



LIVE WEBINAR | THURSDAY 29 OCTOBER 2026 | 13:00 GMT

Dust monitoring in the UK: MCERTS, IAQM, and the Clarity Dust Module

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Paolo Micalizzi Co-founder and CTO



Lee Swanson and Paolo Micalizzi



Lee Swanson

**Account Executive,
Europe and Africa**

Works with UK and European consultants, contractors, and local authorities on dust and air quality monitoring programmes.



Paolo Micalizzi

**Co-founder
and CTO**

Leads Clarity's hardware and data science teams and ran the MCERTS certification programme for the Dust Module.

10+ years of air quality monitoring projects worldwide

500M+

air quality
measurements

10,000+

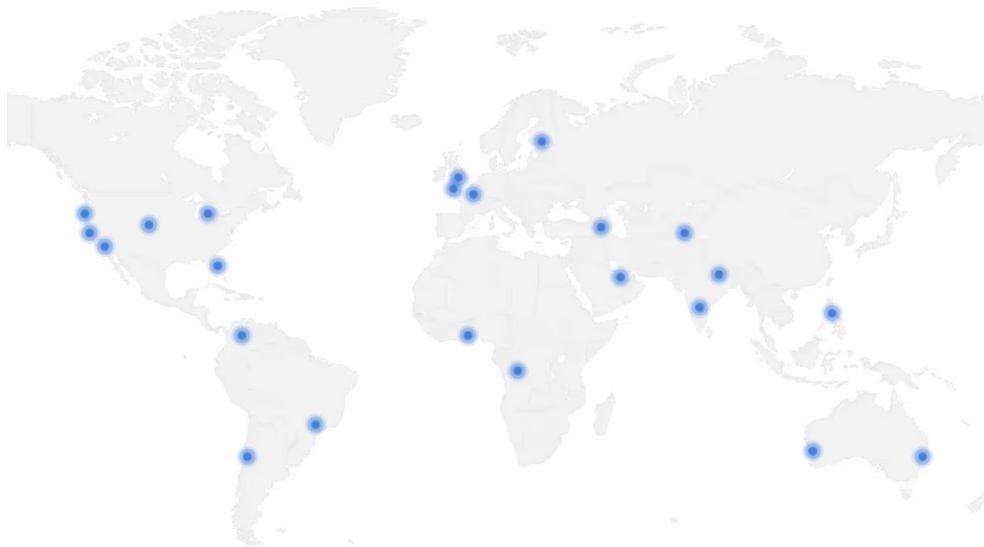
unique deployments
worldwide

250+

cities
with Clarity sensors

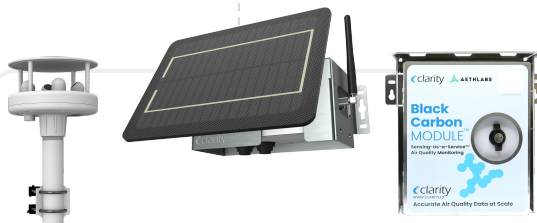
85+

countries
with Clarity data recorded



Hardware, software, and an expert team in one subscription

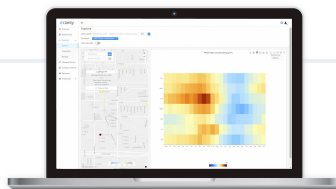
Sensing-as-a-ServiceSM



Air Monitoring Equipment

Measures all key air pollutants

- Quick and easy installation
- Solar-powered, always online
- Modular design for expandability
- Low-maintenance with free warranty



Clarity Cloud & Software

Cloud-based data analysis

- Natively-integrated IoT dashboard
- Secure data pipeline & storage
- Powerful APIs, analytics and visualization



Air Quality Expert Team

Scalable project support

- Highly qualified air quality experts
- Accurate and reliable data through Remote Calibration
- Responsive project management enabled by modern software stack

