

LAB AUTOMATION

BEYOND HUMAN BOUNDARIES



HELMED[®] ALL-IN-ONE PROCESSOR

TAKE YOUR LAB FLEXIBILITY TO THE NEXT LEVEL



As a manufacturer of reagents, **AESKU.DIAGNOSTICS** has a great understanding of the automation needs faced by end-users when handling diagnostic products on a daily basis.

While there are automation companies with great engineers, we believe they sometimes lack a full understanding of the daily lab routine.

Understanding these needs encouraged us to create state-of-the-art instruments. Therefore, **AESKU.SYSTEMS** was established to develop products that adapt to the laboratory reality. Our systems are designed to fulfil the highest usability requirements, making our instruments practical and easy to use.

Fully manufactured in our facilities in Germany, the first instrument of **AESKU.SYSTEMS** – the **HELMED®** system – has numerous unique and patented features focusing on usability and flexibility, granting access to the best of 3 worlds – IFA, ELISA and Blot on a single platform.

Since its launch, **HELMED®** has never stopped evolving, revolutionizing the way lab routine is

INNOVATIVE DESIGN – PRECISION AND STANDARDIZATION FASTER THAN EVER

Due to its innovative design, e.g. the 3-needle system and 3 independent rings, **HELMED®** needs less processing time and increases the reproducibility of results compared to manual analysis or one-needle-systems.

The **HELMED®** system:
3 techniques in one instrument and all this within 1 m³.

SAMPLE AUTOMATED TRACEABILITY

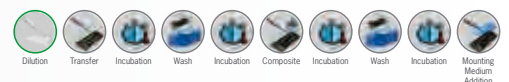
HELMED® was the first machine to introduce a built-in barcode reader allowing automated detection and scanning of sample tube IDs, eliminating transcription errors. Communication between LIS and instrument can be done directly or via our middleware **AESKU.LAB**.



INSTRUMENT LOADING. STEP-BY-STEP

The loading wizard provides clear visual instructions how to load the required reagents.

After loading, all the steps can be followed real time.





4x4 FORMAT – MORE SLIDES AND TESTS

Up to 20 slides from 4 different tests with 4 different substrates can be processed in just one run.

SMALL SIZE – HIGH THROUGHPUT

Despite its small footprint, **HELMED®** is able to process up to 190 different samples in one single run.

SCREENING AND TITRATION WITH JUST ONE WORKLIST

HELMED® allows dilution ratios from 1:1 to 1:10.240 in 192 available dilution positions. One step dilution ratios range from 1:1 to 1:160; greater dilutions are performed in two steps.

OPEN FORMAT

HELMED® supports slides from different manufacturers independently of different thicknesses, number of wells and formats.

FLEXIBLE PROTOCOL PROGRAMMING

The multi-step programmable software allows the user to define conjugate/counterstain or multi-step reagent addition immediately after a specific well is washed (not after the whole slide has been washed).

UNPARALLELED REPRODUCIBILITY

The total sample and reagent volume to be dispensed per well is automatically calculated. Then it is distributed on multiple points to provide optimal sample and reagent distribution. This is especially necessary for tissue sections and large format wells. The wash-by-cycle system avoids cross-contamination.



HELMED® HTC

- For IFA incubations up to 37°C and up to 2 hours
- Optimal humidity controlled over long time
- Ring moves every 10 seconds to guarantee temperature homogeneity.



- Paperless workflow
- Electronic worklists
- Electronic results with pictures
- No transcription errors
- Full traceability
- Pattern library



MOTIC LED MICROSCOPE

- Same intensity throughout entire lifetime
- No lamp replacement required (no extra costs)
- No lamp re-validation required
- No waiting time
- No need to record lamp use
- Lower power consumption and environmentally friendly

TECHNICAL SPECIFICATIONS FOR IFA PROCESSING

Sample capacity	IFA:	With barcode: up to 190	without barcode: 190
Sample identification	Built-in multi-type barcode reader for sample detection and identification		
IFA slide capacity	Up to 20 slides		
IFA test capacity	Up to 4 different tests with 4 different substrates and 4 different conjugates per run		
Samples & reagents support	Customized multi-format extractable racks		
Slide support	26.1 x 76.1 mm (25 mm and 26 mm slide thickness within the same run)		
Standard sample rack tube size	75 mm x 13 mm diameter tubes, other sizes upon request		

HELMED® ELISA

ADAPTS TO YOUR LAB NEEDS

MULTIPLE OPTIONS FOR LOW TO MEDIUM THROUGHPUT



THE “ONE” AESKU CONCEPT

One protocol, one buffer system, one substrate, one stop solution, one sample dilution and one color code for all **AESKULISA®** kits, allows a maximum throughput with a minimum hands-on time.



COMPLETE WORKFLOW

Confirm your IFA screening in the same instrument using the ELISA module.

NO PRE-DILUTION TUBES REQUIRED

Sample dilutions up to 1:101 are directly prepared on a microtiter plate (MTP). Higher dilutions should be performed outside the instrument.

