Autobio
Microplate Instrumentation

PHOMO
Microplate Reader

LUMO
Microplate Luminometer

Autobio

autobio labtec instruments

an autobio group company | www.autobio-labtec.com

Autobio Labtec Instruments Co., Ltd. was set up as a competence center focused on development, production and marketing, adding an own line laboratory instrumentation to the product portfolio of the Autobio group.

A close cooperation with an experienced R&D team in Europe and a highly qualified team in charge of production enables Autobio Labtec Instruments to offer state of the art instrumentation to the domestic and international market.

Combining the expertise of our team of instrumentation specialists in Europe and China and the diagnostic background of Autobio, our products are the result of a development making best use of synergies across the globe and our commitment to quality.

Autobio Labtec Instruments is ISO 9001 / 13485 certified. All products are CE-marked and meet the requirements for IVD-Devices according to the In Vitro Medical Diagnostics Directive 98/79/EC Annex III. Certified as IVD our products are qualified to be used with strictly controlled In Vitro Diagnostic applications.

LUmo and PHOmo

... are designed to share a common platform with common advantages. Most of the core components in electronics, mechanics and software are identical for both instruments. Similar operation and maintenance within this product family improves efficiency and saves time and costs.

Following some of the main product highlights common with LUmo and PHOmo are listed:

State of the art design

LUmo and PHOmo have both been developed by a very experienced team in Europe. Using state of the art technology and more than 20 years of experience in microplate instrumentation the development was focussed on top level performance, cost efficiency and reliability.

IVD

ISO 9001 • 13485 CERTIFIED IVD CE

Both LUmo and PHOmo have passed all required tests and reviews, carried out by independent certified bodies, to certify compliance with the relevant directives 98/79/EC (IVD), 2004/108/EC (EMC) and 2006/95/EC (LVD).

USB and RS232 serial interface

The instruments incorporate both a USB and an RS232 interface to connect the instrument with the computer. This makes sure the instrument can be connected, no matter which interfaces are installed in the PC.

Front Loader - LUmo & PHOmo

The front loading mechanism is designed to support the use of LUmo and PHOmo in a robotic operating environment.

The plate can be easily positioned and accessed. To enable easy and safe loading, the plate is not locked while the plate transport is located in load position and only held in a defined position once the plate carrier moves into the instrument

If a plate is dropped the instrument itself will not be spilled. This reduces service and maintains the value of the instrument. The plate carrier can easily be cleaned and decontaminated in load position.

Accommodates 96- and 48-well microplates

The plate carrier system is designed to accommodate all kinds of 96- and 48-well (4x12) microplates without an additional adaptor required.

Flat top surface

… can be used to accommodate other instruments and save valuable space in the lab. LUmo and PHOmo can be placed on top of each other. The surface can be easily cleaned and decontaminated.

No blower – no noise

The extremely low power consumption of the integrated electronics generates no heat. Accordingly no blower is required which makes standby operation absolutely silent. The temperature within the instruments remains at ambient level without any impact on the reaction in the plate.

