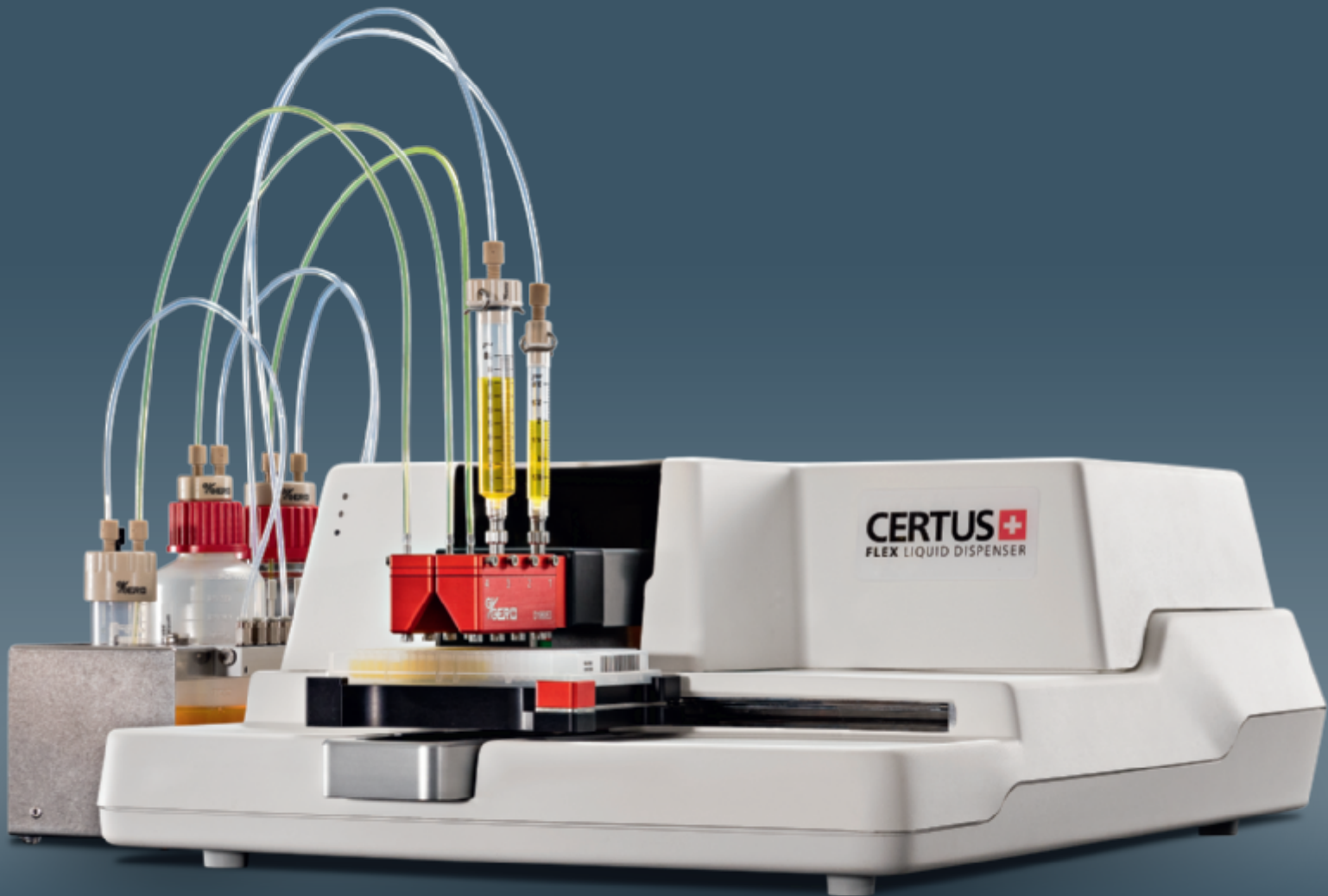


**CERTUS**   
FLEX LIQUID DISPENSER



**THE ONE-OF-A-KIND DIGITAL  
DISPENSING TECHNOLOGY**

# BECAUSE YOU NEED THE **HIGHEST THROUGHPUT** WITH THE **LOWEST** **MARGIN OF ERROR**

Thanks to the CERTUS FLEX one-of-a-kind digital dispensing technology the days of tedious manual dispensing and error-prone dilution patterns are over. The CERTUS FLEX does this part of the job for you. Thus, you will reach higher throughput, which means higher cost efficiency.

