



A Century of Innovation  
and  
A World of Experience

Innovation Experience



## HVAC & Refrigeration Product Catalog

Combustion & Environmental Analyzers • Indoor Air Quality • Leak Detection  
Air Conditioning & Refrigeration • Service Tools & Meters • Combustion &  
Environmental Analyzers • Indoor Air Quality • Leak Detection • Air  
Conditioning & Refrigeration • Service Tools & Meters • Combustion &

# Bacharach®

WE ARE THE MEASURABLE DIFFERENCE

## Product Solutions for All Seasons.



Bacharach® is committed to making a measurable difference in all that we do. From product development and exceptional service to our nationally recognized Institute of Technical Training, it is our mission to continually deliver beyond what is expected.

### **PRODUCT LEADERSHIP**

Because Bacharach® is an industry leader in product development and manufacturing, we are dedicated to incorporating the very latest technology into our instrumentation whenever possible. We work closely with regulatory commissions and professional industry associations to keep abreast of all the latest safety and environmental concerns that may impact the products we design and manufacture. Our goal is to consistently deliver state-of-the-art test and measurement instruments for gases and liquids and indoor air quality equipment, recovery machines and refrigeration service tools and meters that are both superior and reliable.

### **SERVICE EXCELLENCE**

At Bacharach®, service means much more than tending to our products after we have manufactured them. It means tending to our customers too. Our global network of service centers enables us to swiftly deliver superior technical service both in the field and in-factory. Communication, speed, availability, expert technical support, on-demand repairs and outstanding product warranties – all of these things combined allow us to consistently deliver a level of service that is hard to find elsewhere.

### **PROFESSIONAL TRAINING**

Sure, instruction manuals have their place. But, Bacharach® views professional training as just that – training delivered by professionals. To supplement and enhance the product training our customers regularly receive when they purchase an instrument, we developed our nationally recognized Institute of Technical Training. The Institute offers a variety of comprehensive training seminars on combustion analysis, carbon monoxide safety, building pressure diagnostics, ventilation and refrigeration – all of which are delivered by industry experts. Tens of thousands of professionals across North America have completed our courses and are successfully applying the theories and techniques they acquired from them.

### **RELIABILITY**


We view reliability as the total sum of all that we do. Whether it's developing a new and improved measurement device, assisting a contractor over the phone with product questions, encouraging customers to adhere to regular calibration schedules, participating in industry forums to ensure environmental safety or going that extra mile to turnaround a service request in a timely manner – all of these things have contributed to Bacharach's reputation as a consistently reliable company. We're tremendously proud that customers have come to depend on us, and intend to keep winning their confidence each and every day.

# Catalog Guide


## **TECHNICAL TRAINING SEMINARS** .....2-3

## **SERVICE** .....4-5


## **COMBUSTION AND ENVIRONMENTAL ANALYZERS**

	ECA 450 - Combustion, Environmental & Emissions Analyzer.....	6-7
	PCA® - Portable Combustion Analyzer.....	8-9
	Fyrite® Pro - Residential Combustion Analyzer.....	10-11
	Fyrite® Tech - Residential Combustion Analyzer.....	12-13
	Combustion Test Kits.....	14
	Draft and Pressure Gauges.....	15
	Fyrite® - Gas Analyzers.....	16-17
	Smoke Tester.....	18

## **INDOOR AIR QUALITY**

	Comfort Chek.....	19
	CO <sub>2</sub> Analyzers.....	20-21
	Florite® & Floret® - Air Velocity Meters.....	22
	Temperature and Relative Humidity Analyzers.....	23

## **ANALYZERS & MONITORS**

	Monoxor® III - Carbon Monoxide Analyzer.....	24
	Monoxor® II - Carbon Monoxide Analyzer.....	25
	Electronic Single Gas Analyzers.....	26
	CO <sub>2</sub> Monitor.....	27
	Nitrous Oxide Monitor.....	28
	Snifit® 50 - Carbon Monoxide Analyzer.....	29

## **LEAK DETECTION**

	Leakator® Jr.....	30
	Leakator® 10 - Combustible Gas Leak Detector.....	31
	Tru Pointe® / Top Gun H10Xpro - Refrigerant Leak Detectors.....	32
	H10PM / H10G - Refrigerant Leak Detectors.....	33
	Informant® 2 - Dual Purpose Leak Detector.....	34-35
	H25IR - Industrial Leak Detector <b>new</b> .....	36


## **AIR CONDITIONING & REFRIGERATION**

	Commercial Recovery Units 3600, 3700.....	37
	Stinger Recovery Unit.....	38
	Vacuum Pump / Flaring & Swaging Kit / Charging Scale.....	39
	Multi - Zone Refrigerant Monitor.....	40-41
	Single - Zone Refrigerant Monitor.....	42-43

## **BACHARACH® KITS**

Bacharach® Kit Options.....	44-45
-----------------------------	-------

## **SERVICE TOOLS & METERS**

	Refrigeration & Hand Tools.....	46-48
---	---------------------------------	-------

## **SHIPPING WEIGHT & DIMENSIONS**.....49

PCA®, Fyrite®, True Spot®, Snifit®, Monoxor®, Leakator®, Florite®, Floret®, Oxor®, Nonoxor®, Dioxor™, The Informant®, Tru Pointe® and Bacharach® are registered trademarks of Bacharach®, Inc.



U.S. Manufacturer

# Bacharach® Institute of Technical Training

## BACHARACH®

## T r a i n i n g

As the global leader in combustion testing and environmental monitoring instrumentation, Bacharach® has been developing, designing, engineering and manufacturing instruments that measure and detect gases and liquids for almost a century.

Bacharach® engineers and scientists have spent decades developing instrumentation and procedures that help assure: combustion safety, indoor air quality, refrigerant detection, identification, recovery, recycling and reclamation.

**Now Bacharach's trained specialists and certified associates can share their expertise with you through several technical training seminars. Learn how to:**

- Verify your performance & equipment manufacturer required measurements
- Reduce your service time by getting the most from Bacharach's products
- Generate new business leads
- Retain existing customers; Find more work on each job site
- Reduce liability costs & risks; compliance verification

**For more information call  
1-800-736-4666**

**Bacharach® Institute of Technical Training  
or visit [www.bacharach-training.com](http://www.bacharach-training.com)**

## WHO SHOULD ATTEND?

- HVACR Service Technicians
- Weatherization Auditors
- Safety & Health Officials
- Gas Utility Personnel
- Home Inspectors
- Industrial & Commercial Contractors
- Fire Departments
- Boiler Contractors
- Plumbing Contractors
- Plant Maintenance Engineers
- Building Maintenance Technicians
- Supervisors

Seminars are hosted by a variety of sponsors, including professional trade associations, Bacharach® selling partners, educational institutions, municipalities, federal, private and state-funded organizations, equipment manufacturers and others.

Costs for the seminars can vary due to time & travel expenses and whether retained knowledge or performance based testing is included or required by the host.

Program content may be customized to meet requirements of various certifying jurisdictions and/or associations. Class participation, written tests, hands-on activities, and performance-based criteria are all components of these seminars. Training may also fulfill some insurance requirements. COSA Approved Training (Carbon Monoxide Safety Association)



## Topics covered in each four-hour seminar

### COMBUSTION ANALYSIS

- Residential and commercial flue gas analysis
- Testing procedures and test result interpretation
- Verifying proper fuel and air input
- What is draft & why it is important
- Insuring safe, efficient and reliable operation
- Techniques for identifying heat exchanger problems
- Troubleshooting combustion problems
- Flue gas emissions and compliance standards
- Using combustion analysis to improve your business
- Learn how to maximize service dollars and increase equipment replacement sales

### CARBON MONOXIDE SAFETY

Each attendee receives the book written by Bacharach® Trainers, *Carbon Monoxide a Clear and Present Danger*. (part #19-9359) CO is Everybody's business. All should attend; proctored tests available.

- Raising awareness and measuring homes and workplaces for carbon monoxide
- CO alarm standards and reviews
- Health effects of CO; who is responsible for measuring the air you work in?
- Reporting and referring CO atmospheres
- Working with authorities of jurisdiction
- Measuring CO and source investigations
- Saving lives and enhancing service; finding solutions
- Using reporting forms, checklists and other vital documentation
- Educating ourselves and the people we serve

Visit the Bacharach® on-line Book Store for these and other technical books authored by Bacharach® Instructors or Certified Associates.



part #19-9359



part #19-9347

### REFRIGERATION

This course may include a detailed review of:

- Basic refrigeration
- Federal regulations
- Refrigerant types
- Advanced refrigeration
- Methods of refrigerant leak detection
- Refrigerant recovery, recycling, and reclamation
- Sealed system evacuation
- Sealed system troubleshooting
- EPA Section 608 and R410A certification; proctored tests available

### BUILDING PRESSURE DIAGNOSTICS

Offers a comparison of competing measurable pressures within a structure.

- Exhaust fan influences
- Heat loss pressures
- Leaky ductwork pressures
- Return air shortcuts and safety
- Appliance back-drafting and troubleshooting
- Achieving SEER efficiencies

## Visit Bacharach's Technical Training Room

for more helpful information on:

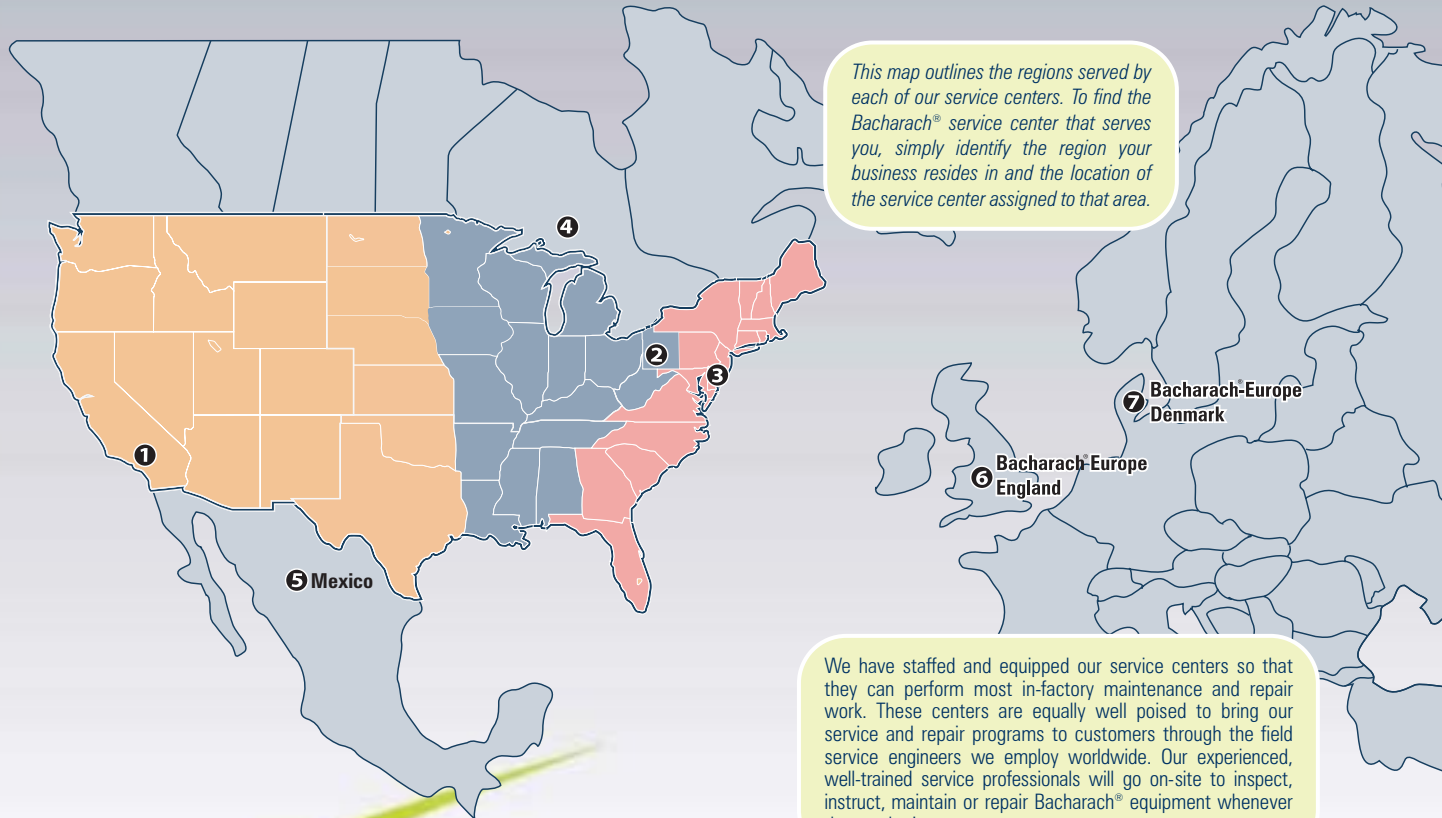
- **Combustion Analysis tips**
- **Instrument maintenance, use, calibration and sensor replacement**
- **Frequently asked questions**
- **Combustion test interpretation**
- **Web-Link to COSA, Carbon Monoxide Safety Association**
- **Bacharach® Institute of Technical Trainers support please contact our training department phone or e-mail!**

[www.bacharach-training.com](http://www.bacharach-training.com)

# Bacharach's Service Commitment

Our aim is to thoroughly support all of the equipment we design and manufacture with a service offering that is exceptional – both in the quality of work we perform as well as the timeliness of our response.

We strive for optimum performance – both in how our products operate and how we extend care for them over time. Our goal is to provide a speedy response to all service requests, deliver that service professionally and at an affordable price.



**1 Bacharach® Sales/Service Center**  
7281 Garden Grove Blvd., Suite H  
Garden Grove, CA 92841  
Ph: 714-895-0050  
Fax: 714-895-7950  
Email: CALSERVICE@bacharach-inc.com

**2 Bacharach® Sales/Service Center**  
621 Hunt Valley Circle  
New Kensington, PA 15068  
Ph: 724-334-5051  
Fax: 724-334-5723  
Email: help@bacharach-inc.com

**3 Bacharach® Sales/Service Center**  
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Pennsauken, NJ 08110  
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Fax: 856-665-6661  
Email: NJSERVICE@bacharach-inc.com

**4 Bacharach® of Canada**  
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Unit #3  
Markham, Ontario L3R 9W7  
Canada  
Ph: 905-470-8985  
Fax: 905-470-8963  
Toll Free in Canada: 800-328-5217  
Email: bachcan@direct.com

**5 Bacharach® de México S.de R. L. de C.V.**  
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Fax: (+45) 74 56 31 78  
Email: mail@bacharach.dk

## Field Service and Service Center Programs

Bacharach's global network of service centers are charged with providing the customer with quality service in a timely manner. Our wide range of service and repair programs enables us to meet a variety of customer needs – and in many cases – exceed them.

### FULL MAINTENANCE CONTRACT

This worry-free program covers all repairs and maintenance at any time over a one-year period and at a fixed price. All replacement parts and semi-annual calibrations are included under the contract. This ensures optimum equipment performance within a strict maintenance budget.

### CALIBRATION SERVICE CONTRACT

This program offers quick turnaround on instruments sent to our service centers on a semi-annual calibration schedule. It ensures that your equipment will work properly and perform to the manufacturer's specifications without incurring any downtime. You will be contacted in advance by your service center to schedule a calibration appointment in order to avoid disrupting your work schedule. Upon receipt of your instrument, we will perform a complete factory calibration and return it to you.

### ON-SITE SERVICE

Bacharach® customers have the choice to send their instruments to us for service, or to receive service in the field. This program is specifically designed to deliver service at our customers' facilities to assure proper operation and customer familiarization with our equipment.

### TRAINING & AUDIT PROGRAM

This program supports our customers' instrument maintenance groups by providing on-site or in-factory training as well as an independent audit/inspection of equipment by Bacharach®. This offers excellent support and documentation of customer maintenance and safety procedures for all of our Bacharach® equipment.

### ON-DEMAND REPAIR AND CALIBRATION SERVICE

Repair, maintenance and calibration for Bacharach® equipment can be delivered on an as-needed basis.

### INSTRUMENT RENTALS

A variety of Bacharach® instruments are available for short-term or long-term rental.

**For more information,  
call 1-800-736-4666.**

# ECA 450

## COMBUSTION EFFICIENCY & ENVIRONMENTAL ANALYZER

Unlike any other industrial grade combustion efficiency and environmental analyzer on the market today, the ECA 450 from Bacharach® conducts accurate combustion and emissions tests that will help you meet environmental regulations and ensure your equipment is burning efficiently. The ECA 450 measures oxygen, carbon monoxide (low range or high range), nitric oxide, nitrogen dioxide and sulfur dioxide, as well as combustibles, temperature and draft. It also calculates combustion efficiency, excess air, carbon dioxide, NO<sub>x</sub> (Nitrogen Oxides) and pollution units.

The ECA 450 takes continuous samplings of furnaces, boilers and other industrial combustion equipment for up to eight hours and generates precise, reliable combustion and environmental measurements and calculations. And it generates this complex data easily – even at selected intervals – enabling plants to make more accurate equipment adjustments and better assess pollution levels. The ECA 450 helps improve overall combustion efficiency, reduce fuel costs and determine emissions compliance.



Built-in printer

Downloads test results to PC

Stores over 1,900 test records

Large, easy to read data display that is visible from wide angles

Modular sensor compartment lets you add sensors as your needs change

Menu-driven setups that deliver the data you want in the format you want

Probes available in varying lengths and styles to accommodate high temperature, heavy sampling & large boiler applications

### APPLICATIONS

The ECA 450 is ideal for professionals concerned about combustion efficiency, environmental compliance or both. It enables plant maintenance engineers and managers, industrial boiler/furnace service technicians, energy coordinators, compliance officers, environmental auditors and safety managers to ensure that industrial equipment is burning efficiently while environmental regulations are being met.

REPLACEMENT SENSORS	
PART NO.	DESCRIPTION
24-0788	Replacement O <sub>2</sub> Sensor
24-0789	Replacement CO (Low) Sensor
24-0881	Replacement NO Sensor
24-0997	Replacement CO (High) Sensor
24-0998	Replacement SO <sub>2</sub> Sensor
24-1027	Replacement NO <sub>2</sub> Sensor
24-1055	Replacement HC Sensor



Units sold with the wireless, hand-held remote are currently not CE certified or EPA/ETV Test Verified. Information on the EPA/ETV performance characteristics of this technology can be found at [www.epa.gov/etv](http://www.epa.gov/etv), or call Bacharach®, Inc at 1-800-736-4666 for a copy of the ETV verification report. The use of the ETV Name or Logo does not imply approval or certification of this product nor does it make any explicit or implied statements as to product performance.



