



SAFETY MANAGEMENT **A**UTOMATIC **R**APIDITY

# **T**RACEABILITY

Sterilization









# **TLV SERIES STERILIZATION WITH TOTAL CONNECTIVITY**



### **REPORTING**

- Custom reports
- Data printing
- Editable data formats



### **STORAGE**

- · 10 years data storage to fulfil documentation requirements
- Secure backup





### **DEVICE MANAGEMENT**

- Combine all devices in one account
- · Create programs
- Disseminate programs to all devices



### **USER MANAGEMENT**

- Individual accounts
- · Accounts linked to devices
- User hierarchy



### **SECURITY**

- SSL encryption
- Secure server
- · 100% data privacy



### **ANNOUNCEMENTS**

- Alerts
- · Cycle completion
- · Data processing



















### **DEFINE CUSTOM PROGRAMS**

- · Long term cycles programming in minutes, hours and days.
- Programs can be labeled.



### **CHOOSE PROGRAM**

- All programs are displayed as icons with name and key data.
- · Programs can be added and deleted.
- Full list steps of each program can be displayed.



### **◯ VIDEO INSTRUCTIONS**

- · All operations are explained in step-by-step videos.
- · Videos for on place staff training.



### **RUNNING PROGRAM STATUS**

- · Current program progress displayed.
- Actual data displayed.
- Elapsed and remaining time displayed.
- · Alarms management.



### PROTOCOL HISTORY

- Protocols are stored on the device.
- Target temperature and actual temperature are graphically displayed in numerical format.
- · Error messages displayed with detailed explanation.







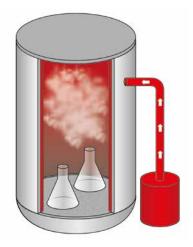


# **TLV SERIE BASIC**

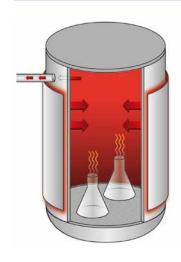
MULTI-PURPOSE AUTOCLAVE FOR STERILIZING SOLIDS AND LIQUIDS
THE TLV SERIES ARE DESIGNED TO COVER THE BASIC STERILIZATION NEEDS IN
ALL TYPE OF LABORATORIES OF INDUSTRIES AND EDUCATIONAL INSTITUTIONS.

- Integrated steam generator (separated into the housing) with automatic filling
- 7" capacitive colour touch screen
- Connectivity to PC, cloud, intranet, LIMS\*
- · Bacteriological filter

- Automatic block/unblock system with mechanical assisted door
- · Casters with brake
- · Filtration of exhaust gases
- · Water cooled discharge



# SERIE TLV-PD WITH SUPER-DRYING SYSTEM



# IT IS THE IDEAL AUTOCLAVE TO STERILIZE SOLIDS THANKS TO ITS DRYING SYSTEM. VERSATILE FOR SOLIDS AND LIQUIDS.

THE TLV-PD SERIES ARE THE BEST ALLY FOR LABORATORIES THAT MUST STERILIZE ALL TYPES OF SOLID PRODUCTS SUCH AS GLASS, PLASTIC VIALS, POROUS OR HOLLOW MATERIAL, WRAPPED AND UNWRAPPED, IN A SAFE, FAST AND VERIFIABLE WAY.

- Integrated steam generator (separated into the housing) with automatic filling
- 7" capacitive colour touch screen
- Connectivity to PC, cloud, intranet, LIMS\*
- · Bacteriological filter
- Automatic block/unblock system with mechanical assisted door
- · Casters with brake
- · Filtration of exhaust gases
- Water cooled discharge
- Water-ring pump for quick pre and post vacuum cycles
- · Heating jacket for dry cycle

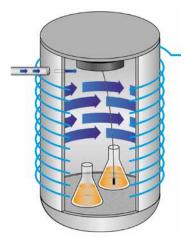
# **SERIE TLV-FA** WITH FAST COOLING SYSTEM

# IT IS THE IDEAL AUTOCLAVE FOR STERILIZING LIQUIDS THANKS TO ITS RAPID COOLING SYSTEM. VERSATILE FOR SOLIDS AND LIQUIDS

STERILIZATION OF LIQUIDS IS A COMPLEX TASK THAT REQUIRES A PRECISE CONTROL OF THE LIQUID TEMPERATURE AND A GOOD MANAGEMENT OF THE THERMAL BALANCE DURING THE COOLING PHASE IN THE MINIMUM POSSIBLE TIME.