We give you a **modular design** in two basic versions, with 5 or 8 individually controllable channels, which can be equipped with different valves to facilitate ideal dispensing of substances with different physical properties. The dispensing parameters of each channel are individually controlled by the **intuitive and adaptable** proprietary CERTUS CONTROL PC software and electronics. We have developed CERTUS FLEX for **contactless dispensing** of a broad range of liquid substances and large molecules, using our renowned Gyger micro valve technology and air pressure control, giving you maximum **precision and flexibility**.

Thanks to the **SiLA compliance of CERTUS CONTROL**, you can rely on easy integration into your laboratory automation workflows such as HTS platforms.



**CERTUS**   
CONTROL PC SOFTWARE





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GYGER+

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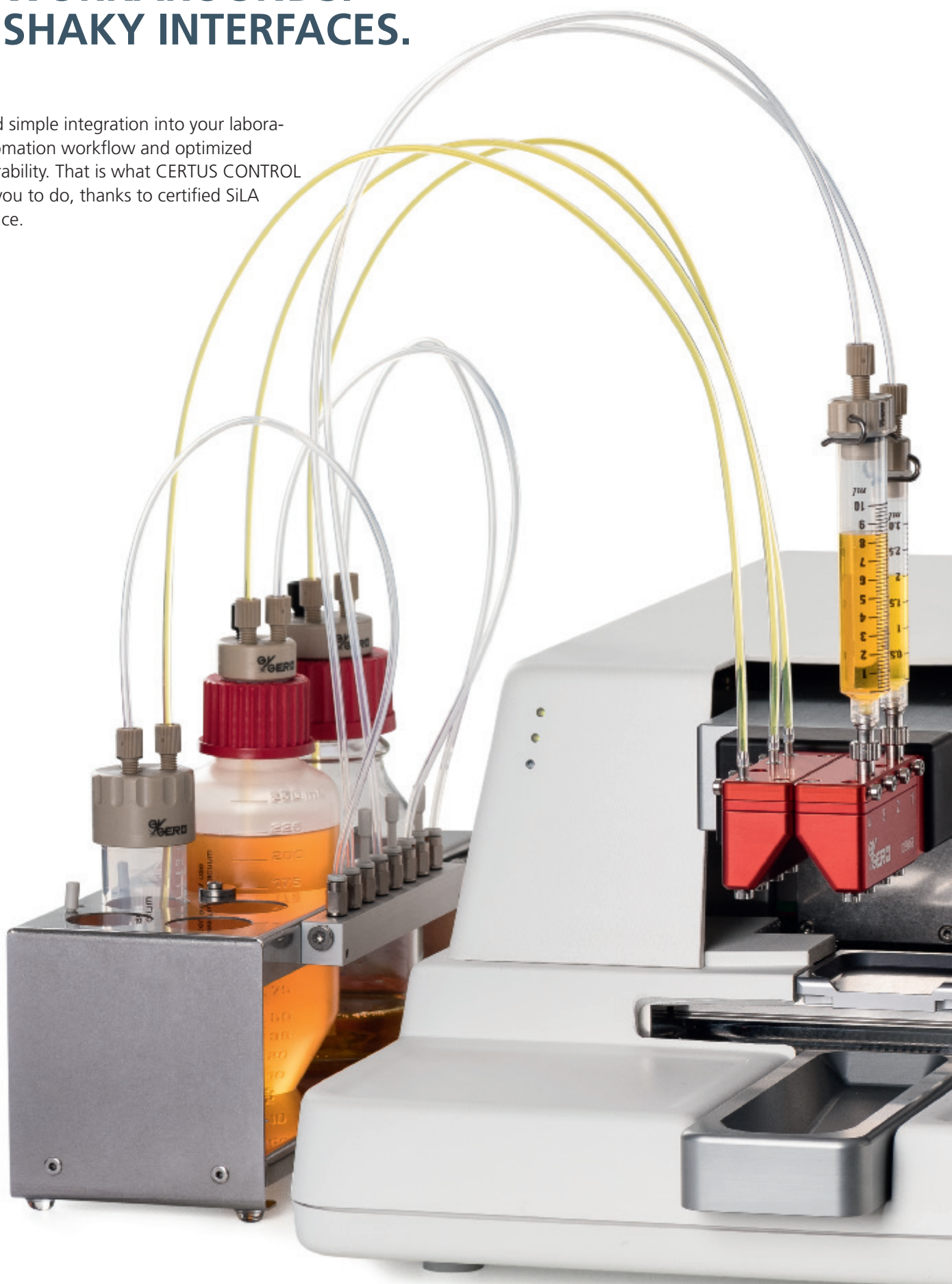
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# PERFECT PROCESS INTEGRATION. NO WORKAROUNDS. NO SHAKY INTERFACES.

