

# BIOLIS30i

Automated Clinical Analyzer



#### Headquarters & R&D Center

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## LABORATORY SOLUTION

## BIOLIS30i

Improved user-friendly interface and test efficiency

The latest model of Biolis series meeting various needs of clinical laboratory tests







## Compact & Easy Operability & Excellent Function BIOLIS30i

#### **Brand new user interface**

- Intuitive screen layout with a sense of unity
- Item parameter in one screen relieving the bother of page feeding

#### Upgraded operability

- Various touch panel operation (swipe-to-select / drag & drop ) contributing to better facility of operation
- Enlarged touch buttons for reducing operation errors.

#### Upgraded throughput

• 270 tests/hour (maximum 450 tests/hour with ISE)

#### Hemolysis of whole blood sample for HbA1c

• Automatic process on board contributing to the test efficiency.

#### Automatic sample clot detection

• Automatic detection & clean-up of sample probe clots (such as fibrin)

#### Crash prevention

• Prevent reagent & sample probes from crash during operation for safety

#### Automatic startup and shutdown

• Stress-free operation by cutting waiting time

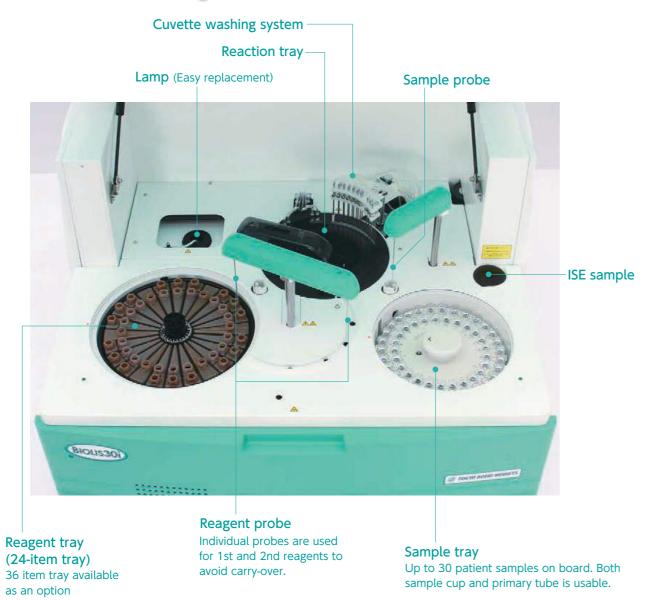
#### **LAN connections**

• LAN connections between machine and operation PC for higher-speed and more stable communication

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### Main unit arrangement

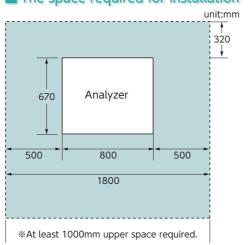


## Installation

#### Conditions

Description				
Analyzer W800×D670×H555(mm) Approx. 95Kg				
AC 100/115/220/230V、50/60Hz				
Voltage fluctuation less than 10%				
600VA				
Earth resistance of ground terminal should be				
less than $100\Omega$				
15~30℃				
45~85% (No condensation)				
Max 3.8 l / hour				
Separate drainage (low and high density waste)				

