

# respons<sup>®</sup>940

## A New Member of the respons<sup>®</sup> System Family



**Designed for Modern Clinical Laboratories.  
Real Throughput of up to 640 Tests/h Including ISE**

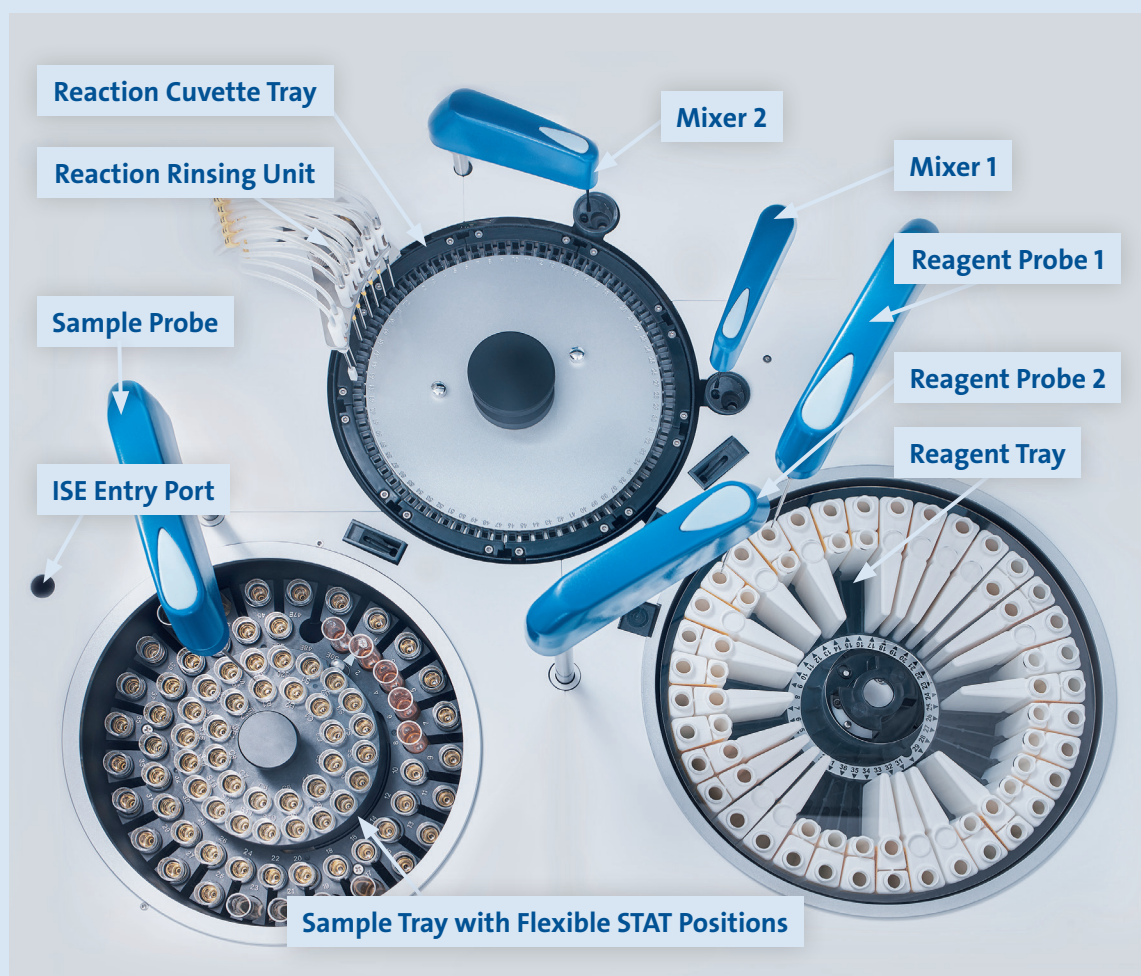
**DiaSys**

Diagnostic Systems

**CHOOSING QUALITY.**

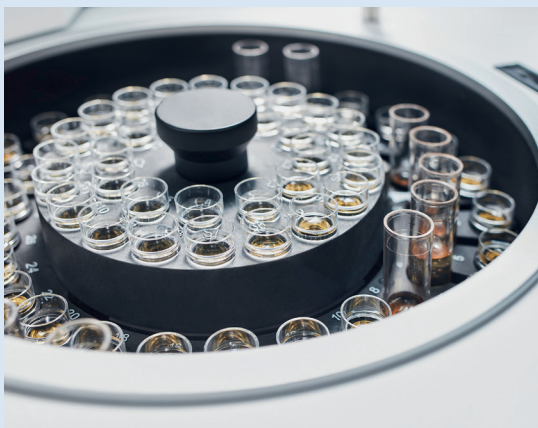
## respons<sup>®</sup>940 at a Glance

respons<sup>®</sup>940 is a fully automatic random access analyzer with a true throughput of 400 tests/hour (640 incl. ISE). Due to durable hard glass cuvettes, low reaction volumes, maintenance free photometer and intuitive software, respons<sup>®</sup>940 offers the economic use and reliability required in small to medium sized labs.



- System solution consisting of respons<sup>®</sup>940 analyzer with touch screen operation, dedicated system reagents and perfect service
- Intelligent software and modern hardware features
- Highest result security by CE-marked applications including carry over evasion list
