Florida Department of Law Enforcement
Alcohol Testing Program

INTOXILYZER® 8000

Reference Guide

TABLE OF CONTENTS

INTRODUCTION

The Florida Department of Law Enforcement Intoxilyzer 8000® Reference Guide is intended for users of the Intoxilyzer 8000 breath test instrumentation in the State of Florida. Other publications concerning the Intoxilyzer 8000, including materials published or produced by the instrument manufacturer, may be used as supplemental references. This guide provides basic reference information but is not all encompassing or exclusive of other materials. Applicable statutes, administrative rules, and approved training curricula supercede any conflicts with information in this or other publications or products.

For information concerning this guide, please contact:

Florida Department of Law Enforcement
Alcohol Testing Program
P.O. Box 1489
Tallahassee, Florida, 32302-1489
(850) 410-7810
www.fdle.state.fl.us/atp

SECTION A: THE INSTRUMENTATION

The Intoxilyzer 8000 instrumentation is approved for evidentiary use in the State of Florida. It is designed for mobile and stationary breath alcohol analysis, and is equipped with electronic communications capability.

Power Source

110 volt AC (wall outlet), or 12 volt DC (motor vehicle or vessel).

Method of Analysis

Infrared light absorption.
Infrared light produced by the instrument is absorbed by the alcohol in the sample analyzed. The more infrared light absorbed, the greater the concentration of alcohol in the sample analyzed. This is the same method of analysis used by the Intoxilyzer 5000 Series instrumentation.

Infrared Light Absorption Components

Sample Chamber - Where a breath sample is analyzed. It is thermostatically controlled temperature of 47C to prevent condensation.

Light Source - A spiral filament which pulses infrared light into the sample chamber. It is directly connected to one end of the sample chamber.

Filters - Filter infrared light at specific wavelengths to identify alcohol. The 3.4 uM filter identifies alcohol and interferents in the sample. The 9.36 uM filter identifies alcohol in the sample.
The two filters are directly connected to the sample chamber opposite the light source.

Detectors - Two pyroelectric detectors, each directly connected to a filter, which detect and determine the amount of light not absorbed by alcohol in the sample. It converts the heat energy into an electrical response.

Microprocessor - Calculates the amount of alcohol in a sample in g/210L based on the electrical responses received from the detectors.

Additional Operational Components

Power Switch - Black rocker switch used to turn the instrument on and off.

Start Test Button - Green button used to turn on the instrument, to initiate a breath test sequence, and to bring the instrument from STANDBY MODE to READY MODE.

Magnetic Card Swipe - Inputs breath test subject information from any driver license or identification card with compatible coded format.

Keyboard – Used to input information. A fold-down, removable, compact model is attached to the instrument. A full size model can be substituted for use.

Breath Tube - Delivers a breath sample into the instrument. It is temperature controlled at 45C to prevent condensation.

Display - A two-line (twenty characters per line) fluorescent display which communicates information to the user.

Regulator Valve - Attaches to the top of a dry gas standard cylinder, indicates the pressure in the cylinder, and controls release of a dry gas sample.

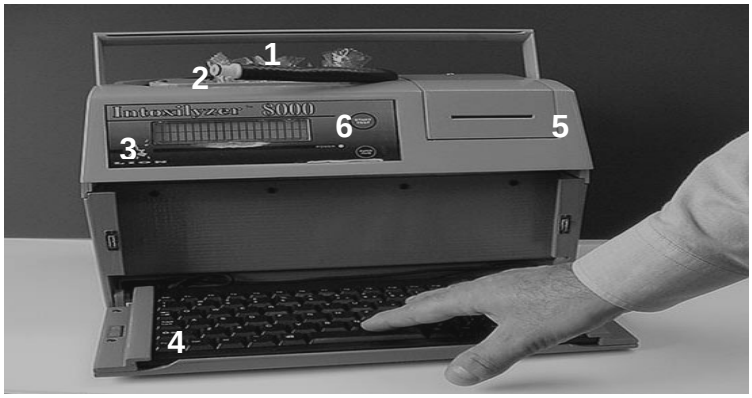
Dry Gas Standard Supply Hose - Delivers the dry gas standard into the instrument.

