

**KEM**

# Beer Analyzer



## Beer Analyzer **WBA-505B**

**KYOTO ELECTRONICS**

# Beer Analyzer WBA-505B

## Introduction

This system is the combination of WBA-505B Beer Analyzer and CHG-242D Multiple Sample Changer, which determine density and refractive index, and compute those parameters necessary for quality control in brewery including alcohol (wt% and vol%), real extract (wt%), original extract (°P), apparent extract (°P), real fermentation (%) and apparent fermentation (%).

The required sample beer is approximately 30 mL of degassed beer, taking 2 to 5 minutes for single measurement.

The built-in thermal control makes it possible to determine both density and refractive index at 20.00°C.

User's desired calculation can be selected out of the following 3 formulas:

- (1) Berglund type (European)
- (2) MEBAK type (German)
- (3) ASBC type (USA)

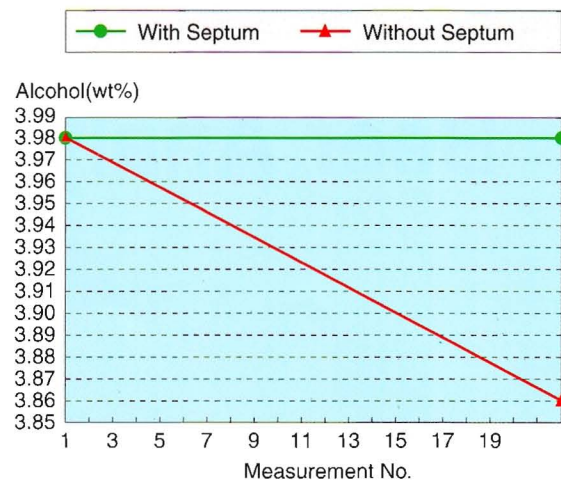
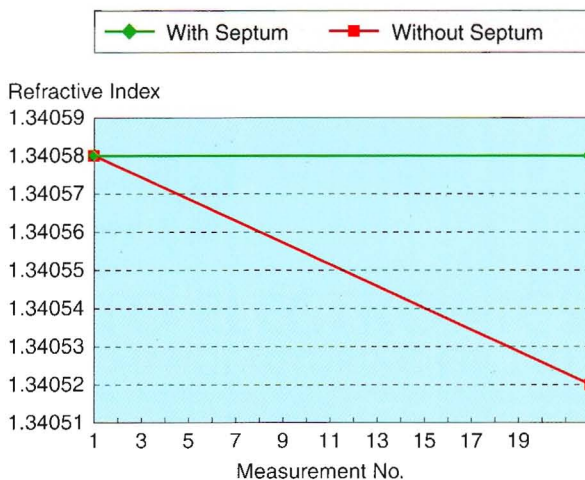


## Features

When WBA-505B measures beer samples continuously by KEM's multiple sample changer, the sample vial on carousel is sealed by septum so that alcohol and extract of the sample will not volatilize until sampled in for measurement (Beer analyzers of other manufacturer do not provide such sealing).

The below two graphic charts show the changes of alcohol concentration and refractive index after 19 samples are continuously measured with and without septum sealing.

\* PC is not included in the system.



