INTOXILYZER 8000 INSTRUMENT SPECIFICATION

FUNCTIONAL

Power Switch

An AC mains power switch is located on the back panel. An auxiliary 5-Volt supply is used to power a logic toggle switch allowing the start test button to serve as the On/Off switch.

Note: A DC mains power switch is not required.

Start Test Switch

Used to initiate a test sequence or cycle power of instrument. Press to turn on/Press and hold to turn off. Traditional green in color.

Power on Indicator

LED on front panel lit if AC power switch is on or if plugged into DC.

Display

Vacuum Florescent, Dot matrix, 2 line x 20 characters with a character height of 4.7 mm.

Printer

Impact, dot matrix, 42 column, 1.5 lines per second, 2.25" paper width, 80' paper length, dual copy compatible, 2.6mm character height. Utilizes ribbon or pressure sensitive paper. Low paper (via indicator on paper) /paper out detection.

Audible Tones

Signal completion of operation, the presence of a malfunction, or incorrect operational procedure, an unfulfilled test requirement, etc. Variable frequency and duration via software.

Keyboard

Built in, detachable IBM compatible keyboard with a PS/2 connector mounted in the front of the instrument.

Note: Single connector for both detachable and external keyboard.

Communications

An RS-232 connection for direct connect/external modem.

Software Configuration

Selection of instrument operating and user interface parameters are keyboard/computer configurable.

A given customer's setup can be stored via the PC base configuration program and recalled later for instant instrument setup. Full detail of the configuration will be presented in the forth-coming software specification.

Breath Sampling

The instrument automatically senses end expiratory (deep lung) air using slope detection, breath volume, breath flow, and minimum time.

Multi-Standard Calibration Check Ready

The instrument is equipped to use both dry and wet ethanol gas standards.

Barometric Compensation

The instrument compensates for ambient barometric pressure during dry gas calibration checks.

Low Power Mode

The instrument optionally can enter a lower power mode when not performing testing. The time interval between last activity and low power fall back is user defined.

Remote Activation

Instrument can be activated by a phone call for communications and remote testing when in low power mode.

Calibration

Instrument is capable of performing single or multi-point calibrations. The process will be controlled via computer in house or by a menu driven sequence for stand alone, field calibration.

Re-circulation

Instrument can be used with a simulator in a re-circulation mode to extend the life of a wet simulator's solution. The new CMI digital simulator attaches to the instrument without heated tubing while providing re-circulation.

PERFORMANCE

Range

0.003 to 0.600 gram/210 liters (0.015 to 3.000mg/L)

Accuracy

±3% or ± .003 grams/210 liters, whichever is greater.

Precision

Standard deviation of .003 or better

Test Time

Less than one minute (excluding data entry).

Interferent Detection

Meets OIML specifications.

Analytical

Dual Wavelength

The instrument analyzes the sample at two wavelengths: 3.4 uM and 9.36 uM.

Pulsed Source

The instrument eliminates the need for a mechanical chopper in the analytical section by using a fixed pulsed source.

Internal Standard

An internal standard will be performed by varying the power to the source and measuring the result at the detector. This effectively changes the intensity of the energy at the detector without inserting something mechanically into the breath path.

Sample Input Selector

An input sample switch (solenoid driven) will select between the breath hose and the external calibration standard.

Electrical

Power

Input Voltage AC: 90 – 264 VAC @ 1.5Amps max @115VAC, 47-63 HZ
Input Voltage DC: 12VDC nominal (10 – 15 VDC range), 7 Amps max.

Fusing and Filtering

AC utilizes passive filtering to meet FCC specs. AC is fused via the AC mains switch module.
DC will comply with ISO 7637-0 (road vehicles – electrical

disturbances). DC power is protected from over and reverse voltage. DC is fused separately and is accessible externally.

Environmental

Operating temperature range

0° C to 40° C.
Warm-up time not to exceed 20 minutes at 20° C.
Warm-up time not to exceed 40 minutes at 5° C *(target)*.

Storage temperature

-10°C to 60°C

Humidity

10% to 95%, non-condensing

Barometric Pressure

600 – 1300 hPa

Mechanical

Dimensions

14"w x 10"h x 8.5"d

Weight

15 lbs.

Case Material

The case will be low-pressure injection molded from ABS to form and outer housing of structural foam. The structural foam housing will provide a rugged and chemical resistant enclosure for the instrument. The inner surface will be coated with a metallic material *(if necessary)* to shield against RFI and provide EM compatibility.

Handle

Fold away handle that runs the length of the instrument to insure a balanced load no matter which options are selected.

Printer Door

Removable Printer Door for easy access to printer mechanism and paper for ease of replacement.

Mouthpiece Storage

Storage of up to 8 mouthpieces *(current mouthpiece design)* located in the center of the breath hose holder. Heat from the breath hose will keep the cavity and the mouthpieces warmer than ambient.

Zero Wall Clearance

Instrument can be operated with back against a wall. Connects with long shrouds mount vertically for space efficiency.

Cooling Fan

A temperature controlled cooling fan is included to provide filtered airflow through the instrument for cooling.

Safety

UL Approved
CSA Approved
CE Approved

All board level DC/DC converters will be protected by self re-settable fuses.

Compatibility

FCC Part 15 Class A (shoot for B)
FCC Part 68
US DOT (58FR – 48705)
OIML

Specifications requiring further review:
UK Home Office

South Africa SABS
German Spec
WELMEC WG7

Plumbing

Breath tube

Heated flexible hose, 36" in length. Temperature regulated to ± 3° C. Breath tube will rest freely in a groove at the top of the instrument.

Calibration Port Inlet

Quick disconnect fitting located on the right side of the instrument.