- Economical operation by using dedicated DiaSys high quality reagents with extended onboard-/calibration stability and wide measuring ranges
- Maximum user safety by dome monitoring and smart pause function





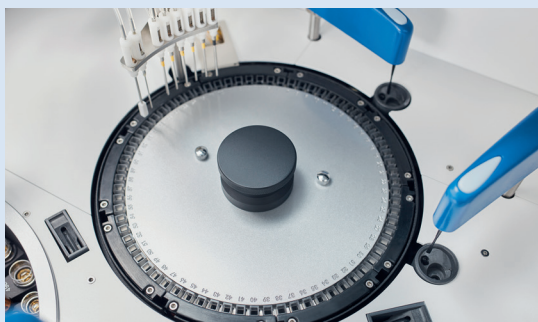
#### Sample Tray

- 80 positions in total
  - 50 positions (outer rings) with auto-barcode reading
  - 30 positions (inner rings) for calibrator, controls, standards, blanks
- Hosting all major primary tubes and sample cups
- Sample indices (Hemolytic/Icteric/Lipemic)
- Processing STAT samples with highest priority (flexible positioning on sample tray)



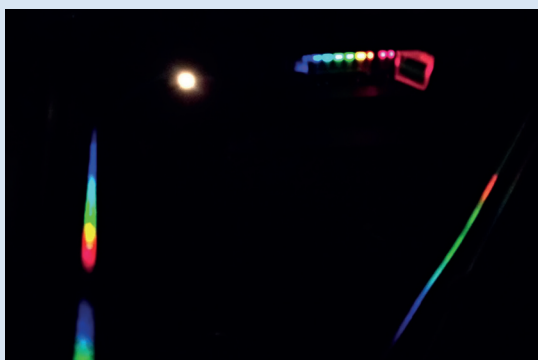
#### Reagent Tray

- 72 positions in total
- 36 positions for respons<sup>®</sup> twin containers, convenient one-grip loading
- 4 – 12°C, refrigerated by Peltier element
- Reagent Location Plate to reduce evaporation
- User protection by dome monitoring; continuous loading via smart pause function



