Knowledge Beyond Measure.

Solar Power and Cellular System Kits

for Real-time Air Quality Monitoring

Model 8145-CE/CEEU, 8145-CEOD/CEODEU, 8145-SO, 8145-CS/CSEU

Not every location has access to traditional power sources and Wi-Fi connectivity, but there are options when you need to collect critical air quality data in remote and challenging environments.

Enhance the versatility of your BlueSky™ Air Quality Monitor with cellular and solar power accessories. Seamlessly connect your device to local cellular networks, allowing real-time data collection in locations without Wi-Fi access, or eliminate the need for traditional power sources and ensure uninterrupted monitoring in remote areas with an eco-friendly solution. From urban streets to remote wilderness, these accessories give you the flexibility to stay connected, stay informed and make a difference – free from the constraints of power grids and infrastructure limitations.

Features & Benefits:

- Ensures real-time, continuous monitoring in isolated or off-grid locations
- Solar power capability promotes sustainable, cost-effective operation
- Versatile configurations are suitable for diverse environmental settings

Accessory Options

- Cellular modem for indoor use Kit 8145-CE/CEEU – includes modem, power supply and mounting hardware (SIM card/data plan not included)
- Cellular modem for outdoor use Kit 8145-CEOD/CEODEU – includes modem, enclosure, power supply and mounting hardware (SIM card/data plan not included)
- Solar System Kit 8145-SO – includes 15W solar panel, 12 VDC 8.5 Amp-hr battery, enclosure and mounting hardware
- Solar and cellular system combo 8145-CS/CSEU – includes solar system kit and cellular modem for outdoor use kit (SIM card/data plan not included)

Applications

- Environmental justice and community monitoring
- Monitoring remote industrial sites and construction areas
- Air quality assessments in agricultural fields and wilderness areas
- Reliable data collection during emergency response operations
- Environmental conservation efforts

Specifications

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Solar System Specifications

Power Requirements

Solar System Run-Time	Continuous (with adequate sunlight)
Rated Maximum Cell Power	15 watts (per panel)
Nominal Voltage	12 volts
Solar System Battery	12 VDC, 8.5 Ah
Battery Run-Time	90 to 120 hours (typical, full-charge to power cutoff, when no sunlight for charging)
Operating Temperature	-22 to 140° F (-30 to 60° C)

Physical (Solar Panel)

Dimensions	12 x 14 in. (31 x 36 cm)

Physical (Battery and Enclosure)

Dimensions	11 x 7 x 6 in. (28 x 18 x 15 cm)
Weight	15 lbs. (7 kg)

Cellular Specifications

Enclosure

Operating Humidity	5% to 95% non-condensing
Operating Temperature	-40 to 67° F (-40 to 75° C)
Dimensions	12 x 9 in. x 5 in. (30 x 23 x 13 cm)
Weight	10 lbs. (5 kg)
AC Power	100 to 240 VAC, 50/60 Hz
Power Consumption	<5 W

Modem

Mobile Module	4G (LTE) - Cat 4 up to 150 Mbps 3G - Up to 42 Mbps 2G - Up to 236.8 kbps
Operating Temperature	-40 °F to 75 °F (-40 °C to 24 °C)
Operating Humidity	10% to 90% non-condensing
AC Power	100 to 240 VAC, 50/60 Hz
Power Consumption	<5 W
Casing Material	Aluminium housing, plastic panels
Dimensions (W x H x D)	3.27 x 0.98 x 2.91 in. (83 x 25 x 74 mm)
Weight	0.28 lbs. (125 g)
Antennas	2 x SMA for LTE, 1 x RP-SMA for Wi-Fi Antenna connectors
SIM	1 x SIM slot (Mini SIM - 2FF), 1.8 V/3 V, external SIM holder

Supported Frequency Bands

Different countries and network operators use different frequency bands for communication in their respective mobile networks. Therefore, in order to communicate within an operator's network, the cellular modem has to support the frequency bands used by that operator. Table below provides the various frequency bands for TSI® cellular modem part numbers.

Supported Frequency Bands		
TSI® P/N	**Region (Operator)**	**Supported Bands**
8145-CE 8145-CEOD 8145-CS	North America (AT&T®, Bell*, T Mobile®)	4G (LTE-FDD): B2 (1900 MHz), B4 (1700 MHz), B12 (700 MHz) 3G: B2 (1900 MHz), B4 (1700 MHz), B5 (850 MHz)
8145-CEEU 8145-CEODEU 8145-CSEU	Europe, the Middle East, Africa, Korea, Thailand, Malaysia	4G (LTE-FDD): B1 (2100 MHz), B3 (1800 MHz), B7 (2600 MHz), B8 (900 MHz), B20 (800 MHz), B28A (700 MHz) 3G: B1 (2100 MHz), B8 (900MHz) 2G: B3 (1800 MHz), B8 (900 MHz)

Data Plan Guidelines		
For optimal device performance, users are required to provide their own SIM card. Choose a compatible data plan that aligns with your preferred sampling rate:		
Sampling Rate	**Monthly**	**Yearly**
1 Minute	73 MB	875 MB
5 Minutes	14.5 MB	175 MB
15 Minutes	5 MB	58 MB
30 Minutes	2.4 MB	29 MB
60 Minutes	1.2 MB	14.6 MB

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

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France	Tel: +33 1 41 19 21 99	**Singapore**	Tel: +65 6595 6388
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