# ECA 450



TECHNICAL DATA	
<b>Measurements &amp; Ranges</b>	
Oxygen	0.1 to 20.9%
Carbon Monoxide	0 to 4000 ppm (hydrogen compensated)
Carbon Monoxide (high)*	4001 to 80000 ppm
Nitric Oxide*	0 to 3500 ppm
Nitrogen Dioxide*	0 to 500 ppm
Sulfur Dioxide*	0 to 4000 ppm
Combustibles*	0 to 5.00% (application dependent)
Stack Temperature	-4 to 2400 degrees F (-20 to 1315° C)
Primary/Ambient Temperature	-4 to 999 degrees F (-20 to 999° C)
Pressure/Draft	-27.7 to 27.7 inches of H <sub>2</sub> O
<b>Calculations &amp; Ranges</b>	
Combustion Efficiency	0.1 to 100.0%
Excess Air	1.0 to 250%
Carbon Dioxide (dry basis)	0 to fuel dependent maximum
NO <sub>x</sub> (NO <sub>x</sub> = NO + NO <sub>2</sub> )	0 to 4000 ppm
NO <sub>x</sub> referenced to % O <sub>2</sub>	0 to 17000 ppm
CO referenced to % O <sub>2</sub>	0 to 99999 ppm
NO referenced to % O <sub>2</sub>	0 to 14900 ppm
NO <sub>2</sub> referenced to % O <sub>2</sub>	0 to 2100 ppm
SO <sub>x</sub> referenced to % O <sub>2</sub>	0 to 17000 ppm
<b>Accuracy</b>	
Oxygen	± 0.3% O <sub>2</sub> on practical concentration of flue gas
Stack or Flue Gas Temp.	± 4°F between 32 and 255°F (± 2°C between 0 and 124°C)
	± 6°F between 256 and 480°F (± 3°C between 125 and 249°C)
	± 8°F between 481 and 752°F (± 4°C between 250 and 400°C)
Primary-air/ambient Temp.	± 2°F between 32 and 212°F (± 1°C between 0 and 100°C)
Pressure/Draft	± 2% of reading or ± .02 in wc whichever is greater
CO	± 5% of reading or ± 10 ppm, whichever is greater between 0-2000 ppm CO
	± 10% of reading between 2001 to 40000 ppm CO
NO	± 5% of reading or ± 5 ppm, whichever is greater between 0-2000 ppm NO
NO <sub>2</sub>	± 5% of reading or ± 5 ppm, whichever is greater between 0-500 ppm NO <sub>2</sub>
SO <sub>2</sub>	± 5% of reading or ± 10 ppm, whichever is greater between 0-2000 ppm SO <sub>2</sub>
HC	± 5% of full scale
Selectable Fuels	Natural Gas, Oil #2, Oil #4, Oil #5, Oil #6, Propane, Coal, Wood, Kerosene, Bagasse
Power	Universal AC adapter and an internal battery pack. Adapter will accept input voltages from 100 to 240V. Fully charged battery pack provides a minimum of 8 hrs of operation
Pumps & Probe	Two pumps are included. The first pump supplies gas sample to the sensors. The second pump supplies fresh air to purge the low range CO sensor when CO levels exceed 4000 ppm. Probe includes a standard probe and hose assembly equipped with a water trap, particulate filter, probe stop, 15 feet of hose, and 12-inch probe tube.
Size	13.5" H x 18.5" W x 9" D (34.3cm x 47.8cm x 22.9cm)
Weight	25 lbs. (11.34 kg)
Warranty	1 year, extended warranty available

\*Optional

ORDERING INFORMATION	
PART NO.	DESCRIPTION
24-7221	Base Unit (O <sub>2</sub> , CO, T <sub>s</sub> , T <sub>A</sub> , DP)
24-7229	ECA 450 without probe & hose
24-8400	ECA 450 NO <sub>x</sub> kit with conditioner
24-8401	ECA 450 NO <sub>x</sub> & SO <sub>x</sub> kit with conditioner
24-7289	Base Unit (O <sub>2</sub> , CO, T <sub>s</sub> , T <sub>A</sub> , DP) w/ wireless hand-held remote **
PART NO.	PROBE ASSEMBLY
24-3023	12" probe assembly
24-3024	24" probe assembly
24-3025	36" probe assembly
24-7223	Heavy duty sample conditioning system (EPA/ETV Test Verified performance). Includes Peltier chiller unit with integral condensate pump, 15' heated hose assembly with probe and built-in temperature controller
24-7224	Compact sample conditioner/probe assembly. Includes Peltier chiller/probe assembly, built-in filter, condensate pump and 15' hose assembly
24-3035	24" High temperature probe assembly
24-3036	36" High temperature probe assembly
24-3037	48" High temperature probe assembly
24-1124	20 ft hose extension
24-1172	Water Trap/Filter Assembly (for probe and hose assembly)
PART NO.	FACTORY INSTALLED SENSOR KITS
24-3026	CO (high) Sensor
24-3027	NO Sensor
24-3028	Combustibles Sensor
24-3029	NO <sub>2</sub> Sensor
24-3030	SO <sub>2</sub> Sensor (requires NO <sub>2</sub> option)
PART NO.	ACCESSORIES
07-1644	Filters (pkg. of 3)
24-7059	Calibration Kit (does not include gas)
104-1800	Thermocouple Wand Extension, 5 feet
104-4027	Serial Cable DB9M to DB9F
24-0980	Printer Paper (5 rolls)

\*\* The wireless, hand-held remote is recommended for use of up to 300 ft. indoors with normal obstructions and up to 1,000 ft. outdoors.



# PORTABLE COMBUSTION ANALYZER

**Comes With A  
2 Year Warranty**



The PCA<sup>®</sup> is the perfect tool for service technicians and boiler contractors who need to determine carbon monoxide (CO) safety and combustion efficiency and emission testing in combustion applications. The PCA<sup>®</sup> directly measures and displays flue gas O<sub>2</sub>, temperatures, draft, differential pressure, NO<sub>(x)</sub> and CO. Simultaneously, the instrument calculates and displays combustion efficiency, excess air, CO<sub>2</sub>, NO<sub>(x)</sub>-Ref. O<sub>2</sub> and CO air free. The large backlit display shows eight different values simultaneously. The PCA<sup>®</sup> provides seven (7) fuels: natural gas, oil #2, oil #4, oil #6, kerosene, propane and coal, for calculating combustion values.

The PCA<sup>®</sup> offers communication features to track and analyze combustion safety tests, efficiency calculations and environmental analysis for residential and commercial applications.

## selectable fuels

- Natural Gas**
- Oil #2**
- Oil #4**
- Oil #6**
- Kerosene**
- Propane**
- Coal**

The advanced communication features of the PCA<sup>®</sup> 55 and the PCA<sup>®</sup> 65 allow the user to store up to 100 tests, customize each combustion test with customer information, generate a personalized printout, and download all of this information to a personal computer for record keeping and trend analysis.



Printer is Optional. See next page for ordering information and included components.



**Probe P/N 24-3003**  
For Models 10 & 20  
(Without draft)

**Probe P/N 24-3004**  
For Models 25, 35, 55, & 65  
(With draft)

Instrument comes complete with: Carrying case, probe and hose assembly, factory calibrated and installed sensor(s), instruction manual, user guide, batteries (packaged separately) and a two-year warranty. All instruments can be upgraded to include CO, Draft, NO<sub>(x)</sub> and other option combinations are available upon request.

Each PCA® that is equipped with Draft / Differential Pressure includes gas pressure test tubing with fittings for ease of appliance line and manifold gas pressure measurement.

SPECIFICATIONS		
Measurement Ranges	Oxygen Primary/Ambient Air Temperature Stack Temperature Carbon Monoxide (optional) Draft (optional)  NO <sub>(x)</sub> (optional)	0.1 to 20.9% 0 °F to 999 °F (-18 °C to 999 °C) 0 °F to 2,192 °F (-18 °C to 1,200 °C) 0 to 4,000 ppm (hydrogen compensated) -28.0 to + 28.0 in. WC (or user selectable in Pascals or Millibars) 0 to 1,000 ppm
Calculated Ranges	Combustion Efficiency Excess Air Carbon Dioxide Carbon Monoxide (air free)  NO <sub>(x)</sub> (Ref. 0 to 15% O <sub>2</sub> )	0.1 to 99.9% (0.1% resolution) 1 to 250% 0.1 to a fuel dependent max. value in percent 0 to 9,999 ppm (on analyzers equipped with CO sensors) 0 to 9,999 ppm (on analyzers equipped with NO sensors)
Accuracy	Oxygen  Carbon Monoxide  NO <sub>(x)</sub>  Draft/Differential Pressure  Stack Temperature  Primary/Ambient Temperature	±0.3% Oxygen (on flue gas)  ±5% of reading or ±10 ppm, whichever is greater between 0 to 2,000 ppm; and ±10% of reading between 2001-4000 ppm  ±5% of reading or ±5 ppm, whichever is greater  ±2% of reading or ±0.02 inches of H <sub>2</sub> O, whichever is greater  ±4 °F between 32 to 255 °F (±2 °C between 0 to 124 °C) ±6 °F between 256 to 480 °F (±3 °C between 125 to 249 °C) ±8 °F between 481 ° to 752 °F (±4 °C between 250 to 400 °C)  ±2 °F between 32 to 212 ° (±1 °C between 0 to 100 °C)
Size	8.5"H x 3.8"W (at display) x 2"D (21.5 cm x 9.7 cm x 5.1 cm)	
Weight	Approximately 1.5 lbs. (0.68Kg) with batteries	
Power Source	Four disposable AA size alkaline batteries; minimum of 8 hours of continuous operation. Optional 120VAC or 240VAC power supply is available for line operation	
Display	A 20 character by 4 line alpha numeric display with backlight	
Warm Up Time	A 60 second total warm up time (Sensors are checked and autozeroed during warm up)	

ORDERING INFORMATION			
MODEL P/N	MEASUREMENTS	CALCULATIONS	FEATURES
<b>Model PCA® 10</b> P/N 24-8040	Oxygen Air Temp. Stack Temp.	Combustion Eff. Excess Air Carbon Dioxide	Printer Interface Memory Storage-10
<b>Model PCA® 20</b> P/N 24-8042	Oxygen Air Temp. Stack Temp. Carbon Monoxide	Combustion Eff. Excess Air Carbon Dioxide CO (air free)	Printer Interface Memory Storage-10
<b>Model PCA® 25</b> P/N 24-8043	Oxygen Air Temp. Stack Temp.	Combustion Eff. Excess Air Carbon Dioxide CO (air free)	Printer Interface Memory Storage-10
<b>Model PCA® 25 Kit w/printer</b> P/N 24-8243	Carbon Monoxide Draft/Differential Pressure		
<b>Model PCA® 35</b> P/N 24-8045	Oxygen Air Temp. Stack Temp.	Combustion Eff. Excess Air Carbon Dioxide CO (air free)	Printer Interface Memory Storage-10
<b>Model PCA® 35 Kit w/printer</b> P/N 24-8244	Carbon Monoxide Draft/Differential Pressure NO <sub>(x)</sub>	NO <sub>(x)</sub> Ref O <sub>2</sub>	
<b>Model PCA® 55</b> P/N 24-8143	Oxygen Air Temp. Stack Temp.	Combustion Eff. Excess Air Carbon Dioxide CO (air free)	Printer Interface Memory Storage-100 Customized Printout Customer ID Computer Interface
<b>Model PCA® 55 Kit w/printer</b> P/N 24-8249	Carbon Monoxide Draft/Differential Pressure		
<b>Model PCA® 65</b> P/N 24-8145	Oxygen Air Temp. Stack Temp.	Combustion Eff. Excess Air Carbon Dioxide	Printer Interface Memory Storage-100 Customized Printout
<b>Model PCA® 65 Kit w/printer</b> P/N 24-8245	Carbon Monoxide Draft/Differential Pressure NO <sub>(x)</sub>	CO (air free) NO <sub>(x)</sub> Ref O <sub>2</sub>	Customer ID Computer Interface

SPARE PARTS AND ACCESSORIES	
PART NO.	DESCRIPTION
24-0788	Replacement Oxygen sensor
24-0789	Replacement CO sensor
24-0797	Replacement Draft sensor
24-0881	Replacement NO(x) sensor
24-0862	Filter for NO(x) sensor
24-1400	IrDA Printer with Disposable Batteries
06-8733	Printer paper, one roll per package
24-1310	Printer paper, 5 roll package
19-3265	Replacement water trap / filter assembly
24-1124	20 ft. extended hose with sample draft & thermocouple lines
24-0885	External power supply 120V
24-1209	External power supply 240V
24-3035	24" high temperature probe assembly
24-3036	36" high temperature probe assembly
24-8214	Pressure Accessory Kit
24-7059	Calibration Kit (less calibration gas)
07-1644	Replacement Filter Element (short, white), pkg. of 3
07-1598	Replacement Filter Element (long, white), pkg. of 3
104-1797	Thermocouple 10 ft. (for combustion air temp.)
104-1798	Thermocouple 1 in. (ambient air temp.)
21-7006	True Spot® Smoke Test Set
19-3037	Probe stop
102-0875	Thumb screw for probe stop
24-1168	Protective rubber boot
24-1229	IrDA Printer with Rechargeable Batteries
24-1243	Battery charger for printer 24-1229
24-1244	Replacement Battery for Printer 24-1229
24-8414	Thermocouple Replacement Kit, 12" probe



# Fyrite® Pro

## RESIDENTIAL COMBUSTION ANALYZER



The Fyrite® Pro is one of our most popular residential combustion analyzers. Service technicians have always been able to rely on the Fyrite® Pro to verify the performance and adjust residential furnaces and appliances quickly and easily. Packed with features such as memory and sensor strength, the Fyrite® Pro offers technicians the best features in measurement precision at an affordable price. We have even added money-saving kits to maximize your investment. (Look for the money-saving symbol \$\$\$ under the ordering information table.)

### FEATURES & BENEFITS

- Directly measures and displays flue gas Oxygen, Temperature, Draft and Carbon Monoxide
- Calculates and displays Combustion Efficiency, Excess Air, Carbon Dioxide
- Four programmed fuels
- Store up to 10 complete test records that can be recalled to the display and printed
- CO purge during turn off
- Oxygen sensor strength display at startup
- Powered by 4 AA alkaline batteries or optional AC power adapter
- Two year warranty on instrument and sensors







SPECIFICATIONS		
Measurement Ranges	Combustion Air/Ambient Air Temperature Flue Gas Temperature Oxygen Carbon Monoxide Draft / Differential Pressure	32 - 212°F (0-100°C) 0 - 999°F (-18 to 537°C) 0.0 to 20.9% O <sub>2</sub> 0 to 2,000 ppm CO -10.0 to +27.0 in. WC
Calculated Ranges	Combustion Efficiency Carbon Dioxide Carbon Monoxide (air free) Excess Air	0.1 to 99.9% 0.1 to a fuel dependent max. value in percent 0 to 9,999 ppm 0 to 400%
Selectable Fuels	Natural Gas (F1) Oil #2 (F2) Propane (F3) Kerosene (F4)	
Power	Four disposable AA alkaline batteries (included)	
Battery Life	Up to 18 hours of continuous operation	
Size	7.5"H x 3.1"W x 2.1"D (19.0 cm x 7.9 cm x 5.3 cm)	
Weight	16 oz. with batteries (0.45 Kg)	
Warranty	2 years, including sensors	

ORDERING INFORMATION			
MODEL P/N	MEASUREMENTS	CALCULATIONS	ACCESSORIES
<b>Model 105</b> P/N 24-8202	Carbon Monoxide **Draft **Differential Pressure		Probe/Hose Assembly Hard Carrying Case
<b>Model 110</b> P/N 24-8103	Oxygen Flue Gas Temperature	Combustion Efficiency Excess Air Carbon Dioxide	Probe/Hose Assembly Hard Carrying Case Protective Rubber Boot
<b>Model 120</b> P/N 24-8104	Oxygen Flue Gas Temperature Carbon Monoxide	Combustion Efficiency Excess Air Carbon Dioxide	Probe/Hose Assembly Hard Carrying Case Protective Rubber Boot CO (air free)
<b>Model 125</b> P/N 24-8105	Oxygen Flue Gas Temperature Carbon Monoxide **Draft **Differential Pressure Combustion Air/Ambient Temp.	Combustion Efficiency Excess Air Carbon Dioxide CO (air free) * Delta Temperature	Probe/Hose Assembly Hard Carrying Case Protective Rubber Boot Probe Stop
<b>Model 125 Kit</b> P/N 24-8205	Oxygen Flue Gas Temperature Carbon Monoxide **Draft **Differential Pressure Combustion Air/Ambient Temp.	Combustion Efficiency Excess Air Carbon Dioxide CO (air free) * Delta Temperature	Probe/Hose Assembly Hard Carrying Case Protective Rubber Boot IrDA Printer Probe Stop
<b>Model 125 Deluxe Kit</b> P/N 24-8206	Oxygen Flue Gas Temperature Carbon Monoxide **Draft **Differential Pressure Combustion Air/Ambient Temp.	Combustion Efficiency Excess Air Carbon Dioxide CO (air free) * Delta Temperature	Probe/Hose Assembly Hard Carrying Case Protective Rubber Boot IrDA Printer True Spot® Test Kit Probe Stop

\*\* Each Fyrite® Pro that is equipped with Draft / Differential Pressure includes gas pressure test tubing with barbed fitting for ease of appliance line and manifold gas pressure measurement.