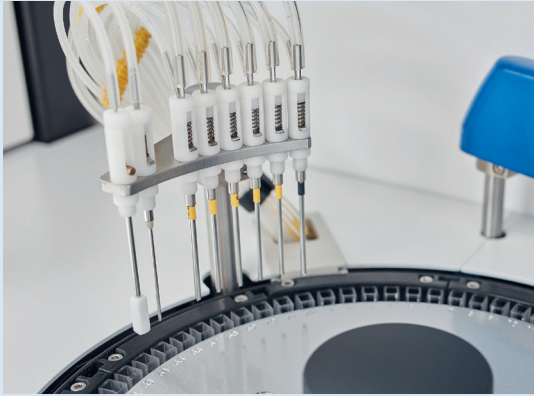
#### Reaction Cuvette Tray

- 72 permanent hard glass cuvettes ensure longest life time
- Maintenance free heating system
- Accurate thermostatic control @ 37°C ± 0.2°
- Minimum reading volume of 180 µL
- Minimized carry over by intelligent software and carry over evasion list



#### Photometric Unit

- 12 wavelengths: 340, 376, 415, 450, 480, 505, 546, 570, 600, 660, 700, 750 nm
- Wavelengths separation by diffraction grating, no deterioration of filters
- Wide photometric linearity up to 3 Abs
- Resolution of 0.0001 OD
- Twin test functionality for DiaSys HbA1c net FS application



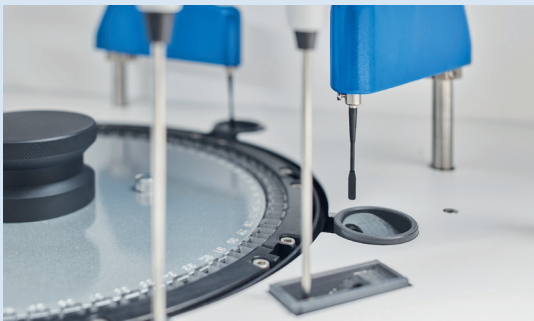
### Wash Station

- Eight step auto-washing
- Special pre-programmed washing procedures, carry over evasion list
- Two different washing solutions to minimize carry over
- Low water consumption of  $\leq 13$  L/h



### Pipetting Units

- Three independent high accuracy pipetting units with crash and liquid level detection:
  - R1 probe: 50 – 300  $\mu$ L (increments of 1  $\mu$ L)
  - R2 probe: 10 – 300  $\mu$ L (increments of 1  $\mu$ L)
- Sample probe: 2 – 70  $\mu$ L (increments of 0.1  $\mu$ L), clot detection
- Internal and external probe cleaning
- Smart inventory monitoring



### Mixers

- Two high performance immersion mixers
- Teflon coated
- Special pedal shape design for perfect homogeneity
- Three variable mixing speeds



### ISE Module

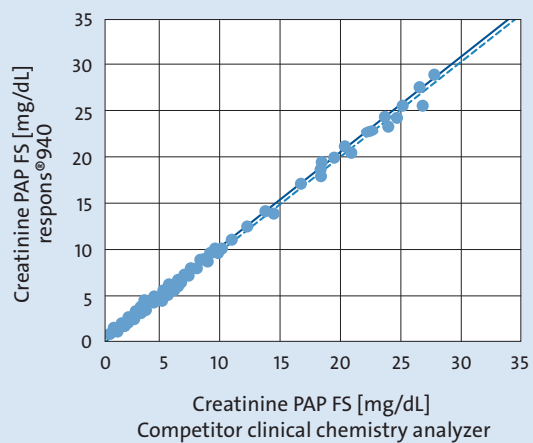
- Integral sample entry port
- Direct measurement of electrolytes
- Na, K, Cl, Li individual electrodes
- Easy access
- Long life time (10000 samples or 6 months)



