Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саранск (8342)22-96-24
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Улан-Удэ (3012)59-97-51
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
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КАТАЛОГ

Autoclaves & Food Analysis

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WHY CHOOSE RAYPA?

GLOBAL REACH

With half a century of experience, we have a long list of satisfied customers around the world. Currently, we export 85% of our annual turnover and have a stable distribution network with presence in over 100 countries.

EFFECTIVE TECHNICAL SERVICE

Our team of technicians and engineers are highly qualified and experts in our products. If you experience a technical issue, it will be our priority to rectify it. When you purchase RAYPA equipment, you are guaranteed the highest level of support and technical assistance.

EXPERT MANUFACTURER

RAYPA is a global leader in the manufacturing of laboratory autoclaves. Each of our autoclaves is meticulously designed and manufactured entirely within our modern facility located in Barcelona, ensuring the highest levels of excellence in production.

COMPLETE AND CUSTOMIZABLE RANGE

We possess a comprehensive portfolio of laboratory autoclaves, suitable for a wide range of applications and market segments. Clients have the option of choosing from a wide selection of 11 series and 35 models of autoclaves and accessories to fit their unique requirements.

INNOVATION AND QUALITY

Our products are engineered to withstand prolonged usage and incorporate state-of-the-art technology, constant innovation, and exceptional manufacturing quality. Our team of engineers and technicians strive daily to improve our products and exceed the expectations of our customers.

COMPREHENSIVE CONSULTANCY

Our team of experts thoroughly evaluates each project and provides counsel to our customers on the solution that best aligns with their requirements. After the sale, we impart comprehensive training and maintenance advice for each piece of equipment to guarantee its optimal operation and extend its useful service life.

Autoclaves


RAYPA
RAYPA
CLOSED

PORTFOLIO OVERVIEW

Laboratory autoclaves

VERTICAL FLOOR-STANDING

TOP LINE

TLV-S Series	TLV-PD Series	TLV-FA Series
TLV-50	TLV-50PD	TLV-50FA
TLV-75	TLV-75PD	TLV-75FA
TLV-110	TLV-110PD	TLV-110FA
TLV-150	TLV-150PD	TLV-150FA

CLASSIC LINE

AES Series	AE-DRY Series	AE-B Series	AE-MP Series
AES-28	AE-28-DRY	AE-50-B	AE-20-MP-10L
AES-50	AE-50-DRY	AE-75-B	AE-20-MP
AES-75	AE-75-DRY	AE-110-B	AE-40-MP
AES-110	AE-110-DRY	AE-150-B	AE-60-MP
AES-150	AE-150-DRY		AE-80-MP
			AE-100-MP

BENCHTOP

CLASSIC LINE

AVS-N Series	AHS-N Series	AHS-DRY Series	AHS-B Series
AES-8	AH-21-N2	AH-21-L	AH-21-B
AES-12	AHS-50-N	AHS-50-DRY	AHS-50-B
	AHS-75-N	AHS-75-DRY	AHS-75-B

Medical autoclaves

VERTICAL FLOOR-STANDING

TOP LINE

TLV-S-MD Series	TLV-PD-MD Series	TLV-FA-MD Series
TLV-50-MD	TLV-50PD-MD	TLV-50FA-MD
TLV-75-MD	TLV-75PD-MD	TLV-75FA-MD
TLV-110-MD	TLV-110PD-MD	TLV-110FA-MD
TLV-150-MD	TLV-150PD-MD	TLV-150FA-MD

CLASSIC LINE

AES-MD Series	AE-DRY-MD Series	AE-B-MD Series
AES-28-MD	AE-28-DRY-MD	AE-50-B-MD
AES-50-MD	AE-50-DRY-MD	AE-75-B-MD
AES-75-MD	AE-75-DRY-MD	AE-110-B-MD
AES-110-MD	AE-110-DRY-MD	AE-150-B-MD
AES-150-MD	AE-150-DRY-MD	

BENCHTOP

CLASSIC LINE

AVS-N-MD Series	AHS-N-MD Series	AHS-DRY-MD Series	AHS-B-MD Series
AES-12-MD	AH-21-N2-MD	AH-21-L-MD	AH-21-B-MD
	AHS-50-N-MD	AHS-50-DRY-MD	AHS-50-B-MD
	AHS-75-N-MD	AHS-75-DRY-MD	AHS-75-B-MD

RAYPA MEDICAL DEVICE

This company is certified with the regulation **ISO 9001:2015** and has a line of medical autoclaves certified with the regulation **ISO 13485:2016**.
For more information about our medical autoclaves, please consult the specific catalogue for medical autoclaves and contact our sales department.

TECHNICAL COMPARISON OF VERTICAL FLOOR-STANDING AUTOCLAVES

		TOP LINE			CLASSIC LINE		
		TLV-S Series	TLV-FA Series	TLV-PD Series	AES Series	AE-DRY Series	AE-B Series
General classification	Target customer	Research, Pharmaceuticals and Biotechnology	Research, Pharmaceuticals and Biotechnology	Research, Pharmaceuticals and Biotechnology	General laboratory	General laboratory	General laboratory
	Equipment placement	Floor-standing	Floor-standing	Floor-standing	Floor-standing	Floor-standing	Floor-standing
	Loading direction	Top-loading	Top-loading	Top-loading	Top-loading	Top-loading	Top-loading
Compatible applications	Culture media and liquids	++	++	++	++	++	++
	Laboratory waste bags	++	++	++	+	++	++
	Porous solids and wrapped loads	-	-	++	-	+	++
	Biohazardous waste (Red bags)	++	++	++	-	-	-
	Glassware	++	++	++	++	++	++
	Pre-filled syringes	-	++	-	-	-	-
Transfer of data	RS-232	✓	✓	✓	✓	✓	-
	USB & Ethernet	✓	✓	✓	-	-	✓
	Wi-Fi	✓	✓	✓	-	-	-
Sterilization chamber and door specifications	Sterilization chamber volume	58 - 169L	58 - 169L	58 - 169L	33 - 175L	33 - 175L	55 - 175L
	External housing material	AISI-304	AISI-304	AISI-304	AISI-304	AISI-304	AISI-304
	Sterilization chamber material	AISI-316L	AISI-316L	AISI-316L	AISI-316L	AISI-316L	AISI-316L
	Min. - max. temperature	105 - 140°C	105 - 140°C	105 - 140°C	100 - 134°C	100 - 134°C	105 - 134°C
	Max. pressure (above atmospheric pressure)	2,6Barg	2,6Barg	2,6Barg	2,1Barg	2,1Barg	2,1Barg
	Automatic locking with pressure	✓	✓	✓	✓	✓	✓
	Door opening mechanism	Push-button	Push-button	Push-button	Wheel	Wheel	Wheel
	Door opening direction	Vertical	Vertical	Vertical	Lateral	Lateral	Lateral
	Mechanically assisted door	✓	✓	✓	-	-	-
	Thermally insulated door	✓	✓	✓	✓	✓	✓
Water management	Multiple-use water sterilization chamber capacity	-	-	-	2 - 12L	-	-
	Multiple-use water tank capacity	-	-	-	-	9 - 20L	-
	Single-use water tank capacity	-	-	-	-	-	9 - 20L
	Automatic tap water supply	✓	✓	✓	-	0	0
	Water pump to pressurize the tap water intake	✓	✓	✓	-	0	0
	Water-cooled discharge	✓	✓	✓	-	-	-
Other specifications	Air inlet fitted with bacteriological filter	✓	✓	✓	-	✓	✓
	Air outlet fitted with bacteriological filter	✓	✓	✓	-	-	-
	Main flexible temperature probe	0	✓	0	0	0	0
	Additional flexible temperature probe	0	0	0	-	-	-
	Casters with brakes	✓	✓	✓	0	0	✓
	Pressure gauge	✓	✓	✓	✓	✓	✓
	Electrical customization (115-230M V / 230-400T V)	0	0	0	0	0	0
	Special models with increased power	-	-	-	0	0	0
User interface and microprocessor	Screen display	Touch Panel PC	Touch Panel PC	Touch Panel PC	Digital LCD	Digital LCD	TFT touchscreen
	Screen size	7"	7"	7"	2 lines x 16 digits	2 lines x 16 digits	5"
	Total number of programs	50	50	50	10	10	50
	Automatic microprocessor control	✓	✓	✓	✓	✓	✓
	Timer start	✓	✓	✓	✓	✓	✓

Continued on next page

		TOP LINE			CLASSIC LINE		
		TLV-S Series	TLV-FA Series	TLV-PD Series	AES Series	AE-DRY Series	AE-B Series
Sterilization technology features	Method to generate steam	Steam generator	Steam generator	Steam generator	Heating elements	Heating elements	Steam generator
	Type of purge	Vacuum	Vacuum	Vacuum	Gravitational	Vacuum	Vacuum
	Type of vacuum pump	Membrane	Membrane	Water-ring	-	Membrane	Membrane
	Type of prevacuum	Single	Single	Fractionated	-	Single	Fractionated
	Type of postvacuum	-	-	Vacuum drying	-	Vacuum drying	Vacuum drying
	Heating jacket	-	-	✔	-	✔	✔
	Fast cooling	-	Water coils + fan	-	-	-	-
	Compressed air system	-	✔	-	-	-	-
	F_0-controlled sterilization	✔	✔	✔	-	-	-
Special cycles and process optimization	Flash cycles (quick sterilization cycle at high temperatures)	-	-	✔	-	-	✔
	Liquids mode (controlled depressurization during the cooling phase to avoid liquids *boilover*)	✔	✔	✔	-	✔	✔
	Air-over-pressure cycles (pressure support during the cooling phase to avoid liquid loss by evaporation)	-	✔	-	-	-	-
	Agar mode (temperature holding when cycle ends)	✔	✔	✔	✔	✔	-
	Vacuum drying (heating jacket + fractionated postvacuum)	-	-	✔	-	✔	✔
	Fast cooling (faster temperature reduction)	-	✔	-	-	-	-
	Vacuum test & Bowie-Dick test cycles	-	-	✔	-	-	✔
Adjustable cycle parameters	Liquids mode	✔	✔	✔	✔	✔	✔
	Agar mode	✔	✔	✔	✔	✔	-
	Temperature of preheating phase	-	-	✔	-	-	-
	Number of prevacuum pulses	✔	✔	✔	-	-	✔
	Temperature and duration of sterilization phase	✔	✔	✔	✔	✔	✔
	Temperature control by flexible probe	O	✔	O	O	O	O
	Duration of drying phase	-	-	✔	-	✔	✔
	Pressure support during cooling phase	-	✔	-	-	-	-
Electronic data and records management	User administration control with passwords	✔	✔	✔	-	-	-
	Audit trail	O	O	O	-	-	-
	LIMS, private cloud server	O	O	O	-	-	-
	Internal memory cycle limit	1M	1M	1M	-	-	150 - 200
Printers	Embedded ticket printer	O	O	O	O	O	O
	External ticket printer	O	O	O	O	O	O
	Label printer and barcode scanner	O	O	O	-	-	-
Services	IQ/OQ/PQ qualification	O	O	O	O	O	O
	Real-time remote technical assistance	O	O	O	-	-	-
Regulations and certifications	ISO 13485:2016	O	O	O	O	O	O
	UL/CSA electric design	O	O	O	O	O	O
	CE marking	✔	✔	✔	✔	✔	✔
	Pressure Equipment Directive 2014/68/EU	✔	✔	✔	✔	✔	✔
	Merkblatt AD 2000 Design Codes	✔	✔	✔	✔	✔	✔
	Machinery Directive 2006/42/EC	✔	✔	✔	-	-	-
	FDA 21 CFR Part 11 and GMP Annex 11 (software and data management compliance)	O	O	O	-	-	-

+: Recommended ✔: Included O: Optional

TECHNICAL COMPARISON OF BENCHTOP AUTOCLAVES

		CLASSIC LINE							
		AVS-N Series		AHS-N Series		AHS-DRY Series		AHS-B Series	
		AES-8	AES-12	AH-21-N2	AHS-50-N AHS-75-N	AH-21-L	AHS-50-DRY AHS-75-DRY	AH-21-B	AHS-50-B AHS-75-B
General classification	Target customer	General laboratory		General laboratory		General laboratory		General laboratory	
	Equipment placement	Benchtop		Benchtop		Benchtop		Benchtop	
	Loading direction	Top-loading		Front-loading		Front-loading		Front-loading	
Compatible applications	Culture media and liquids	+	++	+	++	++		++	
	Laboratory waste bags	+		+		++		++	
	Porous solids and wrapped loads	-		-		+		++	
	Glassware	++		++		++		++	
Transfer of data	RS-232	✔		✔		✔		-	
	USB & Ethernet	-		-		-		✔	
Sterilization chamber and door specifications	Sterilization chamber volume	8L	15L	22L	55 - 79L	22L	55 - 79L	22L	55 - 79L
	Sterilization chamber material	AISI-18/10	AISI-316L	AISI-316L		AISI-316L		AISI-316L	
	External housing material	AISI-304		Painted aluminium		Painted aluminium		Painted aluminium	
	Min. - max. temperature	100 - 127°C	100 - 134°C	100 - 134°C		100 - 134°C		105 - 134°C	
	Max. pressure (above atmospheric pressure)	1,5Barg	2,1Barg	2,1Barg		2,1Barg		2,1Barg	
	Automatic pressure locking	✔		✔		✔		✔	
	Door opening mechanism	Bayonet	Wheel	Handle	Wheel	Handle	Wheel	Handle	Wheel
	Door opening direction	Top-loading		Front-loading		Front-loading		Front-loading	
	Thermally insulated door	✔		✔		✔		✔	
Water management	Multiple-use water sterilization chamber capacity	1,2L	2L	-		-		-	
	Multiple-use water tank capacity	-		6L	10L	6L	10L	-	
	Single-use water tank capacity	-		-		-		6L	10L
	Automatic tap water supply	-		-		0		0	
	Water pump to pressurize water feed	-		-		0		0	
Other specifications	Air inlet fitted with bacteriological filter	-		-		✔		✔	
	Flexible temperature probe	-	0	-	0	0		0	
	Pressure gauge	✔		✔		✔		✔	
	Cycle data limit stored in internal memory	-		-		-		150 - 200	
	Electrical customization (115-230M V / 230-400T V)	0		0		0		0	
User interface and microprocessor	Screen display	Digital LCD		Digital LCD		Digital LCD		TFT touchscreen	
	Screen size	1 line x 3 digits	2 lines x 16 digits	1 line x 3 digits	2 lines x 16 digits	2 lines x 16 digits		5"	
	Total number of programs	1	10	1	10	10		50	
	Automatic microprocessor control	✔		✔		✔		✔	
	Timer start	✔		✔		✔		✔	

Continued on next page

		CLASSIC LINE							
		AVS-N Series		AHS-N Series		AHS-DRY Series		AHS-B Series	
		AES-8	AES-12	AH-21-N2	AHS-50-N AHS-75-N	AH-21-L	AHS-50-DRY AHS-75-DRY	AH-21-B	AHS-50-B AHS-75-B
Sterilization technology features	Method to generate steam	Heating elements		Heating elements		Heating elements		Steam generator	
	Type of purge	Gravitational		Gravitational		Vacuum		Vacuum	
	Type of vacuum pump	-		-		Membrane		Membrane	
	Type of prevacuum	-		-		Single		Fractionated	
	Type of postvacuum	-		-		Vacuum drying		Vacuum drying	
	Heating jacket	-		-		✔		✔	
Special cycles and process optimization	Flash cycles (quick sterilization cycle at high temperatures)	-		-		-		✔	
	Liquids mode (controlled depressurization during cooling phase to avoid liquids *boilover*)	-		✔		✔		✔	
	Agar mode (temperature holding when cycle ends)	-	✔	-	✔	✔		-	
	Vacuum drying (heating jacket + fractionated postvacuum)	-		-		✔		✔	
	Vacuum test & Bowie-Dick test cycles	-		-		-		✔	
Adjustable cycle parameters	Liquids mode	-	✔	✔		✔		✔	
	Agar mode	-	✔	-	✔	✔		-	
	Number of prevacuum pulses	-		-		-		✔	
	Temperature and duration of sterilization phase	✔		✔		✔		✔	
	Temperature control by flexible probe	-	0	-	0	0		0	
	Duration of drying phase	-		-		✔		✔	
Data management	Internal memory cycle limit	-		-		-		150 - 200	
Printers	Embedded ticket printer	-	0	-	0	0		0	
	External ticket printer	-	0	-	0	0		-	
Services	IQ/OQ/PQ qualification	0		0		0		0	
Regulations and certifications	ISO 13485:2016	-	0	0		0		0	
	UL/CSA electric design	0		0		0		0	
	CE marking	✔		✔		✔		✔	
	Pressure Equipment Directive 2014/68/EU	✔		✔		✔		✔	
	Merkblatt AD 2000 Design Codes	✔		✔		✔		✔	

✚: Recommended ✔: Included 0: Optional

LOAD CAPACITY OF VERTICAL FLOOR-STANDING AUTOCLAVES

ISO ERLENMEYER FLASKS

Autoclave model	Usable volume L	250mL (Ø85 x 143mm)				500mL (Ø105 x 183mm)				1000mL (Ø131 x 230mm)				2000mL (Ø166 x 280mm)			
		Total baskets	Units/ basket	Total units		Total baskets	Units/ basket	Total units		Total baskets	Units/ basket	Total units		Total baskets	Units/ basket	Total units	
				A	B			A	B			A	B			A	B
AES-28	31	2	7	14	=	1	4	4	8	1	1	1	=	1	1	1	=
AES-50	50	3	7	21	28	1	4	4	12	1	1	1	3	1	1	1	2
AES-75	75	3	12	36	48	2	8	16	24	2	5	10	=	1	3	3	6
AES-110	110	4	12	48	60	3	8	24	32	3	5	15	=	1	3	3	9
AES-150	153	4	21	84	105	4	14	56	=	3	8	24	=	1	5	5	=
AE-28-DRY	31	2	7	14	=	1	4	4	8	1	1	1	=	1	1	1	=
AE-50-DRY	50	3	7	21	28	1	4	4	12	1	1	1	=	1	1	1	2
AE-75-DRY	75	3	12	36	=	2	8	16	24	2	5	10	=	1	3	3	6
AE-110-DRY	110	4	12	48	60	3	8	24	32	3	5	15	=	1	3	3	6
AE-150-DRY	153	4	21	84	105	4	14	56	=	3	8	24	=	1	5	5	10
AE-50-B	50	3	7	21	28	1	4	4	12	1	1	1	3	1	1	1	2
AE-75-B	75	3	12	36	48	2	8	16	24	2	5	10	=	1	3	3	6
AE-110-B	110	4	12	48	60	3	8	24	32	3	5	15	=	1	3	3	9
AE-150-B	153	4	21	84	105	4	14	56	=	3	8	24	=	1	5	5	10
TLV-50	56	2	12	24	36	1	8	8	16	1	9	9	=	1	3	3	=
TLV-75	81	3	12	36	48	2	8	16	24	2	9	18	=	1	3	3	6
TLV-110	118	3	21	63	84	3	14	42	=	2	8	16	=	1	5	5	10
TLV-150	155	4	21	84	105	4	14	56	=	3	8	24	=	1	5	5	15
TLV-50PD	56	2	12	24	36	1	8	8	16	1	9	9	=	1	3	3	=
TLV-75PD	81	3	12	36	48	2	8	16	24	2	9	18	=	1	3	3	6
TLV-110PD	118	3	21	63	84	3	14	42	=	2	8	16	=	1	5	5	10
TLV-150PD	155	4	21	84	105	4	14	56	=	3	8	24	=	1	5	5	15
TLV-50FA	56	2	12	24	36	1	8	8	16	1	9	9	=	1	3	3	=
TLV-75FA	81	3	12	36	48	2	8	16	24	2	9	18	=	1	3	3	6
TLV-110FA	118	3	21	63	84	3	14	42	=	2	8	16	=	1	5	5	10
TLV-150FA	155	4	21	84	105	4	14	56	=	3	8	24	=	1	5	5	15
AES-8	6,8	1	4	4	=	0	0	2	=	0	0	0	=	0	0	0	=
AES-12	13	1	5	5	=	1	4	4	=	0	0	1	=	0	0	1	=

A: Number of units using standard baskets.
B: Number of units using specially designed baskets for the specific combination of autoclave model and container.