SPARE PARTS AND ACCESSORIES	
PART NO.	DESCRIPTION
24-1400	IrDA Printer with disposable batteries
24-1310	Printer paper, 5 roll package
06-8733	Printer paper, 1 roll package
21-7006	True Spot® Smoke Test Set
24-1127	Protective boot w/ magnet
24-7265	Replacement CO sensor
24-8106	Replacement O <sub>2</sub> sensor
104-1797	10 ft. thermocouple assembly (for primary air temp)
104-1798	1 in. thermocouple (for room air temp)
24-7059	Calibration kit (Less cal. gas)
51-1994	Calibration gas (100 ppm CO)
24-8214	Pressure Accessory Kit: Includes 44' of tubing, one pitot tube, two static pressure tips, one flexible copper tube & one 1/8 NPT gas valve fitting.
24-1267	Optional soft carrying case
07-1644	Filters for water trap / filter assembly, pack of 3
19-3265	Water trap / filter assembly (for 19-7110, 19-7111, 24-7266 and 24-3004 probe assembly)
24-1254	AC Adapter for use with instrument
24-1229	IrDA Printer with rechargeable batteries
24-1243	Battery charger for printer 24-1229
24-1244	Replacement battery for printer 24-1229
24-8414	Thermocouple Replacement Kit, 12" probe assembly



**Probe P/N 19-7111**  
For Models 110 & 120  
(With thermocouple)



**Probe P/N 24-3004**  
For Models 125 and 105  
(With replaceable thermocouple)



# Fyrite® Tech

## COMBUSTION ANALYZERS



Comes With A  
2 Year Warranty

# A Great Way to Start!

## Now with Printing Capability



- **AFFORDABLE**  
The most affordable combustion analyzer currently on the market.
- **ERGONOMICALLY DESIGNED**  
The instrument is lightweight and fits in the palm of your hand, making it easy to handle. Comes with soft carrying pouch for ease of transport and instrument protection.
- **LONG BATTERY LIFE**  
Four alkaline batteries typically offer up to 18 hours of continuous operation with an automatic "power off" feature that saves energy.
- **QUICK PAYBACK**  
The Fyrite® Tech reduces service call time by providing accurate, electronic test results instantly.
- **HIGH QUALITY**  
Based on the same technology as the Fyrite® Pro Combustion Analyzers.
- **ACCURATE OPERATION**  
Tactile feedback from the instrument's keypad assures that the appropriate key has been pressed.
- **PURCHASE PROTECTION**  
Our two-year warranty on each analyzer and its sensors ensures worry-free operation.
- **SIMPLE TO USE**  
Turn the unit on, select the fuel and insert the probe. It's that easy.



## AFFORDABLE

Some service technicians may shy away from electronic combustion analyzers due to cost. The Fyrite® Tech was not only designed to provide "The Measurable Difference," it was priced to be the most affordable electronic analyzer currently on the market.

## BUILT TO LAST

Based on the same technology of the Fyrite® Pro, the Fyrite® Tech analyzers are built to handle natural gas, oil, propane and kerosene. Four alkaline batteries typically offer up to 18 hours of continuous operation with an automatic "power off" feature that saves energy. User-friendly filter replacements also make maintenance a breeze.

SPECIFICATIONS	
<b>Measurement Ranges</b>	
Flue Gas Temperature	0 to 999°F (-18 to 537°C)
Ambient Temperature	32 to 212°F (0 to 100°C)
Oxygen	0.0 to 20.9% O <sub>2</sub>
Carbon Monoxide	0 to 2,000 ppm CO
<b>Calculated Ranges</b>	
Combustion Efficiency	0.1 to 99.9%
Carbon Dioxide	0.0 to a fuel dependent maximum (in %)
CO Air Free	0 to 9,999 ppm
Excess Air	0 to 400%
<b>Selectable Fuels</b>	
	Natural Gas (F1) Oil #2 (F2) Propane (F3) Kerosene (F4)
Power	Four disposable AA alkaline
Battery Life	Up to 18 hours of continuous operation
Size	7.5"H x 3.1"W x 2.1"D (19.0cm x 7.9cm x 5.3cm)
Weight	16 oz. with batteries (0.45 Kg)
Warranty	2 years, including sensors

FYRITE® TECH 50	FYRITE® TECH 60
<b>Measures:</b>	<b>Measures:</b>
Oxygen	Oxygen
Stack Temperature	Stack Temperature
	Carbon Monoxide
<b>Calculates:</b>	<b>Calculates:</b>
Combustion Efficiency	Combustion Efficiency
Carbon Dioxide	Carbon Dioxide
Excess Air	Excess Air
	CO (Air Free)

ORDERING INFORMATION	
PART NO.	DESCRIPTION
24-8216	Fyrite® Tech 50, Soft Pouch, Probe and 4 AA Batteries
24-8217	Fyrite® Tech 60, Soft Pouch, Probe and 4 AA Batteries
21-7006	True Spot® Smoke Test Set
24-1127	Protective Boot with Magnet
24-0865	Hard Carrying Case
24-7059	Calibration Kit
51-1994	Calibration Gas (100 ppm CO)
24-8106	Oxygen Sensor, O <sub>2</sub>
24-7265	Carbon Monoxide Sensor, CO
19-7111	Probe & hose assembly w/sample & thermocouple lines, angled handle
24-1267	Soft Carrying Case
19-3265	Water trap/filter assembly (for 19-7110 & 19-7111 probe hose assembly)
07-1644	Filter element for water trap (package of 3)

KIT ORDERING INFORMATION		
PART NO.	KIT NAME	DESCRIPTION
24-8227	Tech 60 Starter Kit	Fyrite® Tech 60, Hard Carry Case, Rubber Boot, Drafrite®, True Spot®, Smoke Test Kit
24-8226	Tech 60 Kit	Fyrite® Tech 60, Hard Carry Case and Rubber Boot
24-8326	Tech 60 Kit with Printer	Fyrite® Tech 60, Hard Carry Case, Rubber Boot and IrDA Printer

# Oil Burner Combustion

## TESTING KITS



Bacharach® Combustion Testing Kits continue to offer you the most economical means of testing for oil burner efficiency during installation or servicing. Each kit is designed with the service technician in mind and contains the instruments listed in the ordering chart.

### COMPONENTS

- Fyrite® CO<sub>2</sub> Indicator** – The Fyrite® Carbon Dioxide Indicator measures the percent CO<sub>2</sub> in a flue gas sample.
- True Spot® Smoke Tester and Oil Burner Smoke Scale** – With the True Spot® Smoke Tester and Smoke Scale, you can get an accurate indication of smoke content in flue gas.
- Fire Efficiency Finder/Stack Loss Slide Rule** – The Fire Efficiency Slide Rule is a quick and easy way of determining combustion efficiency and stack loss from the results of the CO<sub>2</sub> and stack temperature tests.
- Tempoint® Dial Thermometer** – High stack temperatures are cause for special concern and may indicate a serious condition.
- Model MZF Draft Gauge** – The intensity of draft determines the rate at which combustion gases pass through the boiler or furnace. With the MZF Draft Gauge, you can determine if draft is excessive or insufficient.
- Draftrite® Draft Gauge** – In some Bacharach® Oil Burner Combustion Testing Kits, the hand-held Draftrite® replaces the Model MZF Draft Gauge for measuring overfire and draft.
- Carrying Case** – Instruments for Bacharach® Oil Burner Combustion Testing Kits come in a rugged, plastic carrying case.

### ORDERING INFORMATION

ITEM NO.	KIT CONTENTS	STANDARD KIT					EXPORT KIT*			
		10-5014	10-5002	10-5022	10-5036	10-5050	10-5150	10-5023	10-5037	10-5051
10-5064	Fire Efficiency Finder	■	■	■	■	■	■			
10-0100	Carrying Case (large)	■		■	■	■	■	■	■	■
11-0121	Moisture Absorb. Material	■	■	■	■	■	■	■	■	■
11-7029	Sampling Hose Assembly	■	■	■	■	■	■	■	■	■
11-7032	Fyrite® CO <sub>2</sub> 20%-Filled	■	■	■	■	■				
12-7014	Tempoint Therm. 1000°F (6" Stem)	■	■	■	■		■			
13-7019	MZF Draft, +.05 to -.25"WC	■		■			■			
10-0099	Carrying Case (small)		■							
13-3000	Draftrite®, +.10 to -.14"WC		■		■					
21-7006	True Spot® Smoke Tester			■	■	■	■	■	■	■
12-7018	Tempoint Therm. 1000°F (12" Stem)					■				
13-7021	MZF Draft, +.05 to -1.0"WC					■				
10-5175	Stack Loss Calculator							■	■	■
11-7031	Fyrite® CO <sub>2</sub> 20%-Unfilled						■	■	■	■
12-7015	Tempoint Therm. 540°C (6" Stem)							■	■	
13-7020	MZF Draft, +1.0 to -2.5mmWC							■		■
13-7018	MZF Draft, +1.0 to -5mmWC								■	
12-7017	Tempoint Therm. 540°C (12" Stem)									■

\*Export Kits are similar to standard kits except Fyrite® Indicators are shipped without fluid installed. Draftrite®, MZF Draft Gauge, Manometer and Tempoint are supplied metric in most instances. Fluid for export kits must be purchased separately in three bottle cartons.



# Draft & Pressure

## GAUGES



### MZF Draft GAUGE

The highly sensitive MZF Draft Gauge requires no liquid or tedious leveling; this dry type instrument is always ready for immediate use. The pointer's movement over scale is in direct proportion to the magnitude of the draft at the test point. Ideal for residential, commercial and industrial heating plants; to measure furnace draft pressure drop across air filters.

These dependable, service-free draft gauges are small, inexpensive and easy to use. Both the MZF Draft Gauge and the Drafrite® Pocket Gauge can be utilized by both contractors and service technicians for determining draft and pressure problems in commercial and residential settings.

### Drafrite® POCKET GAUGE



This pocket size instrument is conveniently held in one hand when being used, making it extremely suitable for heating contractors and service technicians. The free-floating pointer indicates sudden changes from draft to pressure caused by "puffbacks." Suitable for checking flue pipe, chimney, fire box, smoke hood, smoke pipe draft, draft regulator, oil burner firing rate, and basement ventilation.

#### ORDERING INFORMATION

PART NO.	RANGE
13-7018	+1.0 to 0 to -5 mm WC
13-7019	+0.05 to 0 to -0.25" WC
13-7021	+0.05 to 0 to -1.0" WC

*Note: All models supplied with 5" draft tube and 9' of rubber tubing.*

#### ORDERING INFORMATION

PART NO.	RANGE
13-3000	+0.10 to 0 to -0.14" WC
13-3001	+0.05 to 0 to -0.25" WC
13-3002	+2.5 to 0 to -3.5 mm WC
13-3003	+1.5 to 0 to -6.5" mm WC
13-5010	Drafrite® Tube Set

*Note: All models supplied with two sections of draft tube and Leatherette Case 13-0003.*

### PORTABLE MANOMETER

A valuable instrument for measuring and adjusting the inlet and manifold pressure for gas heating equipment and appliances. The Bacharach® Manometer is designed for accuracy, readability and portability. Used to measure pressure in gas lines and to adjust pressure for all types of gas burning appliances. Also used to determine filter resistance, fan efficiency, air velocity and static pressures.



#### ORDERING INFORMATION

PART NO.	DESCRIPTION
17-7000	0-15 INWC and 0-8.5 oz. per sq/in
17-7002	0-15 INWC and 0-38 cm WC
17-0025	Replacement fluid



# Fyrite®

## GAS ANALYZERS

Fast, accurate and easy to use instruments for measuring and analyzing carbon dioxide or oxygen. Fyrite® Analyzers are available for either CO<sub>2</sub> or O<sub>2</sub> analysis, and each model is produced in three scale ranges.

All six instruments are similar in appearance and size, but differ in important construction details, as well as in the absorbing fluids.

Each model, therefore, is suitable only for the particular gas analysis or scale range for which it has been manufactured. Accuracy is within ±0.5% CO<sub>2</sub> or O<sub>2</sub>.



### APPLICATIONS

0-7.6% CO<sub>2</sub> –  
CO<sub>2</sub> tests of controlled atmospheres in fruit, vegetable, meat storage rooms and incubator monitoring.

0-7.6% O<sub>2</sub> –  
Oxygen determination in flammable gases; oxygen tests to check inertness of atmosphere in silos, fuel tanks, etc.

0-20% CO<sub>2</sub> –  
Flue gas combustion tests; CO<sub>2</sub> tests of heat treating atmospheres.

0-21% O<sub>2</sub> –  
Flue gas combustion tests, oxygen deficiency test. Checking oxygen concentrations in hydrogen cooled generators and oil sealed inert gas transformers.

0-60% CO<sub>2</sub> –  
Checking CO<sub>2</sub> in inert gas blankets in tankers and barges carrying gasoline and other combustibles; CO<sub>2</sub> tests on lime kilns; checking CO<sub>2</sub> in sewage plant digesters.

0-60% O<sub>2</sub> –  
Oxygen test in connection with oxygen and gas anesthesiology.

### FEATURES

Fyrite® Indicators have a broad range; they may be exposed to ambient temperatures from -30° to 150°F, and gases up to 850°F may be tested with standard aspirator sampling equipment (special sampling equipment for higher gas temperatures or dry gases is available). See Fyrite® Instruction manual 11-9026. For temperatures above 1400°F, a ceramic sampling tube (Bacharach® Part No. 11-0164) is available.

### OPERATION

Fyrite® absorbing fluid is selective in the chemical absorption of carbon dioxide or oxygen, respectively. Therefore, the Fyrite®'s accuracy, which is well within the range required for industrial and professional applications, does not depend upon complicated sequential test procedures.

In addition, Fyrite® readings are unaffected by the presence of most background gases in the sample.

The number of tests possible with one fluid charge depends on the concentration of samples being tested. At midpoint scale reading the CO<sub>2</sub> fluid is good for approximately 300 gas samples and the O<sub>2</sub> fluid for 100 tests. The need to replace fluid can be easily determined with a simple test, and replacement is an easy procedure. These test procedures, as well as other good information, are provided in the Fyrite® manual 11-9026



**SINGLE KITS** - Single Kits contain either a Fyrite® CO<sub>2</sub> or a Fyrite® O<sub>2</sub> Indicator, Sampling Assembly and a carrying case.

**DUPLEX KITS** - Special Fyrite® Kits containing various combinations of Oxygen and Carbon Dioxide Indicators, Sampling Assembly and a carrying case.

**REPAIR KITS** - One bottle of Fyrite® fluid, valve plunger gasket, top gasket, screws, diaphragm, and envelope of filtering material.

**REFILL KITS** - Two bottles of Fyrite® fluid, top gasket, screws and envelope of filtering material.

USA			
COMPLETE KIT ITEM NO. <sup>1</sup>	SCALE RANGE	FYRITE®	ASPIRATOR ASSEMBLY
<b>CO<sub>2</sub> Testing</b>			
10-5053	0-7.6%	11-7042	11-7039
10-5000 <sup>2</sup>	0-20%	11-7032	11-7029
10-5032	0-60%	11-7034	11-7029
<b>O<sub>2</sub> Testing</b>			
10-5054	0-7.6%	11-7044	11-7039
10-5011	0-21%	11-7036	11-7029
10-5046	0-60%	11-7038	11-7029

FYRITE FLUID*		
GAS TYPE	RANGE	ITEM NO. 3 BOTTLE CTN.
<b>Carbon Dioxide</b>		
	0-7.6%	10-5100 (11-0058)
	0-20%	10-5057 (11-0057)
	0-60%	10-5057 (11-0057)
<b>Oxygen</b>		
	0-7.6%	10-5103 (11-0059)
	0-21%	10-5060 (11-0169)
	0-60%	10-5060 (11-0169)

EXPORT			
COMPLETE KIT ITEM NO. <sup>3</sup>	SCALE RANGE	FYRITE® (DRY)	ASPIRATOR ASSEMBLY
<b>CO<sub>2</sub> Testing</b>			
10-5083	0-7.6%	11-7041	11-7039
10-5001	0-20%	11-7031	11-7029
10-5033	0-60%	11-7033	11-7029
<b>O<sub>2</sub> Testing</b>			
10-5084	0-7.6%	11-7043	11-7039
10-5012	0-21%	11-7035	11-7029
10-5042	0-60%	11-7037	11-7029

REPAIR KITS		
GAS TYPE	RANGE	ITEM NO.
<b>Carbon Dioxide</b>		
	0-7.6%	11-7053
	0-20%	11-7052
	0-60%	11-7052
<b>Oxygen</b>		
	0-7.6%	11-7055
	0-21%	11-7054
	0-60%	11-7054

DUPLEX KITS			
COMPLETE KIT ITEM NO. <sup>4</sup>	CO <sub>2</sub> FYRITE®	OXYGEN FYRITE®	ASSEMBLY ITEM NO.
10-5020	0-20%	0-21%	11-7029
10-5021 <sup>4</sup>	0-20%	0-21%	11-7029
10-5090 <sup>5,6</sup>	0-7.6%	0-7.6%	11-7039
10-5106 <sup>5,6</sup>	0-7.6%	0-21%	11-7039
10-5111 <sup>5,6</sup>	0-60%	0-21%	11-7029

REFILL KITS		
GAS TYPE	RANGE	ITEM NO.
<b>Carbon Dioxide</b>		
	0-7.6%	not available
	0-20%	11-7047
	0-60%	11-7047
<b>Oxygen</b>		
	0-7.6%	not available
	0-21%	11-7050
	0-60%	11-7050

<sup>1</sup>Domestic shipments only

<sup>2</sup>Also includes Fire Efficiency Finder

<sup>3</sup>Export use only. Kits shipped without fluid.

<sup>4</sup>Export only

<sup>5</sup>Special order only: check factory for price and availability

<sup>6</sup>No export equivalent. Order components separately

\*Note: Only genuine Bacharach® Fyrite® Fluid is to be used in your Fyrite Analyzer. Substitute fluids may cause the Fyrite to be inaccurate or inoperative. Numbers in parentheses are old part numbers for reference only and not to be used for ordering.

# True Spot®

## SMOKE TEST KIT

The Bacharach® True Spot® Smoke Test Kit determines efficient combustion and is internationally recognized as the standard method for evaluating smoke density in the flue gases from distillate fuels. Too much smoke is one of the most common causes of excessive fuel usage and expensive service requirements. That is precisely why the smoke test is an indispensable part of any oil burner service job; and with the True Spot®, an accurate smoke reading takes less than a minute.

The True Spot® smoke test method has long been recognized as the accepted standard for oil burner smoke tests. It is used by Underwriters' Laboratories in approval testing of oil burners; and it is the test method specified in the Installation Standards of the National Oil Fuel Institute by U.S. Department of Commerce, Testing materials (D2156-65), and German Standard DIN 51-402.



### ORDERING INFORMATION

PART NO.	DESCRIPTION
21-7006	True Spot® Smoke Test Kit
21-7012	Test Pump
21-0018	Smoke Scale
21-0040	Lubricant
21-0019	Filter Paper Sheets (40 strips)
21-0020	Scale and filter paper



# Comfort Chek 100 & 200

## HANDHELD INDOOR AIR QUALITY ANALYZER



The Bacharach® Comfort Chek is a versatile handheld analyzer that is ideal for verifying indoor air comfort and quality.

