



GAS DETECTORS

SPERIAN
Protection you can trust

- Single Gas Monitors
- Multi-Gas Monitors
- Docking Stations
- Calibration Gases and Regulators
- Fixed Point Detection Systems
- Air Purifying Systems



WARNING

This document provides only an overview of the Sperian products shown. It does not provide important product warnings and instructions. Sperian recommends all users of gas detection equipment undergo thorough training and that all warnings and instructions provided with the products be thoroughly read and understood prior to use. Failure to read and follow all product warnings and instructions may result in serious personal injury, illness or death.

Sperian Protection Hong Kong Ltd

Room No. 1403, 14/F, Stanhope House,
734 King's Road, Quarry Bay, Hong Kong.
Tel: +852 2707 0922 Fax: +852 2707 0932
Email: Asia@SperianProtection.com



Table of Contents

| | |
|--|----|
| ToxiLtd / Toxi3Ltd/ToxiPro Single Sensor Gas Detectors | 1 |
| Toxi Vision Single Sensor Gas Detectors | 4 |
| Mighty-Tox 90-Day Disposable Single Sensor Gas Detectors | 7 |
| MultiPro Multi-Gas Detectors | 8 |
| MultiVision Multi-Gas Detectors | 10 |
| PhD Lite Multi-Gas Detectors | 13 |
| PhD ⁵ Multi-Gas Detectors | 17 |
| Cannonball3 Continuous Sample Draw Multi-Gas Detectors | 23 |
| IQ Express Docking Station | 28 |
| MultiPro IQ Express Docking Station | 29 |
| IQ Docking Station | 30 |
| IQ Datalink System | 31 |
| Calibration Gases, Regulators and Replacement Sensors | 32 |
| ZoneGuard Fixed Point Gas Detection Systems | 34 |
| Travelpanel 50MP Portable Air Filtration System | 36 |
| Sample Probe Assemblies and Components | 38 |
| PosiChek ³ SCBA Performance Tester | 40 |
| Biosystems Standard Warranty Gas Detection Products | 41 |

EXPORT COMPLIANCE

Any sale of products and/or technical data is subject to U.S. Export Administration Regulations and may require the approval of the U.S. Department of Commerce prior to export or re-export. Any export or re-export by the purchasers, directly or indirectly, in contravention of the U.S. Export Administration Regulations is prohibited.

Biosystems Standard Warranty
Gas Detection Products

Instrument and Accessory Warranty Periods

| PRODUCT(S) / WARRANTY PERIOD |
|---|
| PhD ⁵ , PhD Lite, PhD Plus, PhD Ultra, Cannonball3, MultiVision, Toxi, Toxi/Oxy Plus, Toxi/Oxy Ultra, Toxi Vision, and Ex Chek. As long as the instrument is in service. |
| ToxiPro/OxyPro and MultiPro 2 years from date of purchase. |
| ToxiLtd 2 years after activation or 2 years after the “Must Be Activated By” date, whichever comes first. |
| Toxi3Ltd 3 years after activation or 3 years after the “Must Be Activated By” date, whichever comes first. |
| Mighty-Tox 90 days after activation or 90 days after the “Must Be Activated By” date, whichever comes first. |
| IQ Systems, Series 3000, Airpanel, Travelpanel, ZoneGuard, Gas Chek1, Gas Chek4 and Gas Chek. One year from the date of purchase. |
| Battery packs and chargers, sampling pumps, and other components, which by their design are consumed or depleted during normal operation, or which may require periodic replacement. One year from the date of purchase. |

Sensor Warranty Periods

| INSTRUMENT(S) / SENSOR TYPE | WARRANTY PERIOD |
|--|-----------------|
| PhD Plus, PhD Ultra, PhD ⁵ , PhD Lite, Cannonball3, MultiVision, MultiPro, Toxi Vision, ToxiPro and Ex Chek | |
| O ₂ , LEL**, CO, CO+, H ₂ S and Duo-Tox | 2 Years |
| All Other Sensors | 1 Year |
| Toxi, Toxi/Oxy Plus and Toxi/Oxy Ultra | |
| CO, CO+, H ₂ S | 2 Years |
| All Other Sensors | 1 Year |
| All Others | |
| All Sensors | 1 Year |

**Damage to combustible gas sensors by acute or chronic exposure to known sensor poisons such as volatile lead (aviation gasoline additive), hydride gases such as phosphine, and volatile silicone gases emitted from silicone caulks/sealants, silicone rubber molded products, laboratory glassware greases, spray lubricants, heat transfer fluids, waxes and polishing compounds (neat or spray aerosols), mold release agents for plastics injection molding operations, waterproofing formulations, vinyl and leather preservatives, and hand lotions which may contain ingredients listed as cyclomethicone, dimethicone and polymethicone (at the discretion of Biosystems Instrument Service department) void Biosystems' Standard Warranty as it applies to the replacement of combustible gas sensors.

Limited Warranty

Biosystems warrants that its products are free from defects in material and workmanship. A product that is the subject of a warranty claim must be returned to Biosystems at its manufacturing location in Middletown, Connecticut. All warranty returns must be shipped pre-paid. Biosystems will then determine whether repair or replacement of the product is the appropriate remedy. This will be done at no charge to the end user. A return authorization number must be obtained from Biosystems prior to shipment.

This limited warranty does not cover any product or component found by Biosystems to have been altered, misused, abused, tampered with or improperly maintained or to have deteriorated due to aging of any component made of rubber or any other elastomer

This limited warranty does not cover any damage, loss or expense due to damage caused by accident, abuse, improper maintenance, use or misuse of the product.

This warranty is expressly in lieu of any and all other warranties and representations, express or implied, including but not limited to, the warranty of fitness for a particular purpose. Biosystems will not be liable for loss or damage of any kind connected to the use of its products or failure of its products to function or operate properly.

ToxiLtd™ / Toxi3Ltd™ / ToxiPro™

Single Sensor Gas Detectors

PRODUCT HIGHLIGHT:

A full-featured single gas monitor at a low cost.



FEATURES

DESIGN

- Compact and rugged.
- IPX5/IPX7 rated protection against water ingress.
- Over-molded boot.
- One button operation.
- Large display (backlit in ToxiPro).
- Loud alarm.
- Top and front mounted bright LED.
- Available with built-in vibrating alarm.
- Exceeds IEC 61000-4-3 for level 3 RFI immunity specifications.

LOGGING AND DOWNLOAD

- Automatic event logger (20 events, including sensor type, max, average, time and duration).
- IrDA® PC communication.
- ToxiPro comes standard with black-box recorder.
- ToxiPro available with datalogger.

BATTERIES

- ToxiLtd: Internal lithium – 2 years of operation.
- Toxi3Ltd: Internal lithium – 3 years of operation.
- ToxiPro: Replaceable lithium – 9000 hrs of operation.

SENSORS AND CALIBRATION

- ToxiLtd and ToxiPro: O₂, CO, H₂S, SO₂.
- Toxi3Ltd: CO, H₂S.
- ToxiPro: CO+, CO-H, Cl₂, NH₃, NO₂, PH₃, HCN.
- One-button automatic calibration.

READOUT

TOXIPro

- Current, max, STEL and TWA gas readings.
- Time.

TOXILTD/TOXI3LTD

- Life remaining, current gas readings during alarm and 24-hour max.

ALARMS

TOXIPro

- Low, high, STEL and TWA audible and visual alarms.
- Optional vibrating alarm.

TOXILTD/TOXI3LTD

- Low and high audible and visual alarms.
- Optional vibrating alarm.

STANDARD ACCESSORIES

- Heavy duty alligator clip.
- Calibration adapter.
- Reference manual and quick reference card.

OPTIONAL ACCESSORIES

- Lanyard.
- IQ Express bump test and calibration station.
- Belt clip / hard hat adapter (standard slot).
- Cell phone style swivel clip.

COMPLETE TOXIPro KIT CONFIGURATION

VALUE PACK

- All standard accessories.
- Compact sized (34 liter) cylinder of calibration gas.
- Fixed flow regulator.
- Foam-lined carrying case.

biosystems

No one makes it easier™

ToxiLtd / Toxi3Ltd / ToxiPro / Single Sensor Gas Detectors

ToxiLtd Configuration

| PART NUMBER | TOXILTD SENSORS INSTALLED | |
|-------------|---------------------------|------------------|
| 54-44-90 | O ₂ | Oxygen |
| 54-44-01 | CO | Carbon Monoxide |
| 54-44-02 | H ₂ S | Hydrogen Sulfide |
| 54-44-03 | SO ₂ | Sulfur Dioxide |

Toxi3Ltd Configuration

| PART NUMBER | TOXILTD SENSORS INSTALLED | |
|-------------|---------------------------|------------------|
| 54-52-01 | CO | Carbon Monoxide |
| 54-52-02 | H ₂ S | Hydrogen Sulfide |

ToxiPro Configuration

| PART NUMBER | TOXIPRO SENSORS INSTALLED | | Value Pack |
|-------------|---------------------------|---------------------|------------|
| 54-45-90 | O ₂ | Oxygen | K |
| 54-45-01 | CO | Carbon Monoxide | • |
| 54-45-05 | CO+ | CO Plus | • |
| 54-45-19 | CO-H | CO Minus | • |
| 54-45-02 | H ₂ S | Hydrogen Sulfide | • |
| 54-45-03 | SO ₂ | Sulfur Dioxide | • |
| 54-45-21 | NH ₃ | Ammonia | • |
| 54-45-18† | Cl ₂ | Chlorine (specific) | • |
| 54-45-09 | NO ₂ | Nitrogen Dioxide | • |
| 54-45-10 | HCN | Hydrogen Cyanide | • |
| 54-45-13 | PH ₃ | Phosphine | • |

† The non specific Cl₂ sensor can be used for the detection of both gases. The specific Cl₂ sensor is designed for the target gas only.

ToxiLtd / Toxi3Ltd/ToxiPro Options

(Add option code letter to the part number.)

| CODE | DESCRIPTION |
|----------|---|
| K | VALUE PACK Value Pack Kits contain standard accessories, compact sized calibration gas, fixed flow rate regulator, and foam-lined carrying case. |
| V | VIBRATING ALARM Adds an internal vibrating alarm which will work in tandem with the audible and visual alarms. |
| D | DATALOGGING Available for ToxiPro only. Enables the ToxiPro to record and download measurements and time history data. Computer must support IrDA® to download. |

ToxiLtd / Toxi3Ltd / ToxiPro Single Sensor Gas Detectors

ToxiPro Replacement Sensors

| PART NUMBER | DESCRIPTION | RANGE | RESOLUTION |
|-------------|--|---|----------------|
| 54-47-90 | O ₂ Oxygen (2 years) | 0 – 30% / Vol. | 0.1% |
| 54-47-01 | CO Carbon Monoxide | 0 – 1000 PPM | 1 PPM |
| 54-47-05 | CO+ CO Plus dual purpose CO/H ₂ S (provides a non-specific readout for CO and H ₂ S) | CO: 0 – 1000 PPM H ₂ S: 0 – 200 PPM | 1 PPM 1 PPM |
| 54-47-19 | CO-H CO Minus, reduced sensitivity to H ₂ | 0 – 1000 PPM | 1 PPM |
| 54-47-02 | H ₂ S Hydrogen Sulfide | 0 – 200 PPM | 1 PPM |
| 54-47-03 | SO ₂ Sulfur Dioxide | 0 – 20 PPM | 0.1 PPM |
| 54-47-21† | NH ₃ Ammonia | 0 – 100 PPM | 1 PPM |
| 54-47-18† | Cl ₂ Chlorine (specific) | 0 – 20 PPM | 0.1 PPM |
| 54-47-09† | NO ₂ Nitrogen Dioxide | 0 – 20 PPM | 0.1 PPM |
| 54-47-10† | HCN Hydrogen Cyanide | 0 – 100 PPM | 0.1 PPM |
| 54-47-13 | PH ₃ Phosphine | 0 – 20 PPM | 0.01 PPM |
| 54-47-03 | SO ₂ Sulfur Dioxide | 0 – 100 PPM | 0.1 PPM |

† Special reactive gas calibration adapter and tubing required for proper calibration.

ToxiLtd / Toxi3Ltd/ToxiPro

Accessories

| PART NO. | DESCRIPTION |
|------------|---|
| 54-46-101 | Replacement sensor filter. |
| 35-964 | Lanyard for ToxiLtd and ToxiPro. |
| 54-46-102 | Replacement belt clip for ToxiLtd and ToxiPro. |
| 54-46-103 | Replacement clothes clip for ToxiLtd and ToxiPro. |
| 54-46-109 | Replacement cell phone-style swivel clip. |
| 54-46-104 | Manual sample draw kit. Includes adapter, probe, and 10' tubing. Not for use with Cl ₂ . |
| 54-46-105 | Case for Value Pack. Foam-lined case, with room for 1 compact sized calibration gas cylinder. |
| 54-46-106 | Calibration / sample draw adapter. |
| 54-46-107 | Calibration adapter. Includes FEP lined tubing for reactive gases (NH ₃ , Cl ₂ , HCN and NO ₂). |
| 54-46-108 | ToxiPro datalogger upgrade. Field upgradeable. |
| 54-26-0603 | ToxiPro BioTrak Software Kit. Includes BioTrak software and manual. |

† Computer must be equipped with infrared adapter (IrDA) to download.

‡ Download software not included.

Toxi Vision®

Single Sensor Gas Detectors

PRODUCT HIGHLIGHT:

A tough and rugged single sensor gas detector.



FEATURES

DESIGN

- IPX5/IPX7 rated protection against water ingress.
- Compact and rugged.
- One button operation.
- Large backlit display.
- Loud alarm (92dBA @ 1 foot).
- RFI immunity to 40 V/m.
- Top and front mounted bright LED.
- Available with built-in vibrating alarm.
- Available with rubber boot.
- Security beep (selectable via PC).

BATTERIES

- Alkaline and rechargeable version available for LEL.
- Up to 4000 hours continuous operation for the O₂ or Toxic versions, 13 hours for alkaline LEL version and 15 hours for rechargeable LEL version.

SENSORS AND CALIBRATION

- O₂, CO, CO+, CO-H, H₂S, SO₂, Cl₂, NH₃, NO₂, HCN, PH₃, LEL.
- One-button automatic calibration.

READOUT AND ALARMS

- Current and Max gas readings.
- STEL and TWA readings (selectable via PC).
- Low, High, STEL and TWA alarms.
- Programmable alarm levels (via PC).

STANDARD ACCESSORIES

- Belt clip
- Calibration adapter.
- Reference manual.
- Quick reference card.

COMPLETE TOXI VISION KIT CONFIGURATION

VALUE PACK INCLUDES

- All standard accessories.
- Compact sized (34 liter) cylinder of calibration gas.
- Fixed flow regulator.

(See matrix for available value pack configurations.)

TOXI VISION CO RESPONSE KIT

CO RESPONSE KIT INCLUDES

- Toxi Vision CO Instrument.
- 10 ToxiTube Dosimeter Tubes.
- All standard accessories.
- Compact sized (34 liter) cylinder of calibration gas.
- Fixed flow regulator.
- Waterproof, Pelican™ style foam-lined carrying case.
- Part Number: 54-37-01RK

biosystems

No one makes it easier™

Toxi Vision Single Sensor Gas Detectors

Toxi Vision Configuration

| PART NUMBER | PHD ULTRA SENSORS INSTALLED | Value Pack |
|-------------|--|------------|
| 54-37-90 | O ₂ Oxygen | K |
| 54-37-01 | CO Carbon Monoxide | • |
| 54-37-05 | CO+ "CO Plus" | • |
| 54-37-19 | CO-H CO Minus, reduced sensitivity to H ₂ | • |
| 54-37-02 | H ₂ S Hydrogen Sulfide | • |
| 54-37-03 | SO ₂ Sulfur Dioxide | • |
| 54-37-21 | NH ₃ Ammonia | • |
| 54-37-08† | Cl ₂ Chlorine (non-specific) | • |
| 54-37-18† | Cl ₂ Chlorine (specific) | • |
| 54-37-09 | NO ₂ Nitrogen Dioxide | • |
| 54-37-10 | HCN Hydrogen Cyanide | • |
| 54-37-13 | PH ₃ Phosphine | • |
| 54-37-80A | LEL LEL (Alkaline) | • |
| 54-37-80ND‡ | LEL LEL (Rechargeable) | • |

† The non specific Cl₂ sensor can be used for the detection of both gases. The specific Cl₂ sensor is designed for the target gas only.

