

LoRaWAN Optical Particle Counting Sensor WSLRW-OPC

SKU: WSLRW-OPC

Doc No: WSLRW-OPC-DS-EN-10

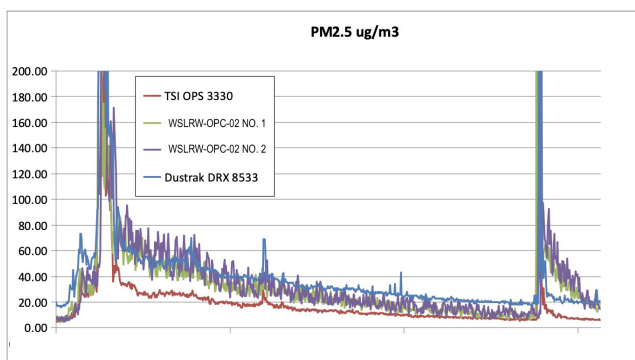
Introduction

WSLRW-OPC is a LoRaWAN sensor with a built-in advanced optical particle counter. Like conventional optical particle counters, the WSLRW-OPC measures the light scattered by individual particles in a sample air stream through a laser beam. These measurements are used to determine the particle size (related to the intensity of light scattered via a calibration based on Mie scattering theory) and particle number concentration. Particle mass loadings - PM1, PM2.5, and PM10, are then calculated from the particle size spectra and concentration data. The WSLRW-OPC is designed to minimize particle deposition within the unit and thus allow for prolonged unattended operation in dusty environments. Its innovative hardware and firmware design allow the sensor to operate with extremely low energy consumption while still delivering the best measurement efficiency, high accuracy, and reliability. The sensor will transmit data over kilo-meters to the LoRaWAN gateway, any brand on the market. It supports multi regions: EU868, IN865, RU864, KR920, AS923, AU915, and US915.

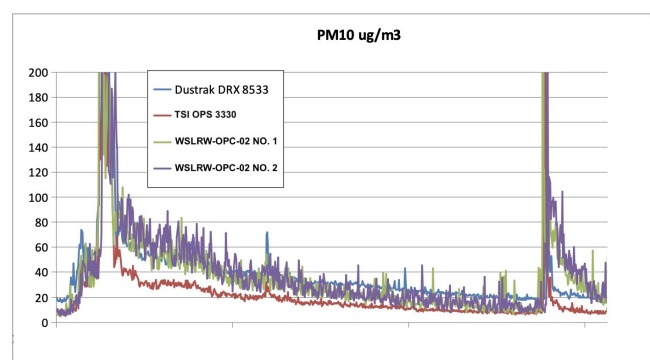
- 1 High accurate PM measurement for PM1.0, PM2.5, and PM10;
- 1 Prolonged unattended operation in dusty environments;
- 1 LoRaWAN Class Communication;
- 1 Long battery life;

Typical Applications

- 1 Particulate matter monitor for ambient air quality monitor.



This figure shows a comparison of PM2.5 monitoring by a WSLRW-OPC-02 sensor and TSI OPS 3330 and DustTrak instruments. All are set at 5s averaging and are sampling the ambient air of a workshop; the raw 3330 data has been used to calculate a PM figure.




The figure shows a comparison of PM10 monitoring by a WSLRW-OPC-02 sensor and TSI OPS 3330 and DustTrak instruments. All are set at 5s averaging and are sampling the ambient air of a workshop; the raw 3330 data has been used to calculate a PM figure.

Specification

SENSOR SPECIFICATION	
Measuring technology	Laser light scattered method for PM1.0, PM2.5 and PM10
Particle range	0.3 to 12.4 um
Detection limit (PM10)	0.01 ug/m3 to 1500 mg/m3
Resolution	0.01 ug/m3
Accuracy	+/- 10% of Reading value
Sample flowrate	240 mL/min
Laser Classification	Class 1
LORAWAN SPECIFICATION	
Antenna	Internal Antenna 2.67 dBi
RF Frequency and Power	860..930Mhz, +14 .. +20 dBm, configurable for zones: EU868, IN865, RU864, KR920, AS923, AU915, US915
Protocol	LoRaWAN, class A
Data sending modes	Interval time and when the alarm occurred
Power supply	2 x battery size D 3.6V (recommend SAFT LS33600), not included
Configuration	via Downlink or offline USB cable (PC software is supplied for free)
RF Module complies to	CE, FCC, ARIB
Storage temperature	-20°C..+60°C
Working temperature	-10°C..+50°C
Working humidity	0-95 % RH (non-condensing)
Dimensions	145x210x60 mm (H)
Net-weight	< 500 grams
Housing / Rating	ASA UL94HB / IP65, weather-proof
Mounting	Wall mount bracket or Pipe mount bracket (order separately)

Ordering Code

Item code	Descriptions
WSLRW-OPC-01	LORAWAN OPTICAL PARTICLE COUNTER PM1, PM2.5, AND PM10, FOR INDOOR
WSLRW-OPC-02	LORAWAN OPTICAL PARTICLE COUNTER PM1, PM2.5, AND PM10, FOR OUTDOOR AMBIENT MONITOR

 [Link for full datasheet:](#)

 Link for manual:



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