### AVAILABLE IN TWO MODELS:

- **Model 100** – measures CO<sub>2</sub>, barometric pressure, temperature and humidity (features diffusion gas sampling)
- **Model 200** – measures CO<sub>2</sub>, barometric pressure, temperature, humidity and CO (features an internal pump for remote gas sampling)

Each reading is displayed separately, but by pressing the f3 button the user can easily scroll through all the readings. Peak readings can also be displayed by pressing and holding down the f3 button.

Both models feature data-logging, charge-and-run capability and a user-zero function for all gases. There is enough memory to store up to 125 sets of data. Power is provided by a long-life NiMH battery, which is capable of providing up to 12 hours of continuous operation from one charge.

The Comfort Chek is small enough to fit in the palm of your hand, remarkably easy to use and is ideal for trend analysis and record keeping.

### APPLICATIONS

IAQ-Indoor air quality checks, environmental health and general safety, CAP-X Controlled atmosphere monitoring, trend analysis using Data-Logging

### FEATURES

- Available in two models:
  - Model 100 measures CO<sub>2</sub>, barometric pressure, temperature and humidity.
  - Model 200 measures CO<sub>2</sub>, barometric pressure, temperature, humidity and CO (built-in pump)
- Data Logging for storing up to 125 sets of data, ideal for trend analysis
- Model 100 measures CO<sub>2</sub>, barometric pressure, temperature and humidity
- Convenient zero function for all gas sensors
- Long Life Infrared CO<sub>2</sub> sensor
- Electrochemical CO sensor
- Charge-and-Run capability for long-term monitoring
- Stored data can be easily downloaded through optional host software using an IrDA communications link
- Peak reading mode

SPECIFICATIONS	
Weight	12 oz
Dimensions	5.5H x 2.5W x 1.4 D inches
Battery Supply	Supplied with 110-220 volt wall charger
Battery Life	Up to 12 hours of operation on one charge
Sensor Life	Long-life sensors (CO <sub>2</sub> - 5 years, CO - 2 years)
MEASURING RANGES	
CO <sub>2</sub>	0 to 10,000 ppm / 10 ppm Resolution
CO (Model 200)	0 to 500 ppm / 1 ppm Resolution
Barometric Pressure	21" to 36" Hg
Operating Temperature	0 to 104°F / 0.1°F Resolution
Relative Humidity	0 to 99.9% / 1% Resolution

ORDERING INFORMATION	
PART NO.	DESCRIPTION
19-8048	Comfort Chek 100. Includes data logging and battery charger
19-8049	Comfort Chek 200. Includes data logging and battery charger
19-3337	Hard Carrying Case (Small)
19-3254	Bach-Com Plus Host Software w/ IrDA Link

# CO<sub>2</sub> Analyzer 2825, 2830 & 2835

## HANDHELD INDOOR AIR QUALITY ANALYZERS



Bacharach's line of CO<sub>2</sub> Analyzers has been expanded to now measure CO<sub>2</sub>, O<sub>2</sub>, temperature, relative humidity, and barometric pressure.

### AVAILABLE IN THREE MODELS:

- 2825 – CO<sub>2</sub> (high range), O<sub>2</sub> and Pressure
- 2830 – CO<sub>2</sub> (high range), O<sub>2</sub>, Pressure and Temperature
- 2835 – CO<sub>2</sub> (low range), Pressure, Temperature and R.H.

Each reading is displayed separately, but by pressing the f3 button the user can easily scroll through all the readings. Peak readings can also be displayed by pressing and holding down the f3 button.

All models feature data-logging, charge-and-run capability, a user-zero function for all gases and an internal pump for remote sampling. There is enough memory to store up to 125 sets of data. Power is provided by a long-life NiMH battery, which is capable of providing up to 8 hours of continuous operation from one charge.

The CO<sub>2</sub> Analyzers are small enough to fit in the palm of your hand, remarkably easy to use, and are ideal for trend analysis and record keeping.

### APPLICATIONS

The 2828, 2830 & 2835 are the ideal instruments for incubators, mushroom farms, fruit/vegetable storage, greenhouses, food packing, brewing, blended beer gases and carbonated drink dispensing.

### FEATURES

- Data Logging for storing up to 125 sets of data, ideal for trend analysis
- Stored data can easily be downloaded through optional host software using an IrDA communications link
- Peak reading mode
- Charge-and-Run capability for long-term monitoring
- Convenient zero function for all gas sensors
- Infrared CO<sub>2</sub> sensor
- Electrochemical O<sub>2</sub> sensor

ORDERING INFORMATION	
PART NO.	DESCRIPTION
19-8053	CO <sub>2</sub> Analyzer 2825. With built in sampling pump, data logging and charger.
19-8054	CO <sub>2</sub> Analyzer 2830. With built in sampling pump, data logging and charger.
19-8055	CO <sub>2</sub> Analyzer 2835. With built in sampling pump, data logging and charger.
19-3310	Extended Probe Assembly, 3 foot
19-3337	Hard Carrying Case (Small)
19-3254	Bac-Com Plus Host Software w/IrDA Link

# CO<sub>2</sub> Analyzer 2810, 2815 & 2820

## CARBON DIOXIDE ANALYZERS



Indoor Air Quality

Bacharach's CO<sub>2</sub> Analyzers 2810, 2815 & 2820 are compact and lightweight and provide fast and accurate CO<sub>2</sub> measurements. All instruments use a maintenance free, dual wavelength, infrared, pressure and temperature compensated sensor. The 2815 & 2820 have a powerful internal pump for extracting samples. The 2820 includes a nafion tube to remove moisture from the sample when testing incubators. The nafion tube requires no maintenance or replacement. All instruments feature built in data-logging for record keeping.



### FEATURES

- Stores up to 850 CO<sub>2</sub> readings
- Quick, intelligent charge in less than two hours
- Two way IrDA communication link
- Easy calibration with built-in user cal feature
- Pressure & temperature compensated sensor
- 2810 range - 0-10,000 ppm (10 ppm resolution)  
2815 range - 0 - 10,000 ppm (10 ppm resolution)  
2820 range - 0-60% (0.1% resolution)
- Low flow indicator (2815 & 2820)
- Powerful internal pump for remote sampling (2815 & 2820)
- Rapid detection of changing CO<sub>2</sub> levels
- Maintenance free dual wavelength infrared CO<sub>2</sub> sensor
- 8 to 10 hours use on a full charge

### APPLICATIONS

The 2810 & 2815 are the ideal instruments for IAQ (indoor air quality) surveys, ventilation verification, food processing/packaging, mushroom farms, fermentation and carbonation processes, and leak detection for bulk and high-pressure CO<sub>2</sub> systems.

The 2820 is the ideal instrument for laboratories to test the CO<sub>2</sub> levels of incubators, soil gas analysis, agriculture and horticulture applications.

### ORDERING INFORMATION

PART NO.	DESCRIPTION
19-8023	CO <sub>2</sub> Analyzer 2810. Includes data logging and charger
19-8025	CO <sub>2</sub> Analyzer 2820. With built in sampling pump, nafion tube, data logging and charger
19-8028	CO <sub>2</sub> Analyzer 2815. With built in sampling pump, data logging and charger
19-3301	IrDA Interface/Software
19-3304	Protective Boot
19-3337	Plastic Carrying Case (small)
19-8027	Calibration Kit
24-1125	Calibration Gas (340ppm CO <sub>2</sub> ), 17L (2810 & 2815)
24-1126	Calibration Gas (5% CO <sub>2</sub> ), 17L (2820)
24-1130	Calibration Gas (2500ppm CO <sub>2</sub> ) 17L (2810 & 2815)
23-4003	Calibration Gas (100% N <sub>2</sub> ) 17L (28200)
19-3306	Replacement Battery Pack



# Florite® and Floret®

## AIR VELOCITY METERS

**FLORITE®**



### FLORITE®

These air velocity meters are easy to use. Simply hold the Florite® in the air stream or in an open area or against the face of a flat-surfaced register, so that air current is flowing directly into the instrument. No stop watch, curves or calculations of any kind are necessary.

### FEATURES

- Instantaneous, direct readings of air velocity without timing or calculations
- Scale lock holds readings until lock is released
- Chart converts air velocity readings to cubic feet per minute without calculations

### APPLICATIONS

- Surface wind velocities
- Air flow in experiments and lab work
- Air flow in connection with ceramics, textile and other manufacturing processes
- Air velocities in testing ventilating systems in schools, hospitals, mines and factories

**FLORET®**



### FLORET®

The Floret® is an ideal pocket size air flow indicator for applications where readability to 50 ft/min is adequate. The Floret® is a handy instrument that can be used for checking air flow through openings as small as 1/4" in diameter.

### FEATURES

- Instant readings from any held position; no leveling or zero balancing required
- Entirely self-contained; does not need hose, probe or other auxiliary parts for measuring air velocity
- Readings are in feet per minute or meters per minute

### APPLICATIONS

- Checking air flow in refrigeration units such as display cases and walk-in coolers
- Detecting leaks around doors and windows
- Checking air flow at registers, grilles, diffusers and convectors
- Checking air flow from any HVAC equipment

### ORDERING INFORMATION

PART NO.	DESCRIPTION
16-7001	Florite® Model MRF, 0-1000 fpm
16-7002	Florite® Model MRF, Dual Scale 0-3,000 fpm and 0-35 mph
16-7009	Floret®, 0-1,000 fpm
16-0107	Florite® Grille Velocity Finder
16-0005	Florite® MRF Carrying Case



# Temperature & Humidity Meters



## SLING PSYCHROMETER

The uniquely compact Bacharach® Sling Psychrometer accurately determines percent relative humidity without the necessity of consulting complex tables. There is no need to wet the wick each time a reading is taken; the Sling Psychrometer contains a slide rule calculator which correlates wet and dry bulb thermometer indications for direct reading of relative humidity. When not in use, the thermometer case telescopes into the handle for protection.



### FEATURES

- Designed for portability (7.5" long x 1" diameter)
- Slide rule construction quickly converts temperature to relative humidity
- Built-in water reservoir holds sufficient water for several hours of testing
- Thin bulb design gives fast thermal response
- Thermometers constructed of shock-resistant glass; stems have deep-etched numerals and 1° scale divisions for easy reading
- Accurate to within  $\pm 5\%$  R.H.

### ORDERING INFORMATION

PART NO.	DESCRIPTION
12-7011	+20°F to +120°F Mercury Filled
12-7012	+20°F to +120°F Red Spirit Filled
12-7013	-5° to +50°C Mercury Filled
12-7043	-5° to +50°C Red Spirit Filled
12-0267	Thermometer (+25°F + 120°F Mercury Filled)
12-0266	Thermometer (+25°F + 120°F Red Spirit Filled)
12-0265	Thermometer (-5° to +50°C Mercury Filled)
12-0327	Thermometer (-5° to +50°C Red Spirit Filled)
12-0011	Wick Replacement Kit - contains 4 wicks
06-5456	Cap

## DUAL-CHANNEL DIGITAL THERMOMETER MODEL TH3000

### FEATURES

- Temperature: -50°F ~ 1999°F (-50°C ~ 1300°C)
- 2 K-Type 39" Thermocouples
- T1-T2 differential measurement
- Resolution: 1°F / 1°C
- Data-hold and max-hold functions
- Flip-up stand
- Includes protective boot and battery



## HUMIDITY-TEMPERATURE METER MODEL TH1800

### FEATURES

- Humidity: 10% RH ~ 95% RH
- Temperature: -4°F ~ 140°F (-20°C ~ 60°C)
- Resolution: 0.1°C / 0.1°F / 0.1%RH
- Wet bulb and dew point temp. readings
- Data-hold and relative function
- Dual LCD display with bargraph indication
- Includes soft carrying case and batteries



## INFRARED THERMOMETER MODEL TH8000

### FEATURES

- Temperature: -4°F ~ 752°F (-20°C ~ 400°C)
- Laser Pointer
- 8:1 Distance to Spot Ratio
- Resolution: 1°F / 1°C
- Min/max hold function
- Backlit LCD display
- Includes soft carrying case and battery



### ORDERING INFORMATION

PART NO.	DESCRIPTION
2080-0000	Infrared Thermometer
2030-0000	Dual-Channel Digital Thermometer
2002-1800	Humidity-Temperature Meter



# Monoxor® III

## CARBON MONOXIDE ANALYZER



Bacharach's Monoxor® III offers service technicians the easiest and most affordable way to locate CO in ambient air as well as stack gases. The Monoxor® III CO Analyzer is a battery powered, hand-held instrument that can quickly and accurately measure levels of CO between 0 and 2,000 ppm. In addition to locating CO in ambient air, the Monoxor® III is supplied with a stainless steel probe and five feet of tubing to sample CO found in flue gases of residential furnaces, combustion appliances, commercial and industrial boilers. An optional wireless IrDA printer provides a permanent record of the detected CO level.

### SPECIFICATIONS

Range	0-2,000 ppm
Resolution	1 ppm
Accuracy	± 5% of reading or 10 ppm, whichever is greater
Operating Temp.:	Instrument: 32-104°F (0-40°C) Probe: 1,000°F (538°C)
Battery Life	24 hours continuous (minimum of 16 hours)
Display	Four-digit LCD display w/backlight
Power	4 'AA' Alkaline batteries
Printer Port	IrDA or HP protocol
Weight	16 oz. with batteries
Dimensions	7.5"H x 3.1"W x 2.1"D (190mm x 79mm x 53mm)
Warranty	2 years, including sensor

### ORDERING INFORMATION

PART NO.	DESCRIPTION
19-8104	Monoxor® III includes 4 'AA' batteries, probe & hose assembly with integral water-trap / filter, and a hard carrying case.
19-8105	Monoxor® III Kit, includes 4 'AA' batteries, probe & hose assembly with integral water-trap / filter, and a hard carrying case, plus an IrDA printer and a roll of printer paper.
24-1400	IrDA Printer with Disposable Batteries
24-1229	IrDA Printer with Rechargeable Battery
06-8733	Printer paper, 1 roll package
24-1310	Printer paper, 5 roll package
24-7265	Replacement CO sensor
24-7059	Calibration Kit (without CO gas)
24-0492	CO gas cylinder, 500 ppm
51-1994	CO gas cylinder, 100 ppm
24-1254	Battery eliminator
19-7110	Probe & Hose Assembly
07-1644	Filter Element for Water Trap, Package of 3
24-1243	Battery charger for printer 24-1229
24-1244	Replacement battery pack for printer 24-1229

# Monoxor® II

## CARBON MONOXIDE ANALYZER



Bacharach's Monoxor® II CO Analyzer is a hand-held instrument designed to locate CO in ambient air as well as stack gases. The continuous sampling instrument quickly and accurately measures levels of CO between 0 and 2,000 ppm. The Monoxor® II has a stainless steel probe with four feet of tubing to sample CO found in flue gases of residential furnaces, combustion appliances, commercial and industrial boilers.

With the addition of the Breath Analysis Module (BAM) to the Monoxor® II, it becomes a powerful tool in determining the presence and level of CO in the bloodstream.

The Monoxor® II is also available in a high range version (0-80,000 ppm) for vehicle emissions testing and forklift tuning.



### FEATURES

- Quickly measures and displays low levels of CO 0-2,000 ppm
- Measurement resolution of 1 ppm
- Multi-purpose strap for easy holding
- Probe and hose assembly for flue gas testing
- Highly visible digital display with backlight

### APPLICATIONS

- CO safety checks on combustion stack gas and ambient air levels
- Analyzing indoor air quality and safety
- Furnace and boiler servicing or replacement
- BAM verifies CO exposure

### ORDERING INFORMATION

PART NO.	DESCRIPTION
19-8004	Monoxor® II CO Analyzer with case
19-8014	Monoxor® II with CO Breath Analysis Module
19-8011	Breath Analysis Module (BAM)
19-8015	Monoxor® II High Range (0-80,000 ppm)
24-0519	Replacement CO sensor, Monoxor® II
19-3084	Probe and hose assembly
19-0441	Adjustment screwdriver
11-0121	Filtering material (for water trap)
24-7059	Calibration kit (without CO gas)
24-0492	CO Gas Cylinder, 500 ppm (for use with 24-7059)
51-1994	CO Gas Cylinder, 100 ppm (for use with 24-7059)
19-8012	BAM Replenishment kit, 30 mouthpieces, 30 balloons and 10 filter disks
19-0435	BAM Mouthpiece & balloon, 1 each per pkg.
19-0431	Filter disks
19-0444	RFI Protective Pouch
19-8022	Probe & hose repair kit
19-8016	Replacement CO Sensor, Monoxor® II High Range



### MONOXOR® II BAM BREATH ANALYSIS MODULE

#### A NON-INVASIVE DETERMINATION OF CARBON MONOXIDE (CO) IN THE BLOODSTREAM (COHB)

- Attaches to Monoxor®II CO Analyzer
- Backlit, digital display of CO with conversion chart for % COHb
- No Factory Retrofit needed
- Disposable mouthpiece and balloon for sanitary operation
- Measures breath CO in less than one minute
- Adds complete CO first response capability to your Monoxor® II
- Replenishment kit available for disposable components
- Non-invasive on-site test results

# Single Gas Analyzers

## FAMILY OF PRODUCTS



Light and rugged, Bacharach's family of hand-held digital analyzers measure toxic gases or oxygen. Now you can quickly measure and display levels of oxides of nitrogen (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO) or oxygen (O<sub>2</sub>) more accurately, efficiently and economically than ever before. Just turn on the instrument, zero it, and insert the probe into the stack or air being sampled. The analyzer will continuously measure and display readings of a specific gas. Single gas analyzers operate on four replaceable C-size batteries for approximately 14 continuous hours of operation.