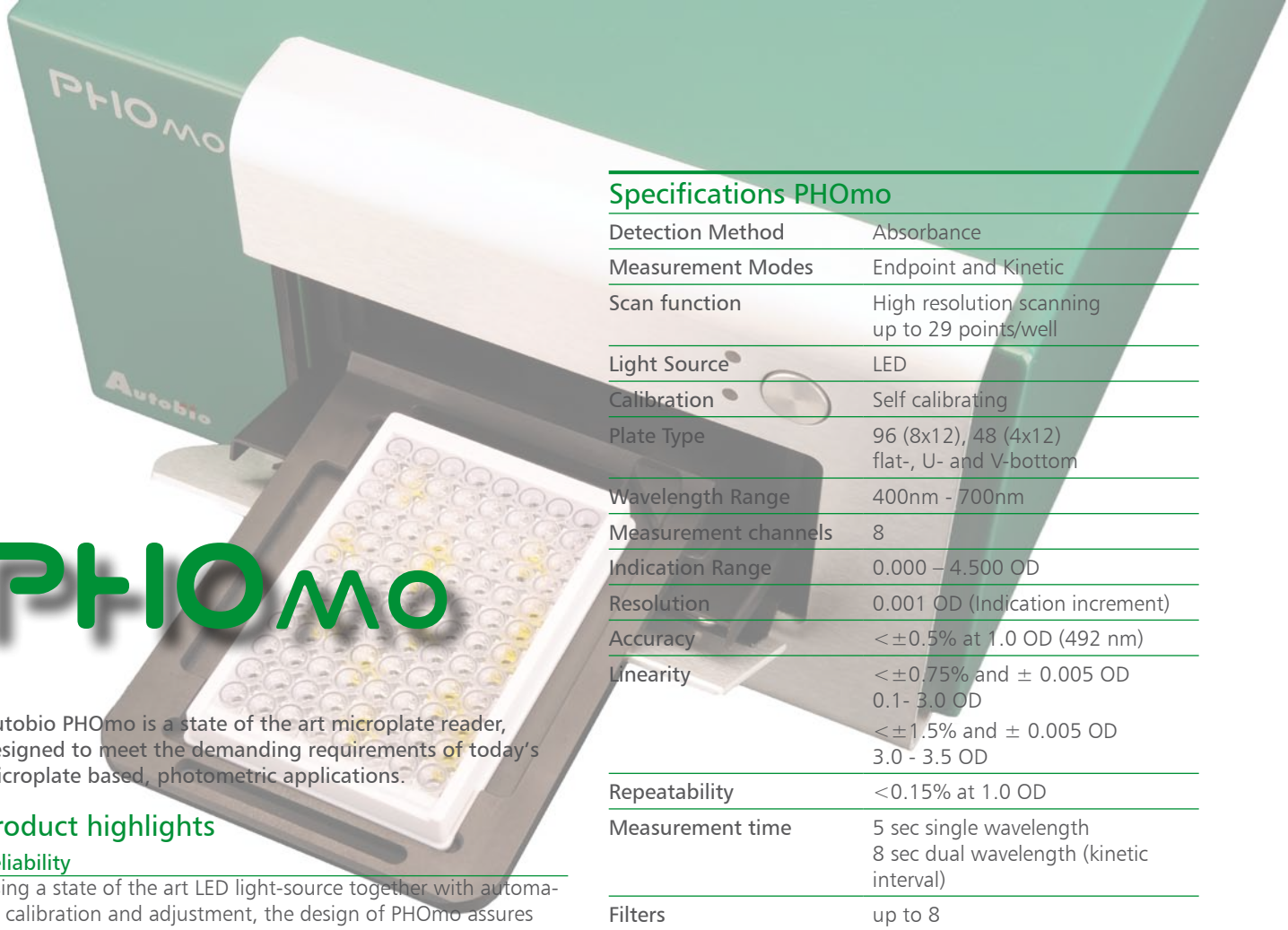
The closed environment without air circulation in the instrument significantly reduces the entry of dust and other contaminants which impair the performance of the optical system. As a result service requirements and downtime of the instrument in the lab are reduced.

Robotic integration

The accurate front loading mechanism which releases the plate in load position, it's compact design and reliability make LUmo and PHOmo the ideal choice for integration into robotic systems. If necessary the front panel can be easily removed.

OEM

LUmo and PHOmo are both available as OEM version with customized paint and labeling.



PHOmo

Autobio PHOmo is a state of the art microplate reader, designed to meet the demanding requirements of today's microplate based, photometric applications.

Product highlights

Reliability

Using a state of the art LED light-source together with automatic calibration and adjustment, the design of PHOmo assures reliable measurement performance and minimum maintenance. The internal software automatically monitors and adjusts the power required. Unlike commonly used tungsten halogen lamps, LEDs require no heat up time and are only turned on during measurement. LEDs show very low power consumption and no heat emission.

Large measurement range and excellent repeatability

… make sure the reader doesn't limit your application and impair your assay performance by poor precision.

High resolution scanning:

The sophisticated optical system of PHOmo is designed for high resolution scan reading. Each well is measured at a resolution of 0.2mm providing 29 measurement values across each well. This feature makes PHOmo the ideal choice for the measurement of agglutination assays.