RFI Detector - Detects Radio Frequency Interference.

Internal Printer - Thermal printer which can be used to print breath test results if no external printer is connected. The instrument automatically detects the absence of an external printer and defaults to the internal printer.

Components Locator

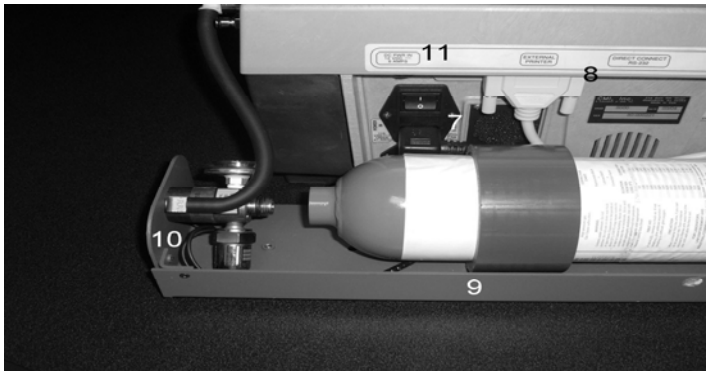
Front View:



1 Mouth Piece Storage Area
2 Breath Tube
3 Display
4 Keyboard
5 Internal Printer Door and Paper Slot
6 Start Test Button

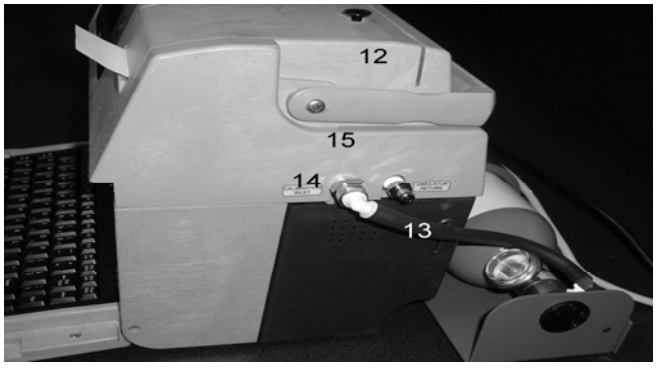
Rear View:

7 Power Switch
8 External Printer Port
9 Dry Gas Standard Cylinder Carrier
10 Regulator Valve
11 DC Power-In Socket



Right Side View:

12 Magnetic Card Swipe
13 Dry Gas Standard Supply Hose
14 Calibration Inlet
15 Carry Handle



Operational Modes

NOT READY MODE - The instrument is not ready for use because it is warming to operational temperatures. The instrument will take approximately twenty (20) minutes to warm-up. During this warm-up time, the instrument will display NOT READY.

READY MODE - The instrument is ready for use.

STANDY BY MODE - If the green start test button is not pushed within approximately thirty (30) minutes in READY MODE, the instrument will go to STANDBY MODE. The instrument suspends all analytical functions but maintains operational temperatures (similar to a "sleep" mode). To bring back to READY MODE push the green start test button.

DISABLED MODE - The instrument is disabled and cannot be used to conduct breath tests because: stored information must be uploaded, OR the monthly Agency Inspection must be conducted, OR a Department Inspection must be conducted after receipt from an authorized repair facility or prior to initial evidentiary use. The reason for DISABLED MODE will be displayed.

Tones

Three distinct tones:
Beep – after completion of each operation.
Continuous Tone – while a subject blows into the instrument with sufficient pressure.
Low/High Tone – denotes an exception, incorrect operational procedure, or unfulfilled test requirement.