You need simple integration into your laboratory automation workflow and optimized interoperability. That is what CERTUS CONTROL enables you to do, thanks to certified SiLA compliance.



# ACCURACY. SPEED. FLEXIBILITY. COMPARABILITY.

## PRECISION

**<3.0 %CV** 0.05 – 0.1  $\mu\text{l}$   
**<2.0 %CV** 0.10 – 1.0  $\mu\text{l}$   
**<1.0 %CV** 1.0 –  $\infty$   $\mu\text{l}$



## ACCURACY

**< $\pm$ 3.0 %** 0.05 – 0.5  $\mu\text{l}$   
**< $\pm$ 2.0 %** 0.05 – 1.0  $\mu\text{l}$   
**< $\pm$ 1.5 %** 1.0 –  $\infty$   $\mu\text{l}$



## RESOLUTION/INCREMENT

**>0.05 nl**



## SPEED (8 values in parallel)

**96 wells, 20  $\mu\text{l}$  within 7 s**  
**384 wells, 5  $\mu\text{l}$  within 11 s**  
**1536 wells, 0.5  $\mu\text{l}$  within 27 s**

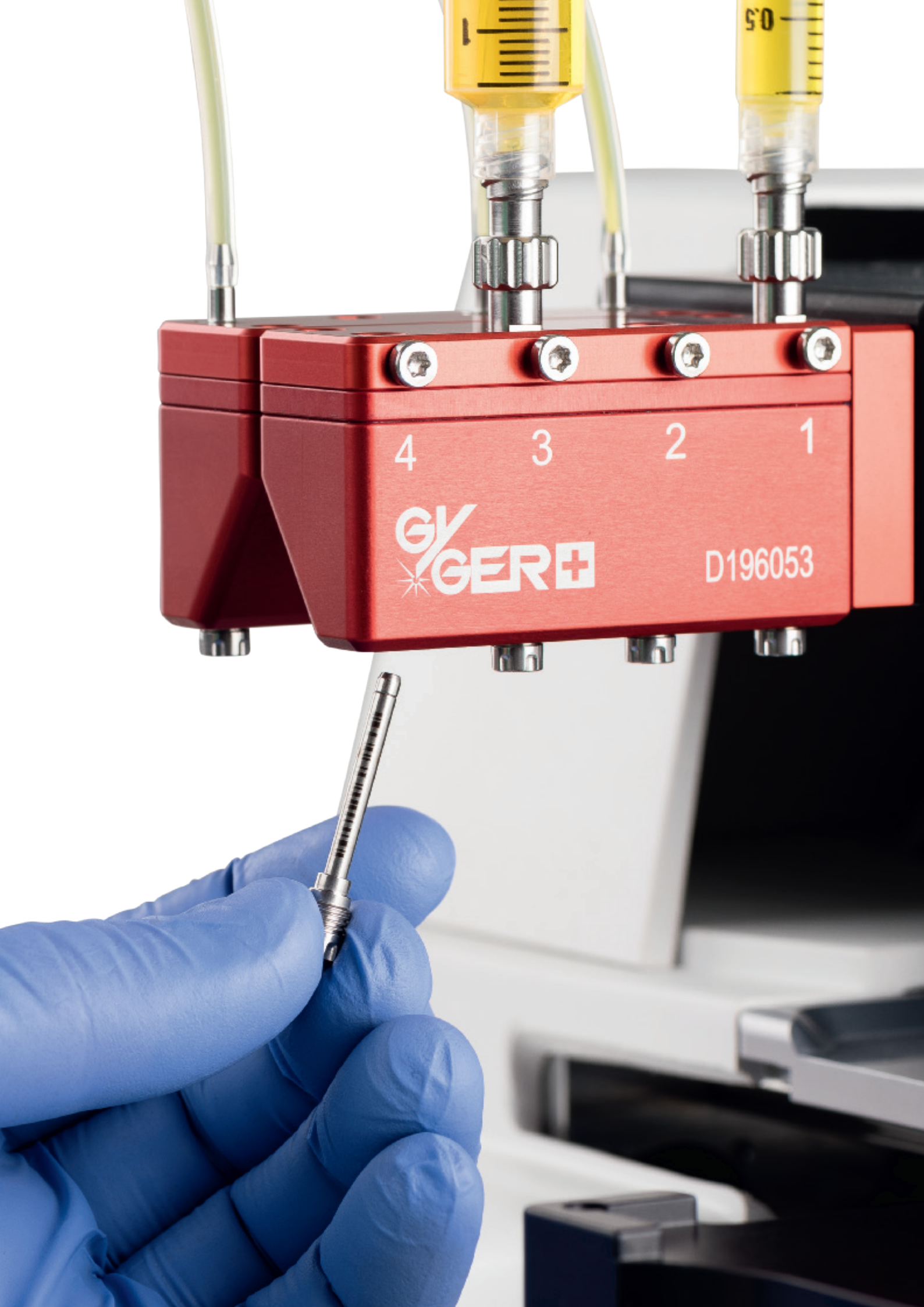



CERTUS FLEX gives you the immense flexibility to dispense fluids of low to high viscosity in individual, precise and highly accurate doses from nanoliters to milliliters.

CERTUS FLEX dispensers are also equipped for high speed parallel dispensing. However, dispensing is also possible into a broad range of other plate formats (standard and custom), to meet your exact experimental requirements. Due to identical dispensing technologies between CERTUS FLEX (i.e. SMLD micro valves, digital control unit, dispensing principles, CERTUS CONTROL PC software) we can guarantee absolute comparability of your dispensing results.









## **UNIQUE MICRO VALVES** FOR MORE DISPENSING OPERATIONS, WITH **LESS DEAD VOLUMES**

Up to 500 million cycles without losing accuracy, that's the performance of our GYGER micro valves. Our micro valves dispense larger substance volumes in one single shot, in contrast to many separate tiny drops. Bottom line: your number of effective valve movements is significantly reduced, giving you more total dispensing operations for your investment.

In addition, cleaning and maintenance are simple and reduced to the absolute minimum.

