INTOXILYZER 8000

Breath Alcohol
Testing Instrument

P/N 650800

Rev.3/02
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CONTENTS

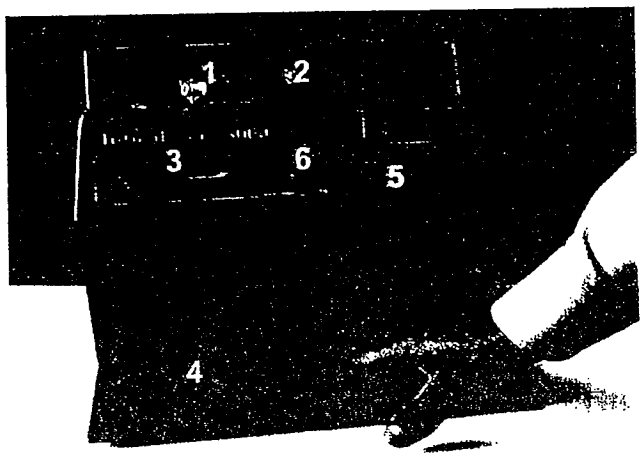
Introduction

The purpose of this manual is to ensure that the user of the CMI, Inc. INTOXILYZER® 8000 achieves the necessary depth of understanding prior to using the device for evidential breath testing. The manual covers all aspects from description of the principles of analysis to running a breath test.

Instrument Description

Overview

The CMI, Inc. INTOXILYZER® 8000 is an infrared-based device, as is shown in the diagram below, has been designed for both mobile and stationary evidential breath alcohol testing. It has a revolutionary design with several features and software configurations.



1. Mouthpiece storage area [heated to minimize likelihood of condensation during breath test];

2. Breath Hose coiled in the top recess of the instrument to allow easy access. Thirty-six inches in length, the hose is flexible but non-kinking, non-collapsible and is heated to ensure that no condensation forms when a breath sample is supplied. The temperature of the breath hose is under digital temperature control. Despite this, it is advised that at all ambient temperatures, when not in use, the hose be positioned correctly within the housing. The hose accepts standard mouthpieces.

3. Instrument display, [vacuum fluorescence];

4. Drop-down standard PS/2 keyboard – may be detached from main unit to enable data entry to be performed remotely from where the test is taking place;

5. Printer unit, [either of the 'impact' or 'thermal' type] has a paper roll that when it is almost "out", a thin red line appears along the edge of the roll. When this occurs, it

will be possible to perform no more than five custom test printouts until the end of the paper is reached;

6. Start button. This button is used to run an evidential breath test.

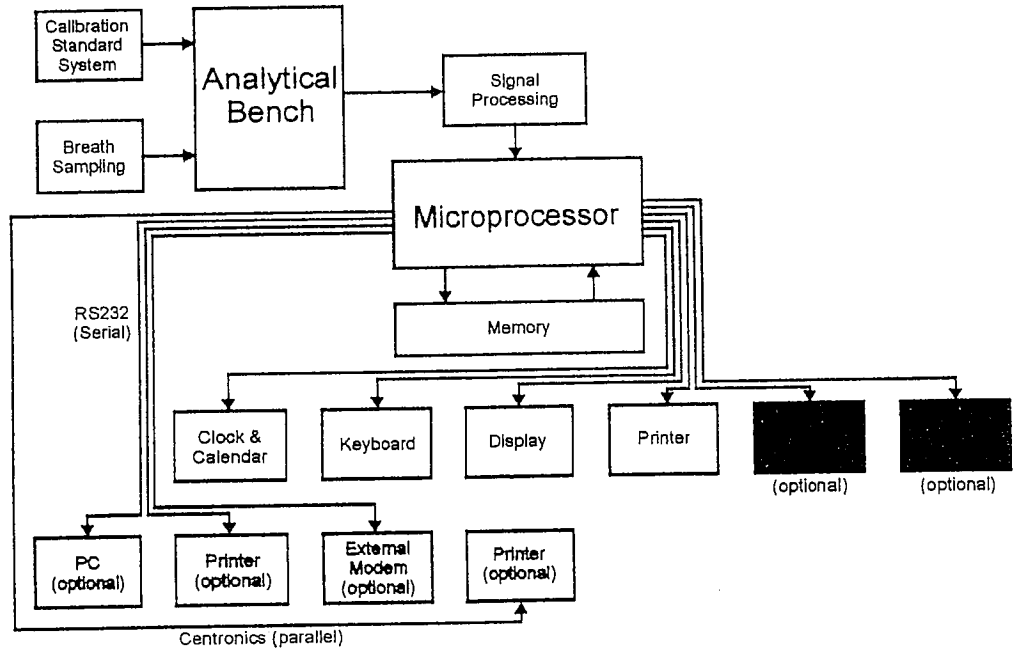
The CMI, Inc. INTOXILYZER® 8000 has a nominal power requirement of 60W. The device may be powered by each of the following:

- 110VAC (47-63 Hz)
- 220VAC (47-63 Hz)
- 12VDC nominal (10 to 15VDC)

The power supply feeds into a recess at the rear of the device (not shown in the diagram) and has been designed in such a way that ensures that the overall footprint of the device remains unchanged when power supply cables are connected. This means that the device is ideal for use in confined areas such as police vehicles.

