Prana Air

Prana Sense Monitor

Track changes in air quality levels and take proactive steps to improve your surroundings.

Brochure

Prana Air

About Us

Prana Air is a leader in the field of air purification and monitoring, driven by a commitment to innovation and sustainability. With a vision for a future where clean air is a fundamental right, we bring you state-of-art technologies that redefine the standards of air quality.

We are dedicated to delivering high-performance air purifiers and monitoring devices that go beyond mere filtration. Prana Air is committed to creating products that not only remove pollutant but also provide real-time insights of air quality around you.

Take the first step towards a healthier life. Explore our range of air purification and monitoring solutions tailored to your unique needs.

Breathe better, live better – with Prana Air.

www.pranaair.com

Prana Sense
Air Quality Monitor

The Prana Air Air Quality Monitor is a powerful device designed to measure air quality, equipped with a solar panel and weather station for efficient, real-time environmental monitoring. Monitor the air quality and historical data with Wifi or GSM/ RS-485 (MODBUS) connectivity and advanced features.

Get the best device with a waterproof housing that makes it water resistant and protects from dust. Make the best decision on air pollution by getting accurate data insight.

Sustainability

Power to Last without interruption

Our monitors, powered by in-built batteries and solar panels. With 96 hours of battery backup, they remain operational through cloudy days and power outages, proving their reliability and resilience.

Solar Panel

30watt

No additional controllers or connectors Needed

Direct solar connectivity, eliminating the need for additional controllers or connectors.

Qualitative Features

The Air Quality Monitor has effective features that enhance its ability. It is designed to increase the reliability to get accurate insight into air quality. Check out the top features of the Device that make it much better at ensuring clean air:

Real-time data insights

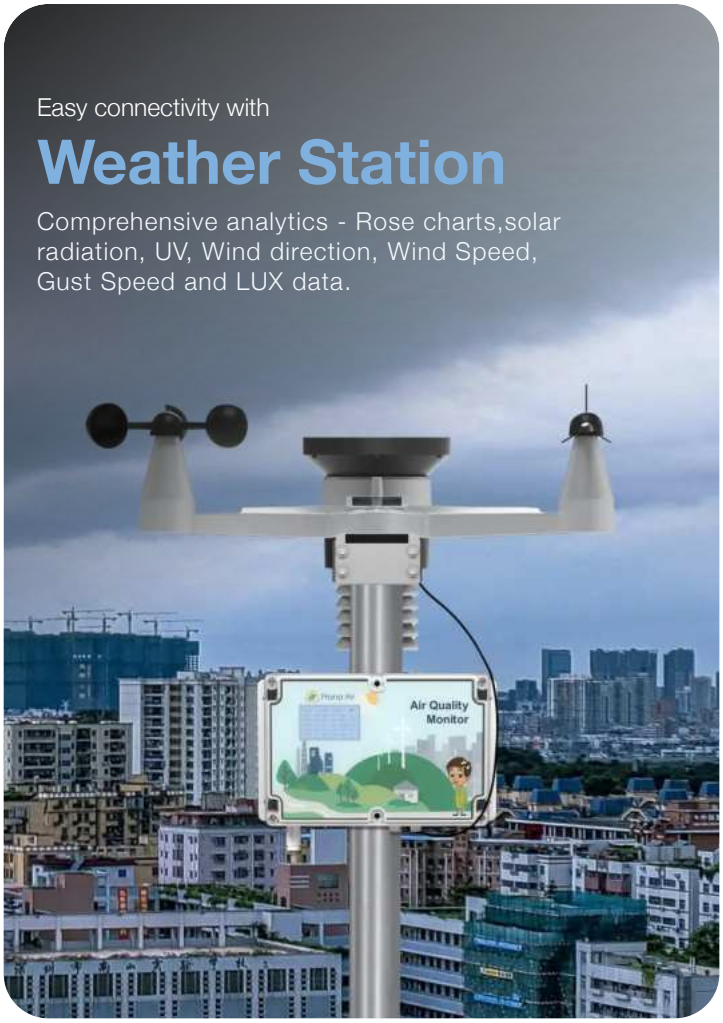
Micro SD Card Storage

Mobile App & Dashboard

Cloud Storage

GPS Enabled

In-Built Battery



Product Specifications

Prana sense

Dimensions

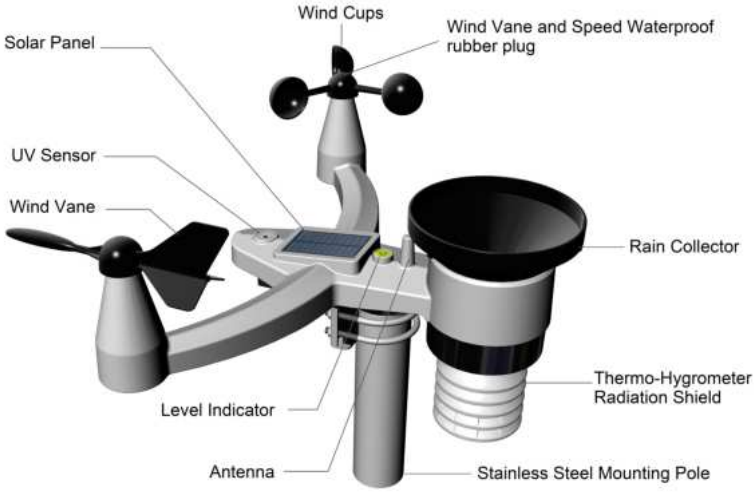
230 X 150 X 85mm

Weight

1Kg

Features	Description
Battery	40,000 mAh in-built Backup (96 Hours)
Display Size	Monochrome 3.5 inch
Solar Panel	30 Watt
Data Accessibility	AQI Mobile App & Web Dashboard
Power Supply	Direct Power Supply or Solar
Connectivity	Wi-Fi, GSM, LoRa, and RS-485