‡ The rechargeable version is also available with Datalogging, with a "D" at the end of part number.

Toxi Vision Options

(Add option code letter to the part number.)

| CODE | DESCRIPTION |
|----------|--|
| K | VALUE PACK Value Pack Kits contain standard accessories, compact sized calibration gas, fixed flow rate regulator, and compact foam-lined carrying case. |
| V | VIBRATING ALARM Adds an internal vibrating alarm, which will work in tandem with the audible and visual alarms. |
| B | RUBBER BOOT Includes Toxi Vision protective boot. |

Toxi Vision Single Sensor Gas Detectors

Toxi Vision Replacement Sensors

| PART NUMBER | DESCRIPTION | RANGE | RESOLUTION |
|-------------|--|---|----------------|
| 54-39-90 | O ₂ Oxygen (2 years) | 0 – 30%/Vol. | 0.1% |
| 54-39-01 | CO Carbon Monoxide | 0 – 1000 PPM | 1 PPM |
| 54-39-05 | CO+ Dual purpose CO / H ₂ S Provides a non-specific readout for CO and H ₂ S | CO: 0 – 1000 PPM H ₂ S: 0 – 200 PPM | 1 PPM 1 PPM |
| 54-39-19 | CO-H CO Minus, reduced sensitivity to H ₂ | 0 – 1000 PPM | 1 PPM |
| 54-39-02 | H ₂ S Hydrogen Sulfide | 0 – 200 PPM | 1 PPM |
| 54-39-03 | SO ₂ Sulfur Dioxide | 0 – 100 PPM | 0.1 PPM |
| 54-39-21† | NH ₃ Ammonia | 0 – 100 PPM | 1 PPM |
| 54-39-08† | Cl ₂ Chlorine (non-specific) | 0 – 20 PPM | 0.1 PPM |
| 54-39-18† | Cl ₂ Chlorine (specific) | 0 – 20 PPM | 0.1 PPM |
| 54-39-09† | NO ₂ Nitrogen Dioxide sensor | 0 – 20 PPM | 0.1 PPM |
| 54-39-10† | HCN Hydrogen Cyanide | 0 – 100 PPM | 0.1 PPM |
| 54-39-13† | PH ₃ Phosphine | 0 – 10 PPM | 0.01 PPM |

† Special reactive gas calibration adapter required for proper calibration.

Toxi Vision Accessories

| PART NO. | DESCRIPTION |
|----------|---|
| 54-38-03 | Rubber boot. |
| 54-38-04 | Toxi Vision PC programming kit. Includes software and serial interface cable. |
| 35-964 | Lanyard for Toxi Vision. |
| 54-38-05 | Replacement belt clip. |
| 54-38-06 | Manual sample draw kit. Includes adapter, probe, and 10' tubing Not for use with Cl ₂ . |
| 54-38-07 | Case for Value Pack. Foam-lined case, with room for 1 compact sized calibration gas cylinder. |
| 54-38-01 | Calibration / sample draw adapter. |
| 54-38-09 | Calibration adapter. Includes FEP lined tubing for reactive gases (NH ₃ , Cl ₂ , HCN and NO ₂). |
| 54-38-11 | Replacement 10-Pack ToxiTube Dosimeter Tubes. |

Mighty-Tox

90-Day Disposable Single Sensor Gas Detectors

PRODUCT HIGHLIGHT:

The smallest 90-day disposable single sensor monitor.



FEATURES

DESIGN

- Disposable, small and rugged ($1\frac{1}{2}$ " x $1\frac{1}{8}$ " x $\frac{7}{8}$ ").
- Steel clip attaches to belt, collar or hard hat.
- RFI-protected metal-plated ABS case.
- Less than 1 oz.
- Built-in test button.

OPERATING LIFE

- 90 days of detection from time of activation.
- Warning chirp for seven days prior to shutdown.
- 180-day shelf life.

ALARMS

- Bright LED (alarm and security flash).
- Two alarm set points.
- Two tone alarm.
- Low battery / shutdown.

SENSORS

- CO and H₂S versions available.
- Accurate electrochemical sensor.

STANDARD ACCESSORIES

- Detector in sealed container.
- Steel clip.
- Bump test adapter.
- Operators guide.

Mighty-Tox Descriptions

| PART NO. | SENSOR INSTALLED / ALARM LVL |
|------------|--|
| 54-28-01 | Carbon Monoxide (CO) (35 and 100 ppm) |
| 54-28-01-C | Carbon Monoxide (CO) (25 and 100 ppm) |
| 54-28-02 | Hydrogen Sulfide (H ₂ S) (10 and 20 ppm) |

Mighty-Tox Miscellaneous Accessories

| PART NO. | DESCRIPTION |
|----------|----------------------------------|
| 10-384 | Bump test adapter for Mighty-Tox |

biosystems

No one makes it easier™

MultiPro™

Multi-Gas Detectors



PRODUCT HIGHLIGHT:

*Feature rich at a low cost
confined space instrument.*

FEATURES

DESIGN

- One button operation.
- Real time gas readings.
- Easy-to-read front-mounted backlit graphic display.
- IrDA port for communication with PC.
- Rated IPX5 for protection against water ingress.
- Exceeds IEC 1000-4-3 for level 3 RFI immunity specifications.

OPTIONAL SLIP-ON PUMP

- Software-controlled pump.
- Powered by the MultiPro battery.
- Automatic low flow alarm.
- Automatic leak test before every use.

BATTERIES

- Easily interchangeable alkaline and rechargeable (Lithium Ion) battery packs.
- Long battery life.

| | | |
|-----------|------------------|-------------|
| Alkaline: | Diffusion 24 hrs | Pump 14 hrs |
| Li-Ion: | Diffusion 24 hrs | Pump 14 hrs |
- Li-Ion battery recharges in less than 5 hours.

SENSORS AND CALIBRATION

- Three sensors and up to four channels of direct detection. O₂, LEL, and a choice of CO, H₂S or Duo-Tox two channel CO/H₂S sensor.
- Field replaceable sensors.
- One button auto calibration.
- Calibration due reminder.
- Sensor span reserve indicators for predictive maintenance.
- IQ compatible.

ALARMS

- Warning, Danger, STEL and TWA alarms.
- Bright LED alarm light.
- Loud audible alarm 92dBA at one foot.
- Vibrating alarm optional.

FEATURES (continued)

RECORDING

- Event Logger stores max and average readings as well as time and duration for 20 events.
- Black-Box recorder with over 40 hours of storage.
- Available with optional datalogging for convenient and easy downloading to PC.
- Compatible with Biosystems BioTrak® Software.

STANDARD ACCESSORIES

- Clothing clip.
- Reference manual.
- Laminated quick reference card.
- Rechargeable Li-Ion version includes charger.
- Calibration adapter.
- Training CD-ROM.

COMPLETE MULTIPRO INSTRUMENT KITS

CONFINED SPACE KIT

- All standard accessories.
- Standard sized (58 or 103 liter) cylinder(s) of calibration gas.
- Fixed flow regulator with gauge.
- Foam-lined waterproof carrying case.

VALUE PACK

- All standard accessories.
- Compact sized (34 liter) cylinder of all-in-one calibration gas.
- Fixed flow regulator.
- Foam-lined carrying case.

biosystems

No one makes it easier™



MultiPro Multi-Gas Detectors

MultiPro Configuration

Battery and/or Kit Configuration (CSK = Confined Space Kit)

| PART NUMBER | MULTIPRO SENSORS INSTALLED | Alkaline | Alkaline CSK | Alkaline Value Pack | Li-Ion | Li-Ion CSK | Li-Ion Value Pack |
|-------------|--|----------|--------------|---------------------|--------|------------|-------------------|
| 54-48-300 | LEL / O ₂ | • | • | • | • | • | • |
| 54-48-301 | LEL / O ₂ / CO | • | • | • | • | • | • |
| 54-48-302 | LEL / O ₂ / H ₂ S | • | • | • | • | • | • |
| 54-48-314 | LEL / O ₂ / Duo-Tox (CO/H ₂ S) | • | • | • | • | • | • |

MultiPro Sensors

| PART NUMBER | DESCRIPTION | RANGE | RESOLUTION |
|-------------|--|---|----------------|
| 54-49-80 | LEL Combustible Gas | 0 – 100% LEL | 1% LEL |
| 54-49-90 | O ₂ Oxygen | 0 – 30% / Vol. | 0.1% |
| 54-49-01 | CO Carbon Monoxide | 0 – 1000 PPM | 1 PPM |
| 54-49-02 | H ₂ S Hydrogen Sulfide | 0 – 200 PPM | 1 PPM |
| 54-49-14 | Duo-Tox Dual Channel CO/H ₂ S (Provides Substance specific readouts for CO and H ₂ S) | CO: 0 – 1000 PPM H ₂ S: 0 – 200 PPM | 1 PPM 1 PPM |
| 54-49-200 | MultiPro sensor exchange set. O ₂ , LEL, Duo-Tox* | | |
| 54-49-201 | MultiPro sensor exchange set. O ₂ , LEL, CO* | | |
| 54-49-202 | MultiPro sensor exchange set. O ₂ , LEL, H ₂ S* | | |

* This part number requires return of identical set of expired MultiPro sensors.

MultiPro Remote Accessories

| PART NO. | DESCRIPTION |
|-------------|---|
| 54-49-102 | Continuous sample pump for MultiPro. Includes 10' of sample tubing and sample probe assembly. |
| 54-49-104 | Sample draw/calibration adapter. |
| 54-49-105 | Sample draw kit. Includes adapter, squeeze bulb, 10' of tubing and sample probe assembly. |
| 54-05-A0403 | Sample probe assembly. Does not include tubing, squeeze bulb, or sample draw adapter. |
| 54-05-A0405 | Sample probe assembly with 11.5-inch stainless-steel probe tube. Does not include tubing, squeeze bulb, or sample draw / calibration adapter. |

MultiPro Charging and Datalogging Accessories

| PART NO. | DESCRIPTION |
|--------------|---|
| 54-49-103-1 | Slip-in fast charger (110 VAC) for MultiPro. Includes "wall-cube" supply. |
| 54-49-103-12 | Slip-in fast charger (12 VDC) for MultiPro. Includes "cigarette lighter" style adapter and vehicle mounting hardware. |
| 54-49-106 | MultiPro Alkaline battery pack. |
| 54-49-107 | MultiPro Li-Ion rechargeable battery pack. |
| 54-26-0603 | MultiPro BioTrak Software Kit. Includes BioTrak software and manual. |
| 54-26-0605S | Infrared communication device (Serial – IrDA). Requires one available PC serial port. |
| 54-26-0605U | Infrared communication device (USB – IrDA). Requires one USB port. |
| 54-49-110 | MultiPro datalogger upgrade. Field upgradeable. |

MultiPro Options

(Add option code letter to the part number.)

| CODE | DESCRIPTION |
|----------|--|
| A | ALKALINE Alkaline version may be upgraded to Li-Ion rechargeable version after purchase. |
| N | RECHARGEABLE Li-Ion version includes charger. Li-Ion option is available in Value Pack configurations. N3: includes a 220V continental charger wall cube N4: includes a 220V British charger wall cube. |
| C | CONFINED SPACE KIT (CSK) Confined Space Kits contain standard accessories, standard sized calibration gas and fixed flow rate regulator conveniently packaged in a rugged waterproof carrying case. |
| V | VALUE PACK Value Pack Kits contain standard accessories, compact sized calibration gas, fixed flow rate regulator, and foam-lined carrying case. See matrix for configurations. |
| D | DATALOGGING Enables the MultiPro to record and download measurements. This upgrade is available after purchase. Download software must be purchased separately. Computer must support infrared communication (IrDA) to download. |
| Y | VIBRATING ALARM Adds an internal vibrating alarm, which will work in tandem with the audible and visual alarms. |

MultiVision™

Multi-Gas Detectors



PRODUCT HIGHLIGHT:

A tough, durable confined space instrument with an internal pump.

FEATURES

DESIGN

- IPX5/IPX7 rated protection against water ingress.
- Rugged metal plated ABS case.
- RFI Immunity to 40V/m.
- True one button operation.
- Large front mounted backlit display.
- Loud alarm (92dBA @ 1 foot).
- Rubber boot available.

OPTIONAL BUILT-IN PUMP

- Real time display of pump status.
- Automatic low flow alarm.
- Automatic leak test before every use.
- Easily switch between diffusion and pump mode.

RECORDING

- Black-Box recorder with over 40 hours of storage.
- Available with optional datalogging for convenient and easy downloading to a computer.

SENSORS AND CALIBRATION

- Up to four sensors. O₂, LEL, CO and H₂S.
- Field replaceable sensors.
- One button auto calibration.
- Calibration due reminder.
- Sensor span reserve indicators during calibration for predictive maintenance.
- Datalogging version is compatible with IQ Dock™.

BATTERIES

- Interchangeable alkaline (3 "AA") or rechargeable (NiMH) battery packs.
- Long battery life.

| | | |
|-----------|------------------|-------------|
| Alkaline: | Diffusion 16 hrs | Pump 12 hrs |
| NiMH: | Diffusion 20 hrs | Pump 16 hrs |
- Drop-in charger for NiMH. Fits instrument, instrument with boot or battery pack alone.
- Recharges in 7 hours.

STANDARD ACCESSORIES

- Rechargeable NiMH version includes charger.
- Internal pump version includes 10' of tubing, sample probe and replacement filters.
- Belt clip.
- Calibration adapter and tubing.
- Operators guide.
- Laminated quick reference guide.
- Training CD-ROM.

COMPLETE MULTIVISION INSTRUMENT KITS

CONFINED SPACE KIT

- All standard accessories.
- Standard sized (58 or 103 liter) cylinder(s) of calibration gas.
- Fixed flow regulator with gauge.
- Foam-lined waterproof carrying case.

VALUE PACK

- All standard accessories.
- Compact sized (34 liter) cylinder of all-in-one calibration gas.
- Fixed flow regulator.
- Foam-lined carrying case.

biosystems

No one makes it easier™

IQ

MultiVision Multi-Gas Detectors

MultiVision Configuration Diffusion Version

Battery and/or Kit Configuration (CSK = Confined Space Kit)

| PART NUMBER | MULTIVISION SENSORS INSTALLED | A | AC | AV | N | NC |
|-------------|--|---|----|----|---|----|
| 54-40-30000 | LEL / O ₂ | • | • | • | • | • |
| 54-40-30100 | LEL / O ₂ / CO | • | • | • | • | • |
| 54-40-30200 | LEL / O ₂ / H ₂ S | • | • | • | • | • |
| 54-40-30102 | LEL / O ₂ / CO / H ₂ S | • | • | • | • | • |

Alkaline
Alkaline CSK
Alkaline Value Pack
NiMH
NiMH CSK

MultiVision Sensors

| PART NUMBER | DESCRIPTION | RANGE | RESOLUTION |
|-------------|--|----------------|------------|
| 54-42-80 | LEL Combustible Gas | 0 – 100% LEL | 1% LEL |
| 54-42-90 | O ₂ Oxygen | 0 – 30% / Vol. | 0.1% |
| 54-42-01 | CO Carbon Monoxide | 0 – 1000 PPM | 1 PPM |
| 54-42-02 | H ₂ S Hydrogen Sulfide | 0 – 200 PPM | 1 PPM |
| 54-42-101 | MultiVision Exchange set of 4 sensors. O ₂ , LEL, CO and H ₂ S* | | |

* This part number requires return of identical set of expired MultiVision sensors.