The data contained within these tables, regarding load capacities, serves as a non-binding guide to assist you in the selection of the most appropriate autoclave model.

ISO BOTTLES

Autoclave model	Usable volume L	250mL (Ø70 x 143mm)				500mL (Ø80 x 185mm)				1000mL (Ø101 x 230mm)				2000mL (Ø136 x 260mm)			
		Total baskets	Units/ basket	Total units		Total baskets	Units/ basket	Total units		Total baskets	Units/ basket	Total units		Total baskets	Units/ basket	Total units	
				A	B			A	B			A	B			A	B
AES-28	31	2	9	18	=	1	7	7	14	1	4	4	=	1	1	1	=
AES-50	50	3	9	27	36	1	7	7	21	1	4	4	12	1	1	1	2
AES-75	75	3	20	60	80	2	14	28	42	2	8	16	=	1	4	4	8
AES-110	110	4	20	80	100	3	14	42	56	3	8	24	=	1	4	4	12
AES-150	153	4	33	132	165	4	24	96	=	3	15	45	=	1	8	8	24
AE-28-DRY	31	2	9	18	=	1	7	7	14	1	4	4	=	1	1	1	=
AE-50-DRY	50	3	9	27	36	1	7	7	21	1	4	4	=	1	1	1	2
AE-75-DRY	75	3	20	60	=	2	14	28	42	2	8	16	=	1	4	4	8
AE-110-DRY	110	4	20	80	100	3	14	42	56	3	8	24	=	1	4	4	12
AE-150-DRY	153	4	33	132	165	4	24	96	=	3	15	45	=	1	8	8	16
AE-50-B	50	3	9	27	36	1	7	7	21	1	4	4	=	1	1	1	2
AE-75-B	75	3	20	60	80	2	14	28	42	2	8	16	=	1	4	4	8
AE-110-B	110	4	20	80	100	3	14	42	56	3	8	24	=	1	4	4	12
AE-150-B	153	4	33	132	165	4	24	96	=	3	15	45	=	1	8	8	24
TLV-50	56	2	20	40	60	1	14	14	28	1	8	8	=	1	4	4	=
TLV-75	81	3	20	60	80	2	14	28	42	2	8	16	=	2	4	8	=
TLV-110	118	3	33	99	132	3	24	72	=	2	15	30	=	1	8	8	16
TLV-150	155	4	33	132	165	4	24	96	=	3	15	45	=	1	8	8	24
TLV-50PD	56	2	20	40	60	1	14	14	28	1	8	8	=	1	4	4	=
TLV-75PD	81	3	20	60	80	2	14	28	42	2	8	16	=	2	4	8	=
TLV-110PD	118	3	33	99	132	3	24	72	=	2	15	30	=	1	8	8	16
TLV-150PD	155	4	33	132	165	4	24	96	=	3	15	45	=	1	8	8	24
TLV-50FA	56	2	20	40	60	1	14	14	28	1	8	8	=	1	4	4	=
TLV-75FA	81	3	20	60	80	2	14	28	42	2	8	16	=	2	4	8	=
TLV-110FA	118	3	33	99	132	3	24	72	=	2	15	30	=	1	8	8	16
TLV-150FA	155	4	33	132	165	4	24	96	=	3	15	45	=	1	8	8	24
AES-8	6,8	1	4	4	=	0	0	2	=	0	0	0	=	0	0	0	=
AES-12	13	1	5	5	=	1	4	4	=	0	0	1	=	0	0	1	=

A: Number of units using standard baskets.
B: Number of units using specially designed baskets for the specific combination of autoclave model and container.

The data contained within these tables, regarding load capacities, serves as a non-binding guide to assist you in the selection of the most appropriate autoclave model.

FULLY AUTOMATED AUTOCLAVES EQUIPPED WITH STATE-OF-THE-ART TECHNOLOGY AND FDA-COMPLIANT CONNECTIVITY

TOP LINE


TLV-50FA
RAYPA

NEXT-GENERATION VERTICAL AUTOCLAVES WITH STATE-OF-THE-ART TECHNOLOGY

TOP LINE

All Top line vertical floor-standing autoclaves are equipped with the most advanced connectivity on the market and comply with the latest advances in electronic record keeping and data control to work under FDA, GMP and GLP environments. TLV-PD Series autoclaves are specially designed to sterilize glass, porous solids and objects with complex geometries. TLV-FA Series autoclaves are equipped with a fast cooling system for a faster sterilization of liquids.

TLV-FA Series autoclaves are equipped with a fast cooling system composed of water cooling coils, an air compressor and an internal radial fan. This system is designed to offer an advanced sterilization of liquids. They can also incorporate up to two flexible probes.

TOTAL CONTROL, ADVANCED TECHNICAL ASSISTANCE AND PROFESSIONAL TRACEABILITY

RAYPACLOUD

- Custom reports
- Unlimited data storage
- Audit trail and SSL encryption
- User administration control with passwords
- Integrated device management
- Notices and alerts

RAYPASUPPORT

- TeamViewer® for screen sharing with the technical service
- Remote monitoring of equipment status
- Contact the technical service from within the device (email and SMS)
- Remote maintenance and diagnostics

RAYPACONTROL

- Protocol history
- Video instructions
- Advanced cycle programming
- Real-time program display
- 7” colour display capacitive touchscreen
- Ticket and label printing and barcode scanner

OPTIONAL

GMP Annex 11

FDA 21 CFR Part 11

TLV-S Series

MULTIPURPOSE VERTICAL AUTOCLAVES

TOP LINE

Automatic, multipurpose, modern design, professional traceability and advanced connectivity.

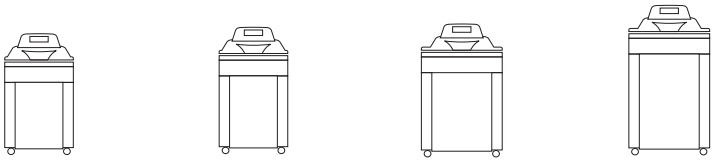
APPLICATIONS

- Culture media and liquids
- Glassware
- Laboratory waste bags
- Biohazardous waste

BENEFITS

- Fully automatic. Push-button-controlled mechanically assisted door. Automatic water filling and water-cooled direct discharge.
- State-of-the-art technology. Instant steam production by the built-in steam generator. Air inlet and outlet fitted with a bacteriological filter. Built-in vacuum pump for initial prevacuum.
- Modern, ergonomic design with excellent quality of construction.
- Controller and connectivity to PC, cloud, intranet and LIMS that complies with FDA, GMP and GLP.
- Advanced technical support. Appointment booking on the controller, screen sharing via TeamViewer® and remote diagnosis of equipment status and failures.

SPECIFICATIONS



References	TLV-50	TLV-75	TLV-110	TLV-150
Total/usable volume of the chamber L	58/56	83/81	124/118	169/155
Usable dimensions of the chamber Ø x H mm	400 x 450	400 x 650	500 x 600	500 x 850
External dimensions L x D x H mm	610 x 870 x 1060	610 x 870 x 1110	710 x 980 x 1160	710 x 980 x 1310
Loading height mm	815	865	915	1065
Net weight Kg	131	139	195	210
Power W	3600	3600	9000	9000
Standard voltage* V	230	230	400	400
Frequency Hz	50/60	50/60	50/60	50/60

*Other voltages and electrical configurations available on request.

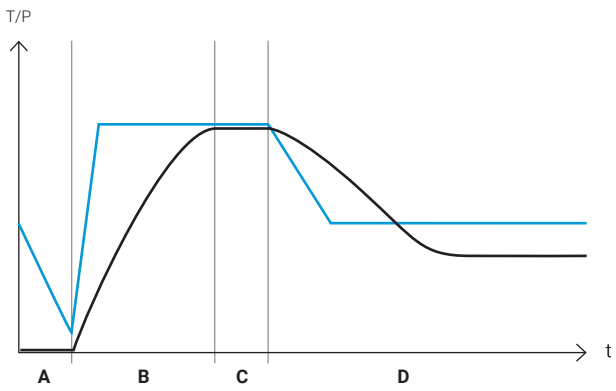
DESCRIPTION

- 7” colour capacitive touchscreen.
- Compliance with FDA 21 CFR Part 11 and GMP Annex 11.
- Compatible with RAYPAcloud.
- AISI-316L stainless steel sterilization chamber. AISI-304 stainless steel external housing.
- Maximum temperature and pressure: 140°C and 2,6Barg.
- Automatic water feed from water network.
- Instant steam production by the built-in steam generator.
- Mechanical purge through an integrated vacuum pump.
- Water-cooled direct discharge.
- Push-button-controlled mechanically assisted door.
- Casters with brakes.
- Air inlet and outlet fitted with a bacteriological filter.
- Features agar mode and liquids programs. Main and secondary flexible probes are optional for F_0-controlled sterilizations.
- Programmable auto start-up by hour and date.
- User administration control with passwords.
- Connection through RS-232, USB, Ethernet, and Wi-Fi.
- Embedded or external ticket printer, label printer and barcode scanner are optional.

OPERATION

In the prevacuum phase, the air in the chamber is mechanically purged with a single vacuum pulse. The steam generator is then activated to inject steam into the sterilization chamber. When the sterilization temperature is reached, the sterilization phase begins and the temperature is accurately sustained for the predefined duration.

At the end of the sterilization phase, a natural cooling phase begins. In programs with agar mode activated, the preset temperature is maintained indefinitely.



A Prevacuum phase
B Heating phase
C Sterilization phase
D Cooling phase

— Temperature
— Pressure

TLV-PD Series

VERTICAL AUTOCLAVES WITH SUPER DRYING SYSTEM

TOP LINE

Automatic, advanced sterilization of solids, modern design, professional traceability and advanced connectivity.

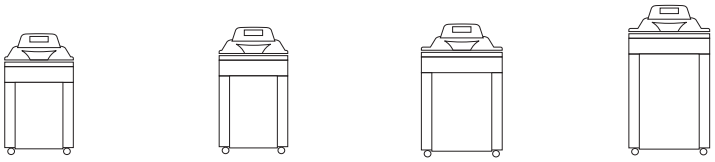
APPLICATIONS

- Culture media and liquids
- Glassware
- Laboratory waste bags
- Biohazardous waste
- Porous solids and wrapped objects
- Objects with complex geometries

BENEFITS

- Advanced sterilization of solids thanks to the super drying system consisting of a water-ring vacuum pump and a heating jacket.
- Modern, ergonomic design with excellent quality of construction.
- Fully automatic. Push-button-controlled mechanically assisted door. Automatic water filling and water-cooled direct discharge.
- Controller and connectivity to PC, cloud, intranet and LIMS that complies with FDA, GMP and GLP.
- State-of-the-art technology. Instant steam production by the built-in steam generator. Air inlet and outlet fitted with a bacteriological filter. Built-in vacuum pump for initial prevacuum pulses.
- Advanced technical support. Appointment booking on the controller, screen sharing via TeamViewer® and remote diagnosis of equipment status and failures.

SPECIFICATIONS



References	TLV-50PD	TLV-75PD	TLV-110PD	TLV-150PD
Total/usable volume of the chamber L	58/56	83/81	124/118	169/155
Usable dimensions of the chamber Ø x H mm	400 x 450	400 x 650	500 x 600	500 x 850
External dimensions L x D x H mm	610 x 870 x 1060	610 x 870 x 1110	710 x 980 x 1160	710 x 980 x 1310
Loading height mm	815	865	915	1065
Net weight Kg	134	143	198	213
Power W	3600	3600	9000	9000
Standard voltage* V	230	230	400	400
Frequency Hz	50/60	50/60	50/60	50/60

*Other voltages and electrical configurations available on request.

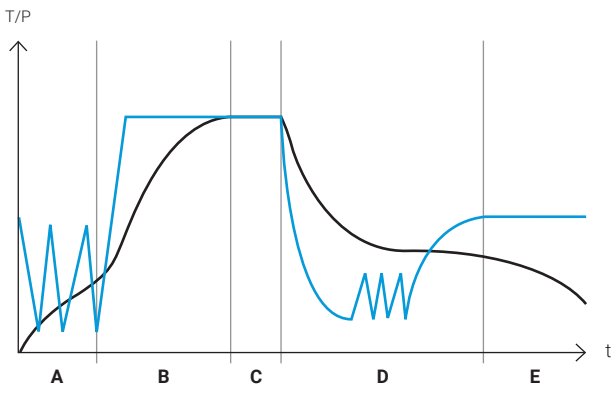
DESCRIPTION

- 7” colour capacitive touchscreen.
- Compliance with FDA 21 CFR Part 11 and GMP Annex 11.
- Compatible with RAYPAcloud.
- AISI-316L stainless steel sterilization chamber. AISI-304 stainless steel external housing.
- Maximum temperature and pressure: 140°C and 2,6Barg.
- Automatic water feed from water network.
- Instant steam production by the built-in steam generator.
- Mechanical purge and final drying through an integrated high-performance water-ring vacuum pump and powerful heating jacket.
- Water-cooled direct discharge.
- Push-button-controlled mechanically assisted door.
- Casters with brakes.
- Air inlet and outlet fitted with a bacteriological filter.
- Agar mode and liquids programs. The main and secondary flexible probes are optional for F_0-controlled sterilizations.
- Programmable auto start-up by hour and date.
- User administration control with passwords.
- Connection through RS-232, USB, Ethernet, and Wi-Fi.
- Embedded or external ticket printer, label printer and barcode scanner are optional.

OPERATION ON SOLID LOADS

In the prevacuum phase, the air in the chamber is mechanically purged at high speed with multiple vacuum pulses. After the first vacuum pulse, the steam generator is activated to inject saturated steam into the sterilization chamber. When the sterilization temperature is reached, the sterilization phase begins and the temperature is accurately sustained for the predefined duration.

Only in solids programs, a fast vacuum drying phase then starts with the activation of both the water-ring vacuum pump and the heating jacket to completely dry the load. Finally, a natural cooling phase begins.



A Prevacuum phase
B Heating phase
C Sterilization phase
D Vacuum drying phase
E Cooling phase

— Temperature
— Pressure

TLV-FA Series

VERTICAL AUTOCLAVES WITH FAST COOLING SYSTEM

TOP LINE

Automatic, advanced sterilization of liquids, modern design, professional traceability and advanced connectivity.

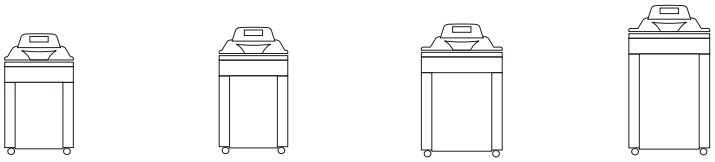
APPLICATIONS

- Culture media and liquids
- Glassware
- Laboratory waste bags
- Biohazardous waste

BENEFITS

- Advanced sterilization of liquids thanks to the fast cooling system consisting of an internal radial fan, water cooling coils and pressure support.
- Modern, ergonomic design with excellent quality of construction.
- Fully automatic. Push-button-controlled mechanically assisted door. Automatic water filling and water-cooled direct discharge.
- Controller and connectivity to PC, cloud, intranet and LIMS that complies with FDA, GMP and GLP.
- State-of-the-art technology. Instant steam production by the built-in steam generator. Air inlet and outlet fitted with a bacteriological filter. Built-in vacuum pump for initial prevacuum.
- Advanced technical support. Appointment booking on the controller, screen sharing via TeamViewer® and remote diagnosis of equipment status and failures.

SPECIFICATIONS



References	TLV-50FA	TLV-75FA	TLV-110FA	TLV-150FA
Total/usable volume of the chamber L	58/56	83/81	124/118	169/155
Usable dimensions of the chamber Ø x H mm	400 x 450	400 x 650	500 x 600	500 x 850
External dimensions L x D x H mm	610 x 870 x 1060	610 x 870 x 1110	710 x 980 x 1160	710 x 980 x 1310
Loading height mm	815	865	915	1065
Net weight Kg	140	151	205	220
Power W	3600	3600	9000	9000
Standard voltage* V	230	230	400	400
Frequency Hz	50/60	50/60	50/60	50/60

*Other voltages and electrical configurations available on request.

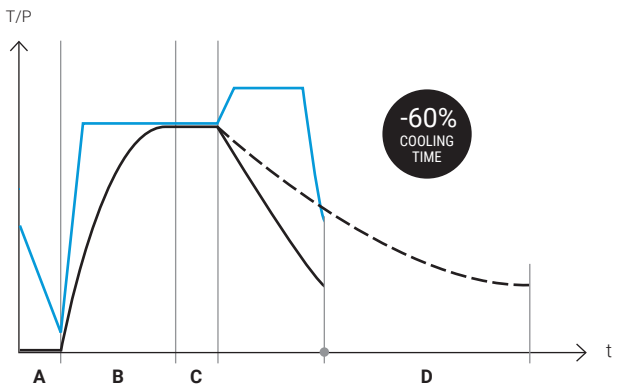
DESCRIPTION

- 7” colour capacitive touchscreen.
- Compliance with FDA 21 CFR Part 11 and GMP Annex 11.
- Compatible with RAYPAcloud.
- AISI-316L stainless steel sterilization chamber. AISI-304 stainless steel external housing.
- Maximum temperature and pressure: 140°C and 2,6Barg.
- Fast cooling by water cooling coils, pressure support and internal radial fan.
- Automatic water feed from water network.
- Instant steam production by the built-in steam generator.
- Mechanical purge by vacuum pump.
- Water-cooled direct discharge.
- Push-button-controlled mechanically assisted door.
- Casters with brakes.
- Air inlet and outlet fitted with a bacteriological filter.
- Equipped with main flexible probe for F_0-controlled sterilizations, agar mode and liquids programs. Secondary flexible probe is optional.
- Programmable auto start-up by hour and date.
- User administration control with passwords.
- Connection through RS-232, USB, Ethernet, and Wi-Fi.
- Embedded or external ticket printer, label printer and barcode scanner are optional.