Weather Station



Dimensions

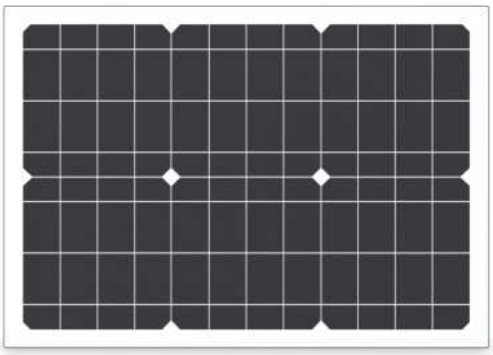
40cm x 50cm

Weight

1 kg (approx)

Features	Description
Housing	IP68
Body Type	ABS Plastic

Solar Panel



Dimensions

54 X 38 cm

Features	Description
Maximum volt	14V
Maximum power	30W
Material	Monocrystalline Solar Panels
Efficiency	High Efficiency

Technical Specifications

Prana Sense

Parameter	Sensor Type	Range	Resolution	Accuracy
PM10, PM2.5 & PM1	90° Light Scattering	0 to 1000µg/m³	1 µg/m³	0-150 µg/m³ is for ±5% & for 150 µg/m³ onwards is ±10%
Temperature	Digital Sensor	-40 to 70 °C	0.1°C	±0.3°C
Humidity	Digital Sensor	0 to 100% RH	1% RH	±3% RH
Carbon Dioxide (CO_2)	NDIR	400 to 5000ppm	1ppm	±3%
Nitrogen Dioxide (NO_2)	Electrochemical	0.001 to 9.999ppm	0.001ppm	±3%
Carbon Monoxide (CO)	Electrochemical	0.01 to 99.99ppm	0.01ppm	±3%
Sulfur Dioxide (SO_2)	Electrochemical	0.001 to 9.999ppm	0.001ppm	±3%
Ozone (O_3)	Electrochemical	0.001 to 9.999ppm	0.001ppm	±3%
Ammonia (NH_3)	Electrochemical	0.001 to 9.999ppm	0.001ppm	±3%
TVOC	MOS	0.001 to 9.999ppm	0.001ppm	±3%
Hydrogen Sulfide (H_2S)	Electrochemical	0.001 to 9.999ppm	0.001ppm	±3%
Noise	Noise	30-130dB	1dB	±3%
Methane (CH_4)	NDIR	0 to 100%	0.05%	±3%

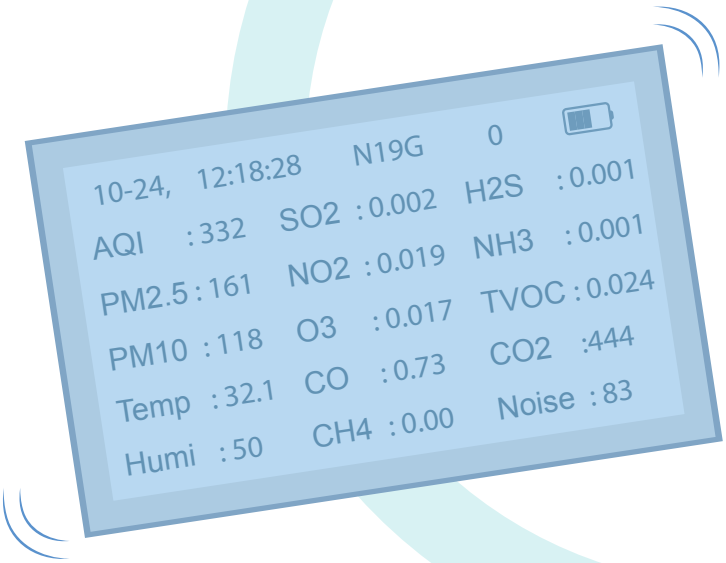
Weather Station

Parameter	Measurement Range	Resolution
Light Intensity	Up to 1,00,000 LUX	1 LUX
Solar Irradiance	0.1 - 1000 uW/m²	0.1 uW/m²
Wind Speed	0-60 m/s	1 m/s
Wind Direction	360 Degree	——
Rainfall	60 cm² (Collection area)	——
Gust speed	0-60 m/s	1 m/s
UV Index	0-13	1

Monochrome 3.5in

Data Display

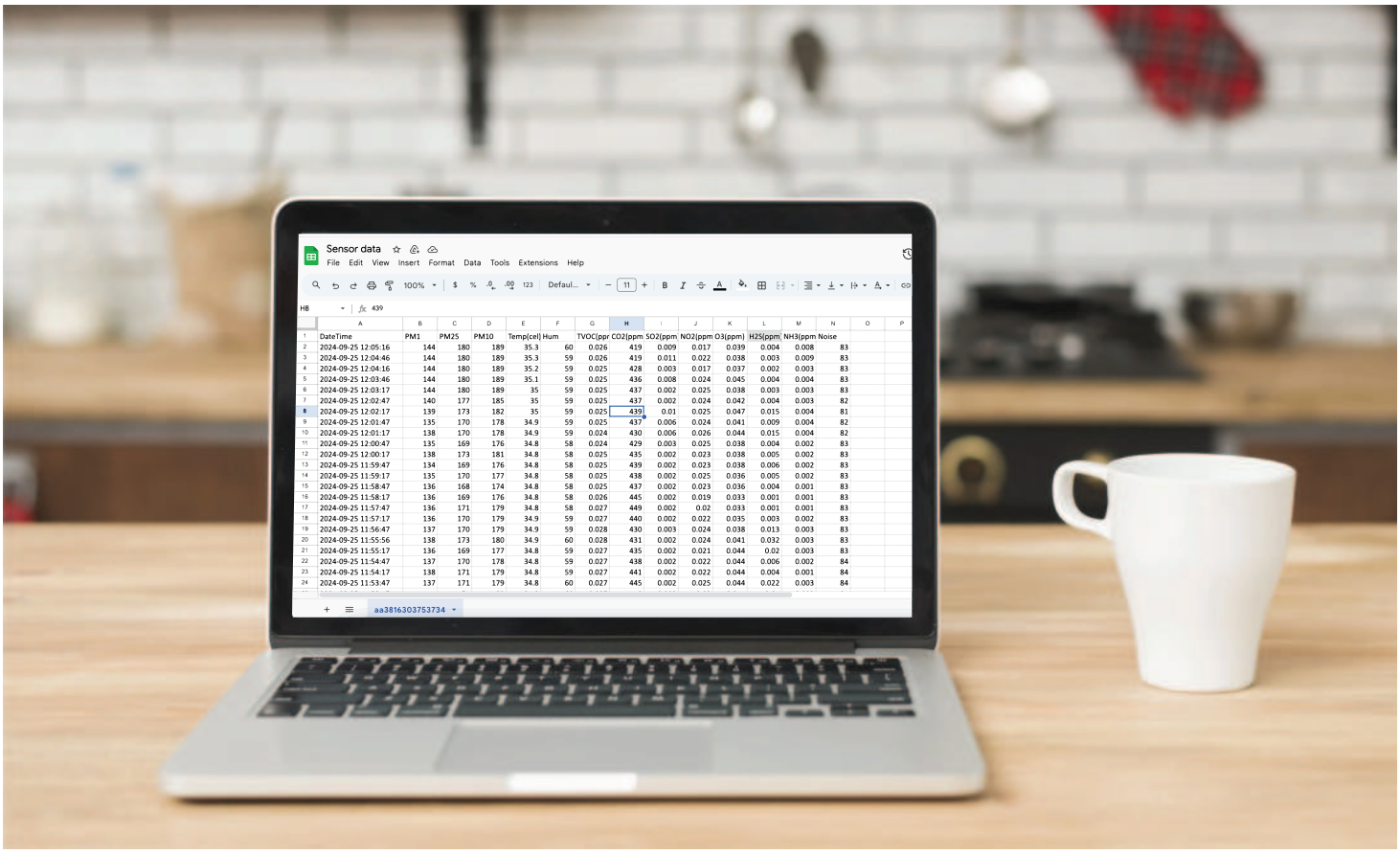
Get accuracy and reliability as you delve into the realm of air quality monitoring. Our state-of-the-art technology empowers you with instant access to real-time data display, seamlessly integrated into the TV App and Web Dashboard.



