



ALETHRA ENV™

AE-E1 (Environmental Verification Edition)

The Atmosphere, Authenticated

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ALETHRA ENV™ is the atmospheric sentinel of the ALETHRA ecosystem. It captures CO₂, particulates, humidity, temperature, VOCs, methane, ammonia, and pressure data—and verifies each reading using ALETHRA AI Clarity™. Unlike traditional sensors that only measure, ENV™ proves each reading's validity before it's accepted, stored, or reported.

From controlled agriculture to food plants, clean rooms, and packaging halls, ENV™ turns the air itself into a trusted data source.

CORE CAPABILITIES

- Air integrity verification
- Confusion-detection for drifting sensors
- Predictive contamination alerts
- 360° intake design
- Blockchain-backed audit trail (TraceChain)

HARDWARE

Processor: Quad-core ARM Cortex-A53 + AI Clarity Coprocessor

Memory: 4 GB LPDDR4

Storage: 128 GB eMMC (expandable to 512 GB)

Sensor Suite: CO₂, O₂, VOC, PM2.5 / PM10, CH₄, NH₃, Temp, Humidity, Pressure

Connectivity: Ethernet, Wi-Fi 6, BLE, optional LoRa

Enclosure: Electric Red anodized cylindrical housing (IP65)

Dimensions: 280 mm × 80 mm

Weight: 840 g

SOFTWARE

- ALETHRA AI Clarity™ Environment Module
- Air Integrity Library
- Predictive Compliance Model
- TraceChain Ledger Sync
- OTA firmware + model updates



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ALETHRA ENV™ verifies air quality, environmental safety, and atmospheric integrity using multi-sensor cross-authentication and AI-driven truth scoring. It prevents false readings and secures verified environmental data to the ALETHRA Ledger.

FUNCTIONAL PERFORMANCE

Verification Speed: > 500 samples/sec

Accuracy: ±0.1 ppm CO₂ / ±0.5 µg/m³ PM2.5

Latency: < 30 ms

Operating Range: -10 °C to +60 °C

APPLICATIONS

- Hydroponic and Controlled-Environment Agriculture
- Food and Beverage Processing Lines
- Pharmaceutical and Biotech Clean Zones
- Smart Buildings and Factories for ESG Reporting
- Regulatory Compliance and Environmental Auditing

SUMMARY

ALETHRA ENV™ makes the invisible verifiable, ensuring environmental truth across agriculture, food, pharma, and smart facilities.

“INTELLIGENT CLARITY TECHNOLOGY”