OPERATION

In the prevacuum phase, the air in the chamber is mechanically purged with a single vacuum pulse. The steam generator is then activated to inject steam into the sterilization chamber. When the sterilization temperature is reached, the sterilization phase begins and the temperature is accurately sustained for the predefined duration.

Finally, a fast cooling phase begins with the addition of pressure support, the circulation of water within the cooling coils and the activation of the internal radial fan to cool the load more quickly. In programs with agar mode activated, the preset temperature is maintained indefinitely.



A Prevacuum phase
B Heating phase
C Sterilization phase
D Cooling phase

— Temperature with fast cooling
-- Temperature without fast cooling
— Pressure

ACCESSORIES

WIRE BASKETS

- Baskets suitable for the sterilization of all types of clean loads.
- Simple and lightweight handling.
- Suitable for heavy loads.
- Material: AISI-304 stainless steel.

References		CV-75S	CV-75	CV-150S	CV-150M
Dimensions	External Ø x H mm	370 x 180	370 x 265	470 x 175	470 x 235
	Internal Ø x H mm	360 x 175	360 x 260	460 x 170	460 x 230
For autoclaves with the following chamber volumes	58 L	2	-	-	-
	83 L	3	2	-	-
	124 L	-	-	3	-
	169 L	-	-	4	3

WIRE BASKET TRAY

- Tray for use in conjunction with wire baskets to collect liquids.
- Material: AISI-304 stainless steel.

References		TR-370	TR-470
Dimensions	External Ø x H mm	320 x 50	420 x 50
	Internal Ø x H mm	318 x 48	418 x 48
For the following models of wire baskets	CV-75S and CV-75	✔	-
	CV-150S and CV-150M	-	✔

UNPERFORATED BASKETS

- Baskets suitable for the sterilization of dirty loads and those at risk of spillage.
- Material: AISI-304 stainless steel.

References		CCI-75S	CCI-75	CCI-150S	CCI-150M
Dimensions	External Ø x H mm	370 x 180	370 x 265	470 x 190	470 x 235
	Internal Ø x H mm	360 x 175	360 x 260	460 x 185	460 x 230
For autoclaves with the following chamber volumes	58 L	2	1	-	-
	83 L	3	2	-	-
	124 L	-	-	3	2
	169 L	-	-	4	3

SCHIMMELBUSCH DRUM

- Drum suitable for the sterilization of instruments and biohazardous loads.
- Material: AISI-304 stainless steel.

References		TBE-34x24	TBE-48x24
Dimensions	External Ø x H mm	340 x 240	480 x 240
	Internal Ø x H mm	330 x 230	470 x 230
For autoclaves with the following chamber volumes	58 L	1	-
	83 L	2	-
	124 L	-	2
	169 L	-	3

HEIGHT ADJUSTABLE TRAY SUPPORT

- For sterilization of instruments, small bags and other small objects that must be placed straight up.
- Material: AISI-304 stainless steel.

References		SRA-R-400	SRA-R-500
External dimensions Ø x H mm		350 x 180	450 x 180
Maximum number of trays/support		4	4
Trays	References	TRAY-SRA-R-400	TRAY-SRA-R-500
	Dimensions Ø x H mm	340 x 20	440 x 20
For autoclaves with the following chamber volumes	58 L	2	-
	83 L	3	-
	124 L	-	3
	169 L	-	4

*The purchase of a tray support comes with a set of two trays and six fastening clips. Likewise, the purchase of a tray includes a set of three fastening clips.

FLEXIBLE PROBE

- TLV-S, TLV-FA and TLV-PD Series autoclaves can be equipped with a total of two flexible temperature probes. All TLV-FA models come equipped with one flexible probe.
- After installing this accessory, the temperature regulation of the sterilization cycle can be controlled either through the temperature probe of the main chamber or by using the flexible temperature probe.
- The use of the flexible probe is particularly beneficial for processes involving the sterilization of large volumes of liquids, as the process is regulated by the temperature reached at the center of the liquid sample, ensuring proper sterilization of the load.
- Additionally, since there is a significant time lapse between the temperature change of the chamber and the temperature change of a liquid load, installing this accessory significantly reduces the risk of burns for operators. This is because it avoids the handling of loads at high temperatures without the operator's knowledge and reduces the risk of spillage of hot liquids due to the *boilover* effect.
- Must be installed at our factory.

  References: PT-2-TLV (TLV-S Series & TLV-FA Series) and PT-2-TLV-PD (TLV-PD Series)

ACCESSORIES

CONTROLLER ADAPTATION FOR FDA COMPLIANCE

- Controller adaptation in compliance with FDA 21 CFR Part 11. After this adaptation, a set of audit trail functions and security measures are activated to ensure the traceability and integrity of all processes performed in the autoclave.

  Reference: GMP/FDA

RAYPACLOUD LICENCES

- Licence to activate all cloud-based connectivity functions.
- The comfort licence is permanent and the professional licence is renewed annually and complies with FDA 21 CFR Part 11 standards.

References	CLOUD-B	CLOUD-P
Type of licence	Comfort	Professional
Validity of the account	One-off payment for permanent licence	Annual renewal
Free remote support for data cleaning	First year	✔
Free remote support for queries and breakdowns via TeamViewer® and email	First year	✔
Email notifications	Up to 200 per month	Unlimited
Notifications in the controller	Unlimited	Unlimited
Sterilization cycle log	Up to 100 simultaneous records	Unlimited
Audit trail function	-	✔
Real-time data and live cycle	-	✔
Advanced cycle and autoclave programming options	-	✔
Compliance with FDA 21 CFR Part 11: data management and storage	-	✔

PRIVATE CLOUD SERVER

- The server communicates with the autoclave via the laboratory's local network.
- Automatic backup of all cycle data if RAYPAcloud licence is active.

  Reference: SERVER

EMBEDDED THERMAL PRINTER

- It prints the program number, cycle number, temperature, duration, date and time of each sterilization, and error messages.
- Selectable print frequency between 10 and 240 seconds.
- Must be installed at our factory.

  Reference: IT/TLV
  Consumable: PAPER-IT for paper.

EXTERNAL DOT MATRIX PRINTER

- It prints the program number, cycle number, temperature, duration, date and time of each sterilization, and error messages.
- Selectable print frequency between 10 and 240 seconds.
- Connection: RS-232.
- Dimensions (LxDxH): 155x240x135mm.

  Reference: ITS
  Consumables: PAPER-ITS for paper and 70934 for ribbon.

EXTERNAL DOT MATRIX LABEL PRINTER

- Individual labels can be printed with barcodes and identification data for each processed load.
- Connection: RS-232.
- Dimensions (LxDxH): 115x230x175mm.

  Reference: ITS-LAB
  Consumables: PAPER-LAB for label paper and 70933 for ink.

BARCODE SCANNER

- Reads individual labels from each processed load and identifies each batch.
- Easy to use with step-by-step guidance on the autoclave controller.
- Connection: RS-232.
- Dimensions (LxDxH): 115x230x175mm.

  Reference: BAR-SCAN

ACCESSORIES

INTEGRATED BASKET LIFT SYSTEM

- Stainless steel electric lift system built into the side of the autoclave with swivel arm to help load and unload heavy items up to 30Kg.
- Modern, ergonomic design.
- Push-button operation with opening up to 200°.
- Motor with auto brake system in the event of obstacles or overload.
- Can be factory fitted or retrofitted.

Reference		FIX-LIFT
Dimensions L x D x H mm		1000 x 85 x 2100
Power W		200
Voltage V		200
Frequency Hz		50/60
Weight Kg		40
Maximum load Kg		30
For autoclaves with the following chamber volumes	83 L	✔
	124 L	✔
	169 L	✔

MOBILE BASKET LIFT SYSTEM

- Stainless steel electric lift system with casters to help load and unload heavy items up to 30Kg.
- Equipped with long-life battery for cordless use.
- Push-button operation.
- Motor with auto brake system in the event of obstacles or overload.
- Compatible with any autoclave model.

Reference	MOB-LIFT
Dimensions L x D x H mm	420 x 800 x 2200
Power W	200
Voltage V	90 - 250
Frequency Hz	50/60
Weight Kg	70
Maximum load Kg	30

TRANSPORT TROLLEY

- Auxiliary trolley to aid in the loading and unloading of equipment and containers.
- Made of chrome iron and plastic.
- The surface of each shelf is textured to prevent the load from moving.
- Equipped with rubber casters to reduce noise and prevent floor wear.
- Dimensions (LxDxH): 730x490x700mm.

  Reference: TR-TR

CABLE GLAND

- Installation of a Ø2mm or Ø4mm cable gland to provide access to as many as eight external temperature probes for calibration and validation procedures.
- Must be installed at our factory.

  Reference: PRENSACLAV

ECO-EFFICIENT WATER PURIFIER

- Eco-efficient direct-flow water purifier with LED display and no accumulation of water. Capable of filtering 1,3L/min.

Reference	ECOPUR-500
External dimensions L x D x H mm	220 x 425 x 415
Purity (TDS) ppm	0,0005
Electrical conductivity µS	>1
Hardness mmol/L	0,0125

PACK OF BOWIE-DICK TESTS

- Class B indicator printed with non-toxic inks and laminated.
- Tests for a proper steam penetration in porous loads, recommended for TLV-PD Series autoclaves.
- Box of 20 tests.

  Reference: TEST-BD

PACK OF STERILIZATION TAPE

- Class 1 indicator for steam sterilization. The colour change indicates that the materials have been processed, but this is not a guarantee of a correct sterilization. Additional methods such as biological indicators are required (EN ISO 11138).
- Colour change after 20 minutes at 121°C.
- Pack of 5 rolls of tape 50m x 19mm.

  Reference: TEST-CT

EXTENDED WARRANTY

- RAYPA autoclaves are pieces of industrial machinery and come with a standard 12-month warranty. This standard warranty can be extended to a maximum of three years.

  Reference: EW

IQ/OQ DOCUMENTATION

- For customers requiring a third-party IQ/OQ qualification, we provide model-specific instructions and protocols for performing these qualifications.

  Reference: IQ-OQ DOC

IQ/OQ/PQ QUALIFICATION

- Qualification service subject to geographic availability for customers requiring a comprehensive IQ/OQ/PQ qualification.
- The qualification may include the autoclave, software and RAYPAcloud.

  References: IQ/OQ/PQ, IQ/OQ SW, IQ/OQ SW-CLOUD

SET OF ESSENTIAL SPARE PARTS

- A set consisting of a selection of original spare parts, components and consumables procured to fulfill the recommended maintenance plan with the aim of maximizing the lifespan of the equipment. Additionally, the timely procurement of this set benefits from discounted rates, savings on future transportation expenses and minimizes downtime in the event of equipment malfunction.

VERSATILE AND ECONOMIC AUTOCLAVES WITH ROBUST PERFORMANCE

CLASSIC LINE

Our Classic line vertical autoclaves, featuring top-loading access, comprises a total of three series that meet a wide range of sterilization needs, from basic to demanding applications. Their optimized large capacity chamber design, superior construction materials, and versatility for a wide range of applications, make for an economical equipment that provides excellent value for many years.

Choose the solution that best suits your needs from our 14 models with chamber sizes ranging from 33 to 175 litres. They can be equipped with a wide range of accessories.

ROBUST PERFORMANCE

Sterilization chamber made of high-quality AISI-316L stainless steel and external housing made of AISI-304 stainless steel. Maximum temperature of 134°C and maximum pressure of 2,1Barg. Fully automatic microprocessor and exportable data via a dedicated software. All models can be equipped with a flexible probe, an embedded printer or an external printer.

AES Series

VERTICAL AUTOCLAVES WITHOUT DRYING

CLASSIC LINE

Economic, robust performance and limited consumption of laboratory resources.

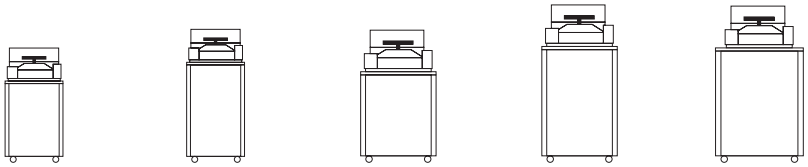
APPLICATIONS

- Culture media and liquids
- Plastics and metal objects
- Glassware
- Laboratory waste bags

BENEFITS

- Built with high-quality construction materials to last for many years in the laboratory.
- Special models available with increased power to achieve faster sterilization cycles.
- Wide range with five models configurable with several options and accessories.
- Steam-release push-button for a quicker cooling phase in solids cycles.
- Easy installation and simple maintenance. No specific connections required.
- An ideal solution for facilities with basic sterilization needs and a restricted budget.

SPECIFICATIONS



References	AES-28	AES-50	AES-75	AES-110	AES-150
Total/usable volume of the chamber L	33/31	55/50	79/75	115/110	175/153
Usable dimensions of the chamber Ø x H mm	300 x 440	300 x 710	400 x 600	400 x 850	500 x 780
External dimensions L x D x H mm	505 x 580 x 1110	505 x 580 x 1290	610 x 700 x 1185	610 x 700 x 1435	750 x 820 x 1400
Loading height mm	795	975	870	1120	1085
Net weight Kg	61	65	98	122	198
Available powers W	2000 or 3200	3200 or 5000	3200 or 6000	4500, 6000 or 9000	6000 or 9000
Standard voltage* V	230	230	230	400	400
Frequency Hz	50/60	50/60	50/60	50/60	50/60

*Other voltages and electrical configurations available on request. Special models with increased power may operate with other voltages.

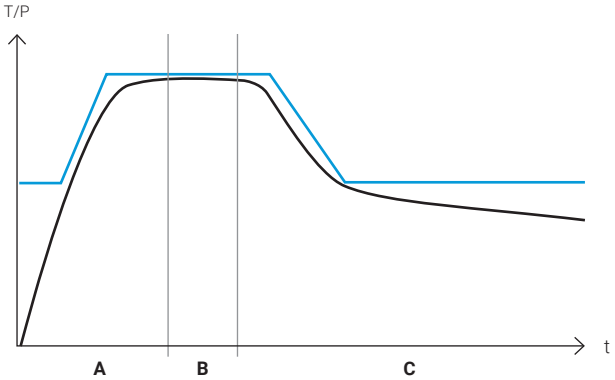
DESCRIPTION

- AISI-316L stainless steel sterilization chamber. AISI-304 stainless steel external housing.
- Steam generation by powerful Incoloy® 825 heating elements protected with a grid.
- Maximum temperature and pressure: 134°C and 2,1Barg.
- Alphanumeric LCD display shows sterilization parameters, alerts and errors.
- Equipment controlled by digital PID microprocessor with four predefined and six editable programs, adjustable by sterilization time, sterilization temperature and either agar or flexible probe mode.
- Programmable automatic start-up of up to 24h.
- The sterilization chamber is manually filled with water and features a manual drain valve.
- Adjustable temperature maintenance at the end of the sterilization cycle between 40-80ºC (agar mode).
- Push-button for fast steam-release at the end of the cycle.
- Flexible probe for sterilization of liquids, control software and embedded ticket printer for data management are optional.

OPERATION

In the heating phase, the heating elements heat up water to produce saturated steam. When the sterilization temperature is reached, the sterilization phase begins and the temperature is accurately sustained for the predefined duration.

At the end of the sterilization phase, a natural cooling phase begins. In solids programs, discharge can be manually forced through a push-button to reduce the duration of the cooling phase. In programs with agar mode activated, the preset temperature is maintained indefinitely.



A Heating phase
B Sterilization phase
C Cooling phase

— Temperature
— Pressure

AE-DRY Series

VERTICAL AUTOCLAVES WITH DRYING

CLASSIC LINE

Cost-effective, robust performance and limited consumption of laboratory resources.

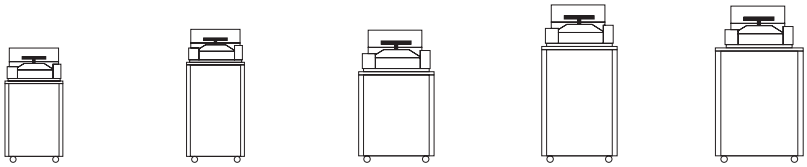
APPLICATIONS

- Culture media and liquids
- Plastics and metal objects
- Glassware
- Laboratory waste bags
- Porous solids and wrapped objects

BENEFITS

- Equipped with a heating jacket and vacuum pump to achieve complete drying of solid loads upon completion of a sterilization cycle.
- Easy installation and simple maintenance. No specific connections required.
- Mechanical purge via a vacuum pulse to help remove air pockets from the load and improve steam penetration.
- Wide range with five models configurable with several options and accessories.
- Automatic supply to the sterilization chamber from the built-in water tank. Automatic filling of the tank with purified water is optional.
- Special models available with increased power to achieve faster sterilization cycles.

SPECIFICATIONS



References	AE-28-DRY	AE-50-DRY	AE-75-DRY	AE-110-DRY	AE-150-DRY
Total/usable volume of the chamber L	33/31	55/50	79/75	115/110	175/153
Usable dimensions of the chamber Ø x H mm	300 x 440	300 x 710	400 x 600	400 x 850	500 x 760
External dimensions L x D x H mm	505 x 580 x 1110	505 x 580 x 1290	610 x 700 x 1185	610 x 700 x 1435	750 x 820 x 1400
Loading height mm	795	975	870	1120	1085
Net weight Kg	75	95	123	150	235
Available powers W	2000 or 3200	3200 or 5000	3200 or 6000	4500, 6000 or 9000	6000 or 9000
Standard voltage* V	230	230	230	400	400
Frequency Hz	50/60	50/60	50/60	50/60	50/60

*Other voltages and electrical configurations available on request. Special models with increased power may operate with other voltages.

