

Consort 2011

Product catalogue



Artistic in Science

Electrochemistry

- pH/mV/Ion/rH₂
- conductivity
- TDS
- resistivity
- dissolved oxygen
- temperature
- electrodes
- calibration solutions
- electrode holder
- flow through cell
- benchtop meters
- portable meters
- controllers
- Data acquisition
- pH/mV/Ion
- conductivity
- dissolved oxygen
- software



Electrophoresis

- power supplies
- horizontal gel
- focusing
- vertical gel
- blotting
- 2-D
- sequencing
- gel dryers
- UV-tables
- crosslinkers
- photo documentation



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How to order

SELECTING REQUIRED ITEMS

- Select the desired products according to the required specifications.
- Each item has a specific code and description.
- Note that the included accessories cannot be changed! When a product does not include the ideal accessories for your application, select both model and desired accessories separately.

PLACING AN ORDER

- Indicate on each order: name of company or organisation, division, full invoice address, full shipping address, phone number, fax number, E-mail, VAT number (if applicable) and name of the buyer.
- An order number and date is required for a convenient follow-up.
- All orders must include a valid item code, with a brief model description. Be sure to include the correct character designation of the code, e.g. "C3010T" not just "3010"!
- Quantities should be indicated as single numbers. Do not indicate for example "3x2" but specify the desired quantity as "6" to avoid mistakes.
- In the event of an order confirmation, always clearly mark copies of the original with "CONFIRMATION, DO NOT DUPLICATE", in order to avoid duplication! Duplicate orders may be subject to a restocking fee.

Conditions

PRICES

Prices are subject to change without notice. Ask for written quotations or an updated price-list if any doubt about availability and price of a product. For orders less than 250 EUR we reserve the right to add a handling fee and banking costs to the invoice.

A minimum of 22 EUR per page will be added to the total net amount for orders requiring a certificate of origin.

A minimum of 250 EUR will be added to the total net amount for orders requiring legalisation or inspection.

Letters of credit are NOT accepted for orders less than 25,000 EUR!

A minimum of 450 EUR will be added to the total net amount for orders on the basis of a letter of credit.

TERMS

All invoices are payable cash on the address of the invoice unless otherwise stipulated in the documents committing the parties or unless an expiry date is stated on the invoice.

SHIPMENTS

All shipments are ex factory unless otherwise agreed. Without specific instructions from the buyer, we will determine the most efficient means of transportation and make partial shipments when necessary. Transport or dispatch of our goods is at the consignee's risk, even with carriage prepaid.

LIABILITY

All products of this catalogue are intended for laboratory use only. CONSORT is not liable for consequential damages arising out of the use or handling of its products.

CLAIMS

Our products are manufactured with the latest technology and need no particular maintenance.

We certify that the goods are thoroughly inspected and tested at the factory prior to shipment and found to meet all requirements defined by contract under which it is furnished.

However, should damage have occurred, keep all original packing material and report eventual claims immediately to the carrier and to us.

DESIGN CHANGES

Design and specifications of all products described in this catalogue are subject to change without notice in the course of product improvement.

WARRANTY

Warranty marked products are guaranteed against defective material and workmanship for the indicated period from the date of shipment ex factory. Accessories and breakable items such as electrodes are not warranted unless proven to be defective before shipment.

The original purchase order numbers, Consort invoice numbers and serial numbers of the products must be provided.

CONSORT will repair all defective equipment returned to it during the warranty period without charge (CIF Turnhout prepaid by sender), provided the equipment has been used under normal laboratory conditions and in accordance with the operating limitations and maintenance procedures described in the instruction manual and when not having been subject to accident, alteration, misuse or abuse.

If the products have been used with or have come into contact with fluids, an MSDS (material safety data sheet) must be supplied prior to issuing a return authorisation.

A written authorisation must be obtained from Consort before returning any product.

Our shipping instructions should be followed by the sender.

We reserve the right to refuse any unauthorised return.

RESTOCKING

Only products purchased within the last 6 months are accepted for return. Products, which are no longer part of our actual offers, are always excluded.

The original purchase order numbers, Consort invoice numbers and serial numbers of the products must be provided.

A new order equivalent to or in excess of the amount of the return must be supplied with the return of the products.

A minimum of 20% restocking charge will be applied for checking, quality control procedures to put the products in a "like new" condition. Electrodes and solutions may not be subject to any credit.

The returned products will be credited to the returner's account and may only be taken as a merchandise credit. No refund check will be issued.

If the products have been used with or have come into contact with fluids, an MSDS (material safety data sheet) must be supplied prior to issuing a return authorisation.

A written authorisation must be obtained from Consort before returning any product. Our shipping instructions should be followed by the sender.

We reserve the right to refuse any unauthorised return.

SALES SERVICE

Call (+32)(0)14411279 between working hours, fax (+32)(0)14429179 or mail to support@consort.be for technical assistance, commercial information or any other inquiry.

Selection guide

Meters and Controllers

Model		C3010	C3020	C3030	C3040	C3050	C3060	R3610	R3620	R3630
CHANNELS		2	2	2	6	3	8	2	2	3
pH	Range (pH)	-2...16	-2...16	-2...16	-2...16	-2...16	-2...16	-2...16	-2...16	-2...16
	Resolution (pH)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	Calibration points	5	5	5	5	5	5	5	5	5
mV	Range (mV)	±2000	±2000	±2000	±2000	±2000	±2000	±2000	±2000	±2000
	Resolution (mV)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Calibration points	1	1	1	1	1	1	1	1	1
rH ₂	Range (rH ₂)					0...42				
	Resolution (rH ₂)					0.01				
ION	Range (g/l)			0...100	0...100		0...100			
	Calibration points			5	5		5			
CONDUCTIVITY	Range (mS/cm)	0...2000	0...2000	0...2000	0...2000	0...2000	0...2000	0...200	0...2000	0...2000
	Resolution (µS/cm)	0.001	0.001	0.001	0.001	0.001	0.001	0.01	0.001	0.001
	Calibration points	3	3	3	3	3	3	3	3	3
RESISTIVITY		✓	✓	✓	✓	✓	✓			
SALINITY/TDS		✓	✓	✓	✓	✓	✓			
DISSOLVED OXYGEN	Range (mg/l)		0...60	0...60	0...60			0...60	0...60	0...60
	Resolution (mg/l)		0.01	0.01	0.01			0.01	0.01	0.01
	Calibration points		1	1	1			1	1	1
FREE CHLORINE	Range (ppm)									0...10
	Calibration points									1
TEMPERATURE	Range (°C)	-5...+105	-5...+105	-5...+105	-5...+105	-5...+105	-5...+105	-30...+130	-30...+130	-30...+130
	Resolution (°C)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Calibration points	1	1	1	1	1	1	1	1	1
USER STANDARD TABLES		Create your own	✓	✓	✓	✓	✓	✓	✓	✓
DATA-LOGGING		Data sets	12000	12000	12000	12000	12000		12000	12000
COMMUNICATION		RS232/USB or Ethernet	RS232/USB or Ethernet	RS232/USB or Ethernet	RS232/USB or Ethernet	RS232/USB or Ethernet	RS232/USB or Ethernet		RS485	RS485
ANALOG OUTPUT									4...20 mA	4...20 mA
POWER SUPPLY	Mains	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Low voltage (12 V)	✓	✓	✓	✓	✓	✓			
	Batteries									

Model		C931	C932	C933	K912	C860	C5010	C5020		
CHANNELS		1	1	1	1	1	2	2		
pH	Range (pH)	-2...16	-2...16	-2...16		0...14	0...14	0...14		
	Resolution (pH)	0.001	0.001	0.001		0.01	0.01	0.01		
	Calibration points	5	5	5		3	3	3		
mV	Range (mV)	±2000	±2000	±2000		±1000	±1000	±1000		
	Resolution (mV)	0.1	0.1	0.1		1	1	1		
	Calibration points	1	1	1		1	1	1		
rH ₂	Range (rH ₂)									
	Resolution (rH ₂)									
ION	Range (g/l)			0...100						
	Calibration points			2						
CONDUCTIVITY	Range (mS/cm)	0...2000	0...2000	0...2000	0...1000	0...1000	0...100	0...1000		
	Resolution (µS/cm)	0.001	0.001	0.001	0.01	0.01	0.1	0.01		
	Calibration points	3	3	3	3	1	1	1		
RESISTIVITY		✓	✓	✓	✓					
SALINITY/TDS		✓	✓	✓	✓	✓				
DISSOLVED OXYGEN	Range (mg/l)		0...60	0...60			0...60	0...60		
	Resolution (mg/l)		0.01	0.01			0.01	0.01		
	Calibration points		1	1			1	1		
FREE CHLORINE	Range (ppm)									
	Calibration points									
TEMPERATURE	Range (°C)	-30...+130	-30...+130	-30...+130	-30...+130	0...100	0...100	0...100		
	Resolution (°C)	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
	Calibration points	1	1	1	1	1	1	1		
USER STANDARD TABLES		Create your own								
DATA-LOGGING		Data sets	3600	3600	3600	300		300		
COMMUNICATION		RS232	RS232	RS232	RS232					
ANALOG OUTPUT		0...2 V	0...2 V	0...2 V	0...2 V					
POWER SUPPLY	Mains	✓	✓	✓	✓	✓	✓	✓		
	Low voltage (12 V)	✓	✓	✓	✓	✓	✓	✓		
	Batteries	✓	✓	✓	✓	✓	✓	✓		

C3010 • C3011

pH - mV - Conductivity - Resistivity - Salinity - TDS - Temperature



pH	-2...+16 pH
mV	±2000 mV
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0...70 ppt
TDS	0...100 g/l
Temperature	-5...+105 °C

**Two independent channels
for all measurements !**

- pH**
 Multi-point (1...5) calibration for more linearity.
 Selectable resolution from 0.001 pH to 0.1 pH.
 Automatic calibration with any of eleven pre-programmed and five user specified pH buffers. **Create your own buffer/temperature tables!**
 Accepts pH electrodes with any zero point (Eo) between ±999 mV.
- mV**
 Features mV calibration for accurate ORP measurements.
 Selectable resolution from 0.1 mV to 1 mV.
- Conductivity**
 Multi-point (1...3) calibration for more linearity.
 An electrode with a typical cell constant of 1 cm⁻¹ permits to measure from 0.01 µS/cm to 200 mS/cm in five ranges.
 An electrode with a typical cell constant of 0.1 cm⁻¹ permits to measure from 0.001 µS/cm to 20 mS/cm in five ranges.
 An electrode with a typical cell constant of 10 cm⁻¹ permits to measure from 0.1 µS/cm to 2000 mS/cm in five ranges.
 Automatically selects correct range and frequency.
 Selectable reference temperature: 20° or 25°C.
 Automatic calibration with any of three preprogrammed and three user specified standard solutions. **Create your own standard/temperature tables!**
 Allows to lock the initial conductivity range to avoid non-linear titration curves.
 Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).
- Temperature**
 Reads temperatures with 0.1°C resolution.
 Manual or automatic temperature compensation.
 Calibrates temperature probe for quality measurements.

CODE	DESCRIPTION
C3010	Meter only (USB version) + USB cable + mains adaptor
C3011	Meter only (Ethernet version) + mains adaptor
C3010X	Meter kit without electrodes: C3010 + 3x50 ml buffers (pH 4, 7 and 10) + 50 ml electrolyte (3M KCl) + 3x50 ml conductivity standards (0.01, 0.1 and 1 M KCl)
C3010P	Meter kit for pH: C3010 + pH/ATC electrode SP10T + 3x50 ml buffers (pH 4, 7 and 10) + 50 ml electrolyte (3M KCl)
C3010K	Meter kit for conductivity: C3010 + conductivity/ATC electrode SK10T + 3x50 ml conductivity standards (0.01, 0.1 and 1 M KCl)
C3010T	Meter kit complete: C3010 + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + 3x50 ml buffers (pH 4, 7 and 10), 50 ml electrolyte (3M KCl) + 3x50 ml conductivity standards (0.01, 0.1 and 1 M KCl)
SH300	Flexible electrode holder (optional)
A4800	Wall mounting kit (optional)
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: C3010S, → Add a U-sign for UK plug versions, e.g.: C3010U	

Inputs

Two BNC inputs for pH, mV or conductivity + corresponding temperature and reference inputs.

Low voltage DC input for e.g. a mains adaptor.

Outputs

Two versions available:

C3010: with USB communication port and RS232 interface.

C3011: with Ethernet communication port and RS232 interface.

Data-logging

Up to 12000 data sets can be stored manually or at a programmable interval.

Allows to mix data from all ranges in the same table.

Visit www.consort.be for free data acquisition software.

Cabinet

Robust dust and splash-proof cabinet.

An optional wall mounting kit allows to fix the meter to any wall making more space available on the desk.

Display

A large bright LCD screen with white backlight enables to view all channels individually or simultaneously.

Stability indicator prompts the user when readings should be taken.

Hold function allows to freeze the display for convenient reading or recording.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

Special features

Two-way communication with a computer using USB, Ethernet or RS232.

Can be programmed to continue automatically with the measurements or data-logging after a power failure.

Password protection prevents any unauthorised access to the instrument.

No electrical interference between electrodes in the same solution.

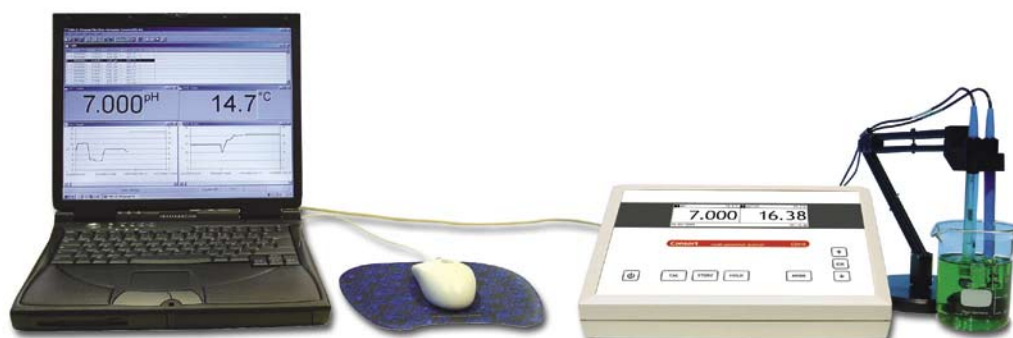
Optional 12 V car adaptor.

Three year warranty.

GLP

All procedures for a "Good Laboratory Practice" are on board.

Specifications	C3010 - C3011
pH	Range
	-2...+16 pH
	Resolution
	0.001 pH
	Accuracy
	0.1% ± 1 digit
	Calibration
	1...5 points
mV	Buffers
	11 pre-programmed
	5 user specified
	Temperature compensation
	-5...+105° C
	ISO-pH
	6...8 pH
	Slope
CONDUCTIVITY	80...120%
	Zero point (Eo)
	±999 mV
	Range
	±2000 mV
	Resolution
	0.1 mV
	Accuracy
RESISTIVITY	0.1% ± 1 digit
	Calibration
	1 point
	Range (cc dependent)
	0...2000 mS/cm
	Resolution (cc dependent)
	0.001 µS/cm
	Accuracy
SALINITY	0.5% f.s. of range
	Calibration
	1...3 points
	Standards
	0.01/0.1/1 M KCl
	3 user specified
	Cell constant (cc)
	0.05...15.0 cm ⁻¹
TDS	Temperature compensation
	-5...+105° C
	Reference temperature
	20° or 25° C
	Temperature coefficient
	natural waters (EN27888)
	Range lock
	✓
TEMPERATURE	Capacitive compensation
	✓
	Range
	0...200 MΩ.cm
	Resolution
	1 Ω.cm
	Range
	0...70 ppt
CHANNELS	Resolution
	0.1 ppt
	Range
	0...100 g/l
	Resolution
	0.01 mg/l
	Range
	-5...+105° C
INPUTS	Resolution
	0.1° C
	Accuracy
	0.3° C
	Calibration
	1 point
	Measurement
	2
CALIBRATION	Temperature
	2
	Measurement
	2 BNC, 10 ¹² Ω
	Temperature
	2x2 banana, for Pt1000
	Reminder
	0...999 h
DISPLAY	GLP
	✓
	LCD
	240x64 pixels
	White backlight
	✓
	Hold function
	✓
COMMUNICATION	Selectable resolution
	✓
	Real time clock
	✓
	Interface with computer
	USB or Ethernet
	RS232, baud rate
	1200...115200 b/s
DATA-LOGGING	Data sets
	12000
	Modes
	all
	Manual or timed
	✓
	Interval
	1...9999 s
SECURITY	Identification number
	✓
	Password protection
	✓
	Temperature
	0...40° C
	Humidity
	0...95%, non condensing
AMBIENT CONDITIONS	Mains
	210...250 VAC, 50/60 Hz
	Low voltage
	9...15 VDC
	Dimensions
	WxDxH
	26x18x9 cm
	Weight
	1 kg



DIS-1 data-acquisition software

C3020 • C3021**pH - mV - Conductivity - Resistivity - Salinity - TDS - Dissolved oxygen - Air pressure - Temperature**

pH	-2...+16 pH
mV	±2000 mV
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0...70 ppt
TDS	0...100 g/l
Dissolved oxygen	0...60 mg/l 0...600%
Air pressure	600...1300 hPa
Temperature	-5...+105 °C

**Two independent channels
for all measurements !**

- pH**
 Multi-point (1...5) calibration for more linearity.
 Selectable resolution from 0.001 pH to 0.1 pH.
 Automatic calibration with any of eleven pre-programmed and five user specified pH buffers. *Create your own buffer/temperature tables!*
 Accepts pH electrodes with any zero point (E₀) between ±999 mV.
- mV**
 Features mV calibration for accurate ORP measurements.
 Selectable resolution from 0.1 mV to 1 mV.
- Conductivity**
 Multi-point (1...3) calibration for more linearity.
 An electrode with a typical cell constant of 1 cm⁻¹ (standard) permits to measure from 0.01 µS/cm to 200 mS/cm in five ranges.
 An electrode with a typical cell constant of 0.1 cm⁻¹ permits to measure from 0.001 µS/cm to 20 mS/cm in five ranges.
 An electrode with a typical cell constant of 10 cm⁻¹ permits to measure from 0.1 µS/cm to 2000 mS/cm in five ranges.
 Automatically selects correct range and frequency.
 Selectable reference temperature: 20 ° or 25 °C.
 Automatic calibration with any of three preprogrammed and three user specified standard solutions. *Create your own standard/temperature tables!*
 Allows to lock the initial conductivity range to avoid non-linear titration curves.
 Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).
- Dissolved oxygen**
 Operates with a galvanic dissolved oxygen electrode requiring no polarisation time and no zero calibration.
 Selectable resolution from 0.01 mg/l (0.1%) to 0.1 mg/l (1%).
 Automatic air pressure compensation 600-1300 hPa.
- Temperature**
 Reads temperatures with 0.1 °C resolution.
 Manual or automatic temperature compensation (O₂: 0...50 °C).
 Calibrates temperature probe for quality measurements.

CODE	DESCRIPTION
C3020	Meter only (USB version) + USB cable + mains adaptor
C3021	Meter only (Ethernet version) + mains adaptor
C3020X	Meter kit without electrodes: C3020 + 3x50 ml buffers (pH 4, 7 and 10) + 50 ml electrolyte (3M KCl) + 3x50 ml conductivity standards (0.01, 0.1 and 1 M KCl)
C3020P	Meter kit for pH: C3020 + pH/ATC electrode SP10T + 3x50 ml buffers (pH 4, 7 and 10) + 50 ml electrolyte (3M KCl)
C3020K	Meter kit for conductivity: C3020 + conductivity/ATC electrode SK10T + 3x50 ml conductivity standards (0.01, 0.1 and 1 M KCl)
C3020Z	Meter kit for oxygen: C3020 + dissolved oxygen electrode SZ10T
C3020T	Meter kit complete: C3020 + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + dissolved oxygen electrode SZ10T + 3x50 ml buffers (pH 4, 7 and 10) + 50 ml electrolyte (3M KCl) + 3x50 ml conductivity standards (0.01, 0.1 and 1 M KCl)
SH300	Flexible electrode holder (optional)
A4800	Wall mounting kit (optional)
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: C3020S, → Add a U-sign for UK plug versions, e.g.: C3020U	

Inputs

Two BNC inputs for pH, mV, dissolved oxygen or conductivity + corresponding temperature and reference inputs.

Low voltage DC input for e.g. a mains adaptor.

Outputs

Two versions available:

C3020: with USB communication port and RS232 interface.

C3021: with Ethernet communication port and RS232 interface.

Data-logging

Up to 12000 data sets can be stored manually or at a programmable interval.

Allows to mix data from all ranges in the same table.

Visit www.consort.be for free data acquisition software.

Cabinet

Robust dust and splash-proof cabinet.

An optional wall mounting kit allows to fix the meter to any wall making more space available on the desk.

Display

A large bright LCD screen with white backlight enables to view all channels individually or simultaneously.

Stability indicator prompts the user when readings should be taken.

Hold function allows to freeze the display for convenient reading or recording.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

Special features

Two-way communication with a computer using USB, Ethernet or RS232.

Can be programmed to continue automatically with the measurements or data-logging after a power failure.

Password protection prevents any unauthorised access to the instrument.

No electrical interference between electrodes in the same solution.

Optional 12 V car adaptor.

Three year warranty.

GLP

All procedures for a "Good Laboratory Practice" are on board.

Specifications	C3020 - C3021
pH	Range
	-2...+16 pH
	Resolution
	0.001 pH
	Accuracy
	0.1% ± 1 digit
	Calibration
mV	1...5 points
	Buffers
	11 pre-programmed
	5 user specified
	Temperature compensation
	-5...+105°C
	ISO-pH
CONDUCTIVITY	6...8 pH
	Slope
	80...120%
	Zero point (Eo)
	±999 mV
	Range
	±2000 mV
RESISTIVITY	Resolution
	0.1 mV
	Accuracy
	0.1% ± 1 digit
	Calibration
	1 point
	Range (cc dependent)
SALINITY	0...2000 mS/cm
	Resolution (cc dependent)
	0.001 µS/cm
	Accuracy
	0.5% f.s. of range
	Calibration
	1...3 points
TDS	Standards
	0.01/0.1/1 M KCl
	3 user specified
	Cell constant (cc)
	0.05...15.0 cm ⁻¹
	Temperature compensation
	-5...+105°C
DISSOLVED OXYGEN	Reference temperature
	20° or 25°C
	Temperature coefficient
	natural waters (EN27888)
	Range lock
	✓
	Capacitive compensation
TEMPERATURE	✓
	Range
	0...200 MΩ.cm
	Resolution
	1 Ω.cm
	Range
	0...70 ppt
AIR PRESSURE	Resolution
	0.1 ppt
	Range
	0...100 g/l
	Resolution
	0.01 mg/l
	Range
CHANNELS	0...60 mg/l (0...600%)
	Resolution
	0.01 mg/l (0.1%)
	Accuracy
	1% ± 1 digit
	Calibration
	1 point
INPUTS	Temperature compensation
	0...50°C
	Salinity compensation
	0...40 ppt
	Air pressure compensation
	600...1300 hPa
	Range
CALIBRATION	-5...+105°C
	Resolution
	0.1°C
	Accuracy
	0.3°C
	Calibration
	1 point
DISPLAY	Range
	600...1300 hPa
	Calibration
	1 point
	Measurement
	2
	Temperature
COMMUNICATION	2
	Measurement
	2 BNC, 10 ¹² Ω
	Temperature
	2x2 banana, for Pt1000
	Reminder
	0...999 h
DATA-LOGGING	GLP
	✓
	LCD
	240x64 pixels
	White backlight
	✓
	Hold function
SECURITY	✓
	Selectable resolution
	✓
	Real time clock
	✓
	Interface with computer
	USB or Ethernet
AMBIENT CONDITIONS	RS232, baud rate
	1200...115200 b/s
	Data sets
	12000
	Modes
	all
	Manual or timed
POWER SUPPLY	✓
	Interval
	1...9999 s
	Identification number
	✓
	Password protection
	✓
DIMENSIONS	Temperature
	0...40°C
	Humidity
	0...95%, non condensing
	Mains
	210...250 VAC, 50/60 Hz
	Low voltage
WEIGHT	9...15 VDC
	WxDxH
	26x18x9 cm
	Meter
	1 kg



C3030 • C3031 pH - mV - Ion - Conductivity - Resistivity - Salinity - TDS - Dissolved oxygen - Air pressure - Temperature

pH	-2...+16 pH
mV	±2000 mV
Ion	0.01 ng/l...100 g/l
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0...70 ppt
TDS	0...100 g/l
Dissolved oxygen	0...60 mg/l 0...600%
Air pressure	600...1300 hPa
Temperature	-5...+105 °C

**Two independent channels
for all measurements !**

- pH**
 Multi-point (1...5) calibration for more linearity.
 Selectable resolution from 0.001 pH to 0.1 pH.
 Automatic calibration with any of eleven pre-programmed and five user specified pH buffers. *Create your own buffer/temperature tables!*
 Accepts pH electrodes with any zero point (E₀) between ±999 mV.
- mV**
 Features mV calibration for accurate ORP measurements.
 Selectable resolution from 0.1 mV to 1 mV.
- Ion**
 Direct concentration measurement.
 Ion mode is easily calibrated with any of five standards and a blank correction.
- Conductivity**
 Multi-point (1...3) calibration for more linearity.
 An electrode with a typical cell constant of 1 cm⁻¹ (standard) permits to measure from 0.01 µS/cm to 200 mS/cm in five ranges.
 An electrode with a typical cell constant of 0.1 cm⁻¹ permits to measure from 0.001 µS/cm to 20 mS/cm in five ranges.
 An electrode with a typical cell constant of 10 cm⁻¹ permits to measure from 0.1 µS/cm to 2000 mS/cm in five ranges.
 Automatically selects correct range and frequency.
 Selectable reference temperature: 20 ° or 25 °C.
 Automatic calibration with any of three preprogrammed and three user specified standard solutions. *Create your own standard/temperature tables!*
 Allows to lock the initial conductivity range to avoid non-linear titration curves.
 Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).
- Dissolved oxygen**
 Operates with a galvanic dissolved oxygen electrode requiring no polarisation time and no zero calibration.
 Selectable resolution from 0.01 mg/l (0.1%) to 0.1 mg/l (1%).
 Automatic air pressure compensation 600-1300 hPa.
- Temperature**
 Reads temperatures with 0.1 °C resolution.
 Manual or automatic temperature compensation (O₂: 0...50 °C).
 Calibrates temperature probe for quality measurements.

CODE	DESCRIPTION
C3030	Meter only (USB version) + USB cable + mains adaptor
C3031	Meter only (Ethernet version) + mains adaptor
C3030X	Meter kit without electrodes: C3030 + 3x50 ml buffers (pH 4, 7 and 10) + 50 ml electrolyte (3M KCl) + 3x50 ml conductivity standards (0.01, 0.1 and 1 M KCl)
C3030P	Meter kit for pH: C3030 + pH/ATC electrode SP10T + 3x50 ml buffers (pH 4, 7 and 10) + 50 ml electrolyte (3M KCl)
C3030K	Meter kit for conductivity: C3030 + conductivity/ATC electrode SK10T + 3x50 ml conductivity standards (0.01, 0.1 and 1 M KCl)
C3030Z	Meter kit for oxygen: C3030 + dissolved oxygen electrode SZ10T
C3030T	Meter kit complete: C3030 + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + dissolved oxygen electrode SZ10T + 3x50 ml buffers (pH 4, 7 and 10) + 50 ml electrolyte (3M KCl) + 3x50 ml conductivity standards (0.01, 0.1 and 1 M KCl)
SH300	Flexible electrode holder (optional)
A4800	Wall mounting kit (optional)
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: C3030S, → Add a U-sign for UK plug versions, e.g.: C3030U	

Inputs

Two BNC inputs for pH, mV, Ion, dissolved oxygen or conductivity + corresponding temperature and reference inputs.

Low voltage DC input for e.g. a mains adaptor.

Outputs

Two versions available:

C3030: with USB communication port and RS232 interface.

C3031: with Ethernet communication port and RS232 interface.

Data-logging

Up to 12000 data sets can be stored manually or at a programmable interval.

Allows to mix data from all ranges in the same table.

Visit www.consort.be for free data acquisition software.

Cabinet

Robust dust and splash-proof cabinet.

An optional wall mounting kit allows to fix the meter to any wall making more space available on the desk.

Display

A large bright LCD screen with white backlight enables to view all channels individually or simultaneously.

Stability indicator prompts the user when readings should be taken.

Hold function allows to freeze the display for convenient reading or recording.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

Special features

Two-way communication with a computer using USB, Ethernet or RS232.

Can be programmed to continue automatically with the measurements or data-logging after a power failure.

Password protection prevents any unauthorised access to the instrument.

No electrical interference between electrodes in the same solution.

Optional 12 V car adaptor.

Three year warranty.

GLP

All procedures for a "Good Laboratory Practice" are on board.

Specifications	C3030 - C3031
pH	Range
	-2...+16 pH
	Resolution
	0.001 pH
	Accuracy
	0.1% ± 1 digit
	Calibration
	1...5 points
mV	Buffers
	11 pre-programmed
	5 user specified
	Temperature compensation
	-5...+105°C
	ISO-pH
	6...8 pH
	Slope
ION	80...120%
	Zero point (Eo)
	±999 mV
	Range
	±2000 mV
	Resolution
	0.1 mV
	Accuracy
CONDUCTIVITY	0.1% ± 1 digit
	Calibration
	1 point
	Range
	0.01 ng/L...100 g/L
	Resolution
	3 digits
	Accuracy
RESISTIVITY	0.5% ± 1 digit
	Calibration
	2...5 points + blank
	Range (cc dependent)
	0...2000 mS/cm
	Resolution (cc dependent)
	0.001 µS/cm
	Accuracy
SALINITY	0.5% f.s. of range
	Calibration
	1...3 points
	Standards
	0.01/0.1/1 M KCl
	3 user specified
	Cell constant (cc)
	0.05...15.0 cm ⁻¹
TDS	Temperature compensation
	-5...+105°C
	Reference temperature
	20° or 25°C
	Temperature coefficient
	natural waters (EN27888)
	Range lock
	✓
DISSOLVED OXYGEN	Capacitive compensation
	✓
	Range
	0...200 MΩ.cm
	Resolution
	1 Ω.cm
	Range
	0...70 ppt
TEMPERATURE	Resolution
	0.1 ppt
	Range
	0...100 g/L
	Resolution
	0.01 mg/L
	Range
	0...60 mg/L (0...600%)
AIR PRESSURE	Resolution
	0.01 mg/L (0.1%)
	Accuracy
	1% ± 1 digit
	Calibration
	1 point
	Temperature compensation
	0...50°C
CHANNELS	Salinity compensation
	0...40 ppt
	Air pressure compensation
	600...1300 hPa
	Range
	-5...+105°C
	Resolution
	0.1°C
INPUTS	Accuracy
	0.3°C
	Calibration
	1 point
	Range
	600...1300 hPa
	Calibration
	1 point
CALIBRATION	Measurement
	2
	Temperature
	2
	Measurement
	2 BNC, 10 ¹² Ω
	Temperature
	2x2 banana, for Pt1000
DISPLAY	Reminder
	0...999 h
	GLP
	✓
	LCD
	240x64 pixels
	White backlight
	✓
COMMUNICATION	Hold function
	✓
	Selectable resolution
	✓
	Real time clock
	✓
	Interface with computer
	USB or Ethernet
DATA-LOGGING	RS232, baud rate
	1200...115200 b/s
	Data sets
	12000
	Modes
	all
	Manual or timed
	✓
SECURITY	Interval
	1...9999 s
	Identification number
	✓
	Password protection
	✓
	Temperature
	0...40°C
AMBIENT CONDITIONS	Humidity
	0...95%, non condensing
	Mains
	210...250 VAC, 50/60 Hz
	Low voltage
	9...15 VDC
	Dimensions
	WxDxH
POWER SUPPLY	26x18x9 cm
	Weight
	1 kg



C3040 • C3041 pH - mV - Ion - Conductivity - Resistivity - Salinity - TDS - Dissolved oxygen - Air pressure - Temperature

pH	-2...+16 pH
mV	±2000 mV
Ion	0.01 ng/l...100 g/l
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0...70 ppt
TDS	0...100 g/l
Dissolved oxygen	0...60 mg/l 0...600%
Air pressure	600...1300 hPa
Temperature	-5...+105 °C

**Six independent channels
for all measurements !
(conductivity: only 2 channels)**

- pH**
 Multi-point (1...5) calibration for more linearity.
 Selectable resolution from 0.001 pH to 0.1 pH.
 Automatic calibration with any of eleven pre-programmed and five user specified pH buffers. *Create your own buffer/temperature tables!*
 Accepts pH electrodes with any zero point (E₀) between ±999 mV.
- mV**
 Features mV calibration for accurate ORP measurements.
 Selectable resolution from 0.1 mV to 1 mV.
- Ion**
 Direct concentration measurement.
 Ion mode is easily calibrated with any of five standards and a blank correction.
- Conductivity**
 Multi-point (1...3) calibration for more linearity.
 An electrode with a typical cell constant of 1 cm⁻¹ (standard) permits to measure from 0.01 μS/cm to 200 mS/cm in five ranges.
 An electrode with a typical cell constant of 0.1 cm⁻¹ permits to measure from 0.001 μS/cm to 20 mS/cm in five ranges.
 An electrode with a typical cell constant of 10 cm⁻¹ permits to measure from 0.1 μS/cm to 2000 mS/cm in five ranges.
 Automatically selects correct range and frequency.
 Selectable reference temperature: 20° or 25°C.
 Automatic calibration with any of three preprogrammed and three user specified standard solutions. *Create your own standard/temperature tables!*
 Allows to lock the initial conductivity range to avoid non-linear titration curves.
 Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).
- Dissolved oxygen**
 Operates with a galvanic dissolved oxygen electrode requiring no polarisation time and no zero calibration.
 Selectable resolution from 0.01 mg/l (0.1%) to 0.1 mg/l (1%).
 Automatic air pressure compensation 600-1300 hPa.
- Temperature**
 Reads temperatures with 0.1°C resolution.
 Manual or automatic temperature compensation (O₂: 0...50°C).
 Calibrates temperature probe for quality measurements.

CODE	DESCRIPTION
C3040	Meter only (USB version) + USB cable + mains adaptor
C3041	Meter only (Ethernet version) + mains adaptor
SH300	Flexible electrode holder (optional)
A4800	Wall mounting kit (optional)
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: C3040S, → Add a U-sign for UK plug versions, e.g.: C3040U	

Inputs

Two BNC inputs for pH, mV, Ion, dissolved oxygen or conductivity + corresponding temperature and reference inputs.

Four extra inputs for pH, mV, Ion or dissolved oxygen + corresponding temperature and reference inputs.

Low voltage DC input for e.g. a mains adaptor.

Outputs

Two versions available:

C3040: with USB communication port and RS232 interface.

C3041: with Ethernet communication port and RS232 interface.

Data-logging

Up to 12000 data sets can be stored manually or at a programmable interval.

Allows to mix data from all ranges in the same table.

Visit www.consort.be for free data acquisition software.

Cabinet

Robust dust and splash-proof cabinet.