Most Common MultiVision Accessories

| PART NO. | DESCRIPTION |
|-------------|---|
| 54-41-004B | MultiVision Rubber Boot. Black. |
| 54-41-004R | MultiVision Rubber Boot. Red. |
| 54-41-004Y | MultiVision Rubber Boot. Yellow. |
| 54-41-007 | MultiVision Manual Sample draw kit. Includes adapter, squeeze bulb, 10' of tubing. |
| 54-41-008 | MultiVision BioTrak Download software. Requires MultiVision datalogging option be installed. Computer must support infrared communication (IrDA) to download. |
| 54-26-0605S | Infrared communication device (Serial – IrDA) – Requires one available PC serial port. |
| 54-26-0605U | Infrared communication device (USB – IrDA) – Requires one available USB port. |

MultiVision Remote Accessories

| PART NO. | DESCRIPTION |
|-------------|--|
| 54-41-001 | MultiVision Calibration Adapter. |
| 54-41-005 | MultiVision Remote Sampling Adapter (Manual sample draw). |
| 54-41-003 | MultiVision Remote Sampling Adapter (Internal pump). Includes pump activation magnet. Requires internal pump to be installed in MultiVision. |
| 54-41-006 | MultiVision Internal Pump Upgrade. Must be returned to Biosystems service department. This part number includes labor charges for upgrade. Does not include freight. |
| 54-41-007 | MultiVision Manual sample draw kit. Includes adapter, squeeze bulb, 10' of tubing and sample probe assembly. |
| 54-05-A0403 | Sample probe assembly. Does not include tubing, squeeze bulb, or sample draw adapter. |
| 54-05-A0405 | Sample probe assembly with 11.5-inch stainless-steel probe tube. Does not include tubing, squeeze bulb, or sample draw / calibration adapter. |

MultiVision Options

(Add option code letter to the part number.)

| CODE | DESCRIPTION |
|----------|--|
| A | ALKALINE Alkaline configurations may be upgraded to NiCad/Alkaline after purchase. |
| N | RECHARGEABLE NiMH configuration includes charger. NiMH configuration is not available in Value Pack. N3: includes a 220V continental charger wall cube N4: includes a 220V British charger wall cube. |
| C | CONFINED SPACE KIT (CSK) Confined Space Kits contain standard accessories, standard sized calibration gas and fixed flow rate regulator conveniently packaged in a rugged waterproof carrying case. |
| V | VALUE PACK Value Pack Kits contain standard accessories, compact sized calibration gas, fixed flow rate regulator, and foam-lined carrying case. See matrix for configurations. |
| P | INTERNAL PUMP Includes internal pump, sample draw adapter, 10 feet of tubing and sample probe. This option will allow the user to switch automatically between sample draw and diffusion mode by attaching and detaching the pump adapter. |
| D | DATALOGGING Enables the MultiVision to record and download measurements. Necessary in order to be IQ-Dock compatible. Download software must be purchased separately. Computer must support infrared communication (IrDA) to download. |

MultiVision Multi-Gas Detectors

MultiVision Charging, Datalogging and IQ Dock[®] Accessories

| PART NO. | DESCRIPTION |
|-------------|--|
| 54-41-002 | MultiVision Slip-in fast charger (110 VAC). Includes "wall cube" supply. |
| 54-41-010 | MultiVision Slip-in fast charger (12 VDC). Includes "cigarette lighter" style adapter, and vehicle mounting hardware. |
| 54-41-011 | MultiVision Five instrument 110 VAC slip-in multi-charger. Includes power supply. |
| 35-0488 | MultiVision Alkaline Battery Pack. |
| 35-0489 | MultiVision NiMH Battery Pack. |
| 54-41-016 | MultiVision PC programming kit. Used for instrument configuration only. Includes software and serial interface cable. |
| 54-41-014 | MultiVision Datalogger and infrared communication (IrDA) upgrade. Must be returned to Biosystems service department. Includes labor charges for upgrade. Does not include freight. |
| 54-41-008 | MultiVision BioTrak Download software. Requires MultiVision datalogging option be installed. Computer must support infrared communication (IrDA) to download. |
| 54-26-0605S | Infrared communication device (Serial – IrDA) – Requires one available PC serial port. |
| 54-26-0605U | Infrared communication device (USB – IrDA) – Requires one available USB port. |

MultiVision Miscellaneous Accessories

| PART NO. | DESCRIPTION |
|------------|-----------------------------------|
| 13-230 | MultiVision Reference Manual. |
| 13-232 | MultiVision Quick Reference Card. |
| 22-165 | MultiVision training video. |
| 22-166 | MultiVision training CD-ROM. |
| 54-41-004B | MultiVision Rubber Boot. Black. |
| 54-41-004R | MultiVision Rubber Boot. Red. |
| 54-41-004Y | MultiVision Rubber Boot. Yellow. |
| 42-010 | Shoulder Strap. |

MultiVision Calibration Materials and Carrying Cases

| PART NO. | DESCRIPTION |
|-------------|--|
| 54-41-012 | MultiVision Case for Value Pack. Foam-lined case, with room for 1 compact sized calibration gas cylinder. |
| 35-0259 | MultiVision Case for Confined Space Kit. Foam-lined, waterproof Pelican™ style case with room for one standard sized calibration gas cylinder. |
| 54-41-013 | MultiVision Calibration kit. Includes foam-lined carrying case with room for up to three cylinders of calibration gas. Kit contains 12-023 regulator and other fittings. Kit does not include gas. |
| 54-41-V9045 | MultiVision Value Pack "Make-up" Kit. Includes Value Pack case with 54-9045E calibration gas and 12-022 economy regulator. For use with O ₂ / LEL and O ₂ / LEL / CO configurations. |
| 54-41-V9047 | MultiVision Value Pack "Make-up" Kit. Includes Value Pack case with 54-9047E calibration gas and 12-023 regulator. For use with O ₂ / LEL / H ₂ S configurations. |
| 54-41-V9049 | MultiVision Value Pack "Make-up" Kit. Includes Value Pack case with 54-9049E calibration gas and 12-023 regulator. For use with O ₂ / LEL / CO / H ₂ S configurations. |
| 54-41-001 | MultiVision Calibration Adapter. |

PhD Lite

Multi-Gas Detectors

PRODUCT HIGHLIGHT:

A rugged, compact, durable, multi-lingual, multi-gas monitor.



FEATURES

DESIGN

- Rugged metal-plated, RFI-protected case.
- One button operation.
- Easy-to-read front-mounted backlit graphic display.
- Multiple languages.

OPTIONAL SLIP-ON PUMP

- Software-controlled pump.
- Powered by the PhD Lite battery.
- Automatic low flow alarm.
- Automatic leak test before every use.

RECORDING

- Black-Box recorder with over 40 hours of storage.
- Available with optional datalogging for convenient and easy downloading to a computer.
- Available with optional patented TouchID™ for automatic user and location identification.

SMART SENSORS AND CALIBRATION

- Three sensors. O₂, LEL and up to two toxic channels using Biosystems' Duo-Tox two channel CO/H₂S sensor (*see matrix for available sensors*).
- Field replaceable sensors.
- One button auto calibration.
- Calibration due reminder.
- Sensor span reserve indicators following successful calibration for predictive maintenance.
- IQ Compatible.

BATTERIES

- Alkaline or rechargeable (NiMH) versions.
- Up to 16 hours battery life in either configuration.
- Drop-in fast charger.
- Recharges in less than 2 hours.

STANDARD ACCESSORIES

- Hand aspirated sample draw kit with 10' of tubing, sample probe and replacement filters.
- Rechargeable NiMH version includes charger.
- Belt clip.
- Reference manual.
- Laminated quick reference card.
- Interactive training CD-ROM.
- Proper calibration adapter(s), based on sensor type(s).

COMPLETE PHD LITE INSTRUMENT KITS

CONFINED SPACE KIT

- All standard accessories.
- Standard sized (58 or 103 liter) cylinder(s) of calibration gas.
- Fixed flow regulator with gauge.
- Foam-lined waterproof carrying case.

VALUE PACK

- All standard accessories.
- Compact sized (34 liter) cylinder of all-in-one calibration gas.
- Fixed flow regulator.
- Foam-lined carrying case.

(See matrix for available value pack configurations.)

biosystems

No one makes it easier™



PhD Lite Multi-Gas Detectors

PhD Lite Configuration

Battery and/or Kit Configuration (CSK = Confined Space Kit)

| PART NUMBER | PHD LITE SENSORS INSTALLED | <div> <div></div> <div>Alkaline</div> <div>Alkaline CSK</div> <div>Alkaline Value Pack</div> <div>NiMH</div> <div>NiMH CSK</div> </div> | | | | |
|-------------|---|---|----|----|---|----|
| | | A | AC | AV | N | NC |
| 54-23-000 | No Sensors Installed | • | | | • | |
| 54-23-300 | LEL / O ₂ | • | • | • | • | • |
| 54-23-301 | LEL / O ₂ / CO | • | • | • | • | • |
| 54-23-305 | LEL / O ₂ / CO+ | • | • | • | • | • |
| 54-23-319 | LEL / O ₂ / CO-H | • | • | • | • | • |
| 54-23-302 | LEL / O ₂ / H ₂ S | • | • | • | • | • |
| 54-23-314 | LEL / O ₂ / Duo-Tox (CO/H ₂ S) | • | • | • | • | • |
| 54-23-303 | LEL / O ₂ / SO ₂ (0.0-25 / 0.1 ppm Incr.) | • | • | | • | • |
| 54-23-321 | LEL / O ₂ / NH ₃ | • | • | | • | • |
| 54-23-308† | LEL / O ₂ / Cl ₂ (non-specific) | • | • | | • | • |
| 54-23-318† | LEL / O ₂ / Cl ₂ (specific) | • | • | | • | • |
| 54-23-312† | LEL / O ₂ | • | • | | • | • |
| 54-23-320† | LEL / O ₂ | • | | | • | |
| 54-23-309 | LEL / O ₂ / NO ₂ | • | • | | • | • |
| 54-23-310 | LEL / O ₂ / HCN | • | • | | • | • |
| 54-23-313 | LEL / O ₂ / PH ₃ | • | • | | • | • |

† The non specific Cl₂ sensor can be used for the detection of both gases. The specific Cl₂ sensor is designed for the target gas only.

PhD Lite Options

(Add option code letter to the part number.)

| CODE | DESCRIPTION |
|----------|---|
| A | ALKALINE Alkaline version may accept additional battery types (dependent on applicable intrinsic safety approvals). |
| N | RECHARGEABLE NiMH version includes charger. NiMH option is not available in Value Pack configurations. PhD Lite Alkaline and NiMH batteries are not interchangeable. N3: includes a 220V continental charger wall cube N4: includes a 220V British charger wall cube. |
| C | CONFINED SPACE KIT (CSK) Confined Space Kits contain standard accessories, standard sized calibration gas and fixed flow rate regulator conveniently packaged in a rugged waterproof carrying case. |
| V | VALUE PACK Value Pack Kits contain standard accessories, compact sized calibration gas, fixed flow rate regulator, and foam-lined carrying case. See matrix for configurations. |
| D | DATALOGGING Enables the PhD Lite to record and download measurements. This option is available as an upgrade after purchase. Download software must be purchased separately. Computer must support IrDA to download. |
| T | TOUCHID6 This option includes both datalogging and TouchID™ reader. TouchID™ buttons and programming software must be purchased separately. |

PhD Lite Multi-Gas Detectors

PhD Lite Smart Sensors

| PART NUMBER | DESCRIPTION | | RANGE | RESOLUTION |
|--------------|-----------------------|--|---|----------------|
| 54-25-80 | LEL | Combustible Gas | 0 – 100% LEL | 1% LEL |
| 54-25-90 | O ₂ | Oxygen | 0 – 30% / Vol. | 0.1% |
| 54-25-01 | CO | Carbon Monoxide | 0 – 1000 PPM | 1 PPM |
| 54-25-05 | CO+ | CO Plus dual purpose CO/H ₂ S (provides a non-specific readout for CO and H ₂ S) | CO: 0 – 1000 PPM H ₂ S: 0 – 200 PPM | 1 PPM 1 PPM |
| 54-25-19 | CO-H | CO Minus, reduced sensitivity to H ₂ | 0 – 1000 PPM | 1 PPM |
| 54-25-02 | H ₂ S | Hydrogen Sulfide | 0 – 200 PPM | 1 PPM |
| 54-25-14 | Duo-Tox | Dual Channel CO/H ₂ S (provides Substance specific readouts for CO and H ₂ S) | CO: 0 – 1000 PPM H ₂ S: 0 – 200 PPM | 1 PPM 1 PPM |
| 54-25-03 | SO ₂ | Sulfur Dioxide | 0 – 25 PPM | 0.1 PPM |
| 54-25-15 | SO ₂ -Ext. | Sulfur Dioxide extended range | 0 – 100 PPM | 1 PPM |
| 54-25-04† | NH ₃ | Ammonia (for software versions prior to 2.0) | 0 – 50 PPM | 1 PPM |
| 54-25-21† | NH ₃ | Ammonia | 0 – 100 PPM | 1 PPM |
| 54-25-08† †† | Cl ₂ | Chlorine (non-specific) | 0 – 50 PPM | 0.1 PPM |
| 54-25-18† †† | Cl ₂ | Chlorine (specific) | 0 – 50 PPM | 0.1 PPM |
| 54-25-09† | NO ₂ | Nitrogen Dioxide | 0 – 50 PPM | 0.1 PPM |
| 54-25-10† | HCN | Hydrogen Cyanide | 0 – 100 PPM | 0.2 PPM |
| 54-25-13 | PH ₃ | Phosphine | 0 – 20 PPM | 0.1 PPM |

† Special reactive gas calibration adapter (54-26-0405) required for proper calibration.

†† The non-specific Cl₂ sensor can be used for the detection of both gases.
The specific Cl₂ sensor is designed for the target gas only.

Most Common PhD Lite Accessories

| PART NO. | DESCRIPTION |
|--------------|---|
| 54-26-0101 | Continuous sample pump for PhD Lite. Includes 10' of sample tubing and sample probe assembly. |
| 54-26-0101-C | Continuous sample pump for PhD Lite – Configured for reactive gas detection, such as Cl ₂ . Includes 10' of inert sample tubing and sample probe assembly. |
| 54-26-0302 | Leather holster. For PhD Lite without pump. |
| 54-26-0306 | Leather holster. For PhD Lite with pump attached. |
| 54-26-0603 | PhD Lite BioTrak Software Kit. Includes BioTrak software and manual. |
| 54-26-0605S | Infrared communication device (Serial – IrDA) – Requires one available PC serial port. |
| 54-26-0605U | Infrared communication device (USB – IrDA) – Requires one available USB port. |
| 54-27-0802 | TouchID™ programming kit. Includes software, programming wand, serial connector, 10 TouchID™ buttons, 10 key chain / wall mounts for buttons and 10 TouchID™ badges. |

PhD Lite Multi-Gas Detectors

PhD Lite Remote Accessories

| PART NO. | DESCRIPTION |
|--------------|---|
| 54-26-0101 | Continuous sample pump for PhD Lite. Includes 10' of sample tubing and sample probe assembly. |
| 54-26-0101-C | Continuous sample pump for PhD Lite – Configured for reactive gas detection, such as Cl ₂ . Includes 10' of inert sample tubing and sample probe assembly. |
| 35-0344 | Tubing kit for reactive gas detection (Cl ₂). Includes 10' of tubing plus adapters. |
| 54-26-0401 | Sample draw kit. Includes adapter, squeeze bulb, 10' of tubing and sample probe assembly. Not for use with Cl ₂ . |
| 54-05-A0403 | Sample probe assembly. Does not include tubing, squeeze bulb, or sample draw adapter. |
| 54-26-0301 | Sample draw/calibration adapter. |
| 54-05-A0405 | Sample probe assembly with 11.5-inch stainless-steel probe tube. Does not include tubing, squeeze bulb, or sample draw / calibration adapter. |