### APPLICATIONS

- Energy audit testing
- Furnace and boiler servicing or replacement
- Environmental emissions monitoring
- Analyzing indoor air quality (IAQ)
- Spot checking continuous emission systems
- Safety checks on combustion stack gas



### SPECIFICATIONS (for all instruments)

	Nonoxor® II (NO <sub>x</sub> )	Dioxor™ II (SO <sub>2</sub> )	Oxor® II (O <sub>2</sub> )	Monoxor® II (CO)
<b>Range</b>	0-2,000 ppm	0-2,000 ppm	0-25.5%	0-2,000 ppm
<b>Factory Calibrated</b>	100 ppm NO	100 ppm SO <sub>2</sub>	10% O <sub>2</sub>	500 ppm CO
<b>Instrument Accuracy</b>	±5% of reading	±5% of reading	±0.3% O <sub>2</sub>	±5% of reading
<b>Sensor Life (typical)</b>	2 years	2 years	1 year	2 years
<b>Readout</b>	Four-digit LCD display featuring 1/2" high digits, low battery and over-range indicator			
<b>Battery Supply</b>	Four replaceable, C-size batteries (not included)			
<b>Max. Probe Exposure</b>	1000°F (538°C)			
<b>Pump Draw</b>	Sample draw of instrument is suitable for up to 1 inch of water			

### ORDERING INFORMATION

PART NO.	DESCRIPTION
19-8004	Monoxor® II in carrying case
19-8005	Oxor® II in carrying case
19-8006	Nonoxor® II in carrying case
19-8007	Dioxor™ II in carrying case
19-8001	Replacement NO <sub>x</sub> sensor
19-8002	Replacement SO <sub>2</sub> sensor
24-7070	Replacement O <sub>2</sub> sensor
19-3084	Probe & hose assembly
19-0441	Adjustment screwdriver
11-0121	Filtering material for water trap
19-0377	Replacement carrying case
24-0519	Replacement CO Sensor



# CO<sub>2</sub> Monitor 2800

## PERSONAL CARBON DIOXIDE MONITOR



The Bacharach® CO<sub>2</sub> Monitor is a compact and lightweight carbon dioxide detecting and warning device that immediately responds to excessive concentrations of CO<sub>2</sub>. The CO<sub>2</sub> monitor is based on the principle of infrared absorption and has two pre-set alarm levels at 5,000 ppm and 10,000 ppm. When either of these levels is reached, audible and visual alarm signals are activated, sounding until the CO<sub>2</sub> level drops below the lowest pre-set level.

When the Bacharach® CO<sub>2</sub> Monitor is switched on, it will automatically begin storing information (time, date and CO<sub>2</sub> levels) at 30 second intervals (optional software allows user selection of logging frequency).



### FEATURES

- Compact and lightweight
- Simple to use
- Rapid detection of changing CO<sub>2</sub> levels
- Quick, intelligent charge in less than two hours
- Up to 8 hours use on a full charge
- Easy calibration in fresh air
- Automatic data-logging provides complete CO<sub>2</sub> exposure record
- Maintenance free, dual wavelength infrared CO<sub>2</sub> sensor
- Visual and audible alarms
- Optional earpiece for use in high noise environments

### APPLICATIONS

This versatile instrument will provide personal safety monitoring for workers in many industries including agriculture, horticulture, nuclear power plants, food processing and the beverage industry, and as a stand alone monitor for all organizations concerned with indoor air quality.

### SPECIFICATIONS

Range & Resolution	0-50,000 ppm CO <sub>2</sub> (0-5% CO <sub>2</sub> )	100 ppm resolution (0.01% CO <sub>2</sub> )
Response Time	T90 < 10 seconds @ 5,000 ppm and 10,000 ppm	
Audible Alarm	85dB @ 0.5 meters	
Case Seal	NEMA 12 (IP65) (dust and water resistant)	
Power Source	Nickel-metal hydride battery providing up to 8 hours of continuous use	
Operating Temp.	32°F to 104°F (0°C to 40°C)	
Relative Humidity	10 to 95% (non-condensing)	
Dimensions	5.5"L x 2.6"W x 0.8"H (140mm x 66mm x 20mm)	
Weight	7 oz. (200 grams)	
Construction	Hi Impact ABS Case	

### ORDERING INFORMATION

PART NO.	DESCRIPTION
19-7101	CO <sub>2</sub> Monitor 2800
19-3301	IrDA Interface/Software
19-3304	Protective Boot
19-3337	Plastic Carrying Case (Small)
19-3306	Replacement Battery

# N<sub>2</sub>O Monitor 3010

## NITROUS OXIDE MONITOR

Bacharach's N<sub>2</sub>O Monitor 3010 is an affordable and lightweight personal Nitrous Oxide gas monitor that continuously measures and rapidly detects occupational exposure to N<sub>2</sub>O.

Weighing only 8 ounces, the N<sub>2</sub>O Monitor 3010 is a versatile instrument that performs risk assessments, area monitoring, personal monitoring and leak detection in environments where there is a risk of exposure to anesthetic agents. Its measurement resolution is 5 ppm and features both PPM and TWA measurement capabilities, which can be accessed with just a touch of a button. Two modes of TWA are available – real time TWA (over 8 hours) and elapsed time TWA (time unit is switched on). The built-in "auto-stabilization" feature corrects for any drift when sampling long term. A built-in data-logger provides traceable readings for record keeping purposes. The N<sub>2</sub>O Monitor 3010 also includes an internal sampling pump. And, it is not necessary to span or calibrate the monitor – zeroing in fresh ambient air or with nitrogen is all that is necessary.



### APPLICATIONS

The N<sub>2</sub>O Monitor 3010 is a cost-effective monitoring solution for anesthesiologists, doctors, nurses and technicians who work in environments where there is an occupational risk of exposure to Nitrous Oxide, including hospital operating and recovery rooms, medical clinics, surgical centers, and dental and veterinary offices.

### FEATURES

- Rapid detection of changing N<sub>2</sub>O levels
- Continuous data-logging – stores up to 800 readings
- 2 TWA capabilities – real time / elapsed time
- Readings can be toggled between TWA and PPM
- No span calibration required – only zero calibration
- Internal pump for remote sampling with low flow indicator
- Built-in, user-activated alarm
- Compact and lightweight
- Easy-to-read LCD display
- 12 hours of operation on a full charge (10 hours with pump)
- Maintenance free, dual wavelength infrared N<sub>2</sub>O sensor
- Two-way IrDA communication link
- Pressure compensated sensor

### ORDERING INFORMATION

PART NO.	DESCRIPTION
19-7109	N <sub>2</sub> O Monitor 3010
19-3301	IrDA Interface/Software
19-3311	Plastic Carrying Case (Small)
19-8027	Calibration Kit (with regulator & tubing)
23-4003	Calibration Gas (100% N <sub>2</sub> 17L)
24-1295	Calibration Gas (80 ppm N <sub>2</sub> O, 17L)
19-3337	Small Carrying Case

# Snifit® 50

## CARBON MONOXIDE ANALYZERS



### SNIFIT® MODEL 50 CO ANALYZER

The stand alone Snifit® 50 allows you to continuously measure and display CO levels between 0 and 1,999 ppm. With 1 ppm resolution, the Snifit® 50 can accurately measure high and low concentrations quickly and easily. The highly visible display indicates ppm CO and a backlight is available to use in low light conditions.

### APPLICATIONS

The Snifit® is ideal for ambient air safety checks on residential appliances such as fireplaces and ovens; home inspection and HVAC service on furnaces and hot water heaters.

### FEATURES

- Measures and displays Carbon Monoxide 0-1,999 ppm, 1ppm resolution
- Small enough to fit in your shirt pocket
- Backlight for low light conditions
- One button operation
- Low battery indicator

Bacharach's affordable Snifit® Carbon Monoxide (CO) analyzers can help you accurately measure CO concentration levels in room air. This continuous operating instrument quickly and accurately measures levels of CO between 0 and 1,999 ppm. Weighing just 8 ounces, the Snifit® analyzers are light as a feather and small enough to fit in your shirt pocket or hold in the palm of your hand.

With one button operation, the Snifit® analyzers are simple to use. Special design features such as a zero adjustment control and a fast response sensor specific to CO gas make the Snifit® analyzers perfect for measuring low levels of CO.

#### ORDERING INFORMATION

PART NO.	DESCRIPTION
19-7060	Snifit® 50 CO Analyzer
19-7061	CO Sensor
19-3242	Calibration Cup with screwdriver
54-1994	Calibration Gas (100 ppm)
24-7059	Calibration Kit (without gas)

#### SPECIFICATIONS

Range	0-1,999 ppm
Resolution	1 ppm
Display	3 1/2" display with yellow-green backlight
Sensor Type	Electrochemical (specific to CO)
Sensor Calibration	Factory calibrated on 100 ppm
Sensor Accuracy	+/- 5% of reading
Weight	8 ounces (0.23 Kg)
Dimensions	5.5"L x 2.0"W x 1.57"H (140 mm x 50 mm x 40 mm)
Power Source	9-volt battery
Battery Life	6 months operation with normal duty cycles
Manual Zero	Reduces chances of zeroing in hazardous environment
Auto Power Off	Every 30 minutes
Operating Temp.	32°F to 104°F (0-40°C)
Warranty	1 year



# Leakator® Jr.

## COMBUSTIBLE GAS LEAK DETECTOR



Actual Size is 6 inches  
with 12" flexible probe

### SPECIFICATIONS

Housing	Molded four piece ABS plastic
Power	Four alkaline AA-batteries, included. Battery life is 14 hours
Warm-up Time	Automatic calibration, about 60 seconds to operational condition
Sensor	Low power metal oxide
Probe	Self storing 12 inch flexible probe. Accommodates integral sensor
Sensitivity (Methane Based)	20 ppm in high sensitivity mode 50 ppm in low sensitivity mode
Status indicators	Visual: 1 ultra-bright variable frequency LED. Audible: Variable speed ticking sound. Power-On flashing green, Power-Off solid red, Ready Condition Flashing green (low frequency)
Environments	32° to 104°F (0° to 40°C), 15% to 75%, non-condensing
Dimensions / Weight	6"H x 2"W x 1.5"D (15.3 cm x 5 cm x 3.8 cm) 6 oz. (0.17Kg.)
Safety Approvals	UL 913, intrinsically safe, for use in Class I, Division I, Groups A,B,C, and D hazardous locations
Warranty	Two year full warranty on instrument

### ORDERING INFORMATION

PART NO.	DESCRIPTION
19-7075	Leakator® Jr., flexible 12 inch probe for combustible gases and vapors, with instruction manual, sensor, cloth case, and batteries.
19-0575	Replacement sensor
19-0576	Replacement sensor cover
19-0577	Replacement battery door

The Leakator® Jr is a handheld combustible gas leak detector used to pinpoint combustible gas leaks in commercial, residential and industrial applications, including surveying gas pipelines and inspecting valves, regulators and meters on gas equipment. When combustible gases are sensed, audible and visual indication will be given. Combustible gases detected include: Acetone, Acetylene, Benzene, Butane, Ethanol, Ethylene Oxide, Gasoline, Hexane, Hydrogen, Industrial Solvents, Iso-Butane, Methane, Methanol, Paint Thinners, Propane, Natural Gas and Naptha.

### FEATURES

- **Visual Indicator**  
1 LED (Variable Frequency)
- **Audible Indicator**  
Loud audible ticking rate
- **2 Sensitivity Levels**  
Aids in pinpointing leak detection
- **Operational Status LED**
- **Low Power Metal Oxide Sensor**  
Plug-in sensor
- **12 Inch Flexible Probe**
- **Tough ABS Plastic Housing**  
Durable and rugged
- **UL Classified**
- **Automatic Calibration**
- **Micro Processor Controlled Circuitry**
- **Easily Replaced AA-Batteries**  
Battery life is 14 hours
- **New Compact Design**  
Fits in the palm of hand (6"L x 2"W x 1.5"D)
- **2 Year Warranty**



# Leakator® 10

## COMBUSTIBLE GAS LEAK DETECTOR



Leak Detection

Bacharach's Leakator® 10 is a low maintenance combustible gas leak detection unit, small enough to be operated with just one hand, yet loaded with the kind of advanced features and technology professionals demand.

Powered for up to 30 hours of continuous operation by alkaline C-cell batteries, Leakator® 10 comes complete with a flexible 20-inch long probe for hard-to-reach areas and a solid state sensor that will last for up to five years. Leakator® 10 allows you to pinpoint large and small leaks quickly, while checking a relatively large area in a short amount of time.



Actual Size is 8.5 inches with 20" flexible probe

### FEATURES & BENEFITS

- **Visual Indicator**  
10 Ultra-bright LEDs
- **Audible Indicator**  
Loud audible ticking rate
- **30 Hour Battery Life**  
Easily replaced C-cells
- **Sensitivity Thumb-Wheel**  
Aids pinpointing leak detection
- **Operational Status LEDs**  
English and international systems
- **Solid State Sensor**  
Plug-in sensor, five year typical life
- **20 Inch Flexible Probe**  
For hard to reach locations
- **Also Available for ETO**  
Part No. 19-7063
- **UL Listed**  
Intrinsically safe
- **CE Mark**  
Electronic performance standard

### SPECIFICATIONS

Housing	Molded, three piece ABS plastic in bright yellow color, includes carrying strap
Power	Five alkaline C-cells, not provided 30 hours typical life for continuous operation
Warm-up Time	Automatic, self check, about ten seconds to operational condition
Sensor	Semiconductor type. Five year typical life. Plug-in replacement
Probe	Self storing 20 inch flexible probe. Accommodates integral sensor
Sensitivity	20 ppm useable sensitivity (methane)
Status indicators	Visual: 10 ultra-bright red LED's. Audible: Variable speed ticking sound. Earphone available for use in noisy environments. Power-On ultra-bright green LED, Fail ultra-bright yellow LED. Low Battery ultra-bright yellow LED
Environments	23° to 130°F (-5° to 54°C), 10% to 90% relative humidity, non condensing
Dimensions / Weight	Leakator®: 18 oz. (0.51Kg.), 8.5" x 2.25" x 1.75" (21.6 cm x 5.7 cm x 4.4 cm) Case: Black HDPE, 17 oz. (.48Kg), 10.5" x 7" x 3" (26.7 cm x 17.8 cm x 7.6 cm)
Safety Approvals	UL listed, intrinsically safe, for use in Class I, Division 1, Groups A, B, C, and D classified areas
Warranty	One year limited warranty. See warranty card for more information

### ORDERING INFORMATION

PART NO.	DESCRIPTION
19-7051	Leakator® 10, in custom carrying case, flexible 20 inch probe for combustible gases and vapors, with instruction manual (batteries not included)
19-7063	Leakator® ETO - For detection of Ethylene Oxide
19-0398	Replacement sensor and matching resistor, for 19-7051 only
19-0397	Replacement rigid carrying case
19-3091	Replacement flexible probe assembly
51-2529	Optional Earphone

# Tru Pointe® / Top Gun H10Xpro



## TRU POINTE® REFRIGERANT LEAK DETECTOR

Bacharach's newest refrigerant leak detector, the Tru Pointe®, is designed specifically for technicians looking for a premium quality leak detector at an affordable price.

The Tru Pointe® is designed to be instantly responsive to all refrigerants. It is even accurate when used in environments where high levels of refrigerant vapors are present. No manual sensitivity adjustments are necessary during the inspection process. Simply turn the unit on, and let it mark the spot!

### FEATURES

- Detects all CFC, HFC, and HCFC refrigerants using patented heated diode sensor technology
- Instantaneous response time
- Innovative sensor replacement design
- Up to 20 hours continuous operation on 2 'D' alkaline batteries
- Battery-powered with low battery indication
- Long-life, DC brushless fan
- High and low-sensitivity modes
- Automatic zero and background compensation
- Audible & visual leak indication
- Easy to use, one-handed operation
- No user calibration required

### SPECIFICATIONS

Sensing Elements	Type: Patented Heated Diode, Plug-in Life Expectancy: 150 Hours or 1 year of normal use
Refrigerants Detected	All CFC, HCFC and HFC refrigerants, including R-12, R-22, R-123, R-134a and blends R-404a, R-408A, R-409A, and R-410A (i.e. any refrigerant containing Chlorine, Fluorine or Bromine gas)
Alarm Sensitivity of R-134a (Hardest refrigeration to detect)	0.5 oz / year (14g/year) per SAE J1627 0.1 oz / year (3g/year) when probe is held over leak source for at least 5 seconds
Alarm Types	Variable-intensity audible and visual alarms
Power Source	Two 'D' Alkaline Batteries
Warm-Up Time	10 seconds
Response Time	Instantaneous
Battery Life*	15 hours minimum
Probe	14" (35.6cm) flexible
Size	2" W x 9.4" L x 2.5" H (5 cm W x 23.8 cm L x 6.3 cm H)
Weight	1.16 lb (0.53kg) w/ batteries
Agency Approvals	UL Listed in accordance with SAE J1627, CE
Warranty	One year, including sensor

\*As tested in low sensitivity mode using Duracell Ultra MX 1300 alkaline batteries

### ORDERING INFORMATION

PART NO.	DESCRIPTION
19-8106	Tru Pointe®, instruction manual, 2 'D' Batteries and hard carrying case
19-0501	Carrying Case
19-0559	Sensor



## TOP GUN H10XPRO HAND-HELD REFRIGERANT LEAK DETECTOR

### FEATURES

- Detects all CFC, HFC, and HCFC refrigerants
- Utilizes patented heated diode sensor technology
- Rechargeable Ni-Cad battery provides 3 to 4 hours of continuous operation
- Includes 2 battery packs
- Contains 3 sensitivity modes
- Contains automatic and manual zero balance control
- Complies with SAE J1627

### SPECIFICATIONS

Measures	All CFC, HFC, and HCFC Refrigerants
Sensing Element	Patented Heated Diode
Alarm Types	Variable Intensity Audible and Visual Alarms
Probe Length	16" (40.6cm) - 8" (20.3cm) probe optional
Power Source	Rechargeable 7.2V Ni-Cad Battery Pack
Warm-Up Time	10 Seconds
Operating Temperature	32 to 104°F (0 to 40°C)
Weight	1.2 lbs. (0.54 Kg)
Agency Approvals	UL file SA9717, SAE J1627, CE
Warranty	One year, including sensor

### ORDERING INFORMATION

PART NO.	DESCRIPTION
3015-0690	H10XPro with 110V battery charger, 16" probe, 2 rechargeable battery packs, instruction manual, and hard carrying case
3015-1721	Sensor
3015-1476	BatteryPack
3015-1491	8" Probe

# H10PM / H10G

## REFRIGERANT LEAK DETECTOR

Leak Detection



This series combines all features of the previous General Electric & Yokogawa H10 Series.



