A Century of Innovation & A World of Experience

100 Years

BACHARACH

Combustion Analyzers

Portable Combustion Analyzer PCA®3

Complies with:
U.S. EPA Test Methods, CTM-030, & State and Local Protocols including SCAQMD

PCA®3 Features & Benefits:

- Full color, multilingual graphic display with backlighting, zoom display and dimming mode
- Sturdy metal gas and draft connectors
- Measures up to 4 gases simultaneously
- Exclusive B-Smart® field-replaceable sensors reduces downtime and calibration costs
- Ten different fuels – ability to load custom fuels
- Automatic CO over-range protection
- Measures and displays flue gas oxygen, carbon monoxide, stack temperature, combustion air temperature, draft and differential pressure
- Loss and efficiency are calculated from standard heat-loss calculations or using the Siegert formula for Europe

NEW NO_x reading from $NO+NO_2$ or calculated from NO only

Bacharach's all new PCA®3 is the definitive combustion and emissions analyzer that enables fast and accurate measurement for on-demand or semi-continuous sampling of light industrial, institutional, commercial and residential furnaces, boilers and appliances. Exclusive B-Smart® plug-and-play sensor technology makes calibration as simple as pushing a button.

Powerful and Easy to Use!

The Bacharach PCA®3 is the perfect tool for service technicians and boiler contractors who need to ensure safe operating conditions, determine combustion efficiency and perform emissions testing. This lightweight handheld combustion and emissions analyzer directly measures and displays Flue Gas Oxygen (O_2), Carbon Monoxide (CO), Stack Temperature, Draft, Differential Pressure, Combustion Air Temperature and optionally measures and displays Nitric Oxide (NO), Nitrogen Dioxide (NO_2) and Sulfur Dioxide (SO_2). The PCA®3 simultaneously calculates and displays Combustion Efficiency (EFF), Excess Air (EA), Carbon Dioxide (CO_2), NO_x and Oxygen reference values. Plus, the PCA®3 performs combustion calculations for ten different fuels and can measure 4 gases simultaneously from a choice of up to 6 field-upgradable electrochemical sensors. With its large, vibrant color display, reading combustion and emissions test results in any work environment has never been easier!

PCA®3 Specifications

	North American Version	European Version
Measurement Ranges:		
Primary/Ambient Air Temperature	-4° to 999° F	-20° to 537° C
Stack Temperature	-4° to 2192° F	-20° to 1200° C
Oxygen	0.1 to 20.9%	0.1 to 20.9%
Carbon Monoxide (H_2 Compensated)	0 to 4,000 ppm	0 to 4,000 ppm
Carbon Monoxide (High Range)	4,001 to 20,000 ppm	4,001 to 20,000 ppm
Nitric Oxide	0 to 3,000 ppm	0 to 3,000 ppm
Nitrogen Dioxide	0 to 500 ppm	0 to 500 ppm
Sulfur Dioxide	0 to 5,000 ppm	0 to 5,000 ppm
Pressure	+/- 72 inwc	+/- 179 mB
Calculated Ranges:		
Combustion Efficiency	0.1 to 100.0 %	EFF 0.1 to 100.0% ETA 0.1 to 112.0% (Fuel Dependent)
Stack Loss	----	qA 0.1 to 100.0%
Excess Air	1.0 to 250%	Lambda 1 to 9.55%
Carbon Dioxide	0 to Fuel Dependent Maximum	0 to Fuel Dependent Maximum
NO_x ($NO + NO_2$)	0 to 3500 ppm	0 to 3500 ppm
NO_x (Calculated from NO)	0 to 3500 ppm	0 to 3500 ppm
NO_x Referenced to $\%O_2$	0 to 9999 ppm	0 to 9999 ppm
CO Referenced to % O_2	0 to 9999 ppm	0 to 9999 ppm
NO Referenced to % O_2	0 to 9999 ppm	0 to 9999 ppm
NO_2 Referenced to % O_2	0 to 9999 ppm	0 to 9999 ppm
SO_2 Referenced to % O_2	0 to 9999 ppm	0 to 9999 ppm
CO/CO_2	----	0.0001 to Fuel Dependent Maximum
Selectable Fuels:	Natural Gas	Natural Gas
	Oil #2	KOKS
	Oil #4	LEG
	Oil #6	Propane
	Propane	Oil #2
	Coal	Oil #6
	Wood	Coal
	Kerosene	BioFuel
	Bagasse	LPG
	Digester Gas	Butane
Accuracy:		
Oxygen	+/- 0.3% O_2 (Flue Gas)	
Stack Temperature	+/- 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
Primary/Ambient Air Temperature	+/- 2° F between 32° to 212° F	+/- 1° C between 0 o to 100° C
Pressure/Draft	+/- 0.02 inwc between -1 to 1 inwc	+/- 0.05 mB between -2.49 to 2.49 mB
	+/- 2% Reading between -10 to 10 inwc	+/- 2% Reading between – 24.9 to 24.9 mB
	+/- 3% Reading between -40 to 40 inwc	+/- 3% Reading between -100 to 100 mB
CO	+/- 5% of reading or 10 ppm in the range of 0 to 2000 ppm CO	
	+ 10% of reading in the range of 2001 to 4000 ppm	
NO	+/- 5% of reading or 5 ppm whichever is greater in the range of 0 to 2000 ppm NO	
NO_2	+/- 5% of reading or 5 ppm whichever is greater	
SO_2	+/- 5% of reading or 10 ppm whichever is greater in the range of 0 to 2000 ppm SO_2	
Dimensions:	9" x 3" x 2 ½"	22.9 cm x 7.6 cm x 6.3 cm
Weight:	1.4 lbs (w/batteries)	0.6 kg (w/batteries)
Body Materials:	Durable ABS Housing/Rugged Rubberized Over-molding and Protective Boot w/Magnet	
User Interface:	Full Color Graphic Display (320 x 240 pixels), Optional Infrared Printer	
Operating Temperature Range:	32° to 104° F	0° to 40° C
Operating Humidity Range:	15-90% RH Non-condensing	
Power:	4 AA Alkaline Batteries	
	Optional Universal AC Adapter (100 to 240 Volts at 47 to 63 Hz)	
Battery Life:	Minimum of 10 Hours of Operation	
Approvals:	CE Mark • EN 55011, EN 50270, CE Mark, EN 50379-2	