INDIVIDUAL WELL TIME MANAGEMENT

The incubation time will always be the same for all wells. No plate drift effect since the clock starts counting individually and immediately after each well is processed.

ONE WORKLIST, TWO INSTRUMENTS

HELMED® is able to communicate with the most common external MTP readers. This functionality is simplified with **AESKU.READER**. Hereby, the worklist is imported by the reader, which exports the measured OD back to the ELISA software, for data compilation, allowing a paperless workflow and a safer data transfer.



AESKU.READER

ELISA MTP EXTERNAL READER

- Fast and reliable ELISA MTP Reader
- Standalone or connected to **HELMED®**
- Data transformation formulae
- Assay and control validation
- Curve-fitting options: linear, 4-P, 2-P (logit/log), cubic, quadratic, cubic spline, point-to-point
- Multiple assays per plate

TECHNICAL SPECIFICATIONS FOR ELISA PROCESSING

Sample capacity	ELISA:	With barcode: up to 96	without barcode: 96
Sample identification	Built-in multi-type barcode reader for sample detection and identification		
ELISA capacity	2 x 96 well microtiter plate (MTP)		
ELISA test capacity	Up to 6 different tests with 6 different substrates, 6 different conjugates, 2 different stop solutions, 2 different dilution buffers and 2 different washing buffers per run		
Samples & reagents support	Customized multi-format extractable racks		
Standard sample rack tube size	75 mm x 13 mm diameter tubes, other sizes upon request		

HELMED[®] BLOT

ADAPTS TO YOUR LAB NEEDS

REPRODUCIBILITY AND ACCURACY AT A NEW LEVEL



COMPLETE WORKFLOW

Confirm your IFA screening in the same instrument using the Blot module.

NO SAMPLE PRE-DILUTION REQUIRED

Dilutions are prepared directly in the trays.

REPRODUCIBILITY ACROSS ALL STRIPS

The time management and the environment created inside the HELMED[®] Blot ensure a consistent incubation and washing time for all strips tested.

GREAT VERSATILITY

40 strips from up to 9 different tests can be run at the same time.

ROBUST ANALYSIS AND ACCURACY

HELMED[®] Blot communicates with AESKU.SCAN[®] software, supporting an automated analysis of the strips, avoiding person-to-person bias.

REAGENT OPTIMIZATION

AESKUBLOTS[®] are optimized for HELMED[®] Blot, ensuring a better experience and the lowest „dead volume“ on the market.



- Fast and reliable blot interpretation
- Report generation
- Increased sensitivity for band detection



TECHNICAL SPECIFICATIONS FOR BLOT PROCESSING

Sample capacity	BLOT: With barcode: up to 40	without barcode: 40
Sample identification	Built-in multi-type barcode reader for sample detection and identification	
BLOT strip capacity	Up to 40 strips	
BLOT test capacity	Up to 9 different tests	
Samples & reagents support	Customized multi-format extractable racks	
Tray support	5 x 8 strip trays	
Standard sample rack tube size	75 mm x 13 mm diameter tubes, other sizes upon request	

HELMED TECHNICAL SPECIFICATIONS

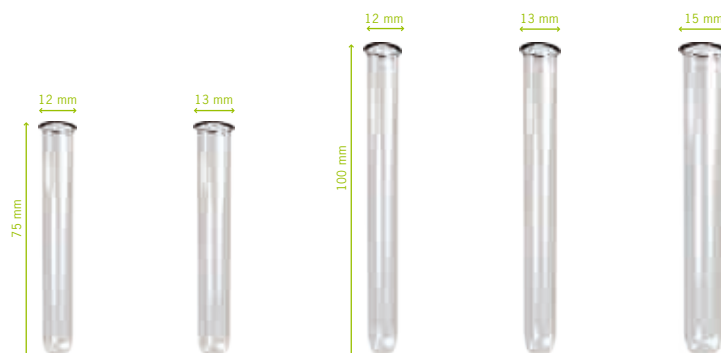
HELMED® COMMON TECHNICAL SPECIFICATIONS

Sample capacity:	IFA: 190 samples ELISA: 96 samples Blot: 40 samples
Sample identification:	Built-in multi-type barcode reader for sample detection and identification
Samples & reagents support:	Customized multi-format extractable racks
Standard sample rack tube size:	75 mm x 13 mm diameter tubes, other sizes upon request
Dilution fluid:	User choice of wash solution or dedicated diluent solution in the carousel
Pipetting station:	<ul style="list-style-type: none"> • 3 low carbon stainless steel needles. 2 fixed and one retractable • The 3rd retractable needle provides an independent reagent pipetting channel • One peristaltic pump for aspiration of fluids • One peristaltic pump for slide well and MTP well washing • One 50 µl syringe • One 1 ml syringe
Level detection:	Continuous level tracking by conductivity
Minimum sample volume pick-up:	1 µl
Minimum sample volume required:	50 µl
Wash solutions:	2 different wash solution
Incubator (HELMED® HTC only):	Programmable from RT to 37 °C
Software requirements:	PC (not included) with 32 & 64 bits compatible processor. Runs on Windows Vista, 2000 & XP, Windows 7
PC communication port:	Bidirectional USB
LIS link:	<ul style="list-style-type: none"> • IFA: uni-directional, combined with HELPS+: bi-directional • BLOT: bi-directional • ELISA: uni-directional, combined with AESKU.READER SW bi-directional • Conforms to ASTM standards
Modularity:	Up to 3 HELMED® systems controlled by a single PC
Programming:	User-friendly software interface including an intuitive easy to use slide & test designer that supports different slide thickness, different well formats, multiple substrates in the same slide, multiple sample dispensing points
Languages:	Chinese*, Czech*, English, French*, German, Greek*, Hungarian*, Italian*, Polish*, Portuguese*, Russian*, Spanish*
Certifications:	CE mark and FDA listed
Power consumption:	Without incubator: 50 Watt max. With incubator (HELMED® HTC only): 250 Watt max.
Power supply:	Input: 100-240 Volt, 50-60 Hz
Dimensions:	57 cm x 65 cm x 75 cm
Instrument weight:	HELMED® : 28 kg HELMED®HTC : 31 kg

