

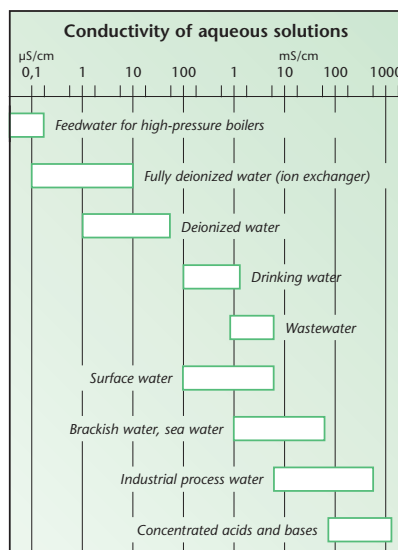
Conductivity Meters

Conductivity

Conductivity is a parameter used to measure the ionic concentration and activity of a solution. The more salt, acid or alkali in a solution, the greater its conductivity. The unit of conductivity is S/m , often also S/cm . The scale for aqueous solutions begins with pure water at a conductivity of $0.05 \mu S/cm$ ($77^\circ F/25^\circ C$). Naturally occurring waters such as drinking water or surface water have a conductivity in the range $100 - 1000 \mu S/cm$. At the upper end of the chart some acids and alkalines can be found.

Conductivity measurements are used for applications such as in the production of ultrapure water or determining the salinity of sea water.

Conductivity is measured by making a measurement of the electrical resistance. The simplest kind of measuring cell used consists of two similar electrodes. An alternating voltage applied to one of the electrodes causes the ions in the solution to migrate towards the electrodes. The more ions in the solution, the greater the current which flows between the electrodes. The instrument measures the current and uses Ohm's law to calculate first the conductance of the solution and then – by taken the cell data into account – the conductivity.



● recommended by WTW ○ conditionally applicable – not recommended

Application Range	inoLab®			Profi-Line	VARIO	Handheld Meters		
	Cond 720	Cond 730	Cond 740	Cond 197i	C _{cond}	Cond 315i	Cond 330i	Cond 340i
Routine measurement	●	-	-	-	●	●	●	-
Routine measurement with documentation	-	●	●	●	-	-	-	●
AQA with documentation	-	●	●	●	-	-	-	●
R&D high precision	-	●	●	●	-	-	●	●
Control measurements	-	●	●	●	●	-	●	●
LIMS connection	-	●	●	●	-	-	-	○
Quality assurance	-	●	●	●	-	-	●	●
Training	●	●	●	○	●	●	●	○
Service	-	-	-	●	●	●	●	●
Laboratory measurements	●	●	●	●	●	-	-	○
Field measurements	-	-	-	●	-	●	●	●
Depth measurements	-	-	-	●	-	-	-	-
External control/PC connection/ PC control	-	●/●/-	●/●/●	●/●/-	-	-	-	●/●/-
Salinity/TDS measurement	●	●	●	●	●	only SAL	●	●
Specific resistance	●	●	●	-	-	●	●	●
Suitable for USP 27	●	●	●	●	-	-	●	●
Measurement of ultrapure water	●	●	●	●	●	●	●	●
Trace conductivity	●	●	●	●	-	-	●	●

see page 40 40 41 42 45 44 44 44
for conductivity measurements with multi-parameter instruments see page 50

Application Range Sensors	TetraCon® 325	TetraCon® 325/S	LR 325/01	LR325/001	TetraCon® DU/T	TA 197 LF
USP 27	-	-	●	●	-	-
Pharmaceutical water	○	-	●	●	-	-
Chemical water	○	-	-	-	●	-
Ground water	●	-	○	-	-	●
Surface waters	●	-	-	-	-	-
Depth measurements (barrages)	○	-	-	-	-	●
Laboratory measurements	●	-	●	●	-	-
Foods industry (juices)	●	-	-	-	○	-
Swimming pools	●	-	-	-	○	-
Pharmaceutics	●	-	●	○	○	-
Cosmetics/Detergents	○	●	-	-	-	-
Semi-conductor industry	-	-	●	●	-	-
Paint/Varnish (soluble)	●	○	-	-	-	-
Electroplating	●	-	-	-	-	-

applicable instruments: all/except VARIO 315i all/except VARIO 315i all/except VARIO 315i all/except VARIO 315i all/except VARIO 315i Cond 197i

