**CITY OF MELBOURNE MICROCLIMATE DATA**

**Data Dictionary Attachment**

This dataset contains microclimate readings from microclimate sensors located within the City of Melbourne Municipality. The data is updated every fifteen minutes and can be used to determine variations in microclimate changes throughout the day. This data includes:

* Ambient air temperature
* Relative humidity
* Atmospheric pressure
* Wind speed and direction
* Gust wind speed
* Particulate matter 2.5
* Particulate matter 10
* Noise

Note this dataset may not contain a reading every 15 minutes as the sensor device might not have a reading for each value. There may be some situations where no readings are reported.

The table below contains general information about the dataset: field names, descriptions, units, sample values and related notes.

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| --- | --- | --- | --- | --- | --- |
| **Field Name** | **Caption** | **Data Type** | **Description** | **Units** | **Sample** |
| Device\_id | Unique sensor device id | Text | Unique identifier of the sensor generating the data |  | ICTMicroclimate-02 |
| Time | Date/Time of reading in UTC | Datetime | Date and time of the sensor reading in UTC |  | 2023-05-09T02:52:48+10:00 |
| SensorLocation | Sensor Location | Text | Where sensor was installed |  | 101 Collins St L11 Rooftop |
| LatLong | Latitude and Longitude | geographical coordinate | Latitude and longitude are geographical coordinates used to specify the location of |  | -37.814604, 144.9702991 |
| WindDirection | wind direction (average, min and max) | Decimal | Average, minimum and maximum wind direction during sampling period.  **Measuring range:** 0 to 360°  **Accuracy:** ± 3°  **Measuring Principle:** Ultrasonic | ° | 316 |
| WindSpeed | wind speed (average, min and max) | Decimal | Average, minimum and maximum wind speed during sampling period.  **Measuring range:** 0 to 60 m/s  **Accuracy:** ±0.3m/s or ±3%  **Measuring Principle:** Ultrasonic | m/s | 0.6 |
| GustWindSpeed | Gust Wind Speed | Decimal | sudden, brief increase in speed of the wind  **Measuring range:** 0 to 60 m/s  **Accuracy:** ±0.3m/s or ±3%  **Measuring Principle:** Ultrasonic | m/s | 2.7 |
| AirTemperature | Air temperature | Decimal | Ambient air temperature.  **Measuring range:** -40 to 60°C (extension: -50 to 80°C)  **Accuracy:** ±0.3°C  **Measuring Principle:** Platinum resistance | °C | 12 |
| RelativeHumidity | Relative Humidity | Decimal | Relative Humidity  **Measuring range**: 0 to 100%RH  **Accuracy**: ±2%RH  **Measuring Principle:** Capacitance | % | 86 |
| AtmosphericPressure | Atmospheric Pressure | Decimal | Atmospheric pressure  **Measuring range**: 10 to 1300 HPa  **Accuracy**: ±1 hPa  **Measuring Principle:** Silicon Piezoresistive | hPa | 1023.900024 |
| Pm25 | Particulate Matter 2.5 | Decimal | Mass density of particles in the air smaller than 2.5 micrometers in diameter  **Measuring range:** 0 to 1000 µg/m3  **Accuracy:** ±10μg/m3 or 15%  **Measuring Principle:** Laser Scattering | µg/m3 | 5 |
| Pm10 | Particulate Matter 10 | Decimal | Mass density of particles in the air smaller than 10 micrometers in diameter  **Measuring range:** 0 to 1000 µg/m3  **Accuracy:** ±10μg/m3 or 15%  **Measuring Principle:** Laser Scattering | µg/m3 | 8 |
| Noise | Noise | Decimal | Ambient noise  **Measuring range**: 30 to 130 dB  **Accuracy**: ±1.5dB  **Measuring Principle:** Capacitive microphone | dB | 47.5999 |