PhD Lite Charging, Datalogging and IQ Dock[®] Accessories

| PART NO. | DESCRIPTION |
|--------------|---|
| 54-26-0201 | Slip-in fast charger (110 VAC) for PhD Lite. Includes “wall cube” supply. |
| 54-26-0202 | Slip-in fast charger (12 VDC) for PhD Lite. Includes “cigarette lighter” style adapter, and vehicle mounting hardware. |
| 54-26-0204 | Five instrument 110 VAC slip-in multi-charger for PhD Lite. Includes power supply. |
| 54-26-0601†‡ | Datalogger upgrade for PhD Lite without “Black-Box” recorder. (Instrument disassembly required.) If your non-datalogging PhD Lite shows the time and date during startup, it does include a “Black-Box” recorder. |
| 54-26-0606†‡ | Datalogger upgrade for PhD Lite with “Black-Box” recorder. |
| 54-26-0603† | PhD Lite BioTrak Software Kit. Includes BioTrak software and manual. |
| 54-26-0605S | Infrared communication device (Serial – IrDA) – Requires one available PC serial port. |
| 54-26-0605U | Infrared communication device (USB – IrDA) – Requires one available USB port. |
| 54-27-0802 | TouchID™ programming kit. Includes software, programming wand, serial connector, 10 TouchID™ buttons, 10 key chain / wall mounts for buttons and 10 TouchID™ badges. |
| 54-27-0805 | 10 TouchID™ buttons. |
| 54-27-0807 | 10 TouchID™ key ring / wall mounts. Does not include TouchID™ buttons. |
| 54-27-0810 | 10 TouchID™ badges. Does not include TouchID™ buttons. |

† Computer must be equipped with infrared adapter (IrDA) to download

‡ Download software not included

PhD Lite Miscellaneous Accessories

| PART NO. | DESCRIPTION |
|------------|---|
| 13-088 | PhD Lite Reference Manual. |
| 13-089 | PhD Lite Quick Reference Card. |
| 22-125 | PhD Lite training video. |
| 22-132 | PhD Lite interactive training CD-ROM. |
| 54-26-0302 | Leather holster. For PhD Lite without pump. |
| 54-26-0306 | Leather holster. For PhD Lite with pump attached. |
| 42-011 | Wrist strap. |
| 42-010 | Shoulder Strap. |

PhD Lite Calibration Materials and Carrying Cases

| PART NO. | DESCRIPTION |
|-------------|---|
| 54-26-0404 | Case for Value Pack. Foam-lined case, with room for 1 compact sized calibration gas cylinder. |
| 35-0259 | Case for Confined Space Kit. Foam-lined, waterproof Pelican™ style case with room for one standard sized calibration gas cylinder. |
| 54-26-0501 | Calibration kit for PhD Lite. Includes foam-lined carrying case with room for up to three cylinders of calibration gas. Kit contains 12-023 regulator and other fittings. Kit does not include gas. |
| 54-26-V9045 | Value Pack “Make-up” Kit. Includes Value Pack case with 54-9045E calibration gas and 12-022 economy regulator. For use with O ₂ / LEL and O ₂ / LEL / CO, CO+, CO-H configurations. |
| 54-26-V9047 | Value Pack “Make-up” Kit. Includes Value Pack case with 54-9047E calibration gas and 12-023 regulator. For use with O ₂ / LEL / H ₂ S configurations. |
| 54-26-V9049 | Value Pack “Make-up” Kit. Includes Value Pack case with 54-9049E calibration gas and 12-023 regulator. For use with O ₂ / LEL / CO / H ₂ S and O ₂ / LEL / Duo-Tox (CO/H ₂ S) configurations. |
| 54-26-0301 | Sample draw / calibration adapter for PhD Lite. |
| 54-26-0405 | Calibration adapter for use with reactive gases (NH ₃ , Cl ₂ , HCN, NO ₂). |

PhD⁵

Multi-Gas Detectors

PRODUCT HIGHLIGHT:

Capable of monitoring up to five gases, simultaneously.



FEATURES

DESIGN

- Rugged metal-plated, RFI-protected case.
- One button operation.
- Easy-to-read top-mounted graphic display with automatic backlight.
- Multiple languages.

OPTIONAL SLIP-ON PUMP

- Software-controlled pump.
- Powered by the PhD⁵ battery.
- Automatic low flow alarm.
- Automatic leak test before every use.

RECORDING

- Black-Box recorder with over 100 hours of storage.
- Available with optional datalogging for convenient and easy downloading to a computer.
- Available with optional patented TouchID™ for automatic user and location identification.

SMART SENSORS AND CALIBRATION

- 4 sensors: O₂, LEL and up to three toxic channels using Biosystems' Duo-Tox two channel CO/H₂S sensor (see matrix for available sensors).
- Field replaceable sensors.
- One button auto calibration.
- Calibration due reminder.
- Sensor span reserve indicators during calibration for predictive maintenance.
- IQ compatible.

BATTERIES

- Interchangeable alkaline and rechargeable (NiCad) batteries.
- Up to 12 hours battery life in either configuration.
- Drop-in fast charger / data dock.
- Recharges in less than 2 hours.

STANDARD ACCESSORIES

- Hand aspirated sample draw kit with 10' of tubing, sample probe and replacement filters.
- Leather cover with shoulder/neck strap.
- Alkaline battery pack with 3 AA batteries.
- NiCad configuration includes charger / data dock.
- Belt clip.
- Operators guide.
- Laminated quick reference guide.
- Interactive training CD-ROM.
- Proper calibration adapter(s), based on sensor type(s).

COMPLETE PHD⁵ INSTRUMENT KITS

CONFINED SPACE KIT

- All standard accessories.
- Standard sized (58 or 103 liter) cylinder(s) of calibration gas.
- Fixed flow regulator with gauge.
- Foam-lined waterproof carrying case.

VALUE PACK

- All standard accessories.
- Compact sized (34 liter) cylinder of all-in-one calibration gas.
- Fixed flow regulator.
- Foam-lined carrying case.

(See matrix for available value pack configurations.)

biosystems

No one makes it easier™



PhD⁵ Multi-Gas Detectors

PhD⁵ Configuration

Battery and/or Kit Configuration (CSK = Confined Space Kit)

| PART NUMBER | PHD ⁵ SENSORS INSTALLED | | | | | |
|---------------|--|----------|--------------|-------|-----------|---------------------|
| | | Alkaline | Alkaline CSK | NiCad | NiCad CSK | Alkaline Value Pack |
| | | A | AC | N | NC | AV |
| 54-24-00000 | No Sensors Installed | • | | • | | |
| 54-24-30000 | LEL / O ₂ | • | • | • | • | • |
| 54-24-30100 | LEL / O ₂ / CO | • | • | • | • | • |
| 54-24-30500 | LEL / O ₂ / CO+ | • | • | • | • | • |
| 54-24-31900 | LEL / O ₂ / CO-H | • | • | • | • | • |
| 54-24-30200 | LEL / O ₂ / H ₂ S | • | • | • | • | • |
| 54-24-30102 | LEL / O ₂ / CO/H ₂ S | • | • | • | • | • |
| 54-24-31400 | LEL / O ₂ / Duo-Tox (CO / H ₂ S) | • | • | • | • | • |
| 54-24-30300 | LEL / O ₂ / SO ₂ | • | • | • | • | |
| 54-24-30103 | LEL / O ₂ / CO / SO ₂ | • | • | • | • | |
| 54-24-30203 | LEL / O ₂ / H ₂ S / SO ₂ | • | • | • | • | |
| 54-24-31403 | LEL / O ₂ / Duo-Tox (CO / H ₂ S) / SO ₂ | • | • | • | • | |
| 54-24-31421 | LEL / O ₂ / Duo-Tox / NH ₃ | • | • | • | • | |
| 54-24-31408† | LEL / O ₂ / Duo-Tox / Cl ₂ (non-specific) | • | • | • | • | |
| 54-24-31409 | LEL / O ₂ / Duo-Tox / NO ₂ | • | • | • | • | |
| 54-24-31410 | LEL / O ₂ / Duo-Tox / HCN | • | • | • | • | |
| 54-24-31412† | LEL / O ₂ / Duo-Tox | • | • | • | • | |
| 54-24-31413 | LEL / O ₂ / Duo-Tox / PH ₃ | • | • | • | • | |
| 54-24-31415 | LEL / O ₂ / Duo-Tox / SO ₂ – Ext. | • | • | • | • | |
| 54-24-31418† | LEL / O ₂ / Duo-Tox / Cl ₂ (specific) | • | • | • | • | |
| 54-24-31420†‡ | LEL / O ₂ / Duo-Tox | • | | • | | |
| 54-24-30121 | LEL / O ₂ / CO / NH ₃ | • | • | • | • | |
| 54-24-30108† | LEL / O ₂ / CO / Cl ₂ (non-specific) | • | • | • | • | |
| 54-24-30109 | LEL / O ₂ / CO / NO ₂ | • | • | • | • | |
| 54-24-30110 | LEL / O ₂ / CO / HCN | • | • | • | • | |
| 54-24-30112† | LEL / O ₂ / CO | • | • | • | • | |
| 54-24-30113 | LEL / O ₂ / CO / PH ₃ | • | • | • | • | |
| 54-24-30115 | LEL / O ₂ / CO / SO ₂ – Ext. | • | • | • | • | |
| 54-24-30118† | LEL / O ₂ / CO / Cl ₂ (specific) | • | • | • | • | |
| 54-24-30120†‡ | LEL / O ₂ / CO | • | | • | | |
| 54-24-31921 | LEL / O ₂ / CO-H / NH ₃ | • | • | • | • | |
| 54-24-31920†‡ | LEL / O ₂ / CO-H | • | | • | | |

Continued on Page 19

† The non specific Cl₂ sensor can be used for the detection of both gases. The specific Cl₂ sensor is designed for the target gas only.

PhD⁵ Options

(Add option code letter to the part number.)

| CODE | DESCRIPTION |
|------|-------------|
|------|-------------|

A ALKALINE

Alkaline configurations may be upgraded to NiCad/Alkaline after purchase.

N RECHARGEABLE

NiCad configuration includes charger and a spare alkaline battery pack. NiCad configuration is not available in Value Pack.

N3: includes a 220V continental charger wall cube
N4: includes a 220V British charger wall cube.

C CONFINED SPACE KIT (CSK)

Confined Space Kits contain standard accessories, standard sized calibration gas and fixed flow rate regulator conveniently packaged in a rugged waterproof carrying case.

V VALUE PACK

Value Pack Kits contain standard accessories, compact sized calibration gas, fixed flow rate regulator, and foam-lined carrying case. See matrix for configurations.

D DATALOGGING

Enables the PhD⁵ to record and download measurements. This option is available as an upgrade after purchase. Download software must be purchased separately (for Alkaline units specify 54-27-0605 for NiCad units specify 54-27-0603).

T TOUCHID[®]

This option includes both datalogging and TouchID™ reader. TouchID™ buttons and programming software must be purchased separately.

PhD⁵ Multi-Gas Detectors

PhD⁵ Configuration

Battery and/or Kit Configuration (CSK = Confined Space Kit)

| PART NUMBER | PHD ⁵ SENSORS INSTALLED | Alkaline Value Pack | | | | |
|---------------|--|---------------------|----|---|----|----|
| | | A | AC | N | NC | AV |
| 54-24-31421 | LEL / O ₂ / DuoTox / NH ₃ | • | • | • | • | |
| 54-24-31408† | LEL / O ₂ / DuoTox / Cl ₂ (non specific) | • | • | • | • | |
| 54-24-31409 | LEL / O ₂ / DuoTox / NO ₂ | • | • | • | • | |
| 54-24-31410 | LEL / O ₂ / DuoTox / HCN | • | • | • | • | |
| 54-24-31412† | LEL / O ₂ / DuoTox | • | • | • | • | |
| 54-24-31413 | LEL / O ₂ / DuoTox / PH ₃ | • | • | • | • | |
| 54-24-31415 | LEL / O ₂ / DuoTox / SO ₂ -Ext. | • | • | • | • | |
| 54-24-31418† | LEL / O ₂ / DuoTox / Cl ₂ (specific) | • | • | • | • | |
| 54-24-31420†‡ | LEL / O ₂ / DuoTox | • | | • | | |
| 54-24-30121 | LEL / O ₂ / CO / NH ₃ | • | • | • | • | |
| 54-24-30108† | LEL / O ₂ / CO / Cl ₂ (non specific) | • | • | • | • | |
| 54-24-30109 | LEL / O ₂ / CO / NO ₂ | • | • | • | • | |
| 54-24-30110 | LEL / O ₂ / CO / HCN | • | • | • | • | |
| 54-24-30112† | LEL / O ₂ / CO | • | • | • | • | |
| 54-24-30113 | LEL / O ₂ / CO / PH ₃ | • | • | • | • | |
| 54-24-30115 | LEL / O ₂ / CO / SO ₂ -Ext. | • | • | • | • | |
| 54-24-30118† | LEL / O ₂ / CO / Cl ₂ (specific) | • | • | • | • | |
| 54-24-30120†‡ | LEL / O ₂ / CO | • | | • | | |
| 54-24-31921 | LEL / O ₂ / CO-H / NH ₃ | • | • | • | • | |
| 54-24-31920†‡ | LEL / O ₂ / CO-H | • | | • | | |
| 54-24-30521 | LEL / O ₂ / CO+ / NH ₃ | • | • | • | • | |
| 54-24-30508† | LEL / O ₂ / CO+ / Cl ₂ (non specific) | • | • | • | • | |
| 54-24-30509 | LEL / O ₂ / CO+ / NO ₂ | • | • | • | • | |
| 54-24-30510 | LEL / O ₂ / CO+ / HCN | • | • | • | • | |
| 54-24-30512† | LEL / O ₂ / CO+ | • | • | • | • | |
| 54-24-30513 | LEL / O ₂ / CO+ / PH ₃ | • | • | • | • | |
| 54-24-30515 | LEL / O ₂ / CO+ / SO ₂ -Ext. | • | • | • | • | |
| 54-24-30518† | LEL / O ₂ / CO+ / Cl ₂ (specific) | • | • | • | • | |
| 54-24-30520†‡ | LEL / O ₂ / CO+ | • | | • | | |
| 54-24-30221 | LEL / O ₂ / H ₂ S / NH ₃ | • | • | • | • | |
| 54-24-30208† | LEL / O ₂ / H ₂ S / Cl ₂ (non specific) | • | • | • | • | |
| 54-24-30209 | LEL / O ₂ / H ₂ S / NO ₂ | • | • | • | • | |
| 54-24-30210 | LEL / O ₂ / H ₂ S / HCN | • | • | • | • | |
| 54-24-30212† | LEL / O ₂ / H ₂ S | • | • | • | • | |
| 54-24-30213 | LEL / O ₂ / H ₂ S / PH ₃ | • | • | • | • | |
| 54-24-30215 | LEL / O ₂ / H ₂ S / SO ₂ -Ext. | • | • | • | • | |
| 54-24-30218† | LEL / O ₂ / H ₂ S / Cl ₂ (specific) | • | • | • | • | |
| 54-24-30219 | LEL / O ₂ / H ₂ S / CO-H | • | • | • | • | |
| 54-24-30220†‡ | LEL / O ₂ / H ₂ S | • | | • | | |

Continued on Page 20

Most Common PhD⁵ Accessories

| PART NO. | DESCRIPTION |
|--------------|--|
| 54-27-0101 | Continuous sample pump for PhD ⁵ , slip-on. Includes 10' tubing and sample probe assembly. |
| 54-27-0101-C | Continuous sample pump for PhD ⁵ , slip-on – Configured for reactive gas detection, such as Cl ₂ . Includes 10' of inert tubing and sample probe assembly. |
| 54-27-0603 | PhD ⁵ BioTrak Software Kit. Includes computer cable, software and manual. |
| 54-27-0605 | PhD ⁵ Datalink Kit. Includes download cradle, BioTrak software, computer cable and manual. |
| 54-27-0802 | TouchID™ programming kit. Includes software, programming wand, serial connector, 10 TouchID™ buttons, 10 key chain / wall mounts for buttons and 10 TouchID™ badges. |