An optional wall mounting kit allows to fix the meter to any wall making more space available on the desk.

Display

A large bright LCD screen with white backlight enables to view all channels individually or simultaneously.

Stability indicator prompts the user when readings should be taken.

Hold function allows to freeze the display for convenient reading or recording.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

Special features

Two-way communication with a computer using USB, Ethernet or RS232.

Can be programmed to continue automatically with the measurements or data-logging after a power failure.

Password protection prevents any unauthorised access to the instrument.

No electrical interference between electrodes in the same solution.

Optional 12 V car adaptor.

Three year warranty.

GLP

All procedures for a "Good Laboratory Practice" are on board.



Specifications	C3040 - C3041
pH	Range
	-2...+16 pH
	Resolution
	0.001 pH
	Accuracy
	0.1% ± 1 digit
	Calibration
	1...5 points
	Buffers
	11 pre-programmed 5 user specified
mV	Temperature compensation
	-5...+105° C
	ISO-pH
	6...8 pH
	Slope
	80...120%
	Zero point (Eo)
ION	±999 mV
	Range
	±2000 mV
	Resolution
CONDUCTIVITY	0.1 mV
	Accuracy
	0.1% ± 1 digit
	Calibration
RESISTIVITY	1 point
	Range
	0.01 ng/L...100 g/L
	Resolution
	3 digits
	Accuracy
	0.5% ± 1 digit
	Calibration
	2...5 points + blank
	Standards
SALINITY	0.01/0.1/1 M KCl 3 user specified
	Cell constant (cc)
	0.05...15.0 cm ⁻¹
	Temperature compensation
	-5...+105° C
	Reference temperature
	20° or 25° C
	Temperature coefficient
	natural waters (EN27888)
	Range lock
TDS	✓
	Capacitive compensation
DISSOLVED OXYGEN	✓
	Range
TEMPERATURE	0...200 MΩ.cm
	Resolution
AIR PRESSURE	1 Ω.cm
	Range
CHANNELS	0...70 ppt
	Resolution
INPUTS	0.1 ppt
	Range
CALIBRATION	0...100 g/L
	Resolution
DISPLAY	0.01 mg/L
	Range
COMMUNICATION	0...60 mg/L (0...600%)
	Resolution
DATA-LOGGING	0.01 mg/L (0.1%)
	Accuracy
SECURITY	1% ± 1 digit
	Calibration
AMBIENT CONDITIONS	1 point
	Temperature compensation
POWER SUPPLY	0...50° C
	Salinity compensation
DIMENSIONS	0...40 ppt
	Air pressure compensation
WEIGHT	600...1300 hPa
	Range
	-5...+105° C
	Resolution
	0.1° C
	Accuracy
	0.3° C
	Calibration
	1 point
	Measurement
	6 (conductivity: 2)
	Temperature
	6
	Measurement
	6 BNC, 10 ¹² Ω
	Temperature
	6x2 banana, for Pt1000
	Reminder
	0...999 h
	GLP
	✓
	LCD
	240x64 pixels
	White backlight
	✓
	Hold function
	✓
	Selectable resolution
	✓
	Real time clock
	✓
	Interface with computer
	USB or Ethernet
	RS232, baud rate
	1200...115200 b/s
	Data sets
	12000
	Modes
	all
	Manual or timed
	✓
	Interval
	1...9999 s
	Identification number
	✓
	Password protection
	✓
	Temperature
	0...40° C
	Humidity
	0...95%, non condensing
	Mains
	210...250 VAC, 50/60 Hz
	Low voltage
	9...15 VDC
	WxDxH
	26x18x9 cm
	Meter
	1 kg

C3050 • C3051

 rH_2 - pH - mV - Conductivity - Resistivity - Salinity - TDS - μW - Temperature

pH	-2...+16 pH
mV	±2000 mV
rH_2	0...42 rH_2
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0...70 ppt
TDS	0...100 g/l
μW	0...400000 μW
Temperature	-5...+105 °C

*Three independent channels
for all measurements !
(conductivity: only 2 channels)*

- **rH_2**
Bio-electronic multimeter for the study of the biological water quality or illnesses in body fluids according to Vincent's method.
- **pH**
Multi-point (1...5) calibration for more linearity.
Selectable resolution from 0.001 pH to 0.1 pH.
Automatic calibration with any of eleven pre-programmed and five user specified pH buffers. *Create your own buffer/temperature tables!*
Accepts pH electrodes with any zero point (Eo) between ±999 mV.
- **mV**
Features mV calibration for accurate ORP measurements.
Selectable resolution from 0.1 mV to 1 mV.
Can also show mV referred to the standard hydrogen electrode.
- **Conductivity**
Multi-point (1...3) calibration for more linearity.
An electrode with a typical cell constant of 1 cm⁻¹ (standard) permits to measure from 0.01 $\mu S/cm$ to 200 mS/cm in five ranges.
An electrode with a typical cell constant of 0.1 cm⁻¹ permits to measure from 0.001 $\mu S/cm$ to 20 mS/cm in five ranges.
An electrode with a typical cell constant of 10 cm⁻¹ permits to measure from 0.1 $\mu S/cm$ to 2000 mS/cm in five ranges.
Automatically selects correct range and frequency.
Selectable reference temperature: 20° or 25°C.
Automatic calibration with any of three preprogrammed and three user specified standard solutions. *Create your own standard/temperature tables!*
Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).
- **μW**
Calculates the resistance (Ω) and the quantification of Vincent (μW).
- **Temperature**
Manual or automatic temperature compensation.
Calibrates temperature probe for quality measurements.

CODE	DESCRIPTION
C3050	Meter only (USB version) + USB cable + mains adaptor
C3051	Meter only (Ethernet version) + mains adaptor
C3050T	Meter kit complete: C3050 + pH/ATC electrode SP21T + ORP electrode SP60X + cable SC01B + conductivity electrode SK20T + 2x50 ml buffers (pH 4 and 7) + 50 ml conductivity standard (0.01 M KCl) + 50 ml electrolyte (3M KCl) + flexible electrode holder SH300
A4800	Wall mounting kit (optional)
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: C3050S, → Add a U-sign for UK plug versions, e.g.: C3050U	

Inputs

Two BNC inputs for pH, mV or conductivity + corresponding temperature and reference inputs.

One extra input for pH or mV + corresponding temperature and reference input.

Low voltage DC input for e.g. a mains adaptor.

Outputs

Two versions available:

C3050: with USB communication port and RS232 interface.

C3051: with Ethernet communication port and RS232 interface.

Data-logging

Up to 12000 data sets can be stored manually or at a programmable interval.

Allows to mix data from all ranges in the same table.

Visit www.consort.be for free data acquisition software.

Cabinet

Robust dust and splash-proof cabinet.

An optional wall mounting kit allows to fix the meter to any wall making more space available on the desk.

Display

A large bright LCD screen with white backlight enables to view all channels individually or simultaneously.

Stability indicator prompts the user when readings should be taken.

Hold function allows to freeze the display for convenient reading or recording.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

Special features

Two-way communication with a computer using USB or RS232.

Can be programmed to continue automatically with the measurements or data-logging after a power failure.

Password protection prevents any unauthorised access to the instrument.

No electrical interference between electrodes in the same solution.

Optional 12 V car adaptor.

Three year warranty.

GLP

All procedures for a "Good Laboratory Practice" are on board.

Specifications		C3050 - C3051
pH	Range	-2...+16 pH
	Resolution	0.001 pH
	Accuracy	0.1% ± 1 digit
	Calibration	1...5 points
	Buffers	11 pre-programmed 5 user specified
	Temperature compensation	-5...+105 °C
	ISO-pH	6...8 pH
	Slope	80...120%
mV	Zero point (Eo)	±999 mV
	Range	±2000 mV
	Resolution	0.1 mV
	Accuracy	0.1% ± 1 digit
rH ₂	Calibration	1 point
	Range	0...42 rH ₂
	Resolution	0.01 rH ₂
CONDUCTIVITY	Accuracy	0.1% ± 1 digit
	Range (cc dependent)	0...2000 mS/cm
	Resolution (cc dependent)	0.001 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1...3 points
	Standards	0.01/0.1/1 M KCl 3 user specified
	Cell constant (cc)	0.05...15.0 cm ⁻¹
	Temperature compensation	-5...+105 °C
	Reference temperature	20° or 25 °C
	Temperature coefficient	natural waters (EN27888)
RESISTIVITY	Range lock	✓
	Capacitive compensation	✓
	Range	0...200 MΩ.cm
SALINITY	Resolution	1 Ω.cm
	Range	0...70 ppt
TDS	Resolution	0.1 ppt
	Range	0...100 g/l
µW	Resolution	0.01 mg/l
	Range	0...400000 µW
TEMPERATURE	Range	-5...+105 °C
	Resolution	0.1 °C
	Accuracy	0.3 °C
	Calibration	1 point
CHANNELS	Measurement	3 (conductivity: 2)
	Temperature	3
INPUTS	Measurement	3 BNC, 10 ¹² Ω
	Temperature	3x2 banana, for Pt1000
CALIBRATION	Reminder	0...999 h
	GLP	✓
DISPLAY	LCD	240x64 pixels
	White backlight	✓
	Hold function	✓
	Selectable resolution	✓
	Real time clock	✓
COMMUNICATION	Interface with computer	USB
	RS232, baud rate	1200...115200 b/s
DATA-LOGGING	Data sets	12000
	Modes	all
	Manual or timed	✓
	Interval	1...9999 s
SECURITY	Identification number	✓
	Password protection	✓
AMBIENT CONDITIONS	Temperature	0...40 °C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	210...250 VAC, 50/60 Hz
	Low voltage	9...15 VDC
DIMENSIONS	WxDxH	26x18x9 cm
WEIGHT	Meter	1 kg

rH₂

The rH₂ is a measurement for the level of electronic exchanges between water and dissolved ions. It enables to study incomplete, indeterminate and very diluted aqueous redox solutions. It is defined as the negative logarithm of molecular hydrogen ion activity, calculated from the pH and the ORP referenced against a hydrogen electrode.

QUANTIFICATION OF VINCENT

The quantification of Vincent is a measurement for the energy stored in an organism. It expresses the maximum dissipation of energy by a chemical or biochemical reaction. The basic unit is Watt (W) but it is more convenient to use µW (micro-watt). It is calculated from the ORP, referenced against a hydrogen electrode, and the resistance.

C3060 • C3061**pH - mV - Ion - Conductivity - Resistivity - Salinity - TDS - Temperature**

pH	-2...+16 pH
mV	±2000 mV
Ion	0.01 ng/l...100 g/l
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0...70 ppt
TDS	0...100 g/l
Temperature	-5...+105 °C

**Eight independent channels
for all measurements !
(conductivity and
temperature: only 2 channels)**

- pH**
 Multi-point (1...5) calibration for more linearity.
 Selectable resolution from 0.001 pH to 0.1 pH.
 Automatic calibration with any of eleven pre-programmed and five user specified pH buffers. *Create your own buffer/temperature tables!*
 Accepts pH electrodes with any zero point (E₀) between ±999 mV.
- mV**
 Features mV calibration for accurate ORP measurements.
 Selectable resolution from 0.1 mV to 1 mV.
- Ion**
 Direct concentration measurement.
 Ion mode is easily calibrated with any of five standards and a blank correction.
- Conductivity**
 Multi-point (1...3) calibration for more linearity.
 An electrode with a typical cell constant of 1 cm⁻¹ (standard) permits to measure from 0.01 µS/cm to 200 mS/cm in five ranges.
 An electrode with a typical cell constant of 0.1 cm⁻¹ permits to measure from 0.001 µS/cm to 20 mS/cm in five ranges.
 An electrode with a typical cell constant of 10 cm⁻¹ permits to measure from 0.1 µS/cm to 2000 mS/cm in five ranges.
 Automatically selects correct range and frequency.
 Selectable reference temperature: 20° or 25°C.
 Automatic calibration with any of three preprogrammed and three user specified standard solutions. *Create your own standard/temperature tables!*
 Allows to lock the initial conductivity range to avoid non-linear titration curves.
 Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).
- Temperature**
 Reads temperatures with 0.1°C resolution.
 Manual or automatic temperature compensation.
 Calibrates temperature probe for quality measurements.

CODE	DESCRIPTION
C3060	Meter only (USB version) + USB cable + mains adaptor
C3061	Meter only (Ethernet version) + mains adaptor
SH300	Flexible electrode holder (optional)
A4800	Wall mounting kit (optional)
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: C3060S, → Add a U-sign for UK plug versions, e.g.: C3060U	

Inputs

Two BNC inputs for pH, mV, Ion or conductivity + corresponding temperature and reference inputs.

Six extra inputs for pH, mV or Ion + corresponding reference inputs.

Low voltage DC input for e.g. a mains adaptor.

Outputs

Two versions available:

C3060: with USB communication port and RS232 interface.

C3061: with Ethernet communication port and RS232 interface.

Data-logging

Stores up to 12000 values including temperature, time and date.

Allows to mix data from all ranges in the same table.

Visit www.consort.be for free data acquisition software.

Cabinet

Robust dust and splash-proof cabinet.

An optional wall mounting kit allows to fix the meter to any wall making more space available on the desk.

Display

A large bright LCD screen with white backlight enables to view all channels individually or simultaneously.

Stability indicator prompts the user when readings should be taken.

Hold function allows to freeze the display for convenient reading or recording.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

Special features

Two-way communication with a computer using USB, Ethernet or RS232.

Can be programmed to continue automatically with the measurements or data-logging after a power failure.

Password protection prevents any unauthorised access to the instrument.

No electrical interference between electrodes in the same solution.

Optional 12 V car adaptor.

Three year warranty.

GLP

All procedures for a "Good Laboratory Practice" are on board.

Specifications	C3060 - C3061
pH	Range
	-2...+16 pH
	Resolution
	0.001 pH
	Accuracy
	0.1% ± 1 digit
	Calibration
	1...5 points
	Buffers
	11 pre-programmed
	5 user specified
	Temperature compensation
	-5...+105°C
	ISO-pH
	6...8 pH
	Slope
	80...120%
	Zero point (Eo)
	±999 mV
mV	Range
	±2000 mV
	Resolution
	0.1 mV
ION	Accuracy
	0.1% ± 1 digit
	Calibration
	1 point
ION	Range
	0.01 ng/L...100 g/L
	Resolution
	3 digits
CONDUCTIVITY	Accuracy
	0.5% ± 1 digit
	Calibration
	2...5 points + blank
CONDUCTIVITY	Standards
	0.01/0.1/1 M KCl
	3 user specified
	Cell constant (cc)
CONDUCTIVITY	0.005...15.0 cm ⁻¹
	Temperature compensation
	-5...+105°C
CONDUCTIVITY	Reference temperature
	20° or 25°C
	Temperature coefficient
	natural waters (EN27888)
CONDUCTIVITY	Range lock
	✓
	Capacitive compensation
	✓
RESISTIVITY	Range
	0...200 MΩ.cm
RESISTIVITY	Resolution
	1 Ω.cm
SALINITY	Range
	0...70 ppt
SALINITY	Resolution
	0.1 ppt
TDS	Range
	0...100 g/L
TDS	Resolution
	0.01 mg/L
TEMPERATURE	Range
	-5...+105°C
	Resolution
	0.1°C
TEMPERATURE	Accuracy
	0.3°C
	Calibration
	1 point
CHANNELS	Measurement
	8 (conductivity: 2)
CHANNELS	Temperature
	2
INPUTS	Measurement
	8 BNC, 10 ¹² Ω
INPUTS	Temperature
	2x2 banana, for Pt1000
CALIBRATION	Reminder
	0...999 h
CALIBRATION	GLP
	✓
DISPLAY	LCD
	240x64 pixels
	White backlight
	✓
	Hold function
DISPLAY	✓
	Selectable resolution
	✓
	Real time clock
	✓
COMMUNICATION	Interface with computer
	USB or Ethernet
COMMUNICATION	RS232, baud rate
	1200...115200 b/s
DATA-LOGGING	Data sets
	12000
	Modes
	all
	Manual or timed
DATA-LOGGING	✓
	Interval
	1...9999 s
SECURITY	Identification number
	✓
SECURITY	Password protection
	✓
AMBIENT CONDITIONS	Temperature
	0...40°C
AMBIENT CONDITIONS	Humidity
	0...95%, non condensing
POWER SUPPLY	Mains
	210...250 VAC, 50/60 Hz
POWER SUPPLY	Low voltage
	9...15 VDC
DIMENSIONS	WxDxH
DIMENSIONS	26x18x9 cm
WEIGHT	Meter
WEIGHT	1 kg



ZERO POINT (Eo)

Standard pH meters assume a pH electrode to supply a zero potential at 7 pH. Electrodes for special applications (e.g. stomach pH measurements) may have a different zero point.

An adjustable zero point correction feature will allow users to measure with these electrodes.

C860

pH - mV - Conductivity - Salinity - TDS - Temperature



One pH/mV channel
One conductivity channel
One temperature channel

Specifications		C860
pH	Range	0...14 pH
	Resolution	0.01 pH
	Accuracy	0.2% ± 1 digit
	Buffers	9 pre-programmed
	Calibration	1...3 points
	Temp. compensation	0...100°C
	ISO-pH	6...8 pH
	Slope	80...120%
mV	Range	±1000 mV
	Resolution	1 mV
	Accuracy	0.2% ± 1 digit
	Calibration	1 point
CONDUCTIVITY	Range (cc dependent)	0...1000 mS/cm
	Resolution (cc dependent)	0.01 µS/cm
	Accuracy	1% f.s. of range
	Calibration	1 point
	Standard	0.01/0.1/1M KCl
	Cell constant (cc)	0.1/1/10 cm ⁻¹ ± 30%
	Temp. compensation	0...100°C
	Reference Temp.	20° or 25°C
	Temp. coefficient	natural waters (EN27888)
SALINITY	Range	0...70 ppt
	Resolution	0.1 ppt
TDS	Range	0...100 g/l
	Resolution	0.1 mg/l
TEMPERATURE	Range	0...100°C
	Resolution	0.1°C
	Accuracy	0.5°C
	Calibration	1 point
INPUTS	pH/mV	BNC, 10 ¹² Ω
	Conductivity	BNC
	Temperature	2 banana, for Pt1000
DATA-LOGGING	Memory	300 values + temperature
DISPLAY	LCD	128x64 pixels
AMBIENT CONDITIONS	Temperature	0...40°C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	210...250 VAC, 50/60 Hz
	Low voltage	9...15 VDC
DIMENSIONS	WxDxH	13x18x10 cm
WEIGHT	Meter	600 g

pH	0...14 pH
mV	±1000 mV
Conductivity	0...1000 mS/cm
Salinity	0...70 ppt
TDS	0...100 g/l
Temperature	0...100°C

- pH**
Automatic calibration with one up to three buffers out of nine pre-programmed pH buffers.
Reads pH with 0.01 pH resolution.
- mV**
Features mV calibration for accurate ORP measurements.
Reads potentials with 1 mV resolution.
- Conductivity**
Extended conductivity range; to measure the full range from 0.01 µS/cm to 1000 mS/cm requires 3 electrodes: 0.1, 1 and 10 cm⁻¹.
Selectable reference temperature: 20° or 25°C.
Automatically selects correct range and frequency.
Automatic cell constant determination with any of three preprogrammed standards (0.01, 0.1 or 1M KCl).
- Temperature**
Reads temperatures with 0.1°C resolution.
Manual or automatic temperature compensation.
Calibrates temperature probe for quality measurements.
- Inputs**
One common input for pH and mV.
One input for conductivity.
One input for a Pt1000 automatic temperature probe.
Low voltage DC input for e.g. a mains adaptor.
- Cabinet**
Robust dust and splash-proof cabinet.
- Display**
Bright LCD screen with white backlight for better readability.
Stability indicator prompts the user when readings should be taken.
The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).
Shows a GLP report on the LCD screen.
- Data-logging**
Storage memory for 300 values including temperature.
- Special features**
Three year warranty.
Optional 12 V car adaptor.

CODE	DESCRIPTION
C860	Meter only (without electrodes) + mains adaptor
C860X	Meter kit without electrodes: C860 + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01M KCl)
C860P	Meter kit for pH: C860 + pH/ATC electrode SP10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl)
C860K	Meter kit for conductivity: C860 + conductivity/ATC electrode SK10T + 50 ml conductivity standard (0.01M KCl)
C860T	Meter kit complete: C860 + pH electrode SP10B + epoxy conductivity electrode SK10B + ATC probe ST10N + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01M KCl)
SH300	Flexible electrode holder (optional)
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: C860S	
→ Add a U-sign for UK plug versions, e.g.: C860U	

Specifications		C5010	C5020
pH	Range	0...14 pH	0...14 pH
	Resolution	0.01 pH	0.01 pH
	Accuracy	0.2% ± 1 digit	0.2% ± 1 digit
	Calibration	1...3 points	1...3 points
	Buffers	11 pre-programmed	11 pre-programmed
	Temperature compensation	0...100 °C	0...100 °C
	ISO-pH	6...8 pH	6...8 pH
	Slope	80...120%	80...120%
mV	Range	±1000 mV	±1000 mV
	Resolution	1 mV	1 mV
	Accuracy	0.2% ± 1 digit	0.2% ± 1 digit
	Calibration	1 point	1 point
CONDUCTIVITY	Range (cc dependent)	0...100 mS/cm	0...1000 mS/cm
	Resolution (cc dependent)	0.1 µS/cm	0.01 µS/cm
	Accuracy	1% f.s. of range	1% f.s. of range
	Calibration	1 point	1 point
	Standards	0.01/0.1M KCl	0.01/0.1/1 M KCl
	Cell constant (cc)	1 cm ⁻¹ ± 30%	0.1/1/10 cm ⁻¹ ± 30%
	Temperature compensation	0...100 °C	0...100 °C
	Reference temperature	20° or 25 °C	20° or 25 °C
SALINITY	Temperature coefficient	natural waters (EN27888)	natural waters (EN27888)
	Range		0...70 ppt
TDS	Resolution		0.1 ppt
	Range		0...100 g/l
DISSOLVED OXYGEN	Resolution		0.1 mg/l
	Range	0...20 mg/l (0...200%)	0...20 mg/l (0...200%)
	Resolution	0.01 mg/l (0.1%)	0.01 mg/l (0.1%)
	Accuracy	1% ± 1 digit	1% ± 1 digit
	Calibration	1 point	1 point
	Temperature compensation	0...50 °C	0...50 °C
	Salinity compensation	0...40 ppt	0...40 ppt
	Air pressure compensation	800...1200 hPa	800...1200 hPa
TEMPERATURE	Range	0...100 °C	0...100 °C
	Resolution	0.1 °C	0.1 °C
	Accuracy	0.5 °C	0.5 °C
	Calibration	1 point	1 point
INPUTS	pH/mV	BNC, 10 ¹² Ω	BNC, 10 ¹² Ω
	Conductivity/Dissolved oxygen	BNC	BNC
	Temperature	2 banana, for Pt1000	2 banana, for Pt1000
STORAGE MEMORY	Data sets		300
DISPLAY	LCD	122x32 pixels	122x32 pixels
	White backlight	✓	✓
AMBIENT CONDITIONS	Temperature	0...40 °C	0...40 °C
	Humidity	0...95%, non condensing	0...95%, non condensing
POWER SUPPLY	Mains	210...250 VAC, 50/60 Hz	210...250 VAC, 50/60 Hz
	Low voltage	9...15 VDC	9...15 VDC
	Batteries	4x1.2 V, NiMH	4x1.2 V, NiMH
DIMENSIONS	WxDxH	10x20x4 cm	10x20x4 cm
WEIGHT	Meter	350 g	350 g

pH

The pH is a measurement for the acidity or alkalinity of a solution. In pure water the hydrogen ion (H⁺) and hydroxyl ion (OH⁻) concentrations are equal at 10⁻⁷ M (25 °C).

To provide a convenient and effective means of defining acidity and alkalinity, the negative logarithm of hydrogen ion activity is used. The pH is calculated from the potential between a glass and a reference electrode (Nernst equation).

TDS

Total Dissolved Salts of a solution gives an indication of the total ion concentration. Due to ionic interactions within a solution, the salt concentration cannot easily be related to conductivity. As the dissolved solids are generally unknown, a TDS measurement is always referred to a solution of pure Sodium Chloride.

CONDUCTIVITY

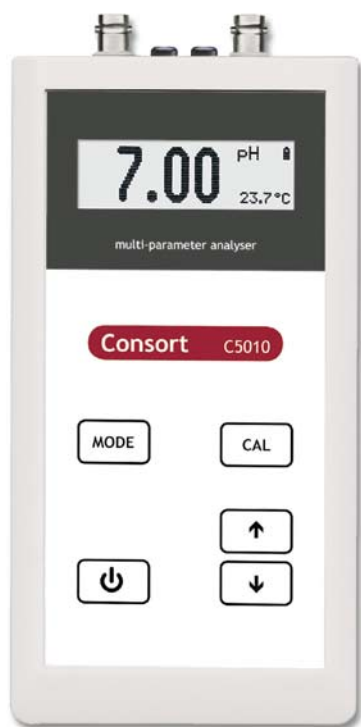
The conductivity is a measure of the solution's ability to conduct electric current.

The basic unit is Siemens/cm (S/cm). It is measured by an electrode consisting of two platinum plates to which an alternating potential is applied. The corresponding current is proportional to the conductivity of the solution in which the electrode is dipped.

SALINITY

Salinity gives an indication of the salt content of sea water. It is calculated from the conductivity referred to 15 °C.

The salinity is the ratio between the total salt content (g) and the total weight of the sea water (kg). Hence salinity can be expressed in ppt (parts per thousand).

C5010**pH - mV - Conductivity - Dissolved oxygen - Temperature**

pH	0...14 pH
mV	±1000 mV
Conductivity	0...100 mS/cm
Dissolved oxygen	0...20 mg/l
	0...200%
Temperature	0...100 °C

*One pH/mV channel
One conductivity/oxygen channel
One temperature channel*

- **pH**
Automatic calibration with one up to three buffers out of eleven pre-programmed pH buffers.
Reads pH with 0.01 pH resolution.
- **mV**
Features mV calibration for accurate ORP measurements.
Reads potentials with 1 mV resolution.
- **Conductivity**
Measures from 0.1 $\mu\text{S/cm}$ to 100 mS/cm with a single 1 cm^{-1} electrode.
Automatically selects correct range and frequency.
Selectable reference temperature: 20° or 25°C.
Automatic calibration with any of two preprogrammed standards (0.01 or 0.1 M KCl).
- **Dissolved oxygen**
Operates with a galvanic oxygen electrode requiring no polarisation time and no zero calibration.
Reads dissolved oxygen with 0.01 mg/l or 0.1% resolution.
Rapid air calibration.
- **Temperature**
Reads temperatures with 0.1°C resolution.
Manual or automatic temperature compensation.
Calibrates temperature probe for quality measurements.
- **Inputs**
One common input for pH and mV.
One common input for conductivity and dissolved oxygen.
One input for a Pt1000 automatic temperature probe.
Low voltage DC input for a mains adaptor.
- **Display**
Bright LCD screen for better readability.
A white backlight automatically illuminates when operated on the mains.
Stability indicator prompts the user when readings should be taken.
The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).
Shows a GLP report on the LCD screen.
- **Cabinet**
Robust dust and splash-proof cabinet.
- **Special features**
Three year warranty.
Mains and rechargeable battery operation with programmable automatic switch-off.
Optional 12 V car adaptor.

CODE	DESCRIPTION
C5010	Meter only (without electrodes) + 4 NiMH batteries + mains adaptor
C5010X	Meter kit without electrodes: C5010 + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
C5010P	Meter kit for pH: C5010 + pH/ATC electrode SP10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + carrying case
C5010K	Meter kit for conductivity: C5010 + conductivity/ATC electrode SK10T + 50 ml conductivity standard (0.01 M KCl) + carrying case
C5010Z	Meter kit for oxygen: C5010 + dissolved oxygen electrode SZ10T + carrying case
C5010T	Meter kit complete: C5010 + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + dissolved oxygen electrode SZ10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: C5010S, → Add a U-sign for UK plug versions, e.g.: C5010U	

C5020*pH - mV - Conductivity - Salinity - TDS - Dissolved oxygen - Temperature*

pH	0...14 pH
mV	±1000 mV
Conductivity	0...1000 mS/cm
Salinity	0...70 ppt
TDS	0...100 g/l
Dissolved oxygen	0...20 mg/l 0...200%
Temperature	0...100 °C

*One pH/mV channel
One conductivity/oxygen channel
One temperature channel*



- pH**
 Automatic calibration with one up to three buffers out of eleven pre-programmed pH buffers.
 Reads pH with 0.01 pH resolution.
- mV**
 Features mV calibration for accurate ORP measurements.
 Reads potentials with 1 mV resolution.
- Conductivity**
 Use a 1 cm⁻¹ electrode (standard) to measure from 0.1 µS/cm to 100 mS/cm.
 Use a 0.1 cm⁻¹ electrode to measure from 0.01 µS/cm to 10 mS/cm.
 Use a 10 cm⁻¹ electrode to measure from 1 µS/cm to 1000 mS/cm.
 Automatically selects correct range and frequency.
 Selectable reference temperature: 20° or 25°C.
 Automatic calibration with any of three preprogrammed standards (0.01, 0.1 or 1 M KCl).
- Dissolved oxygen**
 Operates with a galvanic oxygen electrode requiring no polarisation time and no zero calibration.
 Reads dissolved oxygen with 0.01 mg/l or 0.1% resolution.
 Rapid air calibration.
- Temperature**
 Reads temperatures with 0.1 °C resolution.
 Manual or automatic temperature compensation.
 Calibrates temperature probe for quality measurements.
- Inputs**
 One common input for pH and mV.
 One common input for conductivity and dissolved oxygen.
 One input for a Pt1000 automatic temperature probe.
 Low voltage DC input for a mains adaptor.
- Display**
 Bright LCD screen for better readability.
 A white backlight automatically illuminates when operated on the mains.
 Stability indicator prompts the user when readings should be taken.
 The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).
 Shows a GLP report on the LCD screen.
- Data-logging**
 Storage memory for 300 values including temperature.
- Cabinet**
 Robust dust and splash-proof cabinet.
- Special features**
 Three year warranty.
 Mains and rechargeable battery operation with programmable automatic switch-off.
 Optional 12 V car adaptor.

CODE	DESCRIPTION
C5020	Meter only (without electrodes) + 4 NiMH batteries + mains adaptor
C5020X	Meter kit without electrodes: C5020 + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
C5020P	Meter kit for pH: C5020 + pH/ATC electrode SP10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + carrying case
C5020K	Meter kit for conductivity: C5020 + conductivity/ATC electrode SK10T + 50 ml conductivity standard (0.01 M KCl) + carrying case
C5020Z	Meter kit for oxygen: C5020 + dissolved oxygen electrode SZ10T + carrying case
C5020T	Meter kit complete: C5020 + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + dissolved oxygen electrode SZ10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
A4049	Car adaptor, 12 V (optional)
→ Add a \$-sign for 120 VAC versions, e.g.: C5020\$, → Add a U-sign for UK plug versions, e.g.: C5020U	

C931

pH - mV - Conductivity - Resistivity - Salinity - TDS - Temperature

pH	-2...+16 pH
mV	±2000 mV
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0...70 ppt
TDS	0...100 g/l
Temperature	-30...+130 °C

*One channel for all ranges
One temperature channel*



- pH**
 Multi-point (1...5) calibration for more linearity.
 Selectable resolution from 0.001 pH to 0.1 pH.
 Automatic calibration with any of nine pre-programmed and five user specified pH buffers.
 Accepts pH electrodes with any zero point (E₀) between ±999 mV.
- mV**
 Features mV calibration for accurate ORP measurements.
 Selectable resolution from 0.1 mV to 1 mV.
- Conductivity**
 Multi-point (1...3) calibration for more linearity.
 An electrode with a typical cell constant of 1 cm⁻¹ (standard) permits to measure from 0.01 μS/cm to 200 mS/cm in five ranges.
 An electrode with a typical cell constant of 0.1 cm⁻¹ permits to measure from 0.001 μS/cm to 20 mS/cm in five ranges.
 An electrode with a typical cell constant of 10 cm⁻¹ permits to measure from 0.1 μS/cm to 2000 mS/cm in five ranges.
 Automatically selects correct range and frequency.
 Selectable reference temperature: 20° or 25 °C.
 Automatic calibration with any of three preprogrammed and three user specified standard solutions.
 Allows to lock the initial conductivity range to avoid non-linear titration curves.
 Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).
- Temperature**
 Reads temperatures with 0.1 °C resolution.
 Manual or automatic temperature compensation.
 Calibrates temperature probe for quality measurements.

ZERO POINT (E₀)

Standard pH meters assume a pH electrode to supply a zero potential at 7 pH. Electrodes for special applications (e.g. stomach pH measurements) may have a different zero point. An adjustable zero point correction feature will allow users to measure with these electrodes.

CODE	DESCRIPTION
C931	Meter only (without electrodes) + 4 NiMH batteries + mains adaptor
C931X	Meter kit without electrodes: C931 + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
C931P	Meter kit for pH: C931 + pH/ATC electrode SP10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + carrying case
C931K	Meter kit for conductivity: C931 + conductivity/ATC electrode SK10T + 50 ml conductivity standard (0.01 M KCl) + carrying case
C931T	Meter kit complete: C931 + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
SH300	Flexible electrode holder (optional)
A2001	Data acquisition software DIS-1 + RS232 cable (optional)
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: C931S	
→ Add a U-sign for UK plug versions, e.g.: C931U	

Inputs

One common input for all ranges + corresponding reference input.

Separate input for a Pt1000 automatic temperature probe.

Low voltage DC input for e.g. a mains adaptor.

Outputs

Programmable recorder output.

RS232 interface for connection to a computer or printer.

GLP

All procedures for a "Good Laboratory Practice" are on board.

Display

Bright LCD screen for better readability.

A white backlight automatically illuminates when operated on the mains.

Stability indicator prompts the user when readings should be taken.

Hold function allows to freeze the display for convenient reading or recording.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

Data-logging

Up to 3600 data sets can be stored manually or at a programmable interval.

Allows to mix data from all ranges in the same table.

A powerful data acquisition software for PC is available optionally.

Cabinet

Robust dust and splash-proof cabinet.

Special features

Three year warranty.

Calibration reminder 0...999 h.

Programmable recorder output.

Programmable identification number for use with a printer or computer.

Password protection prevents any unauthorised access to the instrument.

Two-way communication with a printer or computer using RS232.

Mains and rechargeable battery operation with programmable automatic switch-off.

Shows percentage of remaining battery capacity.

Optional 12 V car adaptor.



