Noise Levels Data

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| --- | --- |
| **Start Date** | 2019-01-01 00:11:59 |
| **End Date** | 2023-06-30 21:20:00 |
| **N. of Entries** | 5 118 618 |

# Origin

This data is collected by *Monitar* ([MonitarSense](https://sense.monitar.pt/)), the company responsible for the provision and maintenance of urban sensors scattered within Porto Municipality to monitor the sound levels of determined locations.

The data was retrieved from a Data Warehouse (*Crate DB*), storing the historical data resorting to an Orion broker API. The data is stored as a monthly *.csv* file, which is aggregated into a single Dataframe.

# Transformations

No transformations applied.

# Data Dictionary

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| --- | --- | --- | --- | --- |
| **Name** | **Description** | **Type** | **Default** | **Example** |
| timestamp | Date & Time of measurement taken | object | null | 2019-01-01 00:11:59 |
| date\_observed | Date of measurement | object | null | 01/01/2019 |
| time\_observed | Time of measurement | object | null | 00:11:59 |
| time\_observed\_from |  | float64 | null | NaN |
| time\_observed\_to |  | float64 | null | NaN |
| entity\_id | ID of measuring Sensor | object | null | urn:ngsi-ld:NoiseLevelObserved:porto:noise:ubiwhere:5a8af1d40de8eb4bab4251a9 |
| entity\_type | Type of Sensor | object | NoiseLevelObserved | NoiseLevelObserved |
| latitude | Sensor Latitude Coordinate | float64 | null | 41.148055 |
| longitude | Sensor Longitude Coordinate | float64 | null | -8.611185 |
| laeq | A-weighted, equivalent continuous sound level (dB) | float64 | null | 106.0 |
| name | Sensors’ name | object | null | Anemona |

# Urban Sensor Characteristics

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| --- | --- |
| **Main Characteristics of Noise Level Sensor from MONITARSENSE Station** | **Description** |
| Microphone | Type - ½ inch electret capacitor |
| Accuracy | ± 1.4 dB |
| Class | IEC61672-1 CLASSE 2 |
| Resolution | 0.1 dB |
| Levels – Measuring Range | 40 dB(A) – 120 dB(A) |
| Frequencies – Measuring Range | 31.5 HZ – 8 KHZ |
| Temperature – Operating Range | 0 °C – 40 °C |
| Relative Humidity – Operating Range | 10 % - 90 % |
| Lifetime | > 24 Months |

# Info

* There are inconsistencies in the geographical coordinates (latitude and longitude) that should be accounted for.
* Columns “*time\_observed\_from*” and “*time\_observed\_to*” are empty.
* Initial measurements are at random timestamps. At some point, they will be consistently within a 5-minutes frequency.
* Sensor *“*urn:ngsi-ld:NoiseLevelObserved:porto:noise:ubiwhere:5a8af1d40de8eb4bab4251a9” is not labelled in “*name*” Column.