

Particle Counter

Features:

- An invaluable tool for determining size distribution of airborne particles or tracking down a particle source
- Measures and displays six channels of particle size distribution
- Selectable sample time, count data, programmable delay
- Set sample size to cubic feet or liters, set temperature measurements to °C or °F
- Data displayed in totalize or concentration modes
- Holds 5000 logged samples including date, time, counts, sample volume, temperature and relative humidity
- Graphic LCD with backlight
- Automatic power off
- Data is easily downloaded using Windows compatible software
- Protective holster
- Includes certificate of calibration (NIST), zero-count filter, isokinetic probe, 1/8" hose barb adapter, high purity tubing, DB9 to RS-232 adapter and cable, software and hard carrying case



Specifications:

Channel Sizes:	0.3, 0.5, 1.0, 2.0, 5.0, 10.0µm
Flow Rate:	0.1 cfm (2.83 l/min) controlled by internal pump
Count Modes:	Concentration, totalize, audio
Counting Efficiency:	50% @ 0.3µm; 100% for particles > 0.45µm (per JIS B9921:1997)
Zero Count:	1 count/5minute
Coincidence Loss:	5% at 2,000,000 particles per 3 ft.
Temperature Range:	10 to 40°C (50 to 104°F), ±3°C
Humidity Range:	20 to 90% R.H. non-condensing, ±7%
Data Storage:	5000 sample records (rotating buffer) of date, time, counts, relative humidity, temperature, sample volumes, alarms, label
Alarms:	Counts, low battery, sensor fail
Delay Time:	0 to 24 hours
Sample Inlet:	Isokinetic probe
Interface:	RS-232 and RS-485 via RJ-45
Power Supply:	Rechargeable NiMH battery, 4.8V @ 4.5Ah
Battery Life:	8 hours typical
Recharge Time:	2 hours
Dimensions:	4.5 x 8.25 x 2.25" (114 x 21 x 5.7cm)
Weight:	2.2 lb. (1.0 kg)

Model	Description	Price
983	Particle Counter	\$6500

Combustion Analyzer

NEW!

Features:

- Measures O₂, CO (ambient and stack), stack temperature, differential temperature, draft, differential and gas pressure
- Calculates combustion efficiency, CO₂ and CO-air free
- Pre-programmed with 8 standard fuels
- Includes BioHeat® 5 fuel code
- Easy-to-change particle filter is built into probe handle
- Condensate trap can be easily and quickly emptied
- 30-second warm-up
- 4-line backlit display is user configurable
- Rugged single line probe connection
- Integrated protective boot is dishwasher safe
- Built-in magnetic back
- Wireless IR link for printer
- 5-hour Li-ion rechargeable battery
- Easily accessible field serviceable sensors
- Kit includes combustion analyzer, probe, spare filters, power pack and carrying case

Specifications:

Parameter	Range	Resolution
O ₂	0 to 21%	0.1%
CO	0 to 4000 ppm	1 ppm
Probe Temperature	-40 to 932°F	0.1°F
Draft	±16"H ₂ O	0.001"H ₂ O
Differential Pressure	±80"H ₂ O	0.01"H ₂ O
CO ₂ (calculated)	0 to CO ₂ max	0.01%
Power supply:	Li-Ion rechargeable battery	
Dimensions:	8.5 x 2.7 x 1.9"	
Weight:	1.1 lb	



Model	Description	Price
0563.3203.72	Combustion Analyzer Kit	\$1691
0554.0549	Infrared Printer	\$486
0554.0307	Smoke Spot Tester	\$229
0554.1087	Spare Li-ion Battery w/ Charger	\$129

Combustion Analyzer



Features:

FIVE TOOLS IN ONE

- Residential combustion efficiency analyzer for 8 different fuels
- Room air CO test instrument
- Flue gas CO tester (CO air free)
- Dual channel digital thermometer
- Digital manometer

B-SMART TECHNOLOGY

- Self calibration
- * Easy access to sensors

USER DIAGNOSTICS

- O₂ sensor life indication
- Calibration reminders

GRAPHIC LCD DISPLAY

- Custom readout
- Zoom feature
- Backlight

OPTIONAL REPORTING PACKAGE

- Upload custome fuels
- Software updates
- Test data storage

INCLUDED ACCESSORIES

- **MODEL 24-8250:** analyzer, protective boot, probe assembly, hard carrying case, and instructional DVD
- **MODEL 24-8251:** analyzer, protective boot, probe assembly, software, USB cable, IrDA printer, hard carrying case, and instructional DVD

