CELL INSTRUMENTS

Material Testing Solutions

CLRT-01
Carbonation Tester

Elevate Beverage Quality with Precision Carbonation Analysis

Decades of Innovation in Material Testing

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Application: Elevating Quality in Every Bubble

In the competitive beverage industry, carbonation quality defines a drink's freshness, texture, and consumer appeal. The CLRT-01 empowers manufacturers with precise, automated measurement of carbonation—delivering consistency, efficiency, and quality control across sparkling beverages, carbonated water, soft drinks, and beer.

Ideal for:

- Carbonated soft drinks, beer, sparkling water, Fermented beverages, energy drinks, and craft beverages.
- Quality assurance labs, R&D centers, and high-volume production facilities.

Automated Testing Workflow: Speed, Accuracy, Repeatability

The CLRT-01 improves carbonation testing with a fully automated, error-resistant process:

- Automatic cap piercing– Precision-controlled cap penetration (5mm/s default speed).
- Pressure Stabilization – Vent valve release ensures baseline measurement accuracy.
- Vigorous Agitation – Servo-driven rotating (40s default, customizable) for uniform CO_2 distribution.
- Real-Time Data Capture – High-resolution sensors record pressure (MPa) and temperature (℃).
- Instant CO_2 volume calculation and display– Carbonation is read from embedded carbonation table and displayed automatically.

Eliminate human error and reduce testing time.

Technical Features

Precision & Control

- Industrial-Grade PLC & HMI Touchscreen: interface with programmable settings for piercing speed, shaking frequency, and test duration.
- Servo Motor: Gear-driven mechanism ensures consistent, repeatable shaking.

High-Accuracy Sensors:

- Pressure: ±0.01 kPa resolution.
- Temperature: ±0.1℃ real-time monitoring.

Safety & Durability

- Leak-Proof Design: Sealed mechanism prevents CO_2 loss and liquid leak.
- Anti-Corrosion Materials:

Customization & Flexibility

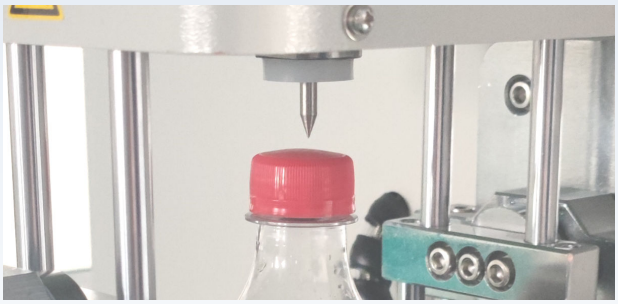
- Adjustable parameters (speed, shaking time, etc.).
- Compatible with bottles, cans, and custom packaging (upon request).

Optional Add-Ons:

- Microprinter.
- RS 232 connectivity and software

Compliance & Standards

- ASTM F1115 – Standard Test Method for Determining the CO2 Loss of Beverage Containers
- GB/T 10792 – Chinese Standard for Carbonated



Specifications

Test Range	0 ~ 1 Mpa (other available)
Pressure Resolution	0.01 KPa
Temperature Range	0 ~ 30°C
Temperature Resolution	0.1°C
Shaking Time	40s (adjustable)
Shaking Speed	Adjustable
Piercing Speed	5 mm/s (customizable)
Max Sample Height	≤ 350 mm (other available)
Power	AC 110~ 220V 50/60 Hz

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℃	MPa																	
	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17
0	1.71	1.88	2.05	2.22	2.39	2.56	2.73	2.90	3.07	3.23	3.40	3.57	3.74	3.91	4.08	4.25	4.42	4.59
1	1.65	1.81	1.97	2.13	2.30	2.46	2.62	2.78	2.95	3.11	3.27	3.43	3.60	3.76	3.92	4.08	4.25	4.41
2	1.58	1.74	1.90	2.05	2.21	2.37	2.52	2.68	2.83	2.99	3.15	3.30	3.46	3.62	3.77	3.93	4.09	4.24
3	1.53	1.68	1.83	1.98	2.13	2.28	2.43	2.58	2.73	2.88	3.03	3.18	3.34	3.49	3.64	3.79	3.94	4.09
4	1.47	1.62	1.76	1.91	2.05	2.20	2.35	2.49	2.64	2.78	2.93	3.07	3.22	3.36	3.51	3.65	3.80	3.94
5	1.42	1.56	1.71	1.85	1.99	2.13	2.27	2.41	2.55	2.69	2.83	2.97	3.11	3.25	3.39	3.53	3.67	3.81
6	1.38	1.51	1.65	1.78	1.92	2.06	2.19	2.33	2.46	2.60	2.74	2.87	3.01	3.14	3.28	3.42	3.55	3.69
7	1.33	1.46	1.59	1.73	1.86	1.99	2.12	2.25	2.38	2.51	2.64	2.78	2.91	3.04	3.17	3.30	3.43	3.56
8	1.28	1.41	1.54	1.66	1.79	1.91	2.04	2.17	2.29	2.42	2.55	2.67	2.80	2.93	3.05	3.18	3.31	3.43
9	1.24	1.36	1.48	1.60	1.73	1.85	1.97	2.09	2.21	2.34	2.46	2.58	2.70	2.82	2.95	3.07	3.19	3.31
10	1.19	1.31	1.43	1.55	1.67	1.78	1.90	2.02	2.14	2.25	2.37	2.49	2.61	2.73	2.84	2.96	3.08	3.20
11	1.15	1.27	1.38	1.50	1.61	1.72	1.84	1.95	2.07	2.18	2.29	2.41	2.52	2.63	2.75	2.86	2.98	3.09
12	1.12	1.23	1.34	1.45	1.56	1.67	1.78	1.89	2.00	2.11	2.22	2.33	2.44	2.55	2.66	2.77	2.88	2.99
13	1.08	1.19	1.30	1.40	1.51	1.62	1.72	1.83	1.94	2.05	2.15	2.26	2.37	2.47	2.58	2.69	2.79	2.90

Part of Carbonation Volume Table ℃/Mpa

Can Carbonatoin Testing

PET Bottle Carbonatoin Testing

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