Data Storage

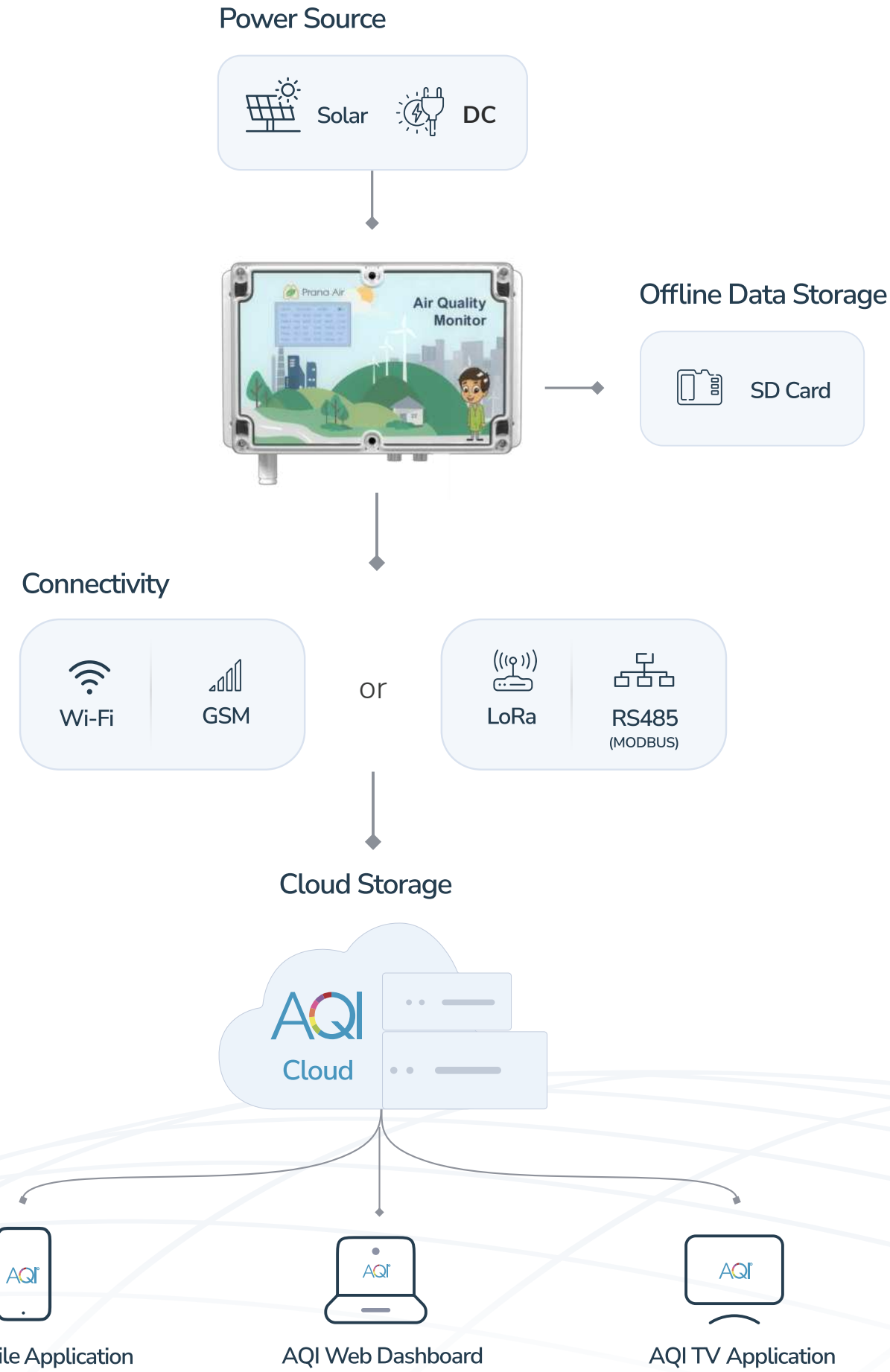
Offline TF Card

Experience the convenience of offline data storage through a TF card. Seamlessly access historical data anytime, anywhere, ensuring that valuable insights are always at your fingertips.



