

Data Dictionary of Air Quality Data for public that generated under the Pilot Multi-functional Smart Lampposts Scheme

The latest processed Air Quality Data (in 5-minute interval) of the available smart lampposts are provided via the following structure:

- Smart Lampposts Air Quality Measurement Data Database
 - This provides the latest air quality device measured data, per lamppost and per device, of the available smart lampposts via API below:

[https://api.data.gov.hk/v1/smart-lamppost/data/epd?pi=\[LP_NUM\]&di=\[DEVICE_ID\]](https://api.data.gov.hk/v1/smart-lamppost/data/epd?pi=[LP_NUM]&di=[DEVICE_ID])

The parameters LP_NUM and DEVICE_ID are the smart lamppost ID and the sensor device ID, respectively. These can be found in Smart Lampposts Air Quality Device Location Database ([smart_lamppost_epd_device_location.json](#)) and Smart Lampposts Air Quality Device Database ([smart_lamppost_epd_device_detail.json](#)).

For an example, <https://api.data.gov.hk/v1/smart-lamppost/data/epd?pi=DF3651&di=01> and HTTP response is encoded in UTF-8.

Name	Description	Remarks
BD	[Currently not in use] Reserve for HKSARG Department Code under Interoperability Framework (IF) for E-Government	[Currently not in use] Type: String Example: "EPD"
GI	[Currently not in use] Reserve for Branch/Division/Section code	[Currently not in use] Type: String Format: 2 characters Example: "00"
PI	Lamppost ID	Type: String Example: "DF3651"
DI	Air quality device ID	Type: String Format: 2 characters Example: "01"
TS	[Currently not in use] Date and time when JSON packet is created (up to millisecond)	[Currently not in use] Type: String Format: Unix time stamp Example: "0"
BODY.EPD.NO	Nitrogen Monoxide (NO) concentration in unit of part per billion (ppb)	Type: String Format: 1 decimal place Example: "127.3"

BODY.EPD.NO2	Nitrogen Dioxide (NO ₂) concentration in unit of part per billion (ppb)	Type: String Format: 1 decimal place Example: "24.5"
BODY.EPD.PM25	PM _{2.5} concentration in unit of microgram per cubic metre (µgm ⁻³)	Type: String Format: 1 decimal place Example: "30.9"
BODY.EPD.TS	Air quality data measurement end time	Type: String Format: yyyyMMddHHmmss (ISO 8601 notation, in Hong Kong Time) Example: "20200326174500"

■ Example of device data JSON file:

```
{
  "BD": "EPD",
  "GI": "00",
  "PI": "DF3651",
  "DI": "01",
  "TS": "1585141911124",
  "BODY": {
    "EPD": {
      "NO": "122.6",
      "NO2": "97.2",
      "PM25": "28.8",
      "TS": "202003252110"
    }
  }
}
```

● Smart Lampposts Air Quality Device Location Database

- This provides information related to the smart lampposts that install the air quality sensor devices.

https://paqs.epd.gov.hk/data/smart_lamppost_epd_device_location.json

Name	Description	Remarks
LP_NUM	Lamppost ID	Type: String Example: "AB1234"
LP_NORTH	Northing coordinates (HK1980 Grid) of lamppost	Type: Numeric Unit: m Resolution: 0.1 m Example: "822222.2"
LP_EAST	Easting coordinates (HK1980 Grid) of lamppost	Type: Numeric Unit: m Resolution: 0.1 m Example: "822222.2"
LP_LAT	Latitude (Decimal Degree) of lamppost in WGS84 (Reference Frame: ITRF96 (1998:121))	Type: Numeric Unit: ° Resolution: 0.000001 ° Example: "22.333333"
LP_LONG	Longitude (Decimal Degree) of lamppost in WGS84 (Reference Frame: ITRF96 (1998:121))	Type: Numeric Unit: ° Resolution: 0.000001 ° Example: "114.222222"
LP_GL	Ground level of lamppost above Hong Kong Principal Datum (HKPD)	Type: Numeric Unit: m Resolution: 0.1 m Example: 5.6 m

■ Example of device location JSON file:

```
[
  {
    "LP_NUM": "DF3651",
    "LP_NORTH": 821165.1,
    "LP_EAST": 839125.5
    "LP_GL": 5.8,
    "LP_LAT": 22.329522,
    "LP_LONG": 114.204611
  }
]
```

- Smart Lampposts Air Quality Device Database
 - This provides a list of air quality data that are measured by air quality sensor device.

https://paqs.epd.gov.hk/data/smart_lamppost_epd_device_detail.json

Name	Description	Remarks
DEVICE_ID	Air quality device ID	Type: String Example: "01"
DEVICE_NAME	Name of the air quality device	Type: String Example: "NAS-LP-OEM-RS485"
DATA_TYPE_COLLECTED	List of air quality data collected	Type: String list Example: ["NO" , "NO2" , "PM25"]

- Example of device element JSON file:

```
[
  {
    "DEVICE_ID": "01",
    "DEVICE_NAME": "NAS-LP-OEM-RS485",
    "DATA_TYPE_COLLECTED": [
      "NO",
      "NO2",
      "PM25"
    ]
  }
]
```