Consort

Artistic in science

20-06

Product catalogue

Clinical Electrophoresis

Compact high resolution system for clinical electrophoresis

Accommodates strips and gels up to 24x20cm

Complete range of cellulose acetate gels and kits

Densitometer software and scanner available

Recommended power supply
EV0220
EV1450

Description

EHCA1100 is the ideal tank for both standard and wet cellulose acetate electrophoresis. It is designed for both routine and research requirements and is built to our high quality standard.

EHCA1100 includes an adjustable support which enables easy and fast adjustment for different lengths of cellulose acetate strip. Strip dimensions up to 24x20 cm.

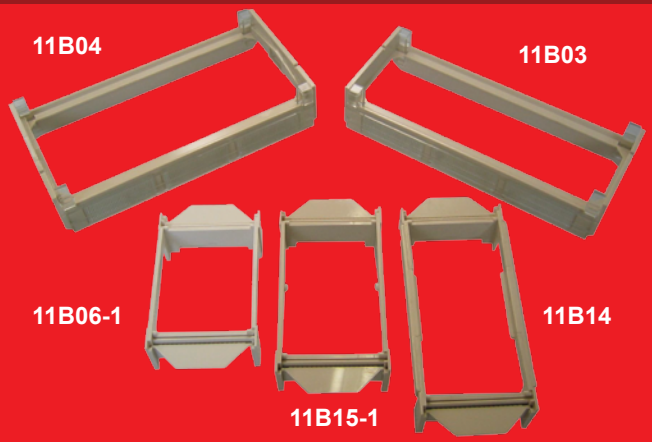
The ideal tank for standard membrane and gel cellulose acetate techniques, the EHCA1100 electrophoresis system is designed and built to our high quality standard to address both routine clinical and research requirements. Two adjustable supports, which can be positioned anywhere within the tank, readily accommodate different lengths of dry cellulose acetate membrane to a maximum 20cm.

Ordering codes

Code	Description
EHCA1100-SYS	Horizontal unit for cellulose acetate electrophoresis (without accessories!)

EHCA1200 system

Cellogel cellulose acetate system



Cellogel is a film of cellulose acetate in gel form. Cellogel is the ideal electrophoretic support for clinical electrophoresis and for the immunological techniques.

Compact high resolution system for clinical electrophoresis

- **Designed for routine and research needs**
- **Easy loading with bridges**
- **Fully compatible with Cellogel precast gels and kits**
- **Complete range of cellulose acetate gels and kits**
- **Densitometer software and scanner available**
-

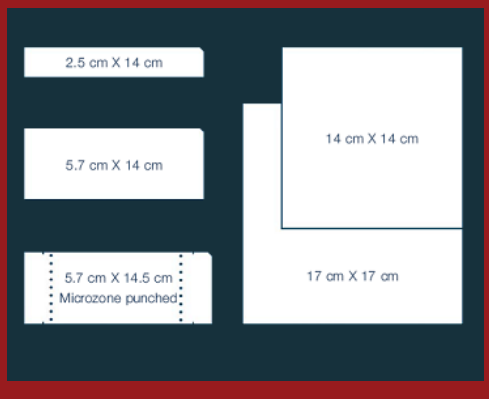
Recommended power supply
EV0220
EV1450

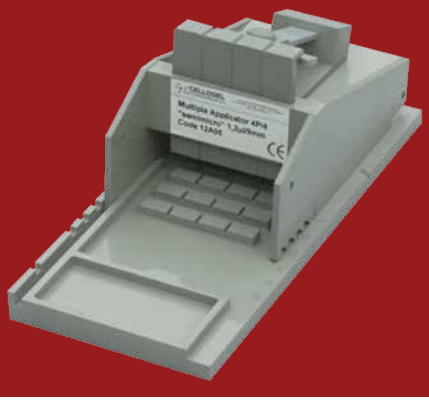
Functions with six strips 2.5x14 cm or with three strips 5.7x14 cm on three bridges, model France of 8.5 cm, furthermore it works with the same size strips as above and with sheets 14x14 cm or 18.3x14 cm on an 8.5 cm long bridge with plastic clips.

Injection moulded polycarbonate with high chemical and physical resistance. The lid is in semi-transparent polycarbonate with two magnets which work safety micro-switches and cut off the current when the lid is taken off.

Universal bridges supports Cellogel during sample application by serving as a convenient loading template for the required applicator. Bridges also available for Helena-, Pratiga- and Shandon-type strips and other size formats.

A wide selection of precast gel and strips are available.





Code	Description
EHCA1200-SYS	Horizontal unit for cellulose acetate including 3 bridges 8.5 for Cellogel strips 2.5 x 14 cm and 5.7 x 14 cm, 1 bridge for Cellogel sheets 18.3 x 14 cm
EHCA1200-BR11B06-1	France bridge, 8.5 cm, for strips of 2.5x14 cm or 5.7x14 cm
EHCA1200-BR11B03	Long bridge for sheets of 18.3x14 cm or 14x14 cm and strips of 2.5x14 cm or 5.7x14 cm. Migration field 8.5 cm
EHCA1200-BR11B15-1	France bridge, 11 cm, for strips of 2.5x17 cm or 5.7x17 cm, Rectangular.
EHCA1200-BR11B04	Long bridge for sheets of 17x17 cm and strips of 5.7x17 cm. Migration field 11 cm.
EHCA1200-BR11B14	France bridge, 14 cm, for Cellogel RS Wedge of 5x18.5 cm and 5.7x18.5 cm Rectangular.
EHCA1200-AP08-8P2	8 Sample Micro Applicator
EHCA1200-AP02-SU	2+2 Samples Semimicro Applicator for 2/5 x 14 cm and IFE kit
EHCA1200-AP08-4P4	4 Samples Semimicro Applicator
EHCA1200-AP05	4 Samples Semimicro Applicator
EHCA1200-AP08-4CS	4 Samples Semimicro Applicator for USP CHONDROITIN SULFATE test
EHCA1200-AP08-6P2	6 Samples Semimicro Applicator
EHCA1200-KC30-R	Serum Proteins kit
EHCA1200-KC31	High Resolution Serium Porteins kit
EHCA1200-KC09	IEF Serum + Concentrated urine kit
EHCA1200-KC64	Glycosylated Hemoglobins HbA1c kit
EHCA1200-KC09-02	Immunofixation
EHCA1200-KC35	Hemoglobins
EHCA1200-KC42	Lipoproteins
EHCA1200-SOFT	Turboscan Universal Densitometer Software
EHCA1200-SCAN	Scanner for EHCA1200-SOFT