- Integrated steam generator (separated into the housing) with automatic filling
- 7" capacitive colour touch screen
- Connectivity to PC, cloud, intranet, LIMS\*
- Bacteriological filter
- Automatic block/unblock system with mechanical assisted door
- · Casters with brake

- Filtration of exhaust gases
- Water cooled discharge
- Cooling coil refrigeration circuit
- Internal radial fan
- Flexible PT-100 temperature sensor
- Air ballast











### **Features**

	TLV-50	TLV-75	TLV-110	TLV-150			
<b>Chamber dimensions</b> Ø x H usable	400 x 450 mm	400 x 650 mm	500 x 600 mm	500 x 850 mm			
Chamber volume total / usable	58 / 56 L	83 / 81 L	124 / 118 L	169 / 155 L			
External dimensions L x D x H	610 x 870 x 1000 mm	610 x 870 x 1080 mm	710 x 970 x 1320 mm	710 x 970 x 1400 mm			
Weight	140 Kg	150 Kg	195 Kg	210 Kg			
Power	3600 W		6000 W	9000 W			
Electrical voltage*	230 (1P	+N+E) V	400 (3P+N+E) V				
Frequency	50 / 60 Hz						
Working temperature range	105 - 140 °C						
Maximum working pressure	2,6 barg						
Maximum design Temperature/Pressure	143 °C / 2,9 barg						

<sup>\*</sup> Ask for other voltages.

