Sümer®

STERILIZATION DEVICES

I. Central Sterilization Units
- *Adela -OT Series*

II. Prismatic Steam Sterilizer

III. Laboratory Type Vertical And Horizontal Steam Sterilizer
- *SM Series*

IV. Prismatic Steam Sterilizer

V. Washer and Steam Sterilizer

VI. Laboratory Type Vertical Steam Sterilizer

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About us

Sümer A.Ş. was established in 1981 in Ankara to proved services in the medical device sector. It has aimed advancement since the day of its establishment by also taking growth and compliance with the contemporary technologies and protecting the environmental conditions. Our manufacturing takes place in an area of 25.000 m^2 in Ankara Organized Industrial Zone.

Our Firm is following the innovations in its sector and in abroad through its research and development unit and its application staff with a strong infrastructure of engineers, and is continuing to produce devices it had developed in computer environment based on such innovations with high technology and to contribute their development so as to be most beneficial for the Turkish medicine.

With this purpose, our Firm is strictly following the "Quality Management" principles and rules from design of the products to the after sale servicing.

Our Firm has been currently certificated for compliance with ISO 9001 quality management system, ISO 13485 medical device quality management system certificate and ISO 14001 environment management system certificate and with product certificates under MDD 93/42/EEC Medical Devices Directive and PED 2014/68/EU Pressurized Equipment certificate. Furthermore, our steam sterilizers, and disinfection and washing devices have been certificated by the German accredited body.

Our Firm is successfully implementing several projects supported by Tübitak, KOSGEB, and Ankara Development Agency.
SÜMER A.Ş. has been awarded with the following:
Ankara Industry Chamber Award for 2012,
2011 R&D Award,
2012 Success Award.

Our Firm possesses the following certificates;
CE Certificates under the following directives:
ISO 9001,
ISO 13485,
ISO 14001 Quality Management System,
MDD 93/42/EEC Medical Devices,
PED 2014/68/EU Pressurized Equipment

Our Vision

To make the Sümer brand a global brand to make our Firm remembered first in the sector.

Our Mission

Our main task is to create designs with competition power in the global sense by taking the priorities of the sector into consideration and being respectful to the environment and people and giving the first priority to the wishes and expectations of customers, and also to produce innovative technological medical products by meeting all the national and international legal requirements.

Our Basic Values

- We are bound up with the Medical Ethical Rules,
- We are people-oriented,
- We respect environment,
- We are creative,
- We are customer-oriented,
- We are innovative,
- We are pro-active,
- We believe in the team spirit.

