### **OPEN UP – SWITCH ON – MEASURE – SAVE DATA – DONE!**





# ECOM

### ECOM-CL2

THE PERFECT COMBINATION OF WALL-POSITIONED AND FLOOR-STANDING INSTRUMENT!

- COMPACT ANALYSER FOR SHORT-TIME MEASUREMENTS AT HOME AND SMALL-SIZED PLANTS WITH A PERFORMANCE OF UP TO 70 KWH.
- BASIC MODEL WITH O<sub>2</sub> / CO LONGLIFE SENSORS
- NO SENSOR OPTIONAL
- CO SENSOR OVERRANGE PROT-ECTION & FRESH AIR PURGE W/O. MEASUREMENT INTERRUPTION
- CONDENSATE TRAP WITH ELEC-TRONIC LEVEL MONITORING
- INTEGRAL THERMAL QUICK-PRINTER
- BACKLIT DISPLAY & KEYPAD
- BLUETOOTH LOW ENERGY –BLE-

- LITHIUM-ION BATTERY
- BATTERY RECHARGING ALSO BY CLOSED HOUSING LID
- SCHOKPROOF & ULTRALIGHT ALUMINIUM PROTECTIVE HOUSING

Ó

# **FLUE GAS ANALYSIS**

CRAFTS - CONTROL MEASUREMENT ECOM-CL2



MEASUREMENT	RANGE	RESOLUTION	ACCURACY *= Higher value prevails			
Maximal amount of el			ACCORACT = Higher value prevails	3		
O <sub>2</sub>	021 %	0,01 vol.%	± 0,3 vol. %	√		
CO ppm (H <sub>2</sub> -comp.)	04000 ppm	1 ppm	± 20 ppm / 5% of meas. value*	•		
CO ppm (n. H <sub>2</sub> -comp.)	02000 ppm	1 ppm	± 20 ppm / 5% of meas. value*			
NO	05000 ppm	1 ppm	± 5 ppm / 5% of meas. value*	•		
T-Gas	0500°C	1°C	$\pm 2^{\circ}C (0.125^{\circ}C) \pm 3^{\circ}C (125.250^{\circ}C) \pm 4^{\circ}C (250.500^{\circ}C)$	1		
T-Air	099°C	1°C	± 1°C			
Pressure / ΔP	± 100 hPa	0.01 hPa	± 1°C	√ √		
CALCULATION	± 100 m a	0,01111 a	RANGE			
	_	_				
CO <sub>2</sub> Combustion efficien			0CO2max 0120%	√ √		
Excess air (Lambda			>1	· √		
Losses	,		0100%	√		
CO <sub>(U)</sub> undiluted			x ppm	1		
Dew point			x°C	√		
mg/m <sup>3</sup>			x mg/m <sup>3</sup>	1		
mg/kWh			x mg/kWh	1		
O <sub>2</sub> reference NOx via NO measurement (estimated NOx value)			x %O <sub>2</sub>	✓ •		
		,	= 1.05 NO	•		
GAS SAMPLING	GAS TEMPERAT	JRE MEASURE	MENT   T-ROOM MEASUREMENT	√		
Sampling probe 220	Sampling probe 220 mm (BB) $\oslash$ 8 mm, with thermocouple					
3-chamber sampling	g tubing 2.20 m (ty	pe B)		√		
Metal fixation cone				√		
T-Room sensor (PT	2000) length 100	mm, with cable	(approx. 1.1 m) & fixation cone	<ul> <li>✓</li> </ul>		
DATA INDICATION	I / INPUT					
LCD display, 70 x 4	0 mm, backlighted	, graphic- and zo	oom capable, max. 8 lines	1		
Backlighted keypad	for safe operation	also by unfavou	rable surrounding lighting	1		
DATA PROCESSING / PRINTOUT						
Internal memory for 300 measurements						
Data exchange with ecom <sup>®</sup> PC-Software MiniDV, DAS.NT.2						
Integral thermal quick-printer 58 mm						
Interface for Bluetooth Low Energy (BLE) data transfer						
CONNECTION						
Serial interface for c	lata transfer			√		
MEASUREMENT G	AS PREPARATIO	)N				
Condensate trap wit			ine dust filter	√		
POWER SUPPLY		monitoring and r				
	ny operation via in	togral Lithium Io	n battery 6 V / 3,8 Ah	√		
External battery cha		0	•	¥		
	5			•		
OPERATION SAFE						
Temperature trend i				1		
Automatic CO switc			ngation of life span) r values measured w/o. time loss)	1		
Fresh air purge afte				1		
	•	lata (antimizad (	gas flow w/o. pressure fluctuation)			
	÷ 1	nate (optimized (	gas now w/o. pressure nucluation)	· ·		
STORAGE   TRANS						
_	-		ation as boiler-positioned analyser	1		
Ŭ	0	nd for operation	as floor-standing analyser	√		
	Shoulder carrying strap					
DIMENSIONS   WE	IGHT   OTHERS					
Dim.: by closed lid	, approx. 340/230/	95 mm; by open	lid, approx. 340/350/180 mm (L x H x )	W)		
Weight: approx. 3 kg	g complete with sa	mpling probe				
Calibration certificat	Calibration certificate, issued after instrument calibration into calibration chamber					
Tested and approved acc. to 1. BImSchV (O_2/CO/Temp./Pressure) & EN 50379-2 (CO-H_2-comp) / EN 50379-3 (CO non H_2-comp.)						
Aluminium housing with 10 years guarantee						
Admissible ambient temperature: +5 +40°C; max. 90 % rF, non-condensing						
Admissible storage	Admissible storage temperature: -20 +50°C					
Fuel types: up to ma	Fuel types: up to maximal 16 possible					
Recommended interval for check/maintenance: 1 year						