PCA®3 Kit

PCA®3 Combustion Analyzer, 12" Probe Assembly, Protective Boot w/Magnet, Fyrite® User Software, USB Cable, Replacement Filter Element (pkg. of 3), 8 'AA' Alkaline Batteries, Hard Carrying Case and Printer

PCA®3 Basic

PCA®3 Combustion Analyzer, 12" Probe Assembly, Protective Boot w/Magnet, Fyrite® User Software, USB Cable, Replacement Filter Element (pkg. of 3), 4 'AA' Alkaline Batteries and Hard Carrying Case

PCA®3 Ordering Information

N. AM	EU	
0024-8440	0024-8460	PCA®3 225 (O_2, CO)
0024-8441	0024-8461	PCA®3 235 (O_2, CO, NO)
0024-8442	0024-8462	PCA®3 245 (O_2, CO, CO high)
0024-8443	0024-8463	PCA®3 255 (O_2, CO, SO_2)
0024-8444	0024-8464	PCA®3 265 (O_2, CO, NO, NO_2)
0024-8445	0024-8465	PCA®3 275 (O_2, CO, NO, SO_2)
0024-8446	0024-8466	PCA®3 285 (O_2, CO, NO, CO high)
0024-8447	0024-8467	PCA®3 225 Kit (O_2, CO, printer)
0024-8448	0024-8468	PCA®3 235 Kit (O_2, CO, NO, printer)
0024-8449	0024-8469	PCA®3 245 Kit (O_2, CO, CO high, printer)
0024-8450	0024-8470	PCA®3 255 Kit (O_2, CO, SO_2, printer)
0024-8451	0024-8471	PCA®3 265 Kit (O_2, CO, NO, NO_2, printer)
0024-8452	0024-8472	PCA®3 275 Kit (O_2, CO, NO, SO_2, printer)
0024-8453	0024-8473	PCA®3 285 Kit (O_2, CO, NO, CO high, printer)

PCA®3 Replacement Parts & Accessories

0024-1541	B-Smart® CO (H_2 Compensated) Sensor
0024-1542	B-Smart® CO (high range) Sensor
0024-1545	B-Smart® NO Sensor
0024-1544	B-Smart® NO_2 Sensor
0024-1543	B-Smart® SO_2 Sensor
0024-0788	Replacement O_2 Sensor
0024-0789	Replacement CO Sensor
0024-0881	Replacement NO Sensor
0024-0997	Replacement CO (high range)
0024-0998	Replacement SO_2 Sensor
0024-1027	Replacement NO_2 Sensor
0024-1400	IrDA Printer w/Disposable Batteries (comes with Reporting Pkg. Kit)
0024-1310	Printer Paper (5 rolls)
0006-8733	Printer Paper (1 roll)
0024-1254	Universal AC Power Adapter (110-240V)
0007-1644	Replacement Filter Element (pkg. of 3)
0024-7224	Compact Sample Conditioner*
0024-3004	Replacement Probe Assembly (North American)
0024-3053	Replacement Probe Assembly (European)
0024-1124	20 ft. Hose Extension with Sample, Draft and Thermocouple Lines
0024-1470	Fyrite® User Software
0021-7006	Tru Spot Smoke Tester

All instruments can be upgraded to include combinations of CO (high), NO, NO_2 and SO_2

***The Compact Sample Conditioner is recommended when measuring NO_2 and SO_2 to ensure the highest degree of measurement accuracy.**

Distributed By:

BACHARACH
The Measurable Difference

MADE IN THE USA

TÜV SÜD