I. Central Sterilization Units

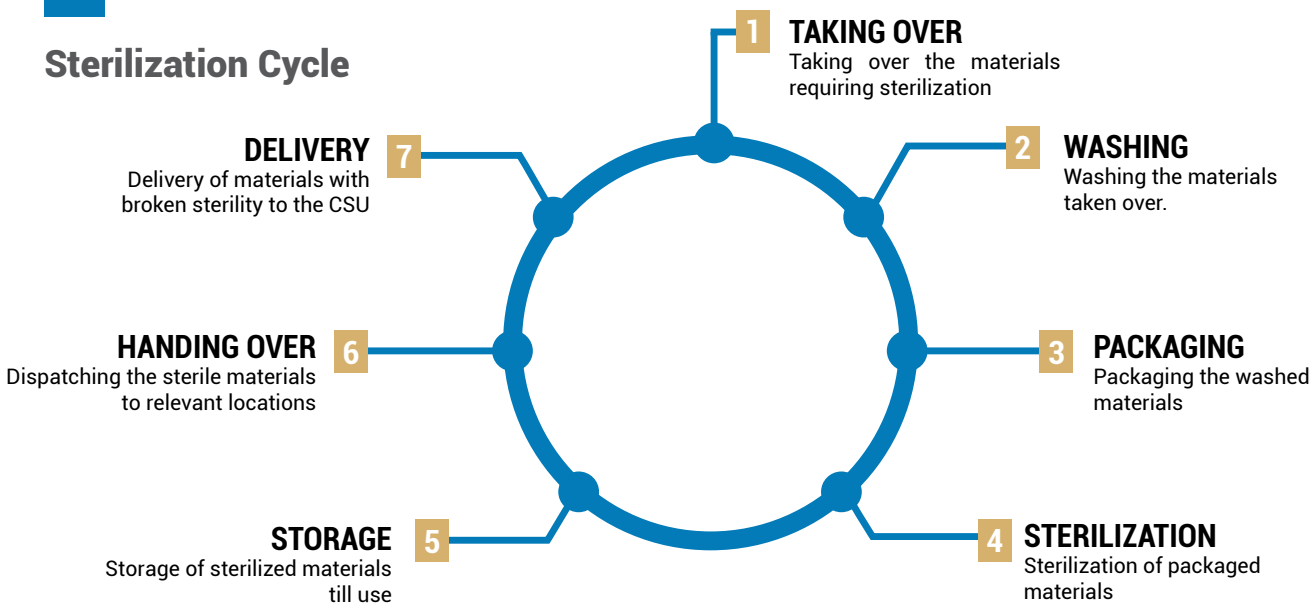
Our Firm implements turn-key sterilization projects designed by taking the hospital sizes into consideration, and gives services for the installation and commissioning of turn-key Central Sterilization Units.

"It is essential for Central Sterilization Units (CSU) to eliminate the microorganisms existing in hospitals."

Sümer A.Ş. offers the following turn-key services for you, our valuable customers, in relation with the Central Stelization Units;

- Design,
- Central construction,
- Installation of products,
- Commissioning,
- Control and similar.

Sterilization Cycle



Central Sterilization Units are indispensible dynamic centers with great responsibility in ensuring the sterilization safety and prevention of infections, collecting the contaminated materials from various locations in the hospital to process and redelivering them to users and providing continuous services throughout 24 hours during 365 days of the year.

Sterilization Process

DECONTAMINATION

DISINFECTION

STERILIZATION

VALIDATION

Sterilization must not be taken as a simple procedure; it must be considered as providing new materials suitable for medical purposes, or a process of novel production.

II. Prismatic Steam Sterilizer

ADELA-OT series steam sterilizers are designed and manufactured regarding the manufacturing and product standards.

General Characteristics

Control System	PLC CPU
Operation Mod	Fully Automatic / Button Command
Screen Type	Multi-Color TFT, LCD Touch Screen
Screen Size	7,0" (10,0" optional)
Keypad	Touch Screen
Printer	40 Character /Line , Thermal Printer
Remote Control and Communication	RS 232 Port / USB , Ethernet (optional)
Warning Sytem	Visual & Audio & Printed
Data Storage	Up to 200 Cycles
Monitoring	Touch Screen, Anaolgue Gauges for Chamber, Jacket, Generator and Air Pressure (Manometer)
Mobility	4 Easy positioning on 4 swivel castors and firm fixing on legs
Steam Generator	with pneumatic valves

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Standard Programs

Medical & Surgical Instruments	134°C	~ 60 dk
Textile Materials	134°C	~ 60 dk
Rubber Articles	121°C	~ 80 dk
Liquids in Glass Container	121°C	~ 60 dk
Liquids in Glass Container	125°C	~ 60 dk
Flash	134°C	~ 20 dk
Prion	134°C	~ 90 dk
Bowie & Dick Test	134°C	~ 45 dk
Vacuum Leak Test	-	~ 25 dk
Customizable Program Capacity	-	99

Safety and Quality
Protects operator from electrical current leaks.
Short circuit protection.
Safety valve.
Hepa filter for air filtration.
Water level control via buoy in generator.
Pneumatic Valves for precise exhausting.
Leak test.
Password protection.
Sensors against obstructions on the doors pathway.
Doors locks under pressure.
Emergency stop button.
Unable to open both doors at once double door models.