Compact high resolution system for clinical electrophoresis

Easy loading with bridges

Fully compatible with Cellogel precast gels and kits.

Complete range of cellulose acetate gels and kits

Densitometer software and scanner available

Recommended power supply
EV0220
EV1450

Description

Tank for electrophoresis on Cellogel and cellulose acetate in general. Designed for routine and research needs.

Functions with six strips 2.5x14 cm or with three strips 5.7x14 cm on three bridges, model France of 8.5 cm, furthermore it works with the same size strips as above and with sheets 14x14 cm or 18.3x14 cm on an 8.5 cm long bridge with plastic clips.

The tank and the bridges are injection moulded in polycarbonate with high chemical and physical resistance. The lid is in smoky grey semi-transparent polycarbonate with two magnets which work safety micro-switches and cut off the current when the lid is taken off.

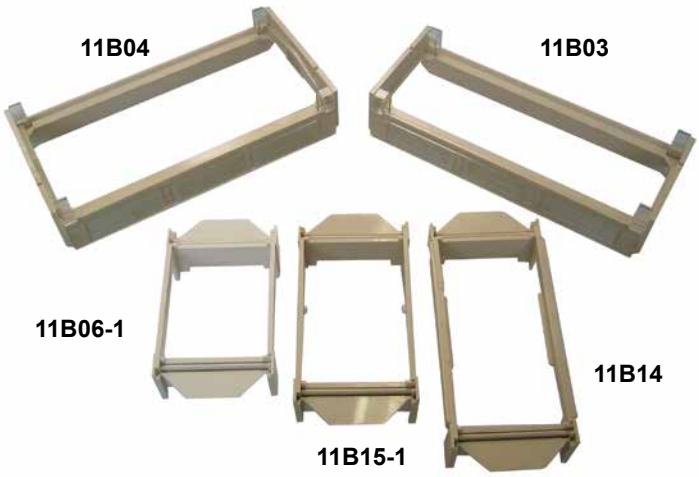
Included:
3 bridges 8.5 for Cellogel strips 2.5 x 14 cm and 5.7 x 14 cm
1 bridge for Cellogel sheets 18.3 x 14 cm

Ordering codes

Code	Description
EHCA1200-SYS	Horizontal unit for cellulose acetate including 3 bridges 8.5 for Cellogel strips 2.5 x 14 cm and 5.7 x 14 cm, 1 bridge for Cellogel sheets 18.3 x 14 cm

Bridges for:

2.5 x 14 cm strips
5.7 x 14 cm strips
18.3 x 14 cm sheets
14 x 14 cm sheets
2.5 x 17 cm strips
5.7 x 17 cm strips
5 x 18.5 cm Cellogel RS Wedge
5.7 x 18.5 cm Cellogel RS Wedge



Description

A universal bridge supports each 2.5 x 14cm and 5.7 x 14cm Cellogel during sample application by serving as a convenient loading template for the required applicator.

Bridges also available for Helena-, Pratiga- and Shandon-type strips and other size formats

Ordering codes

Code	Description
EHCA1200-BR11B06-1	France bridge, 8.5 cm, for strips of 2.5x14 cm or 5.7x14 cm
EHCA1200-BR11B03	Long bridge for sheets of 18.3x14 cm or 14x14 cm and strips of 2.5x14 cm or 5.7x14 cm. Migration field 8.5 cm
EHCA1200-BR11B15-1	France bridge, 11 cm, for strips of 2.5x17 cm or 5.7x17 cm, Rectangular.
EHCA1200-BR11B04	Long bridge for sheets of 17x17 cm and strips of 5.7x17 cm. Migration field 11 cm.
EHCA1200-BR11B14	France bridge, 14 cm, for Cellogel RS Wedge of 5x18.5 cm and 5.7x18.5 cm Rectangular.

Unlike dry cellulose acetate strips that are restricted to low volume micro tests, Cellogel's greater thickness allows tests to be performed on semi-micro and macro scales using a wide range of specialist applicators.





Description

Unlike dry cellulose acetate strips that are restricted to low volume micro tests, Cellogel's greater thickness allows tests to be performed on semi-micro and macro scales using a wide range of specialist applicators. Consequently greater sample-volumes may be loaded as larger, but finer bands over a wider front. This reduces sample saturation and aids densitometric band quantitation, thereby improving resolution.