Seamless Data Flow

Diverse Connectivity



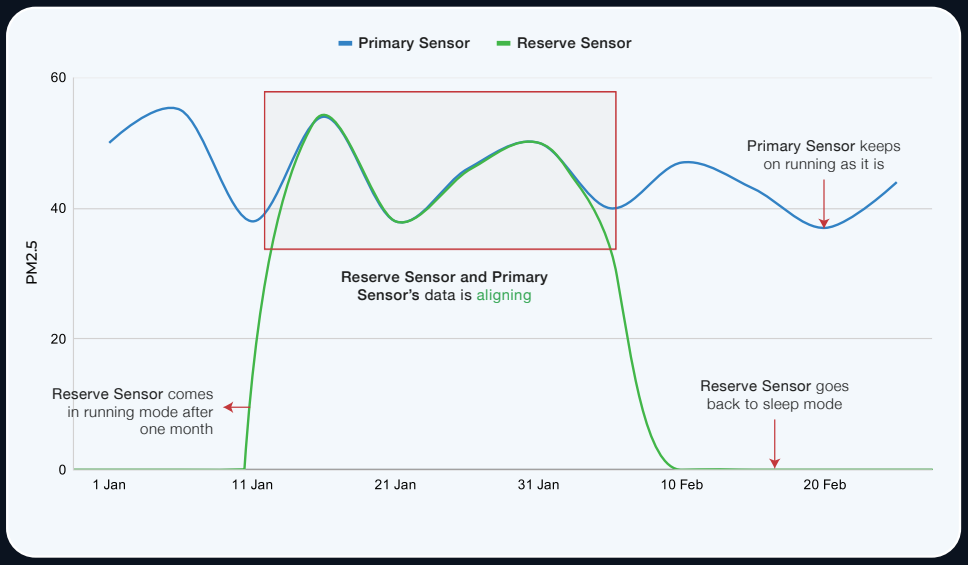
Dual Sensor Technology

Particulate Matter

The advanced technology of dual sensors in our monitors safeguards against possible sensor failure. Also ensures continuous monitoring with zero downtime. It offers a faster response time in any discrepancies and is also a reliable option to tackle the situation.

Scenario 1 :

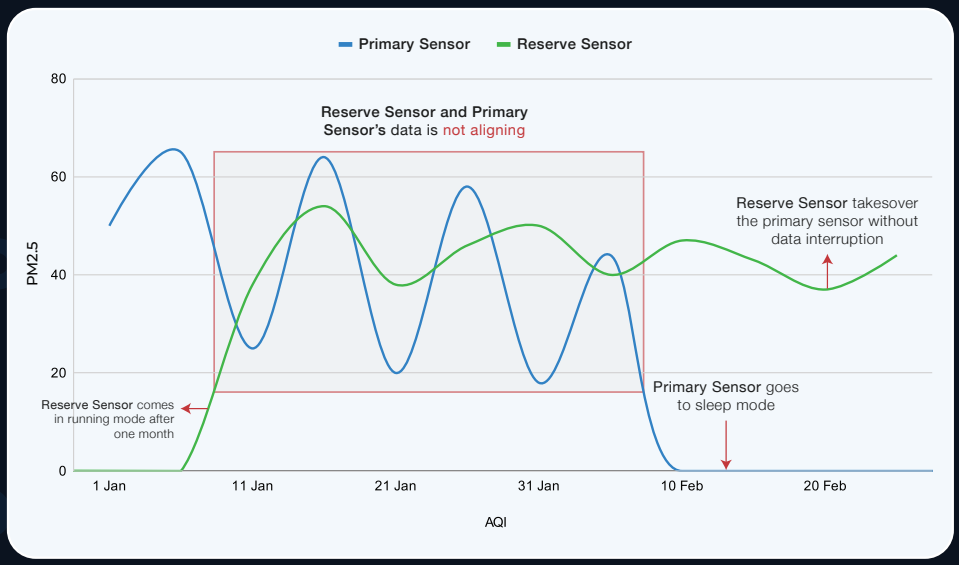
Sensors data aligned



Primary sensor and secondary sensor compares the data once every week and if the data is correct, the secondary sensor goes to sleep.

Scenario 2 :

Sensors data not aligned

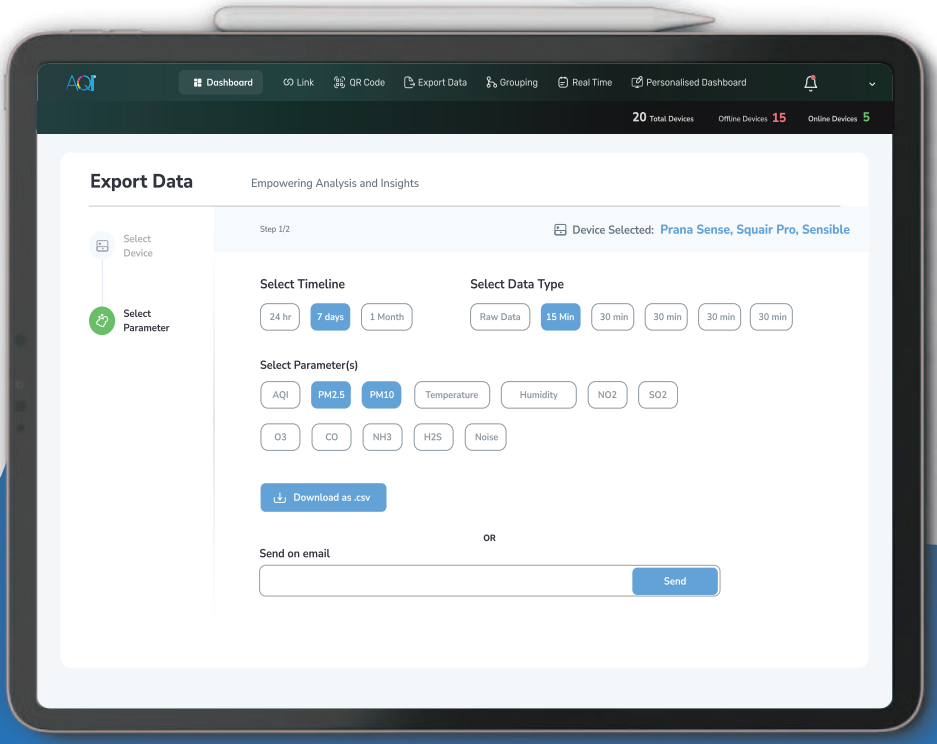


Data Export Functionality

Data at Your Fingertips

*It allows users to easily access and download data in formats like **.xls and .csv** for seamless analysis.*

*Additionally, data can be transmitted online via **email.***



Moreover, Our air quality monitoring devices are fully compatible with data monitoring platforms AQI.IN. Each device is integrated with **GPS coordinates (latitude and longitude)**, enabling real-time data visualization on online maps.

