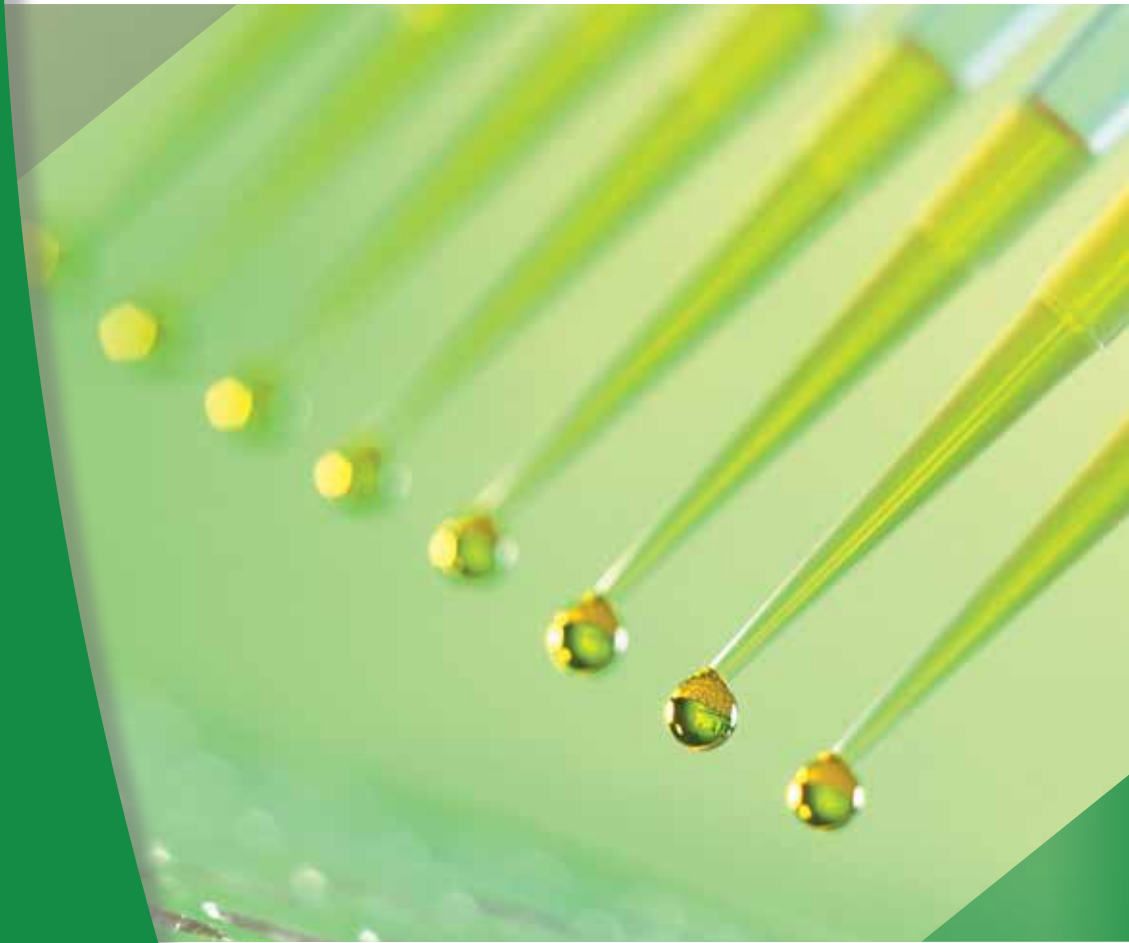


# Catalog 2017/2018



**slamed**<sup>®</sup>  
instruments for sciences

**Dear business partner,**

After more than thirty years of successful operation with liquid handling products and analyzers, company Slamed Ing. GmbH has been taken over by company ratiolab® in 2016.

Due to the company take-over ratiolab® has expanded their expertise and field of activity in the above mentioned business sectors.

Our customers in the fields of medical, research and industry are constantly developing themselves.