# **Specifications**

Neteral edit of the low sing         Y         Y           Automatic block/unblock system         Y         Y           Mechanical assisted door         Y         Y           Fast cooling         9         Y           Pre-vacuum         Y         Y           Post-vacuum         Y         Y           Alic exhaust filtration         Y         Y           Alic exhaust filtration         Y         Y           Water ring vacuum pump         Y         Y           Internal radial fan         Y         Y           Steam exhaust condensation with cold water         Y         Y           Autofill: automatic purified water feed for seral generation         Y         Y           Autofill: automatic purified water feed for program for liquids         Y         Y           Housing and basic frame construction in stainter seral generation         Y         Y           Pressure gauge         Y         Y         Y           Second flexible PT-100 temperature sensor         Y         Y           Flexible PT-100 temperature sensor         Y         Y           Flexible PT-100 temperature sensor         Y         Y           Second flexible PT-100 temperature sensor         Y         Y			TLV	TLV-PD	TLV-FA
Mechanical assisted door	Integrated steam generator separated in	to the housing	✓	✓	<b>~</b>
Pre-vacuum	Automatic block/unblock system		✓	✓	<b>✓</b>
Pre-vacuum	Mechanical assisted door		~	✓	<b>~</b>
Post-vacuum	Fast cooling		-	-	✓
Air exhaust filtration	Pre-vacuum		✓	✓	✓
Nater ring vacuum pump	Post-vacuum		-	✓	-
Internal radial fan	Air exhaust filtration		~	✓	<b>~</b>
Steam exhaust condensation with cold water         ✓         ✓           Autofill: automatic purified water feed for steam generation         ✓         ✓           Temperature holding function after the end of program for liquids         ✓         ✓           Housing and basic frame construction in stainless steel         ✓         ✓         ✓           Lid and pressure vessel construction         316L         316L         316L           Pressure gauge         ✓         ✓         ✓           4 casters (with brakes in two of them)         ✓         ✓         ✓           Flexible PT-100 temperature sensor         0         0         0           Second flexible PT-100 temperature sensor         0         0         0           Second flexible PT-100 temperature sensor         0         0         0           Printer for batch documentation         Integrated         0         0         0           Barcode scanner with label printer         0         0         0         0           Barcode scanner with label printer         50         50         50           Password secured access rights for parameterization         ✓         ✓         ✓           Automatic microprocessor control         ✓         ✓         ✓	Water ring vacuum pump		-	✓	-
Autofili: automatic purified water feed for steam generation         ✓         ✓           Temperature holding function after the end of program for liquids         ✓         ✓           Housing and basic frame construction in stainless steel         ✓         ✓           Lid and pressure vessel construction         316L         316L         316L           Pressure gauge         ✓         ✓         ✓           4 casters (with brakes in two of them)         ✓         ✓         ✓           Flexible PT-100 temperature sensor         0         0         ✓           Second flexible PT-100 temperature sensor         0         0         0           Raccatal accass rights for par	Internal radial fan		-	-	✓
Temperature holding function after the end of program for liquids	Steam exhaust condensation with cold v	vater	✓	✓	<b>✓</b>
Housing and basic frame construction in stailless steel         •         •         •           Lid and pressure vessel construction         316L         316L         316L           Pressure gauge         •         •         •           4 casters (with brakes in two of them)         •         •         •           Flexible PT-100 temperature sensor         0         0         •           Second flexible PT-100 temperature sensor         0         0         0           Second flexible PT-100 temperature sensor         0         0         0           Second flexible PT-100 temperature sensor         0         0         0           Particle for batch documentation         Integrated         0         0         0           Barcode scanner with label printer         0         0         0         0           Barcode scanner with label printer         50         50         50           Number of sterilization programs         50         50         50           Password secured access rights for parameterization         •         •         •           Automatic microprocessor control         •         •         •           7" capacitive colour touch screen         RS-232         •         •           <	Autofill: automatic purified water feed for steam generation		~	✓	<b>~</b>
Lid and pressure vessel construction         316L         316L         316L           Pressure gauge         ✓         ✓         ✓           4 casters (with brakes in two of them)         ✓         ✓         ✓           Flexible PT-100 temperature sensor         O         O         ✓           Second flexible PT-100 temperature sensor         O         O         O           Printer for batch documentation         Integrated External         O         O         O           Barcode scanner with label printer         O         O         O         O           Number of sterilization programs         50         50         50         So           Password secured access rights for parameterization         ✓         ✓         ✓           Automatic microprocessor control         ✓         ✓         ✓         ✓           7" capacitive colour touch screen         RS-232         ✓         ✓         ✓           External data transfer (network compatible)         USB         ✓         ✓         ✓           (network Compatible)         Wi-Fi         ✓         ✓         ✓           RAYPA CLOUD Basic (extensive documentation/network compatible)         O         O         O           RAYPA CLOUD Premium (extensive	Temperature holding function after the e	end of program for liquids	✓	✓	✓