### H10PM ALL-IN-ONE REFRIGERANT LEAK DETECTOR

#### FEATURES

- Detects all CFC, HFC, and HCFC Refrigerants
- Manual or automatic zero balance control
- Pass/Fail Test mode
- Unique sensor calibration system
- 3 sensitivity modes
- Powered by a rechargeable battery
- Pinpoints both small and large leaks

### H10G MANUAL BALANCE REFRIGERANT LEAK DETECTOR

#### FEATURES

- Detects all CFC, HFC and HCFC Refrigerants
- Manual zero balance control
- Pinpoints both small and large leaks
- AC powered
- 3 sensitivity modes
- 25 years of proven experience

#### ORDERING INFORMATION

PART NO.	DESCRIPTION
3015-0456	H10G Standard Leak Detector *
3015-0627	H10PM All-in-One Leak Detector

#### H10PM Accessories and Parts

PART NO.	DESCRIPTION
3015-0895	Battery Clamp/Cigarette Adapter Assembly
3015-0119	Battery Charger (120V AC) (will charge unit only)
3015-0131	AC Adapter (120V AC) (will charge or run unit)
3015-0143	AC Adapter (220V/230V AC) (will charge or run unit)
3015-0147	AC Adapter (240V AC) (will charge or run unit)
3015-0103	Battery for H10PM

#### H10G and H10PM Accessories and Parts

PART NO.	DESCRIPTION
3015-0326	14" Flexible Probe
3015-0638	Standard Probe Assembly
3015-0486	Replacement Sensor
3015-0784	Maintenance Kit
3015-0864	Leak Reference Bottle
3015-0641	Clear Probe Tip
3015-0781	Tune-Up Kit
3015-0680	Rubber Probe Tip

\* Specify power requirements when ordering.

#### SPECIFICATIONS

Detects:	All CFC, HFC, and HCFC Refrigerants
Sensing Element:	Positive Ion Emission Heated Diode
Sensitivity:	R-134a Small - 0.1 oz/year Medium - 0.5 oz/year Large - 2.0 oz/year
Warm-Up Time:	Approx. 2 minutes
Performance:	Exceeds SAE J1627
Probe Length:	4.5 feet
Dimensions / Weight:	H10PM 5.5" x 10.5" x 8.5" / 5lbs. (14cm x 27cm x 22cm / 2.3 Kg) H10G 2.5" x 4.5" x 8.5" / 3lbs. (6cm x 11cm x 22cm / 1.4 Kg)
Operating Temperature Range:	32° TO 104°F (0° to 40°C)
Agency Listings:	UL File SA917, SAE J1627, CE-Mark
Power:	H10PM Internal, Rechargeable Battery (120VAC Charger Included) Optional: 12V Battery Clamp Leads and Cigarette Adapter Optional: 120V Charger for Charge or Run H10G 120VAC Only
Zero Balance:	H10PM Manual and Auto H10G Manual Only
Switchable Sensitivity Modes:	Yes
Alarm:	Audible and Visual

# The Informant<sup>®</sup> 2

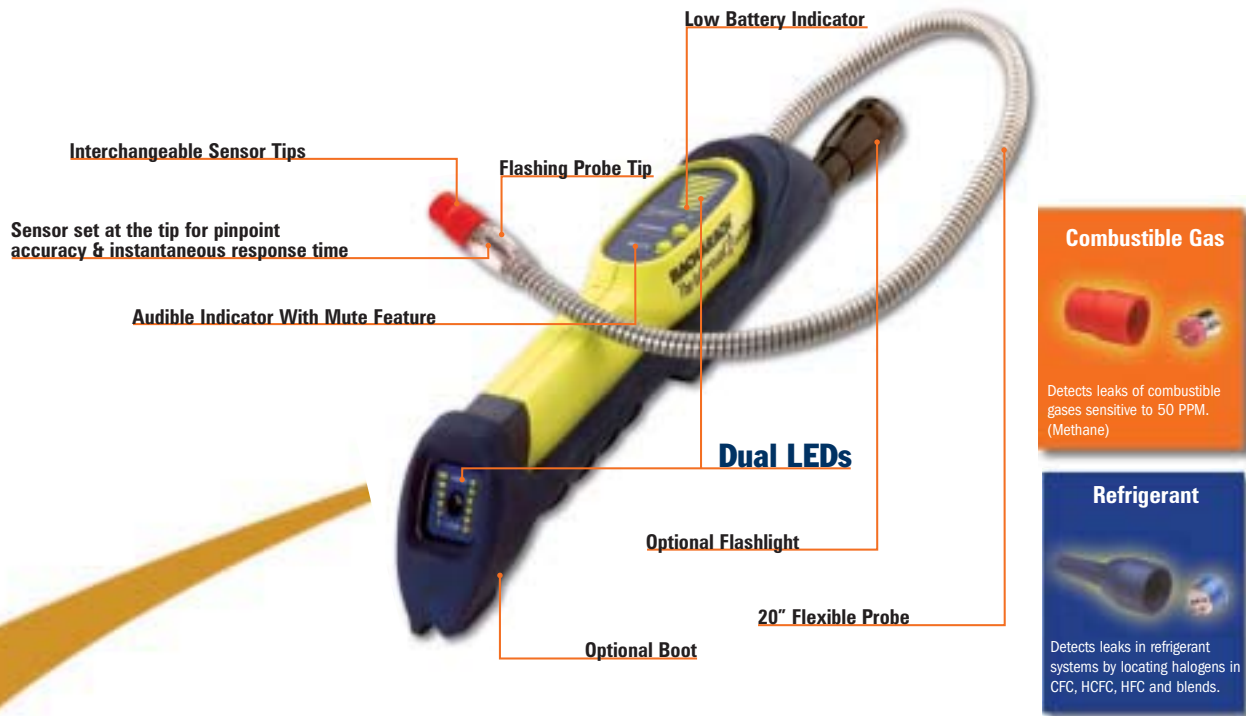
## DUAL PURPOSE LEAK DETECTOR REFRIGERANT & COMBUSTIBLES

The Informant<sup>®</sup> 2 leak detector allows pinpoint detection of both refrigerant and combustible gas leaks with the same instrument.

Its unique combination of state-of-the-art patented sensor technology, advanced software design and microprocessor-controlled circuitry offers you unmatched precision coupled with tremendous speed. The Informant<sup>®</sup> 2 utilizes a patented semiconductor sensor technology to detect combustible gases and patented heated diode sensor technology to detect refrigerants.

Swap sensor tips within seconds and never worry about adjusting sensitivity levels - it's taken care of automatically - even where high levels of background vapors or refrigerants are present. The refrigerant sensor tip is finely tapered to a 0.2" diameter - so you can get in between coils and fittings, gaining access to hard to reach areas.

The Informant<sup>®</sup> 2 leak detector features an audible indicator with a mute option coupled with sequential LEDs to monitor increasing concentrations of refrigerant or combustible gases. Dual bar graph displays offer visual confirmation no matter what position the instrument is in. And, a flashing light at the tip of the probe helps to visually define your sampling location.



### FEATURES

- Detects both refrigerants and combustible gases (with respective sensor installed)
- Audible indicator with mute feature
- Sensor set at the tip for pinpoint accuracy and instantaneous response time
- Sensors are interchanged quickly and easily
- Flashing probe tip, LED display
- Low battery indicator
- Optional boot and flashlight
- Lightweight and ergonomically designed
- Microprocessor controlled for accuracy and reliability
- Sensitivity is adjusted automatically
- Hydrophobic filter prevents moisture contamination
- Rugged rubber boot holds flashlight (optional)
- Flashing probe tip, dual LED displays and loud tick rate indicates relative concentration levels
- Lifetime warranty available



# The Informant<sup>®</sup> 2



Leak Detection



SPECIFICATIONS	
Sensing Elements:	
Refrigerant	Heated Diode - U.S. Patent No. 5,932,176
Combustible	Patented semiconductor type. Five year typical life. Plug-in replacement
Refrigerants Detected:	All CFC, HCFC and HFC refrigerants including: R-12, R-22, R-123, R-134a and blends R-404A, R-408A, R-409A and R-410A (i.e., any refrigerant containing Chlorine, Fluorine or Bromine gas)
Combustible Gases Detected:	All combustible gases and vapors
Alarm Sensitivity:	
Refrigerant	Less than 0.25 oz/yr of R-134a (hardest to detect refrigerant)
Combustible	Minimum 50ppm (Methane)
Alarm Types:	Audible, dual visual LED's and flashing probe tip
Power Source:	Four (4) AA disposable alkaline batteries included
Warm-up Time:	10 seconds
Response Time:	
Refrigerant	Instantaneous
Combustible	Instantaneous
Battery Life:	4-5 hours, under typical intermittent operation
Probe:	20" (50.8 cm) maximum length, fully extended; 3" (7.62 cm) if wrapped around instrument. Includes LED indicator
Size:	1.75"W x 9.62"L x 2.25"H (4.45 cm x 24.43 cm x 5.72 cm)
Weight:	0.86 lbs. (0.39 kg) with batteries
Agency Approvals:	
Refrigerant	UL listed in accordance with SAE J1627
Combustible	MET Lab certified to UL 913, intrinsically safe for use in Class 1, Division 1, Group D hazardous areas
Warranty:	One year, including sensors

ORDERING INFORMATION	
PART NO.	DESCRIPTION
19-8038	<b>Informant<sup>®</sup> 2 Contractor Kit.</b> Instrument comes with refrigerant and combustible gas sensors, color-coded sensor tips, instruction manual, 4 AA batteries, filters and a hard carrying case.
19-8042	<b>Dual Refrigerant/Combustible Informant<sup>®</sup> 2 Detector Kit.</b> Instrument comes with refrigerant and combustible gas sensors, color-coded sensor tips, instruction manual, 4 AA batteries, 5 filters and a custom soft carrying case.
19-8045	<b>Dual Deluxe Refrigerant/Combustible Informant<sup>®</sup> 2 Detector Kit.</b> Instrument comes with refrigerant and combustible gas sensors, color-coded probe tips, protective rubber boot, flashlight, instruction manual, 6 AA batteries and 5 filters, all packaged in a hard carrying case.
19-8040	<b>Refrigerant Only Informant<sup>®</sup> 2 Detector Kit.</b> Instrument comes with refrigerant sensor, color-coded probe tip, instruction manual, 4 AA batteries, 5 filters and a custom carrying case.
19-8037	<b>Deluxe Upgrade Kit.</b> Includes protective rubber boot, flashlight, 2AA batteries and a hard carrying case.
19-8047	<b>Combustible Gas Upgrade Kit.</b> To upgrade a refrigerant only Informant <sup>®</sup> 2 to a dual sensing instrument. Includes combustible gas sensor, color-coded probe tip and 5 filters
19-0499	Replacement combustible sensor
19-0510	Replacement refrigerant sensor
19-0509	Replacement filters (5-pack)

The Informant<sup>®</sup> 2 leak detector is a modular system which is totally upgradable. Order the complete dual system or choose dedicated refrigerant or combustible gas units and upgrade to the dual configuration at any time in the future.

## H25-IR

## INDUSTRIAL REFRIGERANT LEAK DETECTOR



The H25-IR is an industrial leak detector used for low-level detection and leak rate quantification of CFCs, HFCs, HCFCs and halogen gas compounds that are used in air conditioning and refrigeration equipment, fire suppression systems, and various other residential, commercial and industrial apparatus. The instrument can be used to locate and quantify leaks as well as log and totalize the entire group of leaks in a system to ensure quality assurance compliance. The unit is capable of detecting 29 of the most commonly used refrigerants and halogen gas compounds.

## SPECIFICATIONS

Gases Measured	R-11, R-12, R-22, R-23, R-113, R-114, R-123, R-124, R-134a, R-227, R-236fa, R-401A, R-402A, R-402B, R-404A, R-407A, R-407C, R-408A, R-409A, R-410A, R-500, R-502, R-503, R-507, R-508B, H-1211, H-1301, H-2402, N-1230
Sensor	Infrared
Measurement Units	oz/yr, g/yr, mL/s, PaM <sup>3</sup> /s, ppm
Measurement Range	0.00 - 5.00 oz/yr
Warm-Up Time	2 minutes
Probe	8" (20.3 cm) flexible probe with 6' (1.8 m) hose 12' (3.6 m) hose optional
Operating Modes	Search - detects presence and location of gas leaks Measure - calculates and displays leak rate
Response Time	Less than 1 second (with 6' probe hose)
Sensitivity	0.01 oz/yr for most gases Minimum of 0.03 oz/yr for all gases
Temperature Drift	±0.8% of reading per °C
Calibration	Internal: calibration performed using the unit's built-in R-134a leak source External: calibration performed using a customer supplied leak source of known gas type and leak rate
Power	100 to 240 VAC, 50/60 Hz
Power Consumption	15 Watts
Dimensions	4"H x 10.75"W x 15"D (10.2 cm x 27.3 cm x 38.1 cm)
Operating Temperature Range	32 to 122°F (0 to 50°C)
Operating Humidity Range	5 to 90% RH, non condensing
Storage Temperature Range	-4 to 122°F (-20 to 50°C)
Weight	18 lbs. (8.2 kg)

## FEATURES &amp; BENEFITS

- Utilizes infrared technology for detection which ensures long sensor life and high accuracy
- Use of infrared technology enables response to refrigerants only
- Responds to leaks in less than 1 second
- High sensitivity – detects leaks as small as 0.01 oz/yr
- Internal leak source enables calibrations to be made quickly and easily
- Logging feature enables the total leak rate of a system to be quantified quickly and easily
- 8 inch flexible probe enables leak checking in hard to reach places
- Adjustable sensitivity ranges enable "nuisance" leaks to be ignored by the unit
- Contains four relay outputs for external alarm control
- Contains 4-20 mA output current loop
- 2 Year Warranty

## ORDERING INFORMATION

PART NO.	DESCRIPTION
3015-4420	H25-IR with 6' probe hose, 6' power cord and instruction manual
3015-4417	H25-IR with 12' probe hose, 6' power cord and instruction manual
3015-1486	15.5" flexible probe (optional)
3015-1018	Internal particulate filter

# Commercial Recovery Machine

## RECOVERY UNITS



### FM3700 HEAVY DUTY COMMERCIAL RECOVERY UNIT

#### FEATURES

- 3/8" ports for faster, high-volume refrigerant recovery
- Recovers ALL commonly used refrigerants, including R-410A (Puron™)
- 450 PSI high pressure cut-off, high pressure gauges
- High performance compressor
- Rugged and reliable
- Automatic shut-off when evacuation is completed

#### ORDERING INFORMATION

PART NO.	DESCRIPTION
2000-3700	FM3700 Commercial Recovery Unit
2002-0081	80% Shut-Off option

#### SPECIFICATIONS

Refrigerants	All Refrigerants except R-11, R-113 and R-123
Power Source	115 VAC 50/60 Hz, 230 VAC 50/60 Hz, 100 VAC 50/60 Hz
Compressor	1 horsepower twin piston, high performance, oil-less
Vacuum Rating	13" Hg+
High Pressure Limit	450 PSI (31.0 bar)
Recovery Rate	.50 - 4.0 lbs./min. vapor, 8.0 lbs./min. liquid 0.23 - 1.81 Kg/min. vapor, 3.63 Kg/min. liquid
Auto 80% Tank Shut Off	Optional
Self Purging System	No hose changes
Weight	47 lbs. (21.3 Kg)
Dimensions	12" x 14.25" x 8.75" (30.5cm x 36cm x 22cm)

#### ORDERING INFORMATION

PART NO.	DESCRIPTION
2000-3611	FM3600 R-S Commercial Recovery Machine

#### SPECIFICATIONS

Refrigerants	All refrigerants except R-11, R-113 and R-123
Power Source	115 VAC 50/60 Hz, 230 VAC 50/60 Hz, 100 VAC 50/60 Hz
Compressor	0.5 HP high performance, oil-less
Vacuum Rating	13" Hg+
High Pressure Limit	550 PSI
Recovery Rate	.30 - 2.0 lbs./min. vapor 4.0 lbs./min. liquid
Auto 80% Tank Shut-Off	Included
Self Purging System	No hose changes
Weight	38 lbs.
Dimensions	12" x 13" x 7.5"



### FM3600 R-S COMMERCIAL RECOVERY UNIT

#### FEATURES

- Recovers ALL commonly used refrigerants, including R-410A (Puron™)
- LED system status display
- Simple operation / purges clean
- Advanced oil-less compressor
- Contains integrated sight glass
- Hi-low compressor head and valves
- Automatic shut off when evacuation is completed

#### ORDERING INFORMATION

PART NO.	DESCRIPTION
2000-3600	FM3600-410A Commercial Recovery Unit
2002-0081	80% Shut-Off Option

#### SPECIFICATIONS

Refrigerants	All refrigerants except R-11, R-113 and R-123
Power Source	115 VAC 50/60 Hz, 230 VAC 50/60 Hz, 100 VAC 50/60 Hz
Compressor	0.5 HP high performance, oil less
Vacuum Rating	13" Hg+
High Pressure Limit	550 PSI (37.9 bar)
Recovery Rate	.30 - 2.0 lbs./min. vapor, 4.0 lbs./min. liquid 0.14 - 0.91 Kg/min. vapor, 1.81 Kg/min. liquid
Auto 80% Shut-Off	Optional
Self Purging System	No hose changes
Weight	35 lbs.
Dimensions	12" x 13" x 7.5" (30.5cm x 33cm x 19cm)



### FM3600-410A COMMERCIAL RECOVERY UNIT

#### FEATURES

- Recovers ALL commonly used refrigerants, including R-410A (Puron™)
- 550 PSI high pressure cut-off, high pressure gauges
- LED system status display
- Rugged and reliable
- Automatic shut-off when evacuation is completed



# Stinger RECOVERY UNIT



**The best just got better.** The improved Stinger, with its new compressor, will evacuate refrigeration systems faster than ever. The new compressor, coupled with increased condenser capacity, will speed up the recovery process, even on the hottest days. The Stinger's rugged construction will provide you with many seasons of reliable operation. The Stinger is capable of recovering all commonly used\* CFC, HFC and HCFC refrigerants, including R-410A (Puron™). The unit is easy to operate and is ideal for evacuating both residential and light commercial systems. A simple purge system prevents cross-contamination of refrigerants without changing hoses.