30 minute webinar, then your questions

01

What changed in 2025

PC4 and the IAQM position statement, and why the UK sets the terms

02

How we tested

Three months against heated BAMs at a high-dust site

03

Reading a PC4-era certificate

What the document now tells you, and what to ask any supplier

04

What it means for your sites

Planning conditions, specifications, tenders



Recording

Sent to every registrant within 24 hours



Questions

Use the Q&A panel at any time; we answer at the end



Timing

About 30 minutes of slides, 15 for Q&A

01

PART ONE

What changed in UK dust monitoring in 2025

What the IAQM now recommends of PM10 sensors for construction dust monitoring

190 $\mu\text{g}/\text{m}^3$

One-hour site
action level

8 recommendations

For users and
manufacturers

“MCERTS certification alone is not sufficient”

Some certified sensors under-report PM10 as concentrations approach the action level, so exceedances go undetected. The IAQM now asks for independent evidence of performance at elevated PM10.

The eight recommendations

- 1 Detect elevated PM10**
The system must identify concentrations around the action level.
- 2 Fit for the monitoring purpose**
Choose the system for the objectives of the plan.
- 3 Independent evidence**
Users should ask for test data at elevated PM10.
- 4 Manufacturer assurance**
Written assurance, heated inlet, humidity handling.
- 5 Known sensor and algorithms**
Which sensor, what configuration, what adjusts the data.
- 6 Published evidence**
Manufacturers should publish the performance data.
- 7 Purpose and PAS 4023**
Define the purpose of monitoring; follow PAS 4023:2023.
- 8 Site-specific action levels**
Lower the trigger if the sensor is unvalidated above it.

What PC4 changed for PM10 certificates



1 Default ranges removed from existing certificates

Earlier certificates stated PM2.5 and PM10 ranges by default. Those were withdrawn.

2 Scope limited to tested conditions

The certified range is the range observed in the field test, nothing wider.

3 Extended scope needs field evidence

A higher range means a field test at higher concentrations.

4 Qualitative versus quantitative MCERTS

Quantitative use requires annual collocation testing.

Typical IAPM test ranges (PC4, Table 5.2)

0 to 75 **0 to 150**

$\mu\text{g}/\text{m}^3$ PM2.5

$\mu\text{g}/\text{m}^3$ PM10

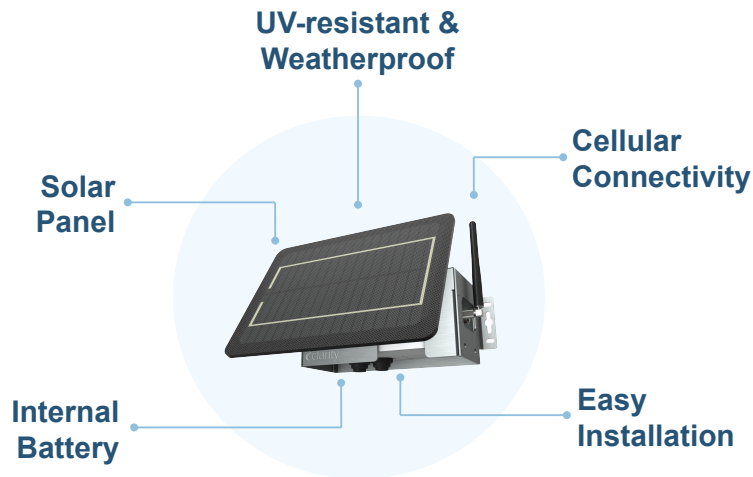
These are urban background levels. A construction site on a dry day sits above them.

02

PART TWO

How we tested the Dust Module for elevated PM10

Cloud-connected devices are the foundation of Sensing-as-a-Service



Designed for **easy deployment** everywhere, and **reliable operation** in adverse weather conditions.
Measures **PM2.5** and **NO2**.

Ozone
Module



Wind
Module



Black Carbon
Module



Multi-Gas
Module



Dust
Module



Node-S monitoring capabilities can be **expanded** by pairing it with **Clarity Modules**, manufactured by **best-in-class instrument makers**.

THE HARDWARE UNDER TEST

Dust Module, tailored to construction dust monitoring



Heated inlet

Minimizes humidity and fog artifacts.

Advanced PM10 optical detection

Detects shifts in particle size distribution, ensuring accuracy during high coarse-mode dust episodes.