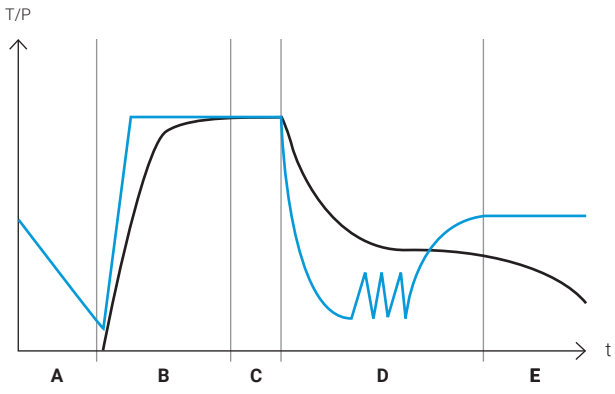
DESCRIPTION

- Equipped with a heating jacket and vacuum pump to fully dry solid loads.
- Steam generation by powerful Incoloy® 825 heating elements protected with a grid.
- AISI-316L stainless steel sterilization chamber. AISI-304 stainless steel external housing.
- Maximum temperature and pressure: 134°C and 2,1Barg.
- Alphanumeric LCD display shows sterilization parameters, alerts and errors.
- Programmable automatic start-up of up to 24h.
- Adjustable temperature maintenance at the end of the sterilization cycle between 40-80ºC (agar mode).
- PID microprocessor control with four predefined and six editable programs, adjustable by time, temperature, drying time and type of sterilization cycle (solids or liquids, with optional agar mode and/or flexible probe control).
- Automatic water supply from the built-in water tank to the sterilization chamber. Water level sensors are included in both locations. Upgrade to automatic water feed from water network is optional.
- Air inlet fitted with a bacteriological filter.
- Flexible probe, embedded ticket printer, control software, automatic water filling and water purifier are optional.

OPERATION ON SOLID LOADS

In the prevacuum phase, the air in the chamber is mechanically purged with a single vacuum pulse. Afterwards, the powerful heating elements heat up water to produce saturated steam. When the sterilization temperature is reached, the sterilization phase begins and the temperature is accurately sustained for the predefined duration.

Only in solids programs, at the end of the sterilization phase, a vacuum drying phase starts using a vacuum pump and a heating jacket to completely dry the load. Finally, a natural cooling phase begins. In liquid programs with agar mode activated, the preset temperature is maintained indefinitely.



A Prevacuum phase
B Heating phase
C Sterilization phase
D Vacuum drying phase
E Cooling phase

— Temperature
— Pressure

AE-B Series

VERTICAL AUTOCLAVES WITH PREVACUUMS AND DRYING

CLASSIC LINE

Excellent performance, advanced features and versatile for multiple applications.

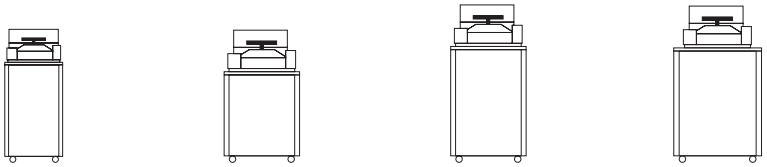
APPLICATIONS

- Culture media and liquids
- Glassware
- Plastics and metal objects
- Laboratory waste bags
- Porous solids and wrapped objects
- Objects with complex geometries

BENEFITS

- Immediate production of high-quality saturated steam thanks to the built-in steam generator.
- Equipped with a heating jacket and vacuum pump to achieve complete drying of solid loads upon completion of a sterilization cycle.
- Mechanical purge via multiple prevacuum pulses to ensure good penetration of steam into complex geometries and porous and bulky objects.
- Suitable for sterilizing wrapped objects, porous objects, textiles, objects with complex geometries and bulky loads.
- 5” touchscreen display with 50 programs and advanced functions.
- Direct discharge into the drain after each cycle and automatic supply to the sterilization chamber from the built-in purified water tank.

SPECIFICATIONS



References	AE-50-B	AE-75-B	AE-110-B	AE-150-B
Total/usable volume of the chamber L	55/50	79/75	115/110	175/153
Usable dimensions of the chamber Ø x H mm	300 x 710	400 x 600	400 x 850	500 x 760
External dimensions L x D x H mm	505 x 580 x 1290	610 x 700 x 1185	610 x 700 x 1435	750 x 820 x 1400
Loading height mm	975	870	1120	1085
Net weight Kg	99	135	165	245
Available powers W	3600	3600 or 6000	6000 or 9000	6000 or 9000
Standard voltage* V	230	230	400	400
Frequency Hz	50/60	50/60	50/60	50/60

*Other voltages and electrical configurations available on request. Special models with increased power may operate with other voltages.

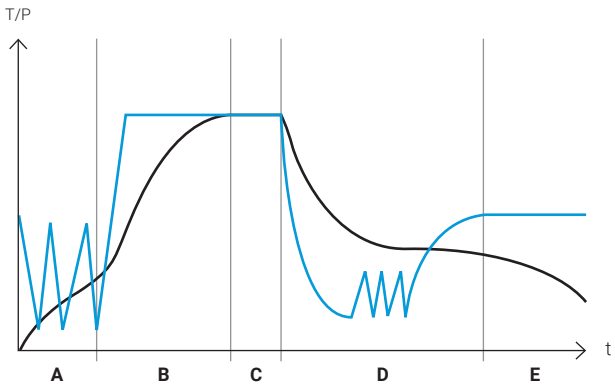
DESCRIPTION

- Heating by a powerful built-in steam generator.
- Equipped with a heating jacket and a vacuum pump to provide initial prevacuum pulses and final vacuum drying, ensuring complete dryness of solid loads.
- AISI-316L stainless steel sterilization chamber. AISI-304 stainless steel external housing.
- Maximum temperature and pressure: 134°C and 2,1Barg.
- 5" TFT-LCD colour touchscreen displays sterilization parameters, graphics, alerts and errors.
- Equipped with 50 customizable programs adjustable by time, temperature, number of prevacuums, drying time and type of load (solids or liquids). Flexible probe control is optional. Includes Bowie-Dick and vacuum test cycles.
- Automatic start-up and sterilization chamber preheating programmable by date and time.
- Automatic water supply from the built-in purified water tank to the sterilization chamber. Water level sensors are included in both locations. Upgrade to automatic water feed from water network is optional. The discharge from each cycle pours directly into the drain, with the option of using an external waste water tank.
- Air inlet fitted with a bacteriological filter.
- User administration control.
- Flexible probe, embedded ticket printer, control software, automatic water filling and water purifier are optional.

OPERATION ON SOLID LOADS

In the prevacuum phase, the air in the chamber is purged mechanically by means of multiple vacuum pulses. Simultaneously, the steam generator is activated to inject steam into the sterilization chamber. When the sterilization temperature is reached, the sterilization phase begins and the temperature is accurately sustained for the predefined duration.

Then, only in solids programs, a vacuum drying phase begins using a vacuum pump and a heating jacket to completely dry the load. Finally, a natural cooling phase starts.



A Prevacuum phase
B Heating phase
C Sterilization phase
D Vacuum drying phase
E Cooling phase

— Temperature
— Pressure

ACCESSORIES

WIRE BASKETS

- Baskets suitable for the sterilization of all types of clean loads.
- Simple and lightweight handling.
- Suitable for heavy loads.
- Material: AISI-304 stainless steel.

References		CV-28	CV-75-130	CV-75S	CV-75	CV-150-130	CV-150S	CV-150M
Dimensions	External Ø x H mm	270 x 185	370 x 130	370 x 180	370 x 265	470 x 130	470 x 190	470 x 235
	Internal Ø x H mm	260 x 180	360 x 125	360 x 175	360 x 260	460 x 125	460 x 185	460 x 230
For autoclaves with the following chamber volumes	33 L	2	-	-	-	-	-	-
	55 L	3	-	-	-	-	-	-
	79 L	-	4	3	2	-	-	-
	115 L	-	6	4	3	-	-	-
	175 L	-	-	-	-	6	4	3

WIRE BASKET TRAY

- Tray for use in conjunction with wire baskets to collect liquids.
- Material: AISI-304 stainless steel.

References		TR-270	TR-370	TR-470
Dimensions	External Ø x H mm	240 x 50	320 x 50	420 x 50
	Internal Ø x H mm	238 x 48	318 x 48	418 x 48
For the following models of wire baskets	CV-28	✔	-	-
	CV-75S and CV-75	-	✔	-
	CV-150S and CV-150M	-	-	✔

UNPERFORATED BASKETS

- Baskets suitable for sterilization of dirty loads and those at risk of spillage.
- Material: AISI-304 stainless steel.

References		CCI-28	CCI-75S	CCI-75	CCI-150S	CCI-150M
Dimensions	External Ø x H mm	270 x 185	370 x 180	370 x 265	470 x 190	470 x 235
	Internal Ø x H mm	260 x 180	360 x 175	360 x 260	460 x 185	460 x 230
For autoclaves with the following chamber volumes	33 L	2	-	-	-	-
	55 L	3	-	-	-	-
	79 L	-	3	2	-	-
	115 L	-	4	3	-	-
	175 L	-	-	-	4	3

SCHIMMELBUSCH DRUM

- Suitable for sterilization of instruments and biohazardous loads.
- Material: AISI-304 stainless steel.

References		TBE-24x16	TBE-34x24	TBE-48x24
Dimensions	External Ø x H mm	240 x 165	340 x 240	480 x 240
	Internal Ø x H mm	230 x 155	330 x 230	470 x 230
For autoclaves with the following chamber volumes	33 L	2	-	-
	55 L	4	-	-
	79 L	-	2	-
	115 L	-	3	-
	175 L	-	-	3

STANDARD CYLINDERS

- Suitable for sterilizing pipette tips and other small consumables.
- Material: AISI-304 stainless steel.

References		CEPP-726	CEPP-740	CEPP-1025	CEPP-1435
Dimensions	External Ø x H mm	70 x 260	70 x 400	100 x 250	140 x 350
	Internal Ø x H mm	60 x 250	60 x 390	90 x 240	130 x 340
For autoclaves with the following chamber volumes	33 L	11	11	6	6
	55 L	22	11	12	12
	79 L	42	21	20	10
	115 L	63	42	30	20
	175 L	90	30	51	34

CYLINDERS WITH BASKET

- Suitable for sterilization of Petri dishes with a diameter of 80 or 120mm.
- Material: AISI-304 stainless steel.

References		CEP-1027	CEP-1041	CEP-1427	CEP-1441
Dimensions	External Ø x H mm	100 x 270	100 x 410	140 x 270	140 x 410
Petri dishes	Maximum number of dishes/cylinder	10	18	10	18
	Diameter Ø mm	80	80	120	120
For autoclaves with the following chamber volumes	33 L	4	4	2	2
	55 L	8	4	4	2
	79 L	16	8	10	5
	115 L	24	16	15	10
	175 L	28	14	16	8

ACCESSORIES

HEIGHT ADJUSTABLE TRAY SUPPORT

- For sterilization of instruments, small bags and other small objects that must be placed straight up.
- Material: AISI-304 stainless steel.

References		SRA-R-300	SRA-R-400	SRA-R-500
External dimensions Ø x H mm		250 x 190	350 x 180	450 x 180
Maximum number of trays/support		4	4	4
Trays	References	TRAY-SRA-R-300	TRAY-SRA-R-400	TRAY-SRA-R-500
	Dimensions Ø x H mm	240 x 20	340 x 20	440 x 20
For autoclaves with the following chamber volumes	33 L	2	-	-
	55 L	3	-	-
	79 L	-	3	-
	115 L	-	4	-
	175 L	-	-	4

*The purchase of a tray support comes with a set of two trays and six fastening clips. Likewise, the purchase of a tray includes a set of three fastening clips.

FLEXIBLE PROBE

- After installing this accessory, the temperature regulation of the sterilization cycle can be controlled either through the temperature probe of the main chamber or by using the flexible temperature probe.
- The use of the flexible probe is particularly beneficial for processes involving the sterilization of large volumes of liquids, as the process is regulated by the temperature reached at the center of the liquid sample, ensuring proper sterilization of the load.
- Additionally, since there is a significant time lapse between the temperature change of the chamber and the temperature change of a liquid load, installing this accessory significantly reduces the risk of burns for operators. This is because it avoids the handling of loads at high temperatures without the operator's knowledge and reduces the risk of spillage of hot liquids due to the *boilover* effect.
- Must be installed at our factory.

  References: PT-2 (AES Series & AE-DRY Series) and PT-2-B (AE-B Series)

EMBEDDED THERMAL PRINTER

- It prints the program number, cycle number, temperature, duration, date and time of each sterilization, and error messages.
- Selectable print frequency between 10 and 240 seconds.
- Must be installed at our factory.

  References: IT (AES Series and AE-DRY Series) and IT/TS (AE-B Series).
  Consumable: PAPER-IT for paper.

EXTERNAL DOT MATRIX PRINTER

- It prints the program number, cycle number, temperature, time, date and time of each sterilization and error messages.
- Selectable print frequency between 10 and 240 seconds.
- Connection: RS-232
- Dimensions (LxDxH): 155x240x135 mm.
- AE-B Series models require a special factory adaptation.

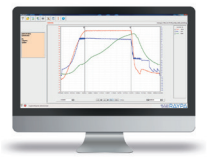
  Reference: ITS
  Consumables: PAPER-ITS for paper and 70934 for ribbon.

SW7000 SOFTWARE

- Communication software between the equipment and the PC for display and recording of each cycle. Cycles can also be printed or exported to Excel.
- PC connection via RS-232 connection.
- Supplied with RS-232 cable, USB memory stick with installation software and drivers, and RS-232 to USB adapter
- Compatible with autoclaves in the AES and AE-DRY Series.

  Reference: SW7000

SW8000 SOFTWARE



- Communication software between the equipment and the PC for display and recording in real time or display after each cycle. Cycles can also be printed or exported to Excel.
- PC connection via Ethernet. Data can also be exported directly to a USB memory stick.
- Supplied with Ethernet cable, USB memory stick with installation software and drivers, and Ethernet to USB adapter.
- Compatible with AE-B Series autoclaves.

  Reference: SW8000

PACK OF BOWIE-DICK TESTS

- Class B indicator printed with non-toxic inks and laminated.
- Tests for a proper steam penetration in porous loads.
- Recommended for AE-B Series autoclaves.
- Box of 20 tests.

  Reference: TEST-BD

PACK OF STERILIZATION TAPE

- Class 1 indicator for steam sterilization. The colour change indicates that the materials have been processed, but this is not a guarantee of a correct sterilization. Additional methods such as biological indicators are required (EN ISO 11138).
- Colour change after 20 minutes at 121°C.
- Pack of 5 rolls of tape 50m x 19mm.

  Reference: TEST-CT

ACCESSORIES

INTEGRATED BASKET LIFT SYSTEM

- Stainless steel electric lift system built into the side of the autoclave with swivel arm to help load and unload heavy items. The device is built into the side of the autoclave. Push-button operation with opening up to 200°.
- Motor with auto brake system in the event of obstacles or overload.
- Available in two models: the standard lift system and reinforced lift system.
- It can be factory fitted or retrofitted.

References		CLASSIC-LIFT	CLASSIC-LIFT-R
Dimensions L x D x H mm		800 x 300 x 2100	800 x 300 x 2600
Power W		480	480
Voltage V		230	230
Frequency Hz		50/60	50/60
Weight Kg		40	45
Maximum load Kg		30	40
For autoclaves with the following chamber volumes	79 L	✔	-
	115 L	✔	✔
	175 L	-	✔

MOBILE BASKET LIFT SYSTEM

- Stainless steel electric lift system with casters to help load and unload heavy items up to 30Kg.
- Equipped with long-life battery for cordless use.
- Push-button operation.
- Motor with auto brake system in the event of obstacles or overload.
- Compatible with any autoclave model.

Reference	MOB-LIFT
Dimensions L x D x H mm	420 x 800 x 2200
Power W	200
Voltage V	90 - 250
Frequency Hz	50/60
Weight Kg	70
Maximum load Kg	30

PREMIUM CASTERS

- Although all AES Series and AE-DRY Series autoclaves come equipped with casters, this accessory provides the option of upgrading to stronger, higher quality casters with brakes. AE-B Series autoclaves are equipped with casters as a standard feature.
- For more convenient equipment mobility.
- Must be installed at our factory.

  Reference: 4WHBR

TRANSPORT TROLLEY

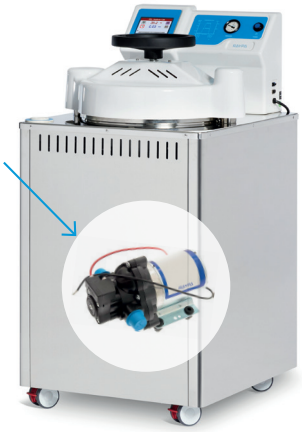
- Auxiliary trolley to aid in the loading and unloading of equipment and containers.
- Made of chrome iron and plastic.
- The surface of each shelf is textured to prevent the load from moving.
- Equipped with rubber casters to reduce noise and prevent floor wear.
- Dimensions (LxDxH): 730x490x700mm.

  Reference: TR-TR


RAYPA

ACCESSORIES

AUTOMATIC WATER FILLING



- Water pump for automating the supply of purified water to the integrated water tank of the autoclave.
- Compatible with installations with a purified water network or a purified water tank, or installations with a non-purified water network. In the latter case, the kit must be supplied with two other accessories: water purifier (ECOPUR-500) and purified water tank (TANK-KLL).
- Not compatible with AES Series autoclaves.
- Must be installed at our factory.

  References: KLL (Series AE-DRY) and KLL-B (Series AE-B)

ECO-EFFICIENT WATER PURIFIER

- Eco-efficient direct-flow water purifier with LED display and no accumulation of water. Capable of filtering 1,3L/min.
- The use of this accessory requires the joint installation of the TANK-KLL external tank and the KLL automatic water filling system corresponding to each model.
- Not compatible with AES Series autoclaves.

Reference	ECOPUR-500
External dimensions L x D x H mm	220 x 425 x 415
Purity (TDS) ppm	0,0005
Electrical conductivity µS	>1
Hardness mmol/L	0,0125

PURIFIED WATER TANK

- 25L tank for storing purified water for use with the water purifier and the automatic water filling kit.
- It includes an automatic filling system with water level control.
- Compatible with AE-DRY and AE-B Series autoclaves.

  Reference: TANK-KLL

CONDENSATES TANK

- Tank with tap to collect condensates during the purging phase and also collect water during cleaning of the sterilization chamber. For use in situations in which easy drainage is not available.
- Compatible with AES Series autoclaves.

  Reference: TANK-AE

CABLE GLAND

- Installation of a Ø2mm or Ø4mm cable gland to provide access to as many as eight external temperature probes for calibration and validation procedures.
- Must be installed at our factory.

  Reference: PRENSACLAV

EXTERNAL TEMPERATURE PROBE ADAPTER

- External adapter for continuous validation processes that provides access to an external probe (Ø3-6mm) to take temperature readings that are independent of the equipment microprocessor.
- Must be installed at our factory.

  Reference: EXT-TP

TEMPERATURE DATA LOGGER

- A stainless steel AISI 316L disk-format temperature recorder, complete with a connection base and accompanying software.
- Recommended for autoclave validation procedures.
- Available in various sizes.

  Reference: VAL-DL

EXTENDED WARRANTY

- RAYPA autoclaves are pieces of industrial machinery and come with a standard 12-month warranty. This standard warranty can be extended to a maximum of three years.