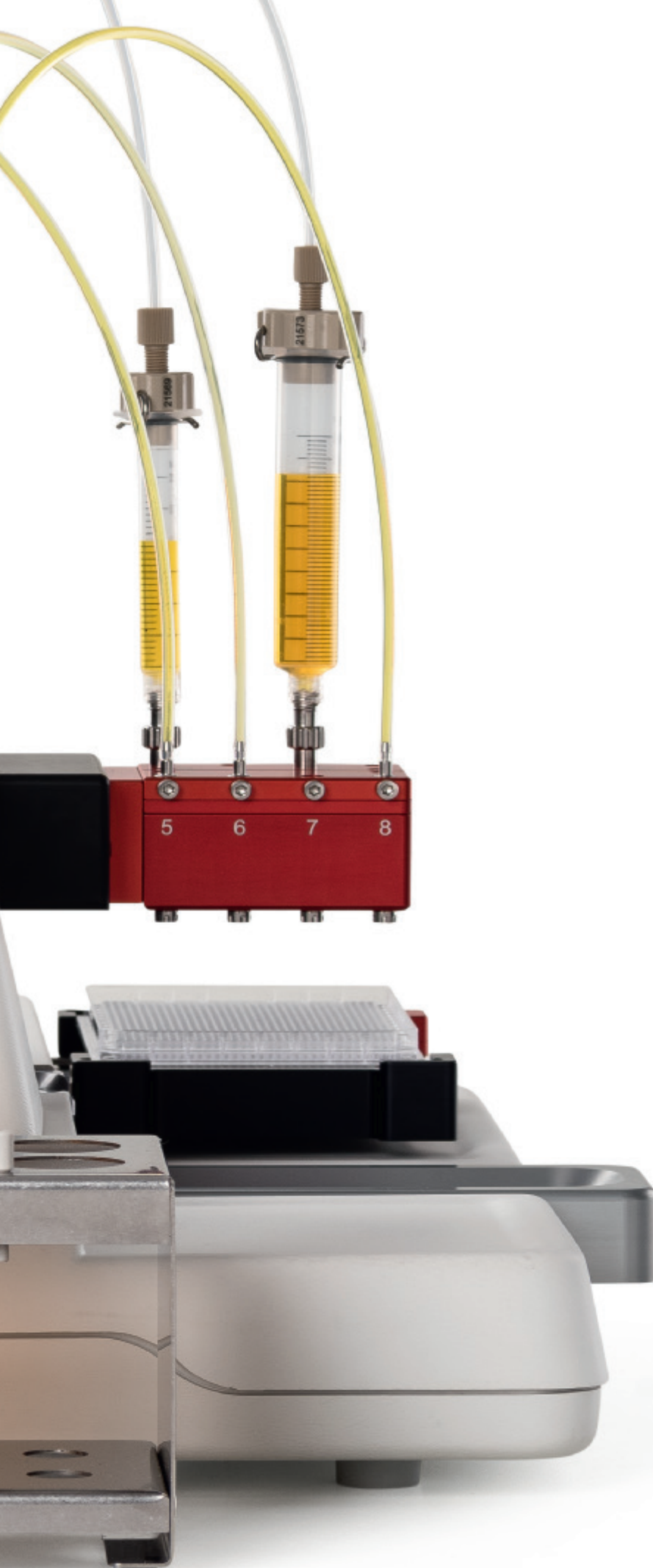


# FLEXIBLE FLUID UPTAKE OPTIONS THAT MEET YOUR EXACT NEEDS.

If large quantities of fluids are to be dispensed, fluids can be fed to the micro valves from bottles or other containers. For the dispensing of smaller volumes or high value substances, syringes with volumes from 3 to 60 ml can be connected directly to the dispensing head using luer-lock.







# LIQUIDS. LARGE MOLECULES. HIGH AND LOW VISCOSITY. WE GOT IT COVERED.

CERTUS FLEX has been developed for contact-less dispensing of a broad range of liquid substances (such as aqueous buffers, alcohols, DMSO, solvents, detergents, cells, DNA / RNA, proteins or oils) and large molecules, all with a focus on greatest accuracy.