Specifications		C931
pH	Range	-2...+16 pH
	Resolution	0.001 pH
	Accuracy	0.1% ± 1 digit
	Calibration	1...5 points
	Buffers	9 pre-programmed 5 user specified
	Temperature compensation	-30...+130 °C
	ISO-pH	6...8 pH
	Slope	80...120%
	Zero point (Eo)	±999 mV
mV	Range	±2000 mV
	Resolution	0.1 mV
	Accuracy	0.1% ± 1 digit
	Calibration	1 point
CONDUCTIVITY	Range (cc dependent)	0...2000 mS/cm
	Resolution (cc dependent)	0.001 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1...3 points
	Standards	0.01/0.1/1M KCl 3 user specified
	Cell constant (cc)	0.05...15.0 cm ⁻¹
	Temperature compensation	-30...+130 °C
	Reference temperature	20° or 25 °C
	Temperature coefficient	natural waters (EN27888)
	Range lock	✓
	Capacitive compensation	✓
RESISTIVITY	Range	0...200 MΩ.cm
	Resolution	1 Ω.cm
SALINITY	Range	0...70 ppt
	Resolution	0.1 ppt
TDS	Range	0...100 g/l
	Resolution	0.01 mg/l
TEMPERATURE	Range	-30...+130 °C
	Resolution	0.1 °C
	Accuracy	0.3 °C
	Calibration	1 point
INPUTS	Measurement	BNC, 10 ¹² Ω
	Temperature	2 banana, for Pt1000
CALIBRATION	Reminder	0...999 h
	GLP	✓
DISPLAY	LCD	128x64 pixels
	White backlight	✓
	Hold function	✓
	Selectable resolution	✓
	Real time clock	✓
ANALOG OUTPUT	Recorder	0...2 V, programmable
	RS232, baud rate	300...19200 b/s
DATA-LOGGING	Data sets	3600
	Modes	all (6)
	Manual or timed	✓
	Interval	1...9999 s
SECURITY	Identification number	✓
	Password protection	✓
AMBIENT CONDITIONS	Temperature	0...40 °C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	210...250 VAC, 50/60 Hz
	Low voltage	9...15 VDC
	Batteries	4x1.2 V, AA, NiMH
DIMENSIONS	WxDxH	12x25x5 cm
WEIGHT	Meter	600 g

Connect to a printer using RS232



C932 *pH - mV - Conductivity - Resistivity - Salinity - TDS - Dissolved oxygen - Air pressure - Temperature*

pH	-2...+16 pH
mV	±2000 mV
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0...70 ppt
TDS	0...100 g/l
Dissolved oxygen	0...60 mg/l 0...600%
Air pressure	600...1300 hPa
Temperature	-30...+130 °C

*One channel for all ranges
One temperature channel*



- pH**
 Multi-point (1...5) calibration for more linearity.
 Selectable resolution from 0.001 pH to 0.1 pH.
 Automatic calibration with any of nine pre-programmed and five user specified pH buffers.
 Accepts pH electrodes with any zero point (E₀) between ±999 mV.
- mV**
 Features mV calibration for accurate ORP measurements.
 Selectable resolution from 0.1 mV to 1 mV.
- Conductivity**
 Multi-point (1...3) calibration for more linearity.
 An electrode with a typical cell constant of 1 cm⁻¹ (standard) permits to measure from 0.01 µS/cm to 200 mS/cm in five ranges.
 An electrode with a typical cell constant of 0.1 cm⁻¹ permits to measure from 0.001 µS/cm to 20 mS/cm in five ranges.
 An electrode with a typical cell constant of 10 cm⁻¹ permits to measure from 0.1 µS/cm to 2000 mS/cm in five ranges.
 Automatically selects correct range and frequency.
 Selectable reference temperature: 20° or 25 °C.
 Automatic calibration with any of three preprogrammed and three user specified standard solutions.
 Allows to lock the initial conductivity range to avoid non-linear titration curves.
 Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).
- Dissolved oxygen**
 Operates with a galvanic dissolved oxygen electrode requiring no polarisation time and no zero calibration.
 Selectable resolution from 0.01 mg/l (0.1%) to 0.1 mg/l (1%).
 Manual salinity compensation 0-40 ppt.
 Automatic air pressure compensation 600-1300 hPa.
- Temperature**
 Reads temperatures with 0.1 °C resolution.
 Manual or automatic temperature compensation.
 Calibrates temperature probe for quality measurements.

CODE	DESCRIPTION
C932	Meter only (without electrodes) + 4 NiMH batteries + mains adaptor
C932X	Meter kit without electrodes: C932 + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
C932P	Meter kit for pH: C932 + pH/ATC electrode SP10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + carrying case
C932K	Meter kit for conductivity: C932 + conductivity/ATC electrode SK10T + 50 ml conductivity standard (0.01 M KCl) + carrying case
C932Z	O ₂ /°C meter kit option: C932 + dissolved oxygen electrode SZ10T + carrying case
C932T	Meter kit complete: C932 + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + dissolved oxygen electrode SZ10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
SH300	Flexible electrode holder (optional)
A2001	Data acquisition software DIS-1 + RS232 cable (optional)
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: C932S	
→ Add a U-sign for UK plug versions, e.g.: C932U	

Inputs

One common input for all ranges + corresponding reference input.

Separate input for a Pt1000 automatic temperature probe.

Low voltage DC input for e.g. a mains adaptor.

Outputs

Programmable recorder output.

RS232 interface for connection to a computer or printer.

GLP

All procedures for a "Good Laboratory Practice" are on board.

Display

Bright LCD screen for better readability.

A white backlight automatically illuminates when operated on the mains.

Stability indicator prompts the user when readings should be taken.

Hold function allows to freeze the display for convenient reading or recording.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

Data-logging

Up to 3600 data sets can be stored manually or at a programmable interval.

Allows to mix data from all ranges in the same table.

A powerful data acquisition software for PC is available optionally.

Cabinet

Robust dust and splash-proof cabinet.

Special features

Three year warranty.

Calibration reminder 0...999 h.

Programmable recorder output.

Programmable identification number for use with a printer or computer.

Password protection prevents any unauthorised access to the instrument.

Two-way communication with a printer or computer using RS232.

Mains and rechargeable battery operation with programmable automatic switch-off.

Shows percentage of remaining battery capacity.

Optional 12 V car adaptor.



Specifications	C932
pH	Range
	-2...+16 pH
	Resolution
	0.001 pH
	Accuracy
	0.1% ± 1 digit
	Calibration
	1...5 points
	Buffers
	9 pre-programmed 5 user specified
mV	Temperature compensation
	-30...+130 °C
	ISO-pH
	6...8 pH
	Slope
	80...120%
	Zero point (Eo)
	±999 mV
	Range
	±2000 mV
CONDUCTIVITY	Resolution
	0.1 mV
	Accuracy
	0.1% ± 1 digit
	Calibration
	1 point
	Range (cc dependent)
	0...2000 mS/cm
	Resolution (cc dependent)
	0.001 µS/cm
RESISTIVITY	Accuracy
	0.5% f.s. of range
	Calibration
	1...3 points
	Standards
	0.01/0.1/1M KCl 3 user specified
	Cell constant (cc)
	0.05...15.0 cm ⁻¹
	Temperature compensation
	-30...+130 °C
SALINITY	Reference temperature
	20° or 25 °C
	Temperature coefficient
	natural waters (EN27888)
	Range lock
	✓
	Capacitive compensation
	✓
	Range
	0...200 MΩ.cm
TDS	Resolution
	1 Ω.cm
	Range
	0...70 ppt
	Resolution
	0.1 ppt
	Range
	0...100 g/l
	Resolution
	0.01 mg/l
DISSOLVED OXYGEN	Range
	0...60 mg/l (0...600%)
	Resolution
	0.01 mg/l (0.1%)
	Accuracy
	1% ± 1 digit
	Calibration
	1 point
	Temperature compensation
	0...50 °C
TEMPERATURE	Salinity compensation
	0...40 ppt
	Air pressure compensation
	600...1300 hPa
	Range
	-30...+130 °C
	Resolution
	0.1 °C
	Accuracy
	0.3 °C
AIR PRESSURE	Calibration
	1 point
	Range
	600...1300 hPa
	Calibration
	1 point
	Measurement
	BNC, 10 ¹² Ω
	Temperature
	2 banana, for Pt1000
INPUTS	Reminder
	0...999 h
	GLP
	✓
	LCD
	128x64 pixels
	White backlight
	✓
	Hold function
	✓
CALIBRATION	Selectable resolution
	✓
	Real time clock
	✓
	Recorder
	0...2 V, programmable
	RS232, baud rate
	300...19200 b/s
	Data sets
	3600
DATA-LOGGING	Modes
	all (8)
	Manual or timed
	✓
	Interval
	1...9999 s
	Identification number
	✓
	Password protection
	✓
SECURITY	Temperature
	0...40 °C
	Humidity
	0...95%, non condensing
	Mains
	210...250 VAC, 50/60 Hz
	Low voltage
	9...15 VDC
	Batteries
	4x1.2 V, AA, NiMH
AMBIENT CONDITIONS	WxDxH
	12x25x5 cm
	Meter
	600 g
	DIMENSIONS
	WEIGHT

C933 *pH - mV - Ion - Conductivity - Resistivity - Salinity - TDS - Dissolved oxygen - Air pressure - Temperature*

pH	-2...+16 pH
mV	±2000 mV
Ion	0.01 ng/l...100 g/l
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0...70 ppt
TDS	0...100 g/l
Dissolved oxygen	0...60 mg/l 0...600%
Air pressure	600...1300 hPa
Temperature	-30...+130 °C

*One channel for all ranges
One temperature channel*



- pH**
 Multi-point (1...5) calibration for more linearity.
 Selectable resolution from 0.001 pH to 0.1 pH.
 Automatic calibration with any of nine pre-programmed and five user specified pH buffers.
 Accepts pH electrodes with any zero point (E₀) between ±999 mV.
- mV**
 Features mV calibration for accurate ORP measurements.
 Selectable resolution from 0.1 mV to 1 mV.
- Ion**
 Direct concentration measurement.
 Ion mode is easily calibrated with any two standards and a blank correction.
- Conductivity**
 Multi-point (1...3) calibration for more linearity.
 An electrode with a typical cell constant of 1 cm⁻¹ (standard) permits to measure from 0.01 µS/cm to 200 mS/cm in five ranges.
 An electrode with a typical cell constant of 0.1 cm⁻¹ permits to measure from 0.001 µS/cm to 20 mS/cm in five ranges.
 An electrode with a typical cell constant of 10 cm⁻¹ permits to measure from 0.1 µS/cm to 2000 mS/cm in five ranges.
 Automatically selects correct range and frequency.
 Selectable reference temperature: 20 ° or 25 °C.
 Automatic calibration with any of three preprogrammed and three user specified standard solutions.
 Allows to lock the initial conductivity range to avoid non-linear titration curves.
 Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).
- Dissolved oxygen**
 Operates with a galvanic dissolved oxygen electrode requiring no polarisation time and no zero calibration.
 Selectable resolution from 0.01 mg/l (0.1%) to 0.1 mg/l (1%).
 Manual salinity compensation 0-40 ppt.
 Automatic air pressure compensation 600-1300 hPa.
- Temperature**
 Reads temperatures with 0.1 °C resolution.
 Manual or automatic temperature compensation.
 Calibrates temperature probe for quality measurements.

CODE	DESCRIPTION
C933	Meter only (without electrodes) + 4 NiMH batteries + mains adaptor
C933X	Meter kit without electrodes: C933 + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
C933P	Meter kit for pH: C933 + pH/ATC electrode SP10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + carrying case
C933K	Meter kit for conductivity: C933 + conductivity/ATC electrode SK10T + 50 ml conductivity standard (0.01 M KCl) + carrying case
C933Z	Meter kit for oxygen: C933 + dissolved oxygen electrode SZ10T + carrying case
C933T	Meter kit complete: C933 + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + dissolved oxygen electrode SZ10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
SH300	Flexible electrode holder (optional)
A2001	Data acquisition software DIS-1 + RS232 cable (optional)
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: C933S	
→ Add a U-sign for UK plug versions, e.g.: C933U	

Inputs

One common input for all ranges + corresponding reference input.

Separate input for a Pt1000 automatic temperature probe.

Low voltage DC input for e.g. a mains adaptor.

Outputs

Programmable recorder output.

RS232 interface for connection to a computer or printer.

GLP

All procedures for a "Good Laboratory Practice" are on board.

Display

Bright LCD screen for better readability.

A white backlight automatically illuminates when operated on the mains.

Stability indicator prompts the user when readings should be taken.

Hold function allows to freeze the display for convenient reading or recording.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

Data-logging

Up to 3600 data sets can be stored manually or at a programmable interval.

Allows to mix data from all ranges in the same table.

A powerful data acquisition software for PC is available optionally.

Cabinet

Robust dust and splash-proof cabinet.

Special features

Three year warranty.

Calibration reminder 0...999 h.

Programmable recorder output.

Programmable identification number for use with a printer or computer.

Password protection prevents any unauthorised access to the instrument.

Two-way communication with a printer or computer using RS232.

Mains and rechargeable battery operation with programmable automatic switch-off.

Shows percentage of remaining battery capacity.

Optional 12 V car adaptor.



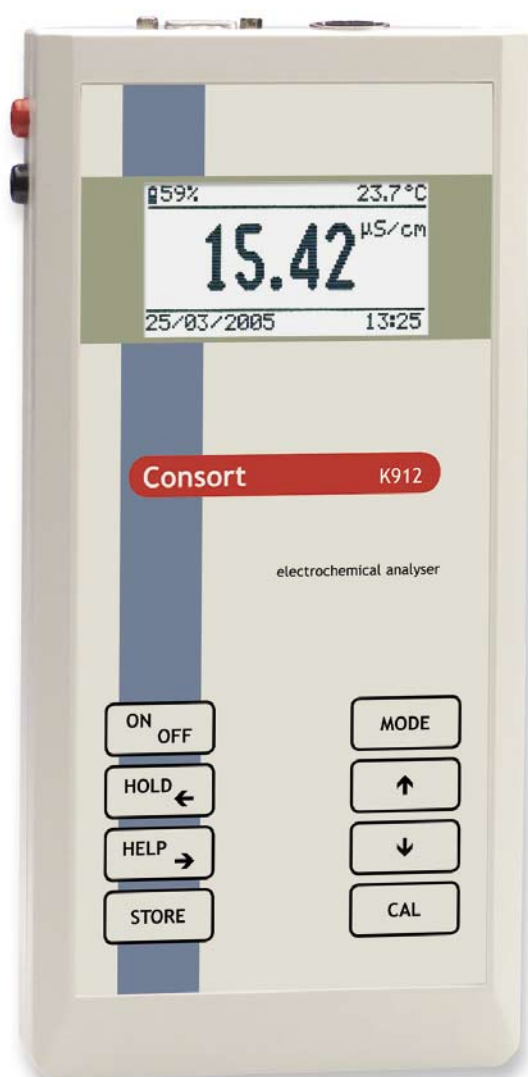
Specifications	C933
pH	Range
	-2...+16 pH
	Resolution
	0.001 pH
	Accuracy
	0.1% ± 1 digit
	Calibration
	1...5 points
mV	Buffers
	9 pre-programmed
	5 user specified
	Temperature compensation
	-30...+130 °C
	ISO-pH
	6...8 pH
	Slope
ION	80...120%
	Zero point (Eo)
	±999 mV
	Range
	±2000 mV
	Resolution
	0.1 mV
	Accuracy
CONDUCTIVITY	0.1% ± 1 digit
	Calibration
	1 point
	Range
	0.01 ng/l...100 g/l
	Resolution
	3 digits
	Accuracy
RESISTIVITY	0.5% ± 1 digit
	Calibration
	2 points + blank
	Range (cc dependent)
	0...2000 mS/cm
	Resolution (cc dependent)
	0.001 µS/cm
	Accuracy
SALINITY	0.5% f.s. of range
	Calibration
	1...3 points
	Standards
	0.01/0.1/1M KCl
	3 user specified
	Cell constant (cc)
	0.05...15.0 cm ⁻¹
TDS	Temperature compensation
	-30...+130 °C
	Reference temperature
	20° or 25 °C
	Temperature coefficient
	natural waters (EN27888)
	Range lock
	✓
DISSOLVED OXYGEN	Capacitive compensation
	✓
	Range
	0...200 MΩ.cm
	Resolution
	1 Ω.cm
	Range
	0...70 ppt
TEMPERATURE	Resolution
	0.1 ppt
	Range
	0...100 g/l
	Resolution
	0.01 mg/l
	Range
	0...60 mg/L (0...600%)
AIR PRESSURE	Resolution
	0.01 mg/l (0.1%)
	Accuracy
	1% ± 1 digit
	Calibration
	1 point
	Temperature compensation
	0...50 °C
INPUTS	Salinity compensation
	0...40 ppt
	Air pressure compensation
	600...1300 hPa
	Range
	-30...+130 °C
	Resolution
	0.1 °C
CALIBRATION	Accuracy
	0.3 °C
	Calibration
	1 point
	Range
	600...1300 hPa
	Calibration
	1 point
DISPLAY	Measurement
	BNC, 10 ¹² Ω
	Temperature
	2 banana, for Pt1000
	Reminder
	0...999 h
	GLP
	✓
ANALOG OUTPUT	LCD
	128x64 pixels
	White backlight
	✓
	Hold function
	✓
	Selectable resolution
	✓
COMMUNICATION	Real time clock
	✓
	Recorder
	0...2 V, programmable
	RS232, baud rate
	300...19200 b/s
	Data sets
	3600
DATA-LOGGING	Modes
	all (9)
	Manual or timed
	✓
	Interval
	1...9999 s
	Identification number
	✓
SECURITY	Password protection
	✓
	Temperature
	0...40 °C
	Humidity
	0...95%, non condensing
	Mains
	210...250 VAC, 50/60 Hz
POWER SUPPLY	Low voltage
	9...15 VDC
	Batteries
	4x1.2 V, AA, NiMH
	Dimensions
	WxDxH
	12x25x5 cm
	Weight
	600 g

K912

Conductivity - Resistivity - Salinity - TDS - Temperature

Conductivity	0...1000 mS/cm
Resistivity	0...20 MΩ.cm
Salinity	0...70 ppt
TDS	0...100 g/l
Temperature	-30...+130 °C

One conductivity/temperature channel



- Conductivity**
 Multi-point (1...3) calibration for more linearity.
 Measures the full range from 0.01 μS/cm to 1000 mS/cm with only one electrode.
 Works with a 4-pole electrode eliminating polarisation effects and electrode fouling. **Do not use any other electrode than SK40T or SK41T!**
 Automatically selects correct range and frequency.
 Selectable reference temperature: 20° or 25°C.
 Automatic calibration with any of three preprogrammed and three user specified standard solutions.
 Allows to lock the initial conductivity range to avoid non-linear titration curves.
 Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).
 Stores up to 5 individual temperature compensation curves in memory.
 Specific temperature coefficients can be entered between 0...3.5%/K.
 Temperature compensation can be switched off for absolute readings without compensating to a reference temperature.
- Temperature**
 Reads temperatures with 0.1°C resolution.
 Manual or automatic temperature compensation.
 Calibrates temperature probe for quality measurements.



Connect to a printer using RS232



CODE	DESCRIPTION
K912	Meter only (without electrodes) + 4 NiMH batteries + mains adaptor
K912T	Meter kit complete (epoxy electrode): K912 + conductivity/ATC electrode SK40T + 3x50 ml conductivity standards (0.01, 0.1 and 1 M KCl) + carrying case
K912L	Meter kit complete (glass electrode): K912 + conductivity/ATC electrode SK41T + 3x50 ml conductivity standards (0.01, 0.1 and 1 M KCl) + carrying case
SH300	Flexible electrode holder (optional)
A2001	Data acquisition software DIS-1 + RS232 cable (optional)
A4049	Car adaptor, 12 V (optional)
→ Add a S-sign for 120 VAC versions, e.g.: K912S	
→ Add a U-sign for UK plug versions, e.g.: K912U	

Inputs

One DIN-8 input for a 4-pole conductivity electrode with built-in Pt1000.

Low voltage DC input for e.g. a mains adaptor.

Outputs

Programmable recorder output.

RS232 interface for connection to a computer or printer.

GLP

All procedures for a "Good Laboratory Practice" are on board.

Display

Bright LCD screen for better readability.

A white backlight automatically illuminates when operated on the mains.

Stability indicator prompts the user when readings should be taken.

Hold function allows to freeze the display for convenient reading or recording.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

Data-logging

Up to 3600 data sets can be stored manually or at a programmable interval.

Allows to mix data from all ranges in the same table.

A powerful data acquisition software for PC is available optionally.

Cabinet

Robust dust and splash-proof cabinet.

Special features

Three year warranty.

Calibration reminder 0...999 h.

Programmable recorder output.

Programmable identification number for use with a printer or computer.

Password protection prevents any unauthorised access to the instrument.

Two-way communication with a computer using RS232.

Mains and rechargeable battery operation with programmable automatic switch-off.

Shows percentage of remaining battery capacity.

Optional 12 V car adaptor.

Specifications		K912
CONDUCTIVITY	Range	0...1000 mS/cm
	Resolution	0.01 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1...3 points
	Standards	0.01/0.1/1 M KCl 3 user specified
	Cell constant	0.3...1.3 cm ⁻¹ aut. or man.
	Temperature compensation	-30...+130 °C
	Reference temperature	20° or 25 °C
	Temperature coefficient	natural waters (EN27888), 5 individual curves, or linear: 0...3.5%/K
	Range lock	✓
	Capacitive compensation	✓
RESISTIVITY	Range	0...20 MΩ.cm
	Resolution	1 Ω.cm
SALINITY	Range	0...70 ppt
	Resolution	0.1 ppt
TDS	Range	0...100 g/l
	Resolution	0.01 mg/l
TEMPERATURE	Range	-30...+130 °C
	Resolution	0.1 °C
	Accuracy	0.3 °C
	Calibration	1 point
INPUT	Measurement	DIN-8, for 4-pole electrode with built-in Pt1000
CALIBRATION	Reminder	0...999 h
	GLP	✓
DISPLAY	LCD	128x64 pixels
	White backlight	✓
	Hold function	✓
	Real time clock	✓
ANALOG OUTPUT	Recorder	0...2 V, programmable
COMMUNICATION	RS232, baud rate	300...19200 b/s
DATA-LOGGING	Data sets	3600
	Modes	all (4)
	Manual or timed	✓
	Interval	1...9999 s
SECURITY	Identification number	✓
	Password protection	✓
AMBIENT CONDITIONS	Temperature	0...40 °C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	210...250 VAC, 50/60 Hz
	Low voltage	9...15 VDC
	Batteries	4x1.2 V, AA, NiMH
DIMENSIONS	WxDxH	12x25x5 cm
WEIGHT	Meter	600 g

4-POLE DESIGN

The 4-pole design reduces considerably the problems of polarisation and fouling. By utilising four electrodes, no current flows through the measuring circuit. The AC-current is only applied to the outer pair of rings allowing the inner pair of electrodes to measure the voltage without any polarisation effects.

Four-pole conductivity electrodes

supplied with 1 m of cable and DIN-8 plug

SK40T

Attention! Only to be used with model K912

- Built-in ATC (Pt1000)
- Epoxy body, 0.5 cm⁻¹, 0...80 °C
- Four graphite electrodes
- 110xØ15 mm



SK41T

Attention! Only to be used with model K912

- Built-in ATC (Pt1000)
- Glass body, 1 cm⁻¹, 0...100 °C
- Four platinum rings
- 110xØ12 mm



D230

pH - mV - Ion - Conductivity - TDS - Dissolved oxygen - Temperature



pH	0...14 pH
mV	±2000 mV
Ion	0...100 g/l
Conductivity	0...2000 mS/cm
TDS	0...100 g/l
Dissolved oxygen	0...60 mg/l
Temperature	-30...+130 °C

4...28 pH/mV/Ion channels
 4...28 conductivity channels
 4...28 oxygen channels
 4...28 temperature channels

- Modular system**

Built in a standard 19" rack and cabinet the central unit accepts up to 7 modules. Different modules can be mixed in one unit.

There are two modules available: with four pH/mV/Ion/O₂ + four temperature channels or with four conductivity/TDS + four temperature channels.

All parameters including set-up, calibration and display are controlled through any computer via a single RS232 connection.

Up to 16 units can be combined with each other to increase the number of channels to a maximum of 448.

- pH**

One- or two-point calibration.

Selectable resolution from 0.001 pH to 0.1 pH.

Automatic calibration with any of nine pre-programmed and two user specified pH buffers.

- mV**

Features mV calibration for accurate ORP measurements.

Selectable resolution from 0.1 mV to 1 mV.

- Ion**

Direct concentration measurement.

Shows concentration in any unit.

Ion mode is easily calibrated with any two standards and a blank correction.

- Dissolved oxygen**

Selectable resolution from 0.01 mg/l (0.1%) to 0.1 mg/l (1%).

Rapid air calibration, no zero calibration required.

Manual salinity compensation 0-40 ppt.

Manual air pressure compensation 800-1200 hPa.

- Temperature**

Manual or automatic temperature compensation.

Calibrates temperature probe for quality measurements.

- Conductivity**

One-point calibration.

Use a 1 cm⁻¹ electrode (standard) to measure from 0.1 µS/cm to 200 mS/cm.

Use a 0.01 cm⁻¹ electrode to measure from 0.001 µS/cm to 2 mS/cm.

Use a 0.1 cm⁻¹ electrode to measure from 0.01 µS/cm to 20 mS/cm.

Use a 10 cm⁻¹ electrode to measure from 1 µS/cm to 2000 mS/cm.

Selectable reference temperature: 20° or 25 °C.

Automatic calibration with any of three preprogrammed and three user specified standard solutions.

Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).

- Special features**

Three year warranty.

No electrical interference between electrodes in the same solution.

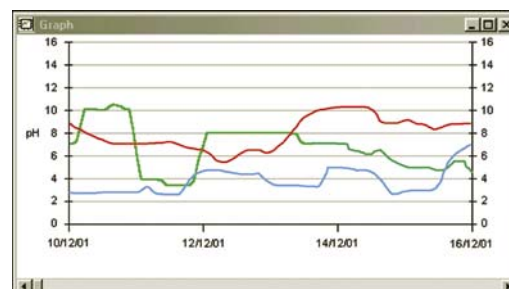
- Data acquisition**

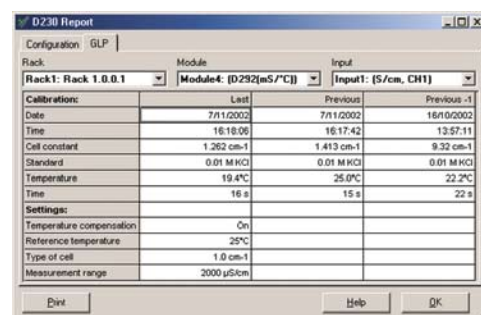
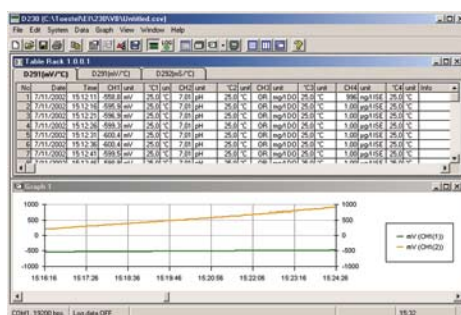
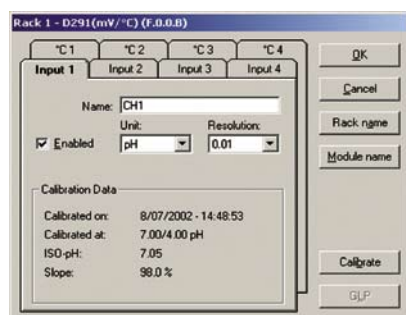
The software package supplied with the D230 is specially designed to control, collect and store data. Runs under Windows™ 2000 or higher.

All channels are processed at the same time, each in its own window.

The software automatically detects the maximum number and type of available channels.

Data is collected on-line at a programmable interval determined by the program (4 s ... 24 h).





Table

Data is always stored in a table.

Each module has its own programmable table containing an unlimited number of lines (maximum depends on available computer memory).

Comments can easily be added to each line in a special information column.

Starting

Data-logging can start/stop automatically or at a programmable date/time.

Data-logging can be stopped or continued at any moment.

Files

All data is saved in a user defined file. Just open the file to view, process or print the stored data.

All measurements are saved in CSV format which is easily transferred into spreadsheets.

Graphs

Graphs are generated using automatic or user defined settings.

The number of visible values can be changed at any time.

Programmable alarm limits for each graph allow to print a report indicating when limits have been exceeded.

Shows statistics about minima, maxima, averages etc...

Settings

Languages: English, Dutch or French.

The style of each window can be set up separately.

Choose fonts, colours etc...

Documented printouts will show:

- file name.
- date and time.
- name of the operator.
- name of the company.
- name of the division.
- optional notes by the operator.

All settings are stored in a configuration file and automatically recalled when opening the program.

Functions

All functions are accessible through the menu.

Only valid options appear in the menu to eliminate set-up errors.

Special buttons, icons and short-keys allow the user to easily access the most useful functions.

The contents of each window can be transferred to other programs by using a copy function.

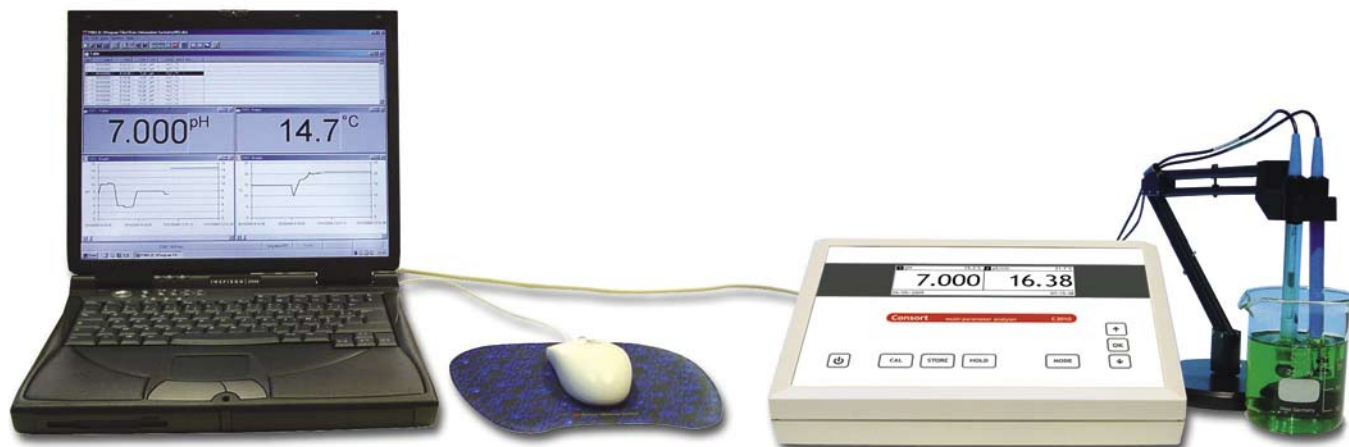
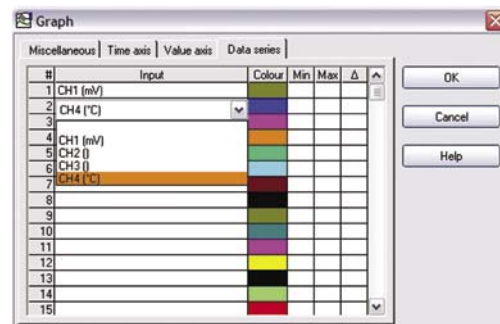
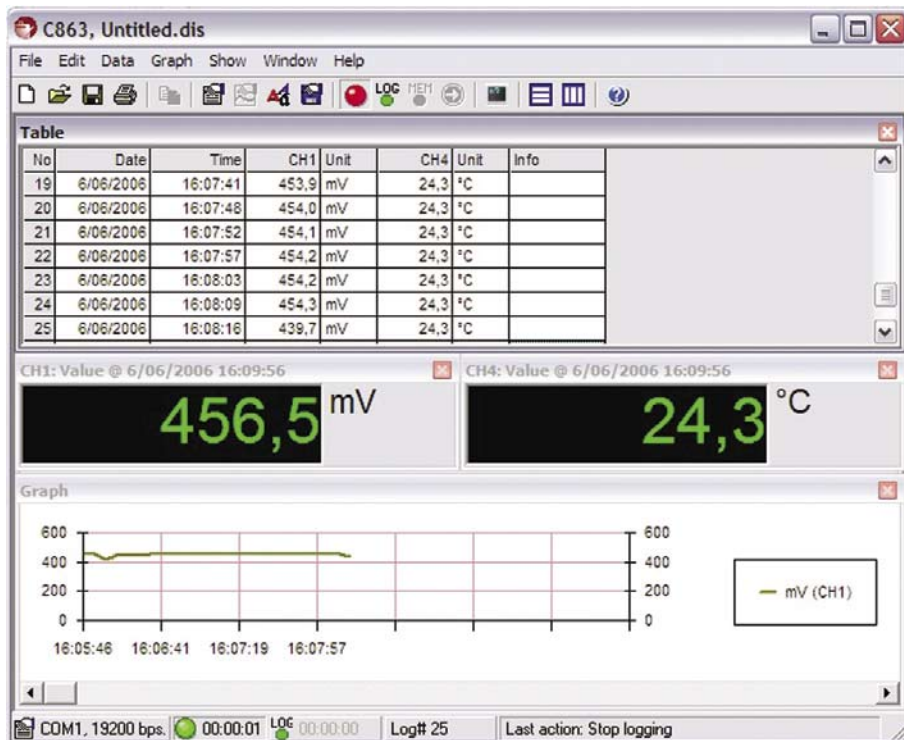
Tile or cascade the windows and arrange the icons fully automatically or rearrange them manually.

CODE	DESCRIPTION
D230	Data-logger: central unit for 7 modules + software + RS232 cable + mains lead
D291	Module for pH/mV/Ion/O ₂ /°C with 4+4 channels
D292	Module for conductivity/TDS/°C with 4+4 channels
D298	Data cable to connect 2 data-loggers with each other (optional)
D299	Blanc frontpanel to cover unused module space (optional)
→	Add a S-sign for 120 VAC versions, e.g.: D230S
→	Add a U-sign for UK plug versions, e.g.: D230U

Specifications	D230
pH	Range
	Resolution
	Accuracy
	Calibration
	Buffers
	Temperature compensation
	ISO-pH
mV	Slope
	Range
	Resolution
	Accuracy
ION	Calibration
	Range
	Resolution
	Accuracy
DISSOLVED OXYGEN	Calibration
	Range
	Resolution
	Accuracy
	Calibration
	Temperature compensation
	Salinity compensation
CONDUCTIVITY	Air pressure compensation
	Range (cc dependent)
	Resolution (cc dependent)
	Accuracy
	Calibration
	Standards
	Cell constant (cc)
	Temperature compensation
	Reference temperature
	Temperature coefficient
TDS	Capacitive compensation
	Range
TEMPERATURE	Resolution
	Range
	Resolution
	Accuracy
CHANNELS	Calibration
	pH/mV/Ion/Dissolved oxygen
	Conductivity
INPUTS	Temperature
	pH/mV/Ion/Dissolved oxygen
	Conductivity
CALIBRATION	GLP
DATA-LOGGING	GLP
	✓
SOFTWARE	Data sets
	Interval
SECURITY	Languages
	EN, NL, FR
AMBIENT CONDITIONS	Password protection
	✓
POWER SUPPLY	Temperature
	0...40°C
DIMENSIONS	Humidity
	0...95%, non condensing
WEIGHT	Mains
	210...250 VAC, 50/60 Hz
	WxDxH
	48x24x13 cm
	Meter
	10 kg

DIS-1

Data acquisition software for laboratory meters



• Data acquisition

This software package is specially designed to collect, store and manage data from the following models:

C3010, C3020, C3030, C3040, C3050, C3060.
C3011, C3021, C3031, C3041, C3051, C3061.
C931, C932, C933, K912.