Case Study

LASER PM SENSOR CASE STUDY - I

Performance-based protocol for selection of economical portable sensor for air quality measurement

Study Brief : In their research, they deployed our device in their Environmental Protection Sensors (EPS) assessment. They compared factory calibration data with reference monitors. Their challenge was balancing cost with accuracy, sensitivity, and data management and Prana Air proved to be a reliable and cost-effective choice.

By Dr. Sunil Gulia, National Environmental Engineering Research Institute,New Delhi, India

Table 1 Comparison of different make economical portable sensor (EPS) for $PM_{2.5}$

Prana Air PM Sensor

Sr. no	Specifications	S1	S2	S3	S4
1	Principle/technology	Light scattering	Laser scattering	Laser scattering	Light scattering
2	Operative at Indian conditions (temp: 0–50 °C; RH: 10–95%)	Yes	Yes	Yes	Yes
3	Accuracy	Good	Good	High	Good
4	Sensitivity	No	No	No	No
5	Error/drift	-	-	<3.0% change/year	-
6	Calibration requirements	Yearly	Yearly	Yearly	Yearly
7	Size including cover box	54×38×22 cm^3	24×16×9 cm^3	14×4.5×19.5 cm^3	45×30×20 cm^3
8	Weight of the device	9.6 kg	1 kg	1.5 kg	6 kg
9	Measurement range (µg/m^3)	0–1500	0–1000	1–2000	0–700
10	Measurement frequency	1 min	40 s	30 s	5 min
11	Capital cost (INR/unit)*	255,000	31,000	95,000	65,000
12	Power requirements, volts	230	230	220	220

Parameters from Sr no. 7–11 are comparable and used in the ranking of the EPSs; *cost at the time of the procurement, i.e. year 2021

Table 2 Ranking of EPSs based on physical features and cost.

Prana Air PM Sensor

Sr. No.	Parameters	*Criteria for Prioritization*	*S1*	*S2*	*S3*	*S4*
1	Dimension	Preference given to Compact and small size device	4	2	1	3
2	Weight of device	Low weight device can easily fit at site or a pole	4	1	2	3
3	Measurement Range	Higher range give first preference	2	3	1	4
4	Measurement Frequency	High time resolution gives first preference	3	2	1	4
5	Cost	Low cost is given first preference	4	1	3	2
Total*			17	9	8	16

*EPS having lowest total is performing more satisfactorily

Ranking for suitable EPSs for air quality assessment

A comparative analysis of each EPS's performance was conducted to obtain the best-performing EPS during the observation period and at the specified study location. Table 5 provides the overall ranking of EPSs based on the statistical results and physical features, measurement range and frequency along with cost. The EPSs were ranked from 1st to 4th based on the difference between obtained and ideal values for all the parameters. All the ranks and scores are summarised to deduce the final ranking for their suitability at Locations 1 and 2. The ranking as described in Table 2 is added at both locations to get the final ranking. Therefore, the final ranking of EPSs based on physical features, cost, and statistical analysis S2 performed better over other EPSs. Considering the findings from both locations, it is inferred that S2 and S3 are the most preferable EPSs suitable for air quality assessment. Ideally, EPS whose monitored data is close to reference monitor data with reasonable cost and is easily deployable at study sites should be considered for air quality assessment.

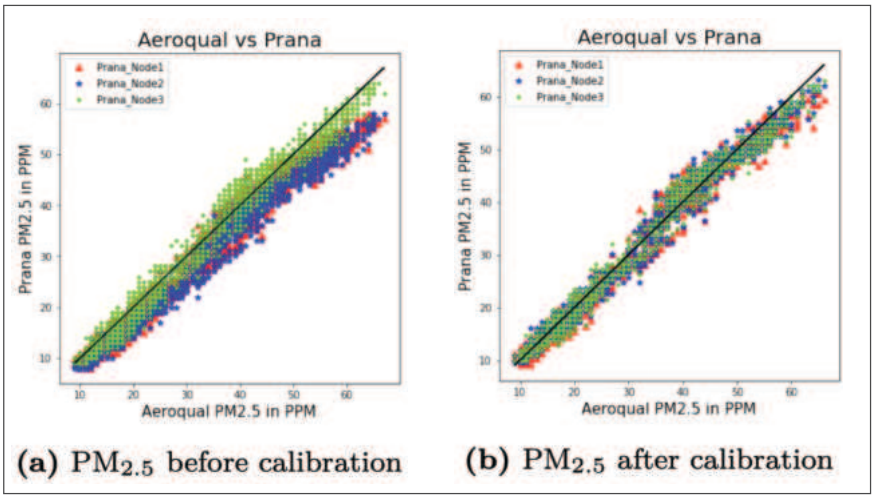
Monitors update in every 30 seconds, our **PM sensors** have a resolution of **±1.0** micrograms per cubic meter, and our **NO2 sensors** boast a resolution of **±1.0 ppb**.

LASER PM SENSOR CASE STUDY - II

Comparative Evaluation of New Low-Cost Particulate Matter Sensors

Study Brief : The paper involves our Prana Air device alongside other low-cost sensors for PM2.5 and PM10 measurements. And they compared them to the standard Aeroqual Series-500. Their challenge with traditional devices was the high cost, bulkiness, and frequent servicing needs, which limited deployment in cities.