Parameter
pH
ORP
ISE
Oxygen (D.O.)
Conductivity
Multi-parameter
BOD/Respiration
Photometers
Turbidity
Colony Counter
Software/Printers

NEW

Conductivity Laboratory Conductivity Meters

Conductivity is an important parameter that is often used for monitoring water quality. In the laboratory sector this parameter has also increased in importance since the introduction of USP 27 Guideline for pharmaceutical water. WTW inoLab® Cond laboratory instruments meet all the requirements for measurements according to this standard.

- Application specific displays
- Touch-sensitive keypad with pressure point and tactile response
- Battery or line power operation

inoLab® Cond 720

Simple and reliable

Routine laboratory conductivity meter with large multifunctional display, parallel temperature display and automatic temperature compensation. 68 °F or 77 °F (20 °C or 25 °C) can be set as reference temperature. Both TDS and salinity measurements are possible as well as conductivity and temperature. The ability to set different cell constants means that other special conductivity cells can be connected as well as the TetraCon® 325 4-electrode conductivity cell and LR 325/01 ultrapure water conductivity cell.



- Simplified operator convenience
- GLP documentation via PC or optional built-in printer
- Meets all the requirements of USP 27

inoLab® Cond 730

Compact and precise

Standard laboratory conductivity meter with large multifunctional display, parallel temperature display and automatic temperature compensation. The datalogging capability and the real-time clock allows for all GLP functions. Data output can take place via the optional built-in printer on thermal paper accepted for use for official documents or via the built-in RS 232 digital interface via a PC or external printer.

68 °F or 77 °F (20 °C or 25 °C) can be set as reference temperature. Both TDS and salinity measurements are possible as well as conductivity and temperature. The ability to set different cell constants means that other special conductivity cells can be connected as well as the TetraCon® 325 4-electrode conductivity cell and LR 325/01 ultrapure water conductivity cell.



IP 43

CE

UL
CUL

3 Year
Warranty

inoLab® Cond 740

NEW

inoLab® Cond 740 with Terminal or PC software:
flexible and powerful

High-performance laboratory conductivity meter with graphic display and digital recorder function, parallel display of temperature and automatic temperature compensation. A built-in datalogger and a real-time clock allows for all QA conforming functions. The optional built-in printer allows data printout on thermal paper accepted for use in official documents.

68 °F or 77 °F (20 °C or 25 °C) can be set as reference temperature. Both TDS and salinity measurements are possible as well as conductivity and temperature. The ability to set different cell constants means that other special conductivity cells can be connected as well as the TetraCon® 325 4-electrode conductivity cell and LR 325/01 ultrapure water conductivity cell.

A PC keyboard interface allows an external keyboard or a barcode reader to be connected.

additional features

- Built-in digital recorder
- Real-Time Graphic Display
- User Selectable Languages
- Multi-Level GLP Functions (password-protected operator levels)
- Limit input with acoustic alarm
- Meets all the requirements of USP 27
- Free-of-charge software downloads for MultiLab® pilot or terminal