Ratiolab GmbH has set itself the goal to accompany this trend innovatively and successfully.

The scope of the ratiolab® team is completed by competence, helpfulness and service.

This makes ratiolab® a successful partner of the national and international laboratory distributors.

The ratiolab® team is happy to support you with "help and advice".

Sincerely yours,



Johannes Frauendörfer  
Managing Director

Slamed® is a trademark of Ratiolab GmbH.



## The slammed® efficiency and solutions

slamed® provides medical, chemical and biological laboratories with Liquid Handling equipment and analysers.

High quality material, durability and reasonable prices are the key features which our customers rely on.

slamed® analysers are specially designed to meet small laboratories' requirements for non-sophisticated analytical instruments. Easy operation, proven technology and low running costs are the criteria which are appreciated by our customers.



## Slamed Pipets and Analysers

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# Single-channel pipette L



## Pipette L

CE IVD

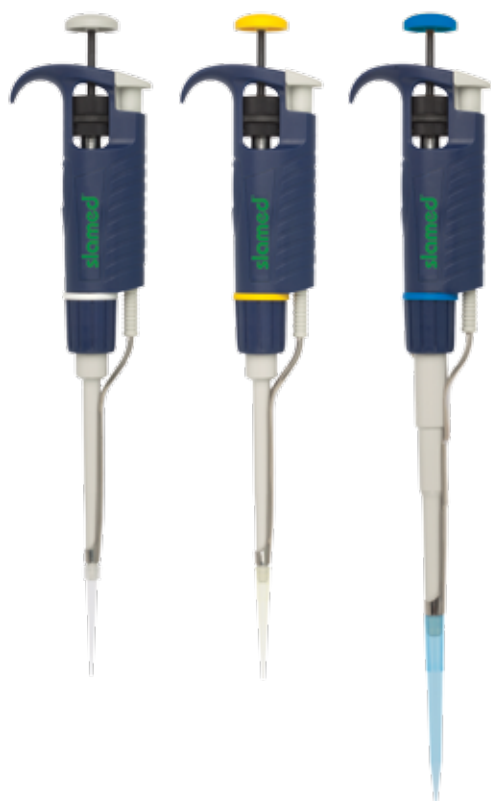
The PIPETTE L meets all the demands for sterile liquid handling in microbiological and molecularbiological laboratories. It is fully autoclavable and resistant to UV-light. Easy volume setting by turning the pushbutton avoids jamming the gloves in the knurled screw.

Low spring forces of pipetting stroke and tip ejector accommodate the daily work without hand fatigue. With ten pipette models the volume range is covered from 0.1 µl up to 10 ml.

- perfect measuring results
- fully autoclavable and UV-light resistant
- volume settings by pushbutton
- grooved handle reduces the influence of handwarmth
- fatigue free operation because of ergonomic designed handle and reduced spring forces
- adjustable length of tip ejector enables the use of any brand of pipette tips
- maintenance free, all components are manufactured either from stainless steel or chemical resistant plastics
- filters in the shafts protect the 5 ml and 10 ml pipettes against overfilling and contamination
- 3 years warranty

Volume range µl	Model	Accuracy max. vol %	Precision < %	Quantity per Pack	Order No.
0.1-2	L2	+1.5	0.7	1	47 70 001
0.5-10	L10	+0.5	0.4	1	47 70 002
2-20	L20	+0.8	0.3	1	47 70 003
5-50	L50	+0.8	0.4	1	47 70 004
10-100	L100	+0.8	0.2	1	47 70 005
20-200	L200	+0.6	0.2	1	47 70 006
50-250	L250	+0.6	0.3	1	47 70 007
100-1000	L1000	+0.6	0.15	1	47 70 008
1000-5000	L5000	+0.5	0.15	1	47 70 009
1000-10000	L10000	+0.5	0.2	1	47 70 010

# Single-channel pipette OLV and OL



## Pipette OLV

CE IVD

The adjustable PIPETTE OLV is a robust and reliable tool for sample handling in medical and chemical laboratories. The volume range of samples from 0.1 µl up to 10 ml is covered by ten pipette models. An ergonomic shaped handle and low spring forces contribute to reducing hand fatigue.