Specifications:

MEASUREMENT RANGES

- Combustion Air Temp.: -4 to 600°F (-20 to 316°C)
- Flue Gas Temp.: -4 to 1200°F (-20 to 649°C)
- Oxygen: 0.0 to 20.9% O₂
- Carbon Monoxide: 0 to 2,000 ppm CO
- Draft/Diff. Pressure: -100 to +100 in.WC

CALCULATED RANGES

- Combustion Efficiency: 0.1 to 100%
- Carbon Dioxide: 0.1 to fuel dependent maximum
- CO (air free): 0 to 9,999 ppm
- Excess Air: 0 to 250%

GENERAL

- Selectable Fuels: Natural Gas, Oil #2, Oil #4, Oil #6, Propane, Coal, Wood, Kerosene
- Power Supply: Four "AA" alkaline batteries (included)
- Battery Life: Minimum 20 hrs. of continuous use
- Dimensions: 8.0"H x 3.6"W x 2.3"D
- Weight: 16 oz. w/ batteries

Model	Description	Price
24-8250	Basic Combustion Analyzer	\$1349
24-8251	Combustion Analyzer w/ Reporting Pkg.	\$1599
06-8733	Spare Paper Roll (1) for IR Printer	\$14
24-1461	Protective Boot w/ Magnets	\$24
24-0788	Replacement O ₂ Sensor	\$183
24-7265	Replacement CO Sensor	\$184
21-7006	True Spot Smoke Test Kit	\$188
24-7059	Calibration Kit	\$351
51-1994	Calibration Gas, 100ppm CO	\$225
24-8214	Pressure Kit	\$271
104-1797	10' Thermocouple Assembly	\$60
104-1798	1" Thermocouple	\$45

Combustion Analyzer

Features:

- Measures flue temperature, oxygen and carbon monoxide (CO)
- Calculates carbon dioxide, gross/net efficiency, excess air, CO air free
- Pre-programmed Fuels: Natural gas, light oil, propane, butane, LPG
- Extra large backlit LCD displays two parameters simultaneously
- Infrared printer port
- 20 memory positions
- Time and date stamp with real time clock
- Protective boot with integral magnet

Specifications:

Power Supply: 4 x "AA" alkaline batteries

Battery Life: 12 hours typical

Probe: 8" (200mm) stainless steel shaft, Type K thermocouple & 3m neoprene hose

Dimensions: 8 x 2 x 3.5" (220 x 45 x 90mm);

Probe: 12" x 0.25" dia. (300 x 6mm)

Weight: 2.2 lb (1 kg)



Specifications:

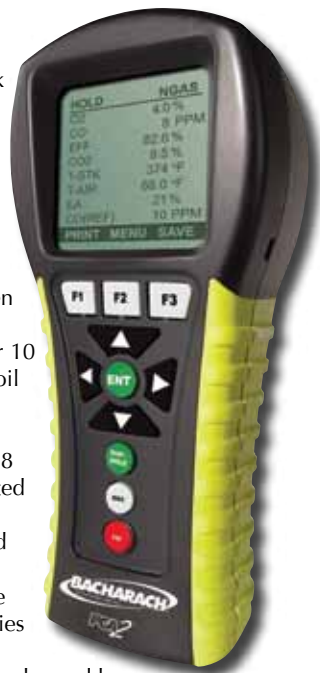
Parameter	Range	Accuracy	Resolution
Flue Temp.	0-600°C/ 32-1112°F	±(0.3% rdg +3.0°C)/ ±(0.3% rdg +5.0°F)	1.0°C/°F
Inlet Temp.	0-600°C/ 32-1112°F	±(0.3% rdg +1.0°C)/ ±(0.3% rdg +1.0°F)	1.0°C/°F
O ₂	0-21%	±0.2%	0.1%
CO	0-1000 ppm	±10 ppm < 100 ppm ±5% rdg.	1 ppm
CO ₂	0-30%	±0.3% rdg.	0.1%
Efficiency	0-99.9%	±1.0% rdg.	0.1%
Excess Air	0-250%	±0.2%	0.1%