## WE DEEPLY **BELIEVE** IN OUR **PRODUCT**, THAT IS WHY **WE** **BUILT IT TO LAST.**

This is our promise: When you buy a GYGER dispenser you will hold in your hands an unmatched product, with the potential to last a lifetime.

## **FAST RETURN OF YOUR INVESTMENT**

CERTUS FLEX offers an unmatched margin of options allowing for a huge range of applications. No cartridges, no disposable tips and no other hidden costs. Altogether, your investment will save costs for consumables as well as for additional devices.

# THE CERTUS CONTROL PC SOFTWARE: INTUITIVE AND EASY TO PROGRAM

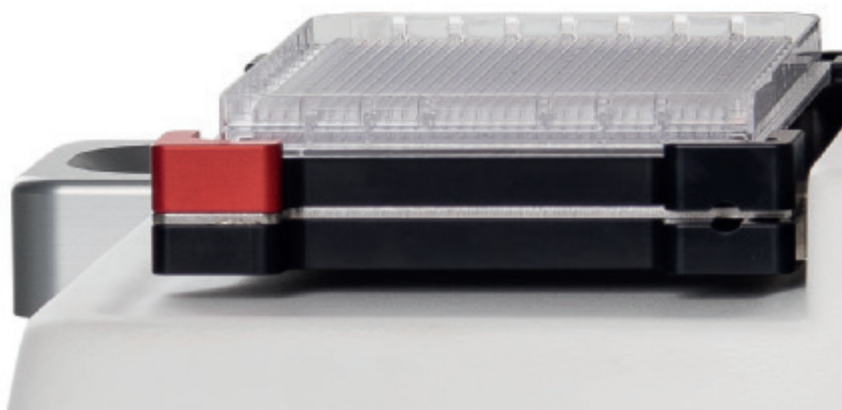
CERTUS FLEX comes with an intuitive, modular proprietary software, which enables flexible programming of dispensing onto multiple regions using different valve types for diverse liquids at the same time. It offers dispensing on any well plate format as well as the calibration and verification of each individual microvalve and also permits automated detailed reporting of your dispensing experiments. Furthermore, it allows you to easily and monitor all your CERTUS FLEX devices in order to transfer methods and experiments; no matter whether they operate as stand-alone-devices or are integrated into larger platforms. Thanks to the Windows based user interface it has a familiar look-and-feel making it much easier to use.

**CERTUS**   
CONTROL PC SOFTWARE

## BROAD RANGE OF APPLICATION AREAS

Due to its unique flexibility, accuracy and economy the CERTUS FLEX can be used in a large number of laboratory application areas, such as:

- › Drug Discovery
- › HTS (High Throughput Screening)
- › Compound Management
- › Biochemical and Cell Based Assays
- › Cancer Research
- › Genomics and Proteomics Research
- › PCR and Protein Crystallography
- › Environmental and Chemical Research
- › Cosmetics Development and Testing
- › Nutritional Science and Food Technology







# TECHNICAL SPECIFICATIONS

## GENERAL

DISPENSING, CALIBRATION AND VERIFICATION	Each channel separately / independent
FLUSHING, FILLING, PURGING AND DRAINING	Each channel separately / independent
DISPENSING PRINCIPLE	Contactless drop-on-demand by solenoid micro valves SMLD 300GC
VALVE TYPE	Gyger SMLD 300GC Ø 0.1 mm - Ø 0.45 mm, 10 different types of valves, depending on the volume range and viscosity
DEAD / TRANSFER VOLUME	Total 125 µl with skyringe; 65 µl valve net.
HANDLING	CERTUS CONTROL PC software
HARDWARE-INTERFACE	Ethernet (1 Gbit/s, RJ45)
SOFTWARE-INTERFACE	SiLA (Standardization in Lab Automation)
PNEUMATICS	1.7 - 2.0 bar inlet pressure, max 5 l/min oil-free, dry, filtered (5 µm)
POWER	110 - 240 V 50/60 Hz nominal operating current: < 0.5 A / 240 VAC
DIMENSIONS (W X D X H)	425 x 555 x 180 mm (H + 20 mm for 70 mm DWP)
WEIGHT	15 kg

