - **T-Edge 11** - Width - 60-62cm; Height –56.5-57.5cm; Min. Depth - 63.2-64cm
4. The operational altitude shall not be over 4000 (m) / 13123 feet.
5. Ambient pressure of 60.5 kPa / 8.8 psi or higher.

3.2. Electrical Components Safety

All components are safety approved and certified by national and international organizations like UL, CE, and others.

4. LANGUAGES

4.1. The operator display is available in the following languages:

| | |
|---------|------------|
| English | Spanish |
| French | Portuguese |
| German | Italian |
| Dutch | Russian |

5. TECHNICAL SPECIFICATIONS

5.1. Device Properties: Dimensions

| Property | | Dimension | |
|--|------------------|---|--------------------------|
| | | T-Edge 10 | T-Edge 11 |
| External size | Width | 48cm | 50cm |
| | Height | 50cm | |
| | Depth | 58 cm supporting common install base carry a 60 cm countertop | |
| Chamber | Diameter | 25 cm | 28 cm |
| | Depth | 46 cm | |
| | volume | 23lit | 27.2lit |
| Max. Allowable Working pressure (MAWP) | | 2.8 bar | |
| Safety relief valve | | 2.8 bar | |
| Net weight | | 53kg | 56kg |
| Shipping weight | | 66kg | 69kg |
| Floor loading requirements | | 75kg | |
| Max load | Solid /Unwrapped | 6kg | 9kg |
| | Solid /Wrapped | 3.5kg | 5.4kg |
| | Textile | 1.5kg | 2kg |
| Maximum load per tray | Unwrapped | 1.2kg | 1.8kg |
| | Wrapped | 0.72kg | 1.08kg |
| Tray dimensions | | 42.1cm x 18.9cm x 2.05cm | 42.1cm x 20.7cm x 2.05cm |
| No. of trays | | 5 | |
| Load No. counter | | Counting from 0 to 999 and nullifies. | |

5.2. Device Electrical Data

| Property | Value |
|-------------------------------------|---------------|
| Voltage | 1Ph / 230 VAC |
| Amperage | 9A |
| Total power | 1960W |
| Frequency (Hz) | 50/60Hz |
| Protection against electrical shock | IEC 61010-1 |
| Mains supply fluctuation | +/- 10% |

5.3. Utilities

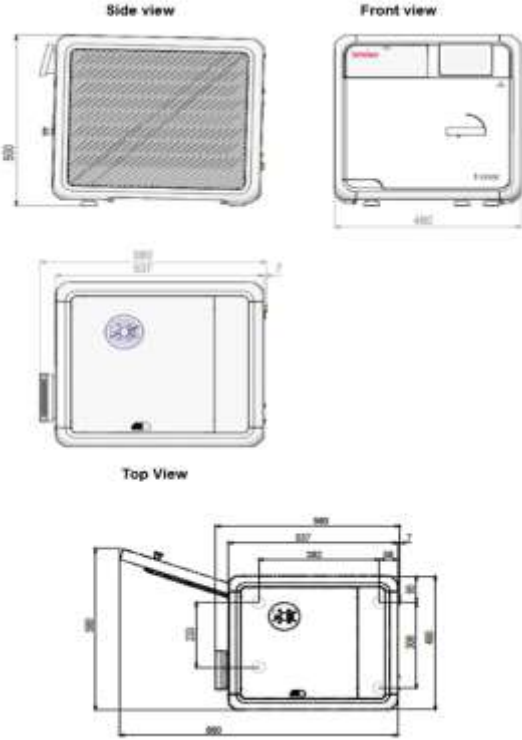
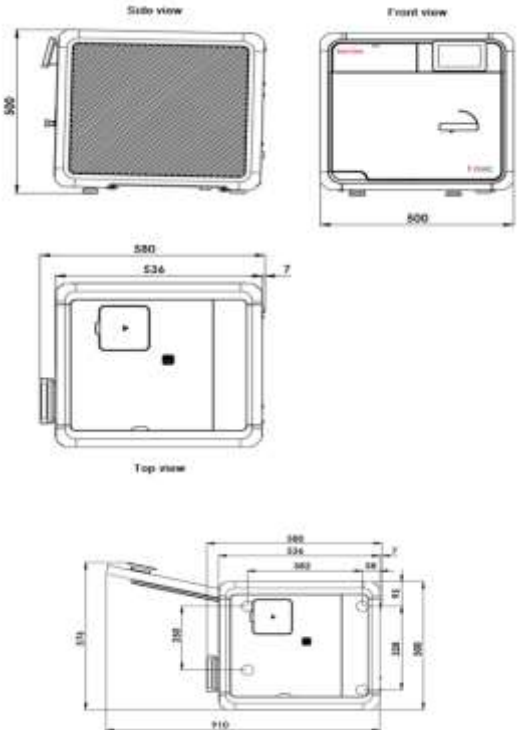
| Property | | Value |
|-----------------------|-----------------------------|-------------------------------|
| Electric Power Supply | Power Supply | 1 phase, 230VAC ±10%, 50/60Hz |
| | Recommended circuit breaker | 16A |
| | Line current | 9A |