Model	Description	Price
C75A	Combustion Analyzer	\$789
KMIRP2	Infrared Printer	\$360
SPT1	Smoke Pump Test Kit	\$140
AACA4	AC Adapter	\$22
AC73	Soft Carrying Case	\$40
C75KIT	Analyzer, Printer, AC Adapter & Case	\$1149

Combustion Analyzers

Features:

- Directly measures and displays flue gas oxygen, carbon monoxide, stack temperature, draft, differential pressure, combustion air temperatures and optionally measures and displays nitric oxide, nitrogen dioxide and sulfur dioxide
- Simultaneously calculates and displays combustion efficiency, excess air, carbon dioxide, NOx and oxygen reference values
- Performs combustion calculations for 10 fuels, including natural gas, oil #2, oil #6, propane, coal, wood, kerosene, bagasse and digester gas
- Large backlit graphic display shows 8 different measurements and calculated values simultaneously
- Pre-calibrated smart sensors are field replaceable
- Choice of power options: disposable batteries, NiMH rechargeable batteries or universal power supply
- Complete with hard carrying case, probe and hose assembly, installed sensors, USB cable, PC software and batteries
- Kit includes all of the above, plus printer



Specifications:

MEASUREMENTS	Range	Accuracy
Primary Air Temp.:	-4 to 999°F	±2°F (32/212°F)
Stack Temp.:	-4 to 2192°F	±4°F (32/255°F) ±6°F (257/480°F) ±8°F (482/752°F)
Oxygen:	0 to 20.9%	±0.3%
CO (H ₂ comp.):	0 to 4000 ppm	±5% rdg. or ±10ppm
CO (high range):	4001 to 20,000 ppm	(≤2000ppm); ±10% rdg. (>2000ppm)
Nitric Oxide:	0 to 3000 ppm	±5% rdg. or ±5ppm (<2000 ppm)
Nitrogen Dioxide:	0 to 500 ppm	±5% rdg. or ±5ppm (<500 ppm)
Sulfur Dioxide:	0 to 5000 ppm	±5% rdg. or ±10ppm (<2000ppm)
Pressure/Draft:	-72 to +72 inwc	±2% rdg. or ±0.02inwc (<±10inwc) ±3% rdg. (≥±10inwc)

CALCULATED RANGES

Combustion Efficiency:	0.1 to 100%
Excess Air:	1.0 to 250%
CO (dry basis):	0 to fuel dependent maximum
NOx (NO + NO ₂):	0 to 3500 ppm
NOx, CO, NO, NO ₂ & SO ₂ referenced to %O ₂ :	0 to 9999 ppm
Memory:	500 complete combustion tests

Model	Description	Price
24-8350	Combustion Analyzer, O ₂ , CO	\$2128
24-8351	Combustion Analyzer, O ₂ , CO, NO	\$2956
24-8352	Combustion Analyzer, O ₂ , CO, CO (hi)	\$2956
24-8353	Combustion Analyzer, O ₂ , CO, SO ₂	\$2956
24-8354	Combustion Analyzer, O ₂ , CO, NO, NO ₂	\$3784
24-8355	Combustion Analyzer, O ₂ , CO, NO, SO ₂	\$3784

Model	Description	Price
24-8370	Combustion Analyzer Kit, O ₂ , CO	\$2318
24-8371	Combustion Analyzer Kit, O ₂ , CO, NO	\$3146
24-8372	Combustion Analyzer Kit, O ₂ , CO, CO (hi)	\$3146
24-8373	Combustion Analyzer Kit, O ₂ , CO, SO ₂	\$3146
24-8374	Combustion Analyzer Kit, O ₂ , CO, NO, NO ₂	\$3974
24-8375	Combustion Analyzer Kit, O ₂ , CO, NO, SO ₂	\$3974

Combustion Analyzers

The **330** represents a new generation in residential/light commercial combustion testing by offering more features in an easier to use format.

The **330** provides the highest level of reliability available in today's combustion analyzers. The self diagnostics function provides you with status information anytime and anywhere at the touch of a button; info on the condensate trap level, for example. Maintenance intervals are displayed making analyzer service easier to plan and sudden breakdowns a thing of the past.

