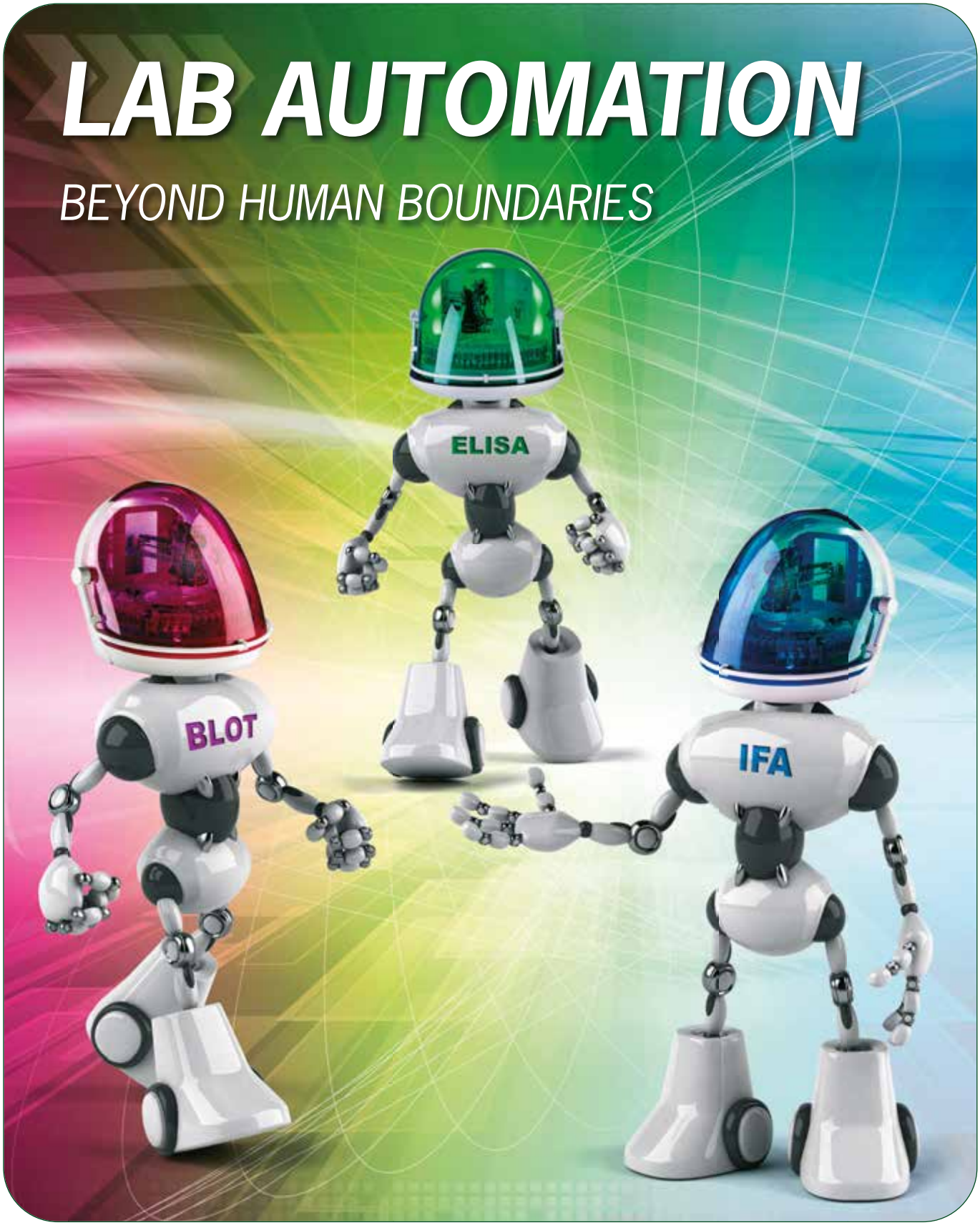
LAB AUTOMATION

BEYOND HUMAN BOUNDARIES



HELMED® ALL-IN-ONE PROCESSOR

AESKU.SYSTEMS
THE DIAGNOSTIC AUTOMATION COMPANY

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 believed 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.

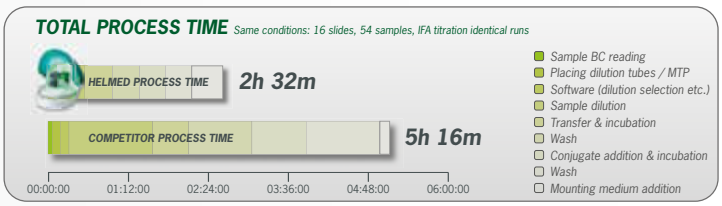
Fully manufactured in our facilities in Germany, the first instrument of **AESKU.**SYSTEMS – the **HELMED®** – has numerous unique and patented features focusing on usability and flexibility, granting access to the best of 3 worlds – IFA, ELISA and Blot on a single platform.

Since its launch, the **HELMED®** has never stopped evolving, revolutionizing the way lab routine is performed across 5 continents.