- perfect measuring results
- clear reading of the counter display
- grooved handle reduces the influence of the hand warmth
- less hand fatigue because of ergonomic design and low spring forces
- adjustable length of tip ejector
- maintenance free: only stainless steel, chemical and UV-light resistant components
- filters protect the 5 and 10 ml pipettes against overfilling and contamination
- 3 years warranty

Volume range µl	Model	Accuracy max. vol %	Precision < %	Quantity per Pack	Order No.
0.1-2.0	OLV2	1.5	0.7	1	47 70 011
0.5-10	OLV10	0.5	0.4	1	47 70 012
2-20	OLV20	0.8	0.3	1	47 70 013
5-50	OLV50	0.8	0.4	1	47 70 014
10-100	OLV100	0.8	0.2	1	47 70 015
20-200	OLV200	0.6	0.2	1	47 70 016
50-250	OLV250	0.6	0.3	1	47 70 017
100-1000	OLV1000	0.6	0.15	1	47 70 018
1000-5000	OLV5000	0.5	0.15	1	47 70 019
1000-10000	OLV10000	0.5	0.2	1	47 70 020



## Pipette OL

With the ergonomic shape and the stylish colour the PIPETTE OL contributes to reducing the strain of manual sample handling in any medical or chemical laboratory. The volume range from 0.1 µl up to 10 ml is covered by 10 models of the variable PIPETTE OL.

- perfect measuring results
- clear reading of the counter display
- grooved handle reduces the influence of the hand warmth
- less hand fatigue because of ergonomic design and low spring forces
- adjustable length of tip ejector
- maintenance free: only stainless steel, chemical and UV-light resistant components
- filters protect the 5 and 10 ml pipettes against overfilling and contamination
- 3 years warranty

Volume range µl	Model	Accuracy max. vol %	Precision < %	Quantity per Pack	Order No.
0.1-2.0	OL2	1.5	0.7	1	47 70 021
0.5-10	OL10	0.5	0.4	1	47 70 022
2-20	OL20	0.8	0.3	1	47 70 023
5-50	OL50	0.8	0.4	1	47 70 024
10-100	OL100	0.8	0.2	1	47 70 025
20-200	OL200	0.6	0.2	1	47 70 026
50-250	OL250	0.6	0.3	1	47 70 027
100-1000	OL1000	0.6	0.15	1	47 70 028
1000-5000	OL5000	0.5	0.15	1	47 70 029
1000-10000	OL10000	0.5	0.2	1	47 70 030

# Single-channel pipette CP



## Pipette CP

CE IVD

Fixed volume pipette with tip ejector. For every laboratory in every field. Highest performance for the best price.

33 PIPETTE CP models within the range 2 to 1000 µl.

- excellent precision and accuracy in measurement of liquids
- ergonomic design of handle for easy and pleasant work
- easy removal of tip ejector when working with narrow test tubes
- piston made of chemically resistant material
- built in special system eliminating pipetting error
- maintenance free
- fully autoclavable
- individual quality certificate with each unit
- the pipet is made of materials resistant to corrosive agents
- 3 years warranty