The large, high contrast backlit display can be easily read in every situation and the information you need is available straightaway. A graphical, menu-driven system is easy to use, with words, not codes, for display choices and messages. The **330** makes your daily work more effective as measurements are completed in only a few easy steps.

The **330** calibrates in just 30 seconds. During calibration, set-ups may be made so the analyzer is ready for immediate use. A complete range of accessories for flue gas analysis and jobs such as tuning and testing installations make it possible for the **330** system to adapt to a wide range of applications. Accessory probes are automatically recognized by the analyzer and the appropriate screens immediately appear in the display. Such measurements may be conducted simultaneously with flue gas measurement.

A unique quick connect probe handle makes analyzer set-up fast and easy. New modular probes, such as the ambient CO probe and the CO₂ probe, are automatically recognized by the instrument. The probes have a bayonette-like connection ensuring that all gas paths are properly connected. The single hose cannot be bent, is virtually indestructible and saves on space. The particle filter, always in plain view at the rear of the handle, is easily changed. The robust handle fits comfortably in your hand, facilitating its use.

A compact, state-of-the-art lithium ion power pack provides enough energy for more than a full day's worth of testing. This unique power system lets you know accurate battery levels at all times via the "i" button. The lithium ion rechargeable batteries are not susceptible to any memory effects or sudden total discharge.

The **330** not only stands apart because of its distinctive and ergonomic package, but also due to its unique, robust housing. The materials used function as integral protection from impact and shock. In addition to being rugged, the lightweight probe materials easily withstand high stack temperatures.

The **330** is supplied complete with rechargeable battery, power supply for line power operation or battery recharge in instrument, modular flue gas probe (12" long x 1/4" diameter with 7' hose), spare filters and hard carrying case.

Specifications:

RANGES

Temperature:	-40 to 2192°F
Draft:	±16 in.H ₂ O
Pressure:	0 to 80 in H ₂ O
O ₂ :	0 to 21% volume
CO:	0 to 4000 ppm
Efficiency:	0 to 100%

OPTIONAL RANGES

CO ₂ :	0 to CO ₂ max %
Ambient CO:	0 to 500 ppm
Gas Leak:	0 to 1000 ppm CH ₄ /C ₂ H ₆



Model	Description	Price
0563.3324.70	Flue Gas Analyzer Kit	\$2942
0563.3324.75	Flue Gas Analyzer Kit w/ IR Printer	\$3399
0554.1087	Rechargeable Battery w/ Charging Station	\$129
0554.0116	Adhesive Storage Pockets	\$118
0554.0307	Smoke Tester	\$229
0554.1204	Differential Temp. Set (2 pipe wrap probes)	\$645
0554.3385	Spare Particle Filters, 10 ea.	\$44
0554.9760	7" Probe, Tube only, 5/16" dia.	\$252
0554.9761	12" Probe, Tube only, 5/16" dia.	\$265
0554.9764	13" Flexible Probe, Tube only, 0.4" dia.	\$495
0554.8764	12" Probe for Mean CO calc.	\$572
0554.1202	Hose Extension, 9'	\$397
0600.9790	Ambient CO Probe	\$3399
0600.9791	Combustion Air Temp. Probe	\$321
0604.0194	Surface Probe	\$311
0430.0143	Connection Cable for Surface Probe	\$84

Combustion Analyzers



Features:

- Real-time measurements in seconds after power-up
- Calculates combustion efficiency, excess air, %CO₂ and emission rates
- Provides NO_x values (models with NO sensor only)
- User adjustable CO high limit pump shutdown protects CO sensor
- Zoom function simplifies viewing of critical parameters
- Easy-to-understand menus and icon-driven commands
- Emission gas concentrations use the adjustable O₂ reference
- Field-recalibration of sensors saves time and money
- Factory calibrated, field-installable replacement sensors
- Four sensor slots designed for easy field upgrades
- CO sensor is hydrogen compensated
- Stores up to 350 samples for 35 site and 75 systems
- On-site access of customer histories
- Data sorted by customer, system or individual sample for printouts and report generation
- Stored data include fuel parameters and time/date stamps
- Download stored data for report management
- Optional printer provides hard copy output
- Battery system provides 24 hours of continuous operation
- Eight factory-set fuels are user-adjustable to improve accuracy
- Five user-defined fuels with easy field set-up
- Status of the internal pump monitored continuously
- All models include 12 in. probe with a 9 ft. sampling tube, carrying case, power supply, water trap, manual and calibration certificate

