



® Knowledge Beyond Measure.

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 data 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 CO₂, NO₂, CO, O₃, and SO₂
- 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



Specifications

BlueSky™ Air Quality Monitor

Models 8143 and 8145

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/m ³ |
| Measurements | PM1, PM2.5, PM4 and PM10 |
| Measurement Resolution | 1 µg/m ³ |
| 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/m ³ ±10 µg @ 0 to 100 µg/m ³ |
| Zero Stability | ±1 µg/m ³ |
| 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 (CO₂)

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

Carbon Monoxide (CO)

| | |
|-------------|-----------------|
| Sensor Type | Electrochemical |
| Range | 0 - 20 ppm |
| Accuracy | +/- 0.150 ppm |
| Resolution | .001 ppm |

Ozone (O₃)

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

Nitrogen Dioxide (NO₂)

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

Sulfur Dioxide (SO₂)

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

Power Requirements

| | |
|-------------------|-------|
| Input Voltage | 5 VDC |
| Power Consumption | 1 W |

Specifications are subject to change without notice.

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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.

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