## Measurement Results (Example)

	A	B	C	D	E	F	G	H	I	J
1	Date	Time	High sample No	Low sample No	Sample ID	Density	Refractive Index	Alcohol(wt%)	Real Ext	Ong Ext
2	2004/03/01	16 11	1		1 Sample-001	1.00357	1.34044	4.06	3.24	11.15
3	2004/03/01	16 17	1		2 Sample-001	1.00355	1.34046	4.08	3.24	11.19
4	2004/03/01	16 22	1		3 Sample-001	1.00354	1.34046	4.08	3.24	11.19
5	2004/03/01	16 28	1		4 Sample-001	1.00356	1.34046	4.08	3.24	11.19
6	2004/03/01	16 33	1		5 Sample-001	1.00356	1.34046	4.08	3.24	11.19
7	2004/03/01	16 45	1		6 Sample-001	1.00351	1.34046	4.09	3.24	11.21
8	2004/03/01	16 51	1		7 Sample-001	1.00356	1.34047	4.09	3.25	11.20
9	2004/03/01	16 57	1		8 Sample-001	1.00356	1.34047	4.09	3.25	11.20
10	2004/03/01	17 02	1		9 Sample-001	1.00354	1.34045	4.08	3.24	11.18
11	2004/03/01	17 09	1		10 Sample-001	1.00357	1.34048	4.09	3.25	11.22
12	2004/03/01	17 16	1		11 Sample-001	1.00357	1.34044	4.06	3.24	11.15
13	2004/03/01	17 23	1		12 Sample-001	1.00355	1.34046	4.08	3.24	11.19
14	2004/03/01	17 30	1		13 Sample-001	1.00354	1.34046	4.08	3.24	11.19
15	2004/03/01	17 37	1		14 Sample-001	1.00356	1.34046	4.08	3.24	11.19
16	2004/03/01	17 44	1		15 Sample-001	1.00356	1.34046	4.08	3.24	11.19
17	2004/03/01	17 51	1		16 Sample-001	1.00351	1.34046	4.09	3.24	11.21
18	2004/03/01	17 58	1		17 Sample-001	1.00356	1.34047	4.09	3.25	11.20
19	2004/03/01	18 05	1		18 Sample-001	1.00356	1.34047	4.09	3.25	11.20
20	2004/03/01	18 12	1		19 Sample-001	1.00354	1.34045	4.08	3.24	11.18
21	2004/03/01	18 19	1		20 Sample-001	1.00357	1.34048	4.09	3.25	11.22

## SOFT-CAP / Beer

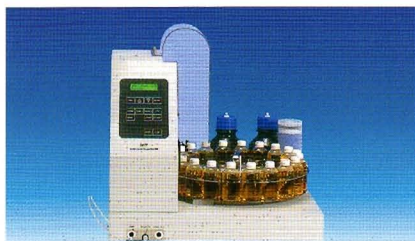
The specifications of the software for the analysis of WBA-505B Beer Analyzer:

- The software SOFT-CAP/Beer not only computes the concentration of each of the following parameters from the density and refractive index data but stores the data automatically.
- The stored data can be exported Excel spreadsheet or the like for further data processing and easy review.
- Calculation of concentration can be selected out of the following 3 formulas:  
(1) Berglund type (2) MEBAK type (3) ASBC type
- Measuring objects and recorded parameters are as follows, which are common to all types:

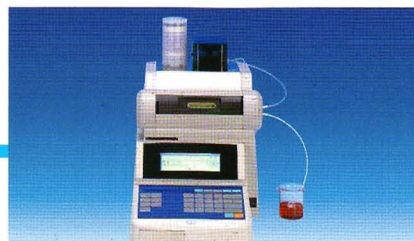
- Measured date and time
- Calculation formula
- Sample number
- Sample ID
- System number
- Specific gravity
- Density (20°C)
- Refractive index (20°C)
- Alcohol (wt%)
- Alcohol (vol%)
- Real extract (wt%)
- Original extract (°P)
- Apparent extract (°P)
- Real fermentation (%)
- Apparent fermentation(%)
- Operator name

- Any of the above parameters or data can be printed out by the printer connected to a computer.

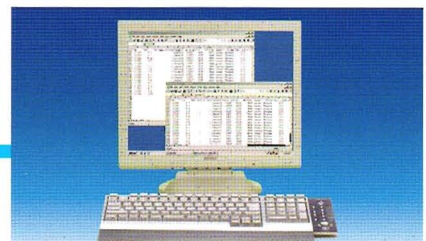
## System



CHG-242D Multiple Sample Changer  
(with connecting cable : 980303388)

