

TMS SERIES

LABORATORY SOLUTION

*Higher test performance and operability with new functions
The clinical analyzer in the next stage*

TMS 50i
TMS 50i

Superior

Automated Clinical Analyzer



TOKYO BOEKI MACHINERY

The best to the requirements for functionality and usability

TMS 50i Superior



The highest throughput in TMS series

- 480 tests/hour for photometry. 580 tests/hour with ISE.

Rapid correspondence by a new function for HbA1c

- Hemolysis of whole blood sample for HbA1c is available automatically.
*The throughput of HbA1c is different from that of general chemistries.

Automatic sample clot detection & automatic cleaning

- Clot detector for the sample probe enhances the accuracy of the test results.
- Automatically cleaning the sample probe in instances where clots are detected.
- Sampling ceases automatically in case clots are not removed.

Accommodate multiple languages

- Multilingual support software provides a user-friendly interface and higher usability.

User interface

- Easy touch screen operation.
- The interface includes improved and additional functions such as sample status screen, and others.

Dedicated sample probe for ISE

- The sample probe directly connected to ISE transfers the sample to electrodes.

Common reagent bottles

- R1: 70 ml, 20 ml, two sizes can be used.

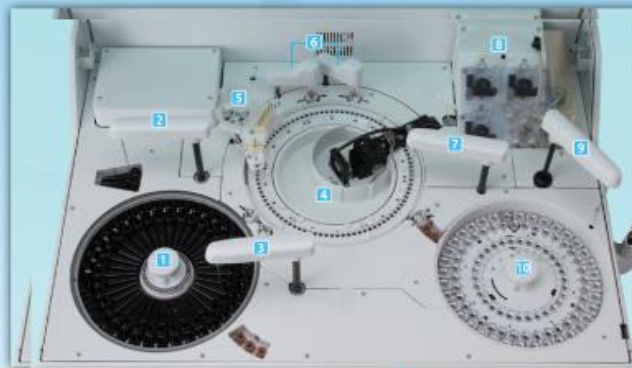
Accuracy Features

- Sample clot detection
- Dedicated sample probe for ISE
- Carry-over protection program for reaction cuvettes and probes
- Pre-dilution
- Auto-rerun
- Cuvette skip
- Five mixing speeds

Operation Features

- Sample cups (0.5 ml, 1.5 ml), Primary tubes (2 ml, 5 ml, 7 ml, 10 ml)
- Availability for using multiple bottles of the same item
- Reaction waste stored in a dedicated tank
- Common reagent bottles (R1: 70 ml, R2: 20 ml)
- Hemolysis of whole blood sample for HbA1c
- Sample and reagent barcode readers as standard feature
- Bidirectional communication

Main Unit Arrangement



1 Reagent tray

R1: 36, R2: 35 position.
Cooling temperature: 8-12°C

2 R1 probe

20-240 μl (in 0.5 μl steps) dispensing
*Minimum total reaction volume is 120 μl

3 R2 probe

4 Reaction tray

90 semi-disposable cuvettes.
Cuvette skip function is available.

5 Cuvette washing station

Cuvette washing with alkaline and acid washing solutions and heated water.

6 Mixing unit

Five mixing speeds

7 Sample probe

1-20 μl (in 0.1 μl steps) dispensing

8 ISE module

Na, K, Cl measurement.

9 ISE probe

Dedicated sample probe for ISE

10 Sample tray

72 samples on board.

Analysis

System	Discrete single line random access multi-test analysis
Number of test items on board	36 + 3 items (ISE)
Throughput	480 tests/hour, 580 tests/hour with ISE *160 tests/hour for HbA1c only (with hemolysis)
Analysis methods	End point assay, Rate assay, ISE
Calibration curve	8 kinds (Linear, Spline, etc)

Sample

Contents of test	Serum, Plasma, Urine, Dialysis, CSF (ISE not available for CSF)
Sample container	Sample cups (0.5 mL, 1.5 mL), Primary tubes (2mL, 5 mL, 7 mL, 10 mL)
Number of samples on board	72 patient samples and standard samples, 30 positions for QC and/or STAT samples
Sample dispensing volume	1-20 µL (in 0.1 µL steps)
Dilution ratio	3-100 times
STAT	Available during measurement
Sample barcode reader	Available

Reagent

Number of bottles on board	R1: 36 positions, R2: 35 positions
Bottle size	R1: 70 mL, R2: 20 mL
Reagent dispensing volume	20-240 µL (in 0.5 µL steps)
Cooling temperature	8-12°C
Reagent residual volume	Level sensing or count down calculation
Reagent barcode reader	Available

Reaction

Cuvette material	Plastics (Semi-disposable)
Number of cuvettes	90
Cuvette washing	Auto washing with heated water and 2 kinds of washing solutions
Washing solution	Alkaline and acid washing solutions
Cuvette skip function	Available
Reaction time	Max 8.5 min. (1st react. 3.5 min. + 2nd react. 5 min)
Reaction volume	120-240 µL
Reaction temperature	37°C ± 0.3°C
Optical absorption	Cuvette direct measurement (1 or 2 wavelengths)
Optical measurements	12 fixed wavelengths (340, 380, 405, 450, 505, 546, 570, 600, 660, 700, 750, 800 nm)
Optical source	Tungsten halogen lamp
Optical range	OD 0-3.0
Mixing	By stirrers
Mixing speed	5 speed levels available

Interface

Operation	Personal computer
OS	Windows 7
Output	RS232C serial cable, LAN (TCP/IP)
Reaction curve monitor	Optical absorbance graphic display
Quality control	Realtime QC, Within a day, Day-to-day variation
Test results storage	100,000 tests

*The Specifications are subject to change without notice.