Speed:

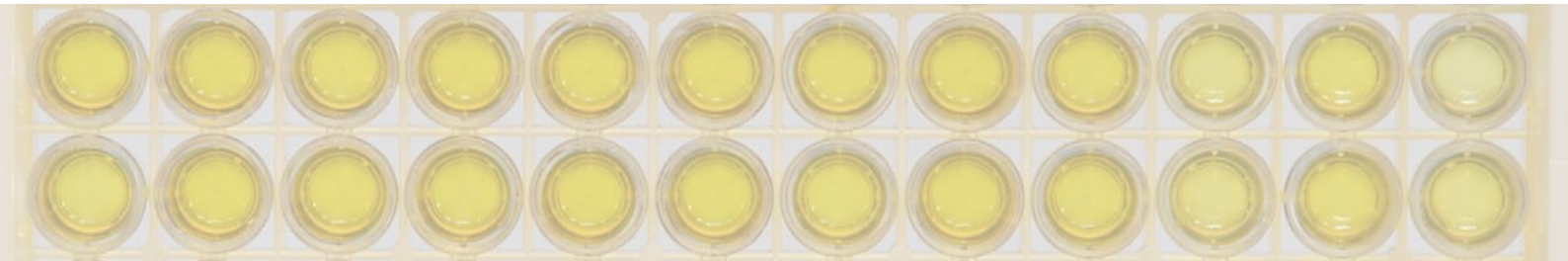
With a repetition rate of 5 seconds (8 seconds for dual wavelength) PHOmo doesn't keep you waiting for your results and enables fast kinetic measurements.

Filter slider for external filter access

The filter slider can easily be moved out of the instrument to allow installation of new filters to the instrument. No tool or service technician is required to install a new filter.

Specifications PHOmo

Detection Method	Absorbance
Measurement Modes	Endpoint and Kinetic
Scan function	High resolution scanning up to 29 points/well
Light Source	LED
Calibration	Self calibrating
Plate Type	96 (8x12), 48 (4x12) flat-, U- and V-bottom
Wavelength Range	400nm - 700nm
Measurement channels	8
Indication Range	0.000 – 4.500 OD
Resolution	0.001 OD (Indication increment)
Accuracy	<±0.5% at 1.0 OD (492 nm)
Linearity	<±0.75% and ± 0.005 OD 0.1- 3.0 OD <±1.5% and ± 0.005 OD 3.0 - 3.5 OD
Repeatability	<0.15% at 1.0 OD
Measurement time	5 sec single wavelength 8 sec dual wavelength (kinetic interval)
Filters	up to 8 Standard 405nm, 450, 492, 620
Shaking	3 modes
Dimensions	33.5cm x 20.5cm x 47.0 cm (w x h x l)
Weight	~ 13.0kg net
Power supply	external
Voltage range	100 - 240VAC ±10%, 47 - 63Hz
Data connections	Serial Interface RS232 (9-pin) and USB 2.0
Environmental conditions	
Operating	Temperature: 10°C to 40°C Humidity: 15% - 85% RH non-condes.
Storage	Temperature: -10°C to 50°C Humidity: <95% RH non-condens.
Scope of supply	Instrument with 4 filters (405, 450, 492, 620nm), power supply, serial cable, USB cable, AUTOsoft Control and Evaluation Software (Windows®) and user manual on CD
Other filters	on request



LUmo

Autobio LUmo is a state of the art microplate luminometer, designed to meet the demanding requirements of today's microplate based, glow luminescence applications.

Product highlights

High sensitivity 1 x 10^{-23} mole HRP

… allows detection of lower analyte concentrations, earlier diagnosis of diseases and efficient tracing of treatments.

Large dynamic range 0 to 1.6 x 10^{9} RLU

… significantly increases assay linearity and enables reliable interpretation of very low and very high analyte concentrations in one test run without additional sample dilution.

Very low crosstalk

LUmo incorporates a sophisticated, adaptive positioning system, keeping the detector as close as possible above the sample to eliminate instrument related crosstalk and make optimum use of LUmo's high sensitivity and dynamic.

Speed

It takes typically less than 40 seconds to read a 96-well plate at 0.1 sec integration time. With fast Luminol-based reaction systems, high reading speed greatly improves assay precision across a plate.