Ordering codes

Code	Description	Volume	Band width	Strip Size
EHCA1200-AP08-8P2	8 Sample Micro Applicator	0.3 µl	5 mm	5.7 x 14cm
EHCA1200-AP02-SU	2+2 Samples Semimicro Applicator for 2/5 x 14 cm and IFE kit	0.7 µl	7 mm	
EHCA1200-AP08-4P4	4 Samples Semimicro Applicator	0.9 µl	7 mm	
EHCA1200-AP05	4 Samples Semimicro Applicator	1.2 µl	9 mm	
EHCA1200-AP08-4CS	4 Samples Semimicro Applicator for USP CHONDROITIN SULFATE test	0.5 µl	7 mm	
EHCA1200-AP08-6P2	6 Samples Semimicro Applicator	0.7 µl	7 mm	

Serum Proteins EHCA1200-KC30-R

The EHCA1200-KC30-R kit is intended for the diagnostic clinical electrophoresis of serum proteins for detecting disproteinemias and for quantitating Albumin, Alpha-1, Alpha-2, Transferrin, C3 and Gammaglobulins.

Assessment:
4 semimicro or 8 micro tests per each Cellogel 5.7x14 cm strip.
12 semimicro tests or 24 micro tests per each Cellogel chamber.

Kit content (100 semimicro or 200 micro tests):
Cellogel, Tris-Hippurate buffer, Ponceau S staining, Destaining solution, Clearing solution, blotting paper and Mylar film

High Resolution Serum Proteins EHCA1200-KC31

Several prestigious authors (Drs. Kohn, Laurell, Aguzzi, Keren et. al.) have not accepted the 20 mm micro electrophoresis of proteins since this technique is not sufficient for diagnosis of gammapathies. HR methods such as Microlong electrophoresis on Cellogel show up to 13 fractions, and have been proposed for diagnosis of incipient gammapathies. In accordance with the Italian Commission for Proteins of SIBioC and some of the most authoritative European experts.

Assessment:
6 semimicro or 8 micro tests per each Cellogel 5.7x14 cm strip.
48 high resolution tests with 6 Cellogel strips placed on 2 Cellogel chamber.

Kit content (150 semimicro or 200 micro tests):
Cellogel, TGS buffer, Coomassie staining, Citric Acid, Clearing solution blotting paper and Mylar film.

Not included: Destaining solution (475ml Methanol + 475ml H2O + 50ml Glacial Acetic Acid).

IEF Serum + Concentrated urine EHCA1200-KC09

Simultaneous immunofixation of serum and urine of 1 patient is recommended as unique method for an absolutely certain diagnosis able to observe gammapathies of uncertain significance (MGUS) or the malignancy of the gammapathy, with the presence of a K free or Lambda free monoclonal, or secondary malignancy for evident kidney disease with the presence of an IgG, IgA or IgM monoclonal component in the IFE of serum and urine with relative positivity of alligned K (bound) or Lambda (bound).

This method, proposed in 1984 and appreciated from many SIBioC members, doesn't use anti K free and anti Lambda free to reveal Bence-Jones protein and respects the guide lines for IFE of the Bence-Jones proposed for urine alone with trivalent anti-serum (anti IgG, anti IgA, anti IgM), anti K Bound & Free and anti Lambda Bound & Free published in Biochimica Clinica, 2001, vol.25, No. 1, pages 23-31

Assessment:
2 test HRE for each patient in semimicro technique on 6 Cellogel 2.5x14 cm strip placed on 3 bridges in one Cellogel chamber.

Kit content (5+5 tests for 5 patients):
Cellogel, TGS buffer, Coomassie staining, Saline solution, Volumetric distributors and Antisera, Clearing solution, blotting paper and Mylar film.

Not included: Destaining solution (475ml Methanol + 475ml H2O + 50ml Glacial Acetic Acid).

Glycosylated Hemoglobins HbA1c EHCA1200-KC64

According to a publication of J. Ambler et al., the non-glycosilated part of Hemoglobin in citrate buffer pH 6.4 containing dextrane sulphate acquires a mobility such as to allow a perfect separation of the glycosilated part. This occurs as the sulphate groups of dextrane combine with non-glycosilated hemoglobin.

Assessment:
4 semimicro per each Cellogel 5.7x14 cm strip.
12 semimicro tests per each Cellogel chamber.

Kit content (100 semimicro tests):
Cellogel, Affinity buffer pH 6.4, Hemolysing solution, Ponceau S staining, Destaining solution, Clearing solution, blotting paper, Mylar film and 1 mini box.

Immunofixation EHCA1200-KC09-2

The EHCA1200-KC09-2 kit is intended for the separation and identification of monoclonal gammapathies. When a monoclonal band is revealed by electrophoresis or when an immunoproliferative disorder is suspected, immunofixation of monoclonal components is basic, either to establish true monoclonality of a band, or to establish the nature of the monoclonal component and fix it. In fact different types have different diagnostic and prognostic value.

Assessment:
6 semimicro tests or 8 micro tests on 6 Cellogel 5.7x14 cm strips placed on 6 bridges in two Cellogel chamber.

Kit content (24 semimicro or 32 micro tests):
Cellogel, Tris- Hippurate buffer, Amidoblack staining, Saline solution, Volumetric distributors and Antisera, Clearing solution, blotting paper and Mylar film.

Not included: Destaining solution (475ml Methanol + 475ml H2O + 50ml Glacial Acetic Acid).

Hemoglobins EHCA1200-KC35

Electrophoresis of Hemoglobins is a simple laboratory technique for the rapid and accurate detection of abnormal conditions, called hemoglobinopathies. It can reveal the possible existence of hemoglobinopathies in two ways, qualitatively, by indicating the presence or absence of variant hemoglobins, and quantitatively, by making possible the measurement of hemoglobins by densitometry.