* Only available for IFA module

As part of the “Plug & Play” concept, no tools, hardware modifications nor technical installation are required – Racks are simply held in place by magnets and are recognized by the barcode scanner.

Different SAMPLE TUBE SIZES can be easily interchanged. The machine automatically recognizes the 5 different sample racks by their unique barcode. Everything else is pre-programmed.



AESKU® RACK REFERENCE

Total Samples (rack 1 + 2)

75 x 12

106

75 x 13

106 & 190

100 x 12

106 & 190

100 x 13

106

100 x 15

92

IFA, ELISA, BLOT – ALL IN ONE

COLOR CODED TROUBLESHOOTING

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SAFE HANDLING AND SECURE RESULTS

HELMED®'s green cover automatically locks before the assay starts running. This creates a perfect reproducible environment inside of the machine and avoiding interference from external factors.

OUTSTANDING REAGENT CAPACITY AND PRACTICABILITY

AESKUBLOTS®, **AESKULISA®** and **AESKUSLIDES®** reagent, calibrator and control vials fit directly into the corresponding positions.

PLUG & PLAY MODULAR SYSTEM

HELMED® is capable of performing the 3 major lab techniques: IFA, ELISA and BLOT. This is achieved by simply changing racks and rings and using dedicated software. The proprietary built-in barcode scanner allows automatic identification of the correct rack. Up to 3 machines can work in parallel with one computer.

REVOLUTIONARY DESIGN WITH THE SMALLEST FOOTPRINT AVAILABLE

HELMED®'s compact architecture is intended to give the technician direct and easy access to all working areas. The main instrument parts are magnetically mounted, allowing easy and fast replacement by technical service or by the operating technician. An optimal footprint (57 cm x 65 cm x 75 cm) combined with the light weight (28 kg) makes it suitable for any lab space.

FEWER CONSUMABLES, MORE FREE SPACE

HELMED® has not only a minimal footprint, but also has a sample requirement as low as 50 µL. The amount of reagents used and the dead volume are considerably reduced, as are consumables like plates. Due to its needle technology, no plastic tips are needed.



PRODUCT ORDERING REFERENCES FOR HELMED IFA, ELISA AND BLOT

Product Ordering References	Description
REF. HEL-1000	HELMED® IFA Processor
REF. HEL-3610	IFA Software
REF. HPS-2002	HELPS+ IFA Management Software
REF. LED-1002	MOTIC Trinocular LED microscope (10x, 20x, 40x and 60x)
REF. LED-3002	LED's GO Camera; USB CMOS Camera, 1/2.5" Sensor, 2592x1944 resolution (LED's GO.CAM Software included)
REF. HEL-1600	HELMED® HTC (Humidity Temperature Controlled) IFA Processor

Product Ordering References	Description
REF. HEL-7000	HELMED® ELISA PROCESSOR
REF. RDR-1000	AESKU.READER Hardware (external ELISA Plate Reader)
REF. HEL-7004	AESKU.READER Software
REF. HEL-7001	HELMED® ELISA UPGRADE MODULE (for existing HEL-1000 or HEL-8000)

Product Ordering References	Description
REF. HEL-8000	HELMED® BLOT PROCESSOR
REF. HEL-8002	HELMED® BLOT UPGRADE MODULE (for existing HEL-1000 or HEL-7000)
REF. HEL-8001	AESKU.SCAN Blot Interpretation Software (Hardware not included)
REF. HEL-8004	AESKU.SCAN Hardware (Scanner)

ALL IN ONE SOLUTION – WITH OPTIMIZED REAGENTS FOR YOUR WORKFLOW

AESKUSLIDES®



- ANA
- nDNA
- ANCA
- EMA
- rLKS
- mLKS

AESKULISA®



- ANA
- ENA
- U1-70
- dsDNA
- CCP
- Cardiolipin
- β2-Glycoprotein I
- MPO
- PR3
- tTg New Generation
- AMA
- LKM-1

AESKUBLOTS®



- ANA
- Vasculitis
- Myositis
- Liver
- Gastro
- Borrelia

More products available at WWW.AESKU.COM