Volume range µl	Model	Accuracy < ± %	Precision < %	Quantity per Pack	Order No.
2	CP2	3.0	1.5	1	47 70 031
5	CP5	2.0	1.0	1	47 70 032
7	CP7	1.5	0.7	1	47 70 033
10	CP10	1.2	0.5	1	47 70 034
15	CP15	1.0	0.5	1	47 70 035
20	CP20	0.9	0.4	1	47 70 036
25	CP25	0.9	0.4	1	47 70 037
30	CP30	0.9	0.3	1	47 70 038
40	CP40	0.9	0.3	1	47 70 039
44.7	CP44.7	0.9	0.3	1	47 70 040
50	CP50	0.9	0.3	1	47 70 041
60	CP60	0.9	0.3	1	47 70 042
70	CP70	0.9	0.3	1	47 70 043
75	CP75	0.9	0.3	1	47 70 044
80	CP80	0.9	0.3	1	47 70 045
90	CP90	0.9	0.3	1	47 70 046
100	CP100	0.9	0.3	1	47 70 047
120	CP120	0.8	0.3	1	47 70 048
150	CP150	0.7	0.3	1	47 70 049
200	CP200	0.6	0.2	1	47 70 050
200	CP200A	0.6	0.2	1	47 70 051
220	CP220	0.6	0.2	1	47 70 052
250	CP250	0.6	0.2	1	47 70 053
300	CP300	0.6	0.2	1	47 70 054
400	CP400	0.6	0.2	1	47 70 055
450	CP450	0.6	0.2	1	47 70 056
500	CP500	0.6	0.2	1	47 70 057
600	CP600	0.6	0.2	1	47 70 058
700	CP700	0.6	0.2	1	47 70 059
750	CP750	0.6	0.2	1	47 70 060
800	CP800	0.6	0.2	1	47 70 061
900	CP900	0.6	0.2	1	47 70 062
1000	CP1000	0.6	0.2	1	47 70 063

# Multichannel pipette ME and MT



## Multichannel pipette ME/MT

CE IVD

The fully autoclavable PIPETTES ME/MT are specially designed for working with gloves under sterile conditions.

The volume range from 1µl to 300 µl is covered by 4 models each in the 8- and 12-channel versions.

The patented manifold system ensures individual tight sealing of the pipette tips on each channel.

- perfect measuring results
- fully autoclavable and UV-light resistant
- volume settings by pushbutton avoids snatching the gloves
- ergonomic design, handle can be turned to an individual convenient position
- patented system makes manual corrections of the tip sealing redundant
- maintenance free: all components are manufactured either from stainless steel or chemical resistant plastics
- each pipette comes with quality certificate, holder and calibration key
- 3 years warranty

### 8-channel-pipette ME

Volume range µl	Model	Accuracy max. vol %	Precision < %	Quantity per Pack	Order No.
1-10	ME10	2.0	1.2	1	47 70 064
5-50	ME50	1.6	0.6	1	47 70 065
20-200	ME200	1.0	0.6	1	47 70 066
50-300	ME300	1.0	0.6	1	47 70 067

### 12-channel-pipette MT

Volume range µl	Model	Accuracy max. vol %	Precision < %	Quantity per Pack	Order No.
1-10	MT10	2.0	1.2	1	47 70 068
5-50	MT50	1.6	0.6	1	47 70 069
20-200	MT200	1.0	0.6	1	47 70 070
50-300	MT300	1.0	0.6	1	47 70 071

# Digital Burette DB



## Digital Burette DB



A Digital Burette, which meets the demands of modern titration practice:

- burette DB works fast, because the operator himself controls the velocity of the piston stroke
- burette DB is exact with the resolution 0.01 ml and accuracy of 0.2%
- burette DB covers a volume range up to 99.99 ml
- the internal memory can store up to 500 measuring values of serial titration
- refilling and air purging performance without loss of reagent.
- push button selection for either „Titration“ or „Dispense“ function
- titration display: 99.99 ml
- temperature: 15-40°C

Remarks: Not to be used with hydrofluoric acid or solutions which are aggressive to Platinum-Iridium, PTFE, FEP or Tefzel. Avoid crystallising or corpuscular liquids.

Product	Volume ml	Subdivision ml	Accuracy %	Precision %	Quantity per Pack	Order No.
Digital Burette	50	0.01	0.2	0.1	1	29 70 014



# Bottle-top Dispenser



## Bottle-top Dispenser

Bottle-Top Dispenser for accurate and rapid dispensing of small and large volumes directly from any original reagent bottle.

The precise bottle dosing apparatus with outparallax errors in volume adjustment.

