



SPS30 USB is an ultra compact (60x60x20mm) Particulate Matter Sensor, which can be directly connected via USB port to PC or embedded system. The SPS30 particulate matter (PM) sensor from SENSIRION used represents a new technological breakthrough in optical PM sensors. Its measurement principle is based on laser scattering

and makes use of Sensirion's innovative contamination-resistance technology. This technology, together with high-quality and long-lasting components, enables accurate measurements from the device's first operation and throughout its lifetime of more than eight years.

PM2.5 and PM10 refer to particulate matter with particle diameter up to 2.5 microns and 10 microns, respectively, and are among the most dangerous air pollutants. Due to their small size, PM2.5 particles can travel deep into the human lung and cause a variety of health issues; for instance, by triggering asthma attacks or contributing to cardiovascular disease. The SPS30 will enable the implementation of innovative air quality monitoring devices that prevent air pollution damage.

Key Benefits/Features

- Easy to use, direct USB connected PM2,5/PM10 sensor.
- Lifetime of more than eight years while operating continuously for 24 hours/day.
- Laser-based scattering principle and advanced algorithms.
- Accurate high-resolution particle size binning.
- Fully calibrated digital output. Accurate measurements for different types of dust and other particles.
- Easy to integrate into devices where size and space are limited.
- Linux and Windows royalty free drivers available.

General Specifications

Particulate Matter Sensor Specifications	
Mass concentration accuracy ¹	$\pm 10 \mu\text{g}/\text{m}^3$ @ 0 to $100 \mu\text{g}/\text{m}^3$ $\pm 10 \%$ @ 100 to $1000 \mu\text{g}/\text{m}^3$

articulate Matter Sensor Specifications	
Mass concentration range	1 to 1000 $\mu\text{g}/\text{m}^3$
Mass concentration resolution	1 $\mu\text{g}/\text{m}^3$
Particle detection size range ²	Mass concentration: PM1.0, PM2.5, PM4 and PM10 Number concentration: PM0.5, PM1.0, PM2.5, PM4 and PM10
Lower limit of detection	0.3 μm
Minimum sampling interval	1 sec (continuous mode)
Lifetime	> 8 years operating continuously 24h/day
Dimensions	60 x 60 x 20 mm^3
Operating temperature range	-10 to +60 $^{\circ}\text{C}$
Storage temperature range	-40 to +70 $^{\circ}\text{C}$
Electrical Specifications	
Interface	USB, FTDI FT230X chip used, driver
Supply voltage	4.5 – 5.5 V
Average supply current @ 1 Hz measurement rate	< 60 mA

For detailed information on SPS30 sensor please check [SPS30's datasheet](#).