Features Model CA-6120-OH:

- Provides fast, accurate flue gas data to tune burners on furnaces, boilers and other heating appliances
- Kit includes combustion analyzer and smoke soot pump
- Analyzer has user-selectable fuels and supplies CO₂, O₂, stack and ambient temperatures, as well as efficiency and excess air
- Real-time display of CO₂ during burner adjustment
- Electronic design that eliminates the need for messy, potentially hazardous chemicals
- Automatic calibration of baseline sensors
- Recalibrates easily for critical safety checks
- Quick replacement sensor installation
- Heavy-duty pump designed for field service

Specifications:

RANGES/RESOLUTION

Oxygen (O ₂):	0 to 25%/0.1%
Carbon Monoxide (CO):	0 to 5,000 ppm/1 ppm
High Concentration CO:	0 to 20,000 ppm/1 ppm
Nitric Oxide (NO):	0 to 4,000 ppm/1 ppm
Sulfur Dioxide (SO ₂):	0 to 4,000 ppm/1 ppm
Nitrogen Dioxide (NO ₂):	0 to 500 ppm/0.1 ppm

CALCULATED RANGES

Carbon Dioxide (CO ₂):	Calculated from O ₂ & fuel type
Excess Air (%EA):	0 to 1000%
Efficiency (E _{net} & E _{gr}):	0 to 125%
Stack Loss:	0 to 100%
Supply Temp.:	-22 to 392°F (-30 to 200°C)
Flue Gas Temp.:	32 to 1800°F (0 to 1000°C)
Draft:	±30 in. H ₂ O (±80 mbar)

GENERAL

Pump Flow Rate:	Nominal 700 cc/min
Sampling Probe Temp.:	1800°F (1000°C) max.
Probe Dimensions:	12" (30cm) L x 5/16" (0.8 cm) dia.;

Display:	1/4-VGA B/W
Operating Conditions:	32 to 122°F (0 to 45°C); 15 to 90% RH
Power Supply:	4 "C" cell alkaline batteries
Battery Life:	>24 hr. (pump on); >48 hr. (pump off)
Dimensions:	6 x 10 x 2.5" (15 x 25.4 x 6.4 cm)
Weight:	2.5 lb (1.14 kg)

Specifications Model CA-6120-OH:

RANGES/RESOLUTION

Oxygen (O ₂):	0 to 25%/0.1%
Flue Gas Temp.:	32 to 1292°F (0 to 700°C)/1°F (1°C)
Supply Air Temp.:	-40 to 392°F (-40 to 150°C)/1°F (1°C)

CALCULATED RANGES

Carbon Dioxide (CO ₂):	Calculated from O ₂ & fuel type
Excess Air (%EA):	0 to 1000%
Efficiency (E _{net} & E _{gr}):	0 to 125%
Stack Loss:	-25 to 100%
Lambda:	0 to 11

GENERAL

Pump Flow Rate:	Nominal 0.8 lpm
Max. Flue Pressure:	±30" H ₂ O
Sampling Probe Temp.:	1292°F (700°C) max.
Probe Dimensions:	12" (30cm) L x 3/16" (0.48 cm) dia.;
	7 ft (2.13 m) hose
Power Supply:	4 "AA" size alkaline batteries
Battery Life:	>10 hr. (pump on)
Dimensions:	4.5 x 7.5 x 2.5" (11.4 x 19.1 x 6.4 cm)
Weight:	1.2 lb (0.54 kg)

Model	Description	Price
CA-6210	Combustion Analyzer w/ O ₂ & CO	\$3467
CA-6211	Combustion Analyzer w/ O ₂ , CO & NO	\$4300
CA-6212	Combustion Analyzer w/ O ₂ , CO & High CO	\$4300
CA-6213	Combustion Analyzer w/ O ₂ , CO, NO & SO ₂	\$5203
CA-6214	Combustion Analyzer w/ O ₂ , CO, CO(2%), NO ₁ , NO _x	\$5203
CA-6215	Combustion Analyzer w/ O ₂ , CO, NO, NO ₂ & teflon-lined sampling tube	\$5342