Enhanced sampling frequency

Supports 1-minute sampling period to catch transient emissions during construction ops.

Easy deployment

Seamlessly pairs to its companion Node-S, streams data to Cloud Dashboard and API.



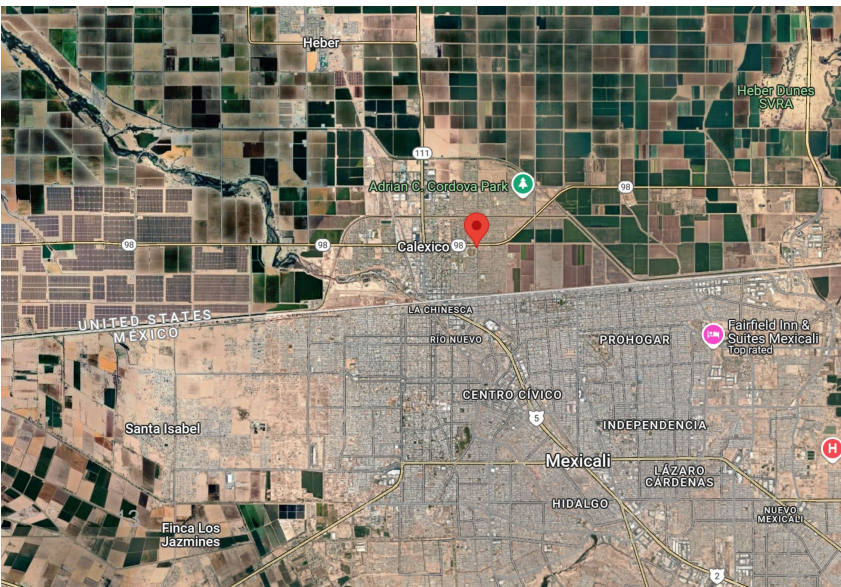
Collocation performance across seven sites and four countries

Site	Reference	Environment	R ² (per unit)	RMSE, µg/m ³	Slope
Calexico, CA (USA)	BAM-1020	Border dust, agricultural	0.86 / 0.90 / 0.89	17.7 / 13.6 / 13.4	1.2 / 1.1 / 1.1
El Paso, TX (USA)	T640X	High-intensity dust storms	0.93 / 0.97 / 0.99	25.4 / 17.5 / 11.9	0.87 / 0.95 / 0.94
King City, CA (USA)	BAM-1020	High humidity and fog	0.92 / 0.91 / 0.88	4.4 / 4.1 / 4.3	0.74 / 0.80 / 0.80
Sefton (UK)	FIDAS 200E	Urban, coastal	0.92 / 0.80	3.4 / 5.7	0.90 / 0.69
Sellicks Beach (AUS)	TEOM 1405	Coastal, hygroscopic	0.75	6.9	0.67
Västerås (SWE)	FIDAS 200E	Urban, northern climate	0.74	30.1	0.65
Queensland (AUS)	T640X	Urban, arid	0.80 / 0.87	2.9 / 2.4	0.57 / 0.68
Study median (15 units)			0.89	6.9	0.80