✓ = Standard • = Option ■ = dependence	nding on basic package
ECOM-CL2   BASIC PACKAGES O <sub>2</sub> , CO-H <sub>2</sub> -compensated, T-Room Item no. 106561	
O <sub>2</sub> , CO-H <sub>2</sub> -compensated, T-Room	stick
Item no. 7106444	
O2, CO-nH2-compensated, T-Ro	om sensor
Item no. 7106445	
O <sub>2</sub> , CO- <b>nH<sub>2</sub>-compensated</b> , T-Roo	om stick
Item no.: on request	
GAS SENSOR   OPTION	
NO MEASUREMENT, 0-5000 PPM	
(Item no. 106093)	
DIFFERENTIAL PRESSURE   AC	CESSORY
TUBING, for differential pressure m	easurement
( $\pm$ 0-100 hPa), length approx. 1.5 m	(4.9 ft.)
Item no. 102884	
DATA OUTPUT / TRANSFER   A	CCESSORY
DATA CABLE -> PC (USB)	
For transfer of data from analyser	
<ul> <li>memory to PC or Laptop</li> <li>Length approx. 1.5 m</li> </ul>	
0	
Item no. 104003	
T-ROOM MEASUREMENT   ALT	ERNATIVE
T-ROOM PROBE PT 2000	
1-ROOM TROBETT 2000	8
Length 260 mm, with 3 m cable	61
Length 260 mm, with 3 m cable Item no. 104569	Ø
Length 260 mm, with 3 m cable	<b>D</b>
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT	AL
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/	
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket	
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale,	
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers	
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers Length: approx. 39 cm; weight: app Item no. 50538	rox. 0.5 kg
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers Length: approx. 39 cm; weight: app Item no. 50538 SAMPLING SYSTEM   ACCESSO	rox. 0.5 kg
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers Length: approx. 39 cm; weight: app Item no. 50538	rox. 0.5 kg
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers Length: approx. 39 cm; weight: app Item no. 50538 SAMPLING SYSTEM   ACCESSO PROBE EXTENSION PIECE With flexible silicone centerpiece. Slipped over probe tip by	rox. 0.5 kg
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers Length: approx. 39 cm; weight: app Item no. 50538 SAMPLING SYSTEM   ACCESSO PROBE EXTENSION PIECE With flexible silicone centerpiece.	rox. 0.5 kg
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers Length: approx. 39 cm; weight: app Item no. 50538 SAMPLING SYSTEM   ACCESSO PROBE EXTENSION PIECE With flexible silicone centerpiece. Silipped over probe tip by measurements at hardly	rox. 0.5 kg
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers Length: approx. 39 cm; weight: app Item no. 50538 SAMPLING SYSTEM   ACCESSO PROBE EXTENSION PIECE With flexible silicone centerpiece. Slipped over probe tip by measurements at hardly accessible, angled measurement	rox. 0.5 kg
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers Length: approx. 39 cm; weight: app Item no. 50538 SAMPLING SYSTEM   ACCESSO PROBE EXTENSION PIECE With flexible silicone centerpiece. Slipped over probe tip by measurements at hardly accessible, angled measurement openings. Item no. 103492 Remark: Because of the missing the	rox. 0.5 kg
