BlueSky™ Air Quality Monitor

Models 8143 and 8145

TSI® has expanded its environmental offerings with the BlueSky™ Air Quality Monitor.

Each lightweight instrument is designed to simultaneously measure particulate, gas and weather data all in real-time! As an Internet of Things (IoT) solution, these hyperlocal, cloud-based monitors offer data interfacing using WiFi/cellular and comes standard with an SD memory card for duplicate date storage. While specifically designed for outdoor environmental monitoring, BlueSky™ Air Quality Monitors can also be utilized inside buildings, homes and manufacturing facilities to measure indoor air quality.

BlueSky™ Environmental Air Quality Monitors are compatible with our cloud-based TSI Link™ software solution that allows customers to track in real-time air quality information, as well as provide integration with customers own platform, third-party software and analytical tools thanks to API Data Services.

Available with Solar and Cellular Accessories

Features and Benefits

- Precision data – TSI® factory-calibrated sensors with the option to program custom calibration factors and measurement offsets
- Pin-point levels of gas air pollution such as CO_2, NO_2, CO, O_3, and SO_2
- Unique laser-based light scattering particle sensors – simultaneously outputs PM1, PM2.5, PM4, PM10, mass concentration data
- Designed to also measure relative humidity, temperature, and barometric pressure
- Self diagnostics – notify user of poor sensor performance while maintaining data integrity
- Designed for outdoor use – performs consistently in a wide range of humidity and temperatures, and protected from rain, bugs and direct sunlight
- Multiple ways to download data - from the cloud (.csv file), from API Data Services, and removable SD Card
- Data buffering – internally logs data (up to 2 weeks at 15 min interval via on board memory) for data redundancy
- Easy and quick installation
- Low power consumption - powered using an IP67 rated AC/DC power supply or solar power accessory
- ROHS compliant with CE Mark

Applications

- Fenceline/Perimeter Monitoring
- Municipalities & Smart Cities
- Community Monitoring Programs
- Hot Spot Detection
- Indicative Comparisons to Federal Reference Air Quality Data

Device

Operational Temperature	-10°C to 60°C
Storage Temperature	-40°C to 70°C
Operational Humidity	0 to 95% RH (Non-condensing)
Dimensions	6 inch x 5.5 inch x 4.5 inch
Weight	0.35 lbs (~6 oz.)
Available Reporting Interval	1, 5, 10, 15, 30, 60 min (average of sensor sampling frequency)

PM Sensor

Sensor Type	Light-scattering single particle counter
Aerosol Concentration Range	0 to 1000 µg/m³
Measurements	PM1, PM2.5, PM4 and PM10
Measurement Resolution	1 µg/m³
Counting Efficiency	50% @ 0.3 µm and 98% at 0.5 µm
Accuracy (PM 2.5) (measured against TSI DustTrak DRX)	±10 % @ 100 to 1000 µg/m³ ±10 µg @ 0 to 100 µg/m³
Zero Stability	±1 µg/m³
Sample Flow Rate	~ 0.3 LPM
Start-up Time	< 8 seconds
Acoustic Emissions Level	25 dBA @ 0.2 m
Calibration	Factory pre-calibrated sensor

Temperature Sensor

Range	-40°C to 50°C
Accuracy	±0.5°C

Humidity Sensor

Range	0 to 100% RH
Accuracy	±3% RH

Model 8145 Only

Barometric Pressure Sensor

Range	8 to 35 inHg (270 to 1185 hPa)
Accuracy	± 0.12 inHg (± 4 hPa)

Carbon Dioxide (CO_2)

Sensor Type	NDIR (non-dispersive infrared)
Range	0 - 10,000 ppm
Accuracy	+/- 30 ppm + 3% of reading (Typical)
Resolution	1 ppm

Carbon Monoxide (CO)

Sensor Type	Electrochemical
Range	0 - 20 ppm
Accuracy	+/- 0.150 ppm (Typical)
Resolution	.001 ppm

Ozone (O_3)

Sensor Type	Electrochemical
Range	0 - 5,000 ppb
Accuracy	+/- 30 ppb (Typical)
Resolution	1 ppb

Nitrogen Dioxide (NO_2)

Sensor Type	Electrochemical
Range	0 - 5,000 ppb
Accuracy	+/- 30 ppb (Typical)
Resolution	1 ppb

Sulfur Dioxide (SO_2)

Sensor Type	Electrochemical
Range	0 - 5,000 ppb
Accuracy	+/- 50 ppb (Typical)
Resolution	1 ppb

Power Requirements

Input Voltage	5 VDC
Power Consumption	1 W

Accessories

8145-SO	Solar System
8145-CE, 8145-CEEU	Cellular Modem
8145-CEOD, 8145-CEODEU	Cellular Modem w/ Outdoor Enclosure
8145-CS, 8145-CSEU	Cellular + Solar Combination

Knowledge Beyond Measure.

TSI Incorporated - Visit our website **www.tsi.com** for more information.