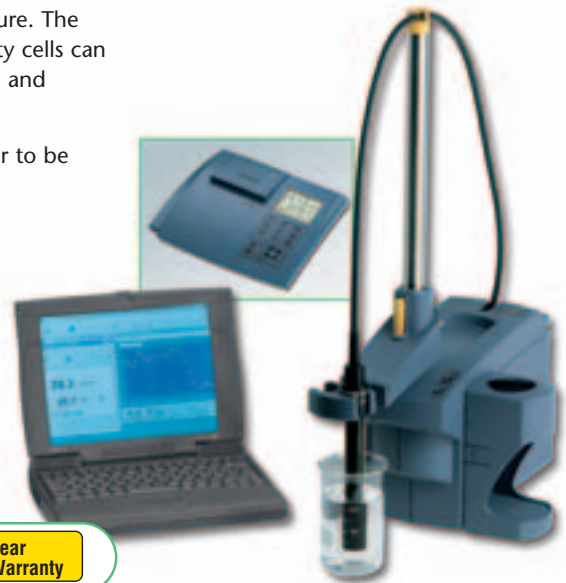
IP 43



3 Year Warranty

Conductivity Meters

- Meets all the requirements of USP 27
- TDS and salinity measurement
- External control with MultiLab® pilot via PC



Technical Data

Model	Cond 720 and Cond 730	Cond 740
Range/Resolution	Conductivity: 0.0 µS/cm ... 500 mS/cm in 5 measuring ranges or AutoRange additionally for K = 0.1 cm ⁻¹ : 0.00 µS/cm ... 19.99 µS/cm K = 0.01 cm ⁻¹ : 0.000 µS/cm ... 1.999 µS/cm 23 ... 211.82 °F (-5.0 ... +99.9 °C) Temperature: Salinity: 0.0 ... 70.0 TDS: 0 ... 1999 mg/l Resistivity: 0.000 ... 1999 MΩcm	0.0 µS/cm ... 2000 mS/cm in 5 measuring ranges or AutoRange additionally for K = 0.1 cm ⁻¹ : 0.00 µS/cm ... 20.00 µS/cm K = 0.01 cm ⁻¹ : 0.000 µS/cm ... 2.000 µS/cm 23 ... 221 °F (-5.0 ... +105.0 °C) 0.0 ... 70.0 0 ... 2000 mg/l 0.000 ... 2000 MΩcm
Accuracy (± 1 digit)	Conductivity: ± 0.5 % of value Temperature: ± 0.1 K	
Reference temperature	68 ... 77 °F (20 °C or 25 °C) selectable	
Cell constants	0.475 cm ⁻¹ , 0.1 cm ⁻¹ and 0.01 cm ⁻¹ fixed; freely selectable 0.25 ... 2.5 cm ⁻¹ and 0.09 ... 0.11 cm ⁻¹	0.475 cm ⁻¹ , 0.1 cm ⁻¹ and 0.01 cm ⁻¹ fixed; freely selectable 0.25 ... 2.5 cm ⁻¹
Temperature compensation	Automatic or switched off	
Temperature coefficient	• Non-linear function for natural water to EN 27 888 • Linear compensation from 0.001 ... 2.999%/K • No compensation	
Calibration	With 0.01 mol KCl	

Ordering Information

inoLab® Laboratory Conductivity Meter SETs – with wide-range power supply 100-240 VAC (50/60 Hz) included	Order No.
inoLab® Cond 720 Simple and reliable conductivity meter, including TetraCon® 325 and accessories	1C10-0111
inoLab® Cond 730 Compact precision conductivity meter, including TetraCon® 325, passive multifunction box and accessories	1C20-0111
inoLab® Cond 740P The intelligent conductivity measuring station with additional built-in printer, TetraCon® 325 and accessories	1C31-0111
Passive multifunction box (not included in Cond 720 Set)	109 810

For information visit www.WTW.com for a customer care center near you or inside US: call WTW 800 645 5999.

Parameter

pH

ORP

ISE

Oxygen (D.O.)

Conductivity

Multi-parameter

BOD/Respiration

Photometers

Turbidity

Colony Counter

Software/Printers

Conductivity Meters

Portable Conductivity Meters

ProfiLine Cond 197i



The WTW conductivity meter of the ProfiLine Cond 197i series is both hoseproof (IP 66) and submersible (IP 67). Along with an 800 data file datalogger, a real time clock and recorder output, the ProfiLine Cond 197i conforms to all GLP requirements. They are equipped with a carrying/support handle and carrying strap as standard.