The electrophoretic separation of hemoglobins is based on the electrical characteristic of the globin molecule which can be negatively or positively charged depending on the amino acid sequence or composition of the polypeptide chains. Differences in the electrostatic charge will produce differences in electrophoretic mobilities and, hence, separation of the various hemoglobins.

Assessment:
4 semimicro per each Cellogel 5.7x14 cm strip.
12 semimicro tests per each Cellogel chamber.

Kit content (100 semimicro tests):
Cellogel, Tris-Glycine buffer, Ponceau S staining, Destaining solution, Clearing solution, blotting paper, Mylar film and 1 mini box.

Lipoproteins EHCA1200-KC42

The EHCA1200-KC42 kit is intended for clinical electrophoresis of serum Lipoproteins and evaluation of HDL (Alpha lipo), VLDL (pre ß lipo), LDL (ß lipo) and Chylomicrons fractions.

Hyperlipoproteinemias may be categorized into 5 types according to Fredrickson et Al. by simple observation of electrophoretic pattern, serum appearance and determination of values of Cholesterol and Tryglyceride.

Cellogel is widely used in the world for Lipoproteins testing. More than 20 scientific works have been published on international magazines. Main advantage of Cellogel versus dry Cellulose Acetate or Agarose is the right porosity (Chylomicrons can not penetrate or permeate Cellogel membrane), the suitable thickness of 250-300 microns and combination of both hydrophobic and hydrophilic properties of gelatinized cellulose acetate.

Assessment:
4 semimicro per each Cellogel 5.7x14 cm strip.
12 semimicro tests per each Cellogel chamber.

Kit content (100 semimicro tests):
Cellogel, Tris Hippurate buffer, Sudan Black staining, Clearing solution, blotting paper, Mylar film and 1 mini box.

Ordering codes

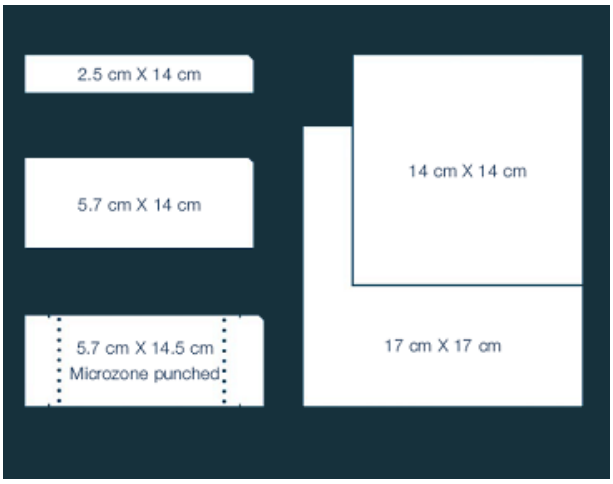
Code	Description	Diagnostic Application
EHCA1200-KC30-R	Serum Proteins kit	Dysproteinaemia;Albumin,Alpha-1, Alpha-2,Transferrin, C3 & Gamma Globulin Quantitationl
EHCA1200-KC31	High Resolution Serium Porteins kit	Incipien Gammopathies
EHCA1200-KC09	IEF Serum + Concentrated urine kit	MGUS, MM
EHCA1200-KC64	Glycosylated Hemoglobins HbA1c kit	Haemoglobinopathies
EHCA1200-KC09-02	Immunofixation	MGUS, MM
EHCA1200-KC35	Hemoglobins	Haemoglobinopathies
EHCA1200-KC42	Lipoproteins	Hyperlipidaemias

Cellogel is a film of cellulose acetate in gel form.

Cellogel is the ideal electrophoretic support for clinical electrophoresis and for the immunological techniques.

Cellogel is an electrophoretic medium which separates the proteins, even at high resolution, according to the electric charge and does not have the effects of molecular filtration typical of other gels like polyacrylamide.

Cellogel is packed in strips and sheets of various dimensions.



Cellogel is ready for buffering and does not entrap air at the moment of immersion into the electrophoretic buffers.

In comparison with dry acetate, with a thickness from 120 to 160 microns, Cellogel is produced with thicknesses between 190µ up to 500µ depending on what it is to be used for. The greater the thickness, greater is the volume of the specimen which can be deposited on it. Furthermore, higher thickness corresponds, with the same voltage applied during electrophoresis and with the same ionic strength of the buffer, to a higher passage of current measured in mA x strip.

With Cellogel there is the possibility to apply specimens with a volume of 0.9µl/9 mm (semimicro method) or of 2µl/18 mm (micro method) without the sample spreading as would occur on a very thin dry acetate strip which tolerates micro applications of 0.25µl/4 mm well but lets the semi-micro and macro deposits spread unacceptably. The application can be repeated two or three times on the same spot on Cellogel, when necessary, as in the case of electrophoresis of isoenzymes and of biological liquids poor in proteins.

Dry acetate is limited to the migrations of 20 mm of miniaturised micro electrophoresis or at most of 30 mm with a quasi-semi-micro carried out with stamp applicators and their relative dispocards. Cellogel, however, is suitable for standard migrations of semi-micro 35 mm serum proteins, with 45 mm semi-micro with prolonged migrations or high resolution electrophoresis with 60-70 mm migrations or more.

