kunak air PRO

CO-LOCATION FIELD STUDY

kunak
SENSING ANYWHERE

O_3
Ozone

Test procedure

- **INSTALLATION:** On top of AQS (3-4meters)
- **STABILIZATION TIME:** 2 days
- **CALIBRATION PROCEDURE:** None
- **POST-PROCESSING:** None. Real corrected data is calculated directly in the device without any delay. No re-calibrations or corrections are applied during the field tests unless specified. Then, the initial calibration is maintained during the whole field tests and results shown in this study.
- **SAMPLING PERIOD:** data is averaged every hour to match data from reference station.
- **100%** of KUNAKAIR data is used for analysis, therefore, any possible outlier is included in the statistics.
- **VALIDATION:** statistics are only calculated if valid Reference Data is available.

Analysis and Characterization Procedure

- **ACCURACY**: is obtained as the mean absolute error (MAE) between KUNAKAIR measurements and the reference instruments.
- **90% CONFIDENCE INTERVAL**: the 90% of the measurements are below this error. Also, the relative error of the maximum error in the 90% of measurements is shown.
- **RELATIVE EXPANDED UNCERTAINTY**:

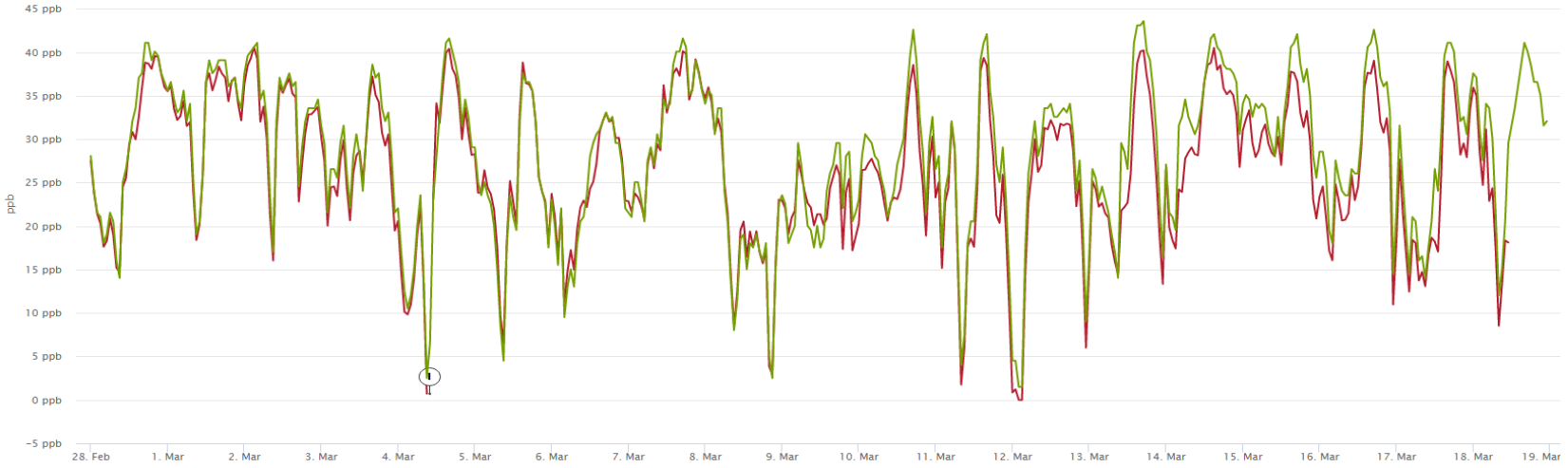
$$\mathrm{U(exp)} = \mathrm{k} * \sqrt{\sqrt{\left(\frac{\mathrm{RSS}}{\mathrm{n-2}} - u(bs, RM)^2\right)} + [a + (b-1) * L]^2}$$