New: Powerful NiMH rechargeable batteries.

The Cond 197i is suitable for depth measurements down to 330 ft (100 m) in combination with the TA 197 LF depth armature.



Conductivity depth armature TA 197 LF with built-in temperature sensor, up to 100 m cable with waterproof plug (IP 67), pressure-resistant steel armoring (material VA 1.4571) with screw-off protective hood, pressure-resistant to max. 10 bar, fits into small boreholes (2" dia.).



- Highly precise, indestructible, waterproof
- Large, silicone keys for field use
- Large, easy to read display
- Measurement down to depths of 330 ft (100 m)

Technical Data

Model	ProfiLine Cond 197i	
Range/Resolution	LF:	0.0 µS/cm ... 500 mS/cm in 5 measuring ranges or AutoRange, 0.00 ... 19.99 µS/cm for K=0.1 cm ⁻¹ , 0.000 ... 1.999 µS/cm for K=0.01 cm ⁻¹
	Temp.:	23 ... 221 °F (-5.0 °C ... +105.0 °C)
	Salinity:	0.0 ... 70.0
	TDS:	0 ... 1999 mg/l
Accuracy (±1 digit)	LF:	±0.5 % of value
	Temp.:	±0.1 K
Reference temp.	68 ... 77 °F (20 °C or 25 °C), selectable	
Call constant	Calibratable 0.450...0.500 and 0.800...1.200 cm ⁻¹ , fixed: 0.01 cm ⁻¹ freely adjustable 0.25 ... 2.5 cm ⁻¹ and 0.09 ... 0.11 cm ⁻¹	
Temperature comp.	Automatic, can be switched off	
Temperature coefficient	<ul style="list-style-type: none"> • Non-linear function for natural waters to EN 27 888 and ultrapure water function • Linear compensation from 0.01 ... 2.99 %/K • No compensation 	

Ordering Information

Portable Conductivity Meter – with wide-range power supply 100-240 VAC (50/60 Hz) included		Order No.
ProfiLine Cond 197i	Robust, waterproof, submersible conductivity meter	3C30-010
Depth armatures down to 330 ft (100 m) see brochure "Product Details"		

Conductivity Handheld Conductivity Meters

Cond 315i, Cond 330i, Cond 340i

Conductivity Meters



Cond 340i in field armoring FM 325 (optional)

Cond 330i in protective armoring SM 325 (optional)



Complete as SET

- Robust, shockproof, water-proof
- Up to 1500 hours of continuous operation
- 4-electrode principle allows a wide range of applications

Useable anywhere, WTW handheld instruments are robust, easy to operate and provide assured accurate readings. From the monitoring of on-line process systems to field studies, WTW's handheld Conductivity meters meet all your measurement needs.



Conductivity Meters

Handheld Conductivity Meters



Cond 315i

WTW handheld conductivity meters are available in three versions:

Cond 315i

The simple conductivity meter for meeting higher demands. With only 5 keys for error-free measurement with parallel temperature measurement, automatic temperature compensation, 4-electrode measuring technology.

Cond 330i

Robust and waterproof handheld conductivity meter for battery operation; with parallel temperature display, integrated datalogger, GLP supporting functions, automatic and manual temperature compensation with linear temperature function and non-linear function for ultrapure water and natural waters according to EN 27 888. The temperature compensation can be switched off; either 68 °F or 77 °F (20 °C or 25 °C) can be selected as the reference temperature.

Cond 340i

As Cond 330i, but with additional analog and digital RS 232 output and an optional power supply is available.