PhD⁵ Configuration

Battery and/or Kit Configuration (CSK = Confined Space Kit)

| PART NUMBER | PHD ⁵ SENSORS INSTALLED | Alkaline Value Pack | | | | |
|---------------|---|---------------------|-----------------|---------|--------------|------------------------|
| | | Alkaline A | Alkaline CSK AC | NiCad N | NiCad CSK NC | Alkaline Value Pack AV |
| 54-24-30321 | LEL / O ₂ / SO ₂ / NH ₃ | • | • | • | • | |
| 54-24-30305 | LEL / O ₂ / SO ₂ / CO+ | • | • | • | • | |
| 54-24-30308† | LEL / O ₂ / SO ₂ / Cl ₂ (non specific) | • | • | • | • | |
| 54-24-30309 | LEL / O ₂ / SO ₂ / NO ₂ | • | • | • | • | |
| 54-24-30310 | LEL / O ₂ / SO ₂ / HCN | • | • | • | • | |
| 54-24-30312† | LEL / O ₂ / SO ₂ | • | • | • | • | |
| 54-24-30313 | LEL / O ₂ / SO ₂ / PH ₃ | • | • | • | • | |
| 54-24-30318† | LEL / O ₂ / SO ₂ / Cl ₂ (specific) | • | • | • | • | |
| 54-24-30319 | LEL / O ₂ / SO ₂ / CO-H | • | • | • | • | |
| 54-24-30320†‡ | LEL / O ₂ / SO ₂ | • | | • | | |
| 54-24-30321 | LEL / O ₂ / SO ₂ / NH ₃ | • | • | • | • | |
| 54-24-30800† | LEL / O ₂ / Cl ₂ (non specific) | • | • | • | • | |
| 54-24-30821† | LEL / O ₂ / Cl ₂ (non specific) / NH ₃ | • | • | • | • | |
| 54-24-30809† | LEL / O ₂ / Cl ₂ (non specific) / NO ₂ | • | • | • | • | |
| 54-24-30810† | LEL / O ₂ / Cl ₂ (non specific) / HCN | • | • | • | • | |
| 54-24-30813† | LEL / O ₂ / Cl ₂ (non specific) / PH ₃ | • | • | • | • | |
| 54-24-30815† | LEL / O ₂ / Cl ₂ (non specific) / SO ₂ -Ext. | • | • | • | • | |
| 54-24-30819† | LEL / O ₂ / Cl ₂ (non specific) / CO-H | • | • | • | • | |
| 54-24-30900 | LEL / O ₂ / NO ₂ | • | • | • | • | |
| 54-24-30921 | LEL / O ₂ / NO ₂ / NH ₃ | • | • | • | • | |
| 54-24-30910 | LEL / O ₂ / NO ₂ / HCN | • | • | • | • | |
| 54-24-30912† | LEL / O ₂ / NO ₂ | • | • | • | • | |
| 54-24-30913 | LEL / O ₂ / NO ₂ / PH ₃ | • | • | • | • | |
| 54-24-30915 | LEL / O ₂ / NO ₂ / SO ₂ -Ext. | • | • | • | • | |
| 54-24-30918† | LEL / O ₂ / NO ₂ / Cl ₂ (specific) | • | • | • | • | |
| 54-24-30919 | LEL / O ₂ / NO ₂ / CO-H | • | • | • | • | |
| 54-24-30920†‡ | LEL / O ₂ / NO ₂ | • | | • | | |
| 54-24-31000 | LEL / O ₂ / HCN | • | • | • | • | |
| 54-24-31012† | LEL / O ₂ / HCN | • | • | • | • | |
| 54-24-31015 | LEL / O ₂ / HCN / SO ₂ -Ext. | • | • | • | • | |
| 54-24-31018† | LEL / O ₂ / HCN / Cl ₂ (specific) | • | • | • | • | |
| 54-24-31019 | LEL / O ₂ / HCN / CO-H | • | • | • | • | |
| 54-24-31020†‡ | LEL / O ₂ / HCN | • | | • | | |

Continued on Page 21

† The non specific Cl₂ sensor can be used for the detection of both gases. The specific Cl₂ sensor is designed for the target gas only.

PhD⁵ Remote Accessories

| PART NO. | DESCRIPTION |
|--------------|---|
| 54-27-0101 | Continuous sample pump for PhD ⁵ , slip-on. Includes 10' tubing and sample probe assembly. |
| 54-27-0101-C | Continuous sample pump for PhD ⁵ , slip-on – Configured for reactive gas detection, such as Cl ₂ . Includes 10' of inert tubing and sample probe assembly. |
| 54-27-0102 | Continuous sample pump for PhD ⁵ , screw on. Includes 10' tubing and sample probe assembly. |
| 54-27-0102-C | Continuous sample pump for PhD ⁵ , screw-on – Configured for reactive gas detection, such as Cl ₂ . Includes 10' of inert tubing and sample probe assembly. |
| 35-0344 | Tubing kit for reactive gas detection (Cl ₂). Includes 10' of tubing plus adapters. |
| 54-05-A0401 | Sample draw kit for PhD ⁵ . Includes adapter, squeeze bulb, 10' of tubing and sample probe assembly. Not for use with Cl ₂ . |
| 54-05-A0403 | Sample probe assembly. Does not include tubing, squeeze bulb, or sample draw adapter |
| 54-05-A0405 | Sample probe assembly with 11.5-inch stainless-steel probe tube. Does not include tubing, squeeze bulb, or sample draw adapter. |
| 10-263 | Sample draw/calibration adapter for PhD ⁵ . |

PhD⁵ Multi-Gas Detectors

PhD⁵ Configuration

Battery and/or Kit Configuration (CSK = Confined Space Kit)

| PART NUMBER | PHD ⁵ SENSORS INSTALLED | <div> <div></div> <div>Alkaline</div> <div>Alkaline CSK</div> <div>NiCad</div> <div>NiCad CSK</div> <div>Alkaline Value Pack</div> </div> | | | | |
|---------------|---|---|----|---|----|----|
| | | A | AC | N | NC | AV |
| 54-24-31221† | LEL / O ₂ / NH ₃ | • | • | • | • | |
| 54-24-31200† | LEL / O ₂ | • | • | • | • | |
| 54-24-31213† | LEL / O ₂ / PH ₃ | • | • | • | • | |
| 54-24-31215† | LEL / O ₂ / SO ₂ -Ext. | • | • | • | • | |
| 54-24-31219† | LEL / O ₂ / CO-H | • | • | • | • | |
| 54-24-31300 | LEL / O ₂ / PH ₃ | • | • | • | • | |
| 54-24-31315 | LEL / O ₂ / PH ₃ / SO ₂ -Ext. | • | • | • | • | |
| 54-24-31318† | LEL / O ₂ / PH ₃ / Cl ₂ (specific) | • | • | • | • | |
| 54-24-31319 | LEL / O ₂ / PH ₃ / CO-H | • | • | • | • | |
| 54-24-31320†‡ | LEL / O ₂ / PH ₃ | • | | • | | |
| 54-24-31500 | LEL / O ₂ / SO ₂ -Ext. | • | • | • | • | |
| 54-24-31521 | LEL / O ₂ / SO ₂ -Ext. / NH ₃ | • | • | • | • | |
| 54-24-31518† | LEL / O ₂ / SO ₂ -Ext. / Cl ₂ (specific) | • | • | • | • | |
| 54-24-31519 | LEL / O ₂ / SO ₂ -Ext. / CO-H | • | • | • | • | |
| 54-24-31520†‡ | LEL / O ₂ / SO ₂ -Ext. | • | | • | | |
| 54-24-31800† | LEL / O ₂ / Cl ₂ (specific) | • | • | • | • | |
| 54-24-31821† | LEL / O ₂ / Cl ₂ (specific) / NH ₃ | • | • | • | • | |
| 54-24-31819† | LEL / O ₂ / Cl ₂ (specific) / CO-H | • | • | • | • | |
| 54-24-31820†‡ | LEL / O ₂ / Cl ₂ (specific) | • | | • | | |
| 54-24-32000†‡ | LEL / O ₂ | • | | • | | |
| 54-24-32021†‡ | LEL / O ₂ / NH ₃ | • | | • | | |
| 54-24-32100 | LEL / O ₂ / NH ₃ | • | • | • | • | |

† The non specific Cl₂ sensor can be used for the detection of both gases. The specific Cl₂ sensor is designed for the target gas only.

Please refer to the PhD⁵ Smart Sensor matrix on page 22 for more detailed sensor information.

PhD⁵ Charging, Datalogging and TouchID[®] Accessories

| PART NO. | DESCRIPTION |
|-------------|---|
| 54-27-0205 | Slip-in fast charger (110 VAC) for PhD ⁵ . Includes “wall cube” power supply. |
| 54-27-0201 | Slip-in fast charger / data dock (110 VAC) for PhD ⁵ . Includes “wall cube” power supply. |
| 54-27-0202 | Slip-in fast charger (12 VDC) for PhD ⁵ . Includes 12 VDC “cigarette lighter” style adapter, and vehicle mounting hardware. |
| 54-27-0204 | Five instrument 110 VAC slip-in multi-charger for PhD ⁵ . Includes power supply. |
| 35-0219 | Alkaline battery pack for PhD ⁵ . |
| 35-0214 | NiCad battery pack for PhD ⁵ . |
| 54-27-0601‡ | Datalogger upgrade for PhD ⁵ without “Black-Box” recorder. (Requires instrument disassembly.) (If your non-datalogging PhD ⁵ shows the time and date during startup, it does include a “Black-Box” recorder.) |
| 54-27-0607‡ | Datalogger upgrade for PhD ⁵ with “Black-Box” recorder. (If your non-datalogging PhD ⁵ shows the time and date during startup, it does include a “Black-Box” recorder.) |
| 54-27-0603 | BioTrak Software Kit. Includes computer cable, software and manual. |
| 54-27-0605 | PhD ⁵ Datalink Kit. Includes download cradle, BioTrak software, computer cable and manual. |
| 54-27-0802 | TouchID™ programming kit. Includes software, programming wand, serial connector, 10 buttons, 10 key chain / wall mounts for TouchID™ buttons and 10 TouchID™ badges. |
| 54-27-0805 | 10 TouchID™ buttons. |
| 54-27-0807 | 10 TouchID™ key ring / wall mounts. Does not include TouchID™ buttons. |
| 54-27-0810 | 10 TouchID™ badges. Does not include TouchID™ buttons. |

‡ Download software not included.

PhD⁵ Smart Sensors

| PART NUMBER | DESCRIPTION | RANGE | RESOLUTION |
|--------------|---|---|----------------|
| 54-25-80A | LEL Combustible gas | 0 – 100% LEL | 1% LEL |
| 54-04-90 | O ₂ Oxygen | 0 – 30% / Vol. | 0.1% |
| 54-25-01 | CO Carbon Monoxide | 0 – 1000 PPM | 1 PPM |
| 54-25-05 | CO+ CO Plus dual purpose CO/H ₂ S (provides a non-specific readout for CO and H ₂ S) | CO: 0 – 1000 PPM H ₂ S: 0 – 200 PPM | 1 PPM 1 PPM |
| 54-25-19 | CO-H CO Minus, reduced sensitivity to H ₂ | 0 – 1000 PPM | 1 PPM |
| 54-25-02 | H ₂ S Hydrogen Sulfide | 0 – 200 PPM | 1 PPM |
| 54-25-14 | Duo-Tox Dual Channel CO/H ₂ S (provides substance specific readouts for CO and H ₂ S) | CO: 0 – 1000 PPM H ₂ S: 0 – 200 PPM | 1 PPM 1 PPM |
| 54-25-03 | SO ₂ Sulfur Dioxide | 0 – 25 PPM | 0.1 PPM |
| 54-25-15 | SO ₂ -Ext. Sulfur Dioxide extended range | 0 – 100 PPM | 1 PPM |
| 54-25-04† | NH ₃ Ammonia (for software versions prior to 2.0) | 0 – 50 PPM | 1 PPM |
| 54-25-21† | NH ₃ Ammonia | 0 – 100 PPM | 1 PPM |
| 54-25-08† †† | Cl ₂ Chlorine (non-specific) | 0 – 50 PPM | 0.1 PPM |
| 54-25-18† †† | Cl ₂ Chlorine (specific) | 0 – 50 PPM | 0.1 PPM |
| 54-25-09† | NO ₂ Nitrogen Dioxide | 0 – 50 PPM | 0.1 PPM |
| 54-25-10† | HCN Hydrogen Cyanide | 0 – 100 PPM | 0.2 PPM |
| 54-25-13 | PH ₃ Phosphine | 0 – 20 PPM | 0.1 PPM |

† Special reactive gas calibration adapter (54-05-A0409) required for proper calibration.

†† The non-specific Cl₂ sensor can be used for the detection of both gases.
The specific Cl₂ sensor is designed for the target gas only.

PhD⁵ Miscellaneous Accessories

| PART NO. | DESCRIPTION |
|----------|---|
| 13-092 | PhD ⁵ Reference Manual. |
| 13-093 | PhD ⁵ Quick Reference Card. |
| 22-130 | PhD ⁵ training video. |
| 22-131 | PhD ⁵ interactive training CD-ROM. |
| 42-005 | Shoulder strap for PhD ⁵ . |
| 45-016 | Leather weather cover for PhD ⁵ . |
| 56-282 | Leather weather cover for PhD ⁵ with TouchID.™ |

PhD⁵ Calibration Materials and Carrying Cases

| PART NO. | DESCRIPTION |
|-------------|--|
| 54-27-0401 | Case for Value Pack. Foam-lined case, with room for 1 compact sized calibration gas cylinder. |
| 35-0002 | Case for Confined Space Kit. Foam-lined, waterproof Pelican™ style case with room for one standard sized calibration gas cylinder. |
| 54-27-0501 | Calibration kit for PhD ⁵ . Includes foam-lined carrying case with room for up to three cylinders of calibration gas. Kit contains 12-023 regulator and other fittings. Kit does not include gas. |
| 54-27-V9045 | Value Pack “Make-up” Kit. Includes Value Pack case with 54-9045E calibration gas and 12-022 regulator. For use with O ₂ / LEL; O ₂ / LEL / CO and O ₂ / LEL / CO+ configurations. |
| 54-27-V9047 | Value Pack “Make-up” Kit. Includes Value Pack case with 54-9047E calibration gas and 12-023 regulator. For use with O ₂ / LEL / H ₂ S configurations. |
| 54-27-V9049 | Value Pack “Make-up” Kit. Includes Value Pack case with 54-9049E calibration gas and 12-023 regulator. For use with; O ₂ / LEL / CO / H ₂ S and O ₂ / LEL / Duo-Tox (CO / H ₂ S) configurations. |
| 10-263 | Sample draw / calibration adapter for PhD ⁵ . |
| 54-05-A0409 | Calibration adapter for use with reactive gases (NH ₃ , Cl ₂ , HCN, NO ₂). |

Cannonball3

Continuous Sample Draw Multi-Gas Detectors

PRODUCT HIGHLIGHT:

Patented, sample draw pump with easy field maintenance.



FEATURES

DESIGN

- Rugged RFI-protected case designed for the most demanding environments.
- IPX5 rated protection against dust and water.
- One button operation.
- Oversized (5" diagonal) backlit graphic display with automatic backlight.
- Super bright alarm lights visible in any direction.
- Multiple languages.

PUMPS

- Field replaceable pump module.
- Available with dual pumps for accurate dilution monitoring in inert environments without the use of a dilution orifice.
- Dilution calibration regardless of tube length.
- Automatic low flow alarm.
- Automatic leak test before every use.

RECORDING

- Black-Box recorder with over 100 hours of storage.
- Available with optional datalogging for convenient and easy downloading to a computer.

FEATURES (continued)

SMART SENSORS AND CALIBRATION

- Four sensors. O₂, LEL and up to three toxic channels using Biosystems' Duo-Tox two channel CO/H₂S sensor (see matrix for available sensors).
- User replaceable sensors.
- One button auto calibration.
- Calibration due reminder.
- Sensor span reserve indicators during calibration for predictive maintenance.
- HC-PPM sensor.
- IQ compatible.

BATTERIES

- Interchangeable Alkaline (5 "D"-cell) and rechargeable (NiMH) batteries.
- Operating life:
 - Alkaline: Up to 24 hours.
 - NiMH: Up to 16 hours.
- Snap-on fast charger included with rechargeable (NiMH) configuration.
- Recharges in 4 hours.