It can also be used with the following previous models or versions:

C831, C832, C833, C834, C835, C868, C731, C732, C733.
P901, P902, P903, K911, Z921.
R305, R315, R325, R335, R735.
T851, T852, T871, T872.

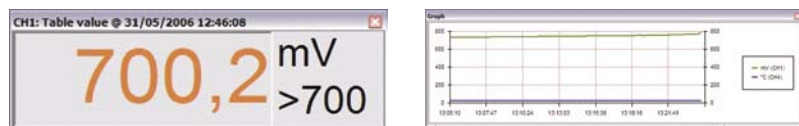
Runs under Windows™ 2000 or higher.

All measurements of multi-channel instruments are processed at the same time, each in its own window.

By selecting the model, which is connected to the computer, the software will automatically determine the maximum number of available channels.

Data is collected on-line at a programmable interval using the pre-set parameters of the connected instrument or those determined by the program (1 s ... 24 h).

CODE	DESCRIPTION
A2001	Data acquisition software DIS-1 + RS232 cable (verify the interface on your meter!)
A2005	Data acquisition software DIS-1 + USB cable (verify the interface on your meter!)



Starting

By using a program-key, the data-logging will start automatically after opening the program.

Data-logging can be stopped or continued at any moment.

Data, which is stored in the internal memory of the connected instrument, can also be read and processed.

Table

Data is always stored in a table.

A table contains an unlimited number of lines (maximum depends on available computer memory).

Comments can be added to each line in a special information column.

Files

All data is saved in a user defined file. Just open the file to view, process or print the stored data.

The incoming data from the USB, Ethernet or RS232 port can be stored immediately in a file.

Graphs

Graphs are generated using automatic or user defined settings.

The number of visible values can be changed at any time.

Programmable alarm limits for each graph allow to print a report indicating when limits have been exceeded.

Shows statistics about minima, maxima, averages etc...

Communication port

Different RS232 or USB ports can be used to connect several instruments. In this case, the software should be installed as many times as the number of connected instruments, but in different directories, to allow opening them privately for each instrument.

Baud rate: 300..19200 b/s.

Terminal

The terminal window shows exactly how data is received through the USB, Ethernet or RS232 port.

It enables the user to check for possible errors in the data transmission.

Settings

Languages: English, Dutch or French.

The style of each window can be set up separately.

Choose fonts, colours etc...

Documented printouts will show:

- file name.
- date and time.
- name of the operator.
- name of the company.
- name of the division.
- description of the instrument.
- serial number of the instrument.
- optional notes by the operator.

All settings are stored in a configuration file and automatically recalled when opening the program.

Functions

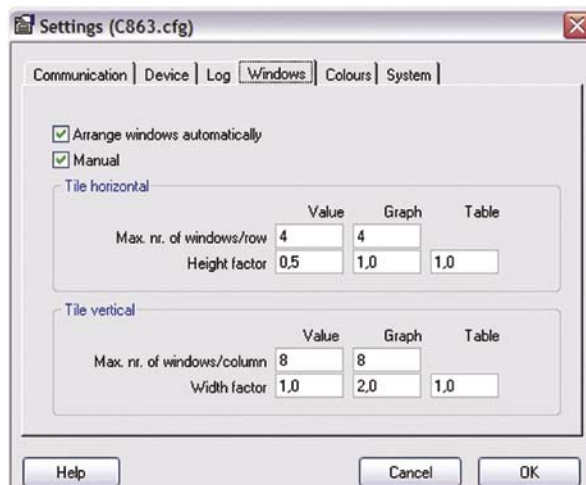
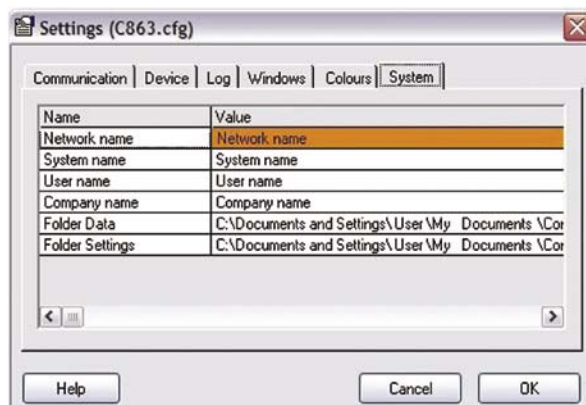
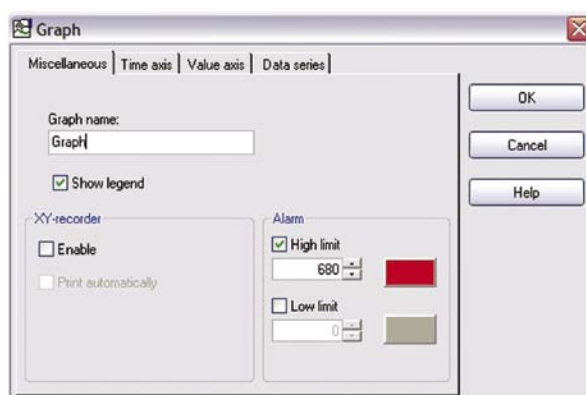
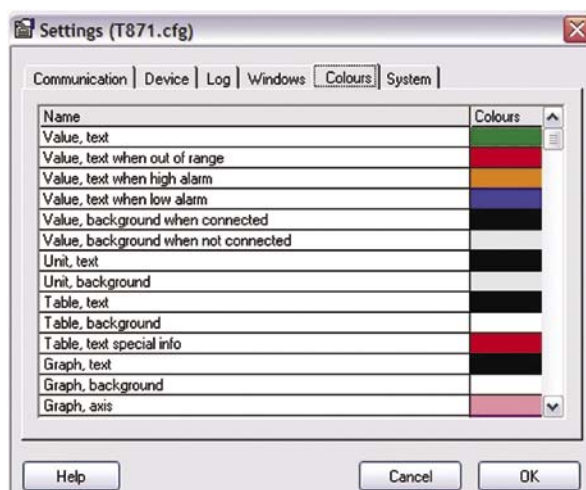
All functions are accessible through the menu.

Only valid options appear in the menu to eliminate set-up errors.

Special buttons, icons and short-keys allow the user to easily access the most useful functions.

The contents of each window can be transferred to other programs by using a copy function.

Tile the windows fully automatically or rearrange them manually. Your settings are stored in the configuration file.



Electrode types

pH electrodes



A



B



C



D



E



F



G

- **Membrane types**

Each membrane of a pH electrode has its own composition, bulb configuration and thickness. Therefore, carefully study the specifications and suggestions in this section to select the most suitable electrode for your application.

A Spheric bulb, brittle, rapid response, highest accuracy, standard applications.

B This new green glass bulb is perfect in low ionic strength solutions as well as for high pH applications and has fast response time with superior accuracy and repeatability.

C Spear bulb, fairly robust, slower response, less accurate, suitable for semi-solids.

D Micro bulb, very brittle, slow response, less accurate, for small volumes of high ionic solutions.

E Flat surface bulb, robust, slower response, less accurate, easily cleaned.

- **Electrode construction**

Glass body electrodes are ideal for accuracy, high temperature and ease of cleaning.

Epoxy body electrodes are a good choice for applications where rough handling and breakage are a major problem.

- **Quality electrodes**

Use this series of electrodes for high performance laboratory measurements according to the GLP requirements. Supplied without cable, they are the ideal choice to match a variety of interchangeable cables.

F Plug head, accepts S7/S8 cables up to 30 m long.

Industrial electrodes are supplied with a standard S8 screw cap. The outer thread size is Pg13.5 for easy in-line mounting.

G Screw cap, accepts S7/S8 cables up to 30 m long.

- **Refillable reference**

Selected for high accuracy, stability and longer electrode life, refillable types sacrifice convenience and ease of maintenance.

- **Sealed reference**

Sealed gel filled reference electrodes are designed for convenience where minimal maintenance is required. Slightly lower accuracy and shorter life must be taken in account.

- **Double junction**

A double junction reference is constructed with an Ag/AgCl inner chamber and a chemically compatible reference solution in the outer chamber.

It is recommended for samples containing organic compounds, proteins, heavy metals and other compounds that interact with silver, such as bromides, iodides, cyanides and sulphides.

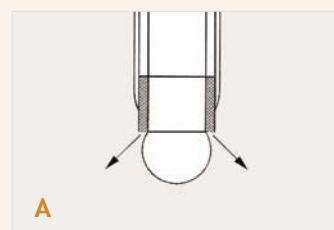
- **Junction types**

The slower flowing junctions provide less contamination but are more easily clogged than the fast flowing junctions.

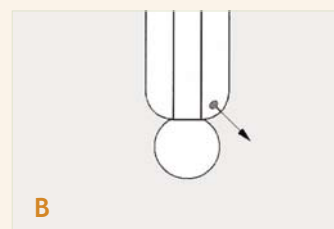
A Most glass combination electrodes feature an anti-fouling annular ceramic junction. The annular junction (medium flow rate) is formulated with a special ceramic which encircles the glass bulb. Numerous pores in the ceramic provide lower resistance and more stable readings.

B The epoxy, polymer and some glass combination electrodes come standard with one or more specially formulated porous ceramic or fibre junction plugs.

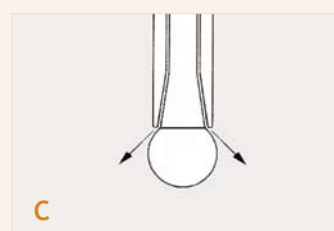
C Sleeve junctions provide the highest flow rate for difficult samples. An open junction brings the internal electrolyte in direct contact with the samples.



A



B



C

Application guide

pH and ORP electrodes

Application	SP10	SP11	SP21	SP22	SP23	SP24	SP26	SP27	SP28	SP29	SP50	SP60	SP61	SP65
Agar						•	•							
Agriculture	•	•	•											
Alkaline solutions				•	•									
Beer				•	•		•							
Blood			•				•		•					
Bread		•				•								
Cheese						•								
Cosmetics				•	•		•							
Cream				•	•		•							
Distilled water							•							
Dough		•				•								
Education	•	•	•								•	•		•
Emulsion							•							
Fat				•	•		•							
Field use	•	•									•			
Fruit			•	•	•	•		•						
Fish						•								
Glucose				•	•		•							
Honey							•							
Industrial, general		•			•						•		•	
Ink		•		•	•		•							
Juice			•	•	•									
Lab flasks, tall-form										•				
Laboratory, general		•	•	•								•		•
Lacquer				•	•		•							
Liquor				•	•		•							
Low ionic strength							•							
Meat						•								
Micro volume									•	•				
Milk				•	•		•							
Non-aqueous media							•							
Oil in water							•							
Paint				•	•		•							
Paper								•						
Photo bath				•	•		•							
Pure water		•	•	•	•		•							
Sausage						•								
Sea water	•	•	•	•	•						•	•	•	•
Soil	•	•	•			•								
Solvent in water				•	•		•							
Suspension							•							
Swimming pool	•	•	•	•	•						•	•	•	
Syrup							•							
Tap water		•	•	•	•							•	•	•
Temperature, high				•	•									
Test tube									•	•				
TRIS buffer				•	•		•							
Waste water		•		•	•		•					•	•	•
Wine				•	•		•							
Viscosity, high				•	•		•					•		
Yogurt				•	•		•					•		

ELECTRODE TYPES

SP pH, ORP or metal electrode**SK** conductivity electrode**SZ** dissolved oxygen electrode**ISE** ion selective electrode

ELECTRODE VERSIONS

B combination electrode with cable and BNC plug**T** combination electrode with built-in ATC, cable and plugs**X** combination electrode with S7 screw cap, without cable**Y** combination electrode with S8 screw cap, without cable

Standard pH electrodes

supplied with 1 m of cable and BNC plug (+ 2 banana plugs for built-in ATC)

SP10B

- General purpose, pH
- Epoxy body
- 0...14 pH, 0...80°C
- Single junction, sealed
- 110xØ12 mm



SP10T

- General purpose, pH + ATC (Pt1000)
- Epoxy body
- 0...14 pH, 0...80°C
- Single junction, sealed
- 110xØ12 mm

SP21B

- General purpose, pH
- Glass body
- 0...14 pH, 0...100°C
- Single junction, refillable
- 110xØ12 mm



SP21T

- General purpose, pH + ATC (Pt1000)
- Glass body
- 0...14 pH, 0...100°C
- Single junction, refillable
- 110xØ12 mm

Speciality pH electrodes

supplied with S7 plug head

SP11X

- Rugged easy to clean Tuff-Tip®, pH
- Epoxy body
- 0...14 pH, 0...100°C
- Double junction, sealed
- 110xØ12 mm



SP21X

- General purpose, pH
- Glass body
- 0...14 pH, 0...100°C
- Single junction, refillable
- 110xØ12 mm



SP22X

- High temperature
- Glass body
- 0...14 pH, 5...110°C
- Double junction, sealed
- 110xØ12 mm



SP24X

- Spear tip, pH
- Glass body
- 0...14 pH, 0...80°C
- Double junction, sealed
- 25xØ5 mm



SP26X

- Sleeve junction, pH
- Glass body
- 0...14 pH, 0...100°C
- Double junction, refillable
- 110xØ12 mm



SP27X

- Flat surface, pH
- Epoxy body
- 0...14 pH, 0...80°C
- Single junction, sealed
- 110xØ12 mm



SP28X

- Micro electrode, pH
- Glass body
- 0...14 pH, 0...80 °C
- Single junction, refillable
- 130xØ4 mm

**SP29X**

- Test tube, pH
- Glass body
- 0...14 pH, 0...100 °C
- Single junction, refillable
- 250xØ8 mm

**ORP electrodes***supplied with S7 plug head***SP50X**

- General purpose, platinum ORP (redox)
- Epoxy body
- 0...±2000 mV, 0...80 °C
- Single junction, sealed
- 110xØ12 mm

**SP60X**

- Platinum ORP (redox)
- Glass body
- 0...±2000 mV, 0...100 °C
- Single junction, refillable
- 110xØ12 mm

**SP65X**

- Silver ORP (redox)
- Glass body
- 0...±2000 mV, 0...100 °C
- Single junction, refillable
- 110xØ12 mm

**Titration electrode***supplied with S7 plug head***SP04X**

- General purpose, double platinum
- Titration electrode
- Glass body
- 0...100 °C
- 110xØ12 mm

**Sterilisable pH electrodes***supplied with S8 plug head*

- For all sterile biotech applications, pH
- 0...13 pH, -5...135 °C, max. 10 bar
- Glass body, double junction, sealed
- Steam sterilisable
- Needs no pressurisation



SP91Y: 110xØ12 mm

SP92Y: 120xØ12 mm

SP93Y: 130xØ12 mm

SP94Y: 160xØ12 mm

SP95Y: 210xØ12 mm

SP96Y: 260xØ12 mm

SP97Y: 310xØ12 mm

SP98Y: 360xØ12 mm

SP99Y: 420xØ12 mm

Electrode cables and accessories

CODE	DESCRIPTION
SC01B	S7/S8 cable, 1 m, with BNC plug
SC03B	S7/S8 cable, 3 m, with BNC plug
SC06B	S7/S8 cable, 6 m, with BNC plug
SC15B	S7/S8 cable, 15 m, with BNC plug
SC30B	S7/S8 cable, 30 m, with BNC plug
A4021	Adaptor, BNC to DIN socket
A4022	Adaptor, BNC to 2 banana
A4025	Adaptor, BNC to Radiometer socket
S295	Storage bottle for electrodes, 8 ml



Conductivity electrodes*supplied with 1 m of cable and BNC plug (+ 2 banana plugs for built-in ATC)***SK10B**

- General purpose, conductivity
- Epoxy body
- 1 cm^{-1} , $0\ldots 80^\circ\text{C}$
- Dual graphite plates
- $110\times\varnothing 12\text{ mm}$

**SK10T**

- General purpose, conductivity + ATC (Pt1000)
- Epoxy body
- 1 cm^{-1} , $0\ldots 80^\circ\text{C}$
- Dual graphite plates
- $110\times\varnothing 12\text{ mm}$

SK20B

- General purpose, conductivity
- Glass body
- 1 cm^{-1} , $0\ldots 110^\circ\text{C}$
- Dual platinum rings
- $110\times\varnothing 12\text{ mm}$

**SK20T**

- General purpose, conductivity + ATC (Pt1000)
- Glass body
- 1 cm^{-1} , $0\ldots 110^\circ\text{C}$
- Dual platinum rings
- $110\times\varnothing 12\text{ mm}$

SK21T

- Low conductivities + ATC (Pt1000)
- Glass body
- 0.1 cm^{-1} , $0\ldots 110^\circ\text{C}$
- Dual platinum plates
- $110\times\varnothing 12\text{ mm}$

**SK23T**

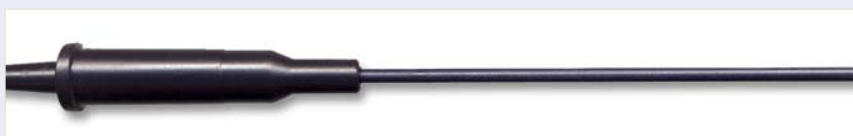
- High conductivities + ATC (Pt1000)
- Glass body
- 10 cm^{-1} , $0\ldots 110^\circ\text{C}$
- Dual platinum rings
- $130\times\varnothing 12\text{ mm}$

**SK24T**

- Micro electrode + ATC (Pt1000)
- Glass body
- 1 cm^{-1} , $0\ldots 100^\circ\text{C}$
- Dual platinum plates
- $110\times\varnothing 6\text{ mm}$

**Temperature Compensators***supplied with 1 m of cable and 2 banana plugs***ST10N**

- General purpose, ATC
- Stainless steel body, PTFE coated
- $-30\ldots +130^\circ\text{C}$
- Pt1000
- $110\times\varnothing 4\text{ mm}$

**ST20N**

- General purpose, ATC
- Glass body
- $-30\ldots +130^\circ\text{C}$
- Pt1000
- $110\times\varnothing 8\text{ mm}$



Dissolved oxygen electrode*supplied with BNC plug + 2 banana plugs, electrolyte and spare membrane***SZ10T**

- Galvanic type + ATC (Pt1000)
- Epoxy body
- 0...60 mg/l, 0...50 °C
- With 3 m submersible cable
- 110xØ12 mm

**SZ02K**

- set of 3 membranes + electrolyte

AP414**Serial printer**

- Serial (RS232) and parallel (Centronix) input.
- Thermal dot matrix 9x320 dots.
- Prints 40 columns (normal) or 80 columns (condensed).
- Paper width: 112 mm.
- Roll length: ±28 m.
- For direct connection to all meters with a digital output.
- Supplied with manual, 1 roll of thermal paper, mains adaptor (230 VAC) and RS232 cable.
- Optional rechargeable battery pack.

CODE	DESCRIPTION
AP414	Serial printer + mains adaptor + RS232 cable
AM112	Replacement paper, 112 mm x 25 m
AP4005	Rechargeable battery pack (optional)

SH300**Flexible electrode holder**

Model SH300 holds up to three standard electrodes. Its heavy base and very stable flexible arm allow the electrodes to move sideways or up and down while keeping them at a constant vertical angle.

CODE	DESCRIPTION
SH300	Flexible electrode holder

A4049**12 V Car adaptor**

All our meters can operate from a 9...15 VDC power supply. Those who travel around for field work can now let their laboratory meters work in a car or recharge the batteries of portables while driving to another site.

Use this optional adaptor instead of the mains adaptor supplied with the meter.

- **Comprises:** 2 types of plugs suitable for all new or old meters.

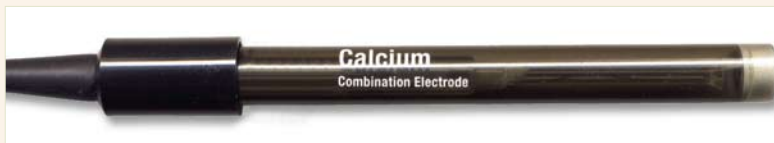
CODE	DESCRIPTION
A4049	Car adaptor



Ion selective electrodes

supplied with 1 m of cable and BNC plug

- Polymer membrane electrodes consist of various ion-exchange materials in an inert matrix such as PVC, polythene or silicone rubber. The potential developed at the membrane surface is related to the concentration of the species of interest.
- Solid state electrodes utilise relatively insoluble inorganic salts in a membrane. Solid state electrodes exist in homogeneous or heterogeneous forms. In both types, potentials are developed at the membrane surface due to the ion-exchange process.
- Glass membrane electrodes are formed by the doping of the silicon dioxide glass matrix with various chemicals. The most common of the glass membrane electrodes is the pH electrode. Glass membrane electrodes are also available for the measurement of sodium ions.
- Gas sensing electrodes are available for the measurement of ammonia, carbon dioxides and nitrogen oxides. These electrodes have a gas permeable membrane and an internal filling solution. The pH of the filling solution changes as the gas reacts with it which is detected by the built-in pH sensor.
- All models are combination electrodes and have an epoxy body.
- Dimensions: 110xØ12 mm.
- Each electrode comes with user instructions.
- **Two versions available:** standard (ISE20B...ISE52B) or with replaceable membrane (ISE60B...ISE82B).



Model	Ion	Sensor	Range (M)	Range (ppm)	°C	Interferences	pH	Electrolyte
ISE20B ISE60B	Ammonium NH ₄ ⁺	polymer	5.10 ⁻⁶ - 10 ⁰	0.1 - 18000	0 - 50	K ⁺	4 - 10	NaCl
ISE21B ISE61B	Bromide Br ⁻	solid state	5.10 ⁻⁶ - 10 ⁰	0.4 - 79900	0 - 50	I ⁻ , CN ⁻ , S ²⁻ , high levels of Cl ⁻ and NH ₃	2 - 14	KNO ₃
ISE22B ISE62B	Cadmium Cd ²⁺	solid state	10 ⁻⁷ - 10 ⁻¹	0.01 - 11200	0 - 50	Cu ²⁺ , Hg ²⁺ , Ag ⁺ , high levels of Fe ²⁺ and Pb ²⁺	2 - 12	KNO ₃
ISE23B ISE63B	Calcium Ca ²⁺	polymer	5.10 ⁻⁶ - 10 ⁰	0.2 - 40000	0 - 50	Pb ²⁺ , Hg ²⁺ , Cu ²⁺ , Ni ²⁺	3 - 10	KCl
ISE24B ISE64B	Chloride Cl ⁻	solid state	5.10 ⁻⁵ - 10 ⁰	1.8 - 35500	0 - 50	I ⁻ , Br ⁻ , CN ⁻ , S ²⁻	1 - 12	KNO ₃
ISE25B ISE65B	Copper Cu ²⁺	solid state	10 ⁻⁸ - 10 ⁻¹	0.00064 - 6350	0 - 50	Hg ²⁺ , Ag ⁺ , high levels of Cl ⁻ , Br ⁻ , Fe ²⁺ and Cd ²⁺	2 - 12	KNO ₃
ISE26B ISE66B	Cyanide CN ⁻	solid state	5.10 ⁻⁶ - 10 ⁻²	0.13 - 260	0 - 50	Cl ⁻ , Br ⁻ , I ⁻ , S ²⁻	11 - 13	KNO ₃
ISE27B ISE67B	Fluoride F ⁻	solid state	10 ⁻⁶ - sat.	0.02 - sat.	0 - 50	OH ⁻	5 - 8	KCl
ISE28B ISE68B	Fluoroborate BF ₄ ⁻	polymer	7.10 ⁻⁶ - 10 ⁰	0.1 - 10800	0 - 50	I ⁻ , ClO ₄ ⁻ , CN ⁻	2.5 - 11	(NH ₄) ₂ SO ₄
ISE29B ISE69B	Iodide I ⁻	solid state	5.10 ⁻⁸ - 10 ⁰	0.006 - 127000	0 - 50	S ²⁻ , CN ⁻ , Cl ⁻ , Br ⁻ , S ₂ O ₃ ²⁻ , NH ₃	0 - 14	KNO ₃
ISE30B ISE70B	Lead Pb ²⁺	solid state	10 ⁻⁶ - 10 ⁻¹	0.2 - 20700	0 - 50	Hg ²⁺ , Ag ⁺ , Cu ²⁺ , high levels of Fe ²⁺ and Cd ²⁺	3 - 8	KNO ₃
ISE31B ISE71B	Nitrate NO ₃ ⁻	polymer	7.10 ⁻⁶ - 10 ⁰	0.5 - 62000	0 - 50	I ⁻ , ClO ₄ ⁻ , CN ⁻ , BF ₄ ⁻	2.5 - 11	(NH ₄) ₂ SO ₄
ISE32B ISE72B	Perchlorate ClO ₄ ⁻	polymer	7.10 ⁻⁶ - 10 ⁰	0.7 - 99500	0 - 50	-	2.5 - 11	(NH ₄) ₂ SO ₄
ISE33B ISE73B	Potassium K ⁺	polymer	10 ⁻⁶ - 10 ⁰	0.04 - 39000	0 - 50	Cs ⁺ , NH ₄ ⁺	2 - 12	NaCl
ISE34B ISE74B	Silver/Sulphide Ag ⁺ /S ²⁻	solid state	10 ⁻⁷ - 10 ⁰	0.01 - 107900 0.003 - 32000	0 - 50	Hg ⁺ , Hg ²⁺	2 - 12	KNO ₃
ISE35B	Sodium Na ⁺	glass	10 ⁻⁶ - sat.	0.02 - sat.	0 - 50	H ⁺ , K ⁺ , Li ⁺ , Ag ⁺ , Cs ⁺ , Tl ⁺	5 - 12	NH ₄ Cl
ISE36B ISE76B	Surfactant X ⁻ /X ⁻	polymer	10 ⁻⁵ - 5.10 ⁻²	1 - 12000	0 - 50	similar types of surfactants	2 - 12	KCl
ISE37B ISE77B	Water hardness Ca ²⁺ /Mg ²⁺	polymer	10 ⁻⁵ - 10 ⁰	0.4 - 4000 (Ca ²⁺)	0 - 50	Cu ²⁺ , Zn ²⁺ , Ni ²⁺ , Fe ²⁺	5 - 10	KCl
ISE50B ISE80B	Ammonia NH ₃	gas sensing	5.10 ⁻⁷ - 10 ⁰	0.01 - 17000	0 - 50	volatile amines	11 - 13	NH ₄ Cl
ISE51B ISE81B	Carbon dioxide CO ₂ /CO ₃ ²⁻	gas sensing	10 ⁻⁴ - 10 ⁻²	4.4 - 440	0 - 50	volatile weak acids	4.8 - 5.2	NaHCO ₃
ISE52B ISE82B	Nitrogen oxides NO _x	gas sensing	5.10 ⁻⁶ - 5.10 ⁻³	0.2 - 220	0 - 50	SO ₂ , HF, acetic acid	1.1 - 1.7	NaNO ₂

Solutions

Ion - pH - mV - Redox - Conductivity

CODE	DESCRIPTION	
ISC20	Calibration solution, 1000 ppm ammonium	475 ml
ISC21	Calibration solution, 1000 ppm bromide	475 ml
ISC23	Calibration solution, 1000 ppm calcium	475 ml
ISC24	Calibration solution, 1000 ppm chloride	475 ml
ISC25	Calibration solution, 1000 ppm copper	475 ml
ISC27	Calibration solution, 1000 ppm fluoride	475 ml
ISC28	Calibration solution, 1000 ppm fluoroborate	475 ml
ISC29	Calibration solution, 1000 ppm iodide	475 ml
ISC31	Calibration solution, 1000 ppm nitrate	475 ml
ISC32	Calibration solution, 1000 ppm perchlorate	475 ml
ISC33	Calibration solution, 1000 ppm potassium	475 ml
ISC34	Calibration solution, 1000 ppm silver/sulphide	475 ml
ISC35	Calibration solution, 1000 ppm sodium	475 ml
ISC36	Calibration solution, 1000 ppm surfactant	475 ml
ISC37	Calibration solution, 1000 ppm water hardness	475 ml
ISC50	Calibration solution, 1000 ppm ammonia	475 ml
ISC51	Calibration solution, 1000 ppm carbon dioxides	475 ml
ISC52	Calibration solution, 1000 ppm nitrogen oxides	475 ml
ISA20	ISA solution for ammonium, potassium	475 ml
ISA21	ISA solution for bromide	475 ml
ISA22	ISA solution for cadmium	475 ml
ISA23	ISA solution for calcium	475 ml
ISA24	ISA solution for chloride	475 ml
ISA25	ISA solution for copper	475 ml
ISA27A	ISA solution for fluoride, TISAB-1	3800 ml
ISA27B	ISA solution for fluoride, TISAB-2	3800 ml
ISA28	ISA solution for fluoroborate	475 ml
ISA29	ISA solution for iodide	475 ml
ISA30	ISA solution for lead	475 ml
ISA31	ISA solution for nitrate	475 ml
ISA32	ISA solution for perchlorate	475 ml
ISA33	ISA solution for potassium	475 ml
ISA34	ISA solution for silver/sulphide	475 ml
ISA35	ISA solution for sodium	475 ml
ISA36	ISA solution for surfactant	475 ml
ISA37	ISA solution for water hardness	475 ml
ISA51	ISA solution for carbon dioxides	475 ml
ISA52	ISA solution for nitrogen oxides	475 ml

→ Other solutions should be prepared locally.

CODE	DESCRIPTION	
ISM50	Set of spare membranes for ISE50B	
ISM51	Set of spare membranes for ISE51B	
ISM52	Set of spare membranes for ISE52B	
ISM60	Replacement membrane kit for ISE60B	
ISM61	Replacement membrane kit for ISE61B	
ISM62	Replacement membrane kit for ISE62B	
ISM63	Replacement membrane kit for ISE63B	
ISM64	Replacement membrane kit for ISE64B	
ISM65	Replacement membrane kit for ISE65B	
ISM66	Replacement membrane kit for ISE66B	
ISM67	Replacement membrane kit for ISE67B	
ISM68	Replacement membrane kit for ISE68B	
ISM69	Replacement membrane kit for ISE69B	
ISM70	Replacement membrane kit for ISE70B	
ISM71	Replacement membrane kit for ISE71B	
ISM72	Replacement membrane kit for ISE72B	
ISM73	Replacement membrane kit for ISE73B	
ISM74	Replacement membrane kit for ISE74B	
ISM76	Replacement membrane kit for ISE76B	
ISM77	Replacement membrane kit for ISE77B	
ISM80	Replacement membrane kit for ISE80B	
ISM81	Replacement membrane kit for ISE81B	
ISM82	Replacement membrane kit for ISE82B	
ISF50	Membrane filling solution for ISE50B/ISE80B	125 ml
ISF51	Membrane filling solution for ISE51B/ISE81B	125 ml
ISF52	Membrane filling solution for ISE52B/ISE82B	125 ml



- All solutions are offered in sealed 500 ml bottles.
- pH buffers are colour coded to reduce errors. They are certified to 0.02 pH.
- Conductivity standards are certified to 0.5 %.
- Redox standards are certified to 1 mV at 25 °C.
- In addition to the reference, a test number is indicated revealing the charge number.
- Each solution is supplied with a certificate.
- The indicated values are at 25 °C. Where necessary, a value/temperature comparison chart is printed on the label.
- Expiry date is mentioned on each bottle.
- Always store solutions cool and away from sunlight.

CODE	DESCRIPTION	
B502	Coloured buffer 2.00 pH	500 ml
B504	Coloured buffer 4.00 pH	500 ml
B507	Coloured buffer 7.00 pH	500 ml
B510	Coloured buffer 10.01 pH	500 ml
B512	Coloured buffer 12.00 pH	500 ml
B560	Calibration solution 0.01 M KCl (1413 µS/cm)	500 ml
B561	Calibration solution 0.1 M KCl (12.88 mS/cm)	500 ml
B562	Calibration solution 1 M KCl (111.8 mS/cm)	500 ml
B566	Calibration solution 200 mS/cm (at 25 °C)	500 ml
B571	Redox standard solution 124 mV	500 ml
B572	Redox standard solution 358 mV	500 ml
B520	Electrolyte, 3M KCl	500 ml
B530	Electrode cleaning solution	500 ml

GOOD MEASUREMENT PRACTICES

- While calibrating or measuring all solutions should be stirred gently (e.g. with a magnetic stirrer) to ensure the electrode gives a true representation of the beaker contents.
- Calibration solutions should be chosen which have values near the expected sample value.
- Only fresh calibration solutions should be used! Changing all solutions daily is a good practice.
- All solutions should be maintained at equal temperature.
- Rinse the electrode twice between measurements: first thoroughly in distilled water and then with a small amount of the next sample to be measured.
- Allow the electrodes sufficient time to stabilise while calibrating or measuring. A stability indicator on all of our meters prompts the user when readings should be taken.

R3610

pH - mV - Conductivity - Dissolved oxygen - Air pressure - Temperature



pH	-2...+16 pH
mV	±2000 mV
Conductivity	0...2000 mS/cm
Dissolved Oxygen	0...60 mg/l 0...600%
Air Pressure	600...1300 hPa
Temperature	-30...+130 °C

*Two measurement channels
Two temperature channels*

- **Control**

Two independent channels allow to control any two functions simultaneously, each with its own temperature compensation.

On/off or proportional control.

Four solid state relays programmable for high/low level control, wash program or alarm functions.

Allows to stop temporarily the control (relays off) without holding the measurements.

Wash program for an automatic periodical cleaning of the electrodes.

Special alarm timer to interrupt the process control in case of an electrode failure.

- **pH**

Multi-point (1...5) calibration for more linearity.

Selectable resolution from 0.001 pH to 0.1 pH.

Automatic calibration with any of eleven pre-programmed and five user specified pH buffers. *Create your own buffer/temperature tables!*

- **mV**

Features mV calibration for accurate ORP measurements.

Selectable resolution from 0.1 mV to 1 mV.

- **Conductivity**

Multi-point (1...3) calibration for more linearity.

Use a 1 cm⁻¹ electrode (standard) to control from 0.01 µS/cm to 200 mS/cm.

Use a 0.1 cm⁻¹ electrode to control from 0.001 µS/cm to 20 mS/cm.

Use a 10 cm⁻¹ electrode to control from 0.1 µS/cm to 2000 mS/cm.

Automatically selects correct range and frequency.

Selectable reference temperature: 20° or 25°C.

Automatic calibration with any of three preprogrammed and three user specified standard solutions. *Create your own standard/temperature tables!*

Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).

- **Dissolved oxygen**

Operates with a galvanic oxygen electrode requiring no polarisation time and no zero calibration.

Selectable resolution from 0.01 mg/l (0.1%) to 0.1 mg/l (1%).

Rapid air calibration.

Manual salinity compensation 0-40 ppt.

Automatic air pressure compensation 600-1300 hPa.

- **Temperature**

Reads temperatures with 0.1°C resolution.

Manual or automatic temperature compensation.

Calibrates temperature probe for quality measurements.

CODE	DESCRIPTION
R3610	Controller for pH/mV/conductivity/oxygen
→ Add a \$-sign for 120 VAC versions, e.g.: R3610\$	

● **Inputs**

Two BNC inputs for pH, mV, conductivity or dissolved oxygen and two BNC inputs for temperature.