  Reference: EW

IQ/OQ DOCUMENTATION

- For customers requiring a third-party IQ/OQ qualification, we provide model-specific instructions and protocols for performing these qualifications.

  Reference: IQ-OQ DOC

IQ/OQ/PQ QUALIFICATION

- Qualification service subject to geographic availability for customers requiring a comprehensive IQ/OQ/PQ qualification.

  Reference: IQ/OQ/PQ

SET OF ESSENTIAL SPARE PARTS

- A set consisting of a selection of original spare parts, components and consumables procured to fulfill the recommended maintenance plan with the aim of maximizing the lifespan of the equipment. Additionally, the timely procurement of this set benefits from discounted rates, savings on future transportation expenses and minimizes downtime in the event of equipment malfunction.

COMPACT DESIGN, SIMPLE INSTALLATION, ROBUST PERFORMANCE AND VERSATILE FOR MULTIPLE APPLICATIONS

CLASSIC LINE

Our Classic line benchtop autoclaves, featuring both front- and top-loading options, comprises a total of four series that meet a wide range of sterilization needs, from basic to demanding applications. Their compact design with a spacious chamber, notable versatility and simple installation requiring no specific connections make them a cost-effective piece of equipment that will provide excellent value many years. All models come with all necessary components, including a tray support, trays, a clamp for trays and drainage tubes.

Choose the solution that best suits your laboratory from 11 models with chamber sizes ranging from 8 to 79 litres. They can be equipped with a wide range of accessories.

REDUCED DIMENSIONS WITHOUT ANY COMPROMISE ON QUALITY

Our Classic line benchtop autoclaves feature equivalent technology and construction quality as their equivalent vertical floor-standing counterparts but with a reduced equipment footprint.

AVS-N Series

TOP-LOADING BENCHTOP AUTOCLAVES WITHOUT DRYING

CLASSIC LINE

Economic, compact design, robust performance and limited consumption of laboratory resources.

APPLICATIONS

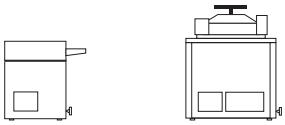
- Culture media and liquids
- Plastics and metal objects
- Glassware
- Laboratory waste bags

AES-12

BENEFITS

- Compact design, benchtop format and top-loading access.
- Fast steam-release valve for a quicker cooling phase in solids cycles.
- Easy installation and simple maintenance. No specific connections required.
- They include a specific basket, a protective cover for the heating elements and a drainage tube.
- Flexible probe for sterilization of liquids, control software and embedded ticket printer for data management are optional*.

SPECIFICATIONS



References	AES-8	AES-12
Total/usable volume of the chamber L	8/6,8	15/13
Usable dimensions of the chamber Ø x H mm	220 x 180	250 x 280
External dimensions L x D x H mm	410 x 355 x 430	490 x 475 x 630
Loading height mm	320	435
Net weight Kg	12	38
Power W	1000	1000
Standard voltage* V	230	230
Frequency Hz	50/60	50/60

*Other voltages and electrical configurations available on request.

DESCRIPTION

AES-8

- 18/10 stainless steel sterilization chamber.
- Steam generation by Incoloy® 825 heating elements protected with a grid.
- Maximum temperature and pressure: 128°C and 1,5Barg.
- LCD display showing sterilization parameters, current chamber temperature and error messages.
- Equipment controlled by digital PID microprocessor, cycle adjustable by sterilization time and sterilization temperature.
- Programmable automatic start-up of up to 500h.
- The sterilization chamber is manually filled with water.
- Bayonet-style main door with locking system and secondary door acts as a thermal insulation cover.
- Manual valve to drain the sterilization chamber water tank and for faster cooling in solids cycles.
- Control software is optional.

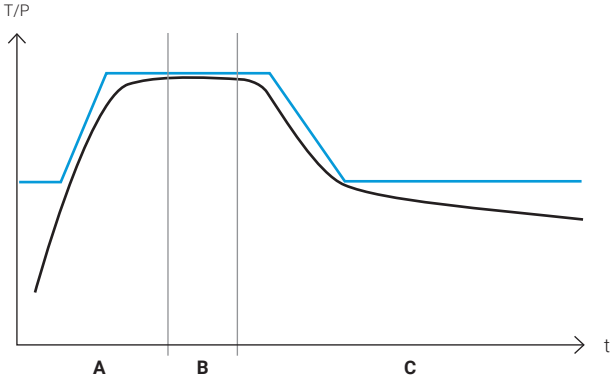
AES-12

- AISI-316L stainless steel sterilization chamber.
- Steam generation by Incoloy® 825 heating elements protected with a grid.
- Maximum temperature and pressure: 134°C and 2,1Barg.
- Alphanumeric LCD display shows sterilization parameters, alerts and errors.
- Equipment controlled by digital PID microprocessor with four predefined and six editable programs, adjustable by sterilization time, sterilization temperature and either agar or flexible probe mode.
- Programmable automatic start-up of up to 24h.
- The sterilization chamber is manually filled with water.
- Door with locking wheel with thermal insulation cover.
- Manual valve to drain the sterilization chamber water tank and for faster cooling in solids cycles.
- Adjustable temperature maintenance at the end of the sterilization cycle between 40-80ºC (agar mode).
- Flexible probe, control software and embedded ticket printer are optional.

OPERATION

In the heating phase, the heating elements heat up water to produce saturated steam. When the sterilization temperature is reached, the sterilization phase begins and the temperature is accurately sustained for the predefined duration.

At the end of the sterilization phase, a natural cooling phase begins. In solids programs, discharge can be forced manually by the actuation of a wheel-shaped valve to reduce the duration of this phase. In programs with agar mode activated, the preset temperature is maintained indefinitely.



A Heating phase
B Sterilization phase
C Cooling phase

— Temperature
— Pressure

AHS-N Series

FRONT-LOADING BENCHTOP AUTOCLAVES WITHOUT DRYING

CLASSIC LINE

Economic, compact design, robust performance and limited consumption of laboratory resources.

APPLICATIONS

- Culture media and liquids
- Plastics and metal objects
- Glassware
- Laboratory waste bags

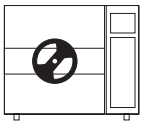
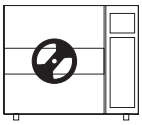
AHS-50-N

BENEFITS

- Built with high-quality construction materials to last for many years in the laboratory.
- Easy installation and simple maintenance. No specific connections required.
- Compact design, benchtop format and front-loading access.
- All models include a specific tray support, trays, a clamp for moving trays, a protective grid for the heating elements, a drainage tube and an auxiliary tray.
- The built-in water tank supplies water to the sterilization chamber.
- Flexible probe for sterilization of liquids, control software and embedded ticket printer for data management are optional*.

*Limited availability in the AH-21-N2 model.

SPECIFICATIONS

References	AH-21-N2	AHS-50-N	AHS-75-N
Total/usable volume of the chamber L	22/21	55/50	79/75
Usable dimensions of the chamber Ø max. x D mm	210 x 430	360 x 400	360 x 600
Volume of the built-in water tank L	6	10	10
External dimensions L x D x H mm	560 x 680 x 425	805 x 805 x 650	805 x 1005 x 650
Maximum number of trays	4 or 5	5	5
Tray size L x D mm	190 x 350	315 x 330	315 x 530
Net weight Kg	45	93	110
Power W	2000	2800	3200
Standard voltage* V	230	230	230
Frequency Hz	50/60	50/60	50/60

*Other voltages and electrical configurations available on request.

DESCRIPTION

AH-21-N2

- AISI-316L stainless steel sterilization chamber.
- Steam generation by Incoloy® 825 heating elements protected with a grid.
- Maximum temperature and pressure: 134°C and 2,1Barg.
- LCD display and multiple LEDs show sterilization parameters, current chamber temperature, and error and safety messages.
- Equipment controlled by digital PID microprocessor, cycle adjustable by sterilization time, sterilization temperature and type of load (solids or liquids).
- Programmable automatic start-up of up to 500h.
- Built-in 6L water tank with manual dispensing valve to fill the sterilization chamber.
- Control software is optional.

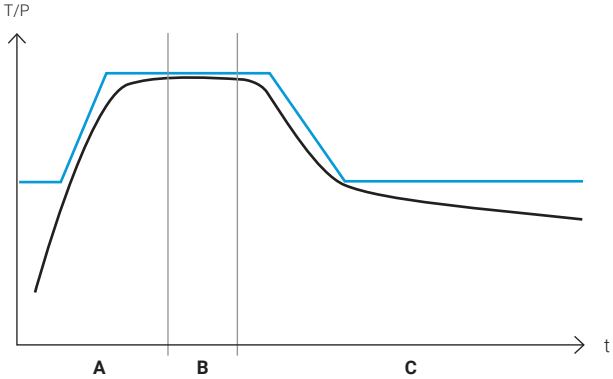
AHS-50-N & AHS-75-N

- AISI-316L stainless steel sterilization chamber.
- Steam generation by Incoloy® 825 heating elements protected with a grid.
- Maximum temperature and pressure: 134°C and 2,1Barg.
- Alphanumeric LCD display shows sterilization parameters, alerts and errors.
- Equipment controlled by digital PID microprocessor with four predefined and six editable programs, adjustable by sterilization time, sterilization temperature and either agar or flexible probe mode.
- Programmable automatic start-up of up to 24h.
- Built-in 10L water tank with manual dispensing valve to fill the sterilization chamber.
- Adjustable temperature maintenance at the end of the sterilization cycle between 40-80ºC (agar mode).
- Flexible probe, control software and embedded ticket printer are optional.

OPERATION

In the heating phase, the heating elements heat up water to produce saturated steam. When the sterilization temperature is reached, the sterilization phase begins and the temperature is accurately sustained for the predefined duration.

At the end of the sterilization phase, a natural cooling phase begins. In solids programs, unloading can be handled manually by pressing a push-button to reduce the duration of this phase. In programs with agar mode activated, the preset temperature is maintained indefinitely.



A Heating phase
B Sterilization phase
C Cooling phase

— Temperature
— Pressure

AHS-DRY Series

FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING

CLASSIC LINE

Cost-effective, compact design, robust performance and limited consumption of laboratory resources.

APPLICATIONS

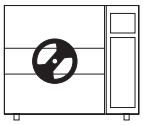
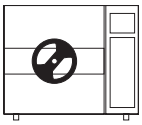
- Culture media and liquids
- Plastics and metal objects
- Glassware
- Laboratory waste bags
- Porous solids and wrapped objects

AHS-50-DRY

BENEFITS

- Equipped with a heating jacket and vacuum pump to achieve complete drying of solid loads upon completion of a sterilization cycle.
- Compact design, benchtop format and front-loading access.
- Mechanical purge via a vacuum pulse to help remove air pockets from the load and improve steam penetration.
- Easy installation and simple maintenance. No specific connections required.
- Automatic water supply to the sterilization chamber from the built-in water tank. Automatic filling of the tank with purified water is optional.
- Flexible probe for sterilization of liquids, control software and embedded ticket printer for data management are optional.

SPECIFICATIONS

References	AH-21-L	AHS-50-DRY	AHS-75-DRY
Total/usable volume of the chamber L	22/21	55/50	79/75
Usable dimensions of the chamber Ø max. x D mm	210 x 430	360 x 400	360 x 600
Volume of the built-in water tank L	6	10	10
External dimensions L x D x H mm	560 x 660 x 425	805 x 805 x 650	805 x 1005 x 650
Maximum number of trays	4 or 5	5	5
Tray size L x D mm	190 x 350	315 x 330	315 x 530
Net weight Kg	49	109	126
Power W	2000	2800	3200
Standard voltage* V	230	230	230
Frequency Hz	50/60	50/60	50/60

*Other voltages and electrical configurations available on request.

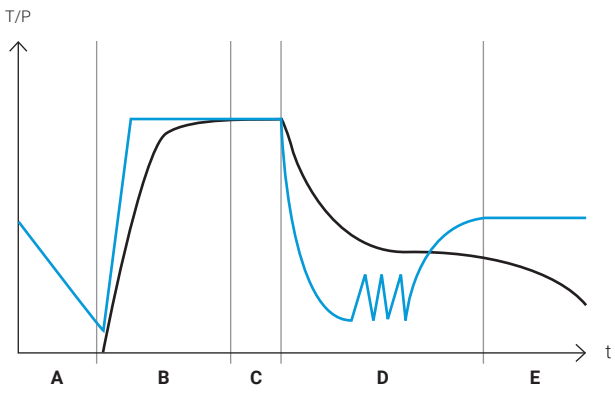
DESCRIPTION

- Equipped with a heating jacket and vacuum pump to fully dry solid loads.
- Steam generation by Incoloy® 825 heating elements protected with a grid.
- AISI-316L stainless steel sterilization chamber.
- Maximum temperature and pressure: 134°C and 2,1Barg.
- Alphanumeric LCD display shows sterilization parameters, alerts and errors.
- PID microprocessor control with four predefined and six editable programs, adjustable by time, temperature, drying time and type of sterilization cycle (solids or liquids, with optional agar mode and/or flexible probe control).
- Programmable automatic start-up of up to 24h.
- Adjustable temperature maintenance at the end of the sterilization cycle between 40-80ºC (agar mode).
- Water supply from the built-in water tank to the automatic sterilization chamber. Water level sensors are included in both places. Upgrade to automatic water feed from water network is optional.
- Air inlet fitted with a bacteriological filter.
- Flexible probe, embedded ticket printer, control software, automatic water filling and water purifier are optional.

OPERATION ON SOLID LOADS

In the prevacuum phase, the air in the chamber is mechanically purged with a single vacuum pulse. Afterwards, the heating elements heat up water to produce saturated steam. When the sterilization temperature is reached, the sterilization phase begins and the temperature is accurately sustained for the predefined duration.

Only in solids programs, at the end of the sterilization phase, a vacuum drying phase starts using a vacuum pump and a heating jacket to completely dry the load. Finally, a natural cooling phase begins. In liquid programs with agar mode activated, the preset temperature is maintained indefinitely.



A Prevacuum phase
B Heating phase
C Sterilization phase
D Vacuum drying phase
E Cooling phase

— Temperature
— Pressure

AHS-B Series

FRONT-LOADING BENCHTOP AUTOCLAVES WITH PREVACUUMS AND DRYING

CLASSIC LINE

Excellent performance, compact design, advanced features and versatile for multiple applications.

APPLICATIONS

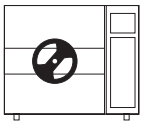
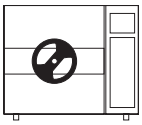
- Culture media and liquids
- Plastics and metal objects
- Glassware
- Laboratory waste bags
- Porous solids and wrapped objects
- Objects with complex geometries

AHS-50-B

BENEFITS

- Immediate production of high-quality saturated steam thanks to the built-in steam generator.
- Suitable for sterilizing wrapped objects, porous objects, textiles, objects with complex geometries and bulky loads.
- Equipped with a heating jacket and vacuum pump to achieve complete drying of solid loads upon completion of a sterilization cycle.
- 5” touchscreen display with 50 programs and advanced functions.
- Mechanical purge via multiple prevacuum pulses to ensure good steam penetration into complex geometries and porous and bulky objects.
- Compact design, benchtop format and front-loading access. Many options and accessories available.

SPECIFICATIONS

References	AH-21-B	AHS-50-B	AHS-75-B
Total/usable volume of the chamber L	22/21	55/50	79/75
Usable dimensions of the chamber Ø max. x D mm	210 x 430	360 x 400	360 x 600
Volume of the built-in clean water tank L	6	10	10
Volume of the built-in waste water tank L	2,6	6	6
External dimensions L x D x H mm	560 x 660 x 425	805 x 805 x 650	805 x 1005 x 650
Maximum number of trays	5	5	5
Tray size L x D mm	190 x 350	315 x 330	315 x 530
Net weight Kg	65	114	132
Power W	2000	3600	3600
Standard voltage* V	230	230	230
Frequency Hz	50/60	50/60	50/60

*Other voltages and electrical configurations available on request.

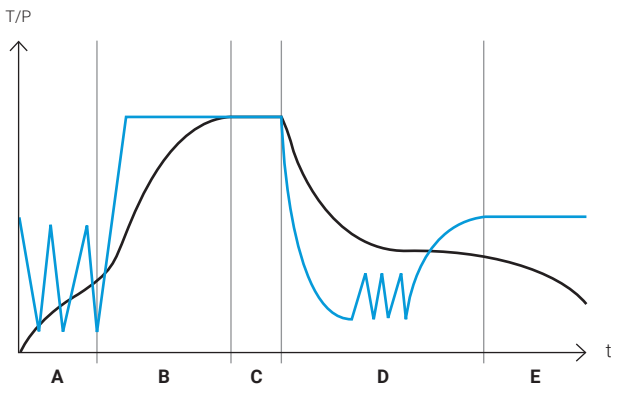
DESCRIPTION

- Heating by a powerful built-in steam generator.
- Equipped with a heating jacket and a vacuum pump to provide initial prevacuum pulses and final vacuum drying, ensuring complete dryness of solid loads.
- AISI-316L stainless steel sterilization chamber.
- Maximum temperature and pressure: 134°C and 2,1Barg.
- 5" TFT-LCD colour touchscreen displays sterilization parameters, alerts and errors.
- Equipped with 50 customizable programs adjustable by time, temperature, number of prevacuums, drying time and type of load (solids or liquids). Flexible probe control is optional. Includes Bowie-Dick and vacuum test cycles.
- Automatic start-up and sterilization chamber preheating programmable by date and time.
- Automatic water supply from the built-in purified water tank to the sterilization chamber. The discharge from each cycle pours directly into the built-in waste water tank. Water level sensors are included in all locations. Upgrade to automatic water feed from water network or the adaptation for a direct discharge into the drain are optional.
- Air inlet fitted with a bacteriological filter.
- User administration control.
- Flexible probe, embedded ticket printer, control software, automatic water filling and water purifier are optional.

OPERATION ON SOLID LOADS

In the prevacuum phase, the air in the chamber is mechanically purged by means of multiple vacuum pulses. Simultaneously, the steam generator is activated to inject steam into the sterilization chamber. When the sterilization temperature is reached, the sterilization phase begins and the temperature is accurately sustained for the predefined duration.

Then, only in solids programs, a vacuum drying phase begins using a vacuum pump and a heating jacket to dry the load completely. Finally, a natural cooling phase starts.



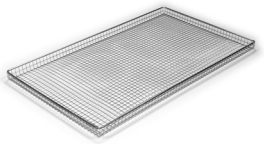
A Prevacuum phase
B Heating phase
C Sterilization phase
D Vacuum drying phase
E Cooling phase

— Temperature
— Pressure

ACCESSORIES

WIRE TRAYS

- Trays designed for use with a tray support, suitable for sterilizing all types of loads.
- Material: AISI-304 stainless steel.