#### ■ The space required for installation



### **Specifications**

Analysis method Calibration curve 8 kinds (linear; spline, etc)  Sample kind Sample container Number of samples on board Sample tray mode (software tray) Sample dispensing volume Dilution ratio  Reagent Reagent  Reagent  Reagent  Reagent  Cuvette material Reaction  Reaction  Reaction  Reaction  Reaction  Reaction  Optical measurements Optical range Optical range Optical range Optical range Operation Operation Operation Operation Operation Operation Output  Sample skinds (linear; spline, etc) Serum, Plasma, Blood cell, Urine, Dialisys, CSF (ISE not available for CSF and Blood Sample cups, primary tube (5, 7, 10ml) Software tray (30 positions for patient sample, and 45 positions for standard and blank sample) Sample dispensing volume Operation Operation Operation Operation Operation Operation Operation Output  End point, Rate, ISE Skinds (linear; spline, etc) Serum, Plasma, Blood cell, Urine, Dialisys, CSF (ISE not available for CSF and Blood Sample cups, spline, etc) Serum, Plasma, Blood cell, Urine, Dialisys, CSF (ISE not available for CSF and Blood Sample cups, spline, etc) Serum, Plasma, Blood cell, Urine, Dialisys, CSF (ISE not available of CSF, 10ml) Sample cups, sprimary tube (5, 7, 10ml) Sample cups, sprimary tube (5, 7, 10ml) Software tray (30 positions for patient sample, and 45 positions for standard and blank sample) Selectable modes for patient sample, calibration for Standard and blank sample) Software tray (30 positions for patient sample, calibration for patient sample, and 45 positions for patient sample, calibration for patient sample, calibration for patient sample, calibration sample, calibration for patient sample, calibration for patient sample, calibration for patient sample, calibration for patient sample, calibration sample, calibrat							
Analysis         Throughput Analysis method Calibration curve         270 tests/hour, 450 tests/hour including ISE, 90tests/hour for HbA1c on End point, Rate, ISE End point, Rate, ISE B kinds (linear, spline, etc)           Sample kind Sample container Number of samples on board Sample cups , primary tube (5, 7, 10ml)         Serum, Plasma, Blood cell, Urine, Dialisys, CSF (ISE not available for CSF and Blood Sample cups , primary tube (5, 7, 10ml)           Sample Sample dispensing volume Dilution ratio STAT         Software tray (30 positions for patient sample, and 45 positions for standard and blank sample)           Reagent Tay Number of bottles on board Bottle size         36 items or 24 items (removable)           Number of bottles on board Bottle size         36 items or 24 items (removable)           Reagent dispensing volume Reagent storage Reagent volume check         24 items : 13, 25, 40 ml           Reaction Unime Reaction temperature Optical measurements         Plastics (semi-disposable)           Reaction Unime Reaction temperature Optical measurements Optical measurements Optical range Cuvette washing Reaction waste collection Pure water consumption         Plastics (semi-disposable)           Reaction waste collection Pure water consumption         Auto washing with heated water and 2 kinds of washing solutions Reaction waste stored in a dedicated tank Maximum 3.80 /hour           Interface         Operation Operation Operation Operation Optical absorbance graphic display Current, Daily and Cumulative QC. Westgard algorithms         Current, Daily and Cumulative QC. Westgard	Analysis	System	Discrete single line random access multi-test analysis				
Analysis method Calibration curve		Number of test items on board	36+3 (ISE) or 24+3(ISE)				
Calibration curve		Throughput	270 tests/hour, 450 tests/hour including ISE, 90tests/hour for HbA1c only				
Sample kind Sample container Number of samples on board Sample tray mode (software tray) Sample dispensing volume Dilution ratio STAT  Reagent tray Number of bottles on board Reagent tray Software tray Software tray Software tray Solutions for patient sample, and 45 positions for standard and blank sample) Selectable modes for patient sample, calibration and QC Selectable modes for patient sample, calibration and QC Software tray Solution ratio Software tray Solution ratio Software tray Solutions for patient sample, and 45 positions for standard and blank sample) Selectable modes for patient sample, calibration and QC Solution ratio Software tray Solution for patient sample, and 45 positions for standard and blank sample) Solution for patient sample, and 45 positions for standard and blank sample) Solution for patient sample, and 45 positions for standard and blank sample) Solution for patient sample, and 45 positions for standard and blank sample) Solution for patient sample, and 45 positions for standard and blank sample) Solution for patient sample, and 45 positions for standard and blank sample) Solution for patient sample, and 45 positions for standard and blank sample) Solution fate of patient sample, calibration and QC Solution for 2.5 400 (0.1µl step) Solution fate of patient sample, calibration and 45 positions for standard and blank sample) Solution fate of patient sample, calibration and 45 positions for standard and blank sample) Solution fate of patient sample, calibration and 45 positions for patient sample, calibration and 45 position and 40 calibration and 45 position and 45 position and 40 calibration and 45		Analysis method	End point, Rate, ISE				
