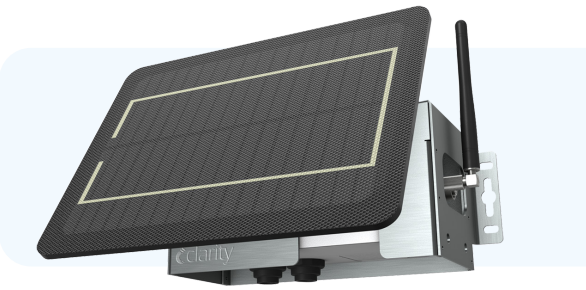
clarity

Node-S Technical Specifications



AIR QUALITY MEASUREMENTS

PARAMETER	TECHNOLOGY	RANGE	PERFORMANCE AFTER CALIBRATION
Particulate Matter $PM_{2.5}$ [µg/m³]	Laser Light Scattering with Remote Calibration	0-1000 µg/m³ 1 µg/m³ resolution	Accuracy: < 100 µg/m³: ± 10 µg/m³; ≥ 100 µg/m³: within ± 10% of measured value Correlation (R^2) with USEPA FEM instrument > 0.8
Nitrogen Dioxide NO_2 [ppb]	Electrochemical Cell with Remote Calibration	0-3000 ppb 1 ppb resolution	Accuracy: < 200 ppb: ± 30 ppb; ≥ 200 ppb: ± 15% of measured value Correlation (R^2) with USEPA FEM instrument > 0.7

Additional Node-S Parameters: $PM_{2.5}$ Number Concentration [#/cm³] | PM_1 Mass Concentration [µg/m³] | PM_1 Number Concentration [#/cm³] PM_{10} Mass Concentration [µg/m³] | PM_{10} Number Concentration [#/cm³] | Internal Temperature [°C] | Internal Relative Humidity [%]

Additional Parameters with Add-On Modules: Wind Speed | Wind Direction | Ambient Temperature | Ambient Relative Humidity Atmospheric Pressure | FEM-Grade Ozone Concentration | tVOC Concentration

DATA FLOW

Measurement Frequency (Adjustable)	Default: Once every 15 minutes Minimum: Once every 3 minutes
Data Retrieval from Cloud	Clarity Dashboard (Web App) RESTful APIs (Programmatic Access) OpenMap (Public Data Sharing)
Device to Cloud Communication	Global cellular 2G/ 3G/ 4G SIM card and service included

POWER[1]

Current Consumption	28 mA (sensing) 30 mA (transmission) <300 uA (sleeping)
Input Voltage	15 V
Battery Capacity	6400 mAh capacity 10.8 V nominal voltage 5 hours charge time
Solar Panel	6 W (max power) 21.6 V (open circuit voltage) 350 mA (short circuit current)
Battery Life[2]	30 days (without solar power harvesting) >5 years (with solar power harvesting)[3]

OPERATING CONDITIONS

Weatherproof Rating	IPX3
Operating temperature[1]	-10° to 55° C
Absolute temperature rating	-40° to 70° C
Operating humidity	10% to 98% RH
UV Exposure	UV resistant

DIMENSIONS

Node (without shield or solar panel)	165 mm (W) x 84 mm (H) x 80 mm (D) Weight: 2.00 lb / 0.91 kg
Solar Panel	233 mm (W) x 176 mm (H) x 4 mm (D) Weight: 1.03 lb / 0.47 kg
Solar Shield[4]	195 mm (W) x 97 mm (H) x 94 mm (D) Weight: 0.60 lb / 0.27 kg
Weight	Total assembled: 3.64 lb / 1.65 kg

[1] The Node-S can be used as a solar-powered or externally-powered device. External power required for operation below 0° C.
[2] Varies by deployment site location, solar panel orientation, and sampling frequency.
[3] Assuming default measurement frequency and exposure to an average of one hour of full sunlight per day over a 15 days rolling window.
[4] Solar shield provides protection against direct heat radiation.