

1 Overview

- Monitoring of quality of air.
- Equipped with PM_{2.5} and PM₁₀ filters.
- Shows flow rate, humidity, temperature and several other quantities at run time.
- Equipped with a WiFi terminal for standalone data acquisition on a smartphone or any WiFi enabled web browser.
- Can be used in open environment or inside a building.



2 Description

Qosain Scientific's Dust Sampler is designed for monitoring the Total Suspended Particles (TSP) in ambient air conditions. The Dust Sampler is equipped with PM_{2.5} and PM₁₀ filters and is controlled using a controller that helps in the maintenance of a constant flow rate. It is a sampling tool for use in the clean-room or the area the quality of air is critical.

Total suspended particles (TSP) is a regulatory measure of the mass concentration of particulate matter (PM) in the air. Particulate matter or particle pollution is a mixture of solid particles and liquid droplets present in the atmosphere. PM₁₀ is particulate matter 10 micrometers or less in diameter, PM_{2.5} is particulate matter 2.5 micrometers or less in diameter. Exposure to these particles is harmful to health. When the level of these particles increases, they penetrate deeply into the lungs, and then one can experience several health impacts like breathing problems, or burning sensation in the eyes, which can lead to cough, asthma attacks, high blood pressure, heart attack, and stroke. Serious diseases may also occur and as a result of which premature death can occur.

Qosain Scientific's Dust sampler is a standalone device to sample PM_{2.5}/PM₁₀ particulate matter from the ambient air while logging the air volume, flow rate, humidity, temperature, and several other quantities at run time. Qosain Scientific's dust sampler includes a vacuum pump, logging circuitry, and a WiFi terminal for standalone data acquisition on a smartphone or any WiFi-enabled web browser. Note that the internet is not necessary for data acquisition and system control. Dust Sampler is designed to work in various conditions. It can be used in an open environment and even inside a building (with proper safety) to monitor the critical requirements of air quality.

3 Technical specification

	Unit	Value
Recommended Voltages	V	220
Flow Rates	Litres/Min	3 to 25
Nominal Flow Rate	Litres/Min	16.7
Weight	kg	30 (Approx.)
Interface Type		Web Browser
Connection Type		WiFi (Internet access point)
Supported Browsers		Google Chrome, Internet Explorer
WiFi Signals Range		30 meters (Line of Sight), 10 meters (Indoor)

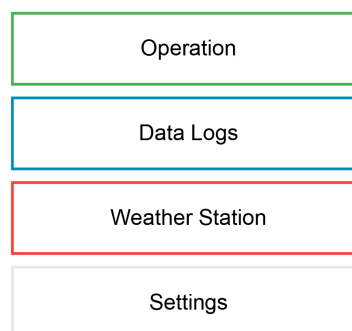
Qosain Scientific

4 Software Interface

DUST SAMPLER PM2.5/PM10

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- Simple Software Interface.
- Easily connect using a WiFi-enabled smartphone or laptop.
- Shows flow rate, humidity, temperature and several other quantities run time.
- Recommended browsers are Chrome and Internet Explorer.



5 Dust Sampler Package

- **Control Unit** which is equipped with pump and all necessary electronics to drive the system.
- **PM Head** which is equipped with filters (PM2.5 or PM10) to process the air.
- **Frame** to adjust the height of PM Head.
- **Filters** to maintain good air quality and provide appropriate ventilation system for produced heat.
- **Weather Station** to record atmospheric conditions to provide information for weather forecasts.