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Sample         Number of samples on board         Software tray (30 positions for patient sample, and 45 positions for standard and blank sample)           Sample tray mode (software tray)         Sample dispensing volume Dilution ratio         2.0 ~ 25.0 μ (0.1 μ l step)           STAT         available during measurement (step between samples by priority)           Reagent tray Number of bottles on board Bottle size         36 items or 24 items (removable)           Reagent storage Reagent volume Reagent storage Reagent volume check level sensing or count down         24 items: 20, 40, 60 ml           Reaction volume Reaction volume Reaction volume Reaction time Reaction time Reaction temperature Optical measurements         Plastics (semi-disposable)           Reaction temperature Optical range Optical range Reaction waste collection Pure water consumption Pure water consumption Pure water consumption Pure water consumption Personal computer OS Windows 10         Auto washing with heated water and 2 kinds of washing solutions Reaction waste stored in a dedicated tank Maximum 3.8ℓ /hour           Interface         Reaction monitor Quality control Quality and Cumulative QC. Westgard algorithms LAN connection	Sample	Sample kind	Serum, Plasma, Blood cell, Urine, Dialisys, CSF (ISE not available for CSF and Blood cell)				
		Sample container	Sample cups , primary tube (5, 7, 10ml)				
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$ \begin{array}{c} \mbox{Dilution ratio} \\ \mbox{STAT} \mbox{ available during measurement (step between samples by priority)} \\ \mbox{Reagent tray} \\ \mbox{Number of bottles on board} \\ \mbox{Bottle size} \mbox{ 36 items or 24 items (removable)} \\ \mbox{72 (36 items) or 48 (24 items)} \\ \mbox{Bottle size} \mbox{ 36 items : 13, 25, 40 ml} \\ \mbox{24 items : 20, 40, 60 ml} \\ \mbox{Reagent dispensing volume} \\ \mbox{Reagent storage} \\ \mbox{Reagent volume check} \mbox{ Level sensing or count down} \\ \mbox{Reagent volume check} \mbox{ Level sensing or count down} \\ \mbox{Reaction volume} \\ \mbox{Reaction volume} \mbox{ 140$$\mu$l$ \sim 400$$\mu$l$ (340$$\sim 800nm)$} \\ \mbox{Reaction temperature} \mbox{ 37$$\pm 0.1^{\circ}$C} \\ \mbox{Optical measurements} \mbox{ Fixed 13 wavelengths (340$$\sim 800nm)$} \\ \mbox{Optical source} \mbox{ Tungsten halogen lamp} \\ \mbox{Optical range} \mbox{ OD 0$$\sim 2.5$} \\ \mbox{ Cuvette washing} \mbox{ Reaction waste collection} \\ \mbox{ Pure water consumption} \mbox{ Maximum 3.8$$\ell$ /hour} \\ \mbox{ Auto washing with heated water and 2 kinds of washing solutions} \\ \mbox{ Reaction monitor} \mbox{ Operation} \mbox{ Operation} \mbox{ Operation} \mbox{ Operation} \mbox{ Operation Double (2000) 2000} \\ \mbox{ Operation} \mbox{ Operation OS Windows 10 } \\ \mbox{ Reaction monitor} \mbox{ Optical absorbance graphic display} \\ \mbox{ Current, Daily and Cumulative QC. Westgard algorithms} \\ \mbox{ LAN connection} \mbox{ LAN connection} \\  Account of the control of the contr$			Selectable modes for patient sample, calibration and QC				
Reagent tray   36 items or 24 items (removable)		Sample dispensing volume	$2.0 \sim 25.0 \mu l (0.1 \mu l \text{ step})$				
Reagent tray   Number of bottles on board   Reagent   Southern   Southern   Reagent   Southern		Dilution ratio	0.5 ~ 100 times				
$ \begin{array}{c} \textbf{Reagent} \\ \textbf{Reagent} \\ \textbf{Reagent} \\ \textbf{Bottle size} \\ \textbf{Reagent dispensing volume} \\ \textbf{Reagent storage} \\ \textbf{Reagent volume check} \\ \textbf{Reagent volume} \\ \textbf{Reaction} \\ Reacti$		STAT	available during measurement (step between samples by priority)				
Reagent       Bottle size       36 items: 13, 25, 40 ml         24 items: 20, 40, 60 ml         Reagent dispensing volume Reagent storage Reagent volume check       R1: 140 ~ 300μl(1μl step), R2: 20 ~ 260μl(1μl step)         Reagent volume check       Level sensing or count down         Plastics (semi-disposable)         Reaction volume       140μl ~ 400μl         Reaction time       approx 10 min. (1st reaction 5 min., 2nd reaction 5 min.)         Reaction temperature       37±0.1℃         Optical measurements       Fixed 13 wavelengths (340 ~ 800nm)         Optical source       Tungsten halogen lamp         Optical range       OD 0 ~ 2.5         Cuvette washing       Auto washing with heated water and 2 kinds of washing solutions         Reaction waste collection Pure water consumption       Reaction waste stored in a dedicated tank         Maximum 3.8ℓ /hour         Interface       Operation       Personal computer         OS       Windows 10         Reaction monitor       Optical absorbance graphic display         Quality control       Current, Daily and Cumulative QC. Westgard algorithms         Output       LAN connection	Reagent	Reagent tray	36 items or 24 items (removable)				