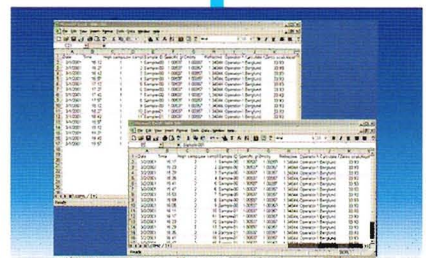


WBA-505B Beer Analyzer  
(with connecting cable : 980300002)



Windows 98, 2000, Me, XP  
of English version

### Standard System



SOFT-CAP / Beer : Beer Analyzer Software

## Specifications of Beer Analyzer

Type and model	WBA-505B Beer Analyzer			
Test sample	Beer products			
Performance		Density meter	Refractometer	
	Measuring method	Resonant frequency detection	Detection of critical angle With Na-D line (589.3 nm)	
	Range	0 to 3g/cm <sup>3</sup>	1.32000 to 1.58000	
	Repeatability	SD 0.00001g/cm <sup>3</sup>	SD 0.00001	
	Temperature precision	±0.05°C	±0.05°C	
Measuring objects		Resolution	Repeatability	Range
	Alcohol	0.01wt%	±0.02wt%	0 to 8wt%
	Real extract	0.01wt%	±0.01wt%	0 to 12wt%
	Original extract	0.01°P	±0.05°P	0 to 20°P
	Apparent extract	0.01°P	±0.01°P	0 to 20°P
	Real fermentation	0.1%	a)	
	Apparent fermentation	0.1%	a)	
Thermostat	Built-in thermostat by electronic semi-conductor			
Required sample	30 mL			
Measuring time	Approx. 2 to 5 minutes per sample			
Sampling	Automatic continuous sampling by CHG-242D			
Calibration	Automatic calibration with air and water (Both density meter and refractometer at a time)			
Data file	Up to 100 measurements data can be stored in the built-in memory			
Interface	RS-232C 2-channel (For printer and computer)			
PC card	Standard supplied			
	<ul style="list-style-type: none"> <li>• Up to 1000 data can be stored in Memory card</li> <li>• Approx. 980 kinds measurement conditions can be stored</li> </ul>			
Ambient conditions	Temperature: 5 to 35°C, Humidity: Below 85%RH (no condensation)			
Power source	AC 100 to 120V or 200 to 240V, 50/60Hz			
Supplied parts	SOFT-CAP/Beer 1pce., Power code 1pce., Desiccator 1pce., Desiccant tube (with joint) 1pce., Sampling tube (with joint) 1pce., Silica gel (500g) 1pce., Connecting tube A 1pce., Connecting tube B 1pce., Connecting cable 1pce., Operation manual 1pce., Others			

a) Fermentation degree can be obtained from the calculation with alcohol and extract.

## Specifications of Multiple Sample Changer

Type and model	CHG-242D Multiple sample changer
Number of sample	Max. 20
Sample required	30 mL
Sampling vessel	50 mL vial
Sample temperature	5 to 35°C
Sampling	Pressurized sampling by the built-in pump
Rinsing	2 kinds of rinsing by option
Dry cleaning	By dried air
Calibration	By automatic sequence using dry air and degassed water
Ambient condition	Temperature: 5 to 35°C, Humidity: Below 85%RH (no condensation)
Power source	AC 100 to 120V or 200 to 240V
Power consumption	Approx. 40W
Dimension	Approx. 495(W) x 345(D) x 340(H) mm
Weight	Approx. 10kg
Supplied parts	Power cord 1pce., Power fuse 2pcs., Vial 50mL 20pcs., Rinse bottle 1L 2pcs., Rinse tube 2pcs., Desiccant tube (with joint) 1pce., Filter (with joint) 2pcs., Nozzle packing 6pcs., Intake filter 1pce., Silica gel 500g 1pce., Hexagonal wrench 1pce., Cap 100pcs., Connecting cable 1pce., Nozzle Cover 1pce., Tube joint B 2pcs., Turntable 1pce., Male joint for rinse tube line 2pcs., Stopper 2pcs., Operation manual 1pce., Others

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