

INTOX EC/IR

THE UNIT

The EC/IR is a desktop instrument featuring reliable fuel cell analysis, combined with real time analytical advantages of infrared technology.

UNIQUE FEATURES

Parallel processing allows communications and analysis functions to be performed simultaneously

- Dual sensor utilizes the best capabilities of both electrochemical (EC) sensors and infrared (IR) detectors
- Fully automated test procedure
- Advanced self-diagnostic capabilities
- Automatic accuracy checks and calibration
- Capable of remote operation and remote trouble-shooting
- Stores multiple test protocols

ANALYTICAL**Sensor**

The fuel cell sensor generates a response that is proportional to the Breath Alcohol Concentration. The response is linear and requires one point calibration. Multi-filter Infrared detector offers real time analysis of breath sample.

Accuracy & Precision

U.S. DOT approved for evidential use. Meets and exceeds the federal model specification for traffic enforcement and Omnibus Breath Alcohol Testing.

Specificity

The fuel cell sensor is specific for alcohol. It does not respond to acetone or other breath substances.

Measurement Limits

The EC/IR can accurately detect breath alcohol levels between .000 - .400 BrAC.

Response Time

The instrument responds within 10 seconds on negative samples and within 30 - 45 seconds on positive samples.

Sampling Rate

It can be used every 15 to 20 seconds when negative tests are encountered. After a positive test, depending on the amount of alcohol in that sample, the instrument may require up to a 2 minute wait before further testing can occur.

Calibration

Checks and calibrations should be performed with either a National Highway Traffic Safety Administration (NHTSA) approved wet bath simulator or a dry gas standard. Fully automatic calibration can be selected as an option with either a dry gas standard or wet bath simulator.

SAMPLING REQUIREMENTS

The instrument has software controlled automatic sampling based on volume and/or plateau of ethanol level in breath.

Sampling Errors Detection

Instrument detects insufficient volume, early blows, inconsistent blows and mouth alcohol.

Mouthpieces

Individually wrapped one-way check trap mouthpieces are recommended.

ELECTRICAL REQUIREMENTS**Power Supply**

90V/60Hz to 260V/50Hz. Approx. 70 Watts

PHYSICAL CHARACTERISTICS**Size/Weight**

Height: 7" Width: 17 3/4" Depth: 18" Weight: 22 lbs.

Case Construction

Extruded and welded sheet aluminum

MEMORY/COMMUNICATIONS**Data Storage**

Up to 1 MByte of RAM

Processor

2 Motorola HC11 micro controllers

Communications

Sends and receives all data in Kermit file formats and is capable of initiating calls to a host computer system.

INPUT/OUTPUT DEVICES**Keyboard**

The Intox EC/IR is compatible with virtually any PC AT-compatible keyboard.

Display

The Intox EC/IR display is a two line by twenty character vacuum fluorescent display. The display is:

- highly reliable - rated for a lifetime of 50,000 hours.
- very bright - 685 cd/m² (or 200 fL)
- low power
- supports a large international character set

Printer

The Intox EC/IR incorporates a high performance thermal printer.

- 7.5 lines per second
- 150 dots/inch resolution
- Integrated paper handling system that requires no threading which means changing the paper roll takes seconds and there are no paper jams.
- Multiple text modes including compressed, double width and height, bold and reverse image.
- Large character set.
- Quiet
- No ink ribbons to change
- Available with heat and UV resistant paper for long-lasting printouts

External Printer

The Intox EC/IR can print to most IBM PC-compatible Centronix printer via the 25-pin printer port on the back panel of the instrument.

Internal Modem

- Hayes compatible
- 2400 baud (optional 9600 baud)
- Enhanced AT commands.

Audio

Built-in speaker

Bar Code and Magnetic Stripe

The Intox EC/IR supports a variety of PC-compatible devices

Other I/O

2 RS-232 serial communication ports
1 parallel port

Intoximeters Inc.

TECHNICAL CHARACTERISTICS

THE UNIT

The EC/IR 2 is a bench-top instrument featuring reliable fuel cell analysis, combined with real time analytical advantages of infrared technology.