Six models within the range 0.1ml to 100 ml

- easy and reliable volume adjustment, protected against unintended alteration
- the double valve system preventing the outlet tube from dripping avoids the hazard of aggressive reagents
- the precision cylinder made of high quality borosilicate glass and Platinum-Iridium
- the positive sealing piston is fully functional also in liquids which tend to crystallize
- the modular design enables easy maintenance and cleansing of the inner parts without using any tools
- as the dispenser is fully autoclavable it can be used for any kind of sterile media

Volume settings ml	Model	Subdivision ml	A < ± %	P < %	Quantity per Pack	Order No.
0.1-2.5	D1	0.05	0.6	0.1	1	29 70 001
1-5	D2	0.10	0.5	0.1	1	29 70 002
2-10	D3	0.25	0.5	0.1	1	29 70 003
5-25	D4	0.50	0.5	0.1	1	29 70 004
10-50	D5	1.00	0.5	0.1	1	29 70 005
20-100	D6	2.00	0.5	0.1	1	29 70 006

A = Accuracy, P = Precision

# 1-Channel Coagulometer Chrom 7



## Coagulometer Chrom 7

CE IVD\*

1-Channel Coagulometer (turbimetry and colorimetry). Open system for any coagulation test-kit on the market like:

- PT
- APTT
- TT
- Fibrinogen
- AT III
- Plasminogen
- Protein C, Alpha-2-Antiplasmin
- HEP anti-Xa, D-dimer

The required reagent and sample volume is 50 µl only.

- reagent saving micro method
- easy operator guide by keyboard and alphanumeric display
- self compensation of icteric, lipemic or hemolytic plasmas
- the memory stores the calibration curve and the referential values after disconnection from the power supply
- measuring results are displayed with patient number, date and time
- microprocessor based function control and error identification
- power supply: 220/240 V, 50/60 Hz
- data port: RS232
- dimension and weight: 23 x 30 x 10 cm, 3,5 kg
- 2 years warranty

Product	Quantity per Pack	Order No.
Coagulometer Chrom 7	1	90 22 027
Test cuvetts	1000	90 22 030

\*except 9022030

# 3-Channel Coagulometer K-3003 Chrom



## Coagulometer K-3003 Chrom

CE IVD\*

In two channels the changes of the optical density (turbidimetry) are measured chronometrically. If both of these channels are used for a double analysis of the same sample, the results are presented together with the deviation value. The third channel is a colorimeter, used for the measurement of colorimetric tests, which are based on chromogenous substrata.

Thus the K-3003 Chrom fits the demand of all coagulation tests in today's medical laboratories. As the internal memory can accept 55 individual programs, it is possible to use all kinds of test kits available on the market. A cost effective operation is granted by the low consumption of only 50 µl sample and 50-100 µl reagent volumes.

The measuring results with patient number, date and time are printed in 110 mm width by the built-in thermoprinter or can be transmitted via the RS232 data port to a host computer. When the power is disconnected, the internal memory can store up to 15 000 patient results and 60 calibration curves.

- power supply: 220V (+10%-15%)
- 50/60Hz, 100VA
- measuring method optical: turbidimetry+colorimetry
- measuring times: 4 to 300 sec.
- dimension and weight: 45 x 33 x 12 cm, 5 kg
- 2 years warranty

3-Channel Coagulometer K-3003 Chrom suitable for the complete coagulation diagnostic with tests like:

- Prothrombin index PT (Ratio, INR, time)
- Thrombin time TT (Ratio, time)
- Caolin-Kephalin time APTT (Ratio, time)
- Fibrinogen (concentration mg%, g/l)
- Both groups of coagulation factors
- Coagulation inhibitors (ATIII, protein C, protein S, heparin)
- D-Dimers

Product	Quantity per Pack	Order No.
Coagulometer Chrom K-3003	1	90 22 026
Test cuvetts	1000	90 22 030

\*except 9022030

# 5-Channel Coagulometer CC-4000



## Coagulometer CC-4000

CE IVD\*

We present 5 channels coagulometer CC-4000, which executes all basic coagulational determination by chronometrical method, method of the usage of chrom substrate and immunochemical method (D-dimer).