Specifications LUmo

Detection system	Photomultiplier module
Detection mode	Glow luminescence
Spectral Range	300 - 650nm
Dynamic / Indication Range	0 - 1.600.000.000 RLU
Measurement unit	RLU (Relative Light Units)
Sensitivity at 545nm	1 x 10^{-23} mole HRP
Repeatability	< 2%
Crosstalk	< 1 x 10^{-7} (typical)
Measurement time	typically <40 seconds at 0.1 sec. integration time for a 96-well plate
Integration time	0.1 sec to 10 sec in increments of 0.1sec
Plate types	96-well and 48-well (4x12) micro-plates, max. height 15.2 mm
Shaking	3 modes
Dimensions	33.5cm x 20.5cm x 47.0 cm (w x h x l)
Weight	~13.0kg net
Power supply	external
voltage range	100-240VAC ±10%, 47-63Hz
Data connections	Serial Interface RS232 (9-pin), USB 2.0
Environmental conditions	
Operating	Temperature: 10°C to 40°C Humidity: 15%-75% RH non-condensing
Storage	Temperature: -10°C to 50°C Humidity: <95% RH non-condensing
Scope of supply	Instrument, power supply, power cable, dustcover, serial cable, USB cable, AUTOsoft - Autobio Control and Evaluation Software (Windows®) and user manual on CD

AUTOsoft

AUTOsoft control and evaluation software

Autobio considers software used to control the instruments and perform the required evaluation as integral part of an efficient system, focussed on processing the variety of microplate based applications. AUTOsoft – Autobios powerful Windows® control and evaluation software – is designed to perform the vast majority of routine and scientific applications.

AUTOsoft is supplied free of charge with LUmo and PHOmo. Unlike other manufacturers Autobio supplies a powerful evaluation package with the instruments and not just a basic data acquisition program, which has to be upgraded for significant additional costs in order to provide the features required by the user.

AUTOsoft features and highlights

User administration

User Administration with 2 different authorization levels.

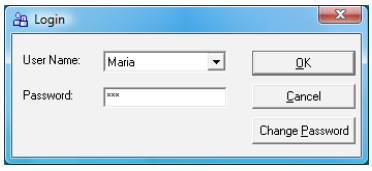
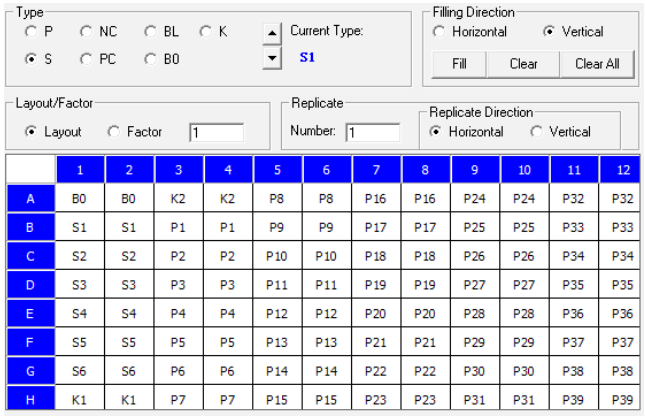


Plate Layouts

… can be defined and saved independent from the test definition using convenient positioning, filling and replicate functions.

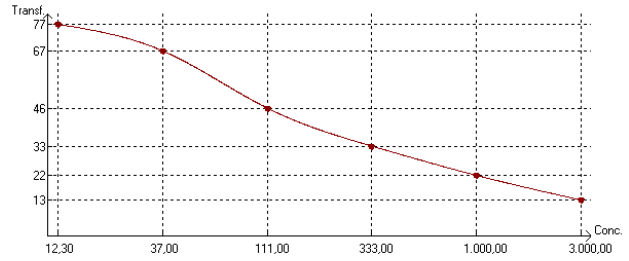


	1	2	3	4	5	6	7	8	9	10	11	12
A	B0	B0	K2	K2	P8	P8	P16	P16	P24	P24	P32	P32
B	S1	S1	P1	P1	P9	P9	P17	P17	P25	P25	P33	P33
C	S2	S2	P2	P2	P10	P10	P18	P18	P26	P26	P34	P34
D	S3	S3	P3	P3	P11	P11	P19	P19	P27	P27	P35	P35
E	S4	S4	P4	P4	P12	P12	P20	P20	P28	P28	P36	P36
F	S5	S5	P5	P5	P13	P13	P21	P21	P29	P29	P37	P37
G	S6	S6	P6	P6	P14	P14	P22	P22	P30	P30	P38	P38
H	K1	K1	P7	P7	P15	P15	P23	P23	P31	P31	P39	P39