● **Connections**

All connections, except for the inputs, can be done through the internal screw terminals.

● **GLP**

All procedures for a "Good Laboratory Practice" are on board.

● **Cabinet**

Robust dust and splash-proof cabinet for wall mounting.

● **Display**

A large bright LCD screen with white backlight enables to view all channels simultaneously.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

● **Special features**

Three year warranty.

No electrical interference between electrodes in the same solution.

Galvanic input/output insulation eliminates ground loop interferences.

A first special timer can start a wash program for an automatic periodical cleaning of the electrodes.

A second special timer can give alarm to interrupt the process control in case of a pump overfeed or an electrode failure.

Password protection prevents any unauthorised access to the instrument.

Easy in-line calibration without removing the electrodes from their fittings.

Specifications		R3610
pH	Range	-2...+16 pH
	Resolution	0.001 pH
	Accuracy	0.1% ± 1 digit
	Calibration	1...5 points
	Buffers	11 pre-programmed + 5 user specified
	Temperature compensation	-30...+130 °C
	ISO-pH	6...8 pH
mV	Slope	80...120%
	Range	±2000 mV
	Resolution	0.1 mV
	Accuracy	0.1% ± 1 digit
CONDUCTIVITY	Calibration	1 point
	Range (cc dependent)	0...2000 mS/cm
	Resolution (cc dependent)	0.001 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1...3 points
	Standards	0.01/0.1/1 M KCl + 3 user specified
	Cell constant (cc)	0.05...15 cm ⁻¹
	Temperature compensation	-30...+130 °C
	Reference temperature	20° or 25° C
	Temperature coefficient	natural waters (EN27888)
	Capacitive compensation	✓
DISSOLVED OXYGEN	Range	0...60 mg/l (0...600%)
	Resolution	0.01 mg/l (0.1%)
	Accuracy	1% ± 1 digit
	Calibration	1 point
	Temperature compensation	0...50 °C
	Salinity compensation	0...40 ppt
TEMPERATURE	Air pressure compensation	600...1300 hPa
	Range	-30...+130 °C
	Resolution	0.1 °C
	Accuracy	0.3 °C
AIR PRESSURE	Calibration	1 point
	Range	600...1300 hPa
CHANNELS	Measurement	2
	Temperature	2
INPUTS	Measurement	2 BNC, 10 ¹² Ω
	Temperature	2 BNC, for Pt1000
CALIBRATION	Reminder	0...999 h
	GLP	✓
CONTROL	On/Off	✓
	Proportional	✓
	Wash program	✓
	Alarm timer	✓
DISPLAY	LCD	240x64 pixels
	White backlight	✓
	Real time clock	✓
RELAY OUTPUT	Four relays	4 solid state
	Voltage	12...250 VAC/ min. 1 mA/ max. 1 A
SECURITY	Password protection	✓
AMBIENT CONDITIONS	Temperature	0...40 °C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	210...250 VAC, 50/60 Hz
DIMENSIONS	WxDxH	28x17x6 cm
WEIGHT	Meter	1.3 kg

S404C

Bypass vessel



CODE	DESCRIPTION
S404C	Bypass vessel

Made of strong plexiglass, this bypass vessel is the ideal solution for many applications.

The electrode's life time is considerably increased by using a small diameter for the connections which ensures a constant flow rate of the processed liquids.

The complete transparency of the vessel allows a permanent visual control of the electrodes. Since the electrodes are easily removed without interrupting the flow in the main tubings, calibration or cleaning can be carried out more rapidly.

- Dimensions: 150x110x36 mm.
- Max. temperature: 60 °C
- Weight: 800 g.

R3620

pH - mV - Conductivity - Dissolved oxygen - Air pressure - Temperature



pH	-2...+16 pH
mV	±2000 mV
Conductivity	0...2000 mS/cm
Dissolved Oxygen	0...60 mg/l 0...600%
Air Pressure	600...1300 hPa
Temperature	-30...+130 °C

*Two measurement channels
Two temperature channels*

- **Control**

Two independent channels allow to control any two functions simultaneously, each with its own temperature compensation.
On/off or proportional control.
Four solid state relays programmable for high/low level control, wash program or alarm functions.
Allows to stop temporarily the control (relays off) without holding the measurements.
Wash program for an automatic periodical cleaning of the electrodes.
Special alarm timer to interrupt the process control in case of an electrode failure.

- **pH**

Multi-point (1...5) calibration for more linearity.
Selectable resolution from 0.001 pH to 0.1 pH.
Automatic calibration with any of eleven pre-programmed and five user specified pH buffers. *Create your own buffer/temperature tables!*

- **mV**

Features mV calibration for accurate ORP measurements.
Selectable resolution from 0.1 mV to 1 mV.

- **Conductivity**

Multi-point (1...3) calibration for more linearity.
Use a 1 cm⁻¹ electrode (standard) to control from 0.01 µS/cm to 200 mS/cm.
Use a 0.1 cm⁻¹ electrode to control from 0.001 µS/cm to 20 mS/cm.
Use a 10 cm⁻¹ electrode to control from 0.1 µS/cm to 2000 mS/cm.
Automatically selects correct range and frequency.
Selectable reference temperature: 20° or 25°C.
Automatic calibration with any of three preprogrammed and three user specified standard solutions. *Create your own standard/temperature tables!*
Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).

- **Dissolved oxygen**

Operates with a galvanic oxygen electrode requiring no polarisation time and no zero calibration.
Selectable resolution from 0.01 mg/l (0.1%) to 0.1 mg/l (1%).
Rapid air calibration.
Manual salinity compensation 0-40 ppt.
Automatic air pressure compensation 600-1300 hPa.

- **Temperature**

Reads temperatures with 0.1°C resolution.
Manual or automatic temperature compensation.
Calibrates temperature probe for quality measurements.

CODE	DESCRIPTION
R3620	Controller for pH/mV/conductivity/oxygen
A2002	Data acquisition software DIS-2 + RS232/RS485 adaptor (optional)
A2003	Data acquisition software DIS-2 + RS485/Ethernet adaptor (optional)
→ Add a \$-sign for 120 VAC versions, e.g.: R3620\$	

● **Inputs**

Two BNC inputs for pH, mV, conductivity or dissolved oxygen and two BNC inputs for temperature.

● **Outputs**

Two programmable 4-20 mA analogue outputs, for connection to a proportional pump, a PLC or an industrial recorder.

RS485 interface for connection to a computer.

● **Connections**

All connections, except for the inputs, can be done through the internal screw terminals.

● **GLP**

All procedures for a "Good Laboratory Practice" are on board.

● **Cabinet**

Robust dust and splash-proof cabinet for wall mounting.

● **Display**

A large bright LCD screen with white backlight enables to view all channels simultaneously.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

● **Data-logging**

Stores up to 12000 values including temperature, time and date at a programmable interval.

An optional powerful data acquisition software for PC + RS485/RS232 or RS485/Ethernet adaptor is available separately.

Can be connected in a network system with up to 31 controllers and a computer.

Two-way communication with any computer using RS485.

Programmable identification number.

Stores minimum/maximum readings for each channel.

● **Special features**

Three year warranty.

No electrical interference between electrodes in the same solution.

Galvanic input/output insulation eliminates ground loop interferences.

A first special timer can start a wash program for an automatic periodical cleaning of the electrodes.

A second special timer can give alarm to interrupt the process control in case of a pump overfeed or an electrode failure.

Password protection prevents any unauthorised access to the instrument.

Easy in-line calibration without removing the electrodes from their fittings.

Specifications		R3620
pH	Range	-2...+16 pH
	Resolution	0.001 pH
	Accuracy	0.1% ± 1 digit
	Calibration	1...5 points
	Buffers	11 pre-programmed + 5 user specified
	Temperature compensation	-30...+130° C
	ISO-pH	6...8 pH
mV	Slope	80...120%
	Range	±2000 mV
	Resolution	0.1 mV
	Accuracy	0.1% ± 1 digit
CONDUCTIVITY	Calibration	1 point
	Range (cc dependent)	0...2000 mS/cm
	Resolution (cc dependent)	0.001 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1...3 points
	Standards	0.01/0.1/1 M KCl + 3 user specified
	Cell constant (cc)	0.05...15 cm ⁻¹
	Temperature compensation	-30...+130° C
	Reference temperature	20° or 25° C
	Temperature coefficient	natural waters (EN27888)
DISSOLVED OXYGEN	Capacitive compensation	✓
	Range	0...60 mg/l (0...600%)
	Resolution	0.01 mg/l (0.1%)
	Accuracy	1% ± 1 digit
	Calibration	1 point
	Temperature compensation	0...50° C
	Salinity compensation	0...40 ppt
TEMPERATURE	Air pressure compensation	600...1300 hPa
	Range	-30...+130° C
	Resolution	0.1° C
	Accuracy	0.3° C
AIR PRESSURE	Calibration	1 point
	Range	600...1300 hPa
CHANNELS	Measurement	2
	Temperature	2
INPUTS	Measurement	2 BNC, 10 ¹² Ω
	Temperature	2 BNC, for Pt1000
CALIBRATION	Reminder	0...999 h
	GLP	✓
CONTROL	On/Off	✓
	Proportional	✓
	Wash program	✓
	Alarm timer	✓
DISPLAY	LCD	240x64 pixels
	White backlight	✓
	Real time clock	✓
ANALOG OUTPUT	Two outputs	4...20 mA, max. 300 Ω load
COMMUNICATION	RS485, baud rate	300...19200 b/s
	Computer	via RS485/RS232 interface
DATA-LOGGING	Data sets	12000
	Modes	all
	Interval	1 s...4 h
RELAY OUTPUT	Four relays	4 solid state
	Voltage	12...250 VAC/ min. 1 mA/ max. 1 A
SECURITY	Identification number	✓
	Password protection	✓
AMBIENT CONDITIONS	Temperature	0...40° C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	210...250 VAC, 50/60 Hz
DIMENSIONS	WxDxH	28x17x6 cm
WEIGHT	Meter	1.3 kg

SOLID STATE RELAY

Solid state relays contain no mechanical contacts. Long life and spark-free switching are the main advantages. However, a small leakage current can cause unwanted switching-on when controlling very low power loads (<1 mA). It cannot be used for controlling DC loads!

R3630

pH - mV - Conductivity - Dissolved oxygen - Air pressure - Free chlorine - Temperature



pH	-2...+16 pH
mV	±2000 mV
Conductivity	0...2000 mS/cm
Dissolved Oxygen	0...60 mg/l 0...600%
Air Pressure	600...1300 hPa
Free Chlorine	0...10 mg/l
Temperature	-30...+130 °C

*Two measurement channels
One free chlorine channel
One temperature channel*

- Control**

Two independent channels allow to control any two functions simultaneously, each with its own temperature compensation.

On/off or proportional control.

Four solid state relays programmable for high/low level control, wash program or alarm functions.

Allows to stop temporarily the control (relays off) without holding the measurements.

Wash program for an automatic periodical cleaning of the electrodes.

Special alarm timer to interrupt the process control in case of an electrode failure.

- pH**

Multi-point (1...5) calibration for more linearity.

Selectable resolution from 0.001 pH to 0.1 pH.

Automatic calibration with any of eleven pre-programmed and five user specified pH buffers. *Create your own buffer/temperature tables!*

- Conductivity**

Multi-point (1...3) calibration for more linearity.

Use a 1 cm⁻¹ electrode (standard) to control from 0.01 µS/cm to 200 mS/cm.

Use a 0.1 cm⁻¹ electrode to control from 0.001 µS/cm to 20 mS/cm.

Use a 10 cm⁻¹ electrode to control from 0.1 µS/cm to 2000 mS/cm.

Automatically selects correct range and frequency.

Selectable reference temperature: 20° or 25°C.

Automatic calibration with any of three preprogrammed and three user specified standard solutions. *Create your own standard/temperature tables!*

Accurate low conductivity measurements by eliminating the capacitive component of the electrode and its cable (avoid the use of long cables!).

- mV**

Features mV calibration for accurate ORP measurements.

Selectable resolution from 0.1 mV to 1 mV.

- Dissolved oxygen**

Operates with a galvanic oxygen electrode requiring no polarisation time and no zero calibration.

Selectable resolution from 0.01 mg/l (0.1%) to 0.1 mg/l (1%).

Rapid air calibration.

Manual salinity compensation 0-40 ppt.

Automatic air pressure compensation 600-1300 hPa.

- Temperature**

Reads temperatures with 0.1°C resolution.

Manual or automatic temperature compensation.

Calibrates temperature probe for quality measurements.

- Free chlorine**

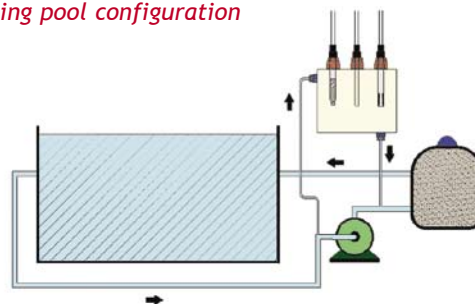
Operates with a double platinum electrode in tubings of a water system.

Selectable resolution from 0.01 mg/l to 0.1 mg/l.

The rate of flow should be at least 20 cm/s and kept constant by using a special bypass vessel.

Calibration is performed by adjusting the controller to a value measured with a photometer.

Swimming pool configuration



CODE	DESCRIPTION
R3630	Controller for pH/mV/conductivity/oxygen/free chlorine
R363C	Controller kit complete: R363 + pH electrode SP23Y + double platinum electrode SP04X + ATC probe ST21Y + 3 electrode cables SC01B + industrial bypass vessel S404C
A2002	Data acquisition software DIS-2 + RS232/RS485 adaptor (optional)
A2003	Data acquisition software DIS-2 + RS485/Ethernet adaptor (optional)
→ Add a \$-sign for 120 VAC versions, e.g.: R3630\$	

● **Inputs**

Two BNC inputs for pH, mV, conductivity or dissolved oxygen, one BNC input for free chlorine and one BNC input for temperature.

● **Outputs**

Two programmable 4-20 mA analogue outputs, for connection to a proportional pump, a PLC or an industrial recorder.

RS485 interface for connection to a computer.

● **Connections**

All connections, except for the inputs, can be done through the internal screw terminals.

● **GLP**

All procedures for a "Good Laboratory Practice" are on board.

● **Cabinet**

Robust dust and splash-proof cabinet for wall mounting.

● **Display**

A large bright LCD screen with white backlight enables to view all channels simultaneously.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

Real-time clock displays time and date.

Shows a GLP report on the LCD screen.

● **Data-logging**

Stores up to 12000 values including temperature, time and date at a programmable interval.

An optional powerful data acquisition software for PC + RS485/RS232 or RS485/Ethernet adaptor is available separately.

Can be connected in a network system with up to 31 controllers and a computer.

Two-way communication with any computer using RS485.

Programmable identification number.

Stores minimum/maximum readings for each channel.

● **Special features**

Three year warranty.

No electrical interference between electrodes in the same solution.

Galvanic input/output insulation eliminates ground loop interferences.

A first special timer can start a wash program for an automatic periodical cleaning of the electrodes.

A second special timer can give alarm to interrupt the process control in case of a pump overfeed or an electrode failure.

Password protection prevents any unauthorised access to the instrument.

Easy in-line calibration without removing the electrodes from their fittings.

SOLID STATE RELAY

Solid state relays contain no mechanical contacts. Long life and spark-free switching are the main advantages. However, a small leakage current can cause unwanted switching-on when controlling very low power loads (<1 mA). It cannot be used for controlling DC loads!

Specifications		R3630
pH	Range	-2...+16 pH
	Resolution	0.001 pH
	Accuracy	0.1% ± 1 digit
	Calibration	1...5 points
	Buffers	11 pre-programmed + 5 user specified
	Temperature compensation	-30...+130°C
	ISO-pH	6...8 pH
mV	Slope	80...120%
	Range	±2000 mV
	Resolution	0.1 mV
	Accuracy	0.1% ± 1 digit
	Calibration	1 point
CONDUCTIVITY	Range (cc dependent)	0...2000 mS/cm
	Resolution (cc dependent)	0.001 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1...3 points
	Standards	0.01/0.1/1 M KCl + 3 user specified
	Cell constant (cc)	0.05...15 cm ⁻¹
	Temperature compensation	-30...+130°C
	Reference temperature	20° or 25°C
	Temperature coefficient	natural waters (EN27888)
DISSOLVED OXYGEN	Capacitive compensation	✓
	Range	0...60 mg/l (0...600%)
	Resolution	0.01 mg/l (0.1%)
	Accuracy	1% ± 1 digit
	Calibration	1 point
	Temperature compensation	0...50°C
	Salinity compensation	0...40 ppt
FREE CHLORINE	Air pressure compensation	600...1300 hPa
	Range	0...10 mg/l
	Resolution	0.01 mg/l
	Accuracy	5% ± 1 digit
	Calibration	1 point
	pH compensation	5...9 pH
TEMPERATURE	Temperature compensation	10...40°C
	Range	-30...+130°C
	Resolution	0.1°C
	Accuracy	0.3°C
	Calibration	1 point
AIR PRESSURE	Range	600...1300 hPa
	Calibration	1 point
CHANNELS	Measurement	2
	Free chlorine	1
	Temperature	1
INPUTS	Measurement	2 BNC, 10 ¹² Ω
	Free chlorine	1 BNC
	Temperature	1 BNC, for Pt1000
CALIBRATION	Reminder	0...999 h
	GLP	✓
CONTROL	On/Off	✓
	Proportional	✓
	Wash program	✓
	Alarm timer	✓
DISPLAY	LCD	240x64 pixels
	White backlight	✓
	Real time clock	✓
ANALOG OUTPUTS	Two outputs	4...20 mA, max. 300 Ω load
COMMUNICATION	RS485, baud rate	300...19200 b/s
	Computer	via RS485/RS232 interface
DATA-LOGGING	Data sets	12000
	Modes	all
	Interval	1 s...4 h
RELAY OUTPUT	Four relays	4 solid state
	Voltage	12...250 VAC/ min. 1 mA/ max. 1 A
SECURITY	Identification number	✓
	Password protection	✓
AMBIENT CONDITIONS	Temperature	0...40°C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	210...250 VAC, 50/60 Hz
DIMENSIONS	WxDxH	28x17x6 cm
WEIGHT	Meter	1.3 kg

DIS-2

Data acquisition software for industrial controllers



- **Data acquisition**

This software package is specially designed to collect, store and manage data from the following controllers when equipped with an RS485 interface:

R3620, R3630

It can also be used with the following previous models or versions when equipped with an RS485 interface:

R305, R315, R335.

Runs under Windows™ 2000 or higher.

All measurements of all instruments are processed at the same time, each in its own window.

Data is collected on-line at a programmable interval determined by the program (1 s ... 24 h).

- **Starting**

By using a program-key, the data-logging will start automatically after opening the program.

Data-logging can be stopped or continued at any moment.

Data, which is stored in the internal memory of the connected instrument, can also be read and processed.

- **Table**

Data is always stored in a table.

Comments can be added to each line in a special information column.

- **Files**

All data is saved in a user defined file. Just open the file to view, process or print the stored data.

The incoming data from the RS232 or Ethernet port can be stored immediately in a file.

All measurements are saved in CVS format which is easily transferred into spreadsheets.

- **Graphs**

Graphs are generated using automatic or user defined settings.

The number of visible values can be changed at any time.

Programmable alarm limits for each graph allow to print a report indicating when limits have been exceeded.

Shows statistics about minima, maxima and averages.

- **Communication port**

COM1 to COM9 can be used to connect up to nine series of max. 31 instruments.

Baud rate: 300..9600 b/s.

- **Terminal**

The terminal window shows exactly how data is received through the RS232 or Ethernet port.

It enables the user to check for possible errors in the data transmission.

- **Settings**

Languages: English, Dutch or French.

The style of each window can be set up separately.

Choose fonts, colours etc...

Documented printouts will show:

- file name.
- date and time.
- name of the operator.
- name of the company.
- name of the division.
- optional notes by the operator.

All settings are stored in a configuration file and automatically recalled when opening the program.

- **Functions**

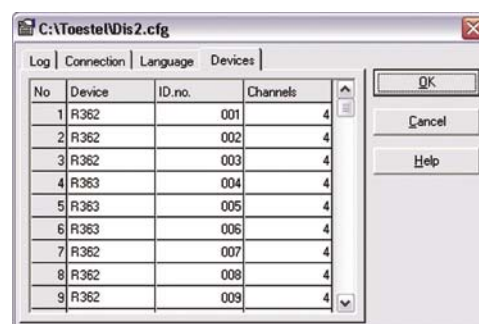
All functions are accessible through the menu.

Only valid options appear in the menu to eliminate set-up errors.

Special buttons, icons and short-keys allow the user to easily access the most useful functions.

The contents of each window can be transferred to other programs by using a copy function.

Tile or cascade the windows and arrange the icons fully automatically or rearrange them manually.



CODE	DESCRIPTION
A2002	Data acquisition software DIS-2 + RS485/RS232 adaptor (optional)
A2003	Data acquisition software DIS-2 + RS485/Ethernet adaptor (optional)

Industrial electrodes

supplied with S8 plug head

SP11Y

- Rugged easy to clean Tuff-Tip®, pH
- Epoxy body
- 0...14 pH, 0...100°C
- Double junction, sealed
- 110xØ12 mm



SP23Y

- High temperature, pH
- Glass body
- 0...14 pH, 5...110°C
- Double junction, sealed
- 110xØ12 mm



SP50Y

- General purpose, ORP
- Epoxy body
- 0...±2000 mV, 0...80°C
- Single junction, sealed
- 110xØ12 mm



SP61Y

- General purpose, ORP
- Glass body
- 0...±2000 mV, 0...100°C
- Single junction, sealed
- 110xØ12 mm



SK10Y

- General purpose, conductivity
- Epoxy body
- 1 cm⁻¹, 0...80°C
- Dual graphite plates
- 110xØ12 mm



SK20Y

- General purpose, conductivity
- Glass body
- 1 cm⁻¹, 0...110°C
- Dual platinum rings
- 110xØ12 mm



SK22Y

- Low conductivities
- Glass body
- 0.1 cm⁻¹, 0...110°C
- Dual platinum plates
- 110xØ12 mm



SK23Y

- High conductivities
- Glass body
- 10 cm⁻¹, 0...110°C
- Dual platinum rings
- 110xØ12 mm



ST21Y

- General purpose, ATC
- Glass body
- -30...+130°C
- Pt1000
- 110xØ12 mm



SZ12T

- Dissolved oxygen, galvanic type + ATC (Pt1000)
- Epoxy body
- 0...60 mg/l
- 0...50°C
- With 15 m cable + 2 BNC plugs
- 110xØ12 mm



SZ02K

- set of 3 membranes + electrolyte

CODE	DESCRIPTION
SC01B	S7/S8 cable, 1 m, with BNC plug
SC03B	S7/S8 cable, 3 m, with BNC plug
SC06B	S7/S8 cable, 6 m, with BNC plug

CODE	DESCRIPTION
SC15B	S7/S8 cable, 15 m, with BNC plug
SC30B	S7/S8 cable, 30 m, with BNC plug
SC45B	S7/S8 cable, 45 m, with BNC plug

EV2xx series

Electrophoresis power supplies

- **Manual programming**

The manual mode allows to set voltage, current, power and time for a routine electrophoresis run. Parameters can be changed temporarily without interrupting the run.

- **Method programming**

Up to 9 different programs, each with 9 steps, of frequently used parameters can be stored in the non-volatile memory for future recall. Reads voltage in 1 V steps, current in 1 mA steps and power in 1 W steps. Each step is able to recall a next one, providing a flexible multiple step function for special techniques. Parameters of the running step can be changed temporarily without interrupting the run.

- **Voltage ramp**

The method mode also allows to program a linear voltage gradient for any step provided the limiting current or power is not attained.

- **Timer**

Timer or volt-hour controlled operation is a useful standard feature on all models. The micro-computer will automatically terminate the run and sound an alarm when the count down of the selected value is achieved.

- **Automatic cross-over**

Each model has constant voltage, constant current, constant power capabilities with automatic cross-over and shows which parameter is kept constant.

- **Automatic recovery after power failure**

After a mains power failure the instrument will automatically continue the run for the remaining time.

- **Display**

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German, Spanish, Italian).

- **Data-logging**

Stores up to 3600 output values (voltage, current and power, time or volthours) including program number and step.

- **Data Transfer**

A free data acquisition software for PC can be downloaded from our website. It allows to visualize and examine the stored run details via RS232.

- **Remote control**

All power supplies can be controlled by a computer using special commands.

- **Safety precautions**

The user is protected from potential shock hazard since the AC line is automatically disconnected from the high voltage transformer when a ground leakage path is detected.

The instrument is fully protected against any overload condition including accidental short circuit of the output.

The high voltage cannot suddenly appear at the outputs. It will always increase smoothly up to one of the pre-set limits is reached.

Galvanic RS232 input/output insulation prevents ground loop interferences when connected to a computer.

- **Warranty**

Three year warranty.

- **Comprises:** manual and mains lead (EV232, EV233 and EV262: + extra 4 pairs of 2/4 mm adapters E200).

(Model EV222 has no method programming, voltage ramp, data-logging or remote control possibility)



Accessories

CODE	DESCRIPTION
E200	Pair of adaptors, 4 mm plug to 2 mm socket
E201	Pair of cables M/F, 4+4 mm
E203	Pair of cables M/F, 2+4 mm
E204	Pair of adaptors, 2 mm plug to 4 mm socket

CODE	DESCRIPTION
EV222	Mini power supply, 200 V / 200 mA / 20 W
EV243	Mini power supply, 400 V / 300 mA / 50 W
EV231	Maxi power supply, 300 V / 1000 mA / 150 W
EV265	Maxi power supply, 600 V / 500 mA / 150 W
EV202	Maxi power supply, 300 V / 2000 mA / 300 W
EV261	Maxi power supply, 600 V / 1000 mA / 300 W
EV215	Maxi power supply, 1200 V / 500 mA / 300 W
EV232	Maxi power supply, 3000 V / 150 mA / 150 W
EV233	Maxi power supply, 3000 V / 300 mA / 300 W
EV262	Maxi power supply, 6000 V / 150 mA / 300 W
AK2315	RS232 computer cable (optional)
→ Add a S-sign for 120 VAC versions, e.g.: EV233S	
→ Add a U-sign for UK plug versions, e.g.: EV233U	
→ Add a C-sign for Swiss plug versions, e.g.: EV233C	

Mini power supplies

Specifications	EV222	EV243
VOLTAGE	0...200 V	0...400 V
CURRENT	0...200 mA	0...300 mA
POWER	0...20 W	0...50 W
PARAMETER RANGE	1...100% of full scale	1...100% of full scale
TIMER	0...99:59 h	0...99:59 h
VOLT-HOURS		0...99.99 kWh
DISPLAY	LCD, 2x16 characters	LCD, 2x16 characters
RESOLUTION	1 V, 1 mA, 1 W	1 V, 1 mA, 1 W
PROGRAMS	1 set of parameters	9x9 set of parameters
OUTPUTS	3 in parallel, 4 mm sockets	3 in parallel, 4 mm sockets
MINIMUM LOAD RESISTANCE	15 Ω	30 Ω
NO LOAD DETECTION	on/off, programmable	on/off, programmable
GROUND LEAKAGE DETECTION	✓	✓
OVERLOAD DETECTION	✓	✓
COMPUTER CONTROL		✓
DATA-LOGGING		3600 values
RS232 INTERFACE		9600 b/s
AMBIENT TEMPERATURE	0...40°C	0...40°C
RELATIVE HUMIDITY	0...95%, non condensing	0...95%, non condensing
POWER REQUIREMENTS	210...250 VAC, 50/60 Hz, 35 W	210...250 VAC, 50/60 Hz, 110 W
DIMENSIONS (WxDxH)	24x20x13 cm	24x20x13 cm
WEIGHT	2 kg	3 kg



Maxi power supplies

Specifications	EV231	EV265	EV202	EV261
VOLTAGE	0...300 V	0...600 V	0...300 V	0...600 V
CURRENT	0...1000 mA	0...500 mA	0...2000 mA	0...1000 mA
POWER	0...150 W	0...150 W	0...300 W	0...300 W
PARAMETER RANGE	1...100% of full scale	1...100% of full scale	1...100% of full scale	1...100% of full scale
TIMER	0...99:59 h	0...99:59 h	0...99:59 h	0...99:59 h
VOLT-HOURS	0...99.99 kWh	0...99.99 kWh	0...99.99 kWh	0...99.99 kWh
DISPLAY	LCD, 2x16 characters	LCD, 2x16 characters	LCD, 2x16 characters	LCD, 2x16 characters
RESOLUTION	1 V, 1 mA, 1 W	1 V, 1 mA, 1 W	1 V, 1 mA, 1 W	1 V, 1 mA, 1 W
PROGRAMS	9x9 set of parameters	9x9 set of parameters	9x9 set of parameters	9x9 set of parameters
OUTPUTS	4 in parallel, 4 mm sockets	4 in parallel, 4 mm sockets	4 in parallel, 4 mm sockets	4 in parallel, 4 mm sockets
MINIMUM LOAD RESISTANCE	10 Ω	30 Ω	5 Ω	15 Ω
NO LOAD DETECTION	on/off, programmable	on/off, programmable	on/off, programmable	on/off, programmable
GROUND LEAKAGE DETECTION	✓	✓	✓	✓
OVERLOAD DETECTION	✓	✓	✓	✓
COMPUTER CONTROL	✓	✓	✓	✓
DATA-LOGGING	3600 values	3600 values	3600 values	3600 values
RS232 INTERFACE	9600 b/s	9600 b/s	9600 b/s	9600 b/s
AMBIENT TEMPERATURE	0...40°C	0...40°C	0...40°C	0...40°C
RELATIVE HUMIDITY	0...95%, non condensing	0...95%, non condensing	0...95%, non condensing	0...95%, non condensing
POWER REQUIREMENTS	210...250 VAC, 50/60 Hz, 200 W	210...250 VAC, 50/60 Hz, 200 W	210...250 VAC, 50/60 Hz, 360 W	210...250 VAC, 50/60 Hz, 360 W
DIMENSIONS (WxDxH)	31x26x15 cm	31x26x15 cm	31x26x15 cm	31x26x15 cm
WEIGHT	6 kg	6 kg	10 kg	10 kg

Specifications	EV215	EV232	EV233	EV262
VOLTAGE	0...1200 V	0...3000 V	0...3000 V	0...6000 V
CURRENT	0...500 mA	0...150 mA	0...300 mA	0...150 mA
POWER	0...300 W	0...150 W	0...300 W	0...300 W
PARAMETER RANGE	1...100% of full scale	1...100% of full scale	1...100% of full scale	1...100% of full scale
TIMER	0...99:59 h	0...99:59 h	0...99:59 h	0...99:59 h
VOLT-HOURS	0...99.99 kWh	0...99.99 kWh	0...99.99 kWh	0...99.99 kWh
DISPLAY	LCD, 2x16 characters	LCD, 2x16 characters	LCD, 2x16 characters	LCD, 2x16 characters
RESOLUTION	1 V, 1 mA, 1 W	1 V, 1 mA, 1 W	1 V, 1 mA, 1 W	1 V, 1 mA, 1 W
PROGRAMS	9x9 set of parameters	9x9 set of parameters	9x9 set of parameters	9x9 set of parameters
OUTPUTS	4 in parallel, 4 mm sockets	4 in parallel, 2 mm sockets	4 in parallel, 2 mm sockets	4 in parallel, 2 mm sockets
MINIMUM LOAD RESISTANCE	70 Ω	600 Ω	300 Ω	1200 Ω
NO LOAD DETECTION	on/off, programmable	on/off, programmable	on/off, programmable	on/off, programmable
GROUND LEAKAGE DETECTION	✓	✓	✓	✓
OVERLOAD DETECTION	✓	✓	✓	✓
COMPUTER CONTROL	✓	✓	✓	✓
DATA-LOGGING	3600 values	3600 values	3600 values	3600 values
RS232 INTERFACE	9600 b/s	9600 b/s	9600 b/s	9600 b/s
AMBIENT TEMPERATURE	0...40°C	0...40°C	0...40°C	0...40°C
RELATIVE HUMIDITY	0...95%, non condensing	0...95%, non condensing	0...95%, non condensing	0...95%, non condensing
POWER REQUIREMENTS	210...250 VAC, 50/60 Hz, 360 W	210...250 VAC, 50/60 Hz, 200 W	210...250 VAC, 50/60 Hz, 360 W	210...250 VAC, 50/60 Hz, 360 W
DIMENSIONS (WxDxH)	31x26x15 cm	31x26x15 cm	31x26x15 cm	31x26x15 cm
WEIGHT	10 kg	6 kg	10 kg	10 kg

Application guide

Electrophoresis power supplies

Voltage (V)	Model	Parameter range	Optimum voltage (V)	Optimum current (mA)	Maximum power (W)	Min. load resistance	Number of programs	Recommended application
6000	EV262	60...6000 V 2...150 mA 3...300 W	100...6000 V	0...150 mA	300 W	1200 Ω	9x9	DNA Sequencing, Flat bed Isoelectric Focusing
3000	EV233	30...3000 V 3...300 mA 3...300 W	50...3000 V	0...300 mA	300 W	300 Ω	9x9	DNA Sequencing, Flat bed Isoelectric Focusing, Horizontal Gel, Vertical Gel, Electro-elution
3000	EV232	30...3000 V 2...150 mA 2...150 W	50...3000 V	0...150 mA	150 W	600 Ω	9x9	DNA Sequencing, Flat bed Isoelectric Focusing, Horizontal Gel, Vertical Gel, Electro-elution
1200	EV215	12...1200 V 5...500 mA 3...300 W	20...1200 V	0...500 mA	300 W	70 Ω	9x9	DNA Sequencing, Flat bed Isoelectric Focusing, Horizontal Gel, Vertical Gel, Electro-elution
600	EV261	6...600 V 10...1000 mA 3...300 W	10...600 V	0...1000 mA	300 W	15 Ω	9x9	Horizontal Gel, Vertical Gel, Electro-elution, Mini Semi-dry Blotting
600	EV265	6...600 V 5...500 mA 2...150 W	10...600 V	0...500 mA	150 W	30 Ω	9x9	Horizontal Gel, Vertical Gel, Electro-elution
400	EV243	4...400 V 3...300 mA 1...50 W	10...400 V	0...300 mA	50 W	30 Ω	9x9	Horizontal Gel, Vertical Gel, Electro-elution
300	EV202	3...300 V 20...2000 mA 3...300 W	5...300 V	0...2000 mA	300 W	5 Ω	9x9	Western Blotting, Semi-dry Blotting, Horizontal Gel, Vertical Gel
300	EV231	3...300 V 10...1000 mA 2...150 W	5...300 V	0...1000 mA	150 W	10 Ω	9x9	Horizontal Gel, Vertical Gel, Electro-elution, Mini Western Blotting, Mini Semi-dry Blotting
200	EV222	2...200 V 2...200 mA 1...20 W	3...200 V	0...200 mA	20 W	15 Ω	1	Mini Horizontal Gel, Mini Vertical Gel

E3xxx series

Horizontal units



Injection mulded construction - Durable, leak-proof environment for complete safety and long life.