Technical Data

Model	Cond 315i	Cond 330i and Cond 340i
Range/Resolution	LF: 0.0 µS/cm ... 500 mS/cm in 5 measuring ranges or AutoRange 0.00 µS/cm ... 19.99 µS/cm (for K=0.1 cm ⁻¹) Temp.: 23 ... 221 °F (-5.0 °C ... +105.0 °C) Salinity: 0.0 ... 70.0 TDS: – Resistivity: 0.000 ... 1999 MΩcm	0.000 µS/cm ... 1.999 µS/cm (for K=0.01 cm ⁻¹) 0 ... 1999 mg/l
Accuracy (± 1 digit)	LF: ±0.5 % of value Temp.: ±0.1 K	
Reference temp. T_{ref}	68 ... 77 °F (20 °C or 25 °C), selectable	
Cell constant	Fixed 0.475 cm ⁻¹ , 0.1 cm ⁻¹	0.475 cm ⁻¹ , 0.1 cm ⁻¹ and 0.01 cm ⁻¹ fixed and 0.25 ... 2.5 cm ⁻¹ and 0.09 ... 0.11 cm ⁻¹ adjustable
Temperature comp.	Automatic, can be switched off	
Temperature coefficient	<ul style="list-style-type: none"> • Non-linear function for natural waters (nLF) to EN 27 888 and ultrapure water function – • Linear compensation from 0.01 ... 2.99 %/K • No compensation 	

Ordering Information

Handheld Conductivity Meter SETs	Order No.
Cond 315i Robust and waterproof battery-operated handheld conductivity meter, including TetraCon® 325, professional case and accessories	2C10-0011
Cond 330i Robust and waterproof battery-operated handheld conductivity meter with datalogger, including TetraCon® 325, professional case and accessories	2C20-0011
Cond 340i Robust and waterproof battery-operated handheld conductivity meter with datalogger and serial interface, including TetraCon® 325, professional case and accessories	2C30-0011
Universal wide-range power supply 100 V - 240 V, 50-60 Hz; for 340i series	902 867
Other measuring cells in SET see brochure "Product Details"	

Conductivity Meters

VARIO C_{ond}

NEW

Simple measurement at a your fingertips – now also available for conductivity measurement!

- Touch screen
- Large operating range
- Plug-in cells – no cables



VARIO C_{ond}

VARIO C_{ond} has a lot to offer – at an excellent price. This economical designed meter is ideal for use in process control monitoring or anywhere a small, accurate meter is needed. The VARIO is small, light, handy, waterproof and has a robust firm-grip rubber armoring.

Technical Data

Model	VARIO C _{ond}	
Range and Resolution	[μS/cm]	0.00 ... 19.99 (when using module LR01 V) 0.0 ... 199.9 0 ... 1999
	[mS/cm]	0.00 ... 19.99 0.0 ... 199.9
Resistivity [k*cm]		0.000 ... 1.999 0.00 ... 19.99 0.0 ... 199.9 0 ... 1999
Resistivity [M*cm]		0.00 ... 19.99 0.0 ... 199.9 0 ... 1999
	SAL	0.0 ... 70.0 according IOT
	TDS [mg/l]	0 ... 1999
	T [°F/°C]	41...221/5.0...+105.0



Miniature precision

The globally renowned measurement cell TetraCon® 325 was specially shortened and modified for the VARIO C_{ond}. With extra ultrapure water cell and flow vessel the Vario C_{ond} is uniquely suited for ultrapure water analysis.

Increased precision through the omission of cable connectors – the VARIO C_{ond} is an appropriate solution for servicing and maintaining water treatment equipment. No matter whether using it for pure water measurement in semi-conductor industry or in cell culture laboratories, the pure water conductivity cell with flow-through vessel always allows a rapid and easy control measurement.

Long-lasting power.

VARIO C_{ond} offers up to 500 hours of continuous operation – with just one standard battery. The low power technology shuts down the device after 10 minutes in standby. Changing the battery is easy and quick.



Conductivity Meters

Parameter

pH

ORP

ISE

Oxygen (D.O.)

