



HYPERLAB PLUS TECHNICAL DATASHEET rev Feb 2022



STEROGLOSS S.r.l.

apparecchi in vetro soffiato
forniture per laboratori chimici

Cap. Soc. € 103.000,00 i.v.

Strada Romano di Sopra, 2/C - 06132 - S. Martino in Campo - Perugia

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R.I. / C.F. / P. IVA 01870870548 - VAT IT 01870870548 R.E.A. N. 164737



Physical characteristics

SIZE / WEIGHT

Height: 49 cm (19.3 in) Weight: 38 kg (83.8 lbs)

Depth: 60 cm (23.6 in)

Width: 62 cm (24.4 in)

POWER SUPPLY

240 / 100 Vac, 50 / 60 Hz, single phase with ground.

Independent on-off switch for refrigerated reagent plate

Fuse compartment / fuses: 2.5 Amp @ 230 Vac, 4 Amp @ 115

Vac Power consumption: less than 200 VA (external PC excluded)

Ground resistance: less than 0.1 Ohm

Leakage current: less than 2.5 mA

SAMPLING ARM

1 sampling needle, 110 mm needle stroke

Capacitive liquid level detector, needle shock sensor

DILUTER SYRINGE

Long life plunger

Syringe capacity, 368 µL

Syringe resolution, 0.14 µL

HYDRAULIC SYSTEM

8 self-priming peristaltic pumps (life 1000 hrs)

with replaceable neoprene cassette (life 500 hrs)

2 vacuum pumps

Pinch valve

Manifold

Containers*: Water, 20L; Cleaning solution, 2L; Waste, 20L

* equipped with level sensor and safety connections

WASH STATION

Needles: 6 dispensing, 6 aspiration, 1 cleaning (8 step washing sequence for each cuvette)

REAGENTS TRAY

Removable rack, 30 bottles, 50 mL or 24 ml (up to 1500 ml total)

SAMPLES TRAY

Removable tray, 60 numbered positions, tubes of 12 - 13 mm, 5 - 7 mL / cups of 0.5-1.5 mL (cups require a metal adapter for level detection)



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CUVETTE ROTOR REACTION CELLS

80 washable BIONEX® cuvettes which allow up to 30 000 tests per rotor Optical path 6 mm, 210 - 350 µL reaction volume

100W heating resistance, temperature sensor, safety thermostat

OPTICAL GROUP

1 halogen lamp (6 V, 10 W) with extended UV emission 2 focusing lenses, optical glass

10-position filter disk: 8 positions provided with interference filters of 340, 405, 505, 546, 578, 600, 650, 700 nm wavelengths, 1 free position and 1 solid position for dark reading

Direct reading reaction cuvettes, 6mm optical path ± 2 nm on peak wavelength, band pass of ± 10 nm

PHOTOAMPLIFIER

Photoelectric detector

Signal amplifier

Response range, 340 nm to 900 nm

Photometric range, 0 to 3 Abs

Linearity, $\pm 0.5\%$ from 0.1 to 1.5 Abs

Precision: 1% CV or 1 mAbs min. (0.1 to 1.5 Abs)

Stability: daily reader offset, less than 1% drift per day

CONTROL

Real-time multitasking microprocessor based control

Easy access to the electronics

EXTERNAL COMPUTER

(Minimum requirements for Software v.1.0)

CPU: Intel i3 or superior

RAM: 4GB

I/O: USB 2.0 port

Display: minimum resolution 1280x768

OS: Microsoft Windows® 7,8, 8.1, 10

Framework: .NET framework 4.6

Operation features

PIPETTING

Volume: sample, 2 - 300 µL; reagent, 5-350 µL

Precision: 1.5 CV% at 2 µL; 1 CV% at 4 µL Mixing by sample needle upon dispensation