Relevant Directives and Standards	
Medical Device Directive	MDD 93/42/EEC / 2007/47/EC
Medical Device Class	Class IIb, MDD 93/42/EEC, 2007/47/EC (Annex IX)
Low Voltage Directive	2014/35/EU - EN 61010-2-040 – EN 61010-1 – EN 60601-1
EMC Directive	2014/30/EU EN 60601-1-2 – EN 61326-1
Pressure Equipments Directive	PED 2014/68/EU : EN 13445-1, -2, -3, -4, -5
Steam Sterilizer Directive	EN285
Quality Mangement System	ISO 9001
Medical Devices Quality Mangement System	ISO 13485
Enviromental Management Systems	ISO 14001

®"Type tests" of Sümer A.S. Steam sterilizers are performed and certified according to the directives of EN 285 and TS EN 17665-1-2 by The German accreditation company HYGCEN GmbH.

Technical Data Sheet

CHAMBER VOLUME (LITER) AND DIMENSIONS													
MODELS	SINGLE DOOR						DOUBLE DOOR						
	100 L	175 L	250 L	325 L	425 L	580 L	100 L	250 L	325 L	425 L	580 L	718 L	900 L
Height (mm)	390	500	500	500	670	670	390	500	500	670	670	670	670
Width (mm)	390	500	500	500	670	670	390	500	500	670	670	670	670
Depth (mm)	700	700	1000	1300	1000	1300	1000	1000	1300	1000	1300	1600	2000
STU Capacity	1	1,5	1,5	2	6	8	1,5	1,5	2	6	8	10	12

DEVICE DIMENSION													
MODELS	SINGLE DOOR						DOUBLE DOOR						
	100 L	175 L	250 L	325 L	425 L	580 L	100 L	250 L	325 L	425 L	580 L	718 L	900 L
Height (mm)	1655	1765	1765	1765	1935	1935	1655	1765	1765	1935	1935	1935	1935
Width (mm)	885	995	995	995	1165	1165	885	995	995	1165	1165	1165	1165
Depth (mm)	1125	1250	1325	1625	1325	1625	1325	1325	1625	1325	1625	1925	2325

PACKING DIMENSION													
MODELS	SINGLE DOOR						DOUBLE DOOR						
	100 L	175 L	250 L	325 L	425 L	580 L	100 L	250 L	325 L	425 L	580 L	718 L	900 L
Height (mm)	1920	2030	2030	2030	2200	2200	1920	2030	2200	2200	2200	2200	2200
Width (mm)	1070	1180	1180	1180	1350	1350	1070	1180	1180	1350	1350	1350	1350
Depth (mm)	1280	1380	1580	1880	1580	1880	1580	1580	1880	1580	1880	2175	2575

DEVICE WEIGHT													
MODELS	SINGLE DOOR						DOUBLE DOOR						
	100 L	175 L	250 L	325 L	425 L	580 L	100 L	250 L	325 L	425 L	580 L	718 L	900 L
Weight (Kg)	500	650	670	770	850	1000	700	800	900	1050	1200	1450	1680

GENERATOR DIMENSION													
MODELS	SINGLE DOOR						DOUBLE DOOR						
	100 L	175 L	250 L	325 L	425 L	580 L	100 L	250 L	325 L	425 L	580 L	718 L	900 L
Generator Power (3 Phase/400± 10VAC)	20	20	30	30	40	40	20	30	30	40	40	60	60
Installation Power (kW)	25	25	35	35	45	45	25	35	35	45	45	65	65
Generator Volume(L)	25	25	50	50	75	75	25	50	50	75	75	100	100

TRANSPORT TROLLEY DIMENSION													
MODELS	SINGLE DOOR						DOUBLE DOOR						
	100 L	175 L	250 L	325 L	425 L	580 L	100 L	250 L	325 L	425 L	580 L	718 L	900 L
Width (mm)	480	590	590	590	660	660	480	590	590	660	660	660	660
Height (mm)	1000	1000	1100	1100	1100	1100	1000	1100	1100	1100	1100	1100	1100
Depth (mm)	880	1180	1180	1480	1180	1480	1180	1180	1480	1180	1480	1780	1780