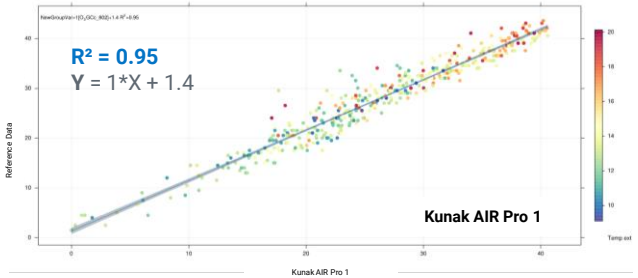
- **DATA QUALITY OBJECTIVE (DQO):** concentration value from which DQO defined in the EU Air Quality Directive (2008/50/EC) is met. Also, it is shown the DQ obtained for the Limit Values set in EU directive for indicative measurements.
- **AVAILABILITY**: is defined as the number of 1 hour averaged samples sent by the device/number of hours in the month.
- Results also include the average concentrations (AVG. GC) during the whole tests.
- **Temporal plots, Scatter plots, DQO plot and Time Variation of the Mean** are used to analyze the test results.
- **FIELD TEST MAIN OBJECTIVES:**
    1. Check the performance of KUNAKAIR V3 device vs. Reference equipment over time, obtaining the statistics defined previously during autumn, winter and spring time.

O_3

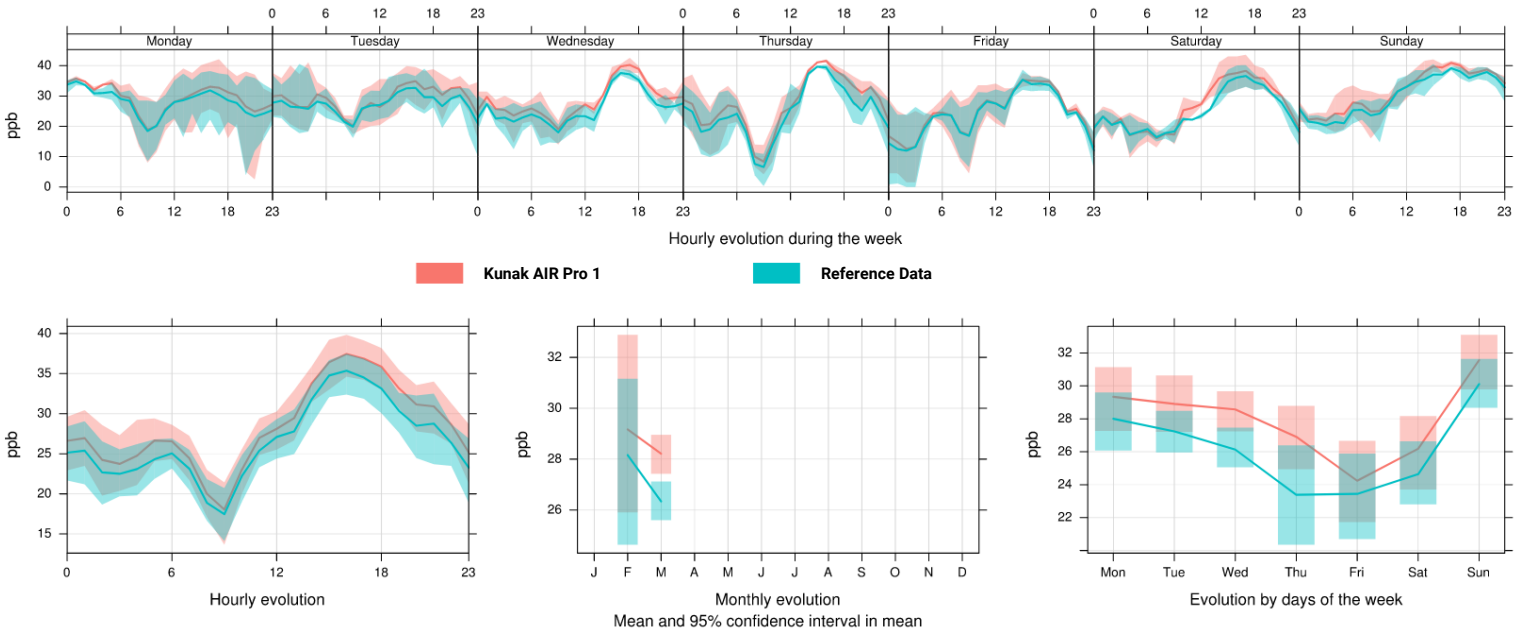
Ozone

OZONE (O_3), Barcelona (Spain), FEB'21-MAR'21





OZONE (O_3), Barcelona (Spain), FEB'21-MAR'21



R^2	ACCY. (PPB)	90% CONF. (PPB)	U(exp) (<30%)	N > LV (60 ppb)	AVG. GC. REF (PPB)	AVG. GC. DUT (PPB)	AVAILABILITY REF/DUT
0.95	2.06	4.08	11.66%	0	28.26	26.44	99%/99%

Want to know more?

Contact us!

+34 848 470 055

www.kunak.es/en

info@kunak.es