- *By Dr. Sachin Chaudhari, International Institute of Information Technology Hyderabad, India*



Prana Air scatter plots

C. Calibrated values

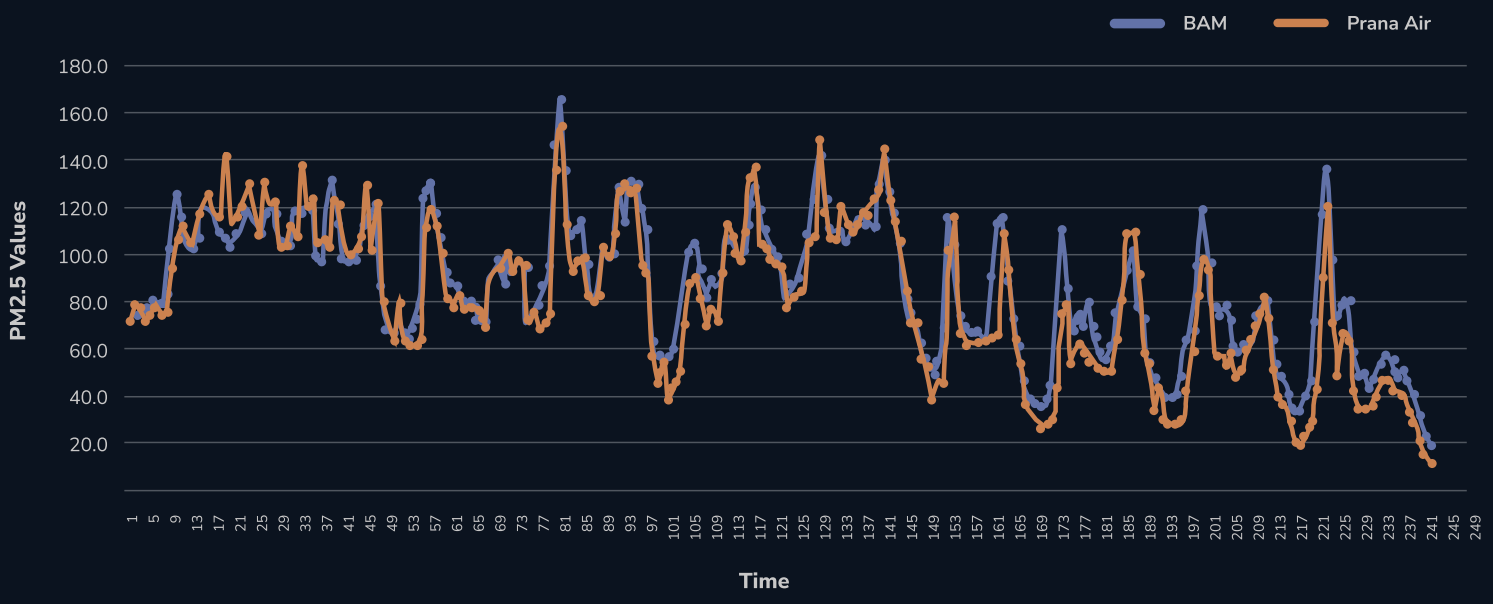
This section contains results obtained after performing the calibration for the indoor experiment only. Data points obtained from the outdoor experiment are in fewer numbers, so they have been excluded from this section. The R^2 values for 1 hr averaged samples, after performing calibration, were calculated as 0.92, 0.91, 0.86 for SDS011, Prana Air, and SPS30, respectively. Table VII indicates the E_{rms} values for 1 hr averaged samples for all test sensors. It was also observed to be reasonable for the collected data.

Figs. 8-10 present the scatter plots of all units represented by different colors before and after performing the calibration. These figures further explain the E_{rms} values. For the sensors having the least E_{rms} values, Prana Air for $PM_{2.5}$ and SDS011 for PM_{10}, the data points align very well around the average value of the reference instrument.

Sensors Calibration

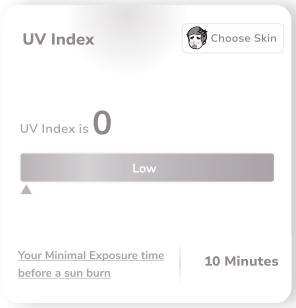
Calibrating with High-end Monitor

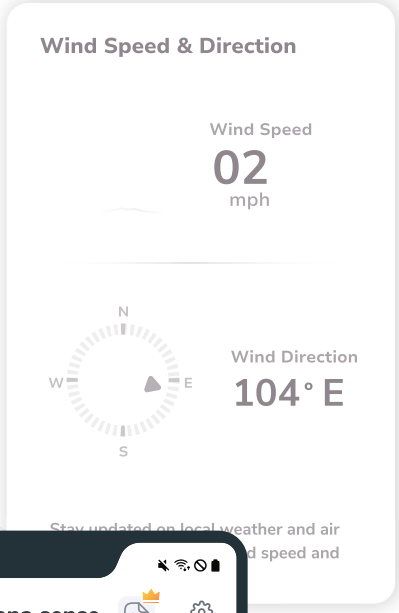
We employ Beta Attenuation Monitoring (BAM) and other light-scattering techniques, alongside reference-grade monitors from globally recognized companies.