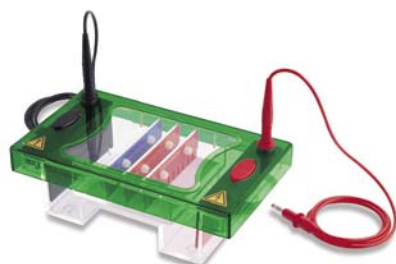
Cassette type electrodes - Inexpensive, easy to replace. Made of 99.99% corrosion resistant, pure platinum.

Electrical safety - Lid can be located in one way only. On removal, power is disconnected from buffer chamber.

UV transparent trays - All units contain removable UV transparent trays.

Multiple gel trays - Gel size and sample number requirements can be exactly matched in each unit, with the option of additional gel tray sizes. This eliminates the need for multiple gel tanks for changes in gel size or application. With no indentations or casting gate grooves in the tray to interfere with sample progression, traditional tape casting can be used, should this be preferred.

Easy to use - Leak proof "Plug and Go" casting dams allow gels to be rapidly cast externally while the tank remains in use for electrophoresis.



E3800**Isoelectric focusing**

- This IEF system has been designed to perform all flat bed IEF techniques, including wick-based electrophoresis with horizontal and hand-cast IEF gels, and focusing with IPG strips.
- The unit includes a large cooling platform which offers increased strip capacity and active gel area.
- Uniform cooling of the platform is achieved using a large ceramic plate that may be connected to any standard chiller via quick-fit connectors for enhanced gel or strip cooling.
- An optional rehydration tray is also available for overnight rehydration of up to twelve IPG strips before use.



CODE	DESCRIPTION
E3800	Isoelectric focusing system, 26x26 cm
E3830	Replacement positive electrode cassette (red)
E3831	Replacement negative electrode cassette (black)
E3832	Replacement glass platform
E3833	Replacement electrode frame
E3834	Rehydration tray

E3100**Mini rapid horizontal unit**

- The mini rapid horizontal unit is a completely self contained system designed for quick checks of samples. Gel casting, running and analysis are all performed in the same ultra compact unit.
- Buffer and gel volumes have been kept to a minimum and the parallel electrode arrangement allows ultra efficient current transfer, enabling resolution to be completed within 30 minutes.
- The UV transparent base allows direct viewing on a UV Transilluminator with no need for time consuming transfer and potential gel damage.
- Dual comb slots allow the loading of up to 40 samples per gel while multichannel pipette compatible combs further enhance the speed and convenience.
- Gel dimensions (WxL): 10x8 cm
- Buffer volume: 50 ml
- Maximum sample capacity: 40
- Unit dimensions (WxDxH): 15x15x4 cm
- Recommended power supplies: EV222, EV243



For routine, rapid checking of samples

CODE	DESCRIPTION
E3100	Mini rapid system, 10x8 cm + dams + 2 combs, 1.5 mm thick, 8 samples
E3120	Replacement casting dams, pk/2
E1091	Replacement platinum wire, 0.2 mm thick, 50 cm

CODE	DESCRIPTION	SAMPLE VOLUME
E3140	Comb, 1 mm thick, 1 sample, 1 dye	330 µl
E3141	Comb, 1 mm thick, 4 sample	90 µl
E3142	Comb, 1 mm thick, 8 sample	40 µl
E3143	Comb, 1 mm thick, 12 sample	25 µl
E3144	Comb, 1 mm thick, 16 sample	15 µl
E3145	Comb, 1 mm thick, 20 sample MC	10 µl

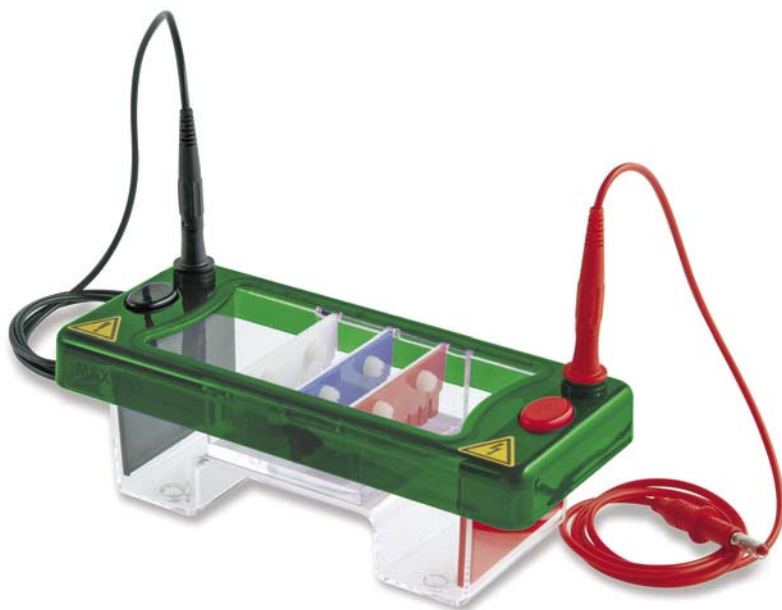
MC = compatible with multi-channel pipettes

CODE	DESCRIPTION	SAMPLE VOLUME
E3146	Comb, 1.5 mm thick, 1 sample, 1 dye	495 µl
E3147	Comb, 1.5 mm thick, 4 sample	135 µl
E3148	Comb, 1.5 mm thick, 8 sample	60 µl
E3149	Comb, 1.5 mm thick, 12 sample	38 µl
E3150	Comb, 1.5 mm thick, 16 sample	23 µl
E3151	Comb, 1.5 mm thick, 20 sample MC	15 µl

MC = compatible with multi-channel pipettes

E3200

Mini horizontal unit



- The mini horizontal unit is the smallest unit in the range, designed for low to medium numbers of samples.
- The small gel size maximises run economy but does not compromise versatility as two tray options are available, 7x7 cm and 7x10 cm, and combs ranging from preparative up to 16 samples.
- Simply by altering the gel tray or comb, this compact unit is capable of resolving up to 64 different samples, prepping 1 ml of sample or separating sample bands over a distance of 9 cm.
- Gel dimensions (WxL): 7x7 or 7x10 cm
- Buffer volume: 225 ml
- Maximum sample capacity: 64
- Unit dimensions (WxDxH): 21x9x9 cm
- Recommended power supplies: EV222, EV243, EV231

Designed for quick checks of low to medium numbers of samples !

CODE	DESCRIPTION
E3200	Complete mini horizontal system + 7x7 & 7x10 cm gel casting trays + loading guides + dams + 2 combs, 1 mm thick, 8 samples
E3201	Mini horizontal unit + 7x7 cm gel casting tray + loading guides + dams + 2 combs, 1 mm thick, 8 samples
E3202	Mini horizontal unit + 7x10 cm gel casting tray + loading guides + dams + 2 combs, 1 mm thick, 8 samples



Casting dams allow gels to be rapidly cast externally while the unit is in use for gel running

Replacement parts & Accessories

CODE	DESCRIPTION
E3220	Gel casting tray, 7x7 cm
E3221	Gel casting tray, 7x10 cm
E3229	Casting dams, pk/2
E3230	Positive electrode cassette (red)
E3231	Negative electrode cassette (black)
E3232	Adhesive loading guides
E3233	Buffer saving blocks, pk/2 (saves 100 ml of buffer)
E3234	Cool-pack and platform
E3235	Gel scoop, 7 cm

CODE	DESCRIPTION	SAMPLE VOLUME
E3240	Comb, 0.75 mm thick, prep 1, marker 1	142 µl
E3241	Comb, 0.75 mm thick, prep 2, marker 2	68 µl
E3242	Comb, 0.75 mm thick, prep 4, marker 2	36 µl
E3243	Comb, 0.75 mm thick, 8 sample MC	8 µl
E3244	Comb, 0.75 mm thick, 8 sample	19 µl
E3245	Comb, 0.75 mm thick, 10 sample	14 µl
E3246	Comb, 0.75 mm thick, 12 sample MC	10 µl
E3247	Comb, 0.75 mm thick, 16 sample	7 µl
E3248	Comb, 1 mm thick, prep 1, marker 1	203 µl
E3249	Comb, 1 mm thick, prep 2, marker 2	90 µl
E3250	Comb, 1 mm thick, prep 4, marker 4	48 µl
E3251	Comb, 1 mm thick, 8 sample MC	11 µl
E3252	Comb, 1 mm thick, 8 sample	25 µl
E3253	Comb, 1 mm thick, 10 sample	18 µl
E3254	Comb, 1 mm thick, 12 sample MC	14 µl
E3255	Comb, 1 mm thick, 16 sample	10 µl

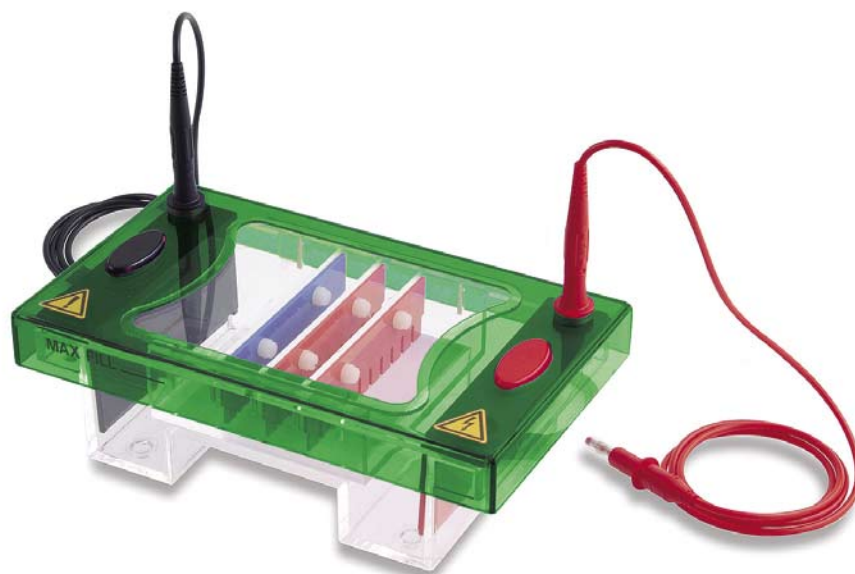
MC = compatible with multi-channel pipettes

CODE	DESCRIPTION	SAMPLE VOLUME
E3256	Comb, 1.5 mm thick, prep 1, marker 1	303 µl
E3257	Comb, 1.5 mm thick, prep 2, marker 2	135 µl
E3258	Comb, 1.5 mm thick, prep 4, marker 4	72 µl
E3259	Comb, 1.5 mm thick, 8 sample MC	17 µl
E3260	Comb, 1.5 mm thick, 8 sample	37 µl
E3261	Comb, 1.5 mm thick, 10 sample	27 µl
E3262	Comb, 1.5 mm thick, 12 sample MC	20 µl
E3263	Comb, 1.5 mm thick, 16 sample	14 µl
E3264	Comb, 2 mm thick, prep 1, marker 1	405 µl
E3265	Comb, 2 mm thick, prep 2, marker 2	180 µl
E3266	Comb, 2 mm thick, prep 4, marker 4	96 µl
E3267	Comb, 2 mm thick, 8 sample MC	23 µl
E3268	Comb, 2 mm thick, 8 sample	50 µl
E3269	Comb, 2 mm thick, 10 sample	36 µl
E3270	Comb, 2 mm thick, 12 sample MC	27 µl
E3271	Comb, 2 mm thick, 16 sample	20 µl

MC = compatible with multi-channel pipettes

E3300**Midi horizontal unit**

- With gel tray options of 10x7 cm and 10x10 cm, the midi horizontal unit has been designed for routine horizontal gel electrophoresis.
- Extending only the width of this unit allows more samples to be resolved per gel than the midi horizontal without a significant increase in buffer or gel volumes.
- A maximum of 100 samples per gel can be resolved making this unit ideal for those routinely checking medium numbers of samples over short to medium gel run lengths.
- Gel dimensions (WxL): 10x7 or 10x10 cm
- Buffer volume: 300 ml
- Maximum sample capacity: 100
- Unit dimensions (WxDxH): 22x12.5x9 cm
- Recommended power supplies: EV222, EV243, EV231



Ideal for quick checks of samples from PCR and cloning

CODE	DESCRIPTION
E3300	Complete midi horizontal system + 10x7 & 10x10 cm gel casting trays + loading guides + dams + 2 combs, 1 mm thick, 16 samples
E3301	Midi horizontal unit + 10x7 cm gel casting tray + loading guides + dams + 2 combs, 1 mm thick, 16 samples
E3302	Midi horizontal unit + 10x10 cm gel casting tray + loading guides + dams + 2 combs, 1 mm thick, 16 samples

Replacement parts & Accessories

CODE	DESCRIPTION
E3320	Gel casting tray, 10x7 cm
E3321	Gel casting tray, 10x10 cm
E3329	Casting dams, pk/2
E3330	Positive electrode cassette (red)
E3331	Negative electrode cassette (black)
E3332	Adhesive loading guides
E3333	Buffer saving blocks, pk/2 (saves 100 ml of buffer)
E3334	Cool-pack and platform
E3335	Gel scoop, 10 cm

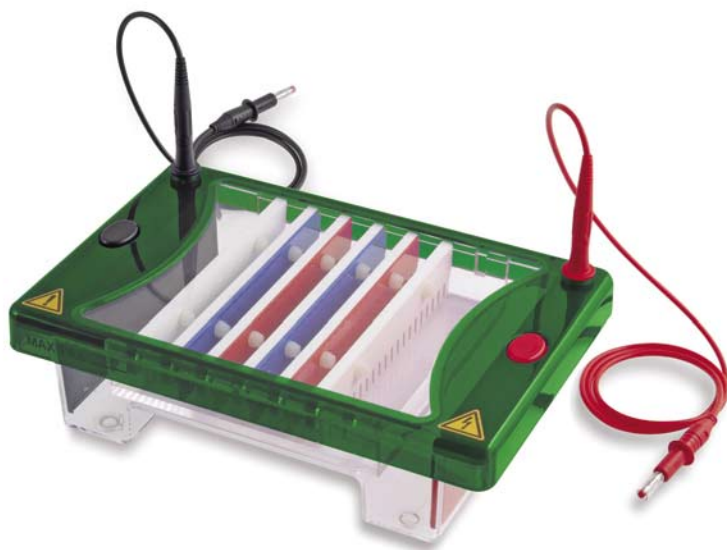


CODE	DESCRIPTION	SAMPLE VOLUME
E3340	Comb, 0.75 mm thick, prep 1, marker 1	270 µl
E3341	Comb, 0.75 mm thick, prep 2, marker 2	118 µl
E3342	Comb, 0.75 mm thick, prep 4, marker 2	57 µl
E3343	Comb, 0.75 mm thick, 8 sample	30 µl
E3344	Comb, 0.75 mm thick, 10 sample MC	20 µl
E3345	Comb, 0.75 mm thick, 12 sample	17 µl
E3346	Comb, 0.75 mm thick, 16 sample	12 µl
E3347	Comb, 0.75 mm thick, 20 sample MC	10 µl
E3348	Comb, 0.75 mm thick, 25 sample	7 µl
E3349	Comb, 1 mm thick, prep 1, marker 1	360 µl
E3350	Comb, 1 mm thick, prep 2, marker 2	158 µl
E3351	Comb, 1 mm thick, prep 4, marker 4	77 µl
E3352	Comb, 1 mm thick, 8 sample	41 µl
E3353	Comb, 1 mm thick, 10 sample MC	27 µl
E3354	Comb, 1 mm thick, 12 sample	23 µl
E3355	Comb, 1 mm thick, 16 sample	16 µl
E3356	Comb, 1 mm thick, 20 sample MC	14 µl
E3357	Comb, 1 mm thick, 25 sample	10 µl

MC = compatible with multi-channel pipettes

CODE	DESCRIPTION	SAMPLE VOLUME
E3358	Comb, 1.5 mm thick, prep 1, marker 1	540 µl
E3359	Comb, 1.5 mm thick, prep 2, marker 2	236 µl
E3360	Comb, 1.5 mm thick, prep 4, marker 4	115 µl
E3361	Comb, 1.5 mm thick, 8 sample	61 µl
E3362	Comb, 1.5 mm thick, 10 sample MC	41 µl
E3363	Comb, 1.5 mm thick, 12 sample	34 µl
E3364	Comb, 1.5 mm thick, 16 sample	24 µl
E3365	Comb, 1.5 mm thick, 20 sample MC	20 µl
E3366	Comb, 1.5 mm thick, 25 sample	15 µl
E3367	Comb, 2 mm thick, prep 1, marker 1	720 µl
E3368	Comb, 2 mm thick, prep 2, marker 2	315 µl
E3369	Comb, 2 mm thick, prep 4, marker 4	153 µl
E3370	Comb, 2 mm thick, 8 sample	81 µl
E3371	Comb, 2 mm thick, 10 sample MC	54 µl
E3372	Comb, 2 mm thick, 12 sample	45 µl
E3373	Comb, 2 mm thick, 16 sample	32 µl
E3374	Comb, 2 mm thick, 20 sample MC	27 µl
E3375	Comb, 2 mm thick, 25 sample	20 µl

MC = compatible with multi-channel pipettes

E3400**Midi-plus horizontal unit**

Ideal for restriction fragment analysis, sample prep or checking of high numbers of samples

- The midi-plus horizontal unit offers a wide degree of versatility.
- Three tray options are available, 15x7 cm, 15x10 cm and 15x15 cm, allowing the choice of one, two or all three gel length options at the time of purchase.
- Further purchases of additional accessories are no longer required.
- Maximising comb and tray options allow up to 210 samples to be resolved per gel.
- The 15 cm total run length allows restriction fragment or other close MW sample bands to be easily separated and identified.
- Speed loading is accomplished using 10, 14, 16, 18, 28 and 30 sample multi-channel pipette compatible combs.
- Gel dimensions (WxL): 15x7, 15x10 or 15x15 cm
- Buffer volume: 500 ml
- Maximum sample capacity: 210
- Unit dimensions (WxDxH): 26.5x17.5x9 cm
- Recommended power supplies: EV243, EV231

CODE	DESCRIPTION
E3400	Complete midi-plus horizontal system + 15x7, 15x10 & 15x15 cm gel casting trays + loading guides + dams + 2 combs, 1 mm thick, 20 samples
E3401	Midi-plus horizontal unit + 15x7 cm gel casting tray + loading guides + dams + 2 combs, 1 mm thick, 20 samples
E3402	Midi-plus horizontal unit + 15x10 cm gel casting tray + loading guides + dams + 2 combs, 1 mm thick, 20 samples
E3403	Midi-plus horizontal unit + 15x15 cm gel casting tray + loading guides + dams + 2 combs, 1 mm thick, 20 samples

Replacement parts & Accessories

CODE	DESCRIPTION
E3420	Gel casting tray, 15x7 cm
E3421	Gel casting tray, 15x10 cm
E3422	Gel casting tray, 15x15 cm
E3429	Casting dams, pk/2
E3430	Positive electrode cassette (red)

Replacement parts & Accessories

CODE	DESCRIPTION
E3431	Negative electrode cassette (black)
E3432	Adhesive loading guides
E3433	Buffer saving blocks, pk/2 (saves 190 ml of buffer)
E3434	Cool-pack and platform
E3435	Gel scoop, 15 cm

CODE	DESCRIPTION	SAMPLE VOLUME
E3440	Comb, 0.75 mm thick, prep 1, marker 1	371 µl
E3441	Comb, 0.75 mm thick, prep 2, marker 2	169 µl
E3442	Comb, 0.75 mm thick, prep 4, marker 2	91 µl
E3443	Comb, 0.75 mm thick, 10 sample	34 µl
E3444	Comb, 0.75 mm thick, 12 sample	30 µl
E3445	Comb, 0.75 mm thick, 20 sample	16 µl
E3446	Comb, 0.75 mm thick, 35 sample	7 µl
E3447	Comb, 0.75 mm thick, 10 sample MC	22 µl
E3448	Comb, 0.75 mm thick, 14 sample MC	22 µl
E3449	Comb, 0.75 mm thick, 16 sample MC	20 µl
E3450	Comb, 0.75 mm thick, 18 sample MC	8 µl
E3451	Comb, 0.75 mm thick, 28 sample MC	8 µl
E3452	Comb, 0.75 mm thick, 30 sample MC	9 µl
E3453	Comb, 1 mm thick, prep 1, marker 1	495 µl
E3454	Comb, 1 mm thick, prep 2, marker 2	225 µl
E3455	Comb, 1 mm thick, prep 4, marker 4	122 µl
E3456	Comb, 1 mm thick, 10 sample	45 µl
E3457	Comb, 1 mm thick, 12 sample	41 µl
E3458	Comb, 1 mm thick, 20 sample	21 µl
E3459	Comb, 1 mm thick, 35 sample	10 µl
E3460	Comb, 1 mm thick, 10 sample MC	29 µl
E3461	Comb, 1 mm thick, 14 sample MC	29 µl
E3462	Comb, 1 mm thick, 16 sample MC	27 µl
E3463	Comb, 1 mm thick, 18 sample MC	11 µl
E3464	Comb, 1 mm thick, 28 sample MC	11 µl
E3465	Comb, 1 mm thick, 30 sample MC	13 µl

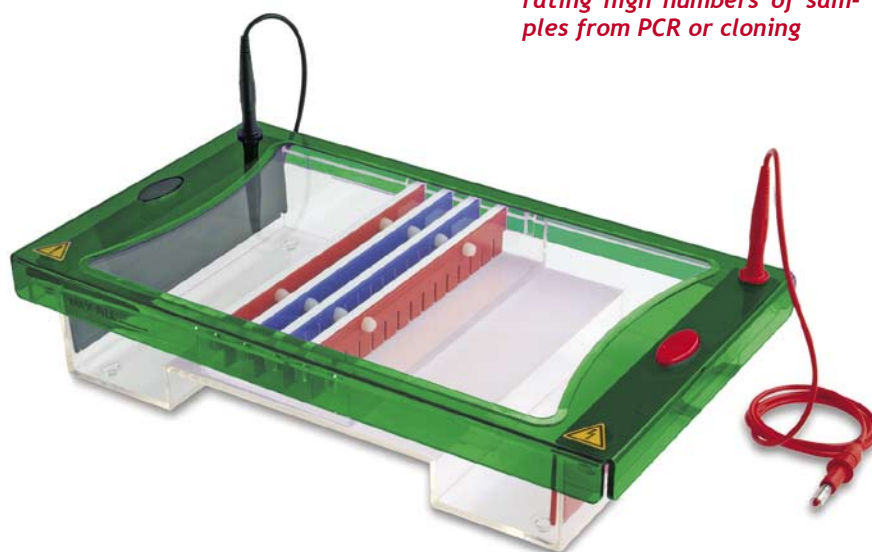
MC = compatible with multi-channel pipettes

CODE	DESCRIPTION	SAMPLE VOLUME
E3466	Comb, 1.5 mm thick, prep 1, marker 1	743 µl
E3467	Comb, 1.5 mm thick, prep 2, marker 2	338 µl
E3468	Comb, 1.5 mm thick, prep 4, marker 4	182 µl
E3469	Comb, 1.5 mm thick, 10 sample	68 µl
E3470	Comb, 1.5 mm thick, 12 sample	61 µl
E3471	Comb, 1.5 mm thick, 20 sample	32 µl
E3472	Comb, 1.5 mm thick, 35 sample	15 µl
E3473	Comb, 1.5 mm thick, 10 sample MC	44 µl
E3474	Comb, 1.5 mm thick, 14 sample MC	44 µl
E3475	Comb, 1.5 mm thick, 16 sample MC	41 µl
E3476	Comb, 1.5 mm thick, 18 sample MC	17 µl
E3477	Comb, 1.5 mm thick, 28 sample MC	17 µl
E3478	Comb, 1.5 mm thick, 30 sample MC	19 µl
E3479	Comb, 2 mm thick, prep 1, marker 1	990 µl
E3480	Comb, 2 mm thick, prep 2, marker 2	450 µl
E3481	Comb, 2 mm thick, prep 4, marker 4	243 µl
E3482	Comb, 2 mm thick, 10 sample	90 µl
E3483	Comb, 2 mm thick, 12 sample	81 µl
E3484	Comb, 2 mm thick, 20 sample	43 µl
E3485	Comb, 2 mm thick, 35 sample	20 µl
E3486	Comb, 2 mm thick, 10 sample MC	59 µl
E3487	Comb, 2 mm thick, 14 sample MC	59 µl
E3488	Comb, 2 mm thick, 16 sample MC	54 µl
E3489	Comb, 2 mm thick, 18 sample MC	23 µl
E3490	Comb, 2 mm thick, 28 sample MC	23 µl
E3491	Comb, 2 mm thick, 30 sample MC	25 µl

MC = compatible with multi-channel pipettes

E3500**Maxi horizontal unit**

- The maxi horizontal unit is primarily designed for resolution of high numbers of samples such as from cloning or PCR. It allows ultra high-resolution separations over extended runs.
- Tray sizes correspond to standard blotter sizes. It also allows easy sample transfer onto a membrane for further analysis.
- Three tray sizes are available, 20x20 cm, 20x25 cm and a half-length 20x10 cm. Multichannel pipette compatible combs up to 40 sample facilitate speed loading of up to 440 samples per gel while 50 sample combs allow maximum sample capacity of 550 samples per gel.
- Gel dimensions (WxL): 20x10, 20x20 or 20x25 cm
- Buffer volume: 1200 ml
- Maximum sample capacity: 550
- Unit dimensions (WxDxH): 39.5x23x9 cm
- Recommended power supplies: EV231, EV265



Primarily designed for separating high numbers of samples from PCR or cloning

CODE	DESCRIPTION
E3500	Complete maxi horizontal system + 20x10 & 20x20 cm gel casting trays + loading guides + dams + 2 combs, 1 mm thick, 20 samples
E3501	Maxi horizontal unit + 20x10 cm gel casting tray + loading guides + dams + 2 combs, 1 mm thick, 20 samples
E3502	Maxi horizontal unit + 20x20 cm gel casting tray + loading guides + dams + 2 combs, 1 mm thick, 20 samples
E3503	Maxi Horizontal unit + 20x25 cm gel casting tray + loading guides + dams + 2 combs, 1 mm thick, 20 samples

Replacement parts & Accessories

CODE	DESCRIPTION
E3520	Gel casting tray, 20x10 cm
E3521	Gel casting tray, 20x20 cm
E3522	Gel casting tray, 20x25 cm
E3529	Casting dams, pk/2
E3530	Positive electrode cassette (red)

CODE	DESCRIPTION	SAMPLE VOLUME
E3540	Comb, 0.75 mm thick, prep 1, marker 1	506 µl
E3541	Comb, 0.75 mm thick, prep 2, marker 2	236 µl
E3542	Comb, 0.75 mm thick, prep 4, marker 2	115 µl
E3543	Comb, 0.75 mm thick, 10 sample	54 µl
E3544	Comb, 0.75 mm thick, 16 sample	30 µl
E3545	Comb, 0.75 mm thick, 20 sample MC	20 µl
E3546	Comb, 0.75 mm thick, 25 sample	16 µl
E3547	Comb, 0.75 mm thick, 30 sample	13 µl
E3548	Comb, 0.75 mm thick, 36 sample	11 µl
E3549	Comb, 0.75 mm thick, 40 sample	8 µl
E3550	Comb, 0.75 mm thick, 50 sample	8 µl
E3551	Comb, 1 mm thick, prep 1, marker 1	675 µl
E3552	Comb, 1 mm thick, prep 2, marker 2	315 µl
E3553	Comb, 1 mm thick, prep 4, marker 2	153 µl
E3554	Comb, 1 mm thick, 10 sample	72 µl
E3555	Comb, 1 mm thick, 16 sample	41 µl
E3556	Comb, 1 mm thick, 20 sample MC	27 µl
E3557	Comb, 1 mm thick, 25 sample	21 µl
E3558	Comb, 1 mm thick, 30 sample	17 µl
E3559	Comb, 1 mm thick, 36 sample	14 µl
E3560	Comb, 1 mm thick, 40 sample MC	11 µl
E3561	Comb, 1 mm thick, 50 sample	10 µl

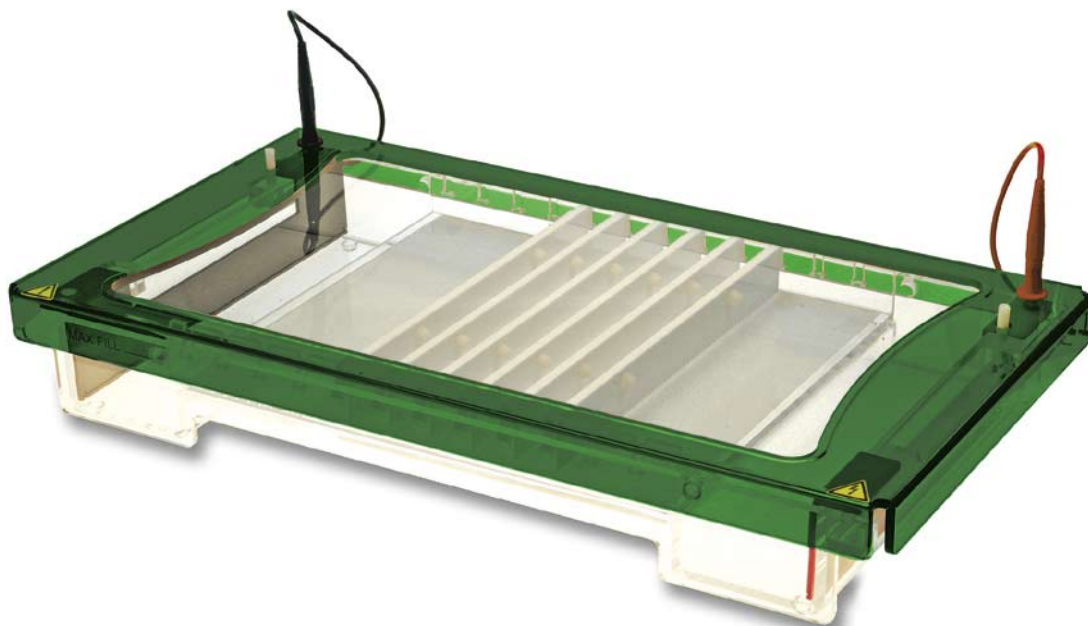
MC = compatible with multi-channel pipettes

Replacement parts & Accessories

CODE	DESCRIPTION
E3531	Negative electrode cassette (black)
E3532	Adhesive loading guides
E3533	Buffer saving blocks, pk/2 (saves 450 ml of buffer)
E3534	Cool-pack and platform
E3535	Gel scoop, 20 cm

CODE	DESCRIPTION	SAMPLE VOLUME
E3562	Comb, 1.5 mm thick, prep 1, marker 1	1013 µl
E3563	Comb, 1.5 mm thick, prep 2, marker 2	473 µl
E3564	Comb, 1.5 mm thick, prep 4, marker 2	230 µl
E3565	Comb, 1.5 mm thick, 10 sample	108 µl
E3566	Comb, 1.5 mm thick, 16 sample	61 µl
E3567	Comb, 1.5 mm thick, 20 sample MC	41 µl
E3568	Comb, 1.5 mm thick, 25 sample	32 µl
E3569	Comb, 1.5 mm thick, 30 sample	26 µl
E3570	Comb, 1.5 mm thick, 36 sample	22 µl
E3571	Comb, 1.5 mm thick, 40 sample	17 µl
E3572	Comb, 1.5 mm thick, 50 sample	16 µl
E3573	Comb, 2 mm thick, prep 1, marker 1	1350 µl
E3574	Comb, 2 mm thick, prep 2, marker 2	630 µl
E3575	Comb, 2 mm thick, prep 4, marker 2	306 µl
E3576	Comb, 2 mm thick, 10 sample	144 µl
E3577	Comb, 2 mm thick, 16 sample	81 µl
E3578	Comb, 2 mm thick, 20 sample MC	54 µl
E3579	Comb, 2 mm thick, 25 sample	42 µl
E3580	Comb, 2 mm thick, 30 sample	34 µl
E3581	Comb, 2 mm thick, 36 sample	29 µl
E3582	Comb, 2 mm thick, 40 sample MC	23 µl
E3583	Comb, 2 mm thick, 50 sample	21 µl

MC = compatible with multi-channel pipettes

E3600**Maxi-plus horizontal unit**

- Designed for rapid screening of very large numbers of clonal or PCR samples, the maxi-plus horizontal unit has a 672 maximum sample capacity per gel. This allows loading and analysis of exactly seven 96 well format micro titre plates.
- The large gel run length of 32 cm also allows resolution of samples over a long distance for separation of complex sample bands such as in restriction fragment analysis.
- The unit is available with a full length tray, with other tray length options of 16 or 24 cm or with all three gel tray lengths so that the user's exact requirements can be matched.
- Buffer recirculation ports are included as standard to allow enhanced resolution over extended runs.
- Gel dimensions (WxL): 26x16, 26x24, 26x32 cm
- Buffer volume: 1400 ml
- Maximum sample capacity: 672
- Unit dimensions (WxDxH): 50x28x9 cm
- Recommended power supplies: EV265, EV215

Ideal for checking very large numbers of samples or extended high resolution separations

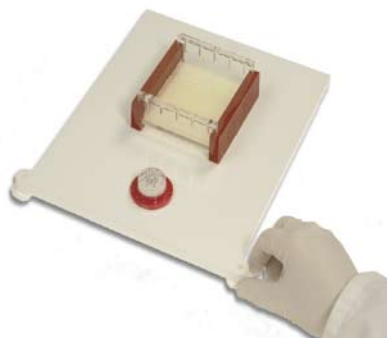
CODE	DESCRIPTION
E3600	Complete maxi-plus horizontal system + 26x16, 26x24 & 26x32 cm gel casting trays + loading guides + 6 combs, 1 mm thick, 28 samples
E3601	Maxi-plus horizontal unit + 26x16 cm gel casting tray + loading guides + dams + 6 combs, 1 mm thick, 28 samples
E3602	Maxi-plus horizontal unit + 26x24 cm gel casting tray + loading guides + dams + 6 combs, 1 mm thick, 28 samples
E3603	Maxi-plus horizontal unit + 26x32 cm gel casting tray + loading guides + dams + 6 combs, 1 mm thick, 28 samples

Replacement parts & Accessories

CODE	DESCRIPTION	
E3620	Gel casting tray, 26x16 cm	
E3621	Gel casting tray, 26x24 cm	
E3622	Gel casting tray, 26x32 cm	
E3629	Gel tray sealing tape, 65 m x 25.4 mm	
E3630	Positive electrode cassette (red)	
E3631	Negative electrode cassette (black)	
E3632	Adhesive loading guides	
E3633	Buffer saving blocks, pk/2 (saves 625 ml of buffer)	
E3634	Cool-pack and platform	
E3635	Gel scoop, 26 cm	
E3640	Comb, 0.75 mm thick, 28 sample MC	25 µl
E3641	Comb, 0.75 mm thick, 56 sample MC	10 µl
E3642	Comb, 1 mm thick, 28 sample MC	34 µl
E3643	Comb, 1 mm thick, 56 sample MC	14 µl
E3644	Comb, 1.5 mm thick, 28 sample MC	51 µl
E3645	Comb, 1.5 mm thick, 56 sample MC	20 µl
E3646	Comb, 2 mm thick, 28 sample MC	68 µl
E3647	Comb, 2 mm thick, 56 sample MC	27 µl

E1020**Gel levelling table**

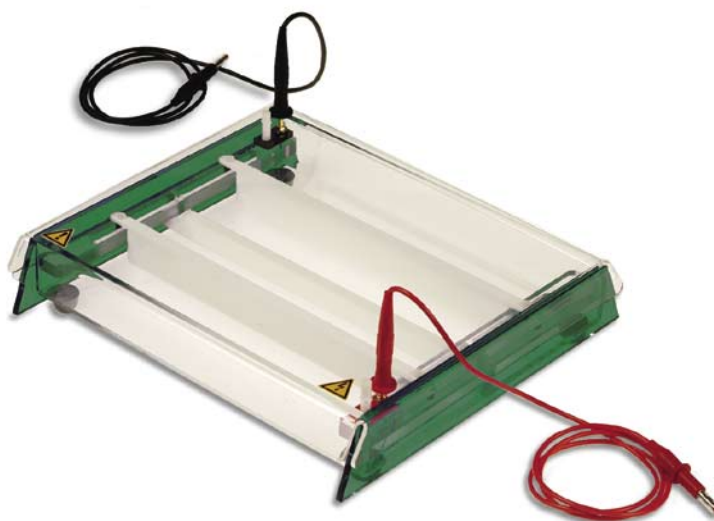
- The gel levelling table provides a useful way of pouring gels of uniform thickness.
- The table features a large 32x26 cm platform with large thumbwheel levelling feet at each corner.
- A levelling bubble is supplied.