STANDARD ACCESSORIES

- Built-in sample draw pump.
- Remote sampling probe with 10' of tubing and QD (quick disconnect) fittings.
- Shoulder strap.
- Rechargeable NiMH version includes charger.
- Operators guide.
- Quick reference guide.
- Training video.

biosystems

No one makes it easier™

IQ

Cannonball3 Continuous Sample Draw Multi-Gas Detectors

Cannonball3 Configuration Standard Version (1 Pump)

Battery and/or Kit Configuration (CSK = Confined Space Kit)

| PART NUMBER | CANNONBALL3 SENSORS INSTALLED | Alkaline NiMH | |
|--------------|--|------------------|---|
| | | A | N |
| 54-34-00000 | No Sensors Installed | • | • |
| 54-34-30000 | LEL / O ₂ | • | • |
| 54-34-30100 | LEL / O ₂ / CO | • | • |
| 54-34-31900 | LEL / O ₂ / CO-H | • | • |
| 54-34-30200 | LEL / O ₂ / H ₂ S | • | • |
| 54-34-31400 | LEL / O ₂ / Duo-Tox (CO/H ₂ S) | • | • |
| 54-34-30102 | LEL / O ₂ / CO / H ₂ S | • | • |
| 54-34-30300† | LEL / O ₂ / SO ₂ | • | • |
| 54-34-30103† | LEL / O ₂ / CO / SO ₂ | • | • |
| 54-34-30203† | LEL / O ₂ / H ₂ S / SO ₂ | • | • |
| 54-34-31403† | LEL / O ₂ / Duo-Tox (CO/H ₂ S) / SO ₂ | • | • |
| 54-34-31500† | LEL / O ₂ / SO ₂ Ext. | • | • |
| 54-34-32100 | LEL / O ₂ / NH ₃ | • | • |
| 54-34-30800 | LEL / O ₂ / Cl ₂ (non-specific) | • | • |
| 54-34-31800 | LEL / O ₂ / Cl ₂ (specific) | • | • |
| 54-34-31200 | LEL / O ₂ | • | • |
| 54-34-32000 | LEL / O ₂ | • | • |
| 54-34-30900 | LEL / O ₂ / NO ₂ | • | • |
| 54-34-50000 | HC-PPM LEL / O ₂ | • | • |
| 54-34-50100 | HC-PPM LEL / O ₂ / CO | • | • |
| 54-34-51400 | HC-PPM LEL / O ₂ / Duo-Tox (CO/H ₂ S) | • | • |
| 54-34-50102 | HC-PPM LEL / O ₂ / CO / H ₂ S | • | • |

† The detection range of the standard SO₂ sensor is 0.0 – 25 PPM in 0.1 PPM increments.
The detection range of the extended range SO₂ sensor is 0 – 150 PPM in 1 PPM increments.

Please refer to the Cannonball3 Smart Sensor matrix on page 26 for more detailed sensor information.

Call Biosystems for additional sensor combinations.

Cannonball3 Options

(Add option code letter to the part number.)

| CODE | DESCRIPTION |
|----------|--|
| A | ALKALINE NiMH battery pack and charger may be purchased separately. |
| N | RECHARGEABLE NiMH configuration includes charger. Alkaline battery packs may be purchased separately. N3: includes a 220V continental charger wall cube N4: includes a 220V British charger wall cube. |
| D | DATALOGGING Enables the Cannonball3 to record and download measurements. This option is available as an upgrade after purchase. Download software must be purchased separately. Computer must support IrDA to download. |
| T | TOUCHID6 This option includes both datalogging and TouchID™ reader. TouchID™ buttons and programming software must be purchased separately. |

Cannonball3 Continuous Sample Draw Multi-Gas Detectors

Cannonball3 Configuration Dilution Version (2 Pumps)[‡]

Battery and/or Kit Configuration (CSK = Confined Space Kit)

| PART NUMBER | CANNONBALL3 SENSORS INSTALLED | Alkaline NiMH | |
|--------------|--|------------------|---|
| | | A | N |
| 54-35-00000 | No Sensors Installed | • | • |
| 54-35-30000 | LEL / O ₂ | • | • |
| 54-35-30100 | LEL / O ₂ / CO | • | • |
| 54-35-31900 | LEL / O ₂ / CO-H | • | • |
| 54-35-30200 | LEL / O ₂ / H ₂ S | • | • |
| 54-35-31400 | LEL / O ₂ / Duo-Tox (CO/H ₂ S) | • | • |
| 54-35-30102 | LEL / O ₂ / CO / H ₂ S | • | • |
| 54-35-30300† | LEL / O ₂ / SO ₂ | • | • |
| 54-35-30103† | LEL / O ₂ / CO / SO ₂ | • | • |
| 54-35-30203† | LEL / O ₂ / H ₂ S / SO ₂ | • | • |
| 54-35-31403† | LEL / O ₂ / Duo-Tox (CO/H ₂ S) / SO ₂ | • | • |
| 54-35-31500† | LEL / O ₂ / SO ₂ Ext. | • | • |
| 54-35-32100 | LEL / O ₂ / NH ₃ | • | • |
| 54-35-30800 | LEL / O ₂ / Cl ₂ (non-specific) | • | • |
| 54-35-31800 | LEL / O ₂ / Cl ₂ (specific) | • | • |
| 54-35-31200 | LEL / O ₂ | • | • |
| 54-35-32000 | LEL / O ₂ | • | • |
| 54-35-30900 | LEL / O ₂ / NO ₂ | • | • |
| 54-35-50000* | HC-PPM LEL / O ₂ | • | • |
| 54-35-50100* | HC-PPM LEL / O ₂ / CO | • | • |
| 54-35-51400* | HC-PPM LEL / O ₂ / Duo-Tox (CO/H ₂ S) | • | • |
| 54-35-50102* | HC-PPM LEL / O ₂ / CO / H ₂ S | • | • |

† The detection range of the standard SO₂ sensor is 0.0 – 25 PPM in 0.1 PPM increments.
The detection range of the extended range SO₂ sensor is 0 – 150 PPM in 1 PPM increments.

‡ The dilution version of the Cannonball3 allows for accurate gas detection in inert environments without the use of a dilution orifice.

* The HC-PPM sensor will only function in LEL mode while the dilution pump is on.

Call Biosystems for additional sensor combinations.

Cannonball3 Options

(Add option code letter to the part number.)

| CODE | DESCRIPTION |
|----------|--|
| A | ALKALINE NiMH battery pack and charger may be purchased separately. |
| N | RECHARGEABLE NiMH configuration includes charger. Alkaline battery packs may be purchased separately. N3: includes a 220V continental charger wall cube N4: includes a 220V British charger wall cube. |
| D | DATALOGGING Enables the Cannonball3 to record and download measurements. This option is available as an upgrade after purchase. Download software must be purchased separately. Computer must support IrDA to download. |
| T | TOUCHID6 This option includes both datalogging and TouchID™ reader. TouchID™ buttons and programming software must be purchased separately. |

Cannonball3 Continuous Sample Draw Multi-Gas Detectors

Cannonball3 Smart Sensors

| PART NUMBER | DESCRIPTION | RANGE | RESOLUTION |
|--------------|---|---|----------------|
| 54-25-80 | LEL Combustible Gas | 0 – 100% LEL | 1% LEL |
| 54-25-70 | LEL Combustible Gas | 0 – 100% LEL | 1% LEL |
| 54-25-71 | HC-PPM LEL Combustible Gas | 0 – 100% LEL | see note* |
| 54-25-90 | O ₂ Oxygen | 0 – 30% / Vol. | 0.1% |
| 54-25-01 | CO Carbon Monoxide | 0 – 1000 PPM | 1 PPM |
| 54-25-05 | CO+ CO Plus dual purpose CO/H ₂ S (provides a non-specific readout for CO and H ₂ S) | CO: 0 – 1000 PPM H ₂ S: 0 – 200 PPM | 1 PPM 1 PPM |
| 54-25-19 | CO-H CO Minus, reduced sensitivity to H ₂ | 0 – 1000 PPM | 1 PPM |
| 54-25-02 | H ₂ S Hydrogen Sulfide | 0 – 200 PPM | 1 PPM |
| 54-25-14 | Duo-Tox Dual Channel CO/H ₂ S (provides Substance specific readouts for CO and H ₂ S) | CO: 0 – 1000 PPM H ₂ S: 0 – 200 PPM | 1 PPM 1 PPM |
| 54-25-03 | SO ₂ Sulfur Dioxide | 0 – 25 PPM | 0.1 PPM |
| 54-25-15 | SO ₂ -Ext. Sulfur Dioxide extended range | 0 – 100 PPM | 1 PPM |
| 54-25-21† | NH ₃ Ammonia | 0 – 100 PPM | 1 PPM |
| 54-25-08† †† | Cl ₂ Chlorine (non-specific) | 0 – 50 PPM | 0.1 PPM |
| 54-25-18† †† | Cl ₂ Chlorine (specific) | 0 – 50 PPM | 0.1 PPM |
| 54-25-09† | NO ₂ Nitrogen Dioxide | 0 – 50 PPM | 0.1 PPM |
| 54-25-13 | PH ₃ Phosphine | 0 – 20 PPM | 0.1 PPM |
| 54-25-06 | NO Nitric Oxide | 0 – 350 PPM | 1 PPM |

† Special reactive gas calibration adapter (54-36-16) required for proper calibration. Inert tubing is required for proper calibration and remote sampling.

†† The non-specific Cl₂ sensor can be used for the detection of both gases. The specific Cl₂ sensor is designed for the target gas only.

*HC PPM LEL Sensor Range

| RANGE | RESOLUTION |
|---------------|------------|
| 0 – 9999 PPM | 10 PPM |
| 1 – 9.99% Vol | .01% / Vol |

% / Vol range is dependent on calibration scale.

Most Common Cannonball3 Accessories

| PART NO. | DESCRIPTION |
|-------------|--|
| 35-0379 | Cannonball3 motorized sample draw pump module. |
| 35-0378 | Cannonball3 motorized sample draw pump module for dual pump version (2 pumps). The Cannonball3 must be configured for dual pump. |
| 35-0376 | Cannonball3 Alkaline battery pack ("D"-Cell batteries not included). |
| 35-0377 | Cannonball3 NiMH battery pack. |
| 54-26-0603† | Cannonball3 BioTrak Software Kit. Includes BioTrak software and manual. |
| 54-26-0605S | Infrared communication device (Serial – IrDA) – Requires one available PC serial port. |
| 54-26-0605U | Infrared communication device (USB – IrDA) – Requires one available USB port. |
| 54-27-0802 | TouchID™ programming kit. Includes software, programming wand, serial connector, 10 buttons, 10 key chain / wall mounts for TouchID™ buttons and 10 TouchID™ badges. |

† PC must support IrDA to download.

Cannonball3 Continuous Sample Draw Multi-Gas Detectors

Cannonball3 Remote Accessories

| PART NO. | DESCRIPTION |
|--------------|--|
| 35-0379 | Cannonball3 motorized sample draw pump. |
| 35-0378 | Cannonball3 motorized sample draw pumps for dual pump version. The Cannonball3 must be configured for dual pump. |
| 54-36-03 | Cannonball3 Sample probe with plastic extension and male quick disconnect. |
| 54-36-04 | Cannonball3 Sample probe with stainless steel extension and male quick disconnect. |
| 54-36-05 | Cannonball3 Sample probe with plastic extension and threaded for quick disconnect fitting. |
| 54-36-06 | Cannonball3 Sample probe with stainless steel extension and threaded for quick disconnect fitting. |
| 54-36-07 | Cannonball3 Sample probe male quick disconnect. |
| 54-36-08-010 | Cannonball3 Extension hose, 10 feet with male and female quick disconnect. |
| 54-36-08-025 | Cannonball3 Extension hose, 25 feet with male and female quick disconnect. |
| 54-36-08-050 | Cannonball3 Extension hose, 50 feet with male and female quick disconnect. |
| 54-36-08-100 | Cannonball3 Extension hose, 100 feet with male and female quick disconnect. |
| 54-36-09 | Cannonball3 set of male and female quick disconnects. |

Cannonball3 Charging, Datalogging and TouchID⁶ Accessories

| PART NO. | DESCRIPTION |
|-------------|--|
| 54-36-10 | Cannonball3 Snap-on fast charger (110VAC). |
| 54-36-11 | Cannonball3 Snap-on fast charger (12VDC). |
| 35-0376 | Cannonball3 Alkaline battery pack (batteries not included). |
| 35-0377 | Cannonball3 NiMH battery pack. |
| 54-36-13†‡ | Cannonball3 Datalogger upgrade. |
| 54-26-0603† | Cannonball3 BioTrak Software Kit. Includes BioTrak software and manual. |
| 54-26-0605S | Infrared communication device (Serial – IrDA) - Requires one available PC serial port. |
| 54-26-0605U | Infrared communication device (USB – IrDA) - Requires one available USB port. |
| 54-27-0802 | TouchID™ programming kit. Includes software, programming wand, serial connector, 10 buttons, 10 key chain / wall mounts for TouchID™ buttons and 10 TouchID™ badges. |
| 54-27-0805 | 10 TouchID™ buttons. |
| 54-27-0807 | 10 TouchID™ key ring / wall mounts. Does not include TouchID™ buttons. |
| 54-27-0810 | 10 TouchID™ badges. Does not include TouchID™ buttons. |

† Computer must be equipped with infrared adapter (IrDA) to download.

‡ Download software not included.

Miscellaneous Accessories

| PART NO. | DESCRIPTION |
|----------|---|
| 13-173 | Cannonball3 Reference Manual. |
| 31-292 | Cannonball3 Quick Reference Label. |
| 22-143 | Cannonball3 Training Video. |
| 42-002 | Cannonball3 Shoulder strap. |
| 54-36-20 | Cannonball3 Gasket service kit. Includes 6 filter gaskets, 2 pump gasket, 2 battery gasket and lubricant for gaskets. |
| 54-36-17 | Internal filter kit for Cannonball3. (10 ea. particulate and 5 ea. hydrophobic). |

Cannonball3 Calibration Materials and Carrying Cases

| PART NO. | DESCRIPTION |
|----------|--|
| 54-36-14 | Cannonball3 Calibration kit. Includes foam-lined carrying case with room for up to three cylinders of calibration gas. Kit contains 12-023 regulator and other fittings. Kit does not include gas. |
| 35-0453 | Cannonball3 Waterproof Pelican™ style carrying case with room for one Cannonball3 and one cylinder of calibration gas. |
| 54-36-15 | Cannonball3 Calibration tube with male quick disconnect. |
| 54-36-18 | Cannonball3 Calibration balloon (not for use with Cl ₂). |
| 54-36-16 | Cannonball3 Inert calibration tube (for reactive gases) with male quick disconnect. |

IQ Express Docking Station

PRODUCT HIGHLIGHT:

The IQ Express Docking

Station is an automatic calibration station and data download center for the ToxiPro, and ToxiLtd sensor gas detectors. Just drop the detector into the IQ Express for automatic maintenance in as little as 20 seconds.



FEATURES

AUTOMATED TESTS

- Automatic Instrument Identification
- Automatic Battery Test
- Automatic Alarm Tests (audible, visible, vibrating)
- Automatic Bump Test
- Automatic Calibration (if necessary)
- Automatic Record Keeping
- Automatic Ready / Fault Indication

SINGLE OR MULTIPLE DOCKS

- Connect between 1 and 4 docks by USB

CONFIGURATION OPTIONS

- Standalone calibration station
- Connected to PC via USB
- Network compatible

PC CONTROL

- Connect to a PC for enhanced control over calibration and data acquisition during testing.

EFFICIENT AND ECONOMICAL

- Bump test in under 20 seconds
- Calibration in under 1 minute

IQ Express Descriptions

| PART NO. | DESCRIPTION |
|-------------|---|
| 54-46-9000 | IQ Express Docking Station for O ₂ , CO, H ₂ S, SO ₂ with Software, Installation Disks, and Manuals. |
| 54-46-9000N | Network Compatible. |
| 54-46-9100 | Enhanced IQ Express Docking Station for O ₂ , CO, H ₂ S, SO ₂ , Cl ₂ , NO ₂ , NH ₃ , HCN, PH ₃ with Software, Installation Disks, and Manuals. |
| 54-46-9100N | Network Compatible. |
| 54-46-8000 | Mounting Bracket. |
| 54-46-8001 | Powered Mounting Bracket. |

biosystems

No one makes it easier™



MultiPro IQ Express

Docking Station



PRODUCT HIGHLIGHT:

The MultiPro IQ Express Docking Station is an automatic calibration station and data download center for the MultiPro gas detector. Just place the detector in the dock and the MultiPro IQ Express does the rest.

