

J-BAC Breath Alcohol Detector Technical Standard  
(Separate Document)

Technical Standard Document: JB10002-2022

Japan Breath Alcohol Testing Consortium  
Technical Committee

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## **1. Scope**

This document is a technical standard document specified by “JB00002-2022 Breath Alcohol Detector Verification System”. For how to apply for the examination and request an external organization’s audit, refer to the main document (JB00002-2022).

## **2. Terms and Definitions**

### **2.1 Alcohol**

Ethyl alcohol or ethanol.

### **2.2 Breath Alcohol Detector**

A device for measuring and indicating the breath alcohol concentration.

### **2.3 Indication Unit**

Ethanol concentration in 1 liter of breath. (mg/L)

### **2.4 Interval**

An amount of time from the end of a measurement to the start of the next measurement.

### **2.5 Alcohol Simulator**

A device for supplying a certain amount of alcohol solution conditioned to a desired concentration at 34°C.

## **3. Device Acceptance (Model Certification) Criteria**

Refer to the main document JB-00002-2022 “Breath Alcohol Detector Verification System”, Section 2.8.

## **4. Breath Alcohol Detector Technical Requirements (Essential Requirements)**

### **4.1 Measurement Range**

The measurement range shall be from 0.00 mg/L to at least 0.25 mg/L. Manufacturers may determine the upper limit of the measurement range. Manufacturers shall explain the masked range in the instruction manual if they mask the lower limit.

### **4.2 Scale Unit**

The scale unit used to indicate the result shall be 0.05 mg/L or less.

The device with 0.05 mg/L scale unit should be able to measure at 0.01 mg/L during examination.

### **4.3 Maximum Permissible Error (MPE)**

The maximum permissible error shall be  $\pm 0.03$  mg/L of the measured concentration.

#### 4.4 Rated Product Specifications

The storage and operating temperature and humidity shall be provided in the instruction manual.

#### 4.5 Display of the Measurement Result

The display of the measurement result shall be easily visible.

#### 4.6 Breath Alcohol Detector Sampling Conditions

In the breath alcohol detector model certification test, external organizations shall use samples collected during an on-site audit. They shall use 4 samples. Manufacturers shall provide them with at least 8 samples.

#### 4.7 Breath Alcohol Detector Technical Requirements: Essential Requirements and High Reliability Requirements

Classification	Item	Relevant Performance	Document Category	Revision year
4.7.1	Linearity	Accuracy	JB10002 compliant	2022
4.7.2	Repeatability	Accuracy		
4.7.3	Influence of Interference Gas	Accuracy		

##### 4.7.1 Linearity

Concentration shall be measured at three points: 0.00 mg/L and any two of 0.10 mg/L, 0.15 mg/L and 0.20 mg/L. Measurement at the 3 points in the order from the lowest concentration shall be repeated using 4 breath alcohol detectors by measuring with one breath alcohol detector each time. The result shall satisfy 4.3. The result at 0.00 mg/L shall indicate 0.00 mg/L.

For intervals and examination concentrations, follow the instructions of the applicant. (Provided in the application form)

##### 4.7.2 Repeatability

Concentration shall be measured at 3 points: 0.00 mg/L and any two of 0.10 mg/L, 0.15 mg/L and 0.20 mg/L. Measurement at the 3 points shall be repeated 10 times using a breath alcohol detector. The result shall satisfy 4.3. The result at 0.00 mg/L shall indicate 0.00 mg/L.

For intervals and examination concentrations, follow the instructions of the applicant. (Provided in the application form)

##### 4.7.3 Influence of Interference Gas

The following gases (of the specified concentration) shall be measured once with a breath alcohol detector. The result shall be less than 0.05 mg/L.

Carbon monoxide	: 0.057 mg/L (50 ppm)
Acetone	: 0.024 mg/L (10 ppm)
Hydrogen	: 0.004 mg/L (50 ppm)