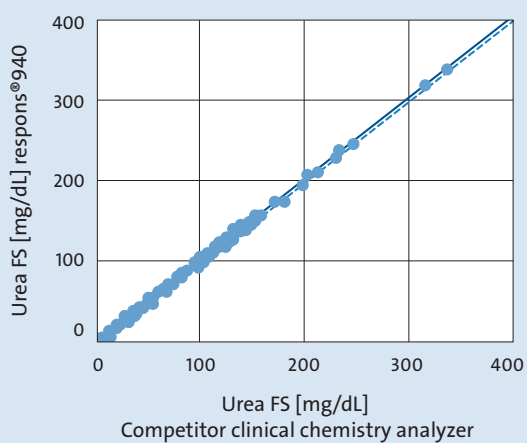
## Precision

Parameter	Unit	In series (n=20)		
		Mean	SD	CV [%]
<b>Creatinine PAP FS</b>	mg/dL	0.66	0.01	0.89
<b>Calcium P FS</b>	mg/dL	12.8	0.12	0.95
<b>α-Amylase CC FS</b>	U/L	109	0.69	0.63
<b>Gamma-GT FS</b>	U/L	84.0	0.88	1.05
<b>Uric acid FS TOOS</b>	mg/dL	2.77	0.02	0.68
<b>Urea FS</b>	mg/dL	153	0.78	0.51
<b>Triglycerides FS 10´</b>	mg/dL	84.6	0.60	0.66

## Method Comparison Creatinine



## Method Comparison Urea

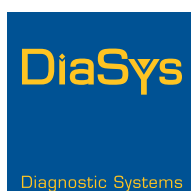




Technical Specifications	
<b>System type</b>	Automated random access clinical chemistry analyzer
<b>Throughput</b>	400 photometric tests, independently of mono- or two-component reagents 640 test/h including ISE
<b>Reagent on board capacity</b>	Max. 72 reagent positions (R1 + R2), up to 36 methods in barcoded respons <sup>®</sup> mono or twin containers for adapter free one grip loading
<b>Analytical methods</b>	1-point, 2-point Rate-A, Rate-B, direct potentiometric ISE, cubic spline, 4P logitlog, 5P logitlog
<b>Calibration</b>	Linear (one point, multi point), exponential, polynomial, factor
<b>Measuring principle</b>	Colorimetry (rate/end point), Immunoturbidimetry
<b>Ion measurement</b>	Direct potentiometry: Na, K, Cl, Li
<b>Sample disk</b>	80 positions for sample, blanks, standards, calibrators, controls, STAT samples and ISE solutions
<b>Sample pipetting</b>	2–70 µL (adjustable in 0.1 µL steps) Clot detection for sample probe
<b>Serum indices</b>	Detection of lipemic, icteric and hemolytic samples
<b>STAT analytics</b>	Several flexible positions
<b>Sample tubes &amp; cups</b>	Primary tubes of 5, 7 & 10 mL and sample cups
<b>Barcode identification</b>	For samples and reagents
<b>Reagent pipetting</b>	Reagent 1: 50–300 µL in 1 µL steps    Reagent 2: 0 µL, 10–300 µL in 1 µL steps
<b>Mixing system</b>	2 independent stirrers with 3 mixing speeds
<b>Reading volume</b>	180 µL
<b>Quality control</b>	Levy Jennings graphs, Westgard rules and Twin Plot Management for 4 level of controls
<b>Utility programmes</b>	Carry over evasion, cuvette skipping, different washing programs
<b>Photometry</b>	12 wavelengths: 340, 376, 415, 450, 480, 505, 546, 570, 600, 660, 700 and 750 nm Wavelengths separation by diffraction grating, twin-test functionality
<b>Photometric linearity and resolution</b>	Linearity: 0 – 3.0 OD Resolution: 0.0001 OD
<b>Light source</b>	Halogen lamp 12 V/20 Watts
<b>LIS connectivity</b>	Yes
<b>Water consumption</b>	< 13 liters per hour
<b>System interface</b>	Analyzer PC: USB 2.0 bi-directional for Pentium IV or higher, PC interface
<b>Power source / Power consumption</b>	AC 110 V +/-10%, 60 +/-1 Hz or 220 V +/- 10%, 50 Hz +/-1 Hz – switchable 800 VA
<b>Dimensions</b>	91 cm (W) x 78 cm (D) x 116 cm (H)
<b>Weight</b>	Approximately 200 kg



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