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers Length: approx. 39 cm; weight: app Item no. 50538 SAMPLING SYSTEM   ACCESSO PROBE EXTENSION PIECE With flexible silicone centerpiece. Slipped over probe tip by measurements at hardly accessible, angled measurement openings. Item no. 103492 Remark: Because of the missing the extension piece, no accurate gas temp ured. The value which finally reaches th	rox. 0.5 kg
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers Length: approx. 39 cm; weight: app Item no. 50538 SAMPLING SYSTEM   ACCESSO PROBE EXTENSION PIECE With flexible silicone centerpiece. Slipped over probe tip by measurements at hardly accessible, angled measurement openings. Item no. 103492 Remark: Because of the missing the extension piece, no accurate gas temp	rox. 0.5 kg
Length 260 mm, with 3 m cable Item no. 104569 SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers Length: approx. 39 cm; weight: app Item no. 50538 SAMPLING SYSTEM   ACCESSO PROBE EXTENSION PIECE With flexible silicone centerpiece. Slipped over probe tip by measurements at hardly accessible, angled measurement openings. Item no. 103492 Remark: Because of the missing the extension piece, no accurate gas temp ured. The value which finally reaches th probe has been influenced by the her	rox. 0.5 kg
<ul> <li>Length 260 mm, with 3 m cable</li> <li>Item no. 104569</li> <li>SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT</li> <li>Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket</li> <li>wrench and 200 soot papers</li> <li>Length: approx. 39 cm; weight: app</li> <li>Item no. 50538</li> <li>SAMPLING SYSTEM   ACCESSOF</li> <li>PROBE EXTENSION PIECE</li> <li>With flexible silicone centerpiece. Slipped over probe tip by measurements at hardly accessible, angled measurement openings.</li> <li>Item no. 103492</li> <li>Remark: Because of the missing the extension piece, no accurate gas temp ured. The value which finally reaches th probe has been influenced by the head conveyance path.</li> </ul>	rox. 0.5 kg
<ul> <li>Length 260 mm, with 3 m cable</li> <li>Item no. 104569</li> <li>SOOT MEASUREMENT   MANU/ SOOT PUMPT KIT</li> <li>Consisting of each 1 manual soot, pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers</li> <li>Length: approx. 39 cm; weight: app</li> <li>Item no. 50538</li> <li>SAMPLING SYSTEM   ACCESSO</li> <li>PROBE EXTENSION PIECE</li> <li>With flexible silicone centerpiece.</li> <li>Slipped over probe tip by measurements at hardly accessible, angled measurement openings.</li> <li>Item no. 103492</li> <li>Remark: Because of the missing the extension piece, no accurate gas temp ured. The value which finally reaches th probe has been influenced by the heat conveyance path.</li> <li>CONSUMABLES   FOR STOCK</li> </ul>	rox. 0.5 kg