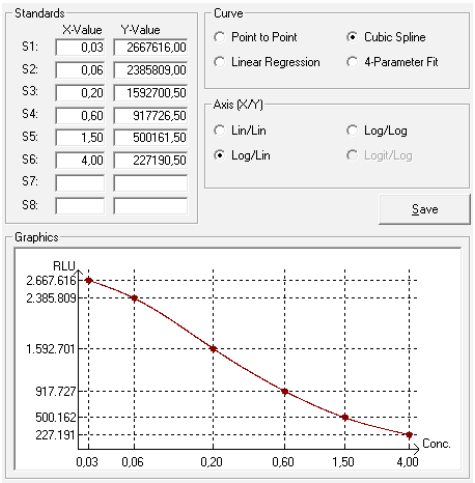
Quantitative evaluation:

Curve fits modes: linear regression, point to point, cubic spline and 4 parameter fit

Axis scaling: linear, logarithmic, logit-log axis scaling and extrapolation option

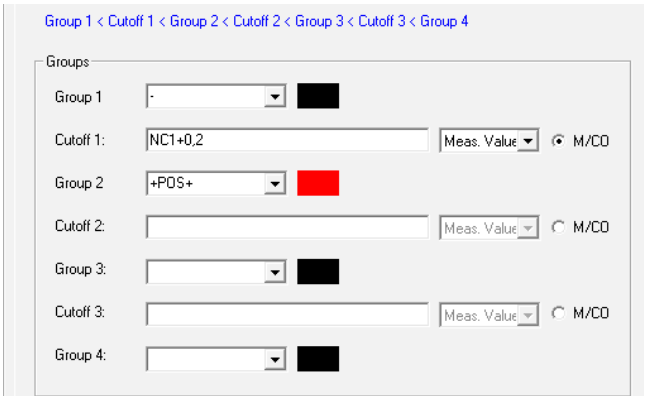


Standard curves can be stored and used for subsequent test runs as measured or adjusted by single or dual point calibration.



Qualitative analysis:

Up to 3 different cut off values can be used to assign samples to up to 4 different ranges. Classification is based on measurement values, concentrations or transformation result. The desired cutoff value can be selected to calculate the ration of cutoff value and measurement values of the samples (M/CO).

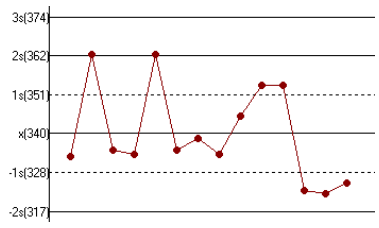


Assay validation:

… to verify correct assay performance can automatically be performed based on formulas defining the required validation criteria.

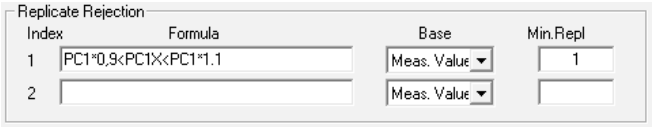
Internal quality control function

… used to monitor and statistically analyze controls over time and test runs.



Automatic replicate elimination

Based on a formula, outliers of replicated samples can be automatically excluded from further evaluation.



Database storage

All data is stored in a database supporting flexible patient data / result management, sample based reporting including recording of external results, flexible export functions, reagent batch management, etc.

Results from LUmo and PHOmo

… are assigned to the corresponding sample IDs. Results of external tests can be added to the sample and printed in a complete sample report.

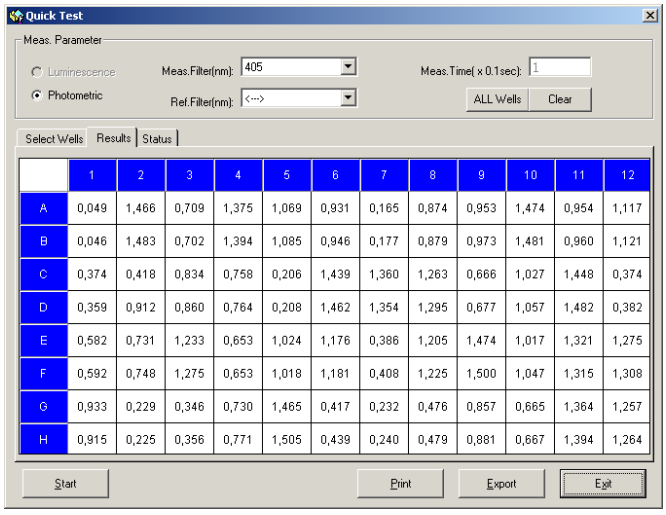
Multitest and Kindling test

Up to 12 different assays per sample (multitest) or up to 5 subsequently drawn samples of one patient (kindling test) can be processed on one plate.