A note should be made also of the fact that when the calibration of the device is verified during periodic checks, security tabs can be attached to the device in such a way that prevents any unauthorized opening of the casing. Provided they remain unbroken, the tabs (not shown) confirm that the device has remained in a fully operational condition between the periodic verification checks.

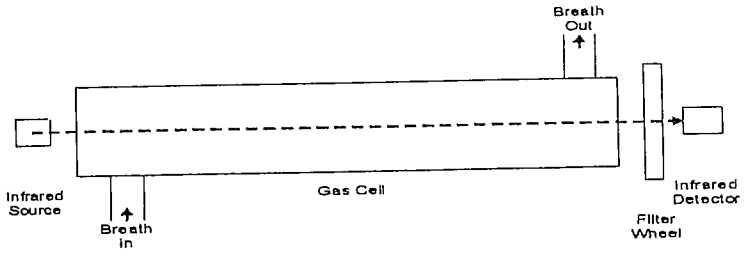
Having outlined the main external features of the CMI, Inc. INTOXILYZER® 8000 it is vital that the user of the device is aware of the relationship of each of the internal component parts. The block diagram below clearly demonstrates this.



Principle of Analysis

As indicated above, the fundamental principle of analysis is non-dispersive infrared absorption. That is, the greater the concentration of alcohol in a subject's breath specimen, the greater the amount of infrared light that is absorbed by that specimen. An infrared detector detects the absorption of the infrared light.

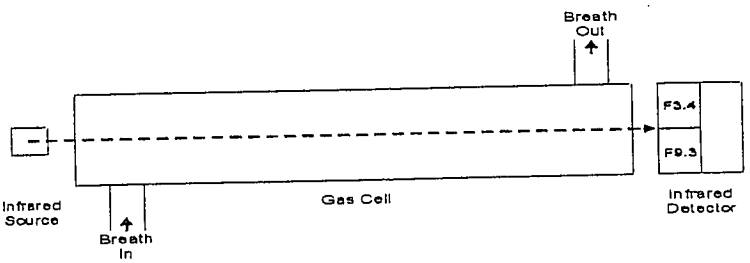
The above situation is summarized in the following diagram:



Applying this fundamental and scientifically accepted principle, in its design the CMI, Inc. INTOXILYZER® 8000 overcomes the only downfall of this method of quantifying a subject's breath alcohol concentration. That is, when using infrared light at a single wavelength it is possible that interferents present within the breath also absorb at the selected wavelength. The effect of this of course being that artificially high breath alcohol readings may be reported by the device.

In order to eliminate this possibility the CMI, Inc. INTOXILYZER® 8000 operates using infrared light selected at two wavelengths, 3 and 9 microns. The absorption ratio that is generated when alcohol alone is supplied in the path of the infrared light creates what may be termed as a fingerprint and that allows the device to discriminate between those samples, which are contaminated by breath interferents, and those that are not.

This is schematically shown in the diagram below.



What differentiates the CMI, Inc. INTOXILYZER® 8000 from other infrared-based breath testing devices is the fact that it has been designed in such a way that it will allow for prolonged use without the requirement for recalibration. The reason for this is that there are no moving parts within the device. The infrared light is pulsed in order that the dual pyroelectric detectors may accurately quantify as well as qualify the alcohol concentration present within the analytical cell.

Other Instrumental Features

Within the instrument firmware different options exist.

The user must twice press and release the Esc key on the keyboard. Upon doing this the display will indicate the following options to the user:

OPERATOR MENU: E, A, F
AGENCY INSPECTOR MENU: E, L, D, C, S, I
SYSTEM MENU: D, M, S, T

Operator Menu: E, A, F

The following options are available to the operators:

- Set Time/ Date (E);
- Agency Inspector...(*password protected* (A);
- FDLE-ATP... (*Password protected)* (F);

Set Time/ Date

Enables the user to change the instrument time and date. The PageUp key or PageDown key will allow you to Select the **Time Mode:** and **Date Mode**: formats provided. Press Enter to accept changes.