$ \begin{array}{c} \textbf{Reagent} \\ \textbf{Reagent dispensing volume} \\ \textbf{Reagent storage} \\ \textbf{Reagent volume check} \\ \textbf{Reagent volume check} \\ \textbf{Level sensing or count down} \\ \\ \textbf{Reaction volume} \\ \textbf{Reaction time} \\ \textbf{Reaction temperature} \\ \textbf{Optical measurements} \\ \textbf{Optical range} \\ \textbf{Cuvette washing} \\ \textbf{Reaction waste collection} \\ \textbf{Reaction waste collection} \\ \textbf{Pure water consumption} \\ \textbf{Interface} \\ \textbf{Reaction monitor} \\ \textbf{Quality control} \\ \textbf{Quaptive final consume} \\ \textbf{Quality control} \\ \textbf{Quiput} \\ \textbf{AN connection} \\ \textbf{Current, Daily and Cumulative QC. Westgard algorithms} \\ \textbf{Quality control} \\ \textbf{Quaptive dispension of count down} \\ \textbf{Reaction temperature} \\ \textbf{24 items : 20, 40, 60 ml} \\ \textbf{R1 : 140 ~ 300\mul (1\mul step)}, \textbf{R2 : 20 ~ 260\mul (1\mul step)} \\ \textbf{R2 : 20 ~ 20 ~ 2.5} \\ R2 : $		Number of bottles on board	72 (36 items) or 48 (24 items)				
$ \begin{array}{c} \text{Reagent dispensing volume} \\ \text{Reagent storage} \\ \text{Reagent volume check} \\ \text{Reagent volume check} \\ \end{array} \begin{array}{c} 24 \text{ hours cooling} \\ \text{Level sensing or count down} \\ \end{array} \\ \\ \text{Cuvette material} \\ \text{Reaction volume} \\ \text{Reaction time} \\ \text{Reaction time} \\ \text{Reaction temperature} \\ \text{Optical measurements} \\ \text{Optical source} \\ \text{Optical range} \\ \text{Cuvette washing} \\ \text{Reaction waste collection} \\ \text{Reaction waste collection} \\ \text{Pore water consumption} \\ \end{array} \begin{array}{c} \text{Naximum } 3.82 \text{ /hour} \\ \text{Personal computer} \\ \text{OS} \\ \text{Windows } 10 \\ \text{Output} \\ \end{array} \\ \text{Output} \\ \end{array} \begin{array}{c} \text{Reaction dispensing volume} \\ \text{Reaction down} \\ \text{Reaction monitor} \\ \text{Optical absorbance graphic display} \\ \text{Current, Daily and Cumulative QC. Westgard algorithms} \\ \text{LAN connection} \\ \end{array}$		Bottle size	36 items : 13, 25, 40 ml				
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Reagent volume check		Reagent dispensing volume	R1: $140 \sim 300 \mu l(1 \mu l \text{ step})$ , R2: $20 \sim 260 \mu l(1 \mu l \text{ step})$				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		0 0	24 hours cooling				
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		Reagent volume check	Level sensing or count down				
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Personal computer Operation Operatio			approx 10 min. (1st reaction 5 min., 2nd reaction 5 min.)				
Personal computer Optical source Optical range Auto washing with heated water and 2 kinds of washing solutions Reaction waste collection Reaction waste stored in a dedicated tank Maximum 3.80 /hour  Operation Operation Os Windows 10 Reaction monitor Optical absorbance graphic display Quality control Output Output Optical range Optical source Optical range Optical source Optical range Optical source Optical range Optical source Optical range Optical range Optical source Optical range Opti							
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Reaction waste collection Pure water consumption  Personal computer OS Windows 10  Reaction monitor Quality control Output  Reaction waste stored in a dedicated tank Maximum 3.80 /hour  Personal computer OS Windows 10 Optical absorbance graphic display Current, Daily and Cumulative QC. Westgard algorithms LAN connection							
Pure water consumption Maximum 3.80 /hour  Operation Personal computer OS Windows 10  Reaction monitor Optical absorbance graphic display Quality control Current, Daily and Cumulative QC. Westgard algorithms Output LAN connection		· ·					
Operation OS Windows 10 Optical absorbance graphic display Quality control Output  Optical absorbance graphic display Current, Daily and Cumulative QC. Westgard algorithms LAN connection							
Interface  Reaction monitor Quality control Output  Output  Windows 10  Optical absorbance graphic display Current, Daily and Cumulative QC. Westgard algorithms LAN connection		Pure water consumption	Maximum 3.8l /hour				
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Output LAN connection							
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Sample barcode reader, Reagent barcode reader	Орион	Sample barcode reader, Reagent barcode reader					