LOADING CART DIMENSION													
MODELS	SINGLE DOOR						DOUBLE DOOR						
	100 L	175 L	250 L	325 L	425 L	580 L	100 L	250 L	325 L	425 L	580 L	718 L	900 L
Width (mm)	380	490	490	490	660	660	380	490	490	660	660	660	660
Height (mm)	365	430	430	430	530	530	365	430	430	530	530	530	530
Depth (mm)	660	670	960	1260	960	1260	960	960	1260	960	1260	1560	960

Technical Data Sheet

TEMPERATURE	
Range	115°C - 137°C (Chamber)
Measurement	PT 100 (DIN A Class)
Sensor Position	Chamber (1)

PRESSURE	
Measurement	Pressure Sensors (4)
Sensor Position	Chamber (1), Jacket(1), Generator (1), Gasket(1)

VACUUM	
Source	Pump, Water Ring (2.2kW)
Pre-Vacuum	Yes

DEVICE CONSTRUCTION	
Body	AISI 304 Stainless Steel
Chamber	6mm, AISI 316 L Stainless Steel
Chamber	6mm, AISI 316 L Stainless Steel
Jacket	3mm, AISI 316L Stainless Steel
Door	10mm, AISI 304 Stainless Steel
Panel Cover	1-1,5 mm AISI 304 Stainless Steel
Pipes	Brass, AISI 304 Stinless Steel
Chamber Polishing	Sandblastin, Electropolishing (Optionel)

DRAINAGE	
Water	Inclined pipe to be installed onsite with at least 2 m of length (Diameter: 2"-3")
Steam	Pneumatic valve, software controlled
Air	Vacuum Motor (Built-in)

INSTALLATION CONDITIONS: At least 60 cm. space is needed on both lateral sides of the device to provide an effective technical service. Exhaust fan or ventilation funnel needs to be placed above the device for an effective evacuation of heat.

Technical Data Sheet

JACKET	
Test Pressure	3,75 Bar
Test Temperature	140 °C
Working Temperature	134 °C
Working Pressure	2,5 Bar

GENERATOR	
Test Pressure	5,25 Bar
Test Temperature	150 °C
Working Temperature	144 °C
Working Pressure	3,5 Bar
Water Level Protection	*CRES / AISI 304 SS

** CRES: Anti Corrosive Stainless Steel*

ENERGY CONSUMPTION	
Electric	20 kW/Loop
Water	~120 Lt/Loop

III. Laboratory Type Vertical And Horizontal Steam Sterilizer

Adela range provides a single solution for the multiples sterilization needs on laboratories including instruments, hollowware elements, glassware and other laboratory items that need a final drying to avoid contamination.

Load has to be placed into the vessel's baskets and after automatic filling with distilled water, device starts to heat up and purge until set temperature is reached. In case of solid objects, discharge is automatically

Operating Principal

Vertical and table-top range provides a single solution for the multiples sterilization needs on laboratories including instruments, hollowware elements, glassware and other laboratory items that need a final drying to avoid contamination.
Load has to be placed into the vessel's baskets and, after automatic filling with distilled water, device starts to heat up and purge until set temperature is reached. In case of solid objects, discharge is automatically forced during cooling stage to reduce cycle time.

Digital Microprocessor: Digital microprocessor for an easy programming and parameters selection for sterilization process.