CODE	DESCRIPTION
E1020	Gel Levelling Table

E3700**Cellulose acetate system**

- This cellulose acetate system is the ideal tank for both standard and wet cellulose acetate electrophoresis. This unit is designed for both routine and research requirements and is built to our high quality standard.
- The unit includes an adjustable support which enables easy and fast adjustment for different lengths of cellulose acetate strip.
- Strip dimensions up to 24x20 cm.
- A new complete range of wet cellulose acetate gels is available. These have the advantage that they can be used for a wide variety of clinical electrophoresis applications including haemoglobin, serum proteins for monoclonal gammopathies, urine proteins, isoenzymes, lipo and glycoproteins. CellasGEL cellulose acetate gels are available in a variety of sizes and applications: 2.5x14 cm, 2.5x17 cm, 5.7x14 cm, 5.7x17 cm, 5x24 cm, 17x17 cm, 6x7.6 cm (Helena), 5.7x 0.2 (arched).
- Kits are available for multiple tests on serum proteins, haemoglobin, urine proteins and for immunofixation.
- Bridges are available in a variety of formats for cellulose acetate sheets.
- A universal densitometer scanner and software able to read 144 tests per minute is offered.
- Recommended power supply: EV243.



Clinical electrophoresis tests: Haemoglobin, Serum Proteins for Monoclonal Gammopathies, Urine Proteins, Isoenzymes, Lipo and Glycoproteins and for Immunofixation

CODE	DESCRIPTION
E3700	Horizontal unit for cellulose acetate electrophoresis (without accessories!)
E3701	Scan software (computer and flatbed scanner not included!)
E3702	Flatbed scanner

Accessories

CODE	DESCRIPTION
E3720	CellasGEL, 2.5x14, 250 micron
E3721	CellasGEL, 2.5x14, 200 micron
E3722	CellasGEL, 2.5x17, 200 micron
E3723	CellasGEL, 5.7x14, 250 micron
E3724	CellasGEL, 5.7x14, 200 micron
E3725	CellasGEL, 5.7x14, 250 micron, Pratiga perforate
E3726	CellasGEL, 5.7x14, 200 micron, Pratiga perforate
E3727	CellasGEL, 5x24, RS 190 micron, Rectangular H.R.
E3728	CellasGEL, 17x17, 200 micron
E3729	CellasGEL/Myl, 6x7.6 (Helena size)
E3730	CellasGEL/Myl, 5.7x10.2, for arched position electrophoresis
E3737	CellasKIT IFE Serum + Concentrated urine (5+5 tests for 5 patients) on CellasGEL
E3738	CellasKIT Immunofixation (24 semimicro or 32 micro tests) on CellasGEL
E3739	CellasKIT serum proteins (100 semimicro or 200 micro tests) on CellasGEL
E3740	CellasKIT high resolution of serum proteins (150 semimicro or 200 micro tests) on CellasGEL
E3741	CellasKIT hemoglobins (100 semimicro tests) on CellasGEL
E3742	CellasKIT IFE 1 patient (10 semimicro tests) 10.2x12 cm for CellasClear
E3743	CellasKIT serum proteins (480 micro tests) on CellasClear
E3744	Bridge 8.5 cm for CellasGEL sheets 18.3x14 cm
E3745	Bridge 11 cm for CellasGEL sheets 17x17 cm
E3746	Bridge 8.5 cm (standard size for CellasGEL kits) for CellasGEL strips 5.7x14 or 2.5x14 cm
E3747	Bridge 14 cm for CellasGEL RS Wedge 5x18.5 cm
E3748	Bridge 11 cm for CellasGEL strips 5.7x17 cm
E3749	Bridge for in arched position electrophoresis
E3750	Bridge for horizontal position electrophoresis Helena type



A variety of rapid sample applicators is available for a selection of applications:

Two specimen applicator for semi micro samples on strips 2.5 cm wide.

Four specimen applicator for semi micro samples on strips 5.7 cm wide.

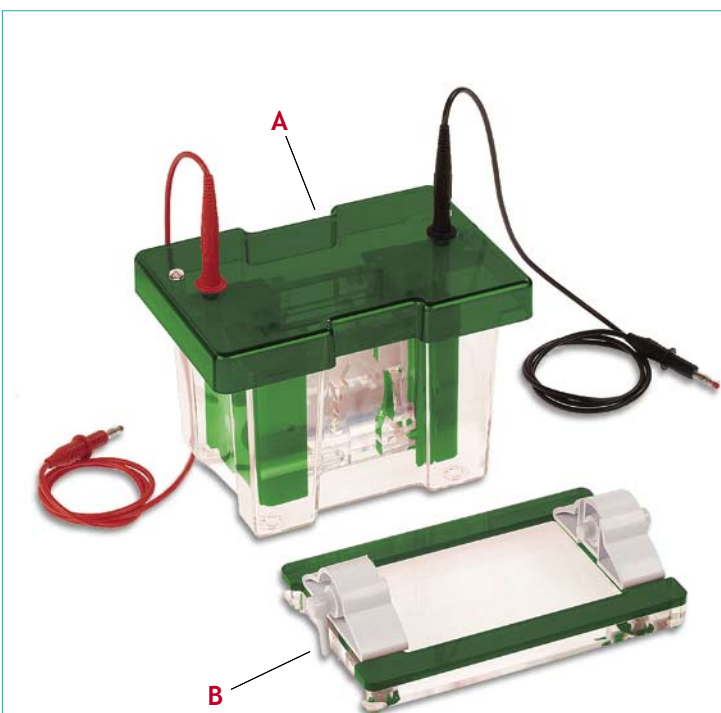
Four specimen applicator for Haemoglobin samples on strips 5.7 cm wide.

Six specimen applicator for samples on strips 5.7 cm wide.

CODE	DESCRIPTION
E3731	Applicator semimicro 2+2 for CellasGEL 2.5x14 cm + CellasKIT IFE Serum + Concentrated urine (5+5 tests for 5 patients) on CellasGEL
E3732	Applicator semimicro 4 for 1.2 µl/9 mm - First type
E3733	Applicator micro 8 for CellasGEL
E3734	Applicator micro 8 for CellasGEL/Myl
E3735	Applicator semimicro 18 for CellasGEL sheets 18.3x14 & x17 cm
E3736	Applicator semimicro 18 for CellasGEL/Myl sheets 19.85x7.6 cm

E4100

Mini vertical unit



- The preferred unit for routine mini protein electrophoresis, the mini vertical unit is constructed using the latest injection moulding manufacturing techniques. This gives a high quality, low cost product with unsurpassed finish, durability and strength.
- The unit incorporates a sealing system which is compatible with all major types of 8x10 cm and 10x10 cm precast gel. Runs up to four 1 mm thick gels.
- Gel casting and running utilise the same insert, no transfer of glass plates during gel casting is necessary.
- The insert contains the option of sliding clamps or just one screw per clamping bar side allowing very rapid set up of both hand cast and precast gels.
- Ultra soft silicone seals and pressure bars which surround the glass plates guarantee leak proof gel casting.
- 2 mm thick glass plates prevent breakage and have bonded spacers for convenience. Reversible gasket for use with Bio-Rad 'non-eared' or short glass plates.
- Accessory electroblotting and tube gel modules are available which use the same outer tank and lid.
- Plate dimensions (WxL): 10x10 cm
- Gel dimensions (WxL): 7.5x8 cm
- Buffer volume: 250...1200 ml
- Maximum sample capacity: 80 (20 per gel)
- Unit dimensions (WxDxH): 19x13x15 cm
- Recommended power supplies: EV243, EV231

Mini SDS PAGE, Native PAGE, Gradient, Second dimension and Nucleic acid separations

CODE	DESCRIPTION
E4100	Mini vertical system (A) + 2 sets of glass plates with bonded 1 mm thick spacers + 2 combs, 1 mm thick, 12 samples + cooling pack + dummy plate

Replacement parts & Accessories

CODE	DESCRIPTION
E4120	Gel casting base, 10x10 cm (B)
E4121	Replacement silicone mat for gel casting base, 10x10 cm
E4122	Inner running module
E4123	Mini cooling pack
E4124	Notched glass plates, 10x10 cm, 2 mm thick, pk/2
E4125	Plain glass plates, 10x10 cm, 2 mm thick, pk/2
E4126	Plain glass plates, 10x10 cm, + 0.75 mm bonded spacers, pk/2
E4127	Plain glass plates, 10x10 cm, + 1 mm bonded spacers, pk/2
E4128	Plain glass plates, 10x10 cm, + 1.5 mm bonded spacers, pk/2
E4129	Plain glass plates, 10x10 cm, + 2 mm bonded spacers, pk/2

CODE	DESCRIPTION	SAMPLE VOLUME
E4140	Comb, 0.75 mm thick, prep 1, marker 1	500 µl
E4141	Comb, 0.75 mm thick, 5 sample	70 µl
E4142	Comb, 0.75 mm thick, 8 sample MC	40 µl
E4143	Comb, 0.75 mm thick, 9 sample	35 µl
E4144	Comb, 0.75 mm thick, 10 sample	30 µl
E4145	Comb, 0.75 mm thick, 12 sample	25 µl
E4146	Comb, 0.75 mm thick, 16 sample MC	20 µl
E4147	Comb, 0.75 mm thick, 20 sample	15 µl
E4148	Comb, 1 mm thick, prep 1, marker 1	650 µl
E4149	Comb, 1 mm thick, 5 sample	100 µl
E4150	Comb, 1 mm thick, 8 sample MC	60 µl
E4151	Comb, 1 mm thick, 9 sample	50 µl
E4152	Comb, 1 mm thick, 10 sample	40 µl
E4153	Comb, 1 mm thick, 12 sample	35 µl
E4154	Comb, 1 mm thick, 16 sample MC	25 µl
E4155	Comb, 1 mm thick, 20 sample	20 µl

MC = compatible with multi-channel pipettes

Replacement parts & Accessories

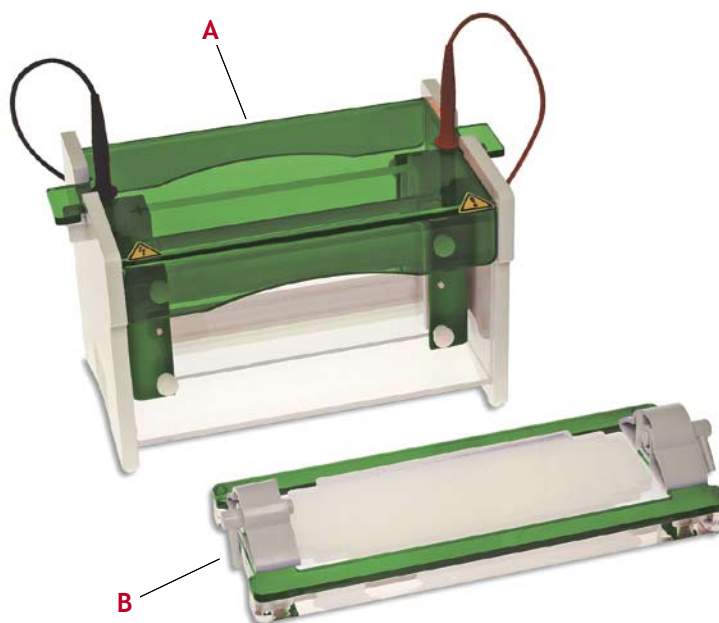
CODE	DESCRIPTION
E4130	Dummy plate, 10x10 cm
E4131	Spacers, 0.75 mm thick, 10 cm, pk/2
E4132	Spacers, 1 mm thick, 10 cm, pk/2
E4133	Spacers, 1.5 mm thick, 10 cm, pk/2
E4134	Spacers, 2 mm thick, 10 cm, pk/2
E4191	Gel caster for 6 gels, 8x10 cm or 10x10 cm
E4192	Gel caster for 12 gels, 8x10 cm or 10x10 cm
E4193	Gel caster for 24 gels, 8x10 cm or 10x10 cm
E1091	Replacement platinum wire, 0.2 mm thick, 50 cm

CODE	DESCRIPTION	SAMPLE VOLUME
E4156	Comb, 1.5 mm thick, prep 1, marker 1	1000 µl
E4157	Comb, 1.5 mm thick, 5 sample	140 µl
E4158	Comb, 1.5 mm thick, 8 sample MC	80 µl
E4159	Comb, 1.5 mm thick, 9 sample	70 µl
E4160	Comb, 1.5 mm thick, 10 sample	60 µl
E4161	Comb, 1.5 mm thick, 12 sample	50 µl
E4162	Comb, 1.5 mm thick, 16 sample MC	40 µl
E4163	Comb, 1.5 mm thick, 20 sample	30 µl
E4164	Comb, 2 mm thick, prep 1, marker 1	1300 µl
E4165	Comb, 2 mm thick, 5 sample	200 µl
E4166	Comb, 2 mm thick, 8 sample MC	120 µl
E4167	Comb, 2 mm thick, 9 sample	100 µl
E4168	Comb, 2 mm thick, 10 sample	80 µl
E4169	Comb, 2 mm thick, 12 sample	70 µl
E4170	Comb, 2 mm thick, 16 sample MC	50 µl
E4171	Comb, 2 mm thick, 20 sample	40 µl

MC = compatible with multi-channel pipettes

E4200**Mini-wide vertical unit**

- The mini-wide vertical unit with a gel width of 20 cm effectively allows double the number of samples to be resolved as the mini unit. This allows consistency of sample comparison on a single gel and is designed for those with greater than 20 samples to compare and re-solve.
- Simple set up using ultra soft silicone seals guarantees trouble free glass plate loading and gel casting.
- Dual gaskets on the gel running insert along with notched and plain glass plates ensure leak proof gel running.
- Rapid set up cooling retains resolution in extended separations and also saves on buffer volume without affecting run quality.
- Ultra soft silicone seals and pressure bars which surround the glass plates guarantee leak proof gel casting.
- 4 mm thick glass plates prevent breakage and have bonded spacers for convenience.
- A wide range of accessories is available allowing many techniques, such as capillary gel IEF and electroblotting, to be performed using the same unit.
- Plate dimensions (WxL): 20x10 cm
- Gel dimensions (WxL): 18x8 cm
- Buffer volume: 600...2800 ml
- Maximum sample capacity: 192 (48 per gel)
- Unit dimensions (WxDxH): 26x16x16 cm
- Recommended power supplies: EV231, EV265



Mini SDS PAGE, Native PAGE, Gradient, Second dimension and Nucleic acid separations

CODE	DESCRIPTION
E4200	Mini-wide vertical system (A) + 2 sets of glass plates with bonded 1 mm thick spacers + 2 combs, 1 mm thick, 24 samples + cooling pack + dummy plate

Replacement parts & Accessories

CODE	DESCRIPTION
E4220	Gel casting base, 20x10 cm (B)
E4221	Replacement silicone mat for gel casting base, 20x10 cm
E4222	Inner running module
E4323	Maxi cooling pack
E4224	Notched glass plates, 20x10 cm, 4 mm thick, pk/2
E4225	Plain glass plates, 20x10 cm, 4 mm thick, pk/2
E4226	Plain glass plates, 20x10 cm, + 0.75 mm bonded spacers, pk/2
E4227	Plain glass plates, 20x10 cm, + 1 mm bonded spacers, pk/2

CODE	DESCRIPTION	SAMPLE VOLUME
E4340	Comb, 0.75 mm thick, prep 1, marker 1	1100 µl
E4341	Comb, 0.75 mm thick, 5 sample	160 µl
E4342	Comb, 0.75 mm thick, 10 sample	80 µl
E4343	Comb, 0.75 mm thick, 18 sample MC	40 µl
E4344	Comb, 0.75 mm thick, 24 sample	30 µl
E4345	Comb, 0.75 mm thick, 30 sample	25 µl
E4346	Comb, 0.75 mm thick, 36 sample MC	20 µl
E4347	Comb, 0.75 mm thick, 48 sample	15 µl
E4348	Comb, 1 mm thick, prep 1, marker 1	1500 µl
E4349	Comb, 1 mm thick, 5 sample	200 µl
E4350	Comb, 1 mm thick, 10 sample	100 µl
E4351	Comb, 1 mm thick, 18 sample MC	50 µl
E4352	Comb, 1 mm thick, 24 sample	40 µl
E4353	Comb, 1 mm thick, 30 sample	35 µl
E4354	Comb, 1 mm thick, 36 sample MC	25 µl
E4355	Comb, 1 mm thick, 48 sample	20 µl

MC = compatible with multi-channel pipettes

Replacement parts & Accessories

CODE	DESCRIPTION
E4228	Plain glass plates, 20x10 cm, + 1.5 mm bonded spacers, pk/2
E4229	Plain glass plates, 20x10 cm, + 2 mm bonded spacers, pk/2
E4230	Dummy plate, 20x10 cm
E4131	Spacers, 0.75 mm thick, 10 cm, pk/2
E4132	Spacers, 1 mm thick, 10 cm, pk/2
E4133	Spacers, 1.5 mm thick, 10 cm, pk/2
E4134	Spacers, 2 mm thick, 10 cm, pk/2
E1091	Replacement platinum wire, 0.2 mm thick, 50 cm

CODE	DESCRIPTION	SAMPLE VOLUME
E4356	Comb, 1.5 mm thick, prep 1, marker 1	2200 µl
E4357	Comb, 1.5 mm thick, 5 sample	320 µl
E4358	Comb, 1.5 mm thick, 10 sample	160 µl
E4359	Comb, 1.5 mm thick, 18 sample MC	80 µl
E4360	Comb, 1.5 mm thick, 24 sample	60 µl
E4361	Comb, 1.5 mm thick, 30 sample	50 µl
E4362	Comb, 1.5 mm thick, 36 sample MC	40 µl
E4363	Comb, 1.5 mm thick, 48 sample	30 µl
E4364	Comb, 2 mm thick, prep 1, marker 1	3000 µl
E4365	Comb, 2 mm thick, 5 sample	400 µl
E4366	Comb, 2 mm thick, 10 sample	200 µl
E4367	Comb, 2 mm thick, 18 sample MC	100 µl
E4368	Comb, 2 mm thick, 24 sample	80 µl
E4369	Comb, 2 mm thick, 30 sample	70 µl
E4370	Comb, 2 mm thick, 36 sample MC	50 µl
E4371	Comb, 2 mm thick, 48 sample	40 µl

MC = compatible with multi-channel pipettes

E4300

Maxi vertical unit



- The preferred unit for maxi protein electrophoresis, the maxi vertical unit combines convenient ease of use features with high resolution separations.
- Simple set up using ultra soft silicone seals guarantees trouble free glass plate loading and gel casting.
- Dual gaskets on the gel running insert along with notched and plain glass plates ensure leak proof gel running.
- Rapid set up cooling retains resolution in extended separations and also saves on buffer volume without affecting run quality.
- 4 mm thick glass plates reduce breakage and have bonded spacers for added convenience.
- A wide range of accessories is available allowing many techniques to be performed using the same unit.
- Prep combs can be used to maximize sample loading and recovery.
- Accessory electroblotting and tube gel modules are available which use the same outer tank and lid.
- Plate dimensions (WxL): 20x20 cm
- Gel dimensions (WxL): 16x17.5 cm
- Buffer volume: 1200...5600 ml
- Maximum sample capacity: 192 (48 per gel)
- Unit dimensions (WxDxH): 26x16x28 cm
- Recommended power supplies: EV265, EV215

Mini SDS PAGE, Native PAGE, Gradient, Second dimension and Nucleic acid separations

CODE	DESCRIPTION
E4300	Maxi vertical system (A) + 2 sets of glass plates with bonded 1 mm thick spacers + 2 combs, 1 mm thick, 24 samples + cooling pack + dummy plate

Replacement parts & Accessories

CODE	DESCRIPTION
E4320	Gel casting base, 20x20 cm (B)
E4321	Replacement silicone mat for gel casting base, 20x20 cm
E4322	Inner running module
E4323	Maxi cooling pack
E4324	Notched glass plates, 20x20 cm, 4 mm thick, pk/2
E4325	Plain glass plates, 20x20 cm, 4 mm thick, pk/2
E4326	Plain glass plates, 20x20 cm, + 0.75 mm bonded spacers, pk/2
E4327	Plain glass plates, 20x20 cm, + 1 mm bonded spacers, pk/2

CODE	DESCRIPTION	SAMPLE VOLUME
E4340	Comb, 0.75 mm thick, prep 1, marker 1	1100 µl
E4341	Comb, 0.75 mm thick, 5 sample	160 µl
E4342	Comb, 0.75 mm thick, 10 sample	80 µl
E4343	Comb, 0.75 mm thick, 18 sample MC	40 µl
E4344	Comb, 0.75 mm thick, 24 sample	30 µl
E4345	Comb, 0.75 mm thick, 30 sample	25 µl
E4346	Comb, 0.75 mm thick, 36 sample MC	20 µl
E4347	Comb, 0.75 mm thick, 48 sample	15 µl
E4348	Comb, 1 mm thick, prep 1, marker 1	1500 µl
E4349	Comb, 1 mm thick, 5 sample	200 µl
E4350	Comb, 1 mm thick, 10 sample	100 µl
E4351	Comb, 1 mm thick, 18 sample MC	50 µl
E4352	Comb, 1 mm thick, 24 sample	40 µl
E4353	Comb, 1 mm thick, 30 sample	35 µl
E4354	Comb, 1 mm thick, 36 sample MC	25 µl
E4355	Comb, 1 mm thick, 48 sample	20 µl

MC = compatible with multi-channel pipettes

Replacement parts & Accessories

CODE	DESCRIPTION
E4328	Plain glass plates, 20x20 cm, + 1.5 mm bonded spacers, pk/2
E4329	Plain glass plates, 20x20 cm, + 2 mm bonded spacers, pk/2
E4330	Dummy plate, 20x20 cm
E4331	Spacers, 0.75 mm thick, 20 cm, pk/2
E4332	Spacers, 1 mm thick, 20 cm, pk/2
E4333	Spacers, 1.5 mm thick, 20 cm, pk/2
E4334	Spacers, 2 mm thick, 20 cm, pk/2
E1091	Replacement platinum wire, 0.2 mm thick, 50 cm

CODE	DESCRIPTION	SAMPLE VOLUME
E4356	Comb, 1.5 mm thick, prep 1, marker 1	2200 µl
E4357	Comb, 1.5 mm thick, 5 sample	320 µl
E4358	Comb, 1.5 mm thick, 10 sample	160 µl
E4359	Comb, 1.5 mm thick, 18 sample MC	80 µl
E4360	Comb, 1.5 mm thick, 24 sample	60 µl
E4361	Comb, 1.5 mm thick, 30 sample	50 µl
E4362	Comb, 1.5 mm thick, 36 sample MC	40 µl
E4363	Comb, 1.5 mm thick, 48 sample	30 µl
E4364	Comb, 2 mm thick, prep 1, marker 1	3000 µl
E4365	Comb, 2 mm thick, 5 sample	400 µl
E4366	Comb, 2 mm thick, 10 sample	200 µl
E4367	Comb, 2 mm thick, 18 sample MC	100 µl
E4368	Comb, 2 mm thick, 24 sample	80 µl
E4369	Comb, 2 mm thick, 30 sample	70 µl
E4370	Comb, 2 mm thick, 36 sample MC	50 µl
E4371	Comb, 2 mm thick, 48 sample	40 µl

MC = compatible with multi-channel pipettes

E4400**Denaturing gradient system**

Detection of single base changes and polymorphisms in genomic cloned and amplified DNA fragments

- The E4400 denaturing gradient gel electrophoresis unit can run two 20x20 cm polyacrylamide gels for the detection of single base changes and polymorphisms in cloned or amplified DNA fragments.
- Use with 100 ml gradient mixer to make two 1 mm parallel denaturing gradient gels.
- Compatible with microplates and thermal cycler blocks.
- It is ideal for the study of mutations and DNA polymorphisms critical in disease.
- This system is primarily for parallel denaturing gradient electrophoresis. The full range of "DGGE" analysis can be performed in this unit.
- During Denaturing Gradient Gel Electrophoresis (DGGE) the buffer in the unit is heated using a 400-watt heater and the temperature controlled by an external temperature control connected to an internal sensor. This allows the gel temperature to be set to the melting temperature of the amplified DNA polymorphism mutation of interest. The temperature can be adjusted in 1°C increments up to 70°C, so the full range of DGGE analysis can be performed in this unit.
- The unit contains all the features of the successful E4300 maxi vertical unit and uses the same combs and accessories.
- Plate dimensions (WxL): 20x20 cm
- Gel dimensions (WxL): 16x17.5 cm
- Buffer volume: 1200...5600 ml
- Maximum sample capacity: 192 (48 per gel)
- Unit dimensions (WxDxH): 26x16x28 cm

CODE	DESCRIPTION
E4400	Denaturing gradient unit + 2 sets of glass plates with bonded 1 mm thick spacers + 2 combs, 1 mm thick, 24 samples + temperature controller + 100 ml gradient mixer

E4500**Sequencing unit**

- Ideal for a variety of large format vertical gel applications, this unit offers advanced features for enhancing gel resolution and ease of use, essential when handling gels of this size.
- Resolution is enhanced by using an aluminium heat sink plate, essential for even sample migration.
- Added convenience is provided by a removable lower buffer tank and upper buffer drainage tap.
- Special buffer chambers allow either low buffer volumes to be used for economy or high buffer volumes to be used for extended runs.
- A wide range of interchangeable comb and spacer options allows a large number of techniques to be easily accomplished.
- Plate dimensions (WxL): 33x45 cm
- Buffer volume: 800...2000 ml
- Maximum sample capacity: 96
- Recommended power supplies: EV232, EV233

CODE	DESCRIPTION
E4500	Sequencing unit + glass plates + 0.35 mm thick spacers + 2 combs, 0.35 mm thick, 48 samples

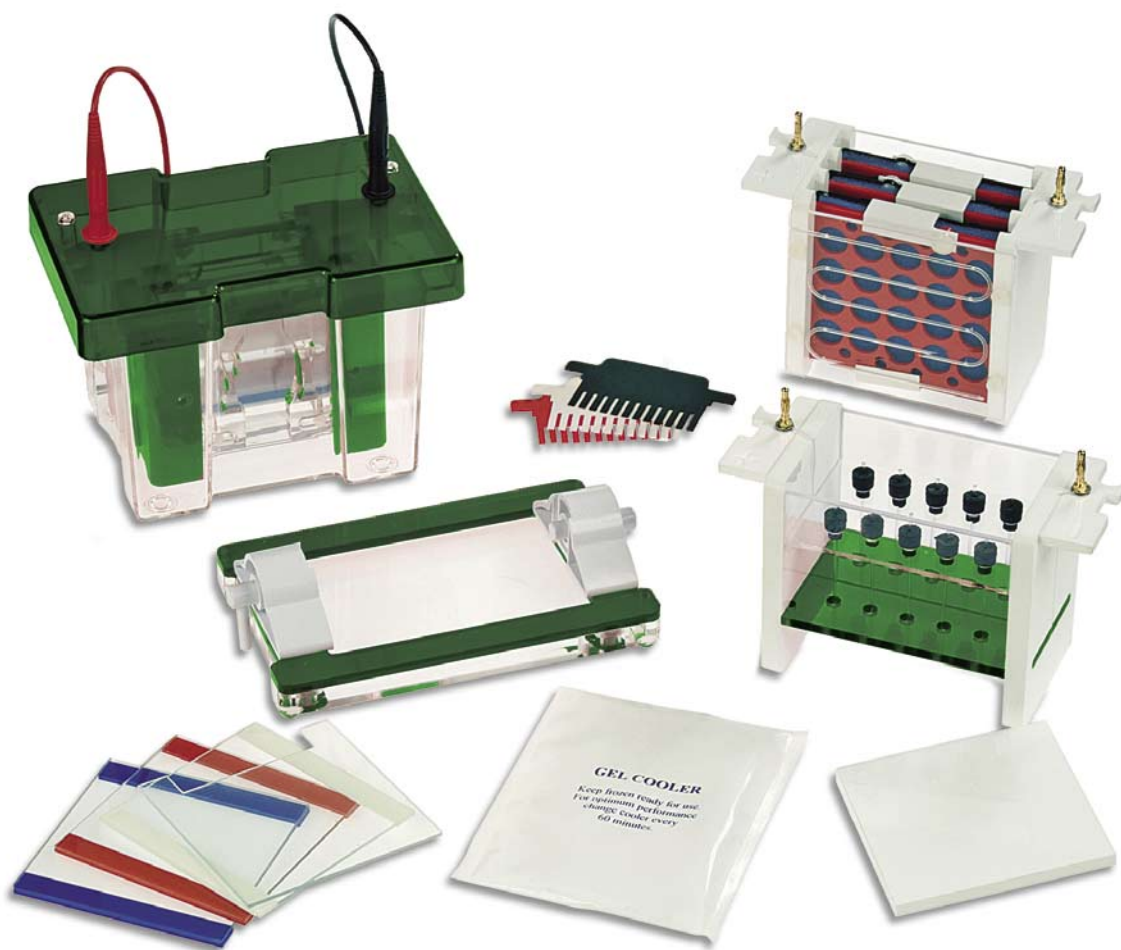
Replacement parts & Accessories

CODE	DESCRIPTION
E4520	Notched glass plates, 33x45 cm, pk/2
E4521	Plain glass plates, 33x45 cm, pk/2
E4522	Spacers, 0.25 mm thick, 45 cm, pk/2
E4523	Spacers, 0.35 mm thick, 45 cm, pk/2
E4524	Spacers, 1 mm thick, 45 cm, pk/2
E4525	Spacers, 1.5 mm thick, 45 cm, pk/2
E4526	Fan heater sensor kit

CODE	DESCRIPTION	SAMPLE VOLUME
E4540	Comb, 0.25 mm thick, 48 sample	7 µl
E4541	Comb, 0.25 mm thick, 96 sample	3 µl
E4542	Comb, 0.35 mm thick, 48 sample	9 µl
E4543	Comb, 0.35 mm thick, 96 sample	5 µl
E4544	Comb, 1 mm thick, 48 sample	35 µl
E4545	Comb, 1 mm thick, 80 sample	20 µl
E4546	Comb, 1.5 mm thick, 48 sample	50 µl
E4547	Comb, 1.5 mm thick, 80 sample	30 µl

E4xxx

Mini, Mini-wide and Maxi complete modular systems



- These systems include all modules and accessories required for slab gel electrophoresis, 2-D electrophoresis and electroblotting.
- The central component is the mini vertical unit, mini-wide vertical unit or maxi vertical unit. These include a rapid and intuitive casting system, enhanced and easy to set up cooling system and have increased capacity (can run up to four gels per run).
- In addition, the tube gel module is capable of resolving up to 10 first dimension gels and the electroblotting module has a four blot (mini) or three blot (mini-wide and maxi) capacity.
- Each of these techniques benefits from rapid set up cooling packs which provide enhanced resolution even during high intensity 2-D electrophoresis and electroblotting.
- All replacement parts and accessories of the corresponding vertical units can also be used for these systems.
- Recommended power supply: EV202

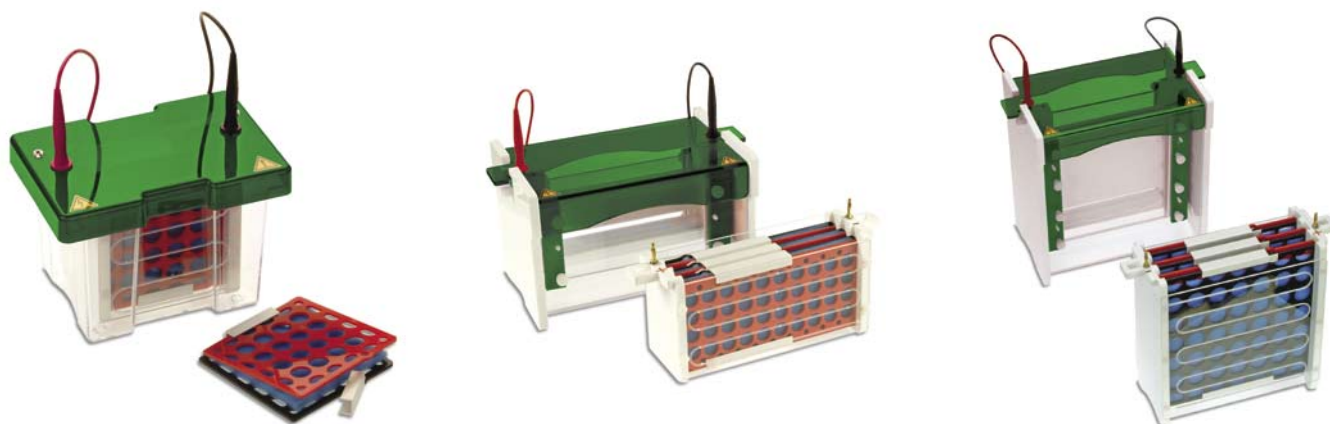
CODE	DESCRIPTION
E4101	Modular system: E4100 + capillary module + electroblotting module + 2 sets of glass plates with bonded 1 mm thick spacers + 2 combs, 1 mm thick, 12 samples + cooling pack + dummy plate + casting base + 100 capillary tubes (1 mm int. diameter) + blanking plugs + 4 compression cassettes 10x10 cm + 8 fibre pads
E4201	Modular system: E4200 + capillary module + electroblotting module + 2 sets of glass plates with bonded 1 mm thick spacers + 2 combs, 1 mm thick, 24 samples + cooling pack + dummy plate + casting base + 100 capillary tubes (1 mm int. diameter) + blanking plugs + 3 compression cassettes 20x10 cm + 6 fibre pads
E4301	Modular system: E4300 + capillary module + electroblotting module + 2 sets of glass plates with bonded 1 mm thick spacers + 2 combs, 1 mm thick, 24 samples + cooling pack + dummy plate + casting base + 100 capillary tubes (1 mm int. diameter) + blanking plugs + 3 compression cassettes 20x20 cm + 6 fibre pads

