

NODE-S (CELLULAR)

TECHNICAL SPECIFICATIONS SHEET

AIR QUALITY MEASUREMENTS

PARAMETER	TECHNOLOGY	RANGE	ACCURACY (Typical)
PM _{2.5} ¹	Laser Light Scattering with Smart Calibration	0-1000 µg/m ³ 1 µg/m ³ resolution	Correlation (R2) with FRM instrument > 0.8 95% Confidence interval: < 100 µg/m ³ : ± 10 µg/m ³ ≥ 100 µg/m ³ : within ± 10% of measured value
Nitrogen Dioxide	Electrochemical Cell with Smart Calibration	0-3000 ppb 1 ppb resolution	Correlation (R2) with FRM instrument > 0.7 95% Confidence interval: < 200 ppb: ± 30 ppb ≥ 200 ppb: ± 15%
Total VOC ²	Metal Oxide Semiconductor	0-60,000 ppb	Within ± 15% of measured value
Temperature ³	Band-gap	-20-70° C	± 0.2° C
Humidity ⁴	Capacitive	0-100% RH	Within ± 2% of measured value
AQI (US EPA Standard)	—	0-500	Calculations based on PM _{2.5} /NO ₂

OPERATING CONDITIONS

PARAMETER	AMOUNT
Weatherproof Rating	IPX3
Operating temperature	-10° to 55° C
Absolute temperature rating	-40° to 70° C
Operating humidity	10% to 98% RH
UV Exposure	UV resistant

COMMUNICATIONS

FUNCTION	PROTOCOL (DETAILS)
Device to Cloud Communication	Cellular North America Cellular EMEA Wi-Fi
Data Retrieving from Cloud	Device Management Interface (Deployment Tool) Programmatic Access (API) User Interface (SmartCity Web App)
Measurement Frequency	≥ 15 minutes (Node-S Mode) ≥ 5 minutes (Node Mode)

¹ Accuracy specs based on 3 months of co-location with government reference monitors in the San Francisco Bay Area.

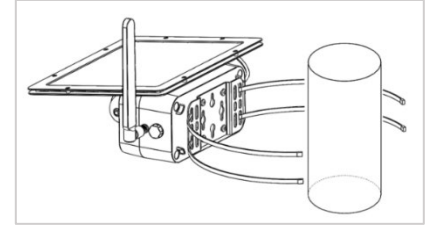
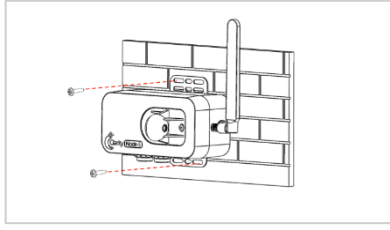
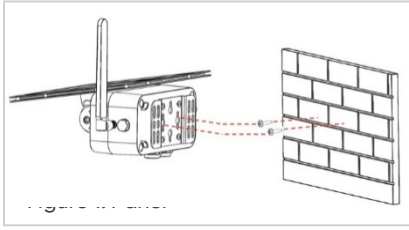
² Accuracy specs from sensor manufacturer, based on ethanol signal.

³ Accuracy specs from sensor manufacturer, based on internal device temperature.

⁴ Accuracy specs from sensor manufacturer.

DEPLOYMENT FEATURES & SCENARIOS

The devices are deployed in three mounting scenarios: hanging onto a panel (Figure 1), screwing into a wall (Figure 2), or attaching to a pole (Figure 3). The mounting bracket attaches to the enclosure in different orientations dependent on the desired mounting scenario. The swivel external antenna adjusts to maximize signal strength for wireless communication. In Node-S models, the solar panel is angled at the most efficient degree for solar power harvesting.



NODE SPECIFICATIONS

*Node-S can be used as solar or externally powered device

POWER

PARAMETER	AMOUNT (WORKING MODE)
Current Consumption	200 mA (sensing) 500 mA (uploading) <1 mA (sleeping)
Input Voltage	5V

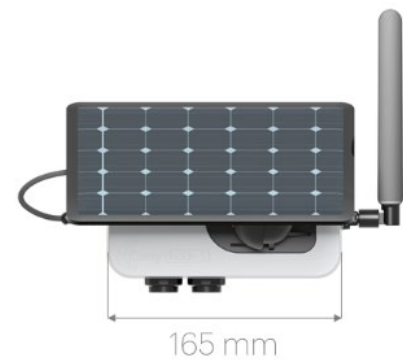
SCHEMATIC DIAGRAM

Weight	1200 g
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NODE-S SPECIFICATIONS

POWER

PARAMETER	AMOUNT (WORKING MODE)
Solar Panel	5W (max power) 6.4V (open circuit voltage) 1.05A (short circuit current)
Battery Life	15 Days (without solar power harvesting) 1-2 Years (with solar power harvesting) ⁵ 20 hours (internal battery charge time)



⁵ Varies by deployment site location & solar panel orientation