KIMO INSTRUMENTS

# Technical Data Sheet

Pressure / Temperature / Humidity / Air Velocity / Airflow / Sound level

## KIGAZ 300
## COMBUSTION GAS ANALYSER


**Interchangeable $O_2$, CO-$H_2$, NO, $NO_2$, $SO_2$ et $CH_4$ sensors**

**CO dilution**

**Autozeroing in the flue**

**Supplied with magnetic protective cover**

## KEY POINTS

- User friendly thanks to icons
- Vocal support
- LED on probe handle to light dark areas
- Built-in water trap with max level alarm
- 3 pressure sensors
- Step-by-step procedures (gas flow,...)
- Single connector
- Built-in printer
- Interchangeable duct
- 2 Go memory (100 000 measurements)

## INSTRUMENT FEATURES

| | | | | | |
|---|---|---|---|---|---|
| **GAS** | - Autozero in the flue<br>- CO dilution up to 4% | Flue gases CO and $CO_2$, ambient CO max | Interchangeable sensors: $O_2$, $COH_2$, NO, $NO_2$, $SO_2$, $CH_4$ (optional) | Excess air Losses | Efficiency > 100% |
| **PRESSURE** | Differential pressure measurement | High accuracy draft measurement with autozero by solenoid valve | Measurement of the suction pump flow | | |
| **TEMPERATURE** | Ambient temperature | Flue gas temperature | Delta Temperature | DHW temperature 2 thermocouples | Dew point temperature |
| **OTHERS FUNCTIONS** | 15 programmed combustibles[1] | Adding 5 combustibles by the user | Automatic measurement | Opacity index | |

[1]***Combustibles :*** *Sahara/Fos-sur-Mer Natural Gas, Groningen Natural Gas, Russia/North Sea Natural Gas, Propane, LPG, Butane, Light Oil, Heavy Oil, Bituminous coal, Hard coal, Coke gas, Bio fuel 5%, Wood 20%, Wood-chip 21%, Pellet 8%*

## MEASUREMENT RANGES

| Parameters | Sensor | Measuring range | Resolution | Accuracy* |
|---|---|---|---|---|
| **$O_2$** | Electrochemical | From 0% to 21% | 0.1% vol. | ±0.2% vol. |
| **CO (with $H_2$ compensation)** | Electrochemical | From 0 to 8000 ppm | 1 ppm | From 0 to 200 ppm : ±10 ppm<br>From 201 to 2000 ppm : ±5% of the measured value<br>From 2001 to 8000 ppm : ±10% of the measured value |
| **NO** | Electrochemical | From 0 to 5000 ppm | 1 ppm | From 0 to 100 ppm : ±5 ppm.<br>From 101 to 5000 ppm : ±5% of the measured value |
| **NOx** | Calculated** | From 0 to 5155 ppm | 1 ppm | |
| **$NO_2$** | Electrochemical | From 0 to 1000 ppm | 1 ppm | From 0 to 100 ppm : ±5 ppm.<br>From 101 to 1000 ppm : ±5% of the measured value |
| **$SO_2$** | Electrochemical | From 0 to 5000 ppm | 1 ppm | From 0 to 100 ppm : ±5 ppm.<br>From 101 to 5000 ppm : ±5% of the measured value |
| **$CO_2$** | Calculated** | From 0 to 99% vol | 0.1% vol | |
| **$CH_4$** | Semiconductor | From 0 to 10000 ppm<br>From 0 to 1% Vol<br>From 0 to 20 %LEL | 1 ppm<br>0.0001% Vol<br>0.002%LEL | ±20% of full scale |
| **Flue gas temperature** | K thermocouple | From -100 to +1250°C | 0.1°C | ±1.1°C or ±0.4% of the measured value |
| **Ambient temperature** | Internal NTC | From -20 to +120°C | 0.1°C | ±0.5°C |
| **Ambient temperature** | Pt100 (1/3 Din external probe) | From -50 to +250°C | 0.1°C | ±0.3% of the measured value ±0.25°C |
| **Dew point temperature** | Calculated** | From 0 to +99°Ctd | 0.1°C | |
| **DHW temperature** | TcK (external probe) | From -200 to +1300 °C | 0.1°C | |
| **Draft** | Piezoelectric | From -10 to +10 Pa<br>From -1000 to +1000 Pa | 0.1Pa<br>1 Pa | From -100 to -10 Pa : ±2 Pa<br>From -10 to +10 Pa : ±0.5 Pa<br>From +10 to +100 Pa : ±2 Pa<br>Above : ±2 % of the measured value |
| **Differential pressure** | Piezoelectric | From -200 to +200 hPa | 0.01 hPa | From -200.00 to -1.00 hPa : ±(0,5% of the measured value +0,045 hPa)<br>From -1.00 to -0.40 hPa : ±5% of the measured value<br>From -0.40 to 0.40 hPa : ±0.02 hPa<br>From 0.40 to 1.00 hPa : ±5% of the measured value<br>From 1.00 to 200.00 hPa : ±(0,5% of the measured value. + 0,045 hPa) |
| **Losses** | Calculated** | From to 100% | 0.1% | |
| **Flue gas velocity** | | From to 99.9 m/s | 0.1 m/s | |
| **Excess air (λ)** | Calculated** | From 1 to 9.99 | 0.01 | |
| **Lower efficiency (ηs)** | Calculated** | From 0 to 100% | 0.1 % | |
| **Higher efficiency (ηt) (condensation)** | Calculated** | From 0 to 120% | 0.1% | |
| **Opacity index** | External instrument | From 0 to 9 | | |