Replacement parts & Accessories

CODE	DESCRIPTION
E1010	Mini capillary tubes, 1 mm internal diameter, 8 mm, pk/100
E1011	Mini capillary tubes, 1.5 mm internal diameter, 8 mm, pk/100
E1012	Capillary blanking ports pk/10
E1013	Maxi capillary tubes, 1 mm internal diameter, 17 mm, pk/100
E5120	Mini blot insert + 4 cassettes 10x10 cm + 8 fibre pads
E5121	Mini blot cassette, 10x10 cm
E5122	Mini fibre pads, 10x10 cm, pk/6
E5123	Mini tube gel insert + 100 capillary tubes (1 mm int. diameter)

Replacement parts & Accessories

CODE	DESCRIPTION
E5220	Mini-wide blot insert + 3 cassettes 20x10 cm + 6 fibre pads
E5221	Mini-wide blot cassette, 20x10 cm
E5222	Mini-wide fibre pads, 20x10 cm, pk/6
E5223	Mini-wide tube gel insert + 100 capillary tubes
E5320	Maxi blot insert + 3 cassettes 20x20 cm + 6 fibre pads
E5321	Maxi blot cassette, 20x20 cm
E5322	Maxi fibre pads, 20x20 cm, pk/6
E5323	Maxi tube gel insert + 100 capillary tubes (1 mm int. diameter)

E5xxx series**Blotting units**

- These stand-alone, complete units for electroblotting, mini, mini-wide and maxi formats, include vertical tank and lid, electroblotting insert, cassettes and fibre pads.
- Units are interchangeable with the vertical slab and tube gel inserts.
- Hinged rigid cassettes allow rapid set up and convenience and ensure even contact between the gel and membrane is maintained.
- Recommended power supply: EV202

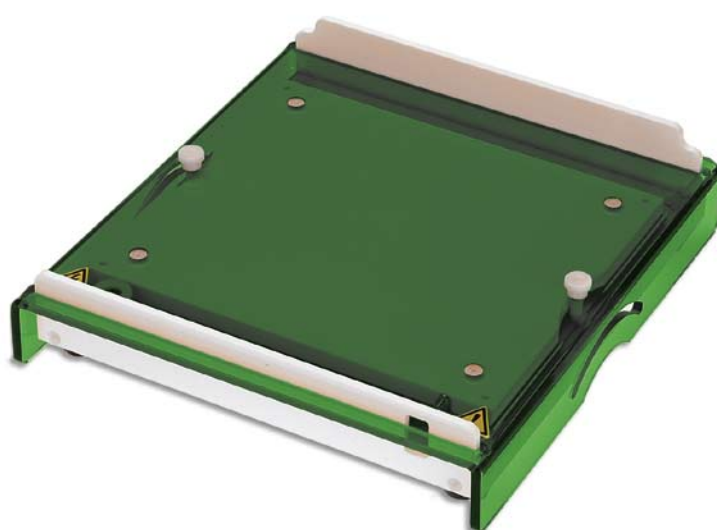
CODE	DESCRIPTION
E5100	Mini blotter: tank & lid + 4 cassettes 10x10 cm + 8 fibre pads + cooling pack
E5200	Mini-wide Blotter: tank & lid + 3 cassettes 20x10 cm + 6 fibre pads + cooling pack
E5300	Maxi blotter: tank & lid + 3 cassettes 20x20 cm + 6 fibre pads + cooling pack

Replacement parts & Accessories

CODE	DESCRIPTION
E5120	Mini blot insert + 4 cassettes 10x10 cm + 8 fibre pads
E5121	Mini blot cassette, 10x10 cm
E5122	Mini fibre pads, 10x10 cm, pk/6
E5220	Mini-wide blot insert + 3 cassettes 20x10 cm + 6 fibre pads
E5221	Mini-wide blot cassette, 20x10 cm
E5222	Mini-wide fibre pads, 20x10 cm, pk/6
E5320	Maxi blot insert + 3 cassettes 20x20 cm + 6 fibre pads
E5321	Maxi blot cassette, 20x20 cm
E5322	Maxi fibre pads, 20x20 cm, pk/6

Semi-dry blotters

- These semi-dry blotters offer rapid transfer times for DNA, RNA and protein blotting (typically 15 to 30 minutes). All units can be used for all types of blotting and are compatible with gel thicknesses from 0.25 up to 10 mm without the need for additional equipment. Each unit is compatible with their respective vertical gel system.
- Semi-dry blotting has the added benefit of economic transfers due to very low buffer volumes.
- These semi-dry blotters utilise a screw down lid, which secures the blot sandwich and allows complete control of pressure ensuring even transfer.
- The electrodes, comprising platinum coated anode and stainless steel cathode, will exhibit practically no corrosion and so provide many years of trouble free use.
- Uniform heat dispersion across the blot sandwich ensures stable transfer times and no heat induced sample loss or transfer distortions.
- Being translucent, you can see the blot sandwich to ensure correct positioning and transfer is occurring correctly.
- Recommended power supply: EV202



CODE	DESCRIPTION	BUFFER VOLUME	MAX. SAMPLE CAPACITY	EXTERNAL DIMENSIONS
E5400	Semi-dry blotter, mini, 10x10 cm	5 ml	1 blot, 10x10 cm	16x16x7 cm
E5500	Semi-dry blotter, midi, 20x20 cm	20 ml	1 blot, 20x20 cm or 4 blots, 10x10 cm	26x26x7 cm
E5600	Semi-dry blotter, maxi, 33x45 cm	75 ml	1 blot, 35x45 cm	39x51x7 cm
E5700	Semi-dry blotter, long, 20x50 cm	50 ml	1 blot, 20x50 cm	26x56x7 cm

E6xxx series**Gel dryers**

- With a drying area of 21x31 cm, the Midi gel dryer can dry six 10x10cm gels or a single larger gel.
- The maxi gel dryer with a 35x45 cm drying area can dry twelve 10x10 cm mini gels simultaneously.
- The unit's microprocessor controls temperature and time, each parameter being displayed on its own LED display.
- The gels are heated from the base plate while the vacuum removes the moisture from below to dry the gel homogeneously.
- Features optimal sealing using a silicone rubber cover and supporting mask.
- When applying the vacuum, a groove that frames the drying surface provides an optimal tight seal during the drying.
- Unit dimensions: 30x26x8 cm (Midi) or 44x50x8 cm (Maxi)
- Drying area: 21x31 cm (Midi) or 35x45 cm (Maxi)
- Temperature increment: 0.1 °C
- Temperature uniformity: 0.2 °C
- Timer: 1...999 minutes

CODE	DESCRIPTION
E6200	Midi gel dryer, 21x31 cm
E6300	Maxi gel dryer, 35x45 cm
E6010	Vacuum pump

**E27xx series****UV tables**

- These new transilluminators are based on an electronic ballast. Its 25 kHz high frequency provides a supreme stability and avoids the usual flickering effect. Accordingly, the gel visualisation and gel documentation is strongly improved.
- The transilluminator heat is considerably reduced, avoiding the use of an extra cooling fan and thus reducing the noise.
- Thanks to their very high output, these transilluminators provide more signal compared to standard 8 W transilluminators.
- A fully adjustable safety screen, which can be positioned to suit the operator's viewing angle, provides protection against exposure to harmful UV-rays.
- An intensity switch (except on the UV/white-light tables) allows you to select for both analysis (100%) and preparation (70%). The lowest position enables you to visualise and cut fragments while minimising the risk of damaging the DNA.
- Unlimited filter life expectancy.
- The same model can be used from 100 to 240 VAC and from 50 to 60 Hz.
- Stainless steel frame equipped with an Ondulex® reflector.

Compact transilluminators

CODE	DESCRIPTION				
E2711	UV table	312 nm	15x15 cm	6 x 8 W tubes	10000 µW/cm ²
E2712	UV table	254nm	15x15 cm	6 x 8 W tubes	7800 µW/cm ²

Standard transilluminators

CODE	DESCRIPTION				
E2721	UV table	312 nm	20x20 cm	6 x 15 W tubes	10000 µW/cm ²
E2722	UV table	254 nm	20x20 cm	6 x 15 W tubes	7800 µW/cm ²
E2723	UV table	365 nm	20x20 cm	6 x 15 W tubes	7000 µW/cm ²
E2731	UV table	312 nm	25x35 cm	6 x 15 W tubes	10000 µW/cm ²
E2732	UV table	254 nm	25x35 cm	6 x 15 W tubes	7800 µW/cm ²
E2733	UV table	365 nm	25x35 cm	6 x 15 W tubes	7000 µW/cm ²

Multiband transilluminators

CODE	DESCRIPTION				
E2724	UV table	365/254 nm	20x20 cm	2x(6 x 15 W) tubes	5900/6400 µW/cm ²
E2725	UV table	365/312 nm	20x20 cm	2x(6 x 15 W) tubes	3800/8500 µW/cm ²
E2726	UV table	312/254 nm	20x20 cm	2x(6 x 15 W) tubes	8500/5900 µW/cm ²

Ultraviolet/White light transilluminators

CODE	DESCRIPTION				
E2727	UV/WL table	312 nm/ white light	2x(20x20) cm	2x(6 x 8 W) tubes	10000 µW/cm ²
E2728	UV/WL table	254 nm/ white light	2x(20x20) cm	2x(6 x 8 W) tubes	7000 µW/cm ²
E2729	UV/WL table	365 nm/ white light	2x(20x20) cm	2x(6 x 8 W) tubes	7000 µW/cm ²

White light transilluminator

CODE	DESCRIPTION				
E2730	WL table	white light	20x35 cm	2x(6 W) 2x(15 W) tubes	

Replacement UV tubes

CODE	DESCRIPTION
E2803	UV tube, 15 W, 312 nm
E2804	UV tube, 15 W, 254 nm
E2805	UV tube, 15 W, 365 nm
E2806	UV tube, 8 W, 254 nm
E2807	UV tube, 8 W, 312 nm
E2808	UV tube, 8 W, 365 nm
E2809	UV tube, 6 W, 254 nm
E2810	UV tube, 6 W, 312 nm
E2811	UV tube, 6 W, 365 nm
E2812	UV tube, 4 W, 254 nm
E2813	UV tube, 4 W, 365 nm
E2814	White-light tube, 8 W

E29xx series**Crosslinkers**

- Three models: 254, 312 and 365 nm, each with 5 UV tubes of 8 W.
- Nine presets for time and energy exposures as well as manual control by the user.
- Timer up to 999.9 minutes.
- Exposure ranges: 0...99.99 and 0...9.999 J/cm².
- Storage of the last UV settings in a non-volatile memory.
- A photo-feedback system automatically compensates for output variation and tube aging.
- UV-blocking viewing window.
- Internal dimensions (HxDxW): 145x33x26 cm.
- External dimensions (HxDxW): 305x36x35 cm.

CODE	DESCRIPTION
E2921	Crosslinker, 254 nm
E2922	Crosslinker, 312 nm
E2923	Crosslinker, 365 nm

**E21xx series****UV lamps with filter**

CODE	DESCRIPTION
E2119	Hand-held stand for 4 and 6 W lamps (G)
E2120	Bracket for 4 and 6 W lamps (E)
E2121	Stand for 4 and 6 W lamps (F)
E2122	Stand for 15 W lamps (D)

These elegant and highly efficient lamps are provided in three different wavelengths: 254, 312, 365 nm or combined.

A unique filter minimises white light interference allowing the user to easily detect weak fluorescence.

Power ranges from a single 4 W tube up to two 15 W tubes.

Lamps include a long-life filter, unlimited life for 312 and 365 nm, and 3000 hours for 254 nm.

Operates on 230 VAC.

Key features

- Easy to handle
- Single or dual wavelength
- Long live filter and high UV output
- Ondulex[®] reflector for optimum UV irradiance
- Anodised aluminium housing for increased durability
- Lamp stand or holder to add versatility
- The simple touch of a switch to change the wavelength

CODE	DESCRIPTION				
E2101	UV lamp, 1x4 W	B	365 nm	400 µW/cm ²	200x85x60 mm
E2102	UV lamp, 1x4 W	B	254 nm	340 µW/cm ²	200x85x60 mm
E2103	UV lamp, 2x4 W	B	254/365 nm	265/350 µW/cm ²	200x85x60 mm
E2104	UV lamp, 1x6 W	C	365 nm	700 µW/cm ²	200x85x60 mm
E2105	UV lamp, 1x6 W	C	254 nm	710 µW/cm ²	200x85x60 mm
E2106	UV lamp, 1x6 W	C	312 nm	680 µW/cm ²	200x85x60 mm
E2107	UV lamp, 2x6 W	C	254/365 nm	400/610 µW/cm ²	200x85x60 mm
E2110	UV lamp, 1x15 W	A	365 nm	1100 µW/cm ²	500x85x80 mm
E2111	UV lamp, 1x15 W	A	254 nm	730 µW/cm ²	500x85x80 mm
E2112	UV lamp, 1x15 W	A	312 nm	1000 µW/cm ²	500x85x80 mm
E2113	UV lamp, 2x15 W	A	365 nm	2300 µW/cm ²	500x85x80 mm
E2114	UV lamp, 2x15 W	A	254 nm	1780 µW/cm ²	500x85x80 mm
E2115	UV lamp, 2x15 W	A	312 nm	3000 µW/cm ²	500x85x80 mm
E2116	UV lamp, 2x15 W	A	254/365 nm	930/1350 µW/cm ²	500x85x80 mm
E2117	UV lamp, 2x15 W	A	312/365 nm	1800/1350 µW/cm ²	500x85x80 mm
E2118	UV lamp, 2x15 W	A	254/312 nm	930/1800 µW/cm ²	500x85x80 mm

E2052

Photo documentation



- Complete photo documentation system
- Allows to save images on a USB key without the need of a computer
- Can be used with any type of UV table
- Gel visualisation on a large high resolution LCD screen
- Highly sensitive CCD camera
- 12 bit imaging
- Pixel saturation warning
- Compact and robust darkroom
- All necessary information to ensure optimum quality of your image
- Supplied with free software

The E2052 is an easy to use and affordable photo documentation system for any laboratory even those without darkroom facilities.

It replaces the traditional cameras, which are less performing and more expensive compared to the print cost.

➔ UV table is not included in the E2052!

- **Electronic control box**

Extra large B/W TFT screen (8 inch) allows to view the images before printing.

Integration time control (10 presets).

The images can be saved on a USB key for export to a computer or to print on a digital thermal printer for instant hard-copy images.

Displays the integration time on the TFT screen.

Electronic circuit with microprocessor controls the integration time and the power supply of the camera.

- **Hood with camera**

Hood in thermoformed ABS equipped with high sensitivity CCD monochrome camera, zoom and UV/IR interference filter.

Resolution: 1360x1024 pixels.

Pixel depth: 12 bit, 4096 grey levels.

High sensitivity of DNA/protein fluorescence detection.

UV/IR interference filter: type F590.

Gel size: max. 180x240 mm / min. 30x40 mm.

- **Software**

The E2052 is supplied with a complementary software to perform analysis such as molecular weight, band quantification, colony counting and distance calculation.

It also includes image enhancement features to enable editing of comments, inversion, contrast/brightness adjustment as well as colorimetry.

Designed by molecular biologists, our software is intuitive and very easy to use: just a few clicks are necessary to obtain sophisticated results.

Captures and stores the images in different formats (TIFF, BMP, JPEG, PICT, PCX, GIF, Targa,...).

Enables to add text or symbols in the images.

Rotates, mirrors or inverts images.

Allows to adjust brightness and contrast.

Automatically identifies bands and lanes.

Defines and saves markers.

Calculates the molecular weight for all the detected bands.

Calculates the volume, area and intensity of all the detected bands.

Counts colonies.

Allows to print results on a laser printer or ink jet printer.

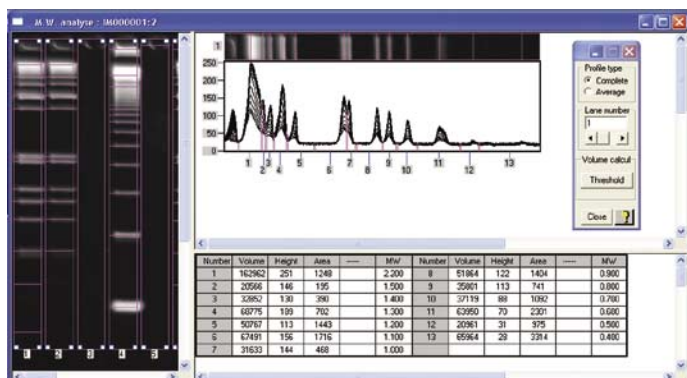
HELP function.

CODE	DESCRIPTION
E2052	Photo documentation comprises camera + extra zoom lens 2D + F590 filter + hood + electronic control box + camera cable + software

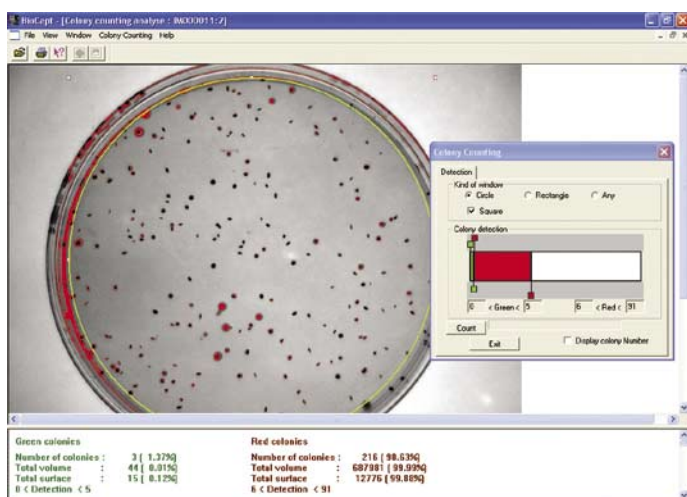
Accessories

CODE	DESCRIPTION
E2721	UV table, 312 nm, 20x20 cm (recommended)
E2991	UV/WL conversion screen, 250x295 mm

This free software is supplied with the E2052. It comprises four main components: image enhancement, molecular weight, band quantification, colony counting.



Volume, height, area and MW are given lane by lane for each band.



The colony counting module allows the calculation and the characterisation of colonies.



Text and symbols can be inserted on the image. Date, time or image name can also be stamped for printing or archiving purpose.

Specifications

Editing of comments and symbols
Date, time or image name stamping
Image inversion
Brightness and contrast adjustment
90 degree clockwise rotation
Horizontal or vertical mirroring of the displayed image
GLP compliance
Automatic band detection
Lane profile display
Molecular weight or pH (IEF) value calculation
Marker's migration curve display and adjustment
Volume, height and area calculation
Colony counting

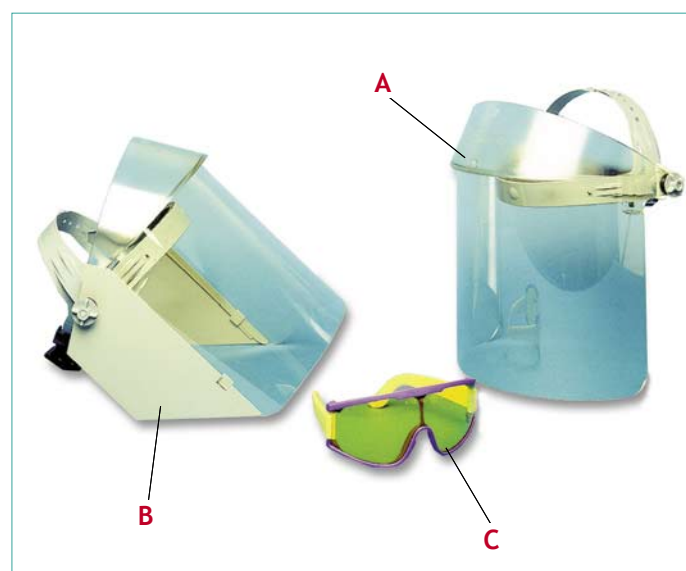
UV protected glasses and face shields

Lamps are a powerful source of UV radiation. Short (254 nm) and medium (312 nm) wavelengths are dangerous for unprotected eyes and skin. Long (365 nm) wavelengths could affect sensitive persons or people under medical treatment.

Therefore, it is strongly recommended that users protect themselves against UV radiation by wearing glasses or face shields.

- E2911 is recommended for protection of the eyes and the face.
- E2912 has two lateral protections to cover the operator's ears in addition to his eyes and face.
- E2913 are comfortable and efficient glasses for total protection of the eyes.

CODE	DESCRIPTION
E2911	UV face shield (A)
E2912	UV face shield with lateral protection (B)
E2913	UV glasses (C)



A2001	30	E204	48	E3257	52	E3463	54	E3635	56	E4170	58	E5323	62	ISM50	39
A2005	30	E2052	66	E3258	52	E3464	54	E3640	56	E4171	58	E5400	63	ISM51	39
A4021	35	E2101	65	E3259	52	E3465	54	E3641	56	E4191	58	E5500	63	ISM52	39
A4022	35	E2102	65	E3260	52	E3466	54	E3642	56	E4192	58	E5600	63	ISM60	39
A4025	35	E2103	65	E3261	52	E3467	54	E3643	56	E4193	58	E5700	63	ISM61	39
A4049	37	E2104	65	E3262	52	E3468	54	E3644	56	E4200	59	E6010	64	ISM62	39
A4800	4	E2105	65	E3263	52	E3469	54	E3645	56	E4201	62	E6200	64	ISM63	39
A4800	12	E2106	65	E3264	52	E3470	54	E3646	56	E4220	59	E6300	64	ISM64	39
AK2315	48	E2107	65	E3265	52	E3471	54	E3647	56	E4221	59	EV202	48	ISM65	39
AM112	37	E2110	65	E3266	52	E3472	54	E3700	57	E4222	59	EV215	48	ISM66	39
AP4005	37	E2111	65	E3267	52	E3473	54	E3701	57	E4224	59	EV222	48	ISM67	39
AP414	37	E2112	65	E3268	52	E3474	54	E3702	57	E4225	59	EV231	48	ISM68	39
B502	39	E2113	65	E3269	52	E3475	54	E3720	57	E4226	59	EV232	48	ISM69	39
B504	39	E2114	65	E3270	52	E3476	54	E3721	57	E4227	59	EV233	48	ISM70	39
B507	39	E2115	65	E3271	52	E3477	54	E3722	57	E4228	59	EV243	48	ISM71	39
B510	39	E2116	65	E3300	53	E3478	54	E3723	57	E4229	59	EV261	48	ISM72	39
B512	39	E2117	65	E3301	53	E3479	54	E3724	57	E4230	59	EV262	48	ISM73	39
B520	39	E2118	65	E3302	53	E3480	54	E3725	57	E4300	60	EV265	48	ISM74	39
B530	39	E2119	65	E3320	53	E3481	54	E3726	57	E4301	62	ISA20	39	ISM76	39
B560	39	E2120	65	E3321	53	E3482	54	E3727	57	E4320	60	ISA21	39	ISM77	39
B561	39	E2121	65	E3329	53	E3483	54	E3728	57	E4321	60	ISA22	39	ISM80	39
B562	39	E2122	65	E3330	53	E3484	54	E3729	57	E4322	60	ISA23	39	ISM81	39
B566	39	E2711	64	E3331	53	E3485	54	E3730	57	E4323	59	ISA24	39	ISM82	39
B571	39	E2712	64	E3332	53	E3486	54	E3731	57	E4323	60	ISA25	39	K912	26
B572	39	E2721	64	E3333	53	E3487	54	E3732	57	E4324	60	ISA27A	39	K912L	26
C3010	4	E2721	66	E3334	53	E3488	54	E3733	57	E4325	60	ISA27B	39	K912T	26
C3010K	4	E2722	64	E3335	53	E3489	54	E3734	57	E4326	60	ISA28	39	R3610	40
C3010P	4	E2723	64	E3340	53	E3490	54	E3735	57	E4327	60	ISA29	39	R3620	42
C3010T	4	E2724	64	E3341	53	E3491	54	E3736	57	E4328	60	ISA30	39	R3630	44
C3010X	4	E2725	64	E3342	53	E3500	55	E3737	57	E4329	60	ISA31	39	R363C	44
C3011	4	E2726	64	E3343	53	E3501	55	E3738	57	E4330	60	ISA32	39	S295	35
C3020	6	E2727	64	E3344	53	E3502	55	E3739	57	E4331	60	ISA33	39	S404C	41
C3020K	6	E2728	64	E3345	53	E3503	55	E3740	57	E4332	60	ISA34	39	SC01B	35
C3020P	6	E2729	64	E3346	53	E3520	55	E3741	57	E4333	60	ISA35	39	SC01B	47
C3020T	6	E2730	64	E3347	53	E3521	55	E3742	57	E4334	60	ISA36	39	SC03B	35
C3020X	6	E2731	64	E3348	53	E3522	55	E3743	57	E4340	60	ISA37	39	SC03B	47
C3020Z	6	E2732	64	E3349	53	E3529	55	E3744	57	E4341	60	ISA51	39	SC06B	35
C3021	6	E2733	64	E3350	53	E3530	55	E3745	57	E4342	59	ISA52	39	SC06B	47
C3030	8	E2803	64	E3351	53	E3531	55	E3746	57	E4342	60	ISC20	39	SC15B	35
C3030K	8	E2804	64	E3352	53	E3532	55	E3747	57	E4343	60	ISC21	39	SC15B	47
C3030P	8	E2805	64	E3353	53	E3533	55	E3748	57	E4344	60	ISC23	39	SC30B	35
C3030T	8	E2806	64	E3354	53	E3534	55	E3749	57	E4345	60	ISC24	39	SC30B	47
C3030X	8	E2807	64	E3355	53	E3535	55	E3750	57	E4346	60	ISC25	39	SC45B	47
C3030Z	8	E2808	64	E3356	53	E3540	55	E3800	51	E4347	60	ISC27	39	SH300	37
C3031	8	E2809	64	E3357	53	E3541	55	E3830	51	E4348	60	ISC28	39	SK10B	36
C3040	10	E2810	64	E3358	53	E3542	55	E3831	51	E4349	60	ISC29	39	SK10T	36
C3041	10	E2811	64	E3359	53	E3543	55	E3832	51	E4350	60	ISC31	39	SK10Y	47
C3050	12	E2812	64	E3360	53	E3544	55	E3833	51	E4351	60	ISC32	39	SK20B	36
C3050T	12	E2813	64	E3361	53	E3545	55	E3834	51	E4352	60	ISC33	39	SK20T	36
C3051	12	E2814	64	E3362	53	E3546	55	E4100	58	E4353	60	ISC34	39	SK20Y	47
C3060	14	E2911	67	E3363	53	E3547	55	E4101	62	E4354	60	ISC35	39	SK21T	36
C3061	14	E2912	67	E3364	53	E3548	55	E4120	58	E4355	60	ISC36	39	SK22Y	47
C5010	18	E2913	67	E3365	53	E3549	55	E4121	58	E4356	60	ISC37	39	SK23T	36
C5010K	18	E2921	65	E3366	53	E3550	55	E4122	58	E4357	60	ISC50	39	SK23Y	47
C5010P	18	E2922	65	E3367	53	E3551	55	E4123	58	E4358	60	ISC51	39	SK24T	36
C5010T	18	E2923	65	E3368	53	E3552	55	E4124	58	E4359	59	ISC52	39	SK40T	27
C5010X	18	E2991	66	E3369	53	E3553	55	E4125	58	E4359	60	ISE20B	38	SK41T	27
C5010Z	18	E3100	51	E3370	53	E3554	55	E4126	58	E4360	60	ISE21B	38	SP04X	35
C5020	19	E3120	51	E3371	53	E3555	55	E4127	58	E4361	60	ISE22B	38	SP10B	34
C5020K	19	E3140	51	E3372	53	E3556	55	E4128	58	E4362	60	ISE23B	38	SP10T	34
C5020P	19	E3141	51	E3373	53	E3557	55	E4129	58	E4363	60	ISE24B	38	SP11X	34
C5020T	19	E3142	51	E3374	53	E3558	55	E4130	58	E4364	60	ISE25B	38	SP11Y	47
C5020X	19	E3143	51	E3375	53	E3559	55	E4131	58	E4365	60	ISE26B	38	SP21B	34
C5020Z	19	E3144	51	E3400	54	E3560	55	E4131	59	E4366	60	ISE27B	38	SP21T	34
C860	16	E3145	51	E3401	54	E3561	55	E4132	58	E4367	60	ISE28B	38	SP21X	34
C860K	16	E3146	51	E3402	54	E3562	55	E4132	59	E4368	60	ISE29B	38	SP22X	34
C860P	16	E3147	51	E3403	54	E3563	55	E4133	58	E4369	60	ISE30B	38	SP23Y	47
C860T	16	E3148	51	E3420	54	E3564	55	E4133	59	E4370	60	ISE31B	38	SP24X	34
C860X	16	E3149	51	E3421	54	E3565	55	E4134	58	E4371	60	ISE32B	38	SP26X	34
C931	20	E3150	51	E3422	54	E3566	55	E4134	59	E4400	61	ISE33B	38	SP27X	34
C931K	20	E3151	51	E3429	54	E3567	55	E4140	58	E4500	61	ISE34B	38	SP28X	35
C931P	20	E3200	52	E3430	54	E3568	55	E4141	58	E4520	61	ISE35B	38	SP29X	35
C931T	20	E3201	52	E3431	54	E3569	55	E4142	58	E4521	61	ISE36B	38	SP50Y	47
C931X	20	E3202	52	E3432	54	E3570	55	E4143	58	E4522	61	ISE37B	38	SP60X	35
C932	22	E3220	52	E3433	54	E3571	55	E4144	58	E4523	61	ISE50B	38	SP61Y	47
C932K	22	E3221	52	E3434	54	E3572	55	E4145	58	E4524	61	ISE51B	38	SP65X	35
C932P	22	E3229	52	E3435	54	E3573	55	E4146	58	E4525	61	ISE52B	38	SP91Y	35
C932T	22	E3230	52	E3440	54	E3574	55	E4147	58	E4526	61	ISE60B	38	SP92Y	35
C932X	22	E3231	52	E3441	54	E3575	55	E4148	58	E4540	61	ISE61B	38	SP93Y	35
C932Z	22	E3232	52	E3442	54	E3576	55	E4149	58	E4541	61	ISE62B	38	SP94Y	35
C933	24	E3233	52	E3443	54	E3577	55	E4150	58	E4542	61	ISE63B	38	SP95Y	35
C933K	24	E3234	52	E3444	54	E3578	55	E4151	58	E4543	61	ISE64B	38	SP96Y	35
C933P	24	E3235	52	E3445	54	E3579	55	E4152	58	E4544	61	ISE65B	38	SP97Y	35
C933T	24	E3240	52	E3446	54	E3580	55	E4153	58	E4545	61	ISE66B	38	SP98Y	35
C933X	24	E3241	52	E3447	54	E3581	55	E4154	58	E4546	61	ISE67B	38	SP99Y	35
C933Z	24	E3242	52	E3448	54	E3582	55	E4155	58	E4547	61	ISE68B	38	ST10N	36
D230	29	E3243	52	E3449	54	E3583	55	E4156	58	E5100	63	ISE69B	38	ST20N	36
D291	29	E3244	52	E3450	54	E3600	56	E4157	58	E5120	62	ISE70B	38	ST21Y	47
D292	29	E3245	52	E3451	54	E3601	56	E4158	58	E5121	62	ISE71B	38	SZ02K	37
D298	29	E3246	52	E3452	54	E3602	56	E4159	58	E5122	62	ISE72B	38	SZ10T	37
D299	29	E3247	52	E3453	54	E3603	56	E4160	58	E5123	62	ISE73B	38	SZ12T	47
E1010	62	E3248	52	E3454	54	E3620	56	E4161	58	E5200	63	ISE74B	38		
E1011	62	E3249	52	E3455	54	E3621	56	E4162	58	E5220	62	ISE76B	38		
E1012	62	E3250	52	E3456	54										

Art. 1

Unless otherwise agreed in writing, the legal relationship between the parties is governed by the present general terms, of which the customer declares to have taken cognisance, and which prevail over the customer's possible terms of purchase.

Art. 2

All quotations are without engagement. Prices do not include taxes. Any price stated is based at all times on the salaries, social charges and prices of materials obtaining on the date of the quotation. Official price modifications as arranged by legal dispositions automatically entail equivalent modifications of the prices stated in the contract. This proportional increase can also apply to part of the order or work.

Art. 3

Transport or dispatch of our goods by any means of transport is at the consignee's risk, even with carriage paid.

Art. 4

If our firm acts as an intermediary, the guarantee on the goods supplied by us is restricted to the guarantee given to us by the supplier or manufacturer. If the goods are subject to formal guarantee, defective, material will be repaired or replaced, but no claims for any other damage will be accepted.

Art. 5

All invoices are payable cash on the address of the invoice unless otherwise stipulated in the documents committing the parties or unless an expiry date is stated on the Invoice.

Art. 6

Contrary to art. 1583 of the Civil Code, any goods that are not paid in full remain our full property; in such case possible advance payments will serve as a compensation for costs and loss of profit.

Art. 7

Bills in arrear entitle us to suspend any further deliveries or services without prior notice, such to prevent debts from further increasing.

Art. 8

The supply of goods or services on a later date than the date stipulated for supply or service, if such is not caused by bad faith or a serious shortcoming of the supplier, shall never form a motive for suspending the order or the agreement, nor entitle the customer to claim any damages.

Art. 9

If default is made in cash payment or if payment is not carried out on the expiry date stated, the amount of the invoice shall bear a conventional interest of 1.5% per month as from the day on which the invoice is remitted or as from the expiry date stated, such by right and without any formal notice. Each month started shall be charged as a full month.

Art. 10

Moreover, by way of a fixed and irrevocable condition, the amount of the invoice shall be increased by 15% with a minimum of 200 EUR, by right and without formal notice, as a compensation for recovery costs of the claim (both staff and administration costs, management and follow-up of the file, influences on financial management, etc.), in application of art. 1147 C.C. and 1152 C.C.

This compensation is due apart from the moratory interests, the recoverable procedure costs and the possible compensation for material damages and loss of profit.

The parties thus agree that this compensation is fixed and that, contrary to art. 1231 C.C. It cannot be modified, even when the shortcoming is only partial.

Art. 11

Cheques and bills of exchange are only accepted as payment after their repayment. Possible costs are at the expense of the purchaser or commissioner.

Art. 12

The drawing and/or accepting bills of exchange or other transferable documents does not imply a novation or deviation from the general terms. The acceptance costs of bills of exchange are at the expense of the purchaser or commissioner.

Art. 13

If one invoice remains unpaid on its expiry date, the balance due of any other invoices, even when not expired, are immediately recoverable by right.

Art. 14

In the event of a dispute, only the courts of Turnhout, Belgium, shall have competence.

Art. 15

Any complaints regarding the supply of the goods and services shall be made on termination and be confirmed by a motivated registered letter within 8 days of the date of supply. These complaints do not suspend the obligation of payment.

Art. 16

Remarks and restrictions concerning the invoice and/or the general terms therein stated shall be transmitted to us by motivated registered letter within 8 days of date of invoice; for the settlement of disputes this period amounts to 30 days. If an order form is signed by a purchaser or commissioner, the regulations of the general terms stated on the order form shall apply.



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