Calibration Port Return

Quick disconnect fitting located on the right side of the instrument next to the calibration port inlet. *(different sex)*

Breath Flow Sensor

Pressure transducer that translates pressure into flowrate. The sample point is located just after the inlet sample switch to allow for measurement of both breath and ethanol standard flow rates. Subsequent volume measurement accuracies are ± 10%.

Non-Return Valve

A non-return valve will be placed in the system to prevent suck back.

Particulate Screen

A metal screen will be placed at the base of the breath hose to prevent large particles from entering the sample chamber.

Exhaust

The pump and breath exhausts will exit the instrument out the back panel. A diffuser will be used to cover the exhaust greatly reducing the chance of blockage.

Mouthpieces

The instrument will accept either CMI or Lion standard mouthpieces for evidential instruments.

Pump

Oscillating diaphragm.

Electronics

System CPU

AMD AM188ES @ 20MHz, 80x86 software compatible, 16 bit internal, 8 bit external data bus.

Memory

512Kbytes Flash in system programmable executable memory.

128Kbytes Battery backed SRAM for configuration and fast access storage.

1Mbytes data storage memory expandable up to 2Mbytes.

Real Time Clock

Accurate to ± 10 minutes per year.

Software

Development Environment

Borland C/C++ Integrated Development Environment (IDE) with turbo debugger compatibility.

Operating System

US Software's MultiTask! Real Time Operating System(RTOS) with pre-emptive, priority-based multi-tasking. Conventional time slice multitasking is also supported.

Documentation

Operators Manual

An operator's manual covering instrument operation and instrument configuration will be available at instrument release.

Service Manual

A service manual covering instrument assemblies, circuit descriptions and schematics, troubleshooting, parts list, and testing procedures will be available one month after instrument release.

Other

Promotional literature information may be pulled from a then update of this document.

Optional

External Printer

A Centronics compatible, uni-directional parallel port.

Wireless Communications

IRDA serial link. *(not in initial release).*

Alternate Displays

Vacuum Florescent, Dot matrix, 2 line x 20 characters with a character height of 5 mm. Low Cost Option

LCD graphics display, 240 x 64 pixel, with LED backlighting.

Serial Communications

1. RS232 connection for intelligent simulator.
2. RS232 connection for future enhancements (barcode reader).

Alternate Internal Printer

Thermal, line printer 384 dots/line, 42 column, 2" per second print speed, 2.25" paper width, 80' paper length, 3mm character height. Low paper (indicator on paper)/paper out detection. *(Non – US Standard)*

Breath temperature measurement

(not in initial release)

Internal Modem

An internal 14.4K baud modem interfaces to a standard phone line via a RJ-11 connector.

Note: Non-US instruments can either use the above modem or an external modem.

Modem

Both 33.6K and 56K modems are optional although current US phone line architectures do not support speeds above 33.6K in point to point connections.

Magnetic Strip Reader

Built into the case. Will read 1, 2, or 3 track magnetic strips which are found on ID cards and drivers licenses.

Carry Strap

Attaches to handle for easy shoulder carrying.

Heated Simulator Vapor Hoses

Temperature regulated simulator hoses will allow for connection of a Guth 34C/2100 style simulator to the instrument initially. Support for other simulators will be added as needed. Heated hoses will be regulated and monitored within ± 3° C.

Voice Playback and Record

The instrument will be able to play back a standard set of voice recordings triggered by key events during instrument operation. To minimize customization, the instrument can optionally include a microphone to allow recording of messages by the customer. *(not in initial release)*

Battery Power

A nickel-cadmium 6 AmpHour battery pack is projected to replace the AC supply when battery power is specified. A separate laptop computer style AC power module will be used for AC mains operation and battery recharging. The instrument is targeted to run approx. 1 hour on battery power. *(not in initial release)*

Remote Display

The spare RS-232 port can be used to drive an external remote display. The display provides it's own power supply and plugs into AC mains. The remote display will mirror the instrument display. *(This option will be developed on an as needed basis.)*

Simulator Brackets

A simulator bracket will not be required when using the CMI digital simulator as it attaches directly to the instrument. A separate bracket will be designed for the Guth 34C/2100 Simulator. Other brackets will be developed as needed.

Membrane Keyboard support

The I6000 keyboard will be supported by developing a circuit to allow the keyboard to emulate a standard PC keyboard. *(This option will be developed on an as needed basis.)*

Instrument Cover

A snap on cover will be pursued after initial instrument release, if interest warrants. The cover would snap over the breath hose and display areas to protect them during transport.

Gas Delivery System

An external solenoid port can be optionally added to the instrument allowing for connection of a dry gas delivery system. The currently envisioned system will be in a separate ABS case *(Pelican)* designed to hold a Scotty V cylinder, regulator, and solenoid.

An alternate system could be designed to attach directly to the instrument case. This attachable system would use either a Scotty 17 or a new cylinder size designed by SSG.

2D Barcode Reader

An optional 2 dimensional barcode reader can be attached to the spare serial port for scanning drivers licenses or ID cards so equipped.

External AC Outlet

A female AC outlet can optionally be included to allow the connection of a simulator. The power to this connector will be applied when AC main power cord is connected. The outlet power is not fused or switched through the instrument.

Production

Instrument will be capable of being produced in the US or in the UK.

Assemblies will be kept as modular as possible with optional accessories affecting as few assemblies as possible.

Service and Maintenance

Extensive Diagnostics as well as event counters will be used to track instrument operation and log instrument usage.

The instrument will be serviceable by access panels and removable covers where appropriate.

Warranty

A standard warranty of 2 years is being allowed for during the parts selection process to reduce/eliminate premature instrument failure.