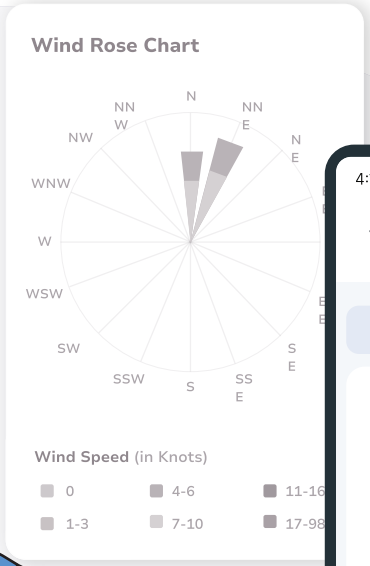


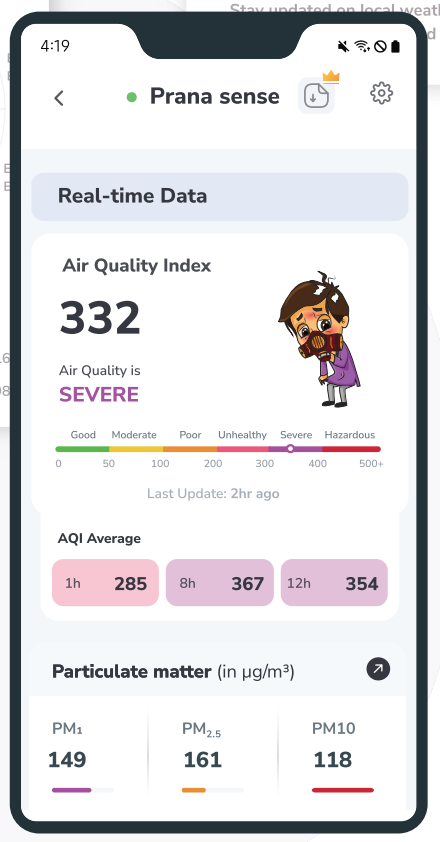
AQI Mobile Application

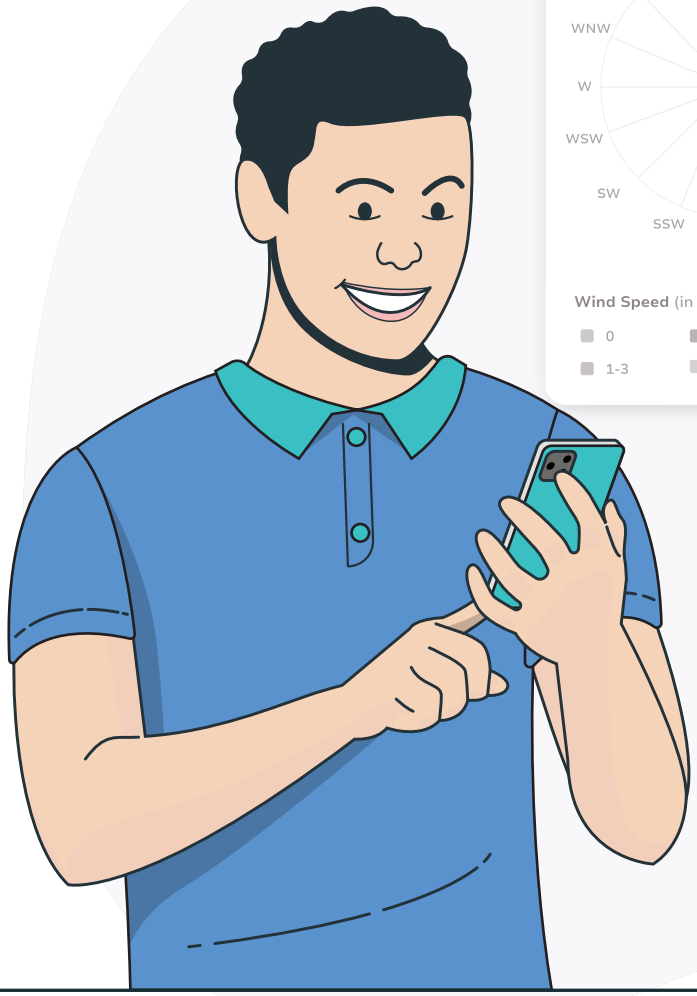
Breathe Easy, Stay Connected: Your Pocket-Sized Companion for AQI and Weather Updates!