## DISPENSING HEADS

CHANNELS	1 – 8 channels independently controlled straight or 22° angled
WETTED MATERIALS	Stainless steels 1.4404 (A316L), 1.4301 (A301), 1.4310 (A304), 1.4113 IM / 1.4105 IL (A430F) PEEK, sapphire, ruby, FEP, FFKM

## DISPENSING PERFORMANCE

DISPENSING VOLUME, DYNAMIC RANGE INDEPENDENT FOR ALL CHANNELS	< 50 nl – ∞
ACCURACY	< ±3.0 %: 0.05 – 0.5 µl < ±2.0 %: 0.50 – 1.0 µl < ±1.5 %: 1.0 – ∞ µl
PRECISION	< 3.0 %: 0.05 – 0.1 µl < 2.0 %: 0.10 – 1.0 µl < 1.0 %: 1.0 – ∞
RESOLUTION / INCREMENT	> 0.05 nl
EXAMPLE DISPENSING SPEED IN PARALLEL MODE (UP TO 8 CHANNELS)	96 wells, 20 µl: within 7 s 384 wells, 5 µl: within 11 s 1536 wells, 0.5 µl: within 27 s
EXAMPLE DISPENSING SPEED IN SERIAL MODE (1 CHANNEL)	96 wells, 20 µl: within 21 s 384 wells, 5 µl: within 50 s 1536 wells, 0.5 µl: within 145 s

## WELL PLATES

ANSI-STANDARD; SPECIAL PLATE TYPES	6, 12, 24, 48, 96, 384, 1536, 3456 wells including evaporation curtain
ADDITIONAL FUNCTIONS	Customized patterns for specific well plates, slides or dishes
WELL PLATE HEIGHT	3 - 51 mm 18 - 75 mm (DWP)

Note:  
Dispensing times may vary depending on media type, micro valve type and dispensing volume.

## MEDIA MANAGEMENT

DISPENSING PRESSURE	0.05 – 1.0 bar
FLUID SUPPLY	Syringe: 3; 5; 10; 60 ml Bottle: 50; 250; 500 ml
MEDIA	buffer, cell media, cells, 100% DMSO, proteins, beads, etc.
FILTER (OPTIONAL)	Built-in filter in SMLD 300GC micro valves Preliminary suction filter for media containers
WASTE CONTAINER	Waste tray with optional drain

# GYGER – SWISS INVENTORS. DEFYING THE IMPOSSIBLE, SINCE 1959

More than 50 years ago the production of gramophone needles went from steel to the much stronger sapphire. Hence, large industrial companies faced a sheer impossible challenge of manufacturing and fully automating production. Driven by his passion for precision and his unyielding will to make his mark our founder Fritz Gyger Senior set off on an endeavor, which would mark the dawning of our success story. From the small cellar of his house he put all his heart, determination and perseverance into the invention and development of the cam-controlled needle polishing machine for gramophone needles.

In 1978 our high-end-performance diamond gramophone needles with patented Gyger grinding geometry went into serial production. Today, two generations later, it is still this unbroken curiosity, our love for perfection and our inventors' hearts that drive us to challenge and defy the impossible.





At the present our products have their main area of use where micro technical thresholds are reached. Nearly impossible requirements regarding miniaturization, quality and integration density are the drivers for our innovative solutions. Our core fields of expertise are micro fluidic and dosing products. The modular GYGER micro valve generation SMLD-300 marks yet another milestone in this development.

Heading towards the future, we are eager and proud to be your partner for the insurmountable and the unsolvable. Because, as history has proven, we resist the temptation of giving in to the impossible. GYGER – Swiss Inventors. Defying the impossible, since 1959.





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