HRE (high resolution electrophoresis) is only possible on Cellogel and not on dry acetates. HRE on Cellogel is much simpler and easier than on agarose; the expensive systems for the circulation of cold water or Peltier control which are needed for all the commercial agarose gels with a thickness of 500 microns are not required with Cellogel. HRE on Cellogel has a cost per test equal to a semi-micro test on acetate and does not have the prohibitive costs of agarose which is only produced in kits of 10 or maximum 15 tests per film, which cannot be proposed for the routine of large and medium size laboratories. With French agarose it is only possible to carry out 10 tests/hour, with American agarose 15 tests/hour, while with Cellogel it is possible to perform up to 48 test/hour; furthermore HRE on agarose presents itself with migrations containing a floating ß-lipoproteins fraction focused, sometimes, overlapped on a small monoclonal band. In practice, high resolution on agarose is a time consuming system as well as being defective. Cellogel, like agarose, offers resolutions that depend on the length of the migrations. Making a deposit of 0.9µl on a line 9 mm long and 1.5 mm wide (semi-micro deposit):

- After 35 mm movement of albumin the serum proteins migration shows 5-6 fractions
- After 50 mm it shows 7-9 fractions
- After 65 mm it shows 9-13 fractions
- After 110 mm it shows between 11 and 23 fractions

Chemically Cellogel is a film of water made of from 7-8% of solid cellulose acetate and 92-93% H_2O of which 60-70% is constitution H_2O bound with hydrogen bridges, and 20-30% water for impregnation of the pores. The evaporation and water transport onto the membrane during prolonged electrophoresis is better regulated, the evaporation of the constitution water bound by the hydrogen bridge is much slowed down and this facilitates long migrations which are impossible on dry acetate. The porosity of Cellogel is predisposed for the main analysis, that is electrophoresis of the serum proteins. Large molecules like pre-ß-lipoproteins and all the other serum proteins penetrate and migrate. Only the chylomicrons do not penetrate or migrate and only leave a mark at the start point, the same occurs with immunocomplexes and cryoglobulins when present; these marks which are analytically and diagnostically important, cannot be seen on the French agarose which uses filtering applicators.

The predisposed porosity of Cellogel is decisive in avoiding spreading of samples at the moment of depositing and spreading of the fractions with low mobility during migrations which can be lengthy. All in all the right porosity corrects the insufficiencies of other commercial cellulose acetates membranes. To this must be added the better compatibility between Cellogel and serum proteins, including lipoproteins, that are incompatible with agarose. The latter is, in fact, a film of water (99% H_2O) totally hydrophilic, where the amphiphilic serum proteins with more lipophilic characteristics remain floating on the surface even when the sample is deposited with applicators which cut the gel.
The superiority of Cellogel over agarose was recognised in numerous publications by important authors between 1963 and 1971. Thanks to its amphiphilic properties (hydrophilic and lipophilic) Cellogel has optimal compatability with specimens as difficult and complex as serum proteins, which are also amphiphilic. Cellogel is, therefore, the ideal support for electrophoresis of serum proteins, hemoglobins, lipoproteins, isoenzymes, for all the immuno-electrophoretic techniques and for the search for antigens, antibodies and tumour markers (especially those immunofixable with polyclonal antibodies).