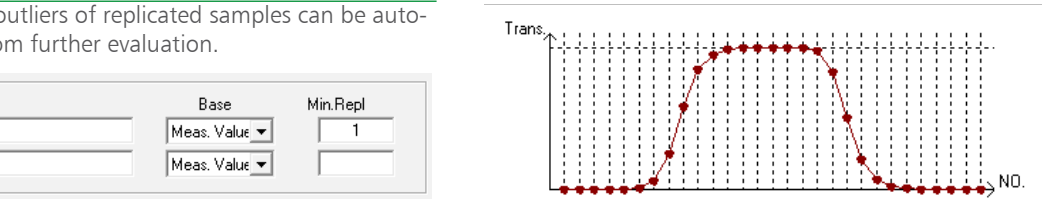
	1	2	3	4	5	6	7	8	9	10	11	12
A	0,10	7,35	1,16	1,00	11,97	453,16	2,00	4,31	4,19	1,00	5,93	4,95
B	1,00	1,10	2,03	10,00	109,41	6,98	4,00	2,56	10,00	2,00	3,27	7,91
C	2,50	6,65	1,61	100,00	93,06	24,58	8,00	3,25	2,19	5,00	6,42	9,39
D	10,00	1,61	3,71	1.000,00	25,95	1,54	16,00	4,38	9,75	10,00	3,77	5,72
E	1,78	2,64	1,06	3,79	8,20	228,76	6,13	2,00	5,13	5,29	8,71	6,67
F	1,46	1,76	0,79	1,91	399,54	41,42	14,38	3,41	10,38	6,91	1,37	9,83
G	1,51	4,03	7,89	1,30	48,26	152,61	8,88	3,84	13,00	8,13	9,91	9,78
H	3,45	1,11	8,22	13,58	649,38	283,87	14,75	7,75	3,69	2,41	4,58	2,85

Quick- and scan measurement

… supports raw data acquisition and export for standard OD- and high resolution scan measurements.



	1	2	3	4	5	6	7	8	9	10	11	12
A	0,049	1,466	0,709	1,375	1,069	0,931	0,165	0,874	0,953	1,474	0,954	1,117
B	0,046	1,483	0,702	1,394	1,085	0,946	0,177	0,879	0,973	1,481	0,960	1,121
C	0,374	0,418	0,834	0,758	0,206	1,439	1,360	1,263	0,666	1,027	1,448	0,374
D	0,359	0,912	0,860	0,764	0,208	1,462	1,354	1,295	0,677	1,057	1,482	0,382
E	0,582	0,731	1,233	0,653	1,024	1,176	0,386	1,205	1,474	1,017	1,321	1,275
F	0,592	0,748	1,275	0,653	1,018	1,181	0,408	1,225	1,500	1,047	1,315	1,308
G	0,933	0,229	0,346	0,730	1,465	0,417	0,232	0,476	0,857	0,665	1,364	1,257
H	0,915	0,225	0,356	0,771	1,505	0,439	0,240	0,479	0,881	0,667	1,394	1,264

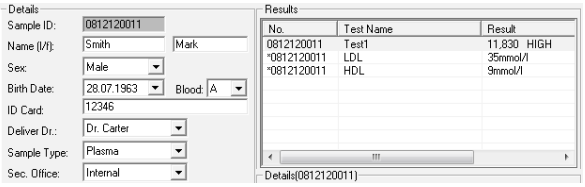


Copy/paste and export

… displayed measurement, result and sample data to use it in other applications (e.g. Excel™).

Sample IDs and patient data

can either be entered manually, generated automatically, or imported from a file. The corresponding results are displayed together with the sample data or printed in a sample report.



Directory

…is used to manage commonly used data and simplify routine data entry.

OEM customization and multilingual user interface

The user interface of AUTOsoft can easily be customized to match the requirements of OEM customers regarding graphics and language.

Included with LUmo and PHOmo

AUTOsoft is included for free with LUmo and PHOmo, providing a fully featured system ready to support your work in the laboratory.

Autobio Group

offers more than 100 *in vitro* diagnostic products including ELISA, POCT (Point of Care Test), Microbiology and CLIA (Chemiluminescence). As an ISO 9001, EN 13485 and GMP certified manufacturer, Autobio supplies high quality products through its well established sales network and is reknown as a reliable OEM partner. For details please visit www.autobio-diagnostics.com

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