Pressure gauge         ✓         ✓         ✓           4 casters (with brakes in two of them)         ✓         ✓         ✓           Flexible PT-100 temperature sensor         0         0         ✓           Second flexible PT-100 temperature sensor         0         0         0           Printer for batch documentation         Integrated External         0         0         0           Barcode scanner with label printer         0         0         0         0           Number of sterilization programs         50         50         50           Password secured access rights for parameterization         ✓         ✓         ✓           Automatic microprocessor control         ✓         ✓         ✓         ✓           7" capacitive colour touch screen         RS-232         ✓         ✓         ✓         ✓           External data transfer (network compatible)         ETHERNET         ✓         ✓         ✓         ✓           (network compatible)         ETHERNET         ✓         ✓         ✓         ✓           RAYPA CLOUD Basic (extensive documentation/network compatible)         0         0         0         0           Private cloud server         0         0         0         0	Housing and basic frame construction in	stainless steel	✓	✓	✓
4 casters (with brakes in two of them)         ✓         ✓         ✓           Flexible PT-100 temperature sensor         O         O         ✓           Second flexible PT-100 temperature sensor         O         O         O           Printer for batch documentation         Integrated External         O         O         O           Barcode scanner with label printer         O         O         O         O           Number of sterilization programs         50         50         50         50           Password secured access rights for parameterization         ✓         ✓         ✓           Automatic microprocessor control         ✓         ✓         ✓           7" capacitive colour touch screen         RS-232         ✓         ✓         ✓           External data transfer (network compatible)         ETHERNET         ✓         ✓         ✓           Mi-Fi         ✓         ✓         ✓         ✓           RAYPA CLOUD Basic (extensive documentation/network compatible)         O         O         O           RAYPA CLOUD Premium (extensive documentation for sterilization cycles         up to 1.000.000         up to 1.000.000         up to 1.000.000         up to 1.000.000         O           Internal memory for documentation for sterilization c	Lid and pressure vessel construction		316L	316L	316L
Flexible PT-100 temperature sensor	Pressure gauge		~	✓	<b>~</b>
Second flexible PT-100 temperature sensor         0         0         0           Printer for batch documentation         Integrated External         0         0         0           Barcode scanner with label printer         0         0         0           Number of sterilization programs         50         50         50           Password secured access rights for parameterization         ✓         ✓         ✓           Automatic microprocessor control          ✓         ✓         ✓           7" capacitive colour touch screen         RS-232         ✓         ✓         ✓           External data transfer (network compatible)         USB         ✓         ✓         ✓           (network compatible)         ETHERNET         ✓         ✓         ✓           RAYPA CLOUD Basic (extensive documentation/network compatible)         0         0         0           RAYPA CLOUD Premium (extensive documentation/network compatible)         0         0         0           Private cloud server         0         0         0         0           Internal memory for documentation for sterilization cycles         up to 1.000.000         0           Timer for programmabl	4 casters (with brakes in two of them)		~	✓	<b>~</b>
Printer for batch documentation         Integrated External         0         0         0           Barcode scanner with label printer         0         0         0           Number of sterilization programs         50         50         50           Password secured access rights for parameterization         ✓         ✓         ✓           Automatic microprocessor control         ✓         ✓         ✓           7" capacitive colour touch screen         RS-232         ✓         ✓         ✓           External data transfer (network compatible)         USB         ✓         ✓         ✓           (network compatible)         Wi-Fi         ✓         ✓         ✓           RAYPA CLOUD Basic (extensive documentation/network compatible)         0         0         0         0           RAYPA CLOUD Premium (extensive documentation/network compatible)         0         0         0         0           Private cloud server         0         0         0         0         0           Internal memory for documentation for sterilization cycles         up to 1.000.000         up to 1.0	Flexible PT-100 temperature sensor		0	0	<b>✓</b>
Printer for batch documentation       External       0       0       0         Barcode scanner with label printer       0       0       0         Number of sterilization programs       50       50       50         Password secured access rights for parameterization       ✓       ✓       ✓         Automatic microprocessor control       ✓       ✓       ✓         7" capacitive colour touch screen       RS-232       ✓       ✓       ✓         External data transfer       USB       ✓       ✓       ✓         (network compatible)       ETHERNET       ✓       ✓       ✓         RAYPA CLOUD Basic (extensive documentation/network compatible)       0       0       0         RAYPA CLOUD Premium (extensive documentation/network compatible)       0       0       0         Private cloud server       0       0       0       0         Private cloud server       0       0       0       0         Internal memory for documentation for sterilization cycles       up to 1.000.000       up to 1.000.000       up to 1.000.000       up to 1.000.000         Data backup via USB reader       ✓       ✓       ✓       ✓         Timer for programmable start time       ✓       ✓       ✓	Second flexible PT-100 temperature sen	sor	0	0	0