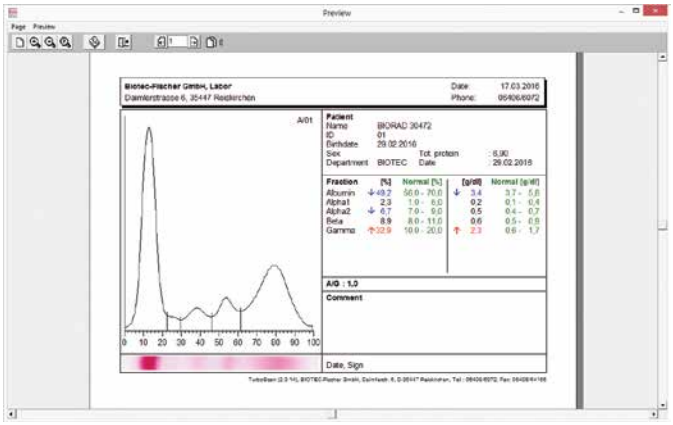
Ordering codes Cellogel Strips

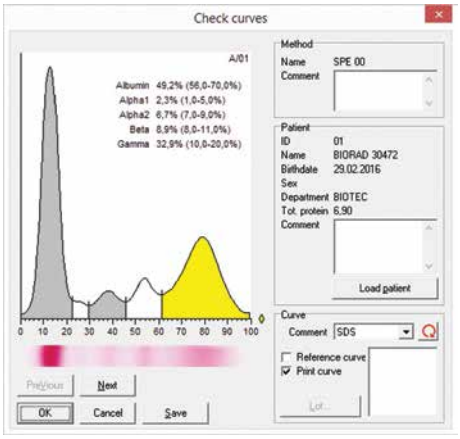
Code	Size (cm)	Description
EHCA1200-ST01-100	2.5x12	Cellogel 250µ
EHCA1200-ST02-100	2.5x12	Cellogel 200µ
EHCA1200-ST03-100	2.5x12	Cellogel 190µ for High Resolution
EHCA1200-ST06-100	2.5x14	Cellogel 250µ
EHCA1200-ST06-25	2.5x14	Cellogel 250µ
EHCA1200-ST07-100	2.5x14	Cellogel 200µ
EHCA1200-ST08-100	2.5x14	Cellogel 190µ for High Resolution
EHCA1200-ST11-100	2.5x17	Cellogel 250µ
EHCA1200-ST11-25	2.5x17	Cellogel 250µ
EHCA1200-ST12-100	2.5x17	Cellogel 200µ
EHCA1200-ST12-25	2.5x17	Cellogel 200µ
EHCA1200-ST13-100	2.5x17	Cellogel 190µ for High Resolution
EHCA1200-ST16-100	4x12	Cellogel 250µ
EHCA1200-ST17-100	4x12	Cellogel 200µ
EHCA1200-ST18-100	4x12	Cellogel 190µ for High Resolution
EHCA1200-ST21-100	4x17	Cellogel 250µ
EHCA1200-ST22-100	4x17	Cellogel 200µ
EHCA1200-ST23-100	4x17	Cellogel 190µ for High Resolution
EHCA1200-ST26-25	5x30	Cellogel 250µ
EHCA1200-ST27-25	5x30	Cellogel 200µ
EHCA1200-ST28-25	5x30	Cellogel 190µ for High Resolution
EHCA1200-ST29-25	5.7x13	Cellogel 250µ Pratiga punched
EHCA1200-ST29U-25	5.7x13	Cellogel 250µ
EHCA1200-ST30-25	5.7x13	Cellogel 200µ Pratiga punched
EHCA1200-ST31-25	5.7x14	Cellogel 250µ
EHCA1200-ST32-25	5.7x14	Cellogel 200µ
EHCA1200-ST33-25	5.7x14	Cellogel 190µ for High Resolution
EHCA1200-ST34-25	5.7x14	Cellogel 500µ
EHCA1200-ST36-100	5.7x14	Cellogel 250µ
EHCA1200-ST37-100	5.7x14	Cellogel 200µ
EHCA1200-ST38-100	5.7x14	Cellogel 190µ for High Resolution
EHCA1200-ST42-25	5.7x14	Cellogel 250µ Pratiga punched
EHCA1200-ST43-100	5.7x14	Cellogel 200µ Pratiga punched
EHCA1200-ST43-25	5.7x14	Cellogel 200µ Pratiga punched
EHCA1200-ST44-25	5.7x14	Cellogel 190µ Pratiga punched for High Resolution
EHCA1200-ST45-25	5.7x14	Cellogel 500µ Pratiga punched
EHCA1200-ST52-25	5.7x14.5	Cellogel 250µ Beckman punched
EHCA1200-ST53-100	5.7x14.5	Cellogel 200µ Beckman punched
EHCA1200-ST53-25	5.7x14.5	Cellogel 200µ Beckman punched
EHCA1200-ST54-25	5.7x14.5	Cellogel 190µ Beckman punched for High Resolution
EHCA1200-ST57-25	2.55x14.5	Cellogel 250µ Boskamp
EHCA1200-ST58-25	2.55x14.5	Cellogel 200µ Boskamp
EHCA1200-ST59-25	2.55x14.5	Cellogel 190µ Boskamp for High Resolution
EHCA1200-ST62-25	7.8x15	Cellogel 250µ Shandon
EHCA1200-ST63-25	7.8x15	Cellogel 200µ Shandon
EHCA1200-ST64-25	7.8x15	Cellogel 190µ Shandon for High Resolution
EHCA1200-ST67-25	5.7x15	Cellogel 250µ
EHCA1200-ST68-25	5.7x15	Cellogel 200µ
EHCA1200-ST69-25	5.7x15	Cellogel 190µ for High Resolution
EHCA1200-ST77-100	5.7x17	Cellogel 250µ

Ordering codes Cellogel Sheets

Code	Size (cm)	Description
EHCA1200-SH01-10	10x17	Cellogel 250µ
EHCA1200-SH02-10	10x17	Cellogel 200µ
EHCA1200-SH03-10	10x17	Cellogel 190µ for High Resolution
EHCA1200-SH04-10	10x17	Cellogel 500µ
EHCA1200-SH06-10	14x14	Cellogel 200m for 2D Immunoelectrophoresis
EHCA1200-SH07-10	16.5x14	Cellogel 250µ
EHCA1200-SH08-10	16.5x14	Cellogel 200µ
EHCA1200-SH09-10	16.5x14	Cellogel 190µ for High Resolution
EHCA1200-SH10-10	16.5x14	Cellogel 500µ
EHCA1200-SH12-10	17x17	Cellogel 250µ
EHCA1200-SH13-10	17x17	Cellogel 200µ
EHCA1200-SH14-10	17x17	Cellogel 190µ for High Resolution
EHCA1200-SH15-10	17x17	Cellogel 500µ
EHCA1200-SH17-10	20.5x20.5	Cellogel 250µ
EHCA1200-SH18-10	20.5x20.5	Cellogel 200µ
EHCA1200-SH19-10	20.5x20.5	Cellogel 190µ for High Resolution
EHCA1200-SH20-10	20.5x20.5	Cellogel 500µ
EHCA1200-SH22-10	30x30	Cellogel 250µ
EHCA1200-SH23-10	30x30	Cellogel 200µ
EHCA1200-SH24-10	30x30	Cellogel 190µ for High Resolution
EHCA1200-SH25-10	30x30	Cellogel 500µ
EHCA1200-SH27-10	18.3x14	Cellogel 190µ for High Resolution
EHCA1200-SH28-10	18.3x14	Cellogel 200µ
EHCA1200-SH32-10	18.3x17	Cellogel 190µ for High Resolution
EHCA1200-SH33-10	18.3x17	Cellogel 250µ

TurboScan. The universal and flexible high-performance densitometer for your clinical laboratory.
Universal and flexible analysis equipment for the clinical laboratory
The latest digital image analysis technology
Analysis programs and analysis masks can be individually defined
Irrespective of filters, special light sources or staining methods
High resolution and excellent reproducibility
High analysis speed
Extremely simple to handle and comfortable to use
Reliable, reproducible results
Analysis results clearly displayed on the monitor
Clear printout of results
Software runs under, XP / VISTA / Win 7





TurboScan. The new generation of densitometers. Once again Biotec-Fischer is leading the way in modern analysis technology with the digital analysis system TurboScan. No other system offers comparable flexibility and comfort. The TurboScan translates users' expectations of a densito meter into reality. Non-essential gadgets have deliberately been left out. Functionality, reliability and operator comfort are the maxims.