**All accuracies indicated in this document were stated in laboratory conditions and can be guaranteed for measurements carried out in the same conditions, or carried out with required compensation.*
***Calculation is made based on the measured values by the analyzer.*

## TECHNICAL FEATURES

| | Features |
|---|---|
| **Dimensions** | Instrument : 331 x 112 x 86 mm<br>Flue gas probe : 300 mm<br>Cable length : 2.50 m |
| **Weight (battery included)** | 1160 g |
| **Display** | TFT 3.5" color screen |
| **Keypad** | Rotating button<br>3 function keys + OK key<br>Backlighted keypad |
| **Material** | Housing and probe : ABS<br>Probe cable : neoprene |

## TECHNICAL FEATURES (suite)

| | |
|---|---|
| **PC interface** | USB<br>Bluetooth (optional) |
| **Protection** | IP40 |
| **Battery life** | 10 h in continuous operating |
| **Power supply** | Li-Ion 3.6 V 4400 mA battery |
| **Operating temperature** | From -5 to +50°C |
| **Storage temperature** | From -10 to +50°C |

## INSTRUMENT DESCRIPTION

### Overview


### Connections

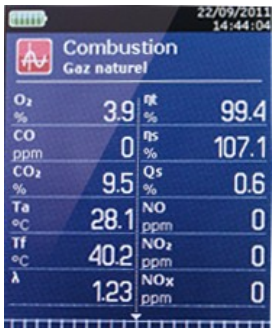

**Top view**


**Bottom view**

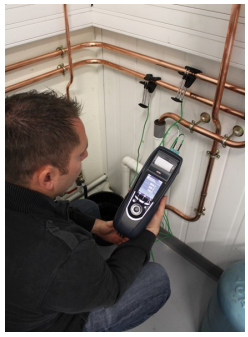

**Right side view**

## MENUS / ACTIVE VIEW / APPLICATION

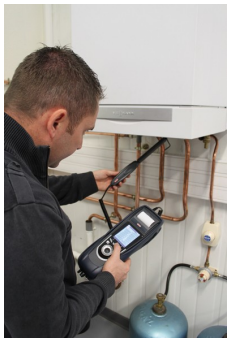

Analyser menus




Example of analysis



DHW network temperature



Ambient CO checking

## SUPPLIED WITH

| Model / Supplied with | KIGAZ 300 CLA | KIGAZ 300 STD | KIGAZ 300 PRO |
|---|---|---|---|
| Number of interchangeable sensors | 2 ($O_2$, and CO-$H_2$) | 3 ($O_2$, CO-$H_2$ and NO) | 4 ($O_2$, CO-$H_2$ ,NO, $NO_2$ or $SO_2$) |
| Scalable | Yes : $CH_4$, NO, $NO_2$, $SO_2$ | Yes : $CH_4$, $NO_2$, $SO_2$ | / |
| Calibration certificate | yes | yes | yes |
| Transport case | yes | yes | yes |
| 300 mm flue gas probe | yes | yes | yes |
| Magnetic protective cover | yes | yes | yes |
| Differential pressure kit | yes | yes | yes |

**Analysers are supplied with LIGAZ software** allowing database creation (Customers, Boilers, inspections), downloading and printing inspections and analyser configuration.


Transport case

## ACCESSORIES*

**SCOT :** Ambient CO probe

**SCO2T :** Ambient $CO_2$ probe

**SPA 150SP :** Ambient Pt100 probe

**SKCL 150 :** Thermocouple probe with lamella

**SCI :** Ionisation current measurement probe

**SDFG :** Gas leak detection probe ($CH_4$)

**PSK180 :** Flue gas probe with interchangeable contact duct, **180 mm** length, operating up to **500 °C**

**PSK300 :** Flue gas probe with interchangeable contact duct, **300 mm** length, operating up to **500 °C**

**PSL750 :** Flue gas probe with interchangeable contact duct in INCONEL, **750 mm** length, operating up to **1000 °C**

**KEG :** Gas network tightness kit

**PMO :** Opacity pump

**Bluetooth® module :** Data downloading and instrument configuration

**LOGAZ** : Software allowing database creation (customers, boilers and inspections), inspections downloading and printing, customizable procedure reports creation, inspection planning, on-site service contracts management (operator planning, customer care) and real-time measurements visualization and recording.

*[1]Please see the technical datasheet of accessories for kigaz for further details*

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