Conductivity

Multi-parameter

BOD/Respiration

Photometers

Turbidity

Colony Counter

Software/Printers

Ordering Information

VARIO C _{ond}		Order No.
VARIO C _{ond} Set	VARIO C _{ond} in the mobile case set, incl. 4-electrode cell and KCl solution 0.01 mol/l	2X00-001A
VARIO C _{ond} Set	VARIO C _{ond} in the mobile case set, incl. ultra pure water cell and flow-through vessel	2X00-001B
Other accessories see brochure "Product Details"		

Conductivity Cells

TetraCon®

For more than 50 years WTW has been one of the leading manufacturers worldwide of precision conductivity meters and cells. The TetraCon® 4-electrode system is the result of our commitment to quality and sets a new standard for professional conductivity measurements. In comparison with conventional measuring cells with 2 electrodes, the TetraCon® conductivity cell offers numerous technical advantages:

- Highest degree of precision and linearity by optimized cell geometry
- Extremely large measuring range with just one cell
- Long-term cell constant stability with high-quality abrasion-resistant graphite electrodes
- With built-in temperature sensor as standard
- Smallest immersion depth possible
- No measuring errors even with very dirty electrode – contact resistance on the electrode surface is automatically compensated
- No measuring errors from cable influences
- No measuring errors from primary or secondary polarization effects
- No measuring errors due to contact with side walls or base of measuring vessels
- Robust, unbreakable epoxy body

Selection Guide

Measuring cell	VARIO C _{ond}	Cond 315i	LF 315	LF 318	LF 320/323/325	LF 330/340A	Cond 330i/340i	inoLab® Cond, pH/Cond, Multi	LF 537	LF 538	LF 539	LF 3000	MultiLab® 540	MultiLab® P4/P5	MultiLine® P4, Multi 340i, Multi 197i	MultiLine® P3 pH/LE, pH/Cond 340i	Multi 350i	LF 197	LF 597	Cond 197i
LTA 1			②	②	②	②	②	②	●	●	②					②	②			②
LTA 10									●				②				②			
LR 01/T									●			●		●						
KLE 1/T									●		●	●		●						
KLE 315			●																	
TetraCon® 96									●		●	●		●						
TetraCon® 96-1,5									●		●	●		●						
TetraCon® 325		●		●	●	●	●	●		●			●		●	●	●	●	●	●
TA 197 LF																		●		
TetraCon® 325/Pt																				
TetraCon® DU/T					⑤	⑤	⑤	⑤	④	⑤	④	④	⑤	④			⑤	⑤	⑤	⑤
TetraCon® DU/TH					⑤	⑤	⑤	⑤	④	⑤	④	④	⑤	④			⑤	⑤	⑤	⑤
LR 325/01		●			●	●	●	●		●			●				●	●	●	●
LR 325/001						●	●	●					●				●	●	●	●
TetraCon® 325/S					●	●	●	●		●			●				●	●	●	●
ConOx																	●			
TetraCon® V	●																			
LR01 V	●																			

Adapter (possible conversion with cell constants) is required:

- ② Adapter cable K/LTA together with temperature sensor TFK 325 or TFK 150
- ④ Connection cable KKDU
- ⑤ Connection cable KKDU 325