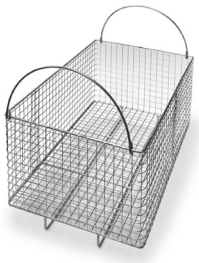


References		BAH-21	BAH-50-B	BAH-75-B
External dimensions L x D mm		190 x 350	315 x 330	315 x 530
For autoclaves with the following chamber volumes	22 L	4*	-	-
	55 L	-	5	-
	79 L	-	-	5

*Special tray rack compatible with up to five trays available on request.

HORIZONTAL WIRE BASKETS

- Baskets recommended for the sterilization of heavy and bulky loads.
- Material: AISI-304 stainless steel.



References		RB-AH-21	RB-AHS-50	RB-AHS-75
External dimensions L x D x H mm		170 x 340 x 180	324 x 360 x 235	324 x 560 x 235
For autoclaves with the following chamber volumes	22 L	1	-	-
	55 L	-	1	-
	79 L	-	-	1

VERTICAL WIRE BASKETS

- Baskets suitable for the sterilization of all types of clean loads.
- Easier and lighter handling. Additionally, it allows for handling heavier loads.
- Material: AISI-304 stainless steel.

References		CV-8	CV-12
Dimensions	External Ø x H mm	200 x 150	220 x 200
	Internal Ø x H mm	190 x 145	210 x 195
For autoclaves with the following chamber volumes	8 L	1	-
	15 L	-	1

BAG HOLDER

- Accessory recommended for the sterilization of wrapped objects and thin bags such as pouches.
- Material: AISI-304 stainless steel.

References		BAP-21	BAP-75
External dimensions L x D x H mm		400 x 180 x 80	300 x 180 x 95
Available positions		20	20
For autoclaves with the following chamber volumes	22 L	1	-
	55 L	-	4
	79 L	-	6

*The number of positions and size of this accessory can be customized based on the needs of each customer. For more information, please contact us.

CONTAINERS WITH FILTER ON THE LID

- Containers recommended for the sterilization of instruments and biohazardous loads.
- Material: AISI-304 stainless steel.

References		FC-215	FC-331	FC-338
Dimensions	External L x D x H mm	285 x 185 x 65	300 x 300 x 110	300 x 300 x 85
	Internal L x D x H mm	275 x 175 x 55	290 x 290 x 100	290 x 290 x 75
For autoclaves with the following chamber volumes	22 L	2	-	-
	55 L	6	1	2
	79 L	9	2	4

ACCESSORIES

FLEXIBLE PROBE

- After installing this accessory, the temperature regulation of the sterilization cycle can be controlled either through the temperature probe of the main chamber or by using the flexible temperature probe.
- The use of the flexible probe is particularly beneficial for processes involving the sterilization of large volumes of liquids, as the process is regulated by the temperature reached at the center of the liquid sample, ensuring proper sterilization of the load.
- Additionally, since there is a significant time lapse between the temperature change of the chamber and the temperature change of a liquid load, installing this accessory significantly reduces the risk of burns for operators. This is because it avoids the handling of loads at high temperatures without the operator's knowledge and reduces the risk of spillage of hot liquids due to the *boilover* effect.
- Models AES-8 and AH-21-N2 cannot be equipped with this accessory.
- Must be installed at our factory.

  References: PT-2 (AVS-N Series), PT-2-AH (AHS-N Series & AHS-DRY Series) and PT-2-B-AH (AHS-B Series)

EMBEDDED THERMAL PRINTER

- It prints the program number, cycle number, temperature, duration, date and time of each sterilization, and error messages.
- Selectable print frequency between 10 and 240 seconds.
- Models AES-8 and AH-21-N2 cannot be equipped with this accessory.
- Must be installed at our factory.

  References: IT (AVS-N, AHS-N and AHS-DRY series) and IT/TS (AHS-B series).
  Consumable: PAPER-IT for paper.

EXTERNAL DOT MATRIX PRINTER

- It prints the program number, cycle number, temperature, duration, date and time of each sterilization, and error messages.
- Selectable print frequency between 10 and 240 seconds.
- Connection: RS-232.
- Dimensions (LxDxH): 155x240x135mm.
- AHS-B Series models require a special factory adaptation.
- Models AES-8 and AH-21-N2 cannot be equipped with this accessory.

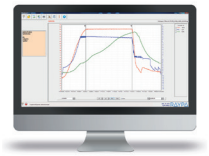
  Reference: ITS
  Consumables: PAPER-ITS for paper and 70934 for ribbon.

SW7000 SOFTWARE

- Communication software between the equipment and the PC for display and recording of each cycle. Cycles can also be printed or exported to Excel.
- PC connection via RS-232 connection.
- Supplied with RS-232 cable, USB memory stick with installation software and drivers, and RS-232 to USB adapter.
- Compatible with AVS-N, AHS-N and AHS-DRY Series autoclaves.

Reference: SW7000

SW8000 SOFTWARE



- Communication software between the equipment and the PC for display and recording in real time or display after each cycle. Cycles can also be printed or exported to Excel.
- PC connection via Ethernet. Data can also be exported directly to a USB memory stick.
- Supplied with Ethernet cable, USB memory stick with installation software and drivers, and Ethernet to USB adapter.
- Compatible with AHS-B Series autoclaves.

Reference: SW8000

PACK OF BOWIE-DICK TESTS

- Class B indicator printed with non-toxic inks and laminated.
- Tests for a proper steam penetration in porous loads.
- Recommended for AHS-B Series autoclaves.
- Box of 20 tests.

Reference: TEST-BD

PACK OF STERILIZATION TAPE

- Class 1 indicator for steam sterilization. The colour change indicates that the materials have been processed, but this is not a guarantee of a correct sterilization. Additional methods such as biological indicators are required (EN ISO 11138).
- Colour change after 20 minutes at 121°C.
- Pack of 5 rolls of tape 50m x 19mm.

Reference: TEST-CT

TRANSPORT TROLLEY

- Auxiliary trolley to aid in the loading and unloading of equipment and containers.
- Made of chrome iron and plastic.
- The surface of each shelf is textured to prevent the load from moving.
- Equipped with rubber casters to reduce noise and prevent floor wear.
- Dimensions (LxDxH): 730x490x700mm.

Reference: TR-TR

AUTOCLAVE TABLE

- Stainless steel table with four casters (with brakes on two).
- Designed to accommodate any model of benchtop autoclave, including larger models.
- Dimensions (LxDxH): 800x900x800mm.

Reference: TABLE-AHS

ACCESSORIES

AUTOMATIC WATER FILLING

- Water pump for automating the supply of purified water to the integrated water tank of the autoclave.
- Compatible with installations with a purified water network or a purified water tank, or installations with a non-purified water network. In the latter case, the kit must be supplied with two other accessories: water purifier (ECOPUR-500) and purified water tank (TANK-KLL).
- Not compatible with AVS-N or AHS-N Series autoclaves.
- Must be installed at our factory.

  References: KLL-21 (models AH-21-DRY & AH-21-B) and KLL-AHS (models AHS-50-DRY, AHS-75-DRY, AHS-50-B & AHS-75-B)

ECO-EFFICIENT WATER PURIFIER

- Eco-efficient direct-flow water purifier with LED display and no accumulation of water. Capable of filtering 1,3L/min.
- The use of this accessory requires the joint installation of the TANK-KLL external tank and the KLL automatic water filling system corresponding to each model.
- Recommended for AHS-DRY Series and AHS-B Series autoclaves.

  Reference: ECOPUR-500

Reference	ECOPUR-500
External dimensions L x D x H mm	220 x 425 x 415
Purity (TDS) ppm	0,0005
Electrical conductivity µS	>1
Hardness mmol/L	0,0125

PURIFIED WATER TANK

- 25L tank for storing purified water for use with the water purifier and the automatic water filling kit.
- It includes an automatic filling system with water level control.
- Compatible with AHS-DRY and AHS-B Series autoclaves.

  Reference: TANK-KLL

WATER DISTILLER

- Forced air water distiller with stainless steel interior, 4L capacity and 1,5L/h distillation volume.
- Recommended for small autoclaves of the AVS-N and AHS-N Series.

  Reference: DEM-4

CABLE GLAND

- Installation of a Ø2mm or Ø4mm cable gland to provide access to as many as eight external temperature probes for calibration and validation procedures.
- Must be installed at our factory.

  Reference: PRENSACLAV

TEMPERATURE DATA LOGGER

- A stainless steel AISI 316L disk-format temperature recorder, complete with a connection base and accompanying software.
- Recommended for autoclave validation procedures.
- Available in various sizes.

  Reference: VAL-DL

EXTENDED WARRANTY

- RAYPA autoclaves are pieces of industrial machinery and come with a standard 12-month warranty. This standard warranty can be extended to a maximum of three years.

  Reference: EW

IQ/OQ DOCUMENTATION

- For customers requiring a third-party IQ/OQ qualification, we provide model-specific instructions and protocols for performing these qualifications.

  Reference: IQ-OQ DOC

IQ/OQ/PQ QUALIFICATION

- Qualification service subject to geographic availability for customers requiring a comprehensive IQ/OQ/PQ qualification.

  Reference: IQ/OQ/PQ

SET OF ESSENTIAL SPARE PARTS

- A set consisting of a selection of original spare parts, components and consumables procured to fulfill the recommended maintenance plan with the aim of maximizing the lifespan of the equipment. Additionally, the timely procurement of this set benefits from discounted rates, savings on future transportation expenses and minimizes downtime in the event of equipment malfunction.

THE MOST EFFICIENT SOLUTION FOR A QUICK AND SAFE PREPARATION OF CULTURE MEDIA

CLASSIC LINE

AE-MP Series media preparators optimize the operational workflow for microbiology and plant tissue culture laboratories.

They are designed to reduce the total turnaround time and provide large volumes of sterile culture media thanks to their efficient heating system and fast cooling phase at the end of the sterilization process.

Simplifies cleaning and avoids problems of gelling and cross-contamination of dispensing lines thanks to their innovative steam pulse system. Dispensing lines can be disinfected and cleaned before, during and after the dispensing phase with high-temperature steam pulses that blow out all culture medium residue.

FOUR PROCESSES STREAMLINED IN ONE SOLUTION

1. PREPARATION
- Only one weighing
- Adjustable stirring
- Fast heating
- Perfect homogeneity

2. STERILIZATION
- Precise control
- Flexible probe control
- F_0-controlled sterilization
- Full traceability

3. FAST COOLING
- Active cooling
- Temperature maintenance
- Safe handling

4. DISPENSING
- Fast, scalable and convenient
- Adjustable dispensing temperature
- Automatic cleaning of dispensing lines

AE-MP Series

CULTURE MEDIA PREPARATORS

CLASSIC LINE

Fast, efficient, automatic and safe solution for preparing culture media.

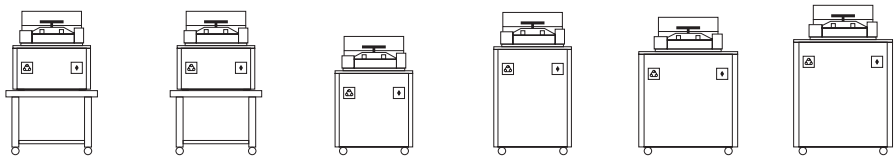
APPLICATIONS

- Preparation of agar
- Preparation of lysogeny broth
- Preparation of buffer solution
- Microbiology laboratories
- Plant tissue culture
- Cultivation of plant stem cells for cosmetics

BENEFITS

- Preparation, sterilization, fast cooling and dispensing all integrated in one piece of equipment.
- High productivity of culture medium per cycle and adjustable dispensing speed of 7-100mL/s.
- Much faster preparations with up to 90% shorter cooling time compared to traditional autoclaves. Overpowered models are available to drastically reduce the duration of the heating phase.
- Safe and accurate sterilizations thanks to F_0 control.
- Before, during and after the dispensing phase, the dispensing lines can be cleaned and disinfected with steam pulses that reach the entire length of the dispensing line.
- Equipped with ports for dispensing supplements, pH correctors and antibiotics. Additionally, programs can include temperature segments, allowing for greater flexibility and versatility of formulation options.

SPECIFICATIONS



References	AE-20-MP-10L	AE-20-MP	AE-40-MP	AE-60-MP	AE-80-MP	AE-100-MP
Maximum capacity for preparing culture media L	8	18	36	54	72	90
Minimum capacity for preparing culture media* (min. by F_0 - min. by time) L	2 - 5	2 - 10	5 - 20	10 - 30	10 - 50	20 - 70
External dimensions L x D x H mm	615 x 815 x 735	615 x 815 x 735	615 x 815 x 1100	615 x 815 x 1320	755 x 935 x 1285	755 x 935 x 1385
Inner vessel dimensions Ø x H mm	210 x 236	330 x 236	330 x 461	330 x 696	420 x 594	420 x 734
Net weight Kg	125	128	135	155	244	265
Available power options** kW	3	3	6 or 12	9 or 15	15, 20 or 30	15, 20 or 30
Standard voltage** V	230	230	400	400	400	400
Frequency Hz	50/60	50/60	50/60	50/60	50/60	50/60

*The minimum volume capacity is much lower if F_0-controlled sterilization is performed instead of control by time at 121ºC. Contact our technical service to receive more information.
**Other voltages and electrical configurations available on request. Special models with increased power may operate with other voltages.

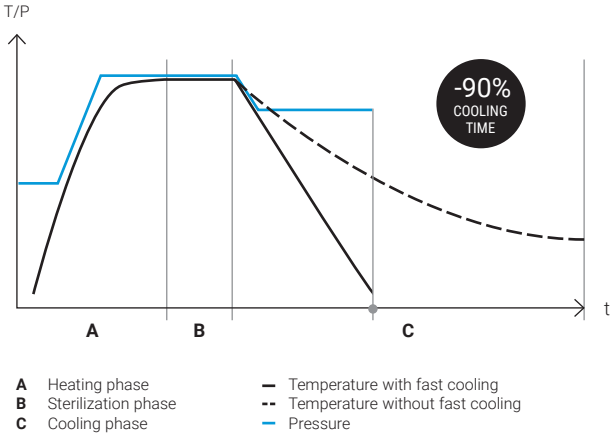
DESCRIPTION

- Sterilization chamber and inner vessel made of AISI-316L stainless steel. AISI-304 stainless steel external housing.
- Fast cooling by water cooling coils.
- Built-in compressed air system in the larger models for dispensing at higher speed through the external dosing station. Optional on smaller models.
- High-power magnetic stirrer adjustable from 50 to 200rpm.
- Built-in flexible probe and integrated peristaltic pump.
- Accurate dosing via a programmable peristaltic pump that can be controlled through the use of a pedal or delay function. Additionally, while working with the external dosing station, the dispensing can be performed via pedal or optical sensor.
- 5" TFT-LCD colour touchscreen display.
- 50 programs available, adjustable by time, temperature or F_0, with the option of temperature control by flexible probe or chamber temperature. The temperature can also be kept constant at the end of the cycle and the dosing temperature, stirring speed and pressure support during dispensing can all be adjusted.
- Direct supply of water to the sterilization chamber from the water network. Manual filling is optional.
- Air inlet fitted with a bacteriological filter.
- Easy and convenient cleaning and removal of the inner vessel with its ergonomic handles. The dispensing lines can be cleaned at any time using steam pulses.
- USB port for downloading data and implementing updates and Ethernet port for PC connection.
- Embedded or external ticket printer are optional.

OPERATION

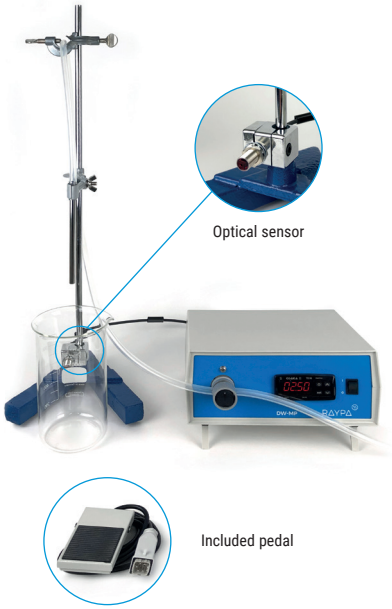
In the heating phase, the powerful heating elements of the sterilization chamber heat water to produce saturated steam and also heat up the inner vessel. When the sterilization temperature is reached in the medium, the sterilization phase begins and the temperature is accurately sustained for the predefined duration.

Finally, a fast cooling phase begins with the addition of pressure support and the circulation of water within the cooling coils to quickly cool the load down to its dispensing temperature, which is maintained until all the prepared culture media is dispensed.



ACCESSORIES

EXTERNAL DOSING STATION



Included pedal

- Automation and acceleration of the dispensing phase in repetitive operations involving medium and large volumes.
- To use this accessory for dispensing, the Ø6,4mm dispensing line must be used and the CP-MP air compressor must be pre-installed in the media preparator.
- Depending on the pressure support selected, the dispensing speed in this mode ranges from 65 to 100mL/s.
- The execution of each dispensation can be carried out manually by pressing a pedal or in semi-automatic mode using an optical sensor.

Reference	DW-MP
Resolution sec	0,01
Controller dimensions L x D x H mm	250 x 285 x 100
Power W	75
Voltage V	230
Frequency Hz	50/60

ECO-EFFICIENT WATER PURIFIER

- Eco-efficient direct-flow water purifier with LED display and no accumulation of water. Capable of filtering 1,3L/min.

Reference	ECOPUR-500
External dimensions L x D x H mm	220 x 425 x 415
Purity (TDS) ppm	0,0005
Electrical conductivity µS	>1
Hardness mmol/L	0,0125

ADDITIONAL PERISTALTIC PUMP

- Add a second peristaltic pump to double the flow rate during dispensing. All models include a single peristaltic pump.
- Depending on the combination of the tube size and the number of peristaltic pumps installed, the dosing speed in this mode ranges from 7 to 33mL/s.
- Each dispensation can be executed manually by pressing a pedal or in semi-automatic mode with a delay function.
- This accessory can be installed at any time.

  Reference: CAB-2

DISPENSING LINES

- Silicone dosing tubes 2m in length with press-fit connection at one end and metal nozzle at the other. Diameters available: 3,2; 4; 4,8; 6,4 and 8mm.
- Acquiring additional tubing sets is recommended to increase dispensing speed when dispensing through peristaltic pump, to prevent halting production due to cleaning and to replace worn tubing.
- All media preparators include a standard set of two dosing tubes, Ø6,4mm and Ø8mm (in addition, a Ø4,8mm tube is included with the smallest models).

  Reference: TUB-DOSIF

COMPRESSED AIR SYSTEM

- Air compressor that provides additional pressure support during both cooling and dispensing phases.
- This accessory is required to enable external dispensing controlled through the external dosing station.
- Must be installed at our factory.
- The AE-60-MP, AE-80-MP and AE-100-MP models include this accessory as a standard feature.