*According to local network

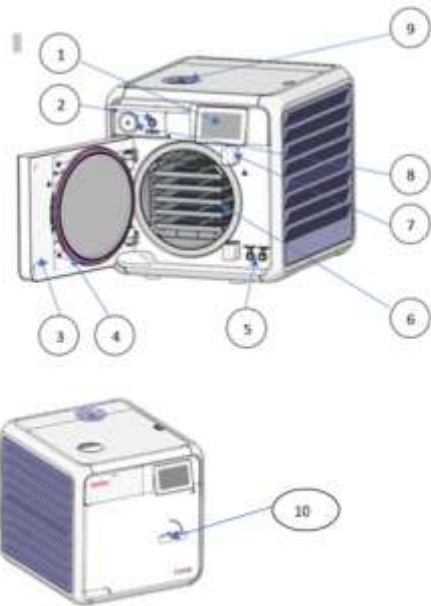
5.4. Construction

| Property | Value |
|---|-----------------------|
| Pressure vessel | Stainless steel 316 L |
| Trays | Aluminum |
| Door, frame, locking mechanism | Stainless steel 304 L |
| Locking handle | Polycarbonate |
| Covers | Polycarbonate |
| Water reservoirs (mineral free / waste) | Polycarbonate |

6. PHYSICAL CHARACTERISTICS

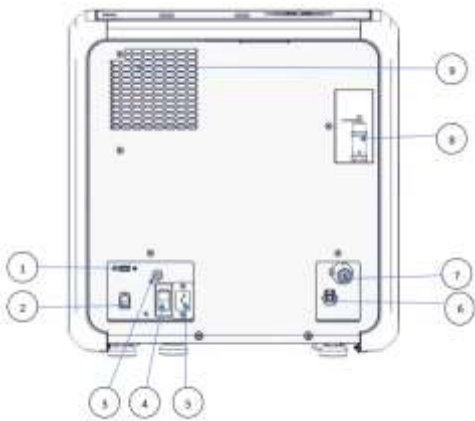
| T-Edge 10 | T-Edge 11 |
|--|---|
|  <p>Side view</p> <p>Front view</p> <p>Top View</p> <p>Exploded view dimensions: 580, 537, 282, 24, 14, 24, 24, 210, 280</p> |  <p>Side view</p> <p>Front view</p> <p>Top view</p> <p>Exploded view dimensions: 580, 536, 282, 24, 14, 24, 210, 280</p> |

7.1. Depiction of Main System Parts:



| No. | Description | No. | Description |
|-----|--|-----|--------------------------------------|
| 1 | Touch screen | 6 | Chamber |
| 2 | On/off switch | 7 | Door switches |
| 3 | Chamber Door | 8 | Air filter |
| 4 | Door Gasket | 9 | Mineral-free water reservoir opening |
| 5 | Mineral-free (left) and waste water (right) reservoir drains | 10 | Door Handle |

7.2. Rear View



| No. | Description | No. | Description |
|-----|-------------------------------|-----|--|
| 1 | USB ports | 6 | Waste outlet |
| 2 | LAN socket | 7 | Mineral free inlet (available in AMS10-230-W-PED-T, AMS11-230-W-PED-T) |
| 3 | Cut-off Thermostat | 8 | Safety valve |
| 4 | Circuit breaker on off switch | 9 | Aeration Ventilation opening |
| 5 | Power socket | | |