Range of Determinations:

### 1. Basic coagulology:

- PT (time, index PT, index Quick, INR, Fibrinogen with PT)
- APTT (time, ratio)
- TT (time, ratio)
- Fibrinogen (Clauss method - g/l, mg/dl)
- Factors.

### 2. Chrome substrate:

- AT III (% activity)
- Plasminogen
- Protein C
- Alfa-2-antiplasmin ( $\alpha_2$ -AP)

### 3. D-Dimer

- ( $\mu\text{g/l}$ )

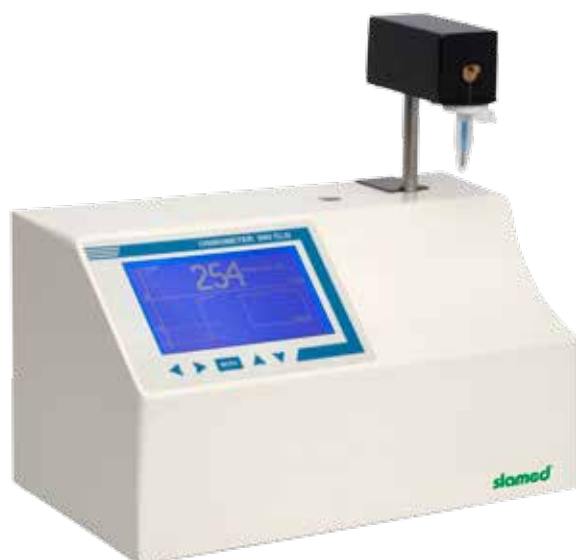
For all determinations the tested material (sample) is taken and prepared as in case of the typical coagulational determinations.

- measurements: length of the light wave: 405 nm, „micro-method“ - 50  $\mu\text{l}$  of the sample and the reagents
- automatic reading of the result
- automatic zero rotation
- storage of 4000 final results, 34 various calibration curves and referential values in the memory supply after the disconnection
- automatic systems of the turbidity compensation (the possibility of the determination of lipemic, hemolysed and icteric plasmas)
- compensation of the sample and cuvette fogging
- short period of the determination for substrata and D-dimer: 30-180s
- programming of the measures, types of results and prints
- display: graphic in English, 4 stop-watches of the incubation, built-in clock with date-marker, „Stand-by“ functions
- printer: built-in quick thermal printer 110 mm, printing of the summary, field results, calibration curves, course of the reaction, control and norms time, indexation of the beyond standards
- interfaces RS232 for the connection with computer's network
- connector USB for barcode leader
- dimensions and weight: 43 x 37 x 12 cm, 5 kg
- 2 years warranty

Product	Quantity per Pack	Order No.
Coagulometer CC-4000	1	90 22 028
Test cuvetts	1000	90 22 030

\*except 9022030

# Osmometer 800CLG



## Osmometer 800CLG

The Osmometer 800CLG is an automated freezing-point analyser for measuring the osmolality of aqueous solutions such as blood, serum, urine, sweat or infusion solutions and beverages. Only 100 µl sample volume are re-quired. The difference of the freezing point of the sample to the freezing point of distilled water correlates with the osmolality of the sample.

On the large LCD display the freezing curve and the measuring results are shown. The 1-point calibration with aqua dest. and the microprocessor controlled function and error identification contribute to saving working time in long tests series with excellent results.

The instrument is easy to be used. After being placed into the measuring vessel the sample of biological fluid is pushed onto the thermistor. By pressing down the measuring head the fluid sample is introduced into the cooling chamber. Using the Peltier effect the sample is cooled down below the freezing point. Now the stirrer is activated, and crystallisation of the sample follows. In the same time the temperature of the sample rises. The temperature will be now measured electronically and displayed in mOsm/kg.