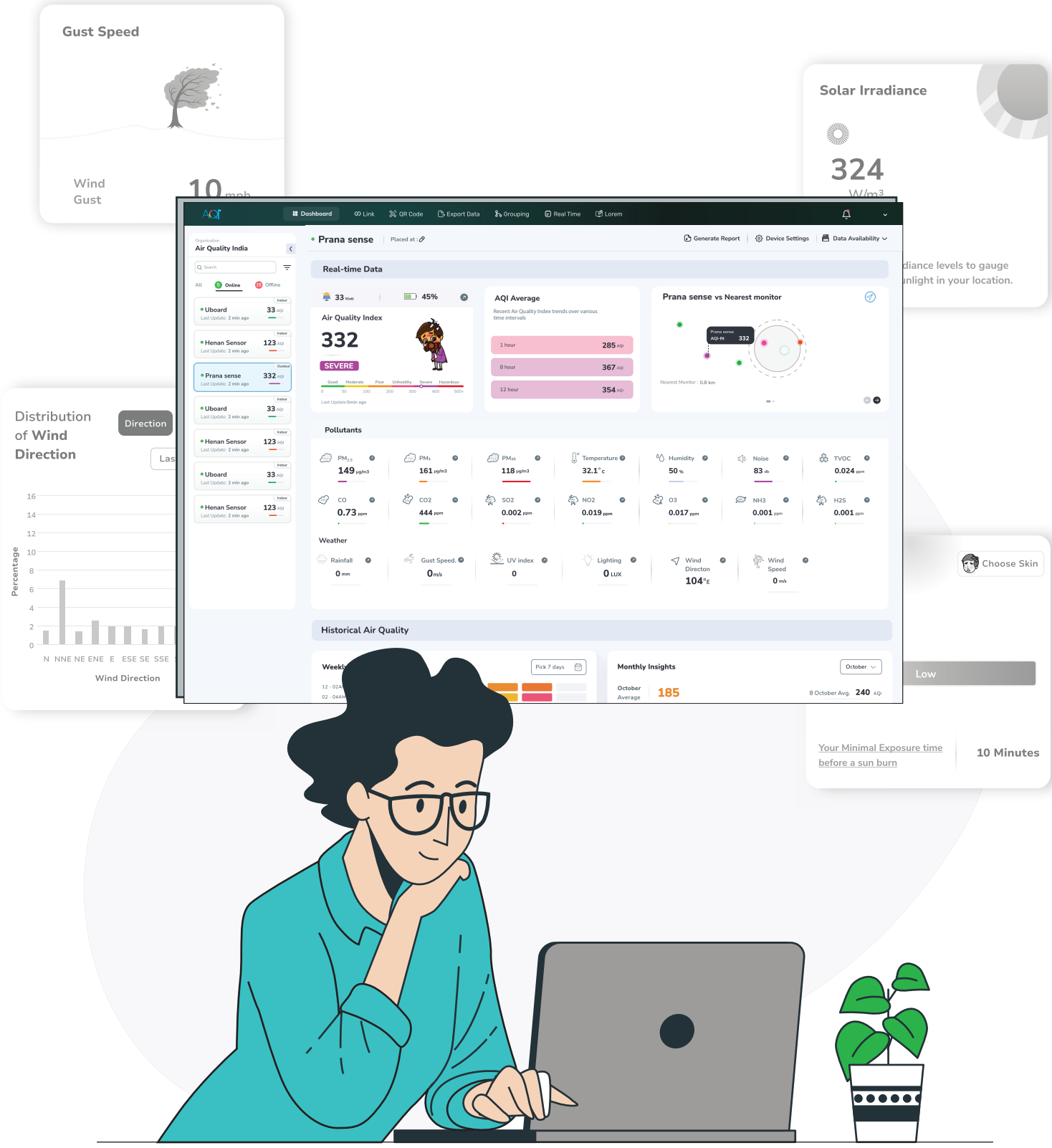












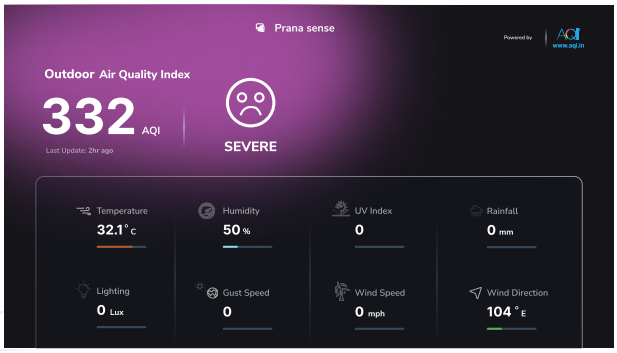
AQI Web Dashboard

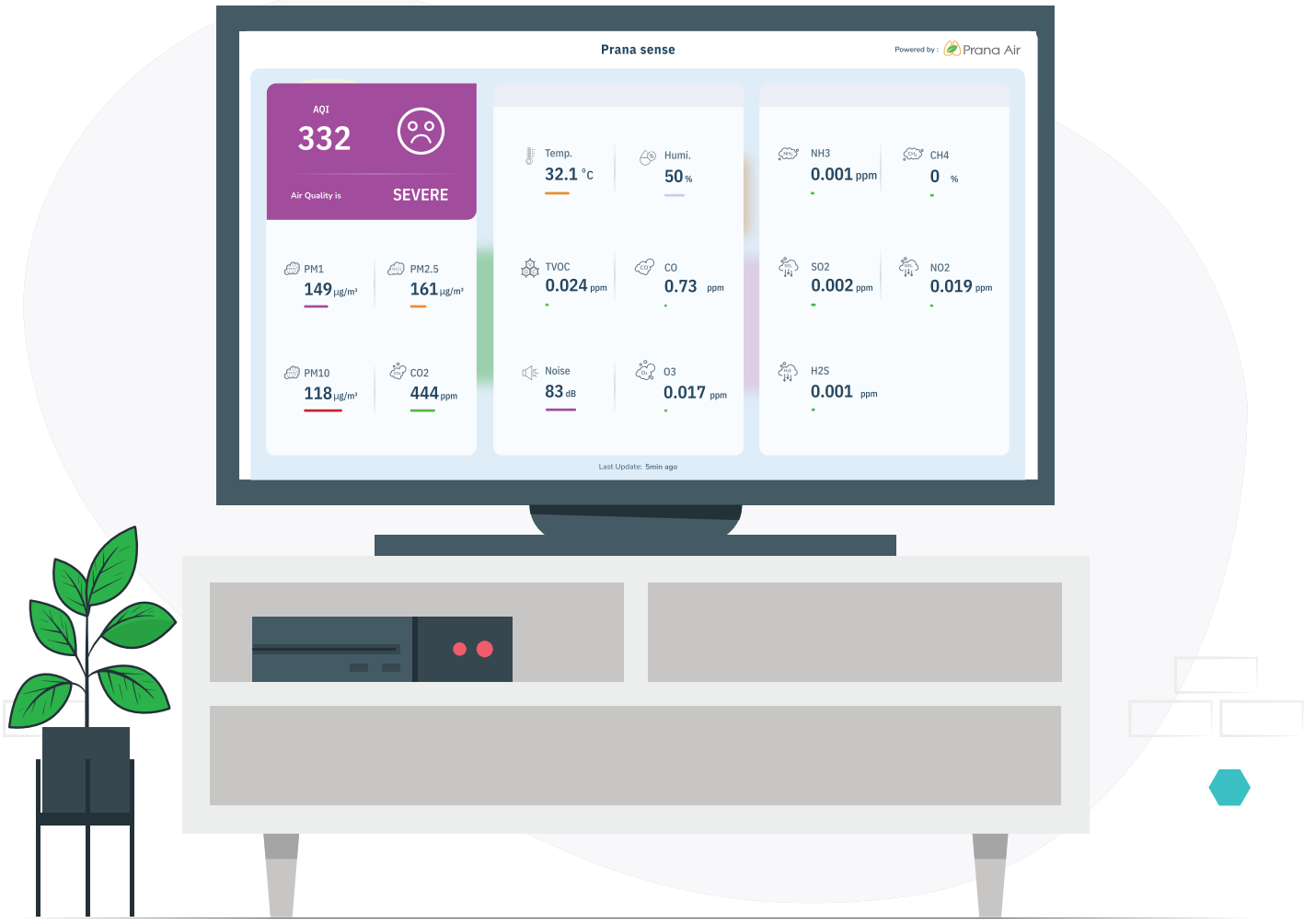
www.aqi.in

Sky's the Limit: Effortlessly check Weather Parameters and AQI Data on the AQI Dashboard.t

AQI TV
Application

Tune into Fresh Air with diverse themes: Transform Your TV into a place for Real-Time AQI and Weather data!





www.pranaair.com

Let’s do something amazing together

Begin your journey to a healthier life with our tailored air quality monitoring solutions.

Get in touch

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