8. CONTENT OF THE DEVICE PACKAGE




















8.1. T-Edge 10

| Part Number | Part Description | Quantity Supplied |
|---------------------------------------|--|-------------------|
| AMS10-230-PED-T/ AMS10-230-W-PED-T | T-Edge10 Autoclave | 1 |
| DEV000-0663 | Aluminum Tray for 10" | 5 |
| TRH511-0001 | Wire Tray holder for trays or Cassettes | 1 |
| TRH511-0004 | tray stoppers (to be assembled on tray holder) | 8 |
| CMT240-0002 | Tray Handle | 1 |
| PIP411-0042 | Tube for Reservoir Drain | 2 |
| PIP511-0029 | Tube for Auto reservoir drain+ Angular connector for the rear drain pipe | 1 |
| WIR040-0003 | Power cable 10A, 250V, EUR | 1 |
| MAN205-0502001EN | Operation and Maintenance Manual | 1 |
| MAN205-0502002EN | Technician Manual | 1 |

8.2. T-Edge 11

| Part Number | Part Description | Quantity Supplied |
|---------------------------------------|--|-------------------|
| AMS11-230-PED-T/ AMS11-230-W-PED-T | T-Edge11 Autoclave | 1 |
| TRY510-0001 | Aluminum Tray for 11" | 5 |
| TRH510-0001 | Wire Tray holder for trays or Cassettes | 1 |
| CMT240-0002 | Tray Handle | 1 |
| PIP411-0042 | Tube for Reservoir Drain | 2 |
| PIP511-0029 | Tube with Angular connector for Auto Reservoir Drain | 1 |
| FIL175-0176 | Hose Seal With Filter, Mesh 60 | 1 |
| GAS086-0102 | Hose, Flexible, St. St, Nut End, RS331S12, Hydra ½"x200cm | 1 |
| WIR040-0003 | Power cable 10A, 250V, | 1 |
| CLE096-0072 | Chamber Clean for B&S-Class 6 tablets – sample kit | 1 |
| 03-134-05 | Autoclave Calibration Report | 1 |
| MAN205-1500000EN | Table- Top and Vertical autoclave log book | 1 |
| MAN205-0502027EN | Operation and Maintenance Manual | 1 |
| MAN205-0502028EN | Technician Manual | 1 |