UNIQUE FEATURES

- Sampling system utilizes the capabilities of both electrochemical (EC) sensors and infrared (IR) detectors
- Smallest IR sampling chamber of competitive bench-top infrared systems. This feature reduces sample dilution due to 'dead space' volumes and provides precise end expiratory breath sampling, and highly sensitive mouth alcohol detection.
- Superior Radio Frequency Interference (RFI) detection.
- Infrared system is capable of analyzing breath carbon dioxide concentrations along with alcohol concentrations in order to capture a consistent deep lung breath on both alcohol rich and alcohol free samples. The infrared system also assists in the determination of mouth alcohol, sample suck back and other breath sample verification and validation.
- Easy to read 256 x 32 pixel graphic vacuum fluorescent display
- Advanced self-diagnostic capabilities
- Automatic accuracy checks and calibration
- Capable of remote operation and remote trouble-shooting

ANALYTICAL

Sensor

The fuel cell sensor generates a response that is proportional to the Breath Alcohol Concentration. The fuel cell sensors response to alcohol is linear and therefore only requires one point calibration.

Infrared Sensor

Single-wavelength, multi-filter detection of ethanol and carbon dioxide offers real time analysis of breath sample.

Accuracy & Precision

US DOT approved for evidential use. Meets and/or exceeds the federal model specification for traffic enforcement and Omnibus Breath Alcohol Testing. OIML and European MID compliant.

Specificity

The fuel cell sensor is highly for alcohol. It does not respond to acetone or other breath substances after a fifteen-minute deprivation period.

Measurement Limits

The EC/IR 2 can accurately detect breath alcohol levels between .000 - .400 BrAC.

Response Time

The instrument responds within 10 seconds on negative samples and within 20 - 30 seconds on positive samples.

Sampling Rate

It can be used every 15 to 20 seconds when negative tests are encountered. After a positive test, depending on the amount of alcohol in that sample, the instrument may require up to a two-minute wait before further testing can occur.

Drift

Instruments will maintain calibration (plus or minus .005 at the .100 level) from six months to more than one year.

Calibration

Checks and calibrations should be performed with either an Intoximeters and National Highway Traffic Safety Administration (NHTSA) approved wet bath simulator or dry gas standard. Fully automatic calibration can be selected as an option with either a dry gas standard or wet bath simulator. Instrument can be programmed to perform scheduled accuracy checks.

Environmental

The standard instrument is designed to operate between 10°C and 35°C.

SAMPLING REQUIREMENTS

The instrument has software controlled automatic sampling based on volume and flow analysis and/or plateau of ethanol level in breath.

Sampling Errors

Instrument detects insufficient volume, early blows, inconsistent blows and mouth alcohol AND will automatically abort invalid samples.

Mouthpiece

Individually wrapped one-way checktrap mouthpieces are recommended.

ELECTRICAL REQUIREMENTS

Power Supply

90-270 VAC, 50/60 Hz. Approx. 70 Watts

PHYSICAL CHARACTERISTICS

Size/Weight

Height: 7 1/8" Width: 18 3/4" Depth: 14 1/2" Weight: 15 1/2 lbs.

Case Construction

Aluminum, machined and welded sheet

MEMORY/COMMUNICATIONS

Data Storage

1 Mbytes program storage 128 Kbytes RAM
128 Kbytes non-volatile test storage

Processor

1 Motorola HC16 microcontroller

Communications

EC/IR 2 uses error correcting transfer of all data and is capable of initiating/receiving calls to/from a host computer system such as IntoxNet.

INPUT/OUTPUT DEVICES

Keyboard

The Intox EC/IR 2 is compatible with most PC AT-compatible keyboards. Optional Start Button.

Display

The Intox EC/IR 2 display is a 256 x 32 pixel graphic vacuum fluorescent display. The display is:

- highly reliable - rated for a life time of 50,000 hours.
- very bright - 685 cd/m2 (or 200 fL)
- low power
- supports many international character sets and fonts

Printer-SILENT

The Intox EC/IR 2 incorporates a high performance thermal printer.

- 7.5 lines per second
- 150 dots/inch resolution
- Integrated paper handling system requires no threading, takes seconds to change paper roll, no paper jams.
- Multiple text modes including compressed, double width and height, bold and reverse image
- No ink ribbons to change
- Available with heat and UV resistant paper for long-lasting printouts

External Printer

The Intox EC/IR 2 can print to most IBM PC-compatible Centronix printer via the 25-pin printer port on the back panel of the instrument.

Audio

Built-in beeper

Bar Code and Magnetic Stripe

The Intox EC/IR 2 supports a variety of PC-compatible devices

Internal Modem

- Hayes compatible
- Up to 33.6 Kbps
- Enhanced AT commands

Other I/O

2 RS-232 serial communications ports
1 parallel port

STANDARDS

- Designed and built in an ISO9001 registered facility.
- Meets UL 1950.
- Meets CE Mark requirements.
- Meets FCC Part 15.
- Meets FCC Part 68 (modem.)

Intoximeters Inc.