REACTION

Reaction volume, 210 - 350 µL

SAMPLE DILUTION

In-needle dilution if allowed by method's sample volumes

Automatic pre-dilution in a reaction cuvette, up to 1:100



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TEMPERATURE CONTROL

Reagent refrigeration, circa 12 °C below room temperature

Reaction cells, heating unit can be set from room temperature up to 42 °C ± 0.2 °C (108 °F ± 0.5 °F)

TYPES OF TESTS

Endpoint, Bichromatic endpoint, Differential endpoint, Differential endpoint sample blank, Fixed Time, Kinetic, Kinetic bichromatic

TEST RUNS

Random / Urgent

MEASUREMENT RATES

125 tests/hour for double reagent run

200 tests/hour in single reagent mode

Maximum incubation + reading time: 638 seconds

Typical precision, endpoint 2.0 CV% / kinetic 2.0 CV%

Carry-over, lower than 15 parts per million

START-UP

The start-up procedure is run daily: self-test, reader offset of optics, wash and check of all cuvettes

CALIBRATION

Reagent blank subtraction, 1 to 8 standards per test method

Linear: factor, linear, linear regression

Non linear (5 interpolation types): cubic-spline, poly-linear, multi-parameter, logit-log four parameters and five parameters

Free standard / control positions (5 mL tubes or 1 mL cups)

Results can be recalculated when changing factor or calibration curve

MAINTENANCE

Procedures programmed by component life counters

PRINTING REPORTS

Single test, complete sample, work sheet, method and QCs

Automatic sample reports upon test completion if requested

NEEDLE WASHING

Sampling needle washed internally and externally with system solution after every operation



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Connections

POWER

Standard VDE removable power cord

EXTERNAL PC

USB port

HOST/ LIS

Ethernet LAN (samples, work list, results) Standard ASTM ASCII protocol

Database

WORKLIST/ SAMPLES

For each worklist: unlimited number of samples, unlimited number of tests, up to 99 sheets of tests per worklist.

Sample ID codes

Tests archive with powerful search tools

Sample management

TEST METHODS

Unlimited number of methods in PC memory

60 active methods

QUALITY CONTROL

Three-level controls per test, one month monitoring

Reagent/calibrator/control lot monitoring,

Exclusion of failing results from graphic and statistics

ERROR LOG

Automatically stored at run-time, can be viewed or printed

Powerful on-line monitoring



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APPENDIX 1

HYPERLAB PLUS METHODS PERFORMANCES

METHOD	Conc.	CV% ≤
Acetic acid	1.0 g/l	0,8
Citric acid	2.0 g/l	1.2
D-Gluconic acid	2.0 g/l	1.0
D-Lactic acid	0.6 g/l	2.0
L-Lactic acid	0.6 g/l	2.0
L-Malic acid	1.0 g/l	0,6
Pyruvic acid	0.6 g/l	1,5
Tartaric acid	5.0 g/l	0,5
Acetaldehyde	100 mg/l	1,5
Anthocyanins	500 mg/l	0.4
α-Amino Nitr.	150 mg/l	1,5
Ammonia Nitr.	50 mg/l	1,5
Calcium	100 mg/l	1,9
Catechins	25 mg/l	0,5
Chlorides	1.0 g/l	1.0
Iron	20 mg/l	1,5
Glycerol	10 g/l	1,5
Glucose/Fructose	2.0 g/l	0,5
Glucose/Fructose (grape juice and must)	250 g/l	1,5
Magnesium	100 mg/l	1.0
Total Polyphenols	4000 mg/l	1,8
Potassium	1500 mg/l	1,5
Copper	2.0 g/l	2.0
Free SO ₂	20 mg/l	1.0
Total SO ₂	150 mg/l	1.0

ATTENTION: It should be noted that the determination on multiparametric instruments derives from different factors including “the instrument”, “the method”, “the reagents / samples” and the number of analyses. The CV% of an analysis cycle must be taken into consideration while referring to the value of the standard and the linearity of the method.

STEROGLASS Srl

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