FEATURES

AUTOMATED TESTS

- Automatic Instrument Identification
- Automatic Battery Test
- Automatic Alarm Tests (audible, visible, vibrating)
- Automatic Bump Test
- Automatic Calibration (if necessary)
- Automatic Record Keeping
- Automatic Ready / Fault Indication

SINGLE OR MULTIPLE DOCKS

- Cascade between 1 and 4 docks

CONFIGURATION OPTIONS

- Standalone calibration station
- Connected to PC via USB
- Network compatible

PC CONTROL

- Connect to a PC for enhanced control over calibration and data acquisition during testing.

EFFICIENT AND ECONOMICAL

- Bump test in under 30 seconds
- Calibration in about 1 minute

IQ Express Descriptions

| PART NO. | DESCRIPTION |
|------------|--|
| 54-49-9000 | MultiPro IQ Express Dock with Software, Installation Disks and Manual. |

IQ Docking Station



FEATURES

HANDS-FREE MAINTENANCE

- Automatic hands-free unattended calibration.
- Automatic instrument configuration, record keeping, data download and battery charging.
- Automatic tracking of instrument readings, calibration data and sensor performance trends.
- Automatic Ready / Fault indication.
- All features and schedules are user definable.

FLEXIBLE DATABASE MANAGEMENT SYSTEM

- Easy access to stored records.
- Built-in report generator and e-mail capability.

MULTIPLE TYPES OF INSTRUMENTS

- Supports PhD Lite, PhD⁵, PhD Ultra, MultiVision (datalogging version), MultiPro and Cannonball3.
- Up to 10 docks per controller, any combination.

MULTIPLE GAS INPUTS

- 3 gas inputs standard (including fresh air).
- Additional blocks of solenoids available for up to 12 gas inputs (3 gas inputs per block).

NETWORK CAPABLE

- Multiple IQ Systems on the same network.
- Data retrieval across network.

PRODUCT HIGHLIGHT:

Instrument and data management system that automates the maintenance of your Biosystems detectors.

IQ Controller and Dock

| PART NO. | DESCRIPTION |
|--------------|--|
| 54-43-0x0yz | IQ Controller with IQ controller software, installation disks and manuals. Please complete part number using the IQ Controller options matrix below. Note some options affect the price of the controller. |
| 54-43-201 | IQ Database Manager software. Note this software is included with the IQ Controller above. |
| 54-43-1401†‡ | IQ Dock for MultiVision. |
| 54-43-1231† | IQ Dock for PhD Lite. |
| 54-43-1241 | IQ Dock for PhD ⁵ . |
| 54-43-1341† | IQ Dock for Cannonball3. |
| 54-43-1481† | IQ Dock for MultiPro. |
| 54-43-1021 | IQ Dock for PhD Ultra. |

† Requires IrDA support at controller – see IQ Controller options

‡ MultiVision must have fully enabled datalogger to be IQ compatible

IQ Controller Options

(Add option code letter to the part number.)

| PART NO. / CODE | OPTION |
|----------------------|--|
| X = 2nd Digit | Blocks of Solenoids (3 inputs per block) |
| Code: 1 | 1 Block (3 Gas Inputs) |
| Code: 2 | 2 Blocks (6 Gas Inputs) |
| Code: 3 | 3 Blocks (9 Gas Inputs) |
| Code: 4 | 4 Blocks (12 Gas Inputs) |
| Y = 4th Digit | Power Supply / Cord |
| Code: 0 | 110V / North America |
| Code: 1 | 220V / Continental Europe and China |
| Code: 2 | 220V / Britain |
| Code: 3 | 220V / Australia (...others may be added) |
| Z = 5th Digit | IrDA Support |
| Code: 0 | No IrDA support |
| Code: 1 | IrDA support (IrDA support is required for the PhD Lite, Cannonball3, MultiVision and MultiPro.) |

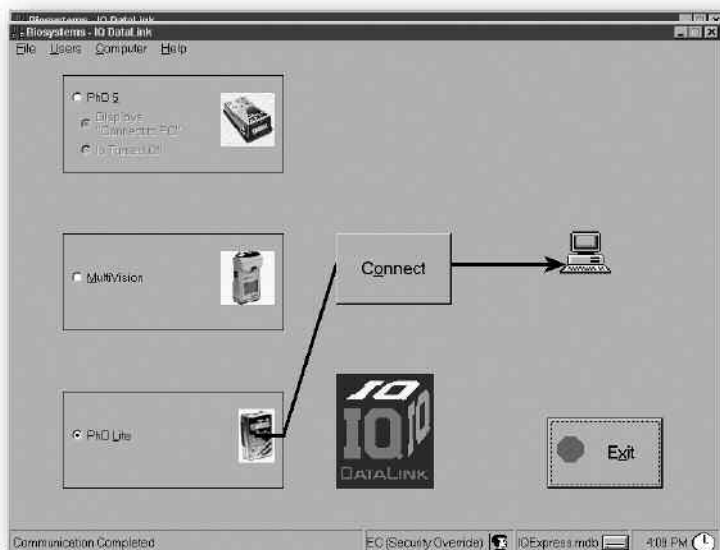
biosystems

No one makes it easier™

IQ

PRODUCT HIGHLIGHT:

The IQ Datalink System is a data management system that downloads instrument readings, calibration information and other data from Biosystems gas detectors and automatically stores them in a user-specified database as part of the gas detectors automatic calibration sequence. The system incorporates the Database Manager software for easy access to the data once it is downloaded from the instrument.



FEATURES

AUTOMATIC RECORD KEEPING

- Automatic download and storage of datalogger information in a specified database.
- Automatic tracking of instrument readings, calibration data, and sensor performance trends.
- Automatic instrument configuration with user defined templates.
- Direct connection between Instrument and PC

FLEXIBLE DATABASE MANAGEMENT SYSTEM.

- Easy access to stored records.
- Built-in report generator and e-mail capability.

LOW COST ALTERNATIVE TO THE IQ DOCKING STATION

- No need for controller and docks (only a PC connection is required).
- User performs calibration using the detector's built-in calibration routine. The instrument datalogger stores the results, which are then downloaded to the PC.
- Automatically maintains instrument calibration and service histories.

NETWORK CAPABLE

- Multiple IQ Datalinks on the same network.
- Data retrieval across network.

IQ Datalink Descriptions

| PART NO. | DESCRIPTION |
|-----------|--|
| 54-43-200 | IQ DataLink software, installation disks and manuals. Supports PhD Lite, PhD ⁵ , PhD Ultra, MultiVision (Datalogging) and Cannonball3. Note communication hardware is not included. |
| 54-43-201 | IQ Database Manager software. Note this software is included with the IQ DataLink software package above. |
| 54-43-202 | IQ DataLink software with serial download cradle, installation disks and manuals. Same as P/N 54-43-200, but also includes PhD ⁵ (PhD Ultra) charger and download cradle, with serial cable and power supply. |
| 54-43-203 | IQ DataLink software with IrDA (Serial), installation disks and manuals. Same as P/N 54-43-200, but also includes a Serial – IrDA communication device and download cradle. IrDA communication is required for PhD Lite, MultiVision (datalogging) and MultiPro. |
| 54-43-204 | IQ DataLink software with, IrDA (USB), installation disks and manuals. Same as P/N 54-43-200, but also includes a Serial – IrDA communication device and download cradle. IrDA communication is required for PhD Lite, MultiVision (datalogging) and MultiPro. |

biosystems

No one makes it easier™



Calibration Gases, Regulators and Replacement Sensors

Multi-Component Calibration Gas Mixtures

| PART NUMBER | COMBUSTIBLE GAS | LEL | CO | H ₂ S | SHELF LIFE* | VOLUME |
|-------------|--------------------|---------|--------|------------------|-------------|------------|
| 54-9041 | Methane | 50% LEL | 50 ppm | | 5 years | 103 liters |
| 54-9043‡ | Methane | 50% LEL | 50 ppm | 25 ppm | 1 year | 58 liters |
| 54-9042E | Propane Equivalent | 50% LEL | 50 ppm | | 5 years | 103 liters |
| 54-9045E† | Propane Equivalent | 50% LEL | 50 ppm | | 5 years | 34 liters |
| 54-9044E‡ | Propane Equivalent | 50% LEL | 50 ppm | 25 ppm | 1 year | 58 liters |
| 54-9049E‡ | Propane Equivalent | 50% LEL | 50 ppm | 25 ppm | 1 year | 34 liters |
| 54-9048E | Propane Equivalent | 50% LEL | | 25 ppm | 1 year | 58 liters |
| 54-9047E | Propane Equivalent | 50% LEL | | 25 ppm | 1 year | 34 liters |
| 54-9070E | Pentane Equivalent | 50% LEL | 50 ppm | | 5 years | 103 liters |
| 54-9046E | Pentane Equivalent | 50% LEL | 50 ppm | 25 ppm | 1 year | 58 liters |
| 54-9071E† | Pentane Equivalent | 50% LEL | 50 ppm | | 5 years | 34 liters |

† Only for use with 12-022 regulator.

‡ Not for use with CO+ or Tox1 sensors.

* Shelf Life figure is from date of manufacture.

Single Component Calibration Gas

| PART NUMBER | GAS TYPE | | CONCENTRATION | SHELF LIFE* | VOLUME |
|-------------|------------------|--|---------------|-------------|------------|
| 54-9031 | LEL | Methane | 50% LEL | 5 Years | 103 liters |
| 54-9032E | LEL | Propane Equivalent | 50% LEL | 5 Years | 103 liters |
| 54-9068E | LEL | Pentane Equivalent | 50% LEL | 5 Years | 103 liters |
| 54-9066 | LEL | Hydrogen (H ₂) | 50% LEL | 5 Years | 103 liters |
| 54-9033 | CO | Carbon Monoxide | 50 ppm | 5 Years | 103 liters |
| 54-9036† | CO | Carbon Monoxide | 50 ppm | 5 Years | 34 liters |
| 54-9067 | CO | Carbon Monoxide (Mighty-Tox series bump test only) | 125 ppm | 5 Years | 103 liters |
| 54-9034 | H ₂ S | Hydrogen Sulfide | 25 ppm | 1 Year | 58 liters |
| 54-9057 | H ₂ S | Hydrogen Sulfide | 25 ppm | 1 Year | 34 liters |
| 54-9037 | SO ₂ | Sulfur Dioxide | 10 ppm | 1 Year | 58 liters |
| 54-9058 | SO ₂ | Sulfur Dioxide | 10 ppm | 1 Year | 34 liters |
| 54-9051‡ | NH ₃ | Ammonia | 50 ppm | 1 Year | 58 liters |
| 54-9061‡ | NH ₃ | Ammonia | 50 ppm | 1 Year | 34 liters |

Continued on Page 32

† Only for use with 12-022 regulator.

‡ Only for use with 12-025 ammonia service regulator.

* Shelf Life figure is from date of manufacture.

Calibration Gases, Regulators and Replacement Sensors

Single Component Calibration Gas

| PART NUMBER | GAS TYPE | | CONCENTRATION | SHELF LIFE* | VOLUME |
|-------------|-----------------|-------------------|---------------|-------------|------------|
| 54-9052 | Cl ₂ | Chlorine | 5 ppm | 8 Months | 58 liters |
| 54-9062 | Cl ₂ | Chlorine | 5 ppm | 8 Months | 34 liters |
| 54-9056 | NO ₂ | Nitrogen Dioxide | 5 ppm | 6 Months | 58 liters |
| 54-9059 | NO ₂ | Nitrogen Dioxide | 5 ppm | 6 Months | 34 liters |
| 54-9054 | HCN | Hydrogen Cyanide | 10 ppm | 1 Year | 58 liters |
| 54-9053 | HCl | Hydrogen Chloride | 10 ppm | 1 Year | 58 liters |
| 54-9065 | PH ₃ | Phosphine | 5 ppm | 6 Months | 58 liters |
| 54-9073 | PH ₃ | Phosphine | 5 ppm | 6 Months | 34 liters |
| 54-9064 | H ₂ | Hydrogen | 100 ppm | 5 Years | 103 liters |
| 54-9035 | N ₂ | Nitrogen | 99.9% | 5 Years | 103 liters |
| 54-9039 | O ₂ | Oxygen (Zero Air) | 20.9% | 5 Years | 103 liters |

† Only for use with 12-022 regulator.

‡ Only for use with 12-025 ammonia service regulator.

* Shelf Life figure is from date of manufacture.

Replacement Sensors

| PART NUMBER | DESCRIPTION | | PhD Plus | PhD Ultra |
|-------------|------------------|--|----------|-----------|
| 54-04-80 | LEL | Combustible Gas | • | • |
| 54-04-90 | O ₂ | Oxygen | • | • |
| 54-04-01 | CO | Carbon Monoxide | • | • |
| 54-04-02 | H ₂ S | Hydrogen Sulfide | • | • |
| 54-04-03 | SO ₂ | Sulfur Dioxide | • | • |
| 54-04-04† | NH ₃ | Ammonia | | • |
| 54-04-05 | CO+ | Dual purpose CO/H ₂ S (provides a non-specific readout for CO and H ₂ S) | • | • |
| 54-04-08† | Cl ₂ | Chlorine | | • |
| 54-04-09† | NO ₂ | Nitrogen Dioxide | | • |
| 54-04-10† | HCN | Hydrogen Cyanide (special version of PhD Ultra required) | | • |
| 54-04-13 | PH ₃ | Phosphine | | • |

† Special reactive gas calibration adapter (54-05-A0409) required for proper calibration.

Regulators

| PART NO. | DESCRIPTION |
|----------|--|
| 12-022 | Regulator, 1.0 liter per minute flow. Only for use with 54-9036 54-9045E and 54-9071E calibration gas cylinders. |
| 12-023 | Regulator, standard service 1.0 liter per minute flow. |
| 12-025 | Regulator, ammonia service 1.0 liter per minute flow. |
| 12-030 | Regulator, standard service 1.0 liter per minute flow with on/off knob. |
| 12-039 | Demand flow regulator, standard service, 0 – 3 liters per minute flow. |
| 35-0380 | AirChek 3000 PSI Regulator. 1.0 liter per minute regulator with CGA346 hand-wheel coupling. Can be used in conjunction with a gas detector to conduct an air quality check on breathing air cylinders. |

Series 3000 Replacement Sensors, Options and Accessories

| PART NO. | DESCRIPTION |
|----------|--|
| 3101 | Oxygen sensor for Model 3100. |
| 3102 | Remote Oxygen sensor for Model 3100R. |
| 3301 | Carbon monoxide sensor, CO for Models 3300 and 3300-TP. |
| 3350 | Compressed air sampling kit with fixed flow regulator. Rated 10 – 200 psig. Specify 3/8" Hansen "H" or 3/8" Schraeder "S" male QD fitting when ordering. |
| 35-179 | Air sampling assembly (sensor/calibration adapter and tubing). |
| 35-043 | Battery Eliminator (110 VAC). |
| 35-197† | Relay Closure, simply closes a circuit upon alarm condition, rated at no more than 110 VAC and 1 amp service. Factory installation required, must be specified at time of purchase. |
| 6050 | High-intensity remote alarm (115 dBA @ 12") Includes mounting plate, 9V battery, test button, 6' of cable Not intrinsically safe; may not be used in potentially combustible environments. |
| 55-025 | Wall mounting plate for 3300-TP. Accepts monitor mounted bracket. |

† Standard with 3300-TP

ZoneGuard

Fixed Point Gas Detection Systems

PRODUCT HIGHLIGHT:

Accurate and reliable fixed point system.



FEATURES

DESIGN

- Microprocessor-based controller.
- NEMA 4X fiberglass housing.
- Large LCD display.
- Integrally-mounted or remote sensors (up to 50').
- Remote sensor heads are available in explosion proof and non-explosion proof housing.
- One button operation including one button auto calibration.
- Extra RFI protection when using explosion proof remote sensor head.