  Reference: CP-MP

AUTOMATIC WATER FILLING

- Water pump for automating the supply of the sterilization chamber with purified water. The filling of the inner vessel will not be automated.
- Compatible with installations with a purified water network or a purified water tank, or installations with a non-purified water network. In the latter case, the kit must be supplied with two other accessories: water purifier (ECOPUR-500) and purified water tank (TANK-KLL).
- Must be installed at our factory.

  Reference: KLL-MP

ACCESSORIES

TABLE FOR MEDIA PREPARATORS

- Stainless steel table with four casters (with brakes on two).
- AE-20-MP-10L and AE-20-MP models include this accessory as a standard feature.
- Dimensions (LxDxH): 700x700x600mm.

  Reference: TABLE-MP

TRANSPORT TROLLEY

- Auxiliary trolley to aid in the loading and unloading of equipment and containers.
- Made of chrome iron and plastic.
- The surface of each shelf is textured to prevent the load from moving.
- Equipped with rubber casters to reduce noise and prevent floor wear.
- Dimensions (LxDxH): 730x490x700mm.

  Reference: TR-TR

EMBEDDED THERMAL PRINTER

- It prints the program number, cycle number, temperature, duration, date and time of each sterilization, and error messages.
- Selectable print frequency between 10 and 240 seconds.
- Must be installed at our factory.

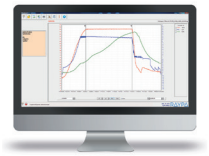
  Reference: IT/TS
  Consumable: PAPER-IT for paper.

EXTERNAL DOT MATRIX PRINTER

- It prints the program number, cycle number, temperature, duration, date and time of each sterilization, and error messages.
- Selectable print frequency between 10 and 240 seconds.
- Connection: RS-232.
- Dimensions (LxDxH): 155x240x135mm.
- A factory special adaptation is required.

  Reference: ITS
  Consumables: PAPER-ITS for paper and 70934 for ribbon.

SW8000 SOFTWARE



- Communication software between the equipment and a PC for display and recording in real time or display after each cycle. Cycles can also be printed or exported to Excel.
- PC connection via Ethernet. Data can also be exported directly to a USB memory stick.
- Supplied with Ethernet cable, USB memory stick with installation software and drivers, and Ethernet to USB adapter.

  Reference: SW8000

EXTERNAL PROBE ADAPTER

- External adapter for continuous validation processes that provides access to an external probe (Ø3-5mm) to obtain temperature readings of the culture medium that are independent of the readings taken by the unit's flexible probe.
- The port is located on the door of the media preparator.

  Reference: CAP-MP

EXTERNAL PROBE FOR QUALIFICATION

- Temperature sensor of specific length and width to be able to perform the qualification of media preparators. The joint installation of the external probe adapter CAP-MP is required.

  Reference: TP-VAL-MP

TEMPERATURE DATA LOGGER

- A stainless steel AISI 316L disk-format temperature recorder, complete with a connection base and accompanying software.
- Recommended for users that need to validate the chamber temperature of media preparators.
- Available in various sizes.

  Reference: VAL-DL

EXTENDED WARRANTY

- RAYPA media preparators are pieces of industrial machinery and come with a standard 12-month warranty. This standard warranty can be extended to a maximum of three years.

  Reference: EW

IQ/OQ DOCUMENTATION

- For customers requiring a third-party IQ/OQ qualification, we provide model-specific instructions and protocols for performing these qualifications.

  Reference: IQ-OQ DOC

IQ/OQ/PQ QUALIFICATION

- Qualification service subject to geographic availability for customers requiring a comprehensive IQ/OQ/PQ qualification.

  Reference: IQ/OQ/PQ

SET OF ESSENTIAL SPARE PARTS

- A set consisting of a selection of original spare parts, components and consumables procured to fulfill the recommended maintenance plan with the aim of maximizing the lifespan of the equipment. Additionally, the timely procurement of this set benefits from discounted rates, savings on future transportation expenses and minimizes downtime in the event of equipment malfunction.

Food analysis


P13
26.5 °C
MANUAL ASPIRATION
SETTINGS
RAYPA

PORTFOLIO OVERVIEW

Food analysis

PROTEIN CONTENT

Kjeldahl digester
MBC Series

Interface
5” touchscreen.

Connectivity
Wi-Fi, RAYPAnet.

Applications
Digestions, Kjeldahl method.

For use in conjunction with our fumes neutralization system SCRUBBER, page 82.

Kjeldahl distiller
DNP Series

Interface
5” touchscreen.

Connectivity
Wi-Fi, RAYPAnet.

Applications
Distillations, Kjeldahl method, nitrogen, volatile acidity.

For use in conjunction with our automatic titrator KIT-TITRA-RAY, page 86.

FAT CONTENT

Soxhlet and Randall extractor
SX-6

Interface
3,5" touchscreen.

Connectivity
Wi-Fi, RAYPAnet.

Applications
Randall method, Soxhlet method, Twisselmann method.

FIBRE CONTENT

Fibre extractor
F-6P

Interface
Analogue.

Applications
Weende method, Van Soest method, extraction of fibre fractions.

For use in conjunction with our cold fat extractor EF-6P, page 93.

ALCOHOLIC STRENGTH

Oenologic distiller
ENODEST

Interface
5” touchscreen.

Applications
Wi-Fi, RAYPAnet.

Applications
Measurement of alcoholic strength.

RAYPAnet: A NEW ONLINE PLATFORM

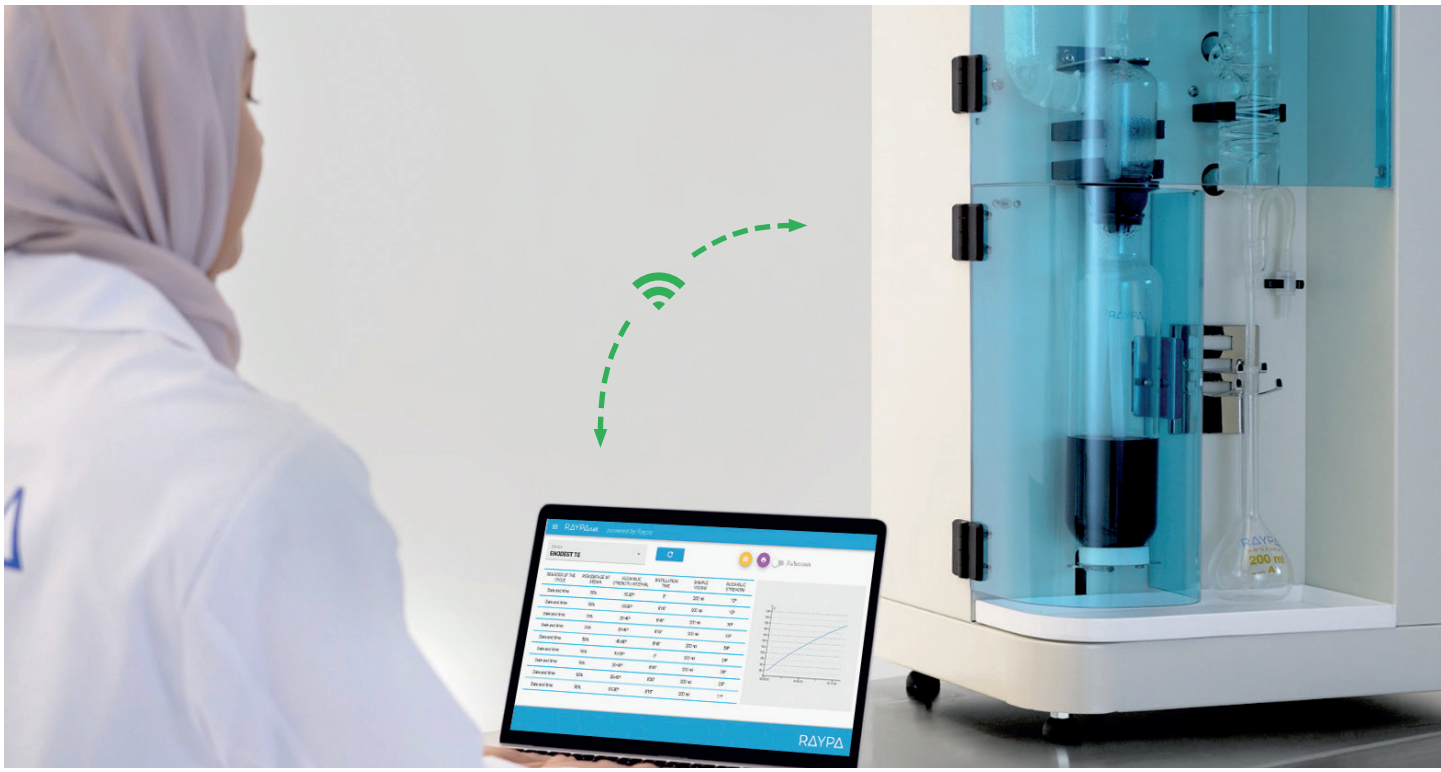
Food analyzers are now equipped with Wi-Fi connectivity, enabling the use of the online RAYPAnet platform on a PC. This allows for the viewing and exporting of all cycle information in a graphical format, and the generation of detailed reports.

The platform offers the ability to access cycle results live, or through the record of cycle history. All relevant information can be exported in both .CSV and .PDF formats for further review, study and archival purposes.

The software is compatible with most web browsers.

Multiple devices can be connected and controlled simultaneously.

The DNP Series distillers, MBC Series digesters, SX-6 extractor and ENODEST distiller all come equipped with this technology.



NEW TOUCHSCREEN MICROPROCESSOR

- Intuitive alphanumeric user interface with a colour LCD touchscreen that displays all relevant parameters of each test in real time.
- Intuitive icons indicate the status and progress of each test.
- Compatible with Celsius and Fahrenheit scales with a resolution of 0,1°C/°F.
- Capable of advanced cycle programming with time and temperature segments, predefined programs whose parameters and name can be edited, and timer start and timer stop programmable by date and time.
- Audiovisual safety alarms.
- Programs can be stored in the program library.
- An acoustic signal indicates the end of the cycle.
- DNP Series distillers, MBC Series digesters, SX-6 extractor and ENODEST distiller are all equipped with this new microprocessor.
- Features a specialized window with restricted access for authorized service technicians.

MBC Series

COMPACT BLOCK DIGESTION SYSTEM

Efficient, versatile and scalable block digestion for safe Kjeldahl digestions and much more.

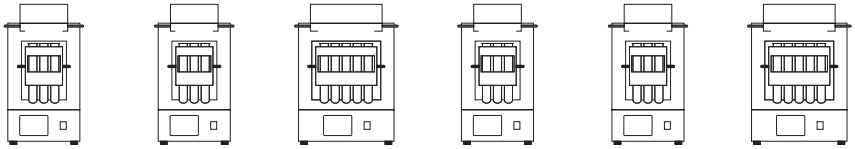
APPLICATIONS

- Food industry
- Animal feed
- Environmental analysis
- Pharmaceutical industry
- Chemical industry

BENEFITS

- Designed to sustain many years of laboratory work, fabricated with excellent construction materials, featuring a stainless steel exterior cabinet.
- 5” colour touchscreen and Wi-Fi connection for analysis of results on RAYPAnet.
- Wide selection of models ranging from 6 to 40 sample positions compatible with 100 & 250mL sample tubes.
- Microprocessor with 10 programs, whose names can be customized in accordance with different application notes and configured with up to 10 segments.
- Fast and safe handling of samples.
- Programmable start-up by date, hour and minute.

SPECIFICATIONS



References	MBC-6 TS	MBC-12 TS	MBC-20 TS	MBCM-12 TS	MBCM-24 TS	MBCM-40 TS
External dimensions L x D x H mm	350 x 400 x 635	350 x 560 x 635	460 x 560 x 635	350 x 400 x 635	350 x 560 x 635	460 x 560 x 635
Power W	1500	2000	2500	1500	2000	2500
Voltage* V	230	230	230	230	230	230
Weight Kg	27	38	47	30	39	48
Frequency Hz	50/60	50/60	50/60	50/60	50/60	50/60
Sample positions	6	12	20	12	24	40
Compatible sample tubes mL	250	250	250	100	100	100
Adjustable temperature range °C	45 - 450	45 - 450	45 - 450	45 - 450	45 - 450	45 - 450
Temperature stability at 400°C	±1	±1	±1	±1	±1	±1
Homogeneity at 420°C	±5	±5	±5	±5	±5	±5

*Other voltages and electrical configurations available on request.

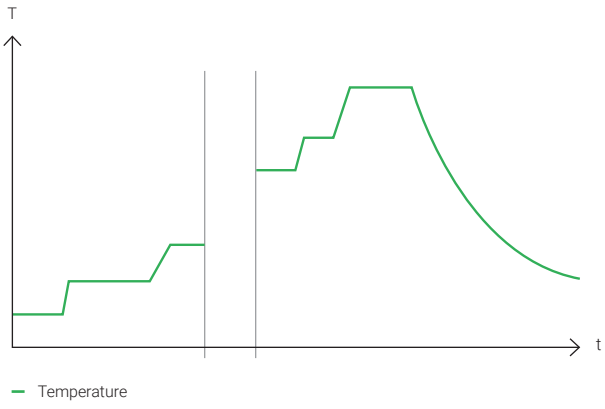
DESCRIPTION

- Sample tube rack, back support, anti-drip tray, gases collector and heating block cover made of AISI-304 stainless steel.
- Aluminium heating block with rock wool and ceramic fibre insulation. Heating block cover with Halar® resin coating.
- Vertically integrated gases collector, mobile sample tube rack and back support with cooling position to speed up cooling after digestion.
- The tube rack has heat insulated handles and an acid anti-drip tray.
- A microprocessor controls the equipment which features a 5" LCD display and Wi-Fi connection for analysis of results on RAYPAnet.
- Auto start-up programmable by date, hour and minute.
- Safety thermostat to prevent overheating.
- Microprocessor with 10 programs, whose names can be customized in accordance with different application notes and configured with up to 10 temperature segments. Each segment is adjustable by target temperature, maintenance time and transition time.
- Visual and acoustic alarms and error messages for overheating, temperature out of range, heating error and temperature probe failure.
- Access port for external validation temperature probe.
- Ideal for use in conjunction with our fumes neutralization system SCRUBBER. Equipped with a specific connection so the devices can be used together.
- Supplied with heating block, gases collector, anti-drip tray, sample tube support, back support, sample tube rack and a complete set of 100 or 250mL sample tubes.

OPERATION

MBC Series digesters programs can be configured with a delayed start time and up to 10 time segments in one program for applications requiring temperature ramps.

Each time segment is independently configured for three parameters: the time the target temperature is maintained once the segment is reached, the time taken to reach the temperature of the next segment and the target temperature of each segment.



ACCESSORIES

FUMES NEUTRALIZATION SYSTEM

Features

- Closed gas exhaust system with active aspiration.
- Manually adjustable vacuum pump with acoustic insulation and an adjustable absolute vacuum of 10-800mBar.
- High-performance Graham-type water cooling circuit that condenses the fumes produced during digestion.
- The condensate flask stores the vapors produced during digestion in liquid form.
- The washing solution flask neutralizes acidic or basic condensates.
- The adsorption flask filters and neutralizes fumes using an activated charcoal filter.
- External building made of AISI-304 stainless steel painted with epoxy resin. Borosilicate 3.3 glassware. Cristalflex®, silicone and Teflon® tubes. PPS, EPDM and FPM pump. Teflon® gasket set.
- Supplied with all necessary components, including flasks, gaskets, supports, activated charcoal and hoses.

Specifications

Reference		SCRUBBER
Included processes	Aspiration	Adjustable vacuum pump
	Condensation	Water circulation through cooling circuit
	Neutralization	Alkaline and acidic solution washing
	Filtration and adsorption	Activated charcoal
Performance data	Maximum vacuum mBar	10
	Water consumption as a function of fumes produced L/min	3 - 5
Installation requirements	Dimensions L x D x H mm	375 x 310 x 540
	Weight Kg	13
	Power W	100
	Voltage* V	230
	Frequency Hz	50/60
	Ambient temperature °C	5 - 40
	Ambient humidity %	30 - 80

*Other voltages and electrical configurations available on request.

DIGESTION TUBES

- Glass digestion tubes for samples.

TB-100DNP TB-250DNP TB-250DNP-R*

References		TB-100DNP	TB-250DNP	TB-250DNP-R*
Recommended sample volume mL		100	250	250
Material		glass	glass	reinforced glass
Dimensions Ø x H mm		26 x 300	42 x 300	42 x 300
Maximum number of sample tubes per model	MBC-6 TS	-	6	6
	MBC-12 TS	-	12	12
	MBC-20 TS	-	20	20
	MBCM-12 TS	12	-	-
	MBCM-24 TS	24	-	-
	MBCM-40 TS	40	-	-

*Reinforced glass tubes for analysis of waste water and slurry.

DNP Series

KJELDAHL DISTILLERS

Steam distillation system for nitrogen analysis using the Kjeldahl method.

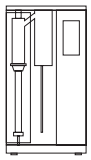
APPLICATIONS

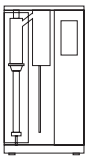
- Protein nitrogen analysis according to the Kjeldahl method
- Analysis of other forms of nitrogen: urea, formaldehyde nitrogen, cyanide and ammonia
- Phenol analysis
- Volatile acidity
- Alcoholic strength by volume
- Determination of sulphur dioxide

BENEFITS

- Designed to sustain many years of laboratory work, fabricated with excellent construction materials, featuring a stainless steel external building.
- Includes 100 customizable programs with pre-installed methods for the most common applications.
- Different models available with varying levels of automation to meet the user's specific needs.
- 5” colour touchscreen and Wi-Fi connection for analysis of results on RAYPAnet.
- Accurate, reproducible results in accordance with standardized analysis procedures.
- Specific menus for the calibration and cleaning of the reagent pumps.

SPECIFICATIONS





References		DNP-1500 TS	DNP-2000 TS
External dimensions L x D x H mm		440 x 340 x 790	440 x 340 x 790
Power W		1800	1800
Voltage* V		230	230
Weight Kg		30	31
Reagent tank capacity	H_2O L	10	10
	NaOH L	10	10
	H_3BO_3 L	-	5
Automatic addition of receiver solution H_3BO_3		-	✔
Automatic removal of sample residue after distillation		-	✔
Automatic titration with external titrator		-	O

✔: Included O: Optional
*Other voltages and electrical configurations available on request.