- 1-point-calibration with aqua dest.
- automatic funktion control
- service panel for error identification and hardware check
- graphic display of the temperature change during measuring
- easy sample handling in 1.5ml test tubes
- bench space saving design
- air cooled Peltier elements
- data / printer port: RS232
- 1 year warranty

Product	Sample volume µl	Measuring range mOsm/24kg	Accuracy (H2O)	Measuring time sec.	Long-term stability	CE IVD	Quantity per Pack	Order No.
Osmometer 800CLG	100	0-2400	+0.4%	90	2mOsm / 24h	CE IVD	1	90 22 010
Osmometer 800CLG/P with printer	100	0-2400	+0.4%	90	2mOsm / 24h	CE IVD	1	90 22 012
Tubes for Osmometer						CE IVD	1	90 22 014
EPRM and Thermistor for Osmometer 800CLG+800CLG/P						-	1	90 22 049
Power supply for printer Seiko DPU414						CE	1	90 22 050
Cable RS232 for printer Seiko DPU414						-	1	90 22 051

# Chloridmeter 20CL, 50CL, 200CL



## Chloridmeter 20CL, 50CL, 200CL

For the fast and easy determination of the concentration of chloride ions in micro specimens 3 models of Chloridmeters are available.

**Chloridmeter 20CL** requires sample volumes of 20 µl only and is designed for the application in medical or biological laboratories for tests in serum, urine or other body fluids.

**Chloridmeter 50CL** is recommended for food & beverage or pharmaceutical laboratories and requires 50 µl sample volume.

**Chloridmeter 200CL** has a very wide measuring range, calculated in mg/l. It is suitable for the application in industrial and environmental laboratories.

### Automatic measuring process

The measuring method is based on the principle of coulometric impulse titration by the use of a silver - electrode pairing; the final point of titration is shown in an independent circuit of the silver - electrode pair. Measurement automatically follows, after a specimen of the working solution has been introduced. When 20 second have elapsed, the analysis result can be read on the display unit. After 50 analysis procedures have been conducted, the necessary exchange of the basic solution is indicated. The electrodes can be used up to 1000 measurements.

### Easy calibration

By the use of micro processing control, no corrections on the part of the mechanism are required for the conducted calibration.

Model	Volume range µl	Measuring range	Accuracy error	Precision error	Quantity per Pack	Order No.
20CL	20	5-999 mmol/l	0.4 mmol/l oder ±0.5%	0.1 mmol/l 100>c>10 mmol/l 1mmol/l 999>c>100 mmol	1	90 22 034
50CL	50	5-999 mmol/l	0.4 mmol/l oder ±0.5%	0.1 mmol/l 100>c>10 mmol/l 1mmol/l 999>c>100 mmol	1	90 22 035
200CL	200	10-9990 mg/l	6 mg/l oder ±0.5%	0.2 mg/l 100>c>10 mg/l 1mg/l 999>c>100 mg/l	1	90 22 036
Anode / Cathode for Chloridmeter					1	90 22 043
Measuring vessel for Chloridmeter					1	90 22 046

A series of horizontal lines for taking notes, consisting of a solid green header bar at the top, followed by a thin green line, and then 30 alternating light gray and white lines.

# Welcome!

## About ratiolab®

For over 40 years now we have been developing professional solutions for laboratory routine and for research, science and industry – all in close cooperation with our customers. Our range of products has proven itself in numerous laboratories throughout the world.

We supply everything that facilitates daily work routines, increases accuracy and improves process safety – in fact, those items that help to make the laboratory all that more efficient!

## What ratiolab® offers

- We have been partners for the trade for over three decades, providing comprehensive quality and reliability
- We produce disposable plastic products of the highest precision – in series, and made in Germany
- We offer individual development and manufacture of customized products
- We have a Quality Management System corresponding to DIN EN ISO 9001 and ISO 13485



**Slamed** Pipets and  
Analysers

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instruments for sciences

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