9. SYMBOLS APPEARING ON THE LABELS AND IN THIS MANUAL

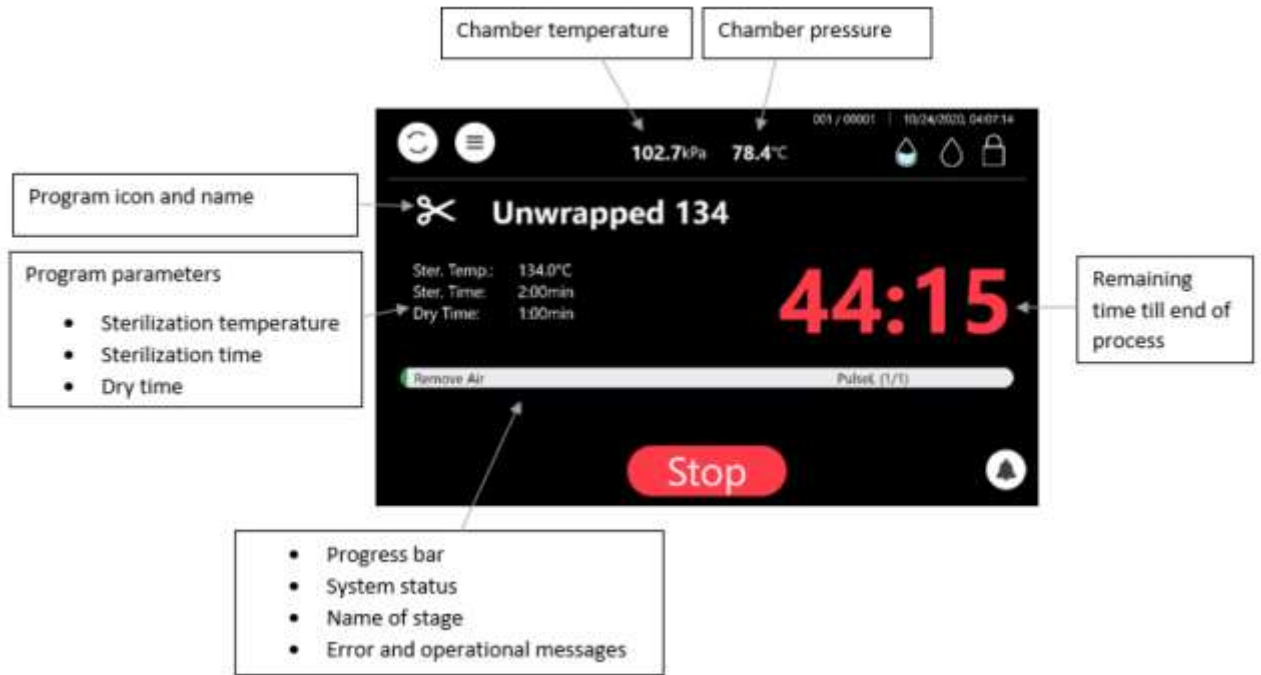
| | |
|--|---|
|  | Manufacturer |
|  | European Authorized Representative |
|  | Year of Manufacturing |
|  | Medical Device |
|  | Model Number |
|  | Serial Number |
|  | Consult the Operation and Maintenance Manual (User Manual) before use |
|  | European compliance Mark of compliance with the European Medical Device Directive (Number xxxx identifies the Notified Body that performed the examination) |
|  | European compliance Mark of compliance with the European Pressure Equipment Directive (Number xxxx identifies the Notified Body that performed the examination) |
|  | Keep away from sunlight and protect from heat. |
|  | For Indoor Use Only |
|  | Keep dry |
|  | Disposal according to electronic scrap ordinance |
|  | This side up (during transport and shipment) |
|  | Fragile (during transport and shipment) |
|  OR  | A warning or precaution as detailed in the Operation and Maintenance Manual (User Manual) |
|  OR  | Caution! Hot Surface |

10. HUMAN MACHINE INTERFACE (HMI)








10.1. HMI

The HMI is based on a graphic Touch screen LCD panel. The screen is used to display the autoclave status, Operational or Error Messages and for operating the machine.

10.2. Program screen



10.3. Displayed Operational Messages / Symbols









| Symbol | Message / Symbol Description | Required Action |
|---|---|--|
|  | This symbol is displayed when the door is open | Informative symbol |
|  | This symbol is displayed when the door is closed | Informative symbol |
|  | Full water level (Clean water tank) | Informative symbol |
|  | Full water level (Waste water tank) | Fix water level (insert or drain water). If it is displayed at end of cycle, and the electrode in the chamber senses water, the door will be locked. Run a new cycle to drain the chamber. |
|  | Alert | Press to watch alert description |
|  | The “Successful” message is displayed when the cycle ends successfully. | Informative message |
|  | The “Fail” message is displayed when the cycle failed due to either an intended cycle abort action by the user, or due to a run-time error. | Perform a new cycle to sterilize the load |

10.4. Control Panel

The display is a graphic Touch screen LCD panel used to display the autoclave status, any Operational or Error Messages and for operating the machine.

For detailed information, please refer to the user manual.

11. AVAILABLE STERILIZATION PROGRAMS AND TEST PROGRAMS





| # | Icon | Name | Temp | Sterilization time (minutes) | Dry time (minutes) | | Load type | Type of use |
|---|---|----------------|-------|--|------------------------------|------------------------------|---|--|
| | | | | | T-Edge 10 | T-Edge 11 | | |
| 1 |  | Unwrapped 134 | 134°C | 4 | 2 (default) Range: 1-99 | 2 (default) Range: 1-99 | Unwrapped Instruments (Unwrapped Solid) | Immediate use only |
| 2 |  | Wrapped 134 | 134°C | 4 | 16 (default) Range: 16-99 | 16 (default) Range: 16-99 | Handpieces, Wrapped Instruments (wrapped solid), Textile (fabric packs), porous | For storage |
| 3 |  | Unwrapped 121 | 121°C | 20 | 2 (default) Range: 1-99 | 2 (default) Range: 1-99 | Unwrapped Instruments (Unwrapped Solid) | Immediate use only |
| 4 |  | Wrapped 121 | 121°C | 20 | 16 (default) Range: 20-99 | 25 (default) Range: 20-99 | Wrapped Instruments (wrapped solid), Textile (fabric packs), porous | For storage |
| 5 |  | Prion | 134°C | 18 | 30 (default) Range: 30-99 | 30 (default) Range: 30-99 | solid load/ Porous load | For storage |
| 6 |  | Bowie and Dick | 134°C | 3.5 | 2 (default) Range: 0-99 | 2 (default) Range: 0-99 | Chemical Indicator in a product challenge device | Periodic testing as referred to in ISO 17665-1 |
| 7 |  | Vacuum Test | N/A | Vac. Stable Time 1 = 5min Vac. Time stable 2 =10min | | | Empty | Not Applicable |
| 8 |  | Chamber Clean | 134°C | N/A | | | Empty | Periodic cleaning |