\*Not for use with R-11, R-113 or R-123

## NEW COMPRESSOR

- Lower cost of ownership - new compressor is virtually maintenance free
- 243% larger compressor piston enables faster recovery
- Unlike competitive units, the new and improved Stinger is capable of pulling a vacuum for an extended period of time without damaging the compressor
- The new compressor is capable of running continuously on air for more than 1,000 hours

## FEATURES

- Lightweight and compact - weighs only 24 pounds
- New compressor provides a 20% increase in vapor recovery rate
- Recovers all commonly used CFCs, HFCs and HCFCs, including R-410A (Puron™)
- Capable of pumping virgin refrigerant without damaging the compressor
- 1 year over the counter warranty replacement

### SPECIFICATIONS

Refrigerants	R-12, R-22, R-114, R134a, R-401A, R-401B, R-401C, R-402A, R-402B, R-404A, R-406A, R-407A, R-407B, R-407C, R-407D, R-408A, R-409A, R-410A, R-411A, R-411B, R-412A, R-500A, R-502B, R-507, R-509
Power Source	110/120 VAC, 1 Phase, 50/60 Hz, 8 Amps
Also Available	220 VAC, 1 Phase, 50/60 Hz, 4 Amps
Compressor Type	0.8 HP High Performance Oil-less
Vacuum Rating	15" Hg+
High Pressure Limit	550 PSI (37.9 bar)
R-22 Recovery Rates (Certified Per ARI 740-98)	Liquid: 3.88 lbs. / min. (1.76 kg / min.) Vapor: 0.33 lbs. / min. (0.15 kg / min.) Liquid Push / Pull: 14.00 lbs. / min. (6.35 kg / min.)
Auto 80% Tank Shut-Off	Optional
Self Purging System	No Hose Changes
Weight	24 lbs. (11 kg)
Dimensions	11"H x 17"L x 9.5"W (28 cm x 43 cm x 24 cm)
Approvals	Complies with UL 1963
Certifications	Meets EPA requirements for recovery equipment Conforms to ARI standard 740-98

### ORDERING INFORMATION

PART NO.	DESCRIPTION
2000-3300	STINGER 115 VAC
2000-3301	STINGER 115 VAC w/ 80% Shut-Off
2000-3307	STINGER 230 VAC 50/60 Hz
2002-0091	80% Shut-Off Kit
2007-0080	Carrying Strap



# Vacuum Pump / Swaging Kit / Charging Scale



## VACUUM PUMP

- Two stage rotary vane pump
- 1/4" and 3/8" fl are and 1/2" ACME intake ports
- Light, compact and well balanced
- High performance vacuum, HP and CFM ratings for all AC/R applications
- One year warranty

**Part No. 2002-0001 QV2 Vacuum Pump**  
**2002-0005 QV5 Vacuum Pump**

SPECIFICATIONS - QV2	
Voltage	110V/60Hz
Free Air Displacement	1.7 CFM
Ultimate	0.03 mbar
Vacuum	15 Micron
Motor	1/4 HP
Motor Speed	1720 rev/min
Oil Capacity	350 ml
Dimensions	358 x 172 x 290 (mm)
Weight	9.8 Kg (21.56 lbs)

SPECIFICATIONS - QV5	
Voltage	110V/60Hz
Free Air Displacement	5.3 CFM
Ultimate	0.03 mbar
Vacuum	15 Micron
Motor	1/2 HP
Motor Speed	3450 rev/min
Oil Capacity	450 ml
Dimensions	385 x 180 x 300 (mm)
Weight	12 Kg (26.4 lbs)

## FLARING, SWAGING & CUTTING KIT

- Most complete kit on the market
- 1/8" - 1-1/8" Tube Cutter
- Flaring tool flares 1/8" to 3/4" tubing
- AC Ratchet Wrench with 3/16", 1/4", 5/16" and 3/8" square sockets
- Five swaging heads sizes 3/16" to 3/4"
- Kit comes in a convenient plastic molded case

**Part No. 2002-6500**



## ELECTRONIC REFRIGERANT SCALE MODEL CS100

### FEATURES & BENEFITS

- Auto Zero feature
- Tethered display with flip-up stand
- Adjustable leveling feet with built-in level indicator
- Handles a wide range of recovery cylinders up to 330 lbs (150 kg)
- Auto power-off feature prevents accidental battery drain



SPECIFICATIONS	
Units	Lbs. / Lbs. - Oz. / Kg
Resolution	0.05 lbs / 0.05 oz / 20 g
Accuracy	± 1% of reading
Capacity	330 lbs (150 kg)
Platform Dimensions	11"L x 11"W x 2"H (27.9cm x 27.9cm x 5.1cm)
Power Supply	9-volt battery (included)

**Part No. 2010-0000**



# Multi-Zone

## FIXED REFRIGERANT MONITORS



Comes With A  
2 Year Warranty

### HGM300 / RDM800

For continuous monitoring of CFC, HFC, HCFC and Halon refrigerant gases



Comes With A  
2 Year Warranty

### ADM800 / AGM300

For continuous monitoring of Ammonia refrigerant gas

Bacharach's multi-zone refrigerant monitors enable up to 16 individual zones to be monitored continuously. Using split architecture design, advanced infrared technology and the latest in network communication protocols, these monitors provide reliable point-by-point refrigerant loss monitoring at concentration levels as low as 1 ppm.

## INNOVATIONS IN INFRARED TECHNOLOGY

- Select refrigerants to be measured - point by point!
- Eliminate False alarms with use of a non-dispersive IR source with sample draw system
- Measure all gases up to 10,000 ppm with a sensitivity of 1 ppm
- Sample points can be located up to 500 feet from unit

## SPLIT ARCHITECTURE DESIGN

- Remotely interrogate, acknowledge alarms, provide maintenance and evaluate operating conditions
- Quick field expansion from 4 to 16 sampling zones with only a screwdriver
- Bolt-in-Bolt Out internal components so the unit never leaves the wall

## ENHANCED COMMUNICATION PROTOCOLS

- Full two-way communication through RS-485 to the Remote Display Module and Building Management Systems such as Modbus RTU\*
- RS232C port for local / modem communication

(\* For other communication protocols, such as LonTalk or N2 (Metasis), please contact the factory.)

## COST EFFECTIVE

- Split-architecture design keeps your investment to a minimum
- Two-year warranty protects your investment

# Multi-Zone



SPECIFICATIONS		NDIR, Multi-Zone Sample Draw Systems	
<b>Refrigerants:</b>			
HGM300 Model	<b>CFC:</b> R-11, R-12, R-113, R-114, R-502, R-404a (HP62), R-407a, R-407c (AC9000), R-134a, R-410a (AZ20), R-507 (AZ50), R-508b (SUVA95) <b>HCFC:</b> R-22, R-123, R-124, R-500, R-503, R-401a (MP39), R-402a (HP80), R-40b (HP81), R-408a, R-409a, R-23 <b>HALON:</b> 1301		
	Measuring Range: 0 to 10,000 ppm		
AGM300 Model	Ammonia (NH <sub>3</sub> - also known as R-717)		
	Measuring Range: 25 to 10,000 ppm		
Inputs:	4 point standard, expandable to 16 points in 4 point increments		
Output Signal:	3 SPDT, 5 Amp, 240 VAC rated alarm relays and 1 SPDT, 5 Amp, 240 VAC rated system fault relay, plus a Digital Display w/ an optional dual 4-20 mA DC analog output		
Detector Type:	Non-dispersive infrared		
Sensitivity:	All gases 1 ppm		
HGM300 Accuracy:	All gases ±10 ppm from 0 to 100 ppm, ±10% of reading from 100 to 10,000 ppm		
AGM300 Accuracy:	± 10 ppm from 25 to 100 ppm ± 10% of reading from 100 to 10,000 ppm		
Front Panel Display:	Green LED indicates when unit is operating properly, Red LED indicates when any monitored point is above its alarm setting, Yellow LED indicates a clogged sample line or other system fault		
Response Time:	5 to 120 seconds, depending on sample tube length and gas concentration		
Max. Monitoring Distance:	Up to 500 feet from measuring point to monitor		
Power:	120 VAC, 60 Hz (Standard) 240 VAC, 50 Hz (Export) 240 VAC, 60 Hz (Domestic)		
Size/Weight:	17" L x 12" W x 5.5" D / 15 lbs (43.18cm L x 30.48cm W x 13.97cm D / 6.8 Kg)		

When ordering this product, you must specify 3 codes. These 3 codes will build up a part number. Codes must be listed in the following sequence:

- Code A- Model Number**
- Code B- Number of Zones**
- Code C- Input Power Type**

For example, to order a 4-zone, 120VAC Ammonia Monitor, you would order a: AGM300-11-1

Remote Display Modules, options and accessories must be ordered as separate line items.

ORDERING INFORMATION for Monitors	
<b>Code A</b>	Model Number
HGM300	For use with CFC, HFC, HCFC and Halon Refrigerants
AGM300	For use with Ammonia Refrigerants
<b>Code B</b>	Number of zones and connection type
-11	4 Zones with metal tube fittings
-12	8 Zones with metal tube fittings
-13	12 Zones with metal tube fittings
-14	16 Zones with metal tube fittings
<b>Code C</b>	Input Power Type
-1	120VAC / 60 Hz (Standard)
-2	240VAC / 50 Hz (Export Applications Only)
-3	240VAC / 60 Hz (Domestic Applications Only)

ORDERING INFORMATION for Remote Display Modules	
3015-2875	RDM800 120VAC / 60 Hz
3015-2885	RDM800 240VAC / 50/60 Hz
3015-4195	ADM800 120VAC / 60 Hz
3015-4196	ADM800 240VAC / 50/60 Hz

OPTIONS / ACCESSORIES	
PART NO.	DESCRIPTION
3015-4121	120VAC surge protector
3015-4122	230VAC surge protector
3015-4123	4-20 mA dc surge protector (two required)
3015-3133	Dual 4-20 mA dc output kit
3015-3069	External Visual alarm 120VAC
3015-3070	External Audible alarm 120VAC
3015-3076	External Audible / Visual alarm 120 VAC
3015-3423	Annual maintenance kit
3015-3235	Air sample tubing (250' per roll for standard refrigerants)
0304-2742	Air sample tubing (Ammonia only)

SPECIFICATIONS		REMOTE DISPLAY MODULES	
RDM800 Model	Compatible with HGM300 Model		
ADM800 Model	Compatible with AGM300 Model		
Inputs:	Accepts from one to four inputs via RS-485 from up to four HGM300 Refrigerant Monitors		
Display:	Backlit LCD displays the measured point in ppm		
Trend Mode / Data logging:	User may select a graphical display of the ppm trend for any measured point (100 data entries per point)		
Output Signal Floating Ground:	2 SPDT, 5 Amp, 240 VAC assignable alarm relays		
Alarm Indications:	Channel display flashes, red light flashes, alarm signal sent via RS-485		
Input Fault Indication:	Yellow light flashes and the LCD indicates location of input fault		
Max. Monitoring Distance:	Maximum of 4,875 wiring feet from the furthest HGM300 to the RDM800 Display		
Power:	240VAC / 50/60 Hz, 120 VAC/60Hz		
Size/Weight:	11" L x 10" W x 3" D / 5 lbs (wall mounted) 28cm x 25.4cm x 7.6cm/2.3Kg		

System design supports compliance to the refrigerant monitoring requirements of ANSI / BSR ASHRAE 15. Certified in compliance to UL #3101-1, CE #EN613262, and EN61010-1.



# Single-Zone

## FIXED REFRIGERANT MONITORS



ORDERING INFORMATION	
PART NO.	DESCRIPTION
3015-4200	HGMSZ single zone monitor (includes termination filter and 50ft. of 304-2743 sample /exhaust / purge line tubing)
304-2743	Sample / Exhaust / Purge line tubing
3015-3420	Termination filter
3015-4121	120 VAC surge protector
3015-4122	220 VAC surge protector
3015-4123	4-20mA surge protector
3015-3069	120 VAC external visual alarm
3015-3070	120 VAC external audible alarm
3015-3076	120 VAC external audible / visual alarm

### HGMSZ

The Bacharach® HGMSZ (Halogen Gas Monitor Single Zone) is an infrared detector based unit designed for continuous single-point monitoring of CFC, HFC, HCFC and Halon refrigerant gases. The unit displays both the current and peak gas levels. Gas alarms and fault conditions are indicated by audible and visual alarms. The HGMSZ's four relay contacts enable external devices to be triggered when gas alarms or fault conditions occur. A 4-20mA output enables the unit to be integrated with remote monitoring equipment or building management systems.

SPECIFICATIONS	HGMSZ
Measures:	R-11, R-12, R-21, R-22, R-23, R-113, R-114, R-123, R-124, R-134a, R-227, R236FA, R-401a, R-402a, R-402b, R-404a, R-407a, R-407c, R-408a, R-409a, R-410a, R-500, R-502, R-503, R-507, R-508b, H-1211, H-1301, H-2404, N-1230
Inputs:	Dedicated Single Zone
Output Signal:	3 SPDT, 5 Amp, 240 VAC rated alarm relays and 1SPDT, 5 Amp, 240 VAC rated system fault relay, plus a Digital Display w/ a dedicated 4-20 mA analog output (floating ground)
Detector Type:	Single Pass, Non-dispersive Infrared
Measuring Range:	All Gases, 0 to 10,000ppm
Sensitivity:	1ppm
Accuracy:	±10ppm from 0 to 100ppm, ±10% of reading from 100 to 10,000ppm
Front Panel Display:	Green LED indicates when unit is operating properly Red LED indicates when any monitored point is above any of its alarm settings Yellow LED indicates a clogged sample line or other system fault
Response Time:	9 to 30 seconds, depending on sample tube length
Max. Monitoring Distance:	Up to 50 feet from measuring point to monitor
Power:	120 to 240 VAC, 50/60 Hz
Weight:	14" W x 18" L x 4.5" D, 7lbs. (35.6cm x 45.7cm x 11.4cm/3.2Kg)

### FEATURES

- Small in size, big in value
- False alarms are virtually eliminated with the use of infrared detection technology
- Capable of detecting 30 of the most commonly used refrigerants and halon gases
- Three gas alarm levels can be individually set by the user
- Logging feature enables 200 gas readings to be stored at user-selectable time intervals
- Two year warranty



# Single-Zone



**Comes With A  
2 Year Warranty**

## AGMSZ

The Bacharach® AGMSZ (Ammonia Gas Monitor Single Zone) is an infrared detector based unit designed for continuous single-point monitoring of ammonia gas. The unit displays both the current and peak gas levels. Gas alarms and fault conditions are indicated by audible and visual alarms. The AGMSZ's four relay contacts enable external devices to be triggered when gas alarms or fault conditions occur. A 4-20mA output enables the unit to be integrated with remote monitoring equipment or building management systems.

## FEATURES

- Small in size, big in value
- False alarms are virtually eliminated with the use of infrared detection technology
- Three gas alarm levels can be individually set by the user
- Logging feature enables 200 gas readings to be stored at user-selectable time intervals
- Two year warranty

## ORDERING INFORMATION

PART NO.	DESCRIPTION
3015-4280	AGMSZ single zone monitor (includes 1 termination filter, 50ft. of 304-2742 sample line tubing and 50ft. of 304-2743 exhaust / purge line tubing)
304-2742	Sample tubing for AGMSZ
3015-3420	Termination filter
304-2743	Exhaust / purge line tubing (note: tubing 304-2742 is required for AGMSZ sample line)
3015-4121	120 VAC surge protector
3015-4122	220 VAC surge protector
3015-4123	4-20mA surge protector
3015-3070	120 VAC external audible alarm
3015-3069	120 VAC external visual alarm
3015-3076	120 VAC external audible / visual alarm

\* Special delivery terms. Call factory for details.

## SPECIFICATIONS AGMSZ

Measures:	Ammonia (NH <sub>3</sub> , also known as R-717)
Inputs:	Dedicated Single Zone
Output Signal:	3 SPDT, 5 Amp, 240 VAC rated alarm relays and 1SPDT, 5 Amp, 240 VAC rated system fault relay, plus a Digital Display w/ a dedicated 4-20 mA DC analog output (floating ground)
Detector Type:	Single Pass, Non-dispersive Infrared
Measuring Range:	25 to 10,000 ppm
Sensitivity:	1 ppm
Accuracy:	± 10ppm from 25 to 100ppm, ± 10% of reading from 100 to 10,000ppm
Front Panel Display:	Green LED indicates when unit is operating properly Red LED indicates when any monitored point is above any of its alarm settings Yellow LED indicates a clogged sample line or other system fault
Response Time:	9 to 30 seconds, depending on sample tube length
Max. Monitoring Distance:	Up to 50 feet from measuring point to monitor
Power:	120 to 240 VAC, 50/60 Hz
Size/Weight:	14" x 18" x 4.5" / 7 lbs. (35.6cm x 45.7cm x 11.4cm / 3.2Kg)

# Bacharach® Kit Options



(see page 24 for more details)

## **MONOXOR® III KIT - Monoxor® III with IrDA Printer**

- Offers service technicians the easiest and most affordable way to locate CO in ambient air as well as stack gases
- Battery powered, hand-held instrument that measures levels of CO between 0 and 2,000 ppm
- Supplied with a stainless steel probe and five feet of tubing to sample CO found in flue gases of residential furnaces, combustion appliances, commercial and industrial boilers
- Includes wireless IrDA printer

## **PCA® 25,35,55 AND 65 KITS**

- Measures and displays Flue Gas Oxygen, Temperature, Draft/Pressure, Carbon Monoxide and NOx
- Calculates and displays Combustion Efficiency, Excess Air, Carbon Dioxide and CO air free
- Seven Programmed Fuels
- Time and date coded combustion tests
- Stores up to 100 tests that can be recalled and printed with time and date (depends on version)
- Includes wireless IrDA printer



(see pages 8 and 9 for more details)



(see pages 10 and 11 for more details)

## **FYRITE® PRO 125 KIT**

- Measures and displays Flue Gas Oxygen, Temperature, Draft/Pressure and Carbon Monoxide
- Calculates and displays Combustion Efficiency, Excess Air, Carbon Dioxide and CO air free
- Stores up to 10 tests that can be recalled and printed with time and date
- Four Programmed Fuels
- Includes wireless IrDA printer

## **FYRITE® PRO 125 DELUXE KIT**

- Measures and displays Flue Gas Oxygen, Temperature, Draft/Pressure and Carbon Monoxide
- Calculates and displays Combustion Efficiency, Excess Air, Carbon Dioxide and CO air free
- Stores up to 10 tests that can be recalled and printed with time and date
- Four Programmed Fuels
- Includes True Spot® Test Kit



(see pages 10, 11, and 18 for more details)