External O O O O O Number of sterilization programs 50 50 50 50 50 50 50 50 50 50 50 50 50	Printer for batch documentation	Integrated	0	0	0
Number of sterilization programs 50 50 50 50  Password secured access rights for parameterization		External	0	0	0
Password secured access rights for parameterization	Barcode scanner with label printer		0	0	0
Automatic microprocessor control  7" capacitive colour touch screen  RS-232  V  External data transfer (network compatible)  ETHERNET WI-FI  RAYPA CLOUD Basic (extensive documentation/network compatible)  RAYPA CLOUD Premium (extensive documentation/network compatible)  Private cloud server  0  0  0  0  RITHERNET V  0  0  0  0  0  RAYPA CLOUD Premium (extensive documentation/network compatible)  Private cloud server 0  0  0  0  Internal memory for documentation for sterilization cycles  up to 1.000.000  Up to 1.000.000  Up to 1.000.000  Up to 1.000.000  Data backup via USB reader  Timer for programmable start time  Calculation of F <sub>0</sub> value in combination with flexible PT-100  0  0  0  0  0  0  0  0  0  0  0  0	Number of sterilization programs		50	50	50
7" capacitive colour touch screen  RS-232  USB  ETHERNET  WI-FI  RAYPA CLOUD Basic (extensive documentation/network compatible)  RAYPA CLOUD Premium (extensive documentation/network compatible)  O  RAYPA CLOUD Premium (extensive documentation/network compatible)  Private cloud server  O  O  O  Internal memory for documentation for sterilization cycles  Up to 1.000.000  Data backup via USB reader  Timer for programmable start time  Calculation of F <sub>o</sub> value in combination with flexible PT-100  O  O  O  O  O  O  O  O  O  O  O  O	Password secured access rights for parameterization		✓	✓	<b>~</b>
External data transfer (network compatible)    ETHERNET	Automatic microprocessor control		✓	✓	✓
External data transfer (network compatible)  ETHERNET WI-FI  RAYPA CLOUD Basic (extensive documentation/network compatible)  RAYPA CLOUD Premium (extensive documentation/network compatible)  Private cloud server  O O O O Internal memory for documentation for sterilization cycles  Up to 1.000.000  Data backup via USB reader  Timer for programmable start time  Calculation of F <sub>o</sub> value in combination with flexible PT-100  DO O O O O O O O O O O O O O O O O O	7" capacitive colour touch screen		✓	✓	✓
(network compatible)  ETHERNET  WI-FI  WI-FI  RAYPA CLOUD Basic (extensive documentation/network compatible)  RAYPA CLOUD Premium (extensive documentation/network compatible)  Private cloud server  O  O  O  Internal memory for documentation for sterilization cycles  Data backup via USB reader  Timer for programmable start time  Calculation of F <sub>0</sub> value in combination with flexible PT-100  DO  O  O  O  O  O  O  O  O  O  O  O  O		RS-232	~	✓	✓
RAYPA CLOUD Basic (extensive documentation/network compatible)  RAYPA CLOUD Premium (extensive documentation/network compatible)  O O O O Private cloud server O O O Internal memory for documentation for sterilization cycles  Up to 1.000.000  Data backup via USB reader  Timer for programmable start time  Calculation of F <sub>0</sub> value in combination with flexible PT-100  D O O O O O O O O O O O O O O O O O	External data transfer	USB	✓	✓	<b>~</b>
RAYPA CLOUD Basic (extensive documentation/network compatible)  RAYPA CLOUD Premium (extensive documentation/network compatible)  Private cloud server  O  O  Internal memory for documentation for sterilization cycles  Data backup via USB reader  Timer for programmable start time  Calculation of F <sub>0</sub> value in combination with flexible PT-100  DO  DO  O  O  O  O  O  O  O  O  O  O	(network compatible)	ETHERNET	✓	✓	<b>~</b>
RAYPA CLOUD Premium (extensive documentation/network compatible)  Private cloud server  0 0 0 0 0 Internal memory for documentation for sterilization cycles  up to 1.000.000  Data backup via USB reader  Timer for programmable start time  Calculation of F <sub>0</sub> value in combination with flexible PT-100  DO  O  O  O  O  O  O  O  O  O  O  O  O		WI-FI	✓	✓	✓
Private cloud server 0 0 0 0 0 Internal memory for documentation for sterilization cycles up to 1.000.000 up to 1.000.000 up to 1.000.000 up to 1.000.000  Data backup via USB reader	RAYPA CLOUD Basic (extensive documentation/network compatible)		0	0	0
Internal memory for documentation for sterilization cycles  up to 1.000.000  v  for programmable start time  v  calculation of F <sub>0</sub> value in combination with flexible PT-100  for programmable start time  or programmable start	$\textbf{RAYPA CLOUD Premium (} extensive \ documentation/network \ compatible) \\$		0	0	0
Data backup via USB reader  Timer for programmable start time  Calculation of F <sub>o</sub> value in combination with flexible PT-100  O  FDA 21 CFR Part 11 and GMP Annex 11 compliance  O  O	Private cloud server		0	0	0
Timer for programmable start time  Calculation of F <sub>o</sub> value in combination with flexible PT-100  O  FDA 21 CFR Part 11 and GMP Annex 11 compliance  O  O	Internal memory for documentation for sterilization cycles		up to 1.000.000	up to 1.000.000	up to 1.000.000
Calculation of F₀ value in combination with flexible PT-100 0 0 ✓ FDA 21 CFR Part 11 and GMP Annex 11 compliance 0 0 0	Data backup via USB reader		<b>~</b>	<b>~</b>	<b>~</b>
FDA 21 CFR Part 11 and GMP Annex 11 compliance 0 0	Timer for programmable start time		<b>~</b>	~	•
	Calculation of F <sub>o</sub> value in combination with flexible PT-100		0	0	<b>~</b>
Connection to LIMS****	FDA 21 CFR Part 11 and GMP Annex 11 compliance		0	0	0
	Connection to LIMS***		<b>~</b>	~	•

✓ STANDARD O OPTIONAL

\*\*\* LIMS: Laboratory Information Management System