Conductivity Cells



	Standard conductivity cell		Special conductivity cell TetraCon® 325/S	Ultrapure water conductivity cell		Trace conductivity cell LR 325/001	Conductivity flow-thru cell TetraCon® DU/T
	TetraCon® 325	TetraCon® V		LR 325/01	LR01 V		
Order No.	301 960	301 990	301 602	301 961	301 992	301 962	301 252**
Electrode material	Graphite		Graphite	V4A steel		V4A steel	Graphite
Flow-thru vessel	-		-	-		V4A steel	-
Shaft material	Epoxy		Epoxy	V4A steel		V4A steel	Epoxy
Shaft length	4.72 in (120 mm)		4.72 in (120 mm)	4.72 in (120 mm)		4.72 in (120 mm)	6.10 in (155 mm)
Cell constant	K = 0.475 cm ⁻¹		K = 0.491 cm ⁻¹	K = 0.1 cm ⁻¹		K = 0.01 cm ⁻¹	K = 0.778 cm ⁻¹
Diameter	0.60 in (15,3 mm)		0.60 in (15,3 mm)	0.47 in (12 mm)		0.79 in (20 mm)	-
Cable length	4.9 ft (1.5 m)		4.9 ft (1.5 m)	4.9 ft (1.5 m)		4.9 ft (1.5 m)	3.3 ft (1 m) (only with KKDU 325)
Measuring range	1 µS/cm ... 2 S/cm*		1 µS/cm ... 2 S/cm*	0.001 µS/cm ... 200 µS/cm		0.0001 µS/cm ... 30 µS/cm	1 µS/cm ... 2 S/cm*
Temperature range	32 ... 212 °F (0 ... 100 °C)		32 ... 212 °F (0 ... 100 °C)	32 ... 212 °F (0 ... 100 °C)		32 ... 212 °F (0 ... 100 °C)	32 ... 140 °F (0 ... 60 °C)
Filling volume	-		-	17 ml (without sensor)		ca. 10 ml (without sensor)	7 ml
Min./max. immersion depth	36/120 mm	40 mm	40/120 mm	30/120 mm	40 mm	40/120 mm	-

* Measuring range depends on particular instrument, ** Adapter cable KKDU 325 (order no. 301 963), length 3.3 ft (1 m), is necessary for the connection

For additional special measuring cells or other cable lengths see brochure "Product Details"

Conductivity Meters

USP 27 and accessories

Calibration and testing agents



Kit for measuring conductivity according to USP 27

This kit contains LR 325/01 Ultrapure water cell, D01/T Flow-thru vessel made of glass (USP-KIT 1) or stainless steel (USP-KIT 2), NIST traceable 5 μ S standard with accuracy $\pm 2\%$ and 6R/SET/LabTesting set

Calibration standard 100 μ S/cm

Shelf life 2 years,
NIST traceable with accuracy $\pm 3\%$

NEW

Calibration standard 5 μ S/cm

Shelf life 1 year,
NIST traceable with accuracy $\pm 2\%$



Ordering-Information

Kit for measuring the conductivity according to USP 27		Order no.
USP Kit 1	Kit for measuring conductivity according to USP 27, consisting of LR 325/01 Ultrapure water cell, D01/T Glass flow-thru vessel, NIST traceable 5 μ S standard with accuracy $\pm 2\%$ and 6R/SET/LabTesting set	300 569
USP Kit 2	As USP Kit 1, but flow-thru vessel made of stainless steel instead of D01/T	300 568
Calibration agents		
KS 100 μ S	Calibration standard 100 μ S/cm, shelf life 2 years, NIST traceable with accuracy $\pm 3\%$ (300 ml)	300 578
KS 5 μ S	Calibration standard 5 μ S/cm, shelf life 1 year, NIST traceable with accuracy $\pm 2\%$ (300 ml)	300 580
EP/SET	Calibration and platinization set (6 x 50 ml bottles calibration and control standard, KCl 0.01 mol/l, 30 ml platinizing solution, 1 calibration vessel), only for platinized cells	300 570
E/SET	Calibration set (6 x 50 ml bottles calibration and control standard, KCl 0.01 mol/l)	300 572

USP 27 and accessories



Conductivity measuring kit according to USP 27, with stainless steel flow-thru vessel for pharmaceutical water.

Flow-thru vessels



Ordering Information

		Order no.
for LTA 1, LTA, LTA 01 and TFK 530		
D 530	Flow-thru vessel of transparent PVC, suitable for conductivity cells and temperature sensors, I.D. 44 mm, V*=97 ml	108 060
for TetraCon® 325		
D 201	Flow-thru vessel of transparent PVC, I.D. 18 mm, V*=13 ml	203 730
for TetraCon® 96, LTA 100 and KLE 1		
D 1/T	Flow-thru vessel, glass I.D. 24 mm, V*=36 ml	302 730
for LR 01/T and LTA 01		
D 01/T	Flow-thru vessel, glass I.D. 18 mm, V*=17 ml	302 750
V*: filling volume without sensor		