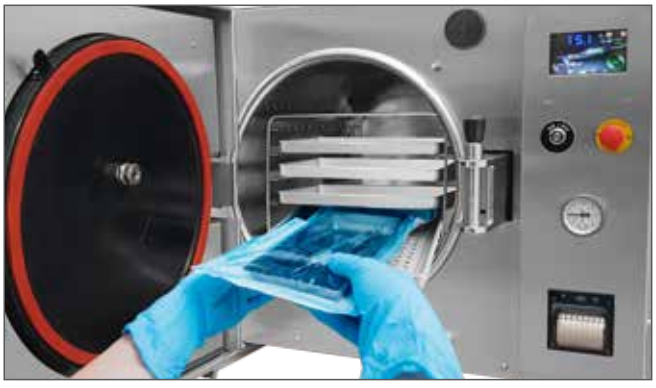
Water Filling: Pure water for sterilization can be added manually into the water pan. Automatic filling is also available by connecting the device to pure mains water.

Adela Rotary Sealers with built-in printer are specially designed to meet the demand of high-volume operations in hospitals and medical device industries.

Common sterilization packaging processes require traceability of sealed pouches to ensure patient/ medical device safety and control all time. The built-in printer of Rotary Sealers ensures the end-user that all essentials data needed for traceability can be printed on the back side of the pouch.

Communications and Documentation

RS-232 Port	For live monitoring of sterilization cycle directly to PC. It is needed the customized software SOFT-S7000W.
Integrated Printer	for quality printouts after each cycle. Intervals can be adjustable. Printer has to be requested before ordering.



Sterilization Process

Pre-vacuum and Filling Stage	Integrated vacuum pump for initial pre-vacuum and subsequent automatic water filling.
Heating Stage	Fast saturated steam production by means of powerful heating elements.
Sterilization Control	A PT-100 temperature probe controls the chamber temperature, with the possibility of installing another flexible PT-100 temperature probe for liquid programs.
Cooling and Drying Stage	In solid program, discharge is automatically forced during cooling stage to reduce the cycle time. Then, integrated heating jacket together with pre-vacuum pulses is activated for a fast and intense drying.
Security	All safety standards are covered with safety valve, safety thermostat and safety pressure switch, door opening prevention system in case of overpressure, open door sensor and water level detector. EU Directive and Standards:
2014/35/EU	Low Voltage
2014/30/EU	Electromagnetic Compatibility
2014/68/EU	Pressure Equipment
EN-61010-1	
EN-61010-2-040	
EN-61326-1	

Programs

Microprocessor has 11 programs in total and the details are prescribed below:

Program	Temperature (°C)	Pressure (bar)	Sterilization Time (min.)	Drying Time (min.)
General	134	2,1	10	10
Fast	134	2,1	4	5
Sensitive	121	1,1	20	10
Prion	134	2,1	20	10
Flash	134	2,1	4	10
Packed 1	134	2,1	5	10
Packed 2	121	1,1	5	10
Liquid 1	134	2,1	10	-
Waste*	134	2,1	20	20
Bowie Dick Test	134	2,1	3,5	-
Helix Test	134	2,1	3,5	-

The rest of the programs are user-defined with the following parameters setting:

- Sterilization temperature
- Sterilization time
- Drying time
- Heart probe selection

Technical Data

Laboratory Type Horizontal Autoclaves

MODEL	USEFUL CAPACITY (L)	CELL (ØxH) (mm)	DEVICE (FxAxH) (mm)	TEMP. (°C)	MAX. PRESSUR (bar)	POWER (W)	WEIGHT (Kg)
ADELA 40	40	Ø400 x 320	780 x 665 x 660	100 - 134	2,1	4000	105
ADELA 60	60	Ø400 x 525	780 x 870 x 660	100 - 134	2,1	4000	135

Laboratory Type Vertical Autoclaves

MODEL	USEFUL CAPACITY (L)	CELL (ØxH) (mm)	DEVICE (FxAxH) (mm)	TEMP. (°C)	MAX. PRESSUR (bar)	POWER (W)	WEIGHT (Kg)
ADELA 75	75	Ø400 x 600	670 x 740 x 1140	100 - 134	2,1	5000	75
ADELA 90	90	Ø500 x 700	670 x 740 x 1260	100 - 134	2,1	6000	80
ADELA 115	115	Ø400 x 910	670 x 740 x 1450	100 - 134	2,1	7500	175

IV. Prismatic Steam Sterilizer

This is produced for the sterilization of surgical and wound dressing tools, plastic and glass materials and bottled fluids by trained, certificated and officially assigned hospital staff.

