

# Data Dictionary for experimental meteorological data collected from Smart Lampposts

**Version 2.0**

**Sep, 2021**

<b>Version</b>	<b>Date</b>	<b>Description</b>	<b>Author</b>
<b>1.0</b>	Mar, 2020	Initial Release	DA Division, OGCI0
<b>2.0</b>	Sep, 2021	Release of Wind Data	HKO

# Table of Content

1	Introduction .....	3
2	API .....	3
2.1	Get data by lamppost ID and device ID .....	3
3	Data Dictionary .....	6
3.1	Smart Lampposts Meteorological Devices Location Database .....	6
3.2	Smart Lampposts Meteorological Devices Type Database .....	7
3.3	Smart Lampposts Meteorological Devices Element Database.....	7
3.4	API.....	8

## 1 Introduction

This is a RESTful API primarily designed for the application developer to retrieve the experimental meteorological data collected from smart lampposts, including air temperature, relative humidity, 10-minute mean wind speed and direction.

## 2 API

### 2.1 Get data by lamppost ID and device ID

By making an API call with a lamppost ID and device ID, the latest processed data (in 10-minute interval) of the specified lamppost and device will be returned.

**HTTP method:** GET

**Resource URL:**

[https://data.weather.gov.hk/weatherAPI/smart-lamppost/smart-lamppost.php?pi=\[lamppost\\_id\]&di=\[device\\_id\]](https://data.weather.gov.hk/weatherAPI/smart-lamppost/smart-lamppost.php?pi=[lamppost_id]&di=[device_id])

**Parameters:**

<b>pi</b>	Required. Lamppost ID. Maximum 8 characters.
<b>di</b>	Required. Device ID. 2 characters.

[For the list of pi and di, please refer to the static dataset provided by HKO]

- Smart Lampposts Meteorological Devices Location Database  
[https://www.hko.gov.hk/common/hko\\_data/smart-lamppost/files/smart\\_lamppost\\_met\\_device\\_location.json](https://www.hko.gov.hk/common/hko_data/smart-lamppost/files/smart_lamppost_met_device_location.json)
- Smart Lampposts Meteorological Devices Type Database  
[https://www.hko.gov.hk/common/hko\\_data/smart-lamppost/files/smart\\_lamppost\\_met\\_device\\_type.json](https://www.hko.gov.hk/common/hko_data/smart-lamppost/files/smart_lamppost_met_device_type.json)
- Smart Lampposts Meteorological Devices Element Database  
[https://www.hko.gov.hk/common/hko\\_data/smart-lamppost/files/smart\\_lamppost\\_met\\_device\\_element.json](https://www.hko.gov.hk/common/hko_data/smart-lamppost/files/smart_lamppost_met_device_element.json)

**Resource Information:**

Response formats	JSON
Requires authentication	NO
Response encoding	UTF-8

**Response Code:**

HTTP code	Definition
200	Success.
400	Bad Request.
500	Internal Server Error.
503	The server is currently unavailable.

**Example Request 1 (Normal request):**

<https://data.weather.gov.hk/weatherAPI/smrt-lamppost/smrt-lamppost.php?pi=GF3637&di=01>

**Example Response 1 (HTTP 200):**

```
{
  "BD": "00",
  "DI": "01",
  "GI": "00",
  "PI": "GF3637",
  "TS": "0",
  "BODY": {
    "HKO": {
      "RH": "71.7",
      "T0": "33.5",
      "TS": "20210913174049",
      "VN": "1.0",
      "W0": "1.09",
      "WD": "143",
      "TP": "20210913174049"
    }
  }
}
```

[For the definitions of the JSON field name, please refer to the Data Dictionary]

**Example Request 2 (Normal request with invalid pi or di):**

<https://data.weather.gov.hk/weatherAPI/smrt-lamppost/smrt-lamppost.php?pi=xxxxxx&di=xx>