Universal use. In terms of flexibility, TurboScan puts all previous systems in the shade. It allows you to create as many individually generated scan masks as you wish. You can also select as many analysis methods as you wish. No other system offers so many options. In clinical work, for example, you can use TurboScan for analysis in the following applications: serum protein electrophoresis, lipo-protein electrophoresis, haemoglobin electrophoresis, Hb-A1 electrophoresis, urine electrophoresis, CSF electrophoresis, Bence-Jones, iso-enzymes, iso-electric focusing, multifractional electrophoresis, blots and lots more. It does not matter wether you carry out your methods on dry or wet cellulose acetate strips, on agarose and on other gels or you work with micro, semi-micro or macro application.

Digital image analys. technology for reliable results. TurboScan uses the latest digital image analysis technology. The advantages to you are obvious: analysis only takes a fraction of the time and the results obtained are reliable with excellent reproducibility. At the same time TurboScan is based on commercial hardware components. The advantage to you - you can use existing PC hardware and save costs.

Perfect analysis. TurboScan has a very high analysis speed. An A4 page is scanned in only 15 seconds. For the standard template with 64 traces, this means an average scanning speed of of 0.23 seconds per separation. The high resolution guarantees reliable results with excellent reproducibility. The analysis data are clearly presented on the colour monitor. The printout shows all the relevant data in a clear form, starting with the image of separation, the graphs, then the laboratory and patient data through to the results in percentages and absolute figures, the normal ranges and your comments.

Easy to operate. In most laboratories, lack of time is a major problem, so careful attention was paid to this aspect when developing the TurboScan. Despite its flexibility and multiple options, it is therefore simple and comfortable to operate. Even under pressure, you will easily find your way round the TurboScan and sources of error are greatly reduced.

The TurboScan software. The TurboScan software lies at the hart of the system. It reflects more than 30 years' experience in this field of electrophoresis analysis. TurboScan automatically recognizes the fractions and assignments present. Each individual separation is automatically coded and every fraction outside the normal range is automatically identified optically. You merely have to look up the result and interpret it. As a matter of course, TurboScan offers you a variety of correction possibilities. You can easily set or delete minimums, correct the baseline, curves of graphs or the albumin factor. After any amendment, TurboScan naturally recalculates all the data for you.

With data processing connection. You can easily connect TurboScan to your DP unit via bi-directional RS-232 interface. This guarantees data exchange between TurboScan and your DP equipment.

Specifications

TurboScan software on CD-ROM
PC (Celeron), 256 MB RAM, scanner and inkjet printer
WINDOWS (98 / NT / 2000 / XP / VISTA)
Patients' Details: first and family name, DOB, sex, ID number, department, total serum protein, comments
Analysis: automatic fraction recognition and assignment, automatic coding of each separation, labelling of fractions outside the normal range
Corrections: set or delete minimums, baseline correction, graph correction, albumin correction
Printout: in A5 format with illustration of the separation, the graphs, patient's details, laboratory data, analysis results in percentages and absolute figures, normal ranges, total serum protein, comments
DP Connection: via RS-232 interface, bi-directional
Masks: A4 format, create, save and retrieve as many individually created masks as you wish
Methods: create, save and retrieve as many individually generated analysis methods as you wish; tolerance range for automatic fraction recognition can be freely selected; automatic correction factors for each method can be freely selected

Ordering codes

Code	Description
EHCA1200-SOFT	Turboscan Universal Densitometer Software
EHCA1200-SCAN	Scanner for EHCA1200-SOFT

ABSOLUTE READINGS
The instrument shows the actual value without compensating to a reference temperature.

AC-ADAPTOR
An internationally approved mains-plug with built-in low voltage transformer for a safe supply of energy to instruments.

ACCURACY
Maximum electronic error of the measured unit. The accuracy of an electrochemical determination such as pH, conductivity, dissolved oxygen & ion-selective measurements is mainly limited by the electrodes and calibration solutions.

ALARM
An alert sounds or a relay is closed when readings stray outside pre-set limits.

ALTERNATING DISPLAY
The meter can automatically scan all selected inputs for display or transmission to a computer or printer.

AUTOMATIC CROSS-OVER
When the resistance of an electrophoresis apparatus changes during a run, the power supply is able to switch automatically between constant voltage, constant current and constant power.

BATTERY CAPACITY
Percentage of remaining battery capacity.

BAUD RATE
Communication speed, in bits/second (b/s), of the digital interface (RS232).

BUFFER
A solution of buffered species where the pH tends to remain constant if diluted or concentrated.

Pre-programmed pH buffers: 1.68/ 2.00/ 4.00/ 4.01/ 6.87/ 7.00/ 9.18/ 9.21/ 10.01/ 12.00/ 12.45.

User specified pH buffers: special tables can be stored for future calibrations.

CALIBRATION REMINDER
A timed calibration procedure facilitates considerably GLP management by prompting the user when his instrument needs to be recalibrated.

CAPACITIVE COMPENSATION
The capacity of the electrode and its cable falsifies the measurement at very low conductivities. A capacity compensation allows to compensate for these errors.

CELL
The 2-pole design is the most commonly used conductivity cell. The electrodes are made of platinised platinum. The cell must be replaced or re-platinised if the plates become fouled.

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.

CELL CONSTANT
The cell constant (cm-1) of a conductivity electrode is determined by the length (cm) of the column of liquid between the plates divided by the area (cm2) of the plates.

CONCENTRATION
Concentration measurement with an ion selective electrode requires a minimum of chemical know-how to make successful ion selective determinations.