### **ORDERING INFORMATION**

PART NO.	KIT	DESCRIPTION
19-8105	Monoxor® III Kit	Monoxor® III with IrDA Printer
24-8243	PCA® 25 Kit	PCA® Model 25 with IrDA Printer
24-8244	PCA® 35 Kit	PCA® Model 35 with IrDA Printer
24-8249	PCA® 55 Kit	PCA® Model 55 with IrDA Printer
24-8245	PCA® 65 Kit	PCA® Model 65 with IrDA Printer
24-8205	Fyrite® Pro 125 Kit	Fyrite® Pro Model 125 with IrDA Printer
24-8206	Fyrite® Pro 125 Deluxe Kit	Fyrite® Pro Model 125 with IrDA Printer, Smoke Test Kit, two 10" K-type Thermocouples and Pressure Accessories

## TECH 60 STARTER KIT

- Directly measures and displays Flue Gas Oxygen, Temperature and Carbon Monoxide
- Calculates and displays Combustion Efficiency, Excess Air, Carbon Dioxide and CO air free
- Four programmed fuels
- Now with printing capabilities
- Includes the Drafrite® Pocket Gauge which is suitable for checking flue pipe, chimney, fire box, smoke hood, smoke pipe draft, draft regulator, oil burner firing rate and basement ventilation. This gauge can be utilized by both contractors and service technicians for determining draft and pressure problems in commercial and residential settings.
- Includes the True Spot® Smoke Test Kit to determine efficient combustion and is internationally recognized as the standard method for evaluating smoke density in the flue gases from distillate fuels



(see pages 12, 13, 15 and 18 for more details)

## TECH 60 & TECH 60 KIT WITH PRINTER

- Directly measures and displays Flue Gas Oxygen, Temperature and Carbon Monoxide
- Calculates and displays Combustion Efficiency, Excess Air, Carbon Dioxide and CO air free
- Four programmed fuels
- Now with printing capabilities



(see pages 12 and 13 for more details)

## INFORMANT® 2 CONTRACTOR KIT

- Two instruments in one - has the ability to detect both combustible gas and refrigerant leaks with the same instrument
- Sensors are interchanged quickly and easily by simply swapping sensor tips
- Utilizes patented semiconductor sensor technology to detect combustible gases
- Utilizes patented heated diode sensor technology to detect refrigerants



(see pages 34 and 35 for more details)

ORDERING INFORMATION		
PART NO.	KIT	DESCRIPTION
24-8227	Tech 60 Starter Kit	Fyrite® Tech 60, Hard Carry Case, Rubber Boot, Drafrite®, True Spot® and Smoke Test Kit
24-8226	Tech 60 Kit	Fyrite® Tech 60, Hard Carry Case and Rubber Boot
24-8326	Tech 60 Kit with Printer	Fyrite® Tech 60, Hard Carry Case, Rubber Boot and IrDA Printer
19-8038	Informant® 2 Contractor Kit	Informant® 2 with refrigerant and combustible gas sensors

# Refrigeration & Hand Tools

## MANIFOLDS & HOSES

**R-12/22/134a  
Manifold Set**



2002-5000

Model # MS050

- Both models have a brass body with hook, hose holder and 2 hand wheels
- Includes 3 pieces 60" RYB hoses with 1/4" flare fittings. Hoses rated at 2500 psi Burst / 500 psi Max W.P.
- 0-250 / 0-500 psi Gauges

**R12/22/134a  
Manifold Set  
w/Sight Glass**



2002-4000

Model # MS040

**R-410A  
Manifold Set**



2002-4400

Model # MS440

- Both models have a brass body with hook, hose holder and 2 hand wheels
- Includes 3 pieces 60" RYB hoses with 1/4" flare fittings. Hoses rated at 4000 psi Burst / 800 psi Max W.P.
- 0-500 / 0-800 psi Gauges

**R-410A  
Manifold Set  
w/Sight Glass**



2002-4300

Model # MS430

**R-12/22/134a  
Ball Valve Hose Set**



2002-0003

Model # BV3

- 3 pcs 6" RYB hoses with 1/4" flare fittings
- Hoses rated at 2500 psi Burst / 500 psi Max W.P.
- Hoses compatible with Manifold Set models MS050 and MS040

**R-410A  
Hose Set**



2002-4600

Model # HS460

- 3 pcs 60" RYB hoses with 1/4" flare fittings
- Hoses rated at 4000 psi Burst / 800 psi Max W.P.
- Hoses compatible with Manifold Set models MS050, MS040, MS440 and MS430

**R134a  
Low Side  
Coupler**



2002-1340

**R134a  
High Side  
Coupler**



2002-1341

**R-12/22/134a  
Hose Set**



2002-4700

Model #MS470

- 3 pcs 60" RYB hoses with 1/4" flare fittings
- Hoses rated at 2500 psi Burst / 500 psi Max W.P.
- Compatible with Manifold Set models MS040 and MS050

**R-410a  
Ball Valve Hose Set**



2002-0040

Model # BV410A

- 3 pcs 60" RYB hoses with 1/4" flare fittings
- Hoses rated at 4000 psi Burst / 800 psi Max W.P.
- Compatible with manifold sets

**1/4" Hose Replacement  
Gaskets (10)**



2002-5100

- Compatible with all hose and ball valve hose sets with 1/4" fittings

## GAUGES

**R-12/22/134a**



2002-0250

Model # MSG250



2002-0550

Model # MSG550

**R-410A**



2002-0410

Model # MSG410



2002-0420

Model # MSG420

Model	MSG250	MSG550
Dial Size	2 1/2"	2 1/2"
Connection	1/8 NPT	1/8 NPT
Scale	°F, PSI, kg/cm <sup>2</sup>	°F, PSI, kg/cm <sup>2</sup>
Pressure	250 psi	500 psi
Color	Blue	Red

Model	MSG410	MSG420
Dial Size	2 1/2"	2 1/2"
Connection	1/8 NPT	1/8 NPT
Scale	°F, °C, PSI, kg/cm <sup>2</sup>	°F, °C, PSI, kg/cm <sup>2</sup>
Pressure	500 psi	800 psi
Color	Blue	Red





## HAND TOOLS

### Refrigeration Wrenches



2002-0122

**Model #HTRW122**

- 4 square openings
- 3/16", 1/4", 5/16", and 3/8"

### Refrigeration Wrenches



2002-0123

**Model #HTRW123**

- 3/16" and 1/4" square openings
- 1/2" and 9/16" hex openings

### Fin Straightener



2002-6000

**Model #HT351**

- 6-in-1 spacings of 8, 9, 10, 12, 14 and 15 fins per inch
- For cleaning and straightening condenser or evaporator coil fins

### Capillary Tube Cutter



2002-8000

**Model #HT128**

- Cuts all types of capillary tubes without collapsing or swaging the tubes

### Valve Core Removal Tool



2002-0125

**Model #HTVCR**

- 1 double ended core removal tool
- For Standard VC-6400 small core and VC-6500 large core

### PVC Pipe Cutter



2002-2120

**Model #HT212**

- Up to 1 5/8" capacity

### Spring-Type Tubing Benders

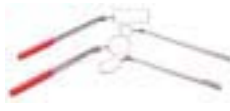


2002-1434

**Model #HT1434**

- 6 per pack
- Sizes 1/4" x 10" long; 5/16" x 10"; 3/8" x 10"; 1/2" x 12"; 5/8" x 14"; 3/4" x 14"

### Telescopic Mirror Set



2002-0300

**Model #HT31M**

- Set of 4 mirrors
- Circular lens 1 1/4" Dia., 4 3/4" to 19 1/2" extension
- Circular lens 2" Dia., 8 1/2" to 18" extension
- Rectangular lens 2" x 3 1/2", 8 1/2" to 19 1/4" extension
- Oval lens 1" x 2", 4 3/4" to 20 1/4" extension

### Flaring & Cutting Kit



2002-6400

**Model #HT1226**

- 1/8"-1 1/8" Tube cutter
- Flaring tool 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8"
- Kit comes in a convenient plastic molded case

### Inner Outer Reamer



2002-6900

**Model #HT208**

- Made of Zinc alloy with red color painted finish
- Reams both inside and outside edges of tubing
- 1/8" to 1 5/8" O.D.

## TUBING CUTTERS



2002-1818

**Model #HT1818**

- 1/8" to 1 1/8" O.D.
- Aluminum alloy body with chrome-plated finish
- Includes 1 spare cutter wheel



2002-0780

**Model #HT780**

- 1/8" - 7/8" O.D.
- Zinc alloy body with red color painted finish



2002-1878

**Model #HT1878**

- 1/8" - 5/8" O.D.
- Zinc alloy body with zinc-plated finish and positive grip knob



2002-7100

**Model #HT195**

- For 3/16", 1/4", 5/16", 3/8", 7/16", 1/2" & 5/8" O.D. tubing

### 3 in 1 Tubing Bender 180°



2002-6700

**Model #HT6700**

### 3 in 1 Tubing Bender 90°



2002-6800

**Model #HT368**

- Fixed Hook
- For 1/4", 5/16" and 3/8" O.D. Tubing



## Flaring, Swaging & Cutting Kit



2002-6500

### Model #HT278

- 1/8"-1 1/8" Tube Cutter
- Flaring Tool with 2 flares 1/8" to 3/4"
- AC Ratchet Wrench w/ 3/16", 1/4", 5/16", 3/8" square sockets
- 5 Swaging heads sizes 3/16" to 3/4"
- Kit comes in a convenient plastic molded case

## Vacuum Pump



2002-0001 (2 CFM Rating)  
2002-0005 (5 CFM Rating)

- Two stage rotary vane pump
- 1/4" and 3/8" fl are and 1/2" ACME intake ports
- Light, compact and well balanced
- High performance vacuum, HP and CFM ratings for all AC/R applications
- One year warranty

## Tamper Evident Straps



2003-0000

- Protect against contamination
- Guard against unqualified repairs
- Warranty repairs with confidence
- Individually serial numbered

## ANEMOMETER MODEL TH4200

### FEATURES

- Ft/min: 0-8800
- Coiled Cable Vane Head
- Temperature: 32°F ~ 140°F (0°C ~ 60°C)
- Data hold and low battery indication
- Sensitive for low/high air velocity
- Also measures Km/hr, Knots, M/S
- Includes soft carrying case and battery



### ORDERING INFORMATION

PART NO.	DESCRIPTION
2042-0000	Anemometer

# Shipping Information

Shipping Information

PRODUCT	SHIPPING WEIGHT	SHIPPING DIMENSIONS	PRODUCT	SHIPPING WEIGHT	SHIPPING DIMENSIONS
ECA 450	30 lbs.	18" x 13" x 10"	Infrared Thermometer	11 oz.	5.5" x 12.5" x 3"
PCA®	6.8 lbs.	17.5" x 6" x 13"	Digital Pocket Thermometer	2 oz.	3.5" x 9" x 1.5"
Fyrite® Pro, Fyrite® Tech, Monoxor® III	4 lbs.	17" x 6" x 13"	Refrigeration Wrenches (2002-0122)	5 oz.	2" x 8" x 1"
Fyrite® Duplex Kit	13 lbs.	13" x 6" x 11"	Refrigeration Wrenches (2002-0123)	8 oz.	2.5" x 9.5" x 1"
Fyrite® Fluid (1 carton of 3 bottles)	2 lbs.	10" x 5" x 4"	PVC Pipe Cutter	13 oz.	5" x 10.5" x 1.5"
Fyrite® Gasaver Kit	18 lbs.	18" x 6" x 16"	Valve Core Removal Tool	2 oz.	3" x 5" x 1"
Fyrite® Indicator	3 lbs.	10" x 5" x 4"	Swaging Punch	1 oz.	2.5" x 9" x 1"
Fyrite® Master Kit	11 lbs.	18" x 6" x 16"	Pocket Dial Thermometer	1 oz.	3" x 8.5" x 1"
Fyrite® Refill Package	2 lbs.	13" x 6" x 11"	R-410A Manifold Set	3 lbs. 8 oz.	12.5" x 14" x 2"
Fyrite® Repair Package	1 lb.	13" x 6" x 11"	R-12/22/134a Manifold Set	3 lbs. 8 oz.	12.5" x 14" x 2"
Fyrite® Combustion Kit	15 lbs.	18" x 6" x 16"	R-12/22/134a Manifold Set w/Sight Glass	3 lbs. 8 oz.	12.5" x 14" x 2"
Drafrite® Draft Gauge	1 lb.	4" x 3" x 1"	R-410A Manifold Set w/Sight Glass	3 lbs. 8 oz.	12.5" x 14" x 2"
True Spot® Smoke Tester	1 lb.	9" x 8" x 9"	R-410A Hose Set	1 lb. 14 oz.	12.5" x 14" x 2"
Monoxor® Detector Kit	2 lbs.	7" x 4" x 2"	Spring Type Tubing Benders	2 lbs. 4 oz.	5" x 18.5" x 1.5"
Monoxor® Indicator Kit	5 lbs.	6" x 3" x 3"	R-12/22/134a Ball Valve Hose Set	1 lb.	6" x 14" x 1"
Monoxor® II, Nonoxor® II, Dioxor™ II, Oxor® II	3 lbs.	17" x 10" x 5"	3 in 1 Tubing Bender 180°	1 lb.	8" x 13" x 5"
Multi Zone	16 lbs.	25" x 18" x 14"	3 in 1 Tubing Bender 90°	15 oz.	4.5" x 13" x 2.5"
MZF Draft Gauge	3 lbs.	7" x 5" x 9"	7 Sizes Flaring Kit	4 lbs. 6 oz.	8.5" x 6" x 1.5"
Snifit® 50	1 lb.	3" x 4" x 7"	Flaring & Cutting Kit	3 lbs. 5 oz.	13" x 5.5" x 2"
Informant® 2 Kit / Tru Pointe®	3 lbs.	4" x 3" x 12"	Flaring, Swaging & Cutting Kit	5 lbs. 9 oz.	13" x 10" x 2"
Informant® 2 Deluxe Kit	4 lbs.	7" x 4" x 16"	Tube Expander Kit	9 lbs. 1 oz.	18" x 8" x 2.5"
Leakator® Jr.	2 lbs.	13" x 8" x 5"	R410A Gauge (2002-0410)	1/2 lb.	4.5" x 6" x 1.5"
Leakator® 10	1 lb. 1 oz.	9" x 2" x 2"	R410A Gauge (2002-0420)	1/2 lb.	4.5" x 6" x 1.5"
CO <sub>2</sub> Monitor	1 lb.	10" x 7" x 3"	R12/22/134a Gauge (2002-0250)	1/2 lb.	4.5" x 6" x 1.5"
CO <sub>2</sub> Analyzer 2810 & 2820	1 lb.	10" x 7" x 3"	R12/22/134a Gauge (2002-0550)	1/2 lb.	4.5" x 6" x 1.5"
CO <sub>2</sub> Continuous Monitor 2850	2 lbs. 8 oz.	7" x 5" x 9"	6 Sizes Flaring Kit	2 lbs. 1 oz.	7.5" x 9.5" x 1.5"
N <sub>2</sub> O Monitor 3010	2 lbs. 8 oz.	7" x 5" x 9"	Heavy Flaring Kit	2 lbs. 5 oz.	9" x 8.5" x 1"
Floret® Air Velocity Meter	1 lb.	7" x 4" x 2"	Flaring Burnishing Tool	1 lb. 15 oz.	7.5" x 9.5 x 1.5"
Florite® Air Velocity Meter	4 lbs.	5" x 7" x 3"	Tubing Cutter (2002-1858)	11 oz.	4" x 9" x 1.5"
Single Zone	5 lbs.	16" x 12" x 10"	Tubing Cutter (2002-0780)	3 oz.	4" x 5" x 1"
Sling Psychrometer	1 lb.	12" x 9" x 6"	Tubing Cutter (2002-1878)	4 oz.	4" x 5" x 1"
Stinger	28 lbs.	18" x 13" x 18"	Tubing Cutter (2002-1818)	4 oz.	4" x 5" x 1"
Recovery Unit 3600-410A, Recovery Unit 3600 R-S	39 lbs.	18" x 13" x 18"	Telescopic Mirror Set	12 oz.	9" x 15.5" x 1"
Recovery Unit 3700	52 lbs.	18" x 13" x 18"	Capillary Tube Cutter	3 oz.	3" x 8" x 1"
H25-IR	18 lbs.	18" x 15" x 15"	Fin Straightener	4 oz.	5" x 6" x 1"
Dual-Channel Digital Thermometer	14 oz.	7" x 12.5" x 2"	Inner Outer Reamer (2002-6900)	8 oz.	4.5" x 6" x 2"
Humidity-Temperature Meter	2 lbs.	18" x 15" x 15"	Inner Outer Reamer	8 oz.	4.5" x 6" x 2"
Anemometer	1 lb. 3 oz.	9" x 12.5" x 3"	Valve Core Removal Tool	2 oz.	3" x 5" x 1"
H10PM, H10G	7 lbs.	12" x 10" x 8"	Charging Scale	10 lbs. 10 oz.	17" x 15" x 4.5"
Tru Pointe®	3 lbs.	19" x 8" x 4"			

**ADD 1 LB. FOR SHIPPING WEIGHT**



# Global Distribution

## U.S.A.

**Bacharach World Headquarters**  
621 Hunt Valley Circle  
New Kensington, PA 15068-7074  
Tel.: (724) 334-5000  
Toll Free: 1-800-736-4666  
www.bacharach-inc.com

## Bacharach Sales/Service Center - California

7281 Garden Grove Blvd., Suite H  
Garden Grove, CA 92841  
Tel.: (714) 895-0050  
Fax: (714) 895-7950  
Email: CALSERVICE@bacharach-inc.com

## Bacharach Sales/Service Center - New Jersey

7300 Industrial Park  
Rt. 130, Bldg. 22  
Pennsauken, NJ 08110  
Tel.: (856) 665-6176  
Fax: (856) 665-6661  
Email: NJSERVICE@bacharach-inc.com

## Bacharach Sales/Service Center - Pennsylvania

621 Hunt Valley Circle  
New Kensington, PA 15068-7074  
Tel.: (724) 334-5051  
Fax: (724) 334-5723  
Email: help@bacharach-inc.com

## CANADA

**Bacharach of Canada Sales/Service Center - Ontario**  
250 Shields Court Unit #3  
Markham, Ontario L3R 9W7 Canada  
Tel.: (905) 470-8985  
Fax: (905) 470-8963  
Toll free in Canada: 800-328-5217  
Email: bachcan@idirect.com

## MEXICO

**Bacharach de México S.de R. L. de C.V.**  
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Fax: +44 (0) 1926 338110  
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39 Lindegade  
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