DESCRIPTION

- 100 programs, including: preheating, washing, ammonium sulphate test and predetermined programs for the most common applications.
- Built-in steam generator of adjustable power and automatic water level control.
- All models come equipped with pumps for automating the addition of dilution water and alkaline solution (NaOH), as well as programs for calibrating and cleaning the pumps. The most advanced model includes an additional pump to automatically add receiver solution (H_3BO_3) and an automatic aspiration of sample residues.
- A microprocessor controls the equipment which features a 5" LCD display and Wi-Fi connection for analysis of results on RAYPAnet.
- Includes system for saving cooling water.
- External housing made of AISI-304 stainless steel painted with epoxy resin.
- System compatible with distillation tubes of different diameters and heights.
- Supplied with all necessary components, including distillation tube, connecting hoses and reagent tanks.

COMPARISON OF MODELS

DNP-1500	DNP-2000	DNP-2000 + Titrator
Automatic addition of dilution water	Automatic addition of dilution water	Automatic addition of dilution water
Automatic addition of NaOH	Automatic addition of NaOH	Automatic addition of NaOH
Manual addition of H_3BO_3	Automatic addition of H_3BO_3	Automatic addition of H_3BO_3
Manual disposal of sample residue	Automatic aspiration of sample residue	Automatic aspiration of sample residue
Manual titration	Manual titration	Automatic titration

ACCESSORIES

KIT FOR AUTOMATIC TITRATION

Features

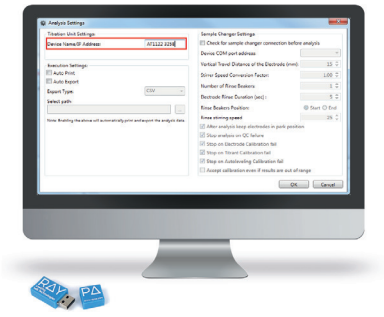
- Potentiometric titrator with colour display validated for use with Kjeldahl distillers.
- Features several titration programs and comes pre-installed with the most common distillation programs specific to DNP Series distillers.
- Results expressed as total nitrogen and protein percentage.
- Specific menus for maintenance, pH calibration, titrator calibration and automatic calibration of burettes.
- Equipped with two USB ports for copying analysis tests, extracting data and connecting a printer, keyboard or mouse.
- Equipped with user admin control and Ethernet port for optional software connection.
- Supplied with all necessary components, including reaction beakers, adapters, stirring bars, syringes and hoses.

Specifications

Reference		KIT-TITRA-RAY
Performance data	Resolution pH; mV	0,001; 0,1
	Reproducibility pH	±0,001
Installation requirements	Dimensions L x D x H mm	220 x 400 x 360
	Weight Kg	4
	Power W	80
	Voltage* V	230
	Frequency Hz	50/60
	Ambient temperature °C	15 - 35
	Ambient humidity %	20 - 80

*Other voltages and electrical configurations available on request.

EXTERNAL TITRATOR SOFTWARE



- Communication software between the titrator and a PC for display, management and export of real-time data directly from the workstation.
- An Ethernet connection cable is included with the purchase of this accessory.

  Reference: SOFT-TITRA

DISTILLATION TUBES

- Glass distillation tubes for samples.


TB-100DNP


TB-250DNP
TB-250DNP-R*


TB-400DNP

References	TB-100DNP	TB-250DNP	TB-250DNP-R*	TB-400DNP
Dimensions Ø x H mm	26 x 300	42 x 300	42 x 300	80 x 300
Volume mL	180	325	325	1200
Recommended sample volume mL	100	250	250	400
Material	glass	glass	reinforced glass	glass

*Reinforced distillation tube for analysis of waste water and slurry.

RACK FOR DISTILLATION TUBES

- Rack for distillation tubes.
- Material: AISI-304 stainless steel.

References	GRA-1220	GRA-640	GRA-680
Dimensions L x D x H mm	122 x 177 x 150	122 x 177 x 150	209 x 308 x 172
Positions	12	6	6
Compatible distillation tubes	TB-100DNP	TB-250DNP & TB-250DNP-R	TB-80300

REACTION BEAKER

- Glass beaker for collecting distillates.

Reference	VR-75300
Dimensions Ø x H mm	80 x 95
Material	glass

ADAPTATION FOR BÜCHI® TUBES

- Adaptation to use Büchi® tubes on DNP Series Kjeldahl distillers.

  Reference: ADAP-BU

SX-6

FAT EXTRACTOR

Accurate and cost-effective solvent extraction system for performing fat extraction analysis.

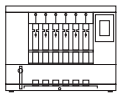
APPLICATIONS

- Fat extraction according to the Soxhlet method
- Fat extraction according to the Randall method
- Fat extraction according to the Twisselmann method
- Extraction of organic solutes

BENEFITS

- Designed to sustain many years of laboratory work, fabricated with excellent construction materials, featuring a stainless steel external building.
- Constant supervision of flow rate.
- Compatible with the Soxhlet, Randall and Twisselmann methods and a wide variety of samples.
- 3,5" colour touchscreen and Wi-Fi connection for analysis of results on RAYPAnet.
- Multiple programs with icons and audiovisual signals make it easy to follow each phase and the status of the assay.
- Design with six simultaneous extraction positions.
- The solvent used, extraction temperature and duration of each stage can be programmed.

SPECIFICATIONS



Reference	SX-6 TS
External dimensions L x D x H mm	680 x 330 x 580
Power W	1500
Voltage* V	230
Weight Kg	46
Frequency Hz	50/60
Reproducibility %	±1
Solvent recovery %	Up to 80
Accuracy °C	± 0,5
Maximum number of samples per test	6

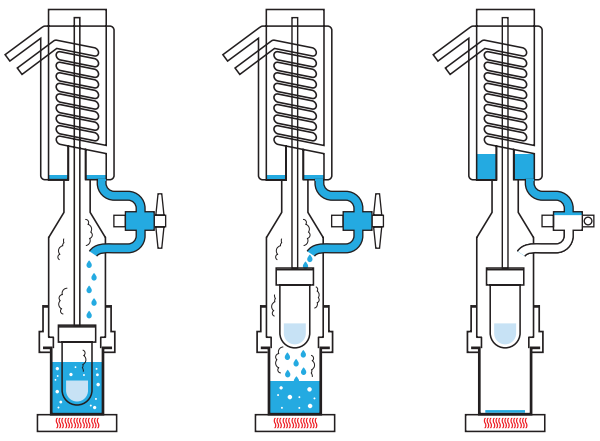
*Other voltages and electrical configurations available on request.

DESCRIPTION

- External housing made of AISI-304 stainless steel painted with epoxy resin.
- Heating by an electric plate with armoured heater for uniform heat distribution.
- 56 programs, whose names can be customized in terms of the solvent used, temperature and extraction times in the boiling, rinsing and recovery phases.
- The screen displays the phase and time remaining of each phase. The transition between phases is indicated audiovisually with specific animations.
- Includes solvent recovery tanks.
- Constant supervision of flow rate.
- A microprocessor controls the equipment which features a 3,5" LCD display and Wi-Fi connection for analysis of results on RAYPAnet.
- Manufactured to ensure compliance with AOAC, ISO, EPA and DIN international standards.
- Supplied with all necessary components, including extraction cartridges, Viton® and EDPM seals, racks, clamps and connection hoses.

OPERATION ACCORDING TO THE RANDALL METHOD

The sample is immersed in hot solvent, where the sample's fat content is continuously absorbed by the solvent through immersion and reflux. The sample is then lifted from contact with the condensed solvent. In this step, the fat content remaining in the sample is continuously removed by the solvent through reflux alone. Finally, the solvent tank valve is closed and the solvent is collected for future reuse. The fat content is collected at the bottom of the reaction beaker.



1. BOILING PHASE
2. RINSING PHASE
3. RECOVERY PHASE

F-6P

FIBRE EXTRACTOR

Efficient, versatile and cost-effective fibre extraction system for performing analysis of crude and detergent fibre.

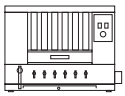
APPLICATIONS

- Crude fibre extraction according to the Weende method
- Extraction of detergent fibre fractions according to the Van Soest method

BENEFITS

- Designed to sustain many years of laboratory work, fabricated with excellent construction materials, featuring a stainless steel external building.
- Faster extraction thanks to the air compressor, which breaks up compact clumps, and the peristaltic pump, which generates vacuum.
- Compatible with the Weende and Van Soest methods and a wide range of samples.
- Scalable with our cold fat extractor to degrease samples or perform cold extractions using organic solvents.
- Extraction and filtration without sample transfer.
- Design with six simultaneous extraction positions.

SPECIFICATIONS



Reference	F-6P
External dimensions L x D x H mm	724 x 330 x 580
Power W	1280
Voltage* V	230
Weight Kg	41
Frequency Hz	50/60
Maximum number of samples per test	6
Dimensions of glass crucible Ø x H mm	34 x 60

*Other voltages and electrical configurations available on request.

DESCRIPTION

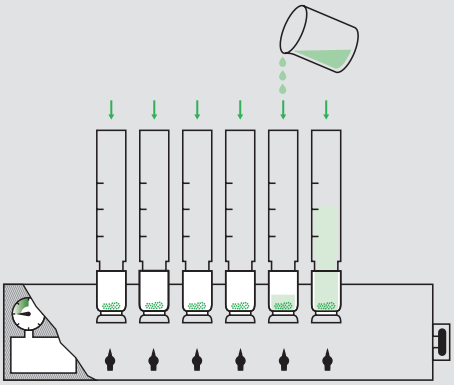
- External housing made of AISI-304 stainless steel painted with epoxy resin.
- Heating by means of a switch-activated quartz heater and temperature-control dial.
- Built-in water cooling circuit to perform hot extractions.
- Built-in air pump activated by an independent switch for positive pressure to break up compact clumps during filtration.
- Built-in peristaltic pump activated by an independent switch to generate negative pressure to drain the solvent faster or collect a fibre fraction.
- Simultaneous or sequential hot or cold extraction of six samples under identical conditions, including boiling, rinsing and filtration.
- Control of extraction steps by means of 3-position valves (closed, drain and positive pressure).
- Pyrex® crucibles with a nominal porosity of 40-90µm.
- Manufactured to ensure compliance with AOAC, AACC and ISO international standards.
- Viton® seals and connecting hoses compatible with different reagents, including acidic and basic solutions.
- Ideal for use in conjunction with the EF-6P cold fat extraction system. Equipped with a specific connection so the devices can be used together.
- Supplied with all necessary components, including crucibles, racks, clamps and connecting hoses.

USE OF THE F-6P IN COMBINATION WITH THE EF-6P

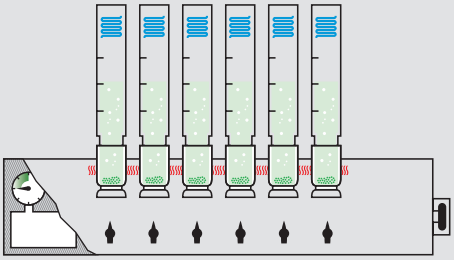
Combined installation of both extractors (F-6P and EF-6P) enables users to pre-degrease samples with a high fat content before performing fibre extraction. This configuration also helps speed up cold fat extraction thanks to the pressure support connection between the two units.

EXTRACTION STEPS FOR THE F-6P AND EF-6P

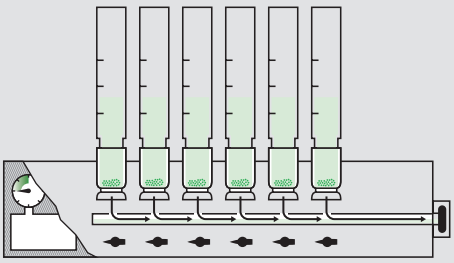
F-6P



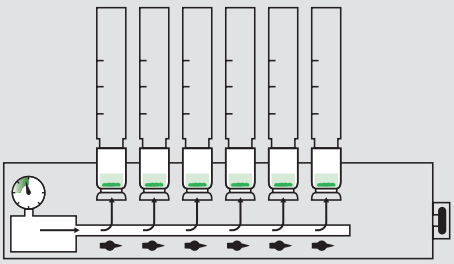
1. Addition of aqueous solvent.



2. Sample mixing with the solvent at boiling temperature and active cooling circuit.

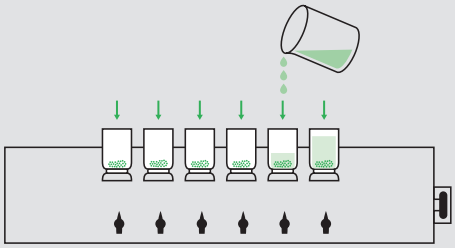


3. Vacuum-assisted filtration using the built-in peristaltic pump for residue and solvent recovery.

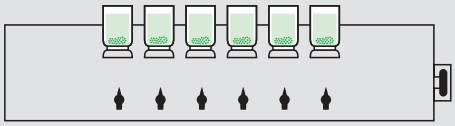


During filtration, it may be necessary to break up compact clumps using the built-in air pump.

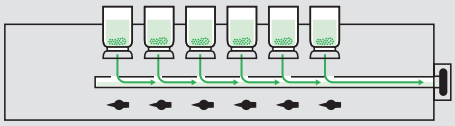
EF-6P



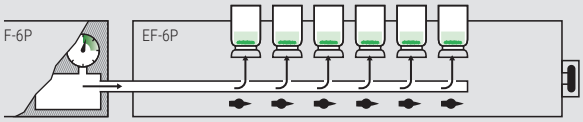
1. Addition of organic solvent.



2. Sample mixing with the solvent at room temperature.



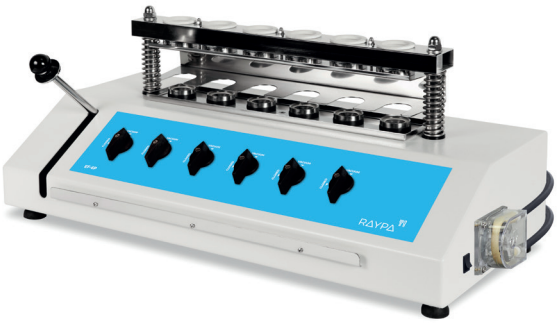
3. Vacuum-assisted filtration using the built-in peristaltic pump for solvent recovery.



During filtration, it may be necessary to break up compact clumps using the air pump connection on the F-6P fibre extractor.

ACCESSORIES

COLD FAT EXTRACTOR



Features

- Extraction system with six extraction positions and six independent extraction valves.
- External housing made of AISI-304 stainless steel painted with epoxy resin.
- Connection with built-in peristaltic pump with separate activation switch to apply negative pressure to speed up extraction.
- Built-in connection with the F-6P extractor to apply positive pressure to the bottom of the samples and break up compact clumps formed during filtration and thus speed up extraction.
- Optional solvent recovery.
- EPDM seals and GSR connecting hoses compatible only with acetone and other non-polar organic solvents.
- Supplied with all necessary components, including crucibles, clamp and hoses.

Specifications

Reference		EF-6P
Applications		Cold fat extraction with acetone and other non-polar organic solvents
		Sample degreasing prior to fibre extraction. Recommended for samples with a fat content greater than 1%.
Performance data	Analysis time min	40
	Dimensions of glass crucible Ø x H mm	34 x 60
	Maximum number of samples per test	6
Installation requirements	Dimensions L x D x H mm	375 x 310 x 540
	Weight Kg	13
	Power W	100
	Voltage* V	230
	Frequency Hz	50/60

*Other voltages and electrical configurations available on request.

ENODEST
OENOLOGIC DISTILLER

Steam distillation system for measuring the alcoholic strength by volume.

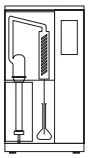
APPLICATIONS

- Measurement of alcoholic strength by volume
- Analysis of volatile acidity
- Analysis of sorbic acid

BENEFITS

- Designed to sustain many years of laboratory work, fabricated with excellent construction materials, featuring a stainless steel external building.
- 5” colour touchscreen and Wi-Fi connection for analysis of results on RAYPAnet.
- Automatic distillation compatible with drinks of any alcoholic strength.
- Optimized cooling circuit for effective distillation of alcoholic beverages.
- Accurate and reproducible results in accordance with standardized analysis procedures for different distillate volumes.
- Advanced safety for users and to ensure process integrity.
- Includes 10 preset programs for the most common applications organized according to the alcohol content and volume of the sample.

SPECIFICATIONS



Reference	ENODEST-TS
External dimensions L x D x H mm	520 x 360 x 910
Weight Kg	27
Power W	2000
Frequency Hz	50/60
Voltage* V	230
Steam generator water consumption L/h	1,6
Cooling water flow rate L/min	3
Distillation time min/mL	7 / 200

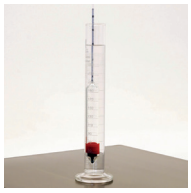
*Other voltages and electrical configurations available on request.

DESCRIPTION

- Includes 10 preset programs for the most common applications organized according to the alcohol content and volume of the sample.
- Built-in steam generator of adjustable power and automatic water level control.
- Includes a pump for automating the addition of dilution water.
- A microprocessor controls the equipment which features a 5" LCD display and Wi-Fi connection for analysis of results on RAYPAnet.
- Includes system for saving cooling water.
- External housing made of AISI-304 stainless steel painted with epoxy resin.
- Supplied with all necessary components, including distillation tube, connecting hoses and water tank.
- Compliance with OIV, EEC 2676/90 and EC 2870/2000 standards to guarantee reliable results.

ACCESSORIES

ALCOHOLOMETER



- Precision glass alcoholometer class II EG-OIML.
- Models available with built-in Hg thermometer. Consult references.

References	ALC-0-10	ALC-10-20	ALC-20-30	ALC-30-40	ALC-40-50	ALC-50-60	ALC-60-70	ALC-70-80	ALC-80-90	ALC-90-100
External dimensions Ø x H mm	26 x 350	26 x 350	26 x 350	26 x 350	26 x 350	26 x 350	26 x 350	26 x 350	26 x 350	26 x 350
Alcoholic strength %	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90	90 - 100
Scale division % Volume	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Calibration temperature °C	20	20	20	20	20	20	20	20	20	20

DISTILLATION TUBE RACK

- Rack with six positions for distillation tubes.
- Material: AISI-304 stainless steel.

References	GRA-640	GRA-680
Dimensions L x D x H mm	122 x 177 x 150	209 x 308 x 172
Positions	6	6
Compatible distillation tubes	TB-100ENO	TB-250ENO

DISTILLATION TUBES

- Glass distillation tubes for samples.

TB-100ENO TB-250ENO

References	TB-100ENO	TB-250ENO
Dimensions Ø x H mm	42 x 300	80 x 300
Volume mL	325	1200
Recommended sample volume mL	100	250
Material	glass	glass

VOLUMETRIC FLASKS

- Glass volumetric flasks for collecting distillates.

References	MA-100	MA-200	MA-250
Dimensions Ø x H mm	61 x 170	75 x 200	80 x 220
Maximum sample volume mL	100	200	250
Material	glass	glass	glass


SETTINGS
GENOLOGIC DISTILLER
ENODIST
RAYPA
200 ml

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
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Воронеж (473)204-51-73
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