General Characteristics

Control System	PLC processor
Way of use	Full automatic / buttons and touch screen
Screen Type	Color TFT, Touch LCD
Screen Dimensions	7,0" (10,0" Optional)
Keypad	Touch Screen
Printer	40 Characters / lines, integrated thermal printer
Communication	RS232 /485 Port - USB (Ethernet Optional)
Warning system	Warnings with audiovisual and written messages
Data Storage	200 cycles
Procedure follow-up/tracing	Analog indicators for the follow-up of Cell, Jacket, Generator and Air pressure in addition to the Touch Screen
Motility	Easy orientation on 4 swivel castors and stabilization legs adjustable according to inclination of the floor
Vapor control	Through pneumatic valves

Standard Programs

Medical and Surgical Tool (134°C)	~ 60 min
Textile Materials (134°C)	~ 60 min
Heavy Materials (134°C)	~ 65 min
Plastic/Rubber Materials (121°C)	~ 80 min
Rubber/Glass (125°C)	~ 60 min
Fluids (121°C)	~ 90 min
Flash (134°C)	~ 20 min
Prion (134°C)	~ 60 min
Bowie & Dick Test (134°C)	~ 35 min
Vacuum Leakage Test	~ 25 min
Number of optional programs	99

Body	AISI 304 Stainless steel
Cell	6 mm, AISI 316 L Stainless steel
Jacked	3mm, AISI 316 L Stainless steel
Cover	6 mm, AISI 304 Stainless steel
Panel Coating	AISI 304 Stainless steel
Piping	Brass, AISI 304 Stainless steel

The entire piping can be made from AISI 304 stainless steel optionally.

Chamber Dimensions

Chamber volume (L)	125	175	200	225	250	325	425	470	490	538	580	628	670	718	760	800	900	1000	1200
Height (mm)	500	500	500	500	500	670	670	670	670	670	670	670	670	670	670	670	670	670	670
Width (mm)	500	500	500	500	500	670	670	670	670	670	670	670	670	670	670	670	670	670	670
Depth (mm)	500	700	800	900	1000	750	950	1050	1100	1200	1300	1400	1500	1600	1700	1800	2020	2250	2675
STU Capacity	-	1	1	1	1	2-4	6	6	6	6-8	8	8	8-10	10	10	10-12	12	14	16

Dimensions – Single Sliding Door Steam Sterilizer

Chamber volume (L)	125	175	200	225	250	325	425	470	490	538	580	628	670	718	760	800	900	1000	1200
Height (mm)	1800	1800	1800	1800	1800	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010
Width (mm)	890	890	890	890	890	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120
Depth (mm)	1250	1300	1350	1400	1500	1100	1450	1550	1600	1700	1800	1900	2000	2100	2200	2300	2500	2750	2900

Dimensions – Double Sliding Door Steam Sterilizer

Chamber volume (L)	200	225	250	325	425	470	490	538	580	628	670	718	760	800	900	1000	1200
Height (mm)	1800	1800	1800	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010
Width (mm)	940	940	940	1170	1170	1170	1170	1170	1170	1170	1170	1170	1120	1120	1120	1120	1120
Depth (mm)	1150	1250	1350	1100	1300	1400	1450	1550	1650	1750	1850	1950	2050	2150	2350	2600	2750