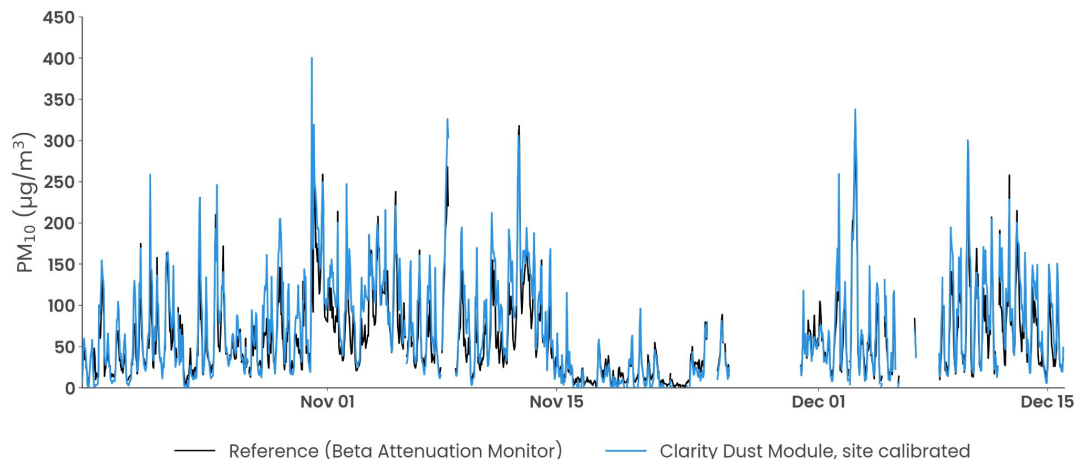
Daily average PM₁₀ against the site reference, with a site-specific linear calibration fitted on the first 30 days and evaluated outside that window. Source: Clarity collocation study (CASANZ 2026). The MCERTS certificate rests on the Calexico campaign alone; the other sites show the same hardware in very different conditions.

Calexico, California: a high-dust site for the certification test

- PM2.5 and PM10 FEM instrumentation (Met One BAM 1020, heated inlet)
- Frequent PM10 peaks above $250 \mu\text{g}/\text{m}^3$
- Distinct PM2.5 and PM10 regimes, with dust and urban sources
- Elevated median PM10
- 100+ days of testing, 10 October 2025 to 18 January 2026, with Bureau Veritas as the independent test body

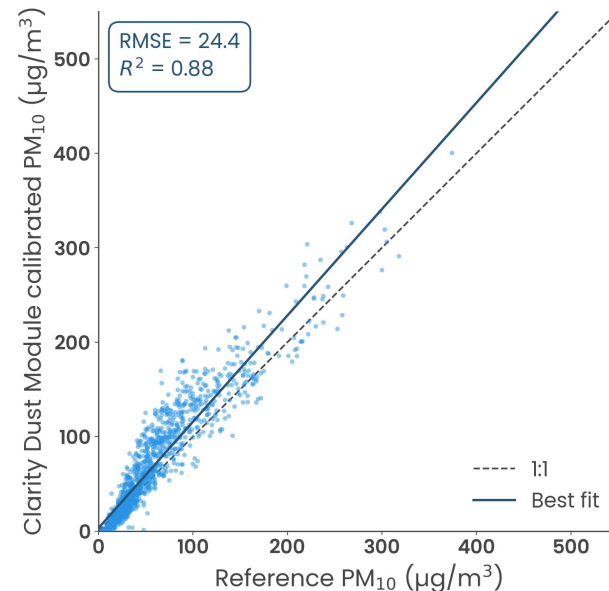


Hourly PM10 from the Dust Module and the reference BAM



Hourly PM10, Calexico, November to December. Black: reference BAM. Blue: Dust Module, site calibrated. The module follows the peaks above 300 $\mu\text{g}/\text{m}^3$.

Spec sheet collocation figures: daily $R^2 > 0.91$, $\text{RMSE} < 6.2 \mu\text{g}/\text{m}^3$ below 80 $\mu\text{g}/\text{m}^3$, $\text{NRMSE} < 21\%$ above; hourly $R^2 > 0.80$, $\text{RMSE} < 9.1 \mu\text{g}/\text{m}^3$.