ALARMS

- Bright alarm lights.
- Built-in mini siren.
- Programmable high and low alarms.
- Double pole double throw (DPDT) relays for each alarm condition.
- Optional integrally-mounted strobes.
- Optional external alarms.

STANDARD ACCESSORIES

- Calibration adapter with tubing.
- Installation and operators guide.

Note: conduit, wire and other components necessary to connect remotely located sensors with the instrument controller are not included.

biosystems

No one makes it easier™

ZoneGuard Fixed Point Gas Detection Systems

ZoneGuard System Configuration

(Add option code letter to the part number.)

| PART NUMBER | ZONEGUARD SENSOR INSTALLED | | Integrally Mounted Sensor | | |
|-------------|----------------------------|------------------|---------------------------|---|---|
| | | | No Code | 0 | 1 |
| 54-16-90 | O ₂ | Oxygen | • | • | • |
| 54-16-80 | LEL | Combustible | | | • |
| 54-16-01 | CO | Carbon Monoxide | • | • | • |
| 54-16-02 | H ₂ S | Hydrogen Sulfide | • | • | • |
| 54-16-03 | SO ₂ | Sulfur Dioxide | • | • | • |
| 54-16-08 | Cl ₂ | Chlorine | • | • | |
| 54-16-13 | PH ₃ | Phosphine | • | • | • |
| 54-16-09 | NO ₂ | Nitrogen Dioxide | • | • | • |

Replacement Sensors for ZoneGuard and Gas Chek

| PART NUMBER | DESCRIPTION | |
|-------------|------------------|------------------|
| 54-15-801-S | LEL | Combustible |
| 54-1631 | O ₂ | Oxygen |
| 54-1632 | H ₂ S | Hydrogen Sulfide |
| 54-1634 | CO | Carbon Monoxide |
| 54-1635 | Cl ₂ | Chlorine |
| 54-1636 | SO ₂ | Sulfur Dioxide |
| 54-1637 | NO ₂ | Nitrogen Dioxide |

ZoneGuard Accessories

| PART NO. | DESCRIPTION |
|-------------|--|
| 54-17-A0101 | Single integrally mounted external strobe for ZoneGuard (Red). |
| 54-17-A0103 | Single integrally mounted external strobe for ZoneGuard (Amber). |
| 54-17-A0102 | Dual integrally mounted external strobes for ZoneGuard (Red and Amber). |
| 54-17-A0201 | Remote programmable (volume adjustable) audible alarm. |
| 54-17-A0202 | Remote high intensity audible alarm. |
| 54-17-A0301 | Splash guard for sensors installed in explosion proof remote housings. |
| 54-17-A0302 | Splash guard for sensors installed in standard housings. |
| 54-17-A0401 | Wire, 22 gauge, 6 conductor, twisted pair, shielded with drain, used to connect Oxygen remote detectors with ZoneGuard controller, 50'. |
| 54-17-A0402 | Wire, 22 gauge, 4 conductor, twisted pair, shielded with drain, used to connect toxic remote detectors with ZoneGuard controller, 50'. |
| 54-17-A0403 | Wire, 18 gauge, 4 conductor, twisted pair, shielded with drain, used to connect combustible remote detectors with ZoneGuard controller, 50'. |
| 54-17-A0310 | ZoneGuard airline adapter (10-200 psig) with Hanson fitting. |
| 35-0136 | Calibration adapter for ZoneGuard and Gas Chek (Oxygen / standard toxic sensors). |
| 54-17-A0304 | Calibration adapter for ZoneGuard and Gas Chek (LEL sensors). |
| 10-302 | Calibration adapter for ZoneGuard and Gas Chek (Reactive gas sensors – Cl ₂). |

Travelpanel 50MP

Portable Air Filtration System



FEATURES

HOUSING

Rugged, durable, lightweight, and portable

DIMENSIONS

58 cm x 41 cm x 23 cm / 23" x 16" x 9" (L x W x D).

WEIGHT

11.3 kg / 25 lbs.

POWER

Internal NiMH rechargeable battery, with external wall cube power supply.

BATTERY LIFE

Rechargeable battery allows up to 50 hours of run time.

DISPLAY

Clear, built-in viewing window.

ALARMS (AUDIBLE)

High intensity audible alarm rated at a minimum of 108db@30cm.

ALARMS (VISUAL)

Automatic filter change indicator and Optional LED Strobe Light.

ALARM OPTION

Optional low pressure alarm standard, set at 80psi descending.

PRODUCT HIGHLIGHT:

*A Portable Air Filtration System
For Supplied Air Respirators.*

The Biosystems TravelPanel 50MP is a portable air filtration system designed to provide Grade-D breathing air for 1 to 4 workers using supplied air respirators. The TravelPanel 50MP can supply 50 cubic feet per minute (CFM) of purified air and regulates the outlet pressure to comply with NIOSH requirements for your respirator. Designed to purify compressed breathing air, the Biosystems TravelPanel 50MP removes water, oil, and particulates as small as 0.01 microns, organic substances and odors. The incorporated MultiPro™ gas detector monitors the air for CO (carbon monoxide) and the optional O₂ sensor can also monitor the oxygen level. The MultiPro offers a blackbox recorder, datalogging capability, calibration reminder, and one button automatic calibration as standard features, all within the TravelPanel 50MP durable housing. The TravelPanel 50MP is portable requiring no AC power to operate. Output pressure is adjustable to the respirator manufacturer's recommended pressure. As a precaution, the output pressure is automatically limited to 125psi, the NIOSH maximum.

biosystems

No one makes it easier™

Travelpanel 50MP Portable Air Filtration System

Travelpanel 50MP Capabilities

| CAPABILITY | DESCRIPTION |
|---|---|
| Output | 50cfm (cubic feet per minute) of purified filtered air. |
| Filtration | Three (3) stage filtration system removes liquids, oil mist, fine particulates, and odors. Filter efficiency is 99.99% @ .01 microns. |
| Pressure | Regulated, with 125psi pressure relief valve. |
| Connections | Choice of 4 Hansen or Schraeder quick disconnect outlets (3/8"). |
| Monitor | MultiPro CO monitor with optional O ₂ sensor, automatic blackbox recorder / datalogging, and calibration reminder. |
| Calibration | One button auto calibration, no pots to turn or buttons to press to adjust the span. |
| <i>Optional locking stabilizer legs keep the TravelPanel steady and upright during operation.</i> | |

Replacement Parts

| PART NO. | DESCRIPTION |
|--|--|
| 54-49-01 | CO Sensor* |
| 54-49-90 | O ₂ Sensor* |
| 54-9033 | Calibration/Test Gas, CO 50 ppm, 103 liters (requires 12-023 regulator). |
| 12-023 | Regulator for 54-9033. |
| 54-9036 | Calibration/Test Gas, \CO 50 ppm, 34 liters (requires 12-022 regulator). |
| 12-022 | Regulator for 54-9036. |
| 54-51-001 | Calibration Kit (includes 54-9033 CO calibration/test gas, 12-023 regulator and foam lined plastic carrying case). |
| 54-51-002 | Value Calibration Kit (includes 54-9036 CO calibration/test gas, 12-022 regulator and foam lined plastic carrying case). |
| 54-51-003 | Filter Kit (includes Pre-filter, coalescing filter, charcoal filter, and O-rings). |
| <i>* 2-year warranty for O₂ and CO sensors.</i> | |

Ordering Information

| PART NO. | CODE | DESCRIPTION |
|--------------------|------|--|
| 54-50-002 | A= 1 | CO |
| | 3 | CO and O ₂ |
| | B= 0 | No Options |
| | 1 | LED Strobe Light |
| | 2 | Locking Stabilizer Legs |
| | 3 | Both |
| | C= 0 | No Option |
| | 1 | Low Pressure Alarm |
| | D= N | Rechargeable |
| | A | Alkaline* |
| | E= H | Hansen outlet fitting |
| | S | Schraeder outlet fitting |
| 54-50-331NH | | Travel Panel 50MP with CO/O ₂ sensors,LED Strobe Light, Locking Stabilize Legs, Low Pressure Alarm, Rechargeable battery, and Hansen outlet fittings. |
| 54-50-100NH | | Hansen Outlet Fittings. |
| 54-50-100NS | | Schraeder Outlet Fittings. |

Sample Probe

Biosystems sample probe assemblies include built-in moisture and particulate filters designed to remove contaminants which might otherwise harm either the instrument or (if equipped) the continuous sample pump. The particulate filter removes particles as small as 1 μm . The hydrophobic filter includes a 0.1 μm Teflon® barrier which blocks the flow of moisture as well as any remaining particulate contaminants.

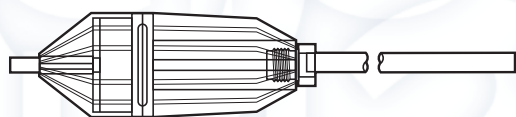
Never use a hand-aspirated sample draw kit or operate an instrument equipped with a sample draw pump unless the sample probe assembly is attached! Using a hand-aspirated sample draw kit or operating an instrument equipped with a sample draw pump without the sample probe assembly attached may result in serious personal injury including death.

The probe extension is available in non-sparking plastic (12") or stainless steel (11.5").

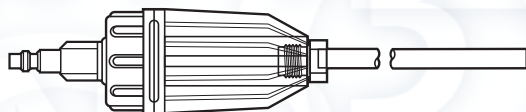
The Biosystems probe assemblies are available with both standard barb fitting or quick disconnect fitting.

Sample Probe Assemblies

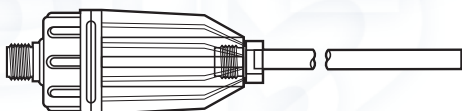
| PART NUMBER | EXTENSION | TUBE FITTING TYPE |
|-------------|-----------|-------------------|
|-------------|-----------|-------------------|



| | | |
|-------------|-----------------|------------------------|
| 54-05-A0403 | Plastic | Standard barb fitting. |
| 54-05-A0405 | Stainless Steel | Standard barb fitting. |



| | | |
|----------|-----------------|-----------------------------|
| 54-36-03 | Plastic | Male quick disconnect (QD). |
| 54-36-04 | Stainless Steel | Male quick disconnect (QD). |

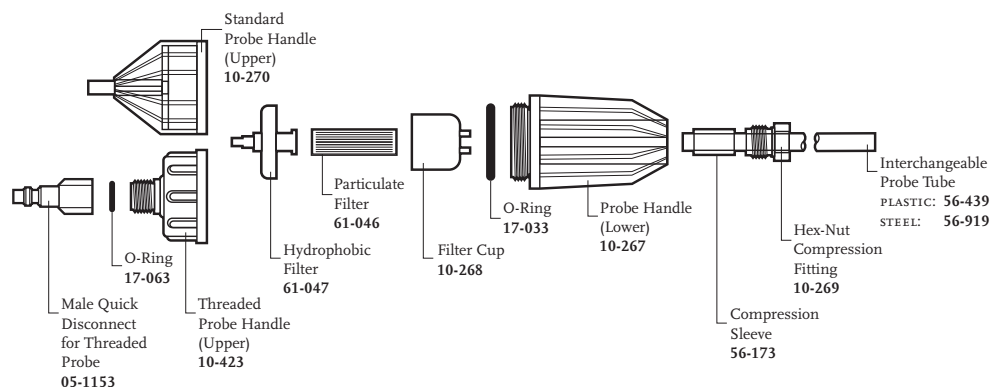


| | | |
|----------|-----------------|---|
| 54-36-05 | Plastic | Threaded for quick disconnect. Intended as replacement where existing QD is reused. |
| 54-36-06 | Stainless Steel | Threaded for quick disconnect. Intended as replacement where existing QD is reused. |

biosystems

No one makes it easier™

Sample Probe Assemblies and Components



Sample Probe Components

| PART NUMBER | DESCRIPTION |
|-------------|--|
| 10-270 | Standard probe handle (upper) |
| 61-047 | Hydrophobic filter |
| 10-268 | Filter cup |
| 10-267 | Probe handle (lower) |
| 10-269 | Hex-nut compression fitting |
| 17-063 | O-ring |
| 05-1153 | Male quick disconnect for threaded probe |
| 10-423 | Threaded probe handle (upper) |
| 61-046 | Particulate filter |
| 17-033 | O-ring |
| 56-173 | Compression sleeve |
| 56-439 | Interchangeable probe tube, Plastic |
| 56-919 | Interchangeable probe tube, Steel |

Sample Probe Filters and Tubing

| PART NO. | DESCRIPTION |
|-------------|--|
| 54-05-K0401 | Filter replacement kit. 10 Particulate (61-046). 3 Hydrophobic (61-047) filters. |
| 54-05-K0403 | Economy filter replacement kit. 30 Particulate (61-046). 10 Hydrophobic (61-047) filters. |
| 54-05-K0402 | Economy filter replacement pack. 10 Particulate (61-046) filters. |
| 54-05-K0405 | Bulk filter replacement pack. 100 Particulate (61-046) filters. |
| 54-05-K0404 | Bulk filter replacement pack. 25 Hydrophobic (61-047) filters. |
| 54-05-K0406 | 100 Hydrophobic filters. |
| 54-05-K0407 | 500 Hydrophobic filters. |
| 53-001 | Polyurethane (fuel resistant) tubing $\frac{5}{16}$ " OD, $\frac{3}{16}$ " ID. |
| 35-0344 | Tubing kit for reactive gas detection (Cl_2). Includes 10' of tubing plus adapters. |

Internal Filters for Motorized Pumps

| PART NO. | DESCRIPTION |
|-------------|---|
| 54-05-K0101 | Internal filter kit for PhD pumps. 10 particulate filters. |
| 54-36-17 | Internal filter kit for Cannonball3. 10 particulate, 5 hydrophobic filters. |
| 35-0408 | In-line cartridge filter for Cannonball3. 1 particulate filter. |

PosiChek³

SCBA Performance Tester



FEATURES

- Computerized test bench, tests performance of any brand SBCA
- Tests Low Pressure (2216 psig) and High Pressure (4500 psig) units for:
 - Mask leakage
 - Exhalation check valve opening pressure
 - Static mask pressure
 - Bypass flow-rate
 - Pressure gauge accuracy
 - Low pressure alarm activation
 - First stage regulator performance
 - Breathing resistance at standard (40 LPM) and maximum (100 LPM) work rates
- **NEW!** Enhanced Precision (EP) High Pressure Transducer, provides more precise measurement of pressure within high-pressure manifold
- **NEW!** Sound Detection System (SDS) automates the primary audible alarm test
- 32-Bit software will operate on:
 - Windows® 98, ME, NT (version 4.0 SP5 or higher), 2000 or XP
 - Internet Explorer version 4.01 (SP2 or higher)
 - A minimum of 100 Mb of available space on the PC's hard drive
 - Parallel Port
 - CD-ROM Drive
- Custom software available from most SCBA manufacturers

PRODUCT HIGHLIGHT:

The PosiChek³ is used by thousands of fire departments, refineries, chemical plants, and nuclear power stations to positively verify that their SCBAs are fit for use. In fact, the PosiChek³ is the standard test bench for every major manufacturer of SCBA around the world.

IQ Express Descriptions

| PART NO. | DESCRIPTION |
|-----------------|--|
| 54-20-1117-32 | Low & High Pressure with Middle Stage Transducer, including Enhanced Precision (EP) Transducer and 32-Bit PosiChek ³ software |
| 54-20-1117-32-L | PosiChek ³ (EP) with laptop computer package |
| 54-20-1117-32-D | PosiChek ³ (EP) with desktop computer package |
| 54-20-2117-32 | Low & High Pressure with Middle Stage Transducer, including Enhanced Precision (EP) Transducer, Sound Detection System (SDS) and 32-Bit PosiChek ³ software |
| 54-20-1117-32-L | PosiChek ³ (EP & SDS) with laptop computer package |

Upgrade your existing PosiChek³

| PART NO. | DESCRIPTION |
|-----------|---|
| 54-21-A12 | Enhanced Precision (EP) Transducer Upgrade |
| 54-21-A13 | Sound Detection System (SDS) Upgrade (Must have EP) |
| 54-21-A14 | EP and SDS Upgrade |

Accessories and extended warranty options available

biosystems

No one makes it easier™