Diagnostics Check

Diagnostics checks are conducted to ensure that the instrument's analytical components and operational standards are functioning properly. The instrument automatically performs all of the following tests when a diagnostic check is conducted:

Internal Printer Test - Verifies that the internal printer has paper and is operational.
Real Time Clock Test – Validates current time and date.
Digital Signal Processor Test – Verifies that the digital signal processor is functioning correctly.
Analytical Stability Test – Verifies the stability and operation of analytical components.
Electronically Erasable Programmable Read Only Memory Checksum Test – Verifies validity of the checksum and EEPROM data.
Voltage/Current Test – Verifies voltage and current values.
RAM Test – Verifies Random Access Memory availability.
Modem Test – Verifies internal modem operation.
Temperature Regulation Test – Verifies prescribed temperature controls for the sample chamber and breath tube.

DIAGNOSTIC OK indicates that all tests are successfully completed and the instrument's analytical components and operational standards are in compliance. The instrument then enters READY MODE.

DIAGNOSTIC FAIL indicates that a diagnostic test result does not comply. The instrument will remain in NOT READY MODE.

Control Tests

Control tests verify the calibration of the instrument by analyzing dry gas standard or alcohol reference solution and ensure that the results obtained are within the acceptable range for the samples analyzed.

Control tests are automatically conducted during the breath test sequence using dry gas standard. Control tests are required to be conducted during Agency Inspections and Department Inspections using dry gas standard and alcohol reference solution.

Control tests using dry gas standard (Dry) and/or alcohol reference solution (Wet) can also be conducted by accessing the Control Tests function in the Level Two User Menu.

Replacing the Internal Printer Paper

- Lift and remove the printer paper door by pulling the black knob.
- Pull the green lever forward until it locks.
- Lift and remove the used roll of paper from the paper roll holder.
- Place a new roll of paper in the paper roll holder with the paper spooling from the bottom. Slip the leading edge of the paper underneath the rear of the black rubber roller until the edge slides out the front.
- Push the green lever up and back until it locks.
- Feed the paper through the slot in the printer paper door.
- Replace the printer paper door and press the black knob until it locks.

SECTION B: THE DRY GAS STANDARD

The Intoxilyzer 8000 uses a standard consisting of a mixture of alcohol and gas which produces a known alcohol vapor concentration. This gas mixture is used to verify the calibration of the instrument. The present gas concentration used in Florida is 0.08 g/210L.
The gas standard in contained in a cylinder tank connected to the instrument. A 105L cylinder can be placed on the Dry Gas Standard Cylinder Carrier.

Connecting the Dry Gas Standard Cylinder

The gas cylinder is attached to the instrument by connecting it to the Regulator Valve, tightening the connection, and connecting the instrument's Dry Gas Standard Supply Hose to the Calibration Inlet. The interface connection cable must be plugged into the Gas Power/Interface Connector for the instrument to operate.

Dry Gas Standard Analysis

The Dry Gas Standard is used to conduct control tests during the breath test sequence. Dry Gas Standard analyses are also conducted during an Agency Inspection and a Department Inspection. The gas concentration used is 0.08 g/210L. The acceptable range for the gas analyses is 0.075 to 0.085 g/210L. If any analysis result is not within the acceptable range, the message CONTROL OUTSIDE TOLERANCE will be displayed.
An Agency Inspection or a Department Inspection sequence can be performed without a connected gas cylinder or with gas cylinder pressure below $\leq$25 psi (pounds per square inch). However, dry gas analyses results are likely to be outside of acceptable range.

Dry Gas Standard Messages

When the gas pressure remaining in the cylinder is $\leq$ 50 psi, the following message will be displayed:
READY MODE GAS STD AT "#" PSI
The "#" indicates the pressure remaining in the cylinder.
Press the green Start Test Button.

If the pressure in the gas cylinder is 25 psi to 50 psi, the following message will be displayed:
TANK PRESSURE LOW CHANGE STANDARD SOON
The instrument can be operated until the gas cylinder pressure reaches 25 psi.

OR

If the pressure in the gas cylinder is <25 psi, or a cylinder is not connected, the following message will be displayed:
TANK BELOW MINIMUM
A breath test cannot be conducted until a gas cylinder is connected or replaced.