INNOVATIVE DESIGN – PRECISION AND STANDARDIZATION FASTER THAN EVER

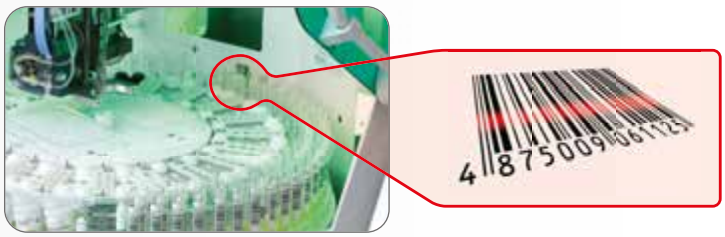
Due to its innovative design, e.g. the 3-needle system and 3 independent rings, the **HELMED®** needs less processing time and increases the reproducibility of results compared to manual analysis or one-needle-systems.

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



SAMPLE AUTOMATED TRACEABILITY

The **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.

All the steps after loading can be followed real time.

HELMED® IFA
ADAPTS TO YOUR LAB NEEDS

106 REASONS TO AUTOMATE YOUR WORKFLOW

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, the **HELMED®** is able to process up to 106 different samples in one single run or approximately 20 slides/hour.

SCREENING AND TITRATION WITH JUST ONE WORKLIST
The **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
The **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
ADAPTS TO YOUR LAB NEEDS

- 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 homogenity.

- Paperless workflow
- Electronic worklists
- Electronic results with pictures
- No transcription
- 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 106 without barcode: 106
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 to 100 mm / 13 mm diameter tubes and microtubes (2 ml)

HELMED® ELISA

ADAPTS TO YOUR LAB NEEDS

MULTIPLE OPTIONS FOR LOW TO MEDIUM THROUGHPUT

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

The **HELMED®** is able to communicate with the most common external MTP readers. This functionality is simplified with the **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.

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.

AESKU.READER

ELISA MTP EXTERNAL READER

- Fast and reliable ELISA MTP Reader
- Standalone or connect to the **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 MicroTiterPlates (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 to 100 mm / 13 mm diameter tubes and microtubes (2 ml)

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

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

REAGENT OPTIMIZATION

The ***AESKUBLOTS®*** are optimized for the **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 to 100 mm / 13 mm diameter tubes and microtubes (2 ml)

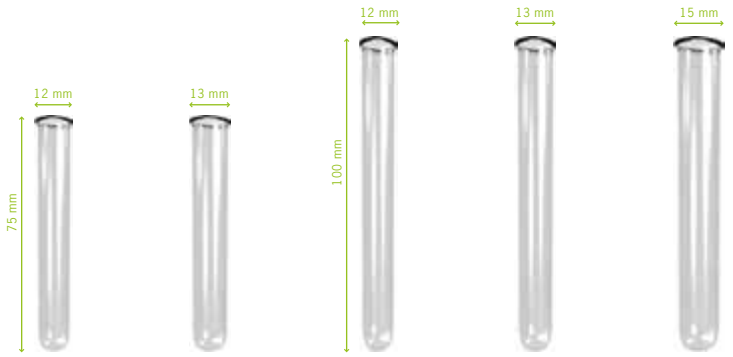
HELMED TECHNICAL SPECIFICATIONS

HELMED® *COMMON TECHNICAL SPECIFICATIONS*	
Sample capacity:	IFA: 106 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 to 100 mm / 13 mm diameter tubes and microtubes (2 ml)
Dilution fluid:	User choice of wash solution or dedicated diluent solution in the carousel
Pippeting station:	• 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
Reagents capacity:	• Modular racks with dynamic allocation of positions • Several reagent rack can be combined in the outer ring, each of them with capacity for 16 reagent and controls bottles
Wash solutions:	2 different wash solution
Incubator:	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:	• IFA: Uni-directional • BLOT and ELISA: 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 and multiple number of well rows within the same slide
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: 250 Watt max.
Power supply:	Input: 100-240 Volt, 50-60 Hz
Dimensions:	57 cm x 62 cm x 75 cm
Instrument weight:	25 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*	***75 x 12***	***75 x 13***	***100 x 12***	***100 x 13***	***100 x 15***
Total Samples (rack 1 + 2)	106	106	106	106	92

IFA, ELISA, BLOT – ALL IN ONE

COLOR CODED TROUBLESHOOTING

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SAFE HANDLING AND SECURE RESULTS

The **HELMED®**´s green cover automatically locks before the assay starts running. This creates a perfect reproducible environment inside of the machine, keeping a constant temperature inside and avoiding interference from external factors, like light or dust.

OUTSTANDING REAGENT CAPACITY AND PRACTICABILITY

In the outer ring for IFA, ELISA and Blot, several reagent racks can be combined, each with a capacity of up to 16 reagent bottles. ***AESKUBLOTS®***, ***AESKULISA®*** and ***AESKUSLIDES®*** reagent, calibrator and control vials fit directly into the corresponding positions.

PLUG & PLAY MODULAR SYSTEM

The **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

The **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 62 cm x 75 cm) combined with the light weight (25 kg) makes it suitable for any lab space.

FEWER CONSUMABLES, MORE FREE SPACE

The **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
HELMED® IFA	REF. HEL-1000	**HELMED®** IFA Processor
	REF. HEL-3610	**IFA** Software v3.1
	REF. HPS-2001	**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
HELMED® ELISA	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
HELMED® BLOT	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 (separated/wrapped)
- mLKS

AESKULISA®

ANA	ß2-Glycoprotein I
ENA	MPO
U1-70	PR3
dsDNA	tTg New Generation
CCP	AMA
Cardiolipin	LKM-1

AESKUBLOTS®

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

More products available at WWW.AESKU.COM

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AESKU.SYSTEMS
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