Agency Inspectors menu: A1 E, L, D, C, S, I

The following options are available to the Agency inspectors:

- Set Time/ Date (E);
- Set Location (L);
- Diagnostics (D);
- Control testing (C);
- Gas Cylinder change (S);
- Inspection date (I);

Set Time / Date

Enables the user to change the instrument time and date. The PageUp key or PageDown key will allow you to Select the **Time Mode:** and **Date Mode**: formats provided. Press Enter to accept changes.

Set Location

Enables user to enter location of the unit.

SCREEN	MAX. NUM. of CHARACTERS	FORMAT
Enter Location:	20	Alpha, numeric

Diagnostics

Enables user to run a self-diagnostics on the operation of the Intoxilyzer. This will print out and save the results.

Control testing A: C1 W, D, S

- Wet Control Test (W);
- Dry Control Test (D);
- Stability Test (S);

Wet Control Test

When the routine is selected the device automatically enters a single Wet bath calibration checking cycle.

Dry Control Test

When the routine is selected the device automatically enters a single dry gas calibration checking cycle.

Stability Test

The function automatically runs through a series of calibration checks – the number of which must be specified by the user.

Questions asked	*Format*
Select Dry/Wet(D/W)	D or W
# Cal Checks to Run	1 through 15

Gas Cylinder Change

User must set up the Gas Cylinder by entering the information from the Cylinder.

Questions asked	*Max. Num. Of Characters*	*Format*
Enter Cylinder Lot #:	10	Alpha, Numeric
Enter Exp Date:	8	Valid Date

Inspection Test

Enter date

FDLE-ATP: D, M, S, C

The following options are available to the FDLE_ATP:

- Diagnostic Routines (D);
- Maintenance ... (M);
- Setup ... (S);
- Control Testing (C);

Diagnostics Routines L: D1 B, D, F, P, T, G

The following options are available to users:

- Barometric Test (B);
- DVM Tests (D);
- Flow Sensor (F);
- Printer Test (P);
- Temperature monitor (T);
- Tank Pressure (G);

Each of the above options is described below:

Barometric Test

This test may be performed when the device is being used in conjunction with the dry gas calibration checking system. It is important to ensure that the barometer used within the CMI, Inc. INTOXILYZER® 8000 remains accurate. The reason for this is that the barometer is used to ensure that the appropriate correction is made to the alcohol concentration of the dry gas that is presented to the device during calibration checking – depending on the atmospheric pressure at the time of the test.

DVM Tests

This routine enables a user to monitor the voltage output from the 3 and 9 micron infrared detectors. Typically, this would be performed as part of the diagnosis of an instrumental problem. In DVM mode, the cell and breath hose temperatures should be:

- Within .15°C of the set point 47°C for the cell
- Within 2°C for the set point of 45°C for the breath hose.

The span numbers for each channel should be below ten counts and DVM readings should be between the ranges of 9000 to 14000.

Flow Sensor

This routine enables a user to perform a simple check to confirm whether or not the output from the flow sensor is satisfactory.

Printer Test

This routine enables a user to perform a simple check to confirm whether or not the printer is printing characters correctly.

Temperature Monitors

This routine enables a user to check the temperature of the sample chamber and breath hose.

Tank Pressure

This option will display the pressure of the dry gas cylinder.

P: ### psi

Maintenance ... L: M1 D, C, S, I

- *Diagnostics (D);*
- Calibration (C);
- Gas Cylinder Change (S);
- Inspection Test (I);

Diagnostics

Enables user to run a self-diagnostics on the operation of the Intoxilyzer. This will print out and save the results.

Calibration *The following option is available to users, but caution should be used*

The instrument calibration routine is divided into two entirely independent sections, namely Flow and Optical bench.

Having selected the Maintenance category within the system menu the following indication will be displayed on the screen:

L: M: F, O

When prompted by this message the user must press F and/or O to calibrate the flow sensor and/or optical bench respectively.

Flow Sensor Cal.

When option F is selected from the Calibration menu the user is automatically entered into the flow sensor calibration routine. The calibration routine must be performed in relation to an air supply with the appropriate control on output flow rate.

Optical Bench Cal.

When option O is selected from the Calibration menu the user is automatically allowed access into the optical bench calibration routine.