Notes:

1. Prion program requires the demineralized water level in the reservoir to be filled to the maximum level to start the program, otherwise an alert will be prompted "please fill water tank to full for start".

2. The sterilization program can be used for sterilizing lumen device of no longer than 230mm and no smaller than 3.4mm.
3. This sterilization program can be used in sterilizing up to five dental handpieces.

11.1. Additional Sterilization Programs

| # | Icon | Name | Description |
|---|--|----------------------|---|
| 1 |  | Custom | Duplicates a sterilization program and enables modifying the settings. Note: Requires validation by the user! |
| 2 |  | Virus Protect | The Virus Protect program is selected prior to a sterilization program to ensure that viruses are eliminated. |
| 3 |  | Add Extra Dry Time | Enables the option of adding extra dry time to a program |
| 4 |  | Start Cycle By Clock | Gives an option of starting a cycle by clock |

11.2. Maximum Load Weight per Load type

| Load type | Maximum Load Weight | | Suitable for programs |
|-----------------|---------------------|-----------|-----------------------|
| | T-Edge 10 | T-Edge 11 | |
| Textile, porous | 1.5kg | 2.0kg | Wrapped Pouches |
| Handpieces | 5 units | | Wrapped Pouches |
| Solid Unwrapped | 6.0kg | 9.0kg | Unwrapped |
| Solid Wrapped | 3.5kg | 5.4kg | Wrapped |

11.3. Description of the Sterilization Cycle Stages

- **Air-removal stage:** Pre vacuum pulses are performed. For wrapped cycles, there are 2-3 pulses, and the vacuum is deeper.
- **Heating stage:** Steam is inserted into the chamber until the sterilization temperature is reached

- **Sterilization:** Sterilization temperature is maintained constant during the sterilization time.
- **Fast exhaust:** Steam is exhausted out of the chamber at a fast rate until pressure decreases to ambient pressure.
- **Drying:** Performed with the door closed by pulling vacuum and using the accumulated heat in the chamber and the load to remove leftover moisture from the instruments and wraps.

11.4. Description of the Vacuum Test Stages

Vacuum is produced in the chamber, down to P1=2.17 psi (15 kPa.) At this stage all the valves close. The autoclave remains in this stage for 5 minutes. This period enables the condition in the chamber to reach equilibrium. After the 5 minutes have elapsed, the *cycle 'history record'* records the pressure that is referred to as P2. At this point the test begins and lasts 10 minutes. At the end of the test, the *cycle 'history record'* records the results. The pressure at the end of the test is referred to as P3.

Notes:

- During the test period the autoclave is not heated. Even if the vacuum test is completed, the operator shall check the test results and consider whether the test results are acceptable or not.
- Perform the Vacuum Test on a completely dry chamber, preferably following a cycle with a Drying procedure i.e., a Wrapped cycle, and after the chamber was cooled i.e., Sleep mode/Turned off.

11.5. Description of Bowie-Dick Test Stages

Air-removal stage: Vacuum pulses are performed.

Heating stage: Steam is inserted into the chamber until the sterilization temperature and pressure are reached.