Replacing/Removing the Dry Gas Standard Cylinder

The dry gas standard cylinder must be replaced when the cylinder is below minimum pressure, and when the cylinder expiration date has been reached.
The dry gas standard cylinder must be removed prior to sending the instrument to an authorized repair facility.

- When the dry gas standard cylinder pressure reaches approximately 50 psi the cylinder must be replaced as soon as possible. No tests can be conducted if the cylinder tank pressure is $\leq$ 25 psi.
- Turn the cylinder counterclockwise to disconnect it from the Regulator Valve.
- Place the cylinder in the Dry Gas Standard Cylinder Carrier, connect it to the Regulator Valve and by turning the cylinder clockwise and tighten.
- After replacing a cylinder, the lot number and expiration date must be entered through the user menus.

SECTION C: USER MENUS

A multi-level user menu allows features and functions to be changed or initiated. This guide will address the first two levels only. Each higher level has access to all functions performed at a lower level. The second level and above are password protected. The user can move through the menu by placing the cursor under the desired letter and pressing ENTER. If no information is recorded within two (2) minutes after completing a function, the instrument will return to READY MODE.

Level One - Breath Test Operator Menu

Press ESC, ESC. Record user last name, first name and middle initial at the prompts.

R – Recall Test - Used to recall recent breath test results listed by test date and test subject name. Use PAGE UP or PAGE DOWN to select a test date and press ENTER. The instrument will display the number of test records for that date. Select a subject last name (use RIGHT ARROW key used to view the subject's first name) and press ENTER. A Breath Alcohol Test Affidavit will be automatically printed on a connected external printer.

S – Gas Cylinder Change - Record the new Cylinder Lot # and press ENTER. Record the new cylinder Expiration Date and press ENTER.

Level Two - Agency Inspector Menu

Press ESC, ESC. Record user last name, first name and middle initial at the prompts. Press 2. Record the password at the prompt and press ENTER.

E – Set Date and Time - Date must be entered MM/DD/YYYY. Time must be entered HH:MM:SS

D – Diagnostic - Initiates the diagnostics check.

G – Tank Monitor - Displays the pressure in the dry gas standard cylinder.

S – Gas Cylinder Change - Record the new Cylinder Lot # and press ENTER. Record the new cylinder Expiration Date and press ENTER.

I – Inspection Test - Begins the process for conducting an Agency Inspection.

R – Recall Test - Used to recall recent Agency Inspection results. Use PAGE UP or PAGE DOWN to select an Agency Inspection date and press ENTER. If there is more than one Agency Inspection with that date, select the one to be printed and press ENTER. An Agency Inspection Report will be automatically printed on a connected external printer.

C – Comms Transfer - Used to electronically upload information. Ensure that the instrument is connected to an analog telephone line. Enter or verify the telephone number to the database in Tallahassee and press ENTER. If the upload is successful, the display will go blank. Push the green start test button. If the upload is unsuccessful, an explanation and TRY AGAIN will be displayed. To try again press ENTER, to terminate the process type N and press ENTER.

T – Control Tests - D – Dry Control Test. The instrument will perform a single analysis of the dry gas standard and print the results. W – Wet Control Test. The instrument will perform a single analysis of a simulator sample and print the results. I – Internal Control Test. The instrument will perform a single analysis of the Internal Test Procedure and print the results. S – Stability Test. The instrument will perform the selected number and type of control test. Enter "D", "W" or "I" at SELECT CAL (D/W/I) and press ENTER. Enter the number of tests and press ENTER. The instrument will perform the requested number and type of tests and print the results.

Z – Change Password - The user must record the new password at ENTER PASSWORD and press ENTER.

SECTION D: SUBJECT BREATH TESTS

Required Information

The instrument prompts the user to record or verify information necessary to continue the breath test process. This includes user name and agency, time and date, last Agency Inspection date, dry gas standard cylinder lot number and expiration date, start of observation period, subject name and driver license number, subject date of birth and sex, arresting officer name and agency, time of arrest, violation code.