 $\ensuremath{\mbox{\%}}$  Specifications are subject to change without notice.

## Test Items List

Clinical chemistry	LD(LDH) ChE Cys-C IP GLU L-FABP *PL	AST(GOT) AMY TG Mg HbA1c T-BIL *SIA	ALT(GPT) P-AMY T-CHO Ca 1,5-AG D-BIL *Fer	ALP LAP HDL-C Fe GA TTT *Li	γ-GTP CRE LDL-C UIBC μTP ZTT	CK(CPK) UA TP Zn µALB NH3	CK-MB BUN ALB Cu IRI *NEFA
Cougulation	*ATII	*FDP	*D-dimer				
Immuno-assay	CRP *IgE	RF MMP-3	TPAb	RPR	*IgG	*IgA	*IgM
TDM	VCM CBZ	ABK DIG	TPM HAL	MTX PB	EVER PHT	TACR THEO	BRP VPA
ISE	Na	K	Cl				

<sup>\*</sup> Above includes test items under verification.

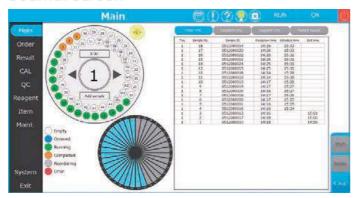
## User Interface

#### **Run monitor screen**



Monitor measurement info by cycles

#### Journal screen



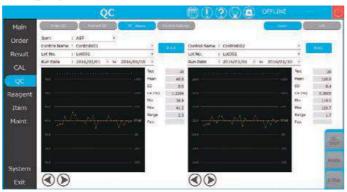
View sample ordered time and result out-put time

#### **Order screen**



Easy to select test items by swiping the touch screen

#### QC graph screen



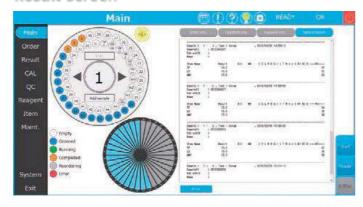
Current, daily, and cumulative QC

#### Auto startup & shutdown screen



Auto maintenance available before shutdown

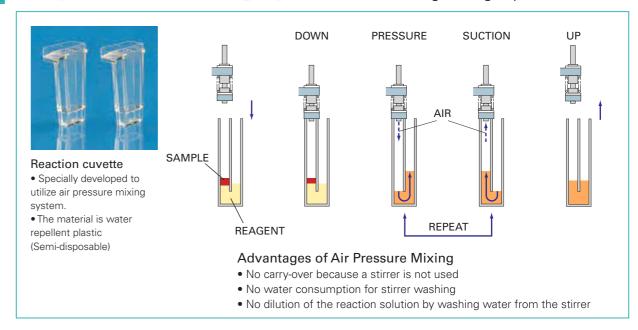
#### **Result screen**



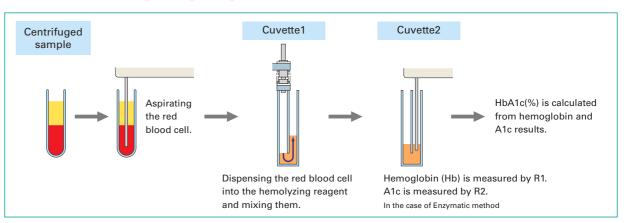
Show current day test results (Separate printer needed for output)

## Air pressure mixing system

Our original system for mixing the sample and reagent using air pressure alone.



### HbA1c sample preparation and measurement



## ISE module (OPTION)