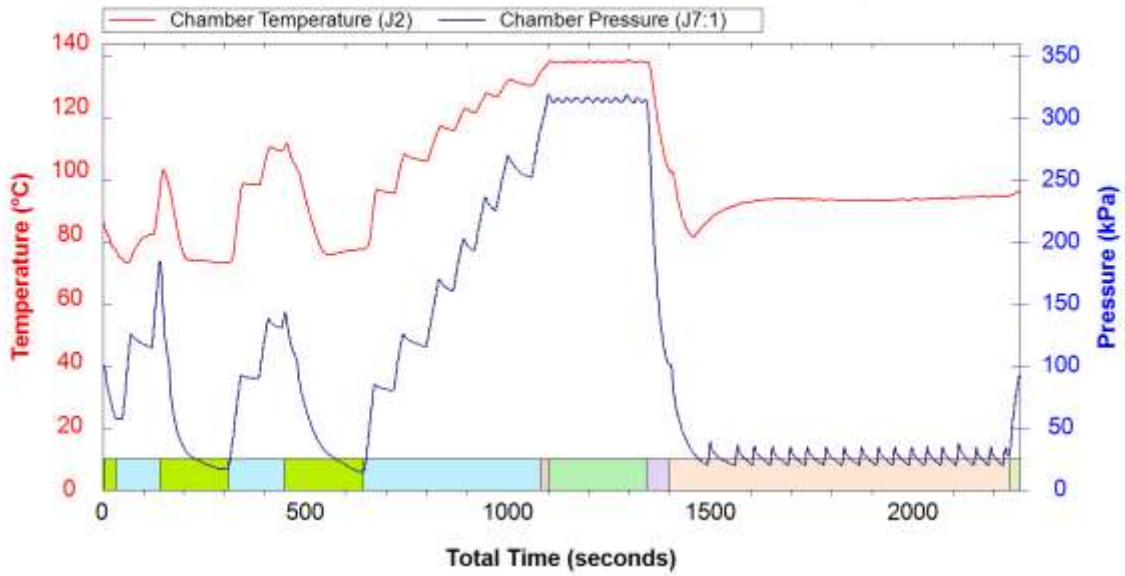
Sterilization stage: Temperature and pressure are maintained constant at the pre-set level for sterilization time.

Fast exhaust stage: Steam is exhausted out of the chamber at a fast rate until pressure decreases to ambient pressure.

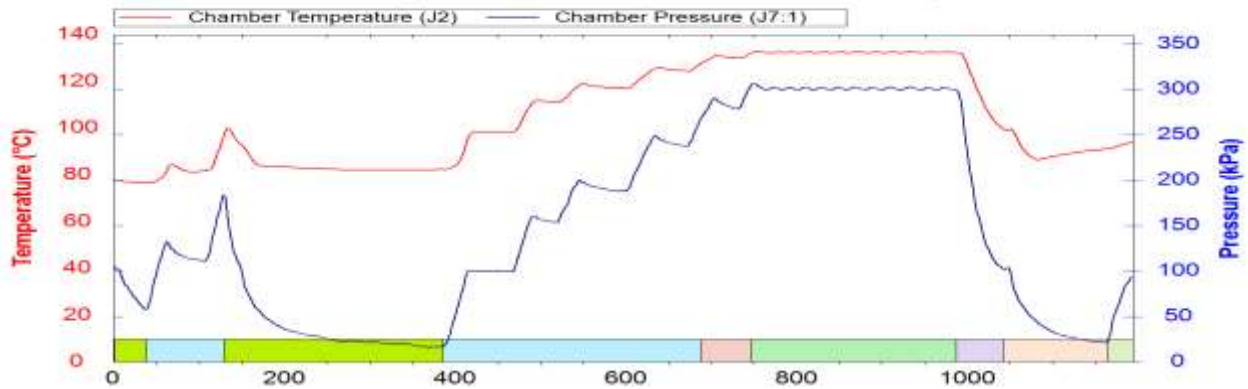
Drying stage: Heating of chamber followed by a vacuum break (air inlet) to remove leftover moisture from the instruments and wraps. Air inlet to reach atmospheric pressure.

12. TYPICAL STERILIZATION CYCLES

Wrapped Pouches 273F (24/JUN/2020 12:44:12)



Unwrapped Instr. 270F (5/JUL/2020 14:55:10)





WolfLabs

Pricing on any accessories shown can be found by keying the part number into the search box on our website.

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Please contact us if this literature doesn't answer all your questions.