# Image: Image



- Robust, ergonomic carrying grip
- 2 Slots for shoulder carrying strap
- 3 Fixation clips for optional probe extension piece
- 4 T-Room sensor with fixation cone
- Backlit LCD display
- 6 Integral thermal quick-printer. Paper width 58 mm.
- Position-independent condensate trap with electronic condensate monitoring and fine dust filter
- 8 Backlit keypad for safe operation also by unfavourable lighting conditions
- Serial interface RS232 (behind tubing)
- 00 Gas sampling probe length 220 mm with 3-chamber tubing 2.20 m and fixation cone. Simple and quick tubing re-stowage after measurement thanks to sample line guidance.

View backside 3 powerful magnets for safe positioning at boiler casing - also in case of lower magnetic pull material properties.

> Easy and safe transport thru instant sticking on metal parts of professional service cars.







# **© COMMANDER APP**

#### SIMPLE CONNECTION

- Automatic identification of ecom instrument via wireless pairing Recording of last active connection
- Use not limited to a specific instrument

#### 🛞 SIMPLE HANDLING

- Remote monitoring of measurement Start / stop of CO sensor purge
- Printout of measurement results
- Switch to stand-by mode

#### 🕸 SMART DATA PROCESSING

- Display of all measurement parameters
- Organisation of customer data
- Recording and management of measurement values
- Archiving and / or export of measurement values via PDF

Download free of charge

### THE BELOW ICONS ILLUSTRATED IN ALL OUR PRODUCT INFORMATION SHEETS DO HAVE THE FOLLOWING MEANING:



#### EXTREMELY PRECISE - FOR EXACT MEASUREMENT ACCURACY.

After completion of the production process, the instrument is then professionally calibrated into a calibration chamber in order to eliminate possible cross-sensitivities. In order to measure in practice with the highest possible exactitude.



#### EXTREMELY EFFICIENT - ENHANCED CONVEYANCE CAPABILITY.

The product is fitted with a particularly performing pump which -compared to other instruments- is conveying many times over within the same period of time.



#### EXTREMELY BROAD REACH - WIRELESS COMMUNICATION.

Product fitted with radio module or Bluetooth LE (Low Energy) for wireless, unerring data transfer.



#### EXTREMELY SAFE - FOR MORE OPERATION SAFETY & PRODUCT LONGEVITY.

The model is or can be equipped with operation safety technique which protects its sensible components and contribute herewith to an increased life span.



#### **EXTREMELY STABLE - SHOCK-PROOF.**

Increased protection for safe transport / unintentional fall. All-round protection provided by robust transport case resp. protective housing.



## EXTREMELY COOL - DRIED SAMPLED GAS AND INCREASED READING ACCURACY.

The model is or can be equipped with a gas cooler which cools down the sampled gas and herewith makes sure that especially water-soluble gas components do not dilute but get conveyed to the sensors.



### EXTREMELY LOSS-FREE - FOR SWIFT GAS TRANSPORT WITHOUT WASHOUT EFFECTS.

Special tubing either part of the standard model delivery package or available optionally provide with a quick gas transport, free of wash-out effects. Water-soluble components do not get lost but reach the measuring sensors.



#### EXTREMELY COMPLETE - ALL INCLUSIVE - PRODUCT READY-TO-MEASURE.

The product is completely ready to measure and does not require any further components to be operated. Respectively a kit of essential consumables is covered in the delivery package, thus avoiding being forced to quit a measurement process because of a missing spare filter or else small part.

#### FOCUSED APPLICATION RESPECTIVELY USER PROFILE ECOM® FLUE GAS ANALYSERS

maintenance companies). Service divisions with many technicians

Raw material production

OIL & GAS

Transport

İ. Processing







COGENERATION Companies manufacturing resp. maintaining engines or combined heat and power An exact NO<sub>x</sub> measurement is of plants. specific importance in this sector.



#### SERVICE ORGANISATIONS & FACILITY-MANAGEMENT Maintenance & adjustment of home smaller boilers. Manufacturers of smaller boilers; Facility Management (building

6 3

**BURNER & BOILER MANUFACTURERS** Companies manufacturing resp. maintaining larger boiler and burner Service divisions with lots of technicians.



INDUSTRIAL APPLICATIONS Mining Foundries Cement factories Cookery plants Chemical process heating Waste combustion, etc.



ECOM® PRODUCTS - YOUR PARTNERS FOR: BURNER DIAGNOSIS GAS LEAK DETECTION FLUE GAS ANALYSIS PRESSURE MEASUREMENT FIND YOUR ECOM® SALES POINT AND DEALER ON: www.ecom.de