**Example Response 2 (HTTP 200):**

```
{"message": "No record found"}
```

**Example Request 3 (Required fields are not provided):**

<https://data.weather.gov.hk/weatherAPI/smrt-lamppost/smrt-lamppost.php>

**Example Response 3 (HTTP 400):**

```
{"message": "Missing required request parameters: [di, pi]"}
```

**Example response for HTTP 500 and HTTP 503**

```
{"message": "[Error Message]"}
```

### 3 Data Dictionary

#### 3.1 Smart Lampposts Meteorological Devices Location Database

Name	Description	Remarks
LP_NUM	Lamppost ID	Data type: String Example: "AB1234"
LP_LATITUDE	Latitude (Decimal Degree) of lamppost in WGS84 (Reference Frame: ITRF96 (1998:121))	Data type: Numeric Unit: ° Resolution: 0.000001 ° Example: "22.333333"
LP_LONGITUDE	Longitude (Decimal Degree) of lamppost in WGS84 (Reference Frame: ITRF96 (1998:121))	Data type: Numeric Unit: ° Resolution: 0.000001 ° Example: "114.222222"
LP_NORTH	Northing coordinates (HK1980 Grid) of lamppost	Data type: Numeric Unit: m Resolution: 0.1 m Example: "822222.2"
LP_EAST	Easting coordinates (HK1980 Grid) of lamppost	Data type: Numeric Unit: m Resolution: 0.1 m Example: "833333.3"
LP_TYPE	Type ID of lamppost	Data type: String Data format: 2 characters Example: "01"

### 3.2 Smart Lampposts Meteorological Devices Type Database

Name	Description	Remarks
LP_TYPE	Lamppost type ID	Data type: String Data format: 2 characters Example: "01"
TYPE_NAME	Name of the meteorological device(s) type	Data type: String Example: "Type 01"
DEVICES	List of meteorological device ID(s)	Data type: String List Data format: 2 characters Example: ["01","02"]

### 3.3 Smart Lampposts Meteorological Devices Element Database

Name	Description	Remarks
DEVICE_ID	Meteorological device ID	Data type: String Data format: 2 characters Example: "01"
TYPE_NAME	Name of the meteorological device	Data type: String Example: "Device 01"
DATA_TYPE_COLLECTED	List of meteorological elements collected	Data type: String List Data format: 2 characters Example: ["AA","BB"]

### 3.4 API

Name	Description	Remarks
PI	Lamppost ID	Data type: String Data format: Maximum 8 characters Example: "AB1234"
DI	Device ID	Data type: String Data format: 2 characters Example: "01"
BD	[ Currently not in use ] Reserve for HKSARG Department Code under Interoperability Framework (IF) for E-Government	[ Currently not in use ] Data type: String Default value: "00"
GI	[ Currently not in use ] Reserve for Branch/Division/Section code	[ Currently not in use ] Data type: String Default value: "00"
TS	[ Currently not in use ] Date and time when JSON packet is created (up to millisecond)	[ Currently not in use ] Data type: String Data format: Unix time stamp Default value: "0"
BODY.HKO.VN	Version number of the payload format	Data type: String Resolution: 0.1 Example: "1.0"



<b>BODY.HKO.TO</b>	Air temperature	Data type: String Unit: °C Resolution : 0.1 °C Example: "19.8" ("////" if fail quality control (QC))
<b>BODY.HKO.RH</b>	Relative humidity	Data type: String Unit: % Resolution: 0.1 % Example: "93.1" ("////" if fail QC)
<b>BODY.HKO.WO</b>	10-minute mean wind speed	Data type: String Unit: m/s Resolution: 0.01 m/s Example: 0.45 ("////" if fail QC)
<b>BODY.HKO.WD</b>	10-minute mean wind direction	Data type: String Unit: ° Resolution: 1° Example: 108 ("////" if fail QC)
<b>BODY.HKO.TS</b>	Data measurement time	Data type: String Data Format: YYYYMMDDHHMMSS (ISO 8601 notation, in Hong Kong Time) Example: "20190506161726"

<b>BODY.HKO.TP</b>	Data processed time	Data type: String Data Format: YYYYMMDDHHMMSS (ISO 8601 notation, in Hong Kong Time) Example: "20190506161726"
--------------------	---------------------	--