Test Items List

Clinical Chemistry	LD (LDH)	AST (GOT)	ALT (GPT)	ALP	Y-GTP	CK (CPK)	LAP
	ChE	AMY	P-AMY	BUN	CRE	UA	T-CHO
	TG	HDL-C	LDL-C	TP	ALB	Ca	IP
	Mg	Fe	UIBC	D-BIL	T-BIL	GLU	NEFA
	PL	ALD	SIA	TBA	GA	CK-MB	
	Fer	µTP	NAG	µALB	HbA1c	HBAO	
Immunoassay	CRP	RF	ASO	TPLA	RPR	β2-m	TF
	C3	C4	Ig-G	Ig-A	Ig-M	Ig-E	
	Apo A-I	Apo A-II	Apo B	Apo C II	Apo C III	Apo E	Lp(a)
TDM	BRP	CBZ	CSA	DIG	DIGT	HAL	PB
	PHT	THEO	VPA				
Coagulation	AT III	APL	PLG	PC	FDP	D dimer	
ISE	Na	K	Cl				

*Some test item may not available.

User Interface

Simple Operation

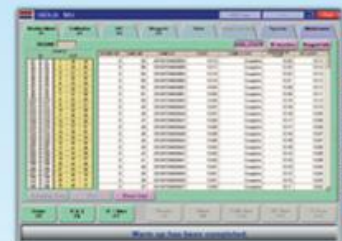
Direct access to each function by clicking tabs and buttons shown on the main screen

New feature for time management

The list of time records for orders or test results is displayed in "Sample Status Screen"



Order Entry Screen



Sample Status Screen



Test Result Screen

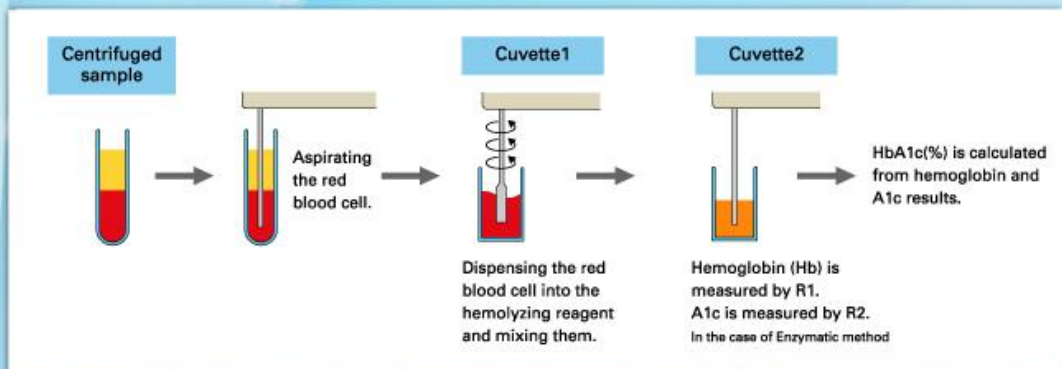


Run Monitor Screen



QC Graph Screen

HbA1c sample preparation and measurement

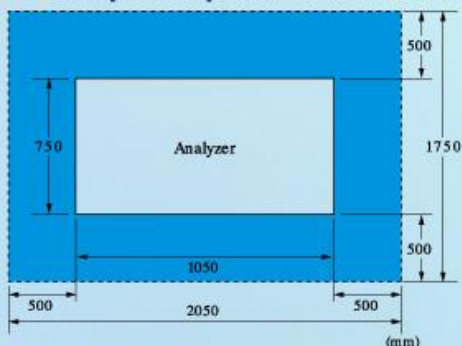


Installation

Conditions

Item	Description
Dimensions and weight	Analyzer W1050xD750xH1145 (mm) Approx. 300kg
Power supply	AC100/115/230V±10%,50/60Hz Voltage fluctuation:Less than 10%
Power consumption	1.2kVA
Grounding	Special 3rd grade. Resistive less than 10Ω
Ambient temperature	15-30°C ± 2°C/hour during measurement
Humidity	40-80% (No condensation)
Water consumption	Max. 15ℓ /hour
Waste liquids	Separate drainage (low and high density waste)

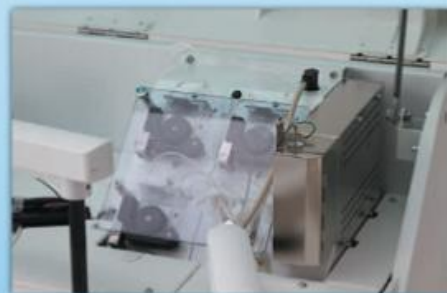
The space required for installation



*At least 500 mm space required for safety and maintenance.

ISE module (Option)

- Direct method
- Dedicated sample probe for ISE
- Na, K, Cl in serum, plasma and urine can be measured
- Sample volume: 100 μℓ
- Electrodes can be commonly used in TMS series



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