Observation Period

The user records the time the observation period began in military time. If the observation period is less than twenty (20) minutes prior to beginning the breath test the instrument will count down the remaining time prior to continuing the testing process.

Agency Codes

The appropriate agency codes are used for OPERATOR AGENCY and ARRESTING AGENCY. The user can manually record the agency codes or select from the agency codes list by using the UP and DOWN arrows.

Subject Information

The user can "swipe" a subject's driver license or identification card, or manually record the breath test subject information.

Violation Codes

The user can select from the violation codes list by using the UP and DOWN arrows.

Breath Samples

Deep Lung Air

The instrument is designed to analyze deep lung air as the type of breath sample which renders the most accurate breath alcohol level representing the alcohol concentration circulating in a test subject's body. Deep lung air is breath obtained from the deepest part of the lungs, and is best obtained by having a test subject normally inhale and provide a continuous, sustained breath sample for as long as possible.

Minimum Acceptable Breath Sample

The instrument requires that a breath sample meet the following analytical criteria to ensure that the breath sample is reliable:

TIME - The subject must provide a continuous breath sample of sufficient flow for at least one (1) second.

VOLUME - The subject must provide a continuous breath sample of at least 1.1 liters of breath.

SLOPE - The subject must provide a breath sample in which the concentration of the sample consistently rises and then levels off.

Breath Test Sequence

Diagnostics Check
Air Blank
Control Test
Air Blank
Subject Sample #1
Air Blank
Wait
Air Blank
Subject Sample #2
Air Blank
    (If No 0.020 g/210L Agreement)
    Wait
    Air Blank
    Subject Sample #3
    Air Blank
Control Test
Air Blank
Diagnostics Check

Breath Alcohol Test Affidavit

FDLE/ATP Form 38 Breath Alcohol Test Affidavit containing all the breath test results will be automatically printed using an attached external printer. If no external printer is connected, the user will receive a printed slip with the results and the affidavit can be printed later by recalling the breath test.

Section E: AGENCY INSPECTIONS

Agency Inspection Sequence

Pre-Inspection Diagnostics Check
Alcohol Free Subject Test
Mouth Alcohol Test
Alcohol Free Test (Three analyses)
Interferent Detect Test (Three analyses)
0.05 g/210L Test (Three analyses)
0.08 g/210L Test (Three analyses)
0.20 g/210L Test (Three analyses)
0.08 g/210L Dry Gas Standard Test (Three analyses)
Post-Inspection Diagnostics Check

Agency Inspection Report

Upon completion of the Agency Inspection (IN COMPLIANCE Y/N) FDLE/ATP Form 40 Agency Inspection Report – Intoxilyzer 8000 containing all Agency Inspection results will be automatically printed to a connected external printer. If no external printer is available the report can be printed later by recalling the Agency Inspection.

Uploading the Agency Inspection

The agency inspector is required by Chapter 11D-8, Florida Administrative Code to make the Agency Inspection results electronically available to the Department within five business days.
The instrument's electronic upload features provide a prompt and convenient method to complete this process. After the agency report is printed, the instrument will prompt the Agency Inspector to UPLOAD NOW. Ensure that the instrument is plugged into an analog telephone line and press ENTER. The Agency Inspection results and any breath test results will be automatically uploaded.

If the Agency Inspection is not uploaded at the time of the inspection, the results may be uploaded using the Comms Transfer section in the agency inspector menu. If the Agency Inspection is not uploaded within five days, the instrument will enter DISABLED MODE and cannot be used to conduct breath tests until the information is electronically transferred.

SECTION F: MESSAGES

PROVIDE SAMPLE NOW - The subject has three (3) minutes to provide a minimum acceptable breath sample.

INTERFERENT DETECT - The calculated result obtained from the detection of light from each filter did not agree, which could mean that an interfering substance was detected in the breath sample or control sample. The instrument will display INTERFERENT DETECT, abort the test, print INT* in the results section of the report, and print *INTERFERENT DETECT.