Gas Cylinder Change

Screen	Max. Num. Of Characters	Format
Enter Cylinder Lot #:	10	Alpha, Numeric
Enter Exp Date:	8	Valid Date

Inspection Test

Setup ... L: S1 E, L, T, S, V

The following options are available to users:

- Set Time/ Date (E);
- Set Location (L);
- Configure Start Test (T);
- Toggle Data Stream (S);
- Ser Num/ Version Info (V);

Each of the above options is described below:

Set Time and date

Enables the user to change the instrument time and date. The PageUp key or PageDown key will allow you to Select the **Time Mode:** and **Date Mode:** formats provided. Press Enter to accept changes.

Set Location

Enables user to enter location of the unit.

SCREEN	MAX. NUM. of CHARACTERS	FORMAT
Enter Location:	20	Alpha, numeric

Configure Start Test

Enables user to select the test sequence the instrument will run from the start test button.

Questions asked:

Data Entry Mode:(PageUp Key or PageDwon Key to move through the selections, and press enter t accept)

ENABLED
DISABLED

Start test sequence: (PageUp Key or PageDown Key to move through the selections, and press enter t accept)

ABA
ACABA
ABABA
ABACA
DACABAWABA(WABA)CAD

A- AIR BLANK
B- BREATH TEST
C- CONTROL TEST
D- DIAGNOSTICS
W- 2 MINUTE WAIT

Control type:(PageUp Key or PageDown Key to move through the selections, and press enter to accept)

Wet Bath Cal Check
Dry gas Cal Check

Enter Target Value: .080 (default)

Toggle Data Stream

When selected, this function produces all serial port information to the engineer and therefore would be used within standard engineer test.

Ser Num/ Version Info

When user selects this, the version number of the operating firmware is displayed.

Control Testing... L: C1 W, D, S

- Wet Control Test (W);
- Dry Control Test (D);
- Stability Test (S);

Wet Control Test

When the routine is selected the device automatically enters a single Wet bath calibration checking cycle.

Dry Control Test

When the routine is selected the device automatically enters a single dry gas calibration checking cycle.

Stability Test

The function automatically runs through a series of calibration checks – the number of which must be specified by the user.

Questions asked	*Format*
Select Dry/Wet (D/W)	D or W
# Cal Checks to Run	1 through 15

Data Entry Questions

If enabled these questions will be asked as part of the subject test sequence.

Questions asked	*Max. Num. of characters*	*Format*
Last Agncy Ins Date?	8	Valid Date
Control #?	10	Alpha, Numeric, Separator
Expiration Date?	8	Valid Date
Obsrv Period Began?	4	HH:MM
Subj Last Name?	20	Alpha, Numeric, Separator
Subj First Name?	20	Alpha, Numeric, Separator
Subj Mid I?	1	Alpha
Drivers license #?	20	Alpha, Numeric, Separator
State?	2	Alpha
Date of birth?	8	Valid Date
Sex M/F?	1	M or F
Arrst Officer Last?	20	Alpha, Numeric, Separator
Arrst Officer First?	20	Alpha, Numeric, Separator
Arrest Time?	20	HH:MM
Arrest Agency?	20	Alpha, Numeric, Separator
Operator Last?	20	Alpha, Numeric, Separator
Operator First?	20	Alpha, Numeric, Separator
Operator Agency	20	Alpha, Numeric, Separator
Violation code?	10	Alpha, Numeric, Separator
UTC#/ Case #?	20	Alpha, Numeric, Separator
Video #?	10	Alpha, Numeric, Separator
Review Data Y/N?	1	Y or N

FLORIDA DEPARTMENT OF LAW ENFORCEMENT
ALCOHOL TESTING PROGRAM
BREATH ALCOHOL TEST AFFIDAVIT

Instrument Type: Intoxilyzer 8000
Instrument Location:
Instrument Serial Number: Software Version:
Date of Test:

Date of Last Agency Inspection:
Observation Period Began:
Subject's Name: DOB: Sex:

State of Florida, County of _____,

Personally appeared before me, the undersigned authority , who (__) is personally known to me (__) produced _____ as identification, and who after being placed under oath, states:

I hold a valid Breath Test Operator permit issued by the Florida Department of Law Enforcement, that I administered the above breath test to the subject named above in accordance with Florida Administrative Code Rule/Chapter 11D-8, and this form is a true and accurate report of that breath test.

Breath Test Operator: _____ Date: _____
Signature

Sworn to (or affirmed) before me this _____ day of _____ , _____

_____ _____
Signature of Notary Public-State of Florida Printed Name of Notary Public-State of Florida

Note: Pursuant to section 117.10, Florida Statutes, law enforcement officers, correctional officers, traffic accident investigation officers and traffic infraction enforcement officers are notaries public when engaged in the performance of official duties.

FDLE/ATP FORM 38- MARCH,2002

Appendix I: Contacts Information

Mail

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