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 ionic solution in which the electrode is dipped.

DATA-ACQUISITION
Connect the instrument to a computer via an USB, RS232, RS485 interface for bi-directional communication capabilities. Most instruments require no special software and feature an advanced easy to use data acquisition fully compatible with spread-sheet.

DATA-LOGGING
Stores automatically or manually the measured values (+ °C & time/date) in a built-in non-volatile memory.

GLP
Good Laboratory Practices procedures help to increase accuracy through calibration reports.

GROUND LEAKAGE
Leaking or dirty electrophoresis apparatus are dangerous, since the applied high voltage may result in an electric current flowing through the operator to the ground.

IDENTIFICATION NUMBER
Several instruments connected to the same computer can easily be identified when specific numbers are allocated to them.

INPUT
Several types of connectors are used according to the application. Check the specifications of meter-input and electrode-plug on their compatibility.

ISO-pH
Zero-point of a pH electrode. A new pH electrode has an ISO-pH between 6.5 and 7.5 pH.

MINIMUM/MAXIMUM MEMORY
Recalls the lowest/highest values ever measured since the last calibration.

mV
Electrode potential is read in mV.

ON/OFF CONTROL
Simple control system in which the relays are continuously closed when a pre-set level is exceeded.

ORP
Oxido-Reduction-Potential (the reducing or oxidising capability of a solution).

PASSWORD PROTECTION
For tamper-proof storage of parameters and data, a secret personal code protects the instrument against any undesired access.

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).

PROPORTIONAL CONTROL
The control relay will pulse at a rate proportional to the regulation difference. When the difference is superior to a pre-set maximum value, the relay is continuously activated. However, when reaching a pre-set level the wait-time between the pulses will increase gradually in order to perform very accurate regulations.

Pt100
Platinum resistance thermometer (100 Ω at 0°C). It requires a low resistance cable for highest accuracy.

Pt1000
Platinum resistance thermometer (1000 Ω at 0°C). Less errors when using longer cables.

QUALITY MANAGEMENT
Measuring equipment should be calibrated on a regular basis (GLP). The accuracy of measurements is only limited by the electrodes and calibration solutions. At any moment, a complete documentation about the electrodes and calibration solutions can be printed or sent to a computer. This includes meter settings, data about the last calibration and a comparison with the previous calibration. The use of certified calibration solutions is strongly recommended. For very accurate quality measurements fresh standard solutions should be used for each calibration.

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.

RANGE LOCK

Allows to lock the initial conductivity measuring range when titrating in order to avoid cross-over errors due to varying measuring frequencies and linearity errors of the conductivity cell.

REAL TIME CLOCK

Shows time and date on the display.

REDOX POTENTIAL

The potential developed by a metallic electrode when placed in a solution containing a species in two different oxidation states. It is usually measured by a combination platinum electrode.

REFERENCE TEMPERATURE

Conductivity measurements are temperature dependent. Therefore, the readings should be referenced to a standard temperature.

RESISTIVITY

Electrical resistivity is the reciprocal of Conductivity. The basic unit is Ohm. cm (Ω.cm). While the ion concentration of a solution decreases, the resistivity rises up to a maximum of 18.3 MΩ.cm (absolute pure water at 25°C).

RESOLUTION

Smallest possible reading of the measured unit. More sophisticated meters allow to select the desired resolution. Unlike other meters, the CONSORT models round off the last digit rather than simply truncating digits outside the display range.

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.

RS232

Digital interface, transmits the displayed values and calibration data to a printer or computer.

RS485

Allows to connect several process controllers for bi-directional communication with a computer. It allows multiple devices (up to 32) to communicate at half-duplex on a single pair of wires, plus a ground wire, at distances up to 1200 meters.

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).

SLOPE

Percentage which relates the actual behaviour of a pH electrode to the Nernst's law. A new electrode has a slope between 95 and 100 %.

S/S RELAY

A solid-state relay contains no mechanical contacts. Long life, compact design and spark-free switching are its main advantages. It should not be used for controlling very low power loads, as the small leakage current can cause unwanted switching-on.

STABILITY INDICATION

A decimal point flashes until the electrode output remains constant, then readings can be recorded.

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.

TEMPERATURE COEFFICIENT

Each solution has its own temperature coefficient (%/K). As this coefficient also varies with temperature, a standard conductometer cannot achieve a precise temperature compensation over a wide span of temperatures. However, a research grade meter is able to plot special temperature curves for each individual type of solutions in its non-volatile memory. Specific temperature coefficients can also be entered for special applications. For standard applications, the non-linear function for natural waters (EN27888) is used.

TEMPERATURE COMPENSATION

Corrects readings for variations in electrode response due to temperature effects.

THERMOCOUPLE

Thermocouples basically consist of two dissimilar wires (each made of a different alloy). One end is twisted or soldered to form a measuring junction. The other end is connected to a thermometer and forms the reference junction. The signal is a small voltage (µV) proportional to the temperature gradient between the measuring and reference junctions. Thermocouple probes are ideal to cover greater lengths. They also have a great temperature range and can easily pass through e.g. oven doors. Response time is faster than with Pt100 probes. Accuracy, stability and repeatability are less than with Pt100 probes.

USB

Universal Serial Bus is a standard designed to eliminate the guesswork in connecting peripherals to a computer.

VOLT-HOUR INTEGRATOR

The distance at which molecules migrate in an electrophoresis apparatus depends on the applied voltage and run-time ($\int V.dt$). In order to achieve reproducible experiments, it is recommended to use a volt-hour integrator rather than a simple timer.

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.

General terms

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 arrears 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 as 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.