IMPROPER SAMPLE - The breath sample was introduced at the wrong time. The instrument will display IMPROPER SAMPLE, abort the test, print IPS* in the results section of the report, and print *IMPROPER SAMPLE.

AMBIENT FAIL - The instrument did not clear the sample chamber during the air blank prior to a breath sample analysis or a control sample analysis. The instrument will display AMBIENT FAIL, abort the test, print AMB* in the results section of the report, and print *AMBIENT FAIL.

PURGE FAIL - The instrument did not clear the sample chamber during the air blank after a breath sample analysis or a control sample analysis. The instrument will display PURGE FAIL, abort the test, print PUR* in the results section of the report, and print *PURGE FAIL.

TEST REFUSED - The operator pressed the “R” key on the keyboard when the instrument displayed PROVIDE SAMPLE NOW. The instrument will display SUBJECT TEST REFUSED, abort the test, print REF* in the results section of the report, and print *SUBJECT TEST REFUSED.

NO SAMPLE PROVIDED - The subject did not provide a breath sample, or provided a breath sample for less than one (1) second. The instrument will display NO SAMPLE PROVIDED, print NSP* in the results section of the report, and print *NO SAMPLE PROVIDED.

SLOPE NOT MET - The breath sample did not meet the slope requirements of a minimum acceptable breath sample, and there was a negative slope (the alcohol concentration from the subject sample decreased). The instrument will display SLOPE NOT MET, abort the test, print SNM* in the results section of the report, and print *SLOPE NOT MET.

RFI DETECT - The instrument detected radio frequency interference of a sufficient strength and frequency to interfere with the breath test or control test. The instrument will display RFI DETECT, abort the test, print RFI* in the results section of the report, and print *RFI DETECT.

SEQUENCE ABORTED - The green “Start Test” button was pressed during an operational function. The instrument will display SEQUENCE ABORTED, abort the test, print ABT* in the results section of the report, and print *SEQUENCE ABORTED.

RANGE EXCEEDED - The value of the breath sample exceeded the reporting range of the instrument (0.600 g/210L). The instrument will display RANGE EXCEEDED, abort the test, print RGE* in the results section of the report, and print RANGE EXCEEDED.

CONTROL OUTSIDE TOLERANCE - The alcohol reference solution or dry gas standard control test value was out of acceptable range. The instrument will display CONTROL OUTSIDE TOLERANCE, abort the test, print an * by the test result in the results section of the report, and print *CONTROL OUTSIDE TOLERANCE.

DIAGNOSTIC FAIL - One or more of the diagnostic check tests failed. The instrument will display DIAGNOSTIC FAIL, abort the test, print FAIL* in the results section of the report and print *DIAGNOSTIC FAIL.

VOLUME NOT MET - The breath sample did not meet the minimum breath sample requirement of 1.1 Liters. The instrument will display VOLUME NOT MET, print VNM* in the results section of the report, and print *VOLUME NOT MET (0.XXX Breath Sample Not Reliable for Quantitative Breath Alcohol Level).

NO .020 AGREEMENT - There was no 0.020 g/210L agreement between any three breath samples. The instrument will display NO .020 AGREEMENT, print an * by the breath sample results, and print *NO .020 AGREEMENT.

SLOPE NOT LEVEL - The breath sample did not meet the slope requirements of a minimum acceptable breath sample, and the slope of the breath sample continued to rise and did not level off. The instrument will display SLOPE NOT LEVEL, print SNL* in the results section of the report, and print *SLOPE NOT LEVEL (0.XXX Breath Sample Not Reliable for Quantitative Breath Alcohol Level).

TANK PRESSURE BELOW MINIMUM – Check the dry gas standard cylinder pressure and connections.

INSUFFICIENT RECORD BUFFER - The record memory has reached the 150 tests storage limit. The information must be electronically transferred before the instrument can be operated