Weights – Single Sliding Door

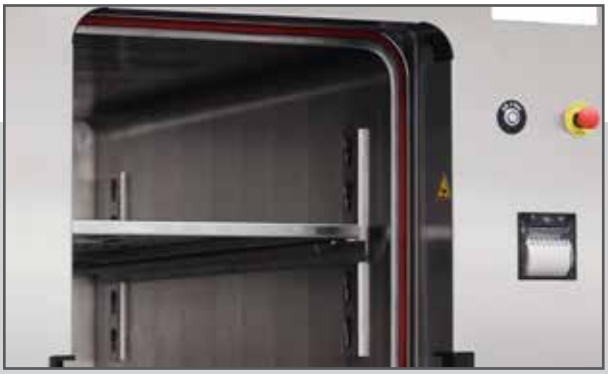
Chamber volume (L)	125	175	200	225	250	325	425	470	490	538	580	628	670	718	760	800	900	1000	1200
Weight of the Device (kg)	590	630	670	710	750	800	850	900	945	1010	1060	1120	1200	1270	1330	1390	1450	1510	1570
Packaging Weight (kg)	730	750	810	800	850	900	990	1040	1060	1150	1210	1290	1360	1430	1520	1590	1660	1700	1770

Weights – Double Sliding Door

Chamber volume (L)	200	225	250	325	425	470	490	538	580	628	670	718	760	800	900	1000	1200
Weight of the Device (kg)	710	760	810	850	900	950	985	1050	1110	1170	1230	1310	1390	1450	1510	1580	1650
Packaging Weight (kg)	850	870	940	980	1070	1090	1110	1190	1250	1330	1400	1470	1560	1630	1700	1780	1900

Volume and Power

Chamber volume (L)		125	175	200	225	250	325	425	470	490	538	580	628	670	718	760	800	900	1000	1200
Generator Power (3 Phase/400±10 VAC)		20 kW		30 kW				40 kW					50 kW					60 kW		
Installed Power		25 kW, 3 Phase / 400 VAC ±10		35 kW, 3 Phase / 400 VAC ±10				45 kW, 3 Phase / 400 VAC ±10					55 kW, 3 Phase / 400 VAC ±10					65 kW, 3 Phase / 400 VAC ±10		
EQUIPMENT-RELATED CHARACTERISTICS	Main Supply Vapor	4-6 Bars																		
	Generator Volume (L)	60	60	60	60	60	60	70	70	70	70	70	75	75	80	80	80	80	100	100



V. Washer and Steam Sterilizer

General Characteristics

Control System	PLC processor
Way of use	Full automatic/ buttons and touch screen
Screen Type	Color TFT, Touch LCD
Screen Dimensions	7,0"
Keypad	Touch Screen
Printer	40 characters/lines, integrated thermal printer
Communication	RS232/RS485 Port/USB (Ethernet Optional)
Warning system	Warnings with audiovisual and written messages
Data Storage	200 cycles
Procedure follow-up/tracing	Analog indicators for the follow-up of Cell, Jacket, Generator and Air pressure in addition to the Touch Screen
Motility	Easy orientation on 4 swivel castors and stabilization legs adjustable according to inclination of the floor
Vapor control	through pneumatic valves
Body	AISI 304 Stainless Steel
Cell	6 mm, AISI 316 L Stainless Steel
Jacket	6 mm, AISI 316 L Stainless Steel
Door	20 mm, AISI 316 Stainless Steel
Panel Coating	AISI 304 Stainless Steel
Piping	PTFE Hose, AISI 304 Stainless Steel

Dimensions of the Device

Chamber volume (L)	96	125	175	250
Height (mm)	1800	1800	1800	1800
Width (mm)	870	870	870	870
Depth (mm)	1030	1155	1355	1755

Washing Chamber Dimensions

Chamber volume (L)	Height (mm)	Width (mm)	Depth (mm)	Number of Basket Racks	STU Capacity	For Feeding-bottle Washing
100	565	595	550	3	6	2 Shelves 4 STU

Chamber Dimensions

Steam Sterilizer Chamber Dimensions

Chamber volume (L)	96	125	175	250
Height (mm)	500	500	500	500
Width (mm)	500	500	500	500
Depth (mm)	385	500	700	1000
STU Capacity	-	-	1	1

sümer
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