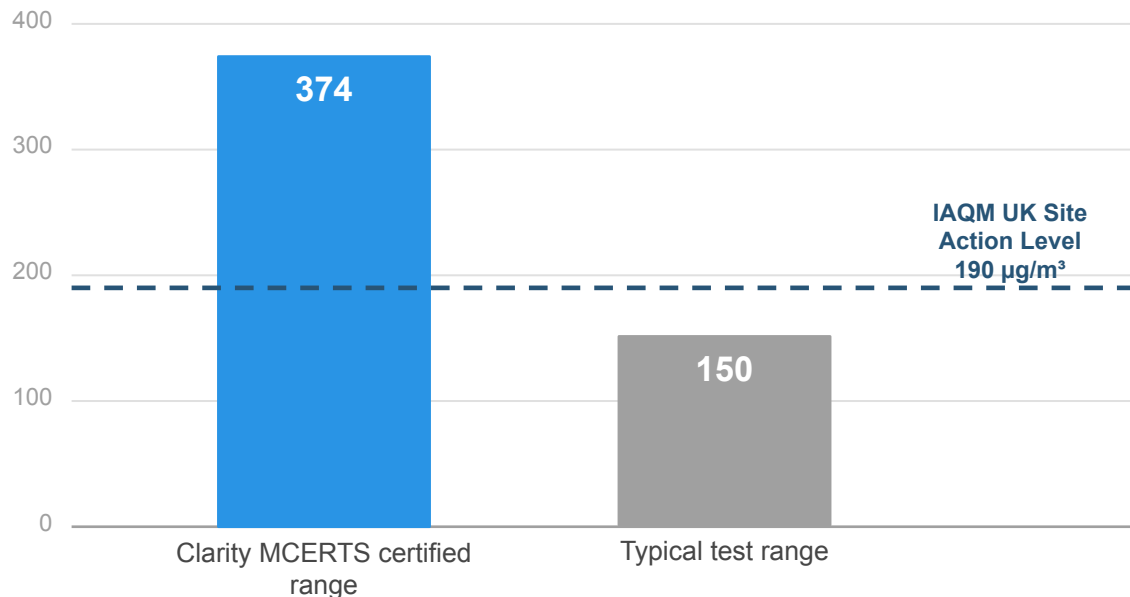


Scatter against reference with 1:1 and best fit (R^2 0.88, RMSE 24.4 $\mu\text{g}/\text{m}^3$, hourly). [Replace with the certification-period plots from the Bureau Veritas report if preferred.]

WHAT THE CERTIFICATE COVERS

The certified range, and where it sits against the action level

PM10, $\mu\text{g}/\text{m}^3$, hourly



0 to 374

$\mu\text{g}/\text{m}^3$ PM10, hourly
Certified performance range

8 to 36 °C

ambient temperature
Observed during the test

7 to 98%

relative humidity
Observed during the test

03

PART THREE

Reading a PC4-era certificate

What to ask before a monitor goes on your site

1

At what concentrations was it tested?

Ask for the hourly PM10 ceiling printed on the certificate.

2

Against what reference, and where?

Heated BAM or equivalent, at a site type that resembles yours.

3

What is the stated uncertainty?

Against the 50% indicative limit, and at what concentration threshold.

4

Does the range cover your action level?

If the ceiling is below $190 \mu\text{g}/\text{m}^3$, the certificate does not cover where it is needed.

5

Is it the current certificate?

Pre-PC4 documents were reissued; check the issue date and version.

Where to look on the document



1

Certified performance range

Hourly and 24-hour PM10 and PM2.5, with the observed maximum stated

2

Site type

“Urban background, elevated PM, coarse frequently observed”

3

Measurement uncertainty

38% PM10 (40% at or above 30 µg/m³) against the 50% limit

4

Environmental conditions

The temperature and humidity envelope the result applies to

5

Dates

Issued 15 September 2026, renewal due 14 September 2031

04

PART FOUR

What this means for your sites

The usual MCERTS clause no longer checks what you need

BEFORE PC4

“Dust monitoring shall use MCERTS-certified instruments.”

A monitor certified to 150 µg/m³ satisfies this wording, and says nothing at a 190 µg/m³ trigger.

AFTER PC4 AND THE IAQM

“Instruments shall hold current MCERTS certification with a certified PM10 range covering the site action level.”

One clause makes the certificate do the checking for you.

Using the certificate as the evidence pack



Tender responses

Attach the certificate and the IAQM statement side by side: the certified range answers the 'evidence at elevated concentrations' question before it is asked.



Client and regulator reporting

Hourly data from a monitor certified across the action level is defensible when a reading triggers a response, and when it does not.



Where the Dust Module fits

Construction and demolition, quarries and aggregates, industrial fence line, and any boundary where PM10 is the number that matters.



Dust Measurement Suite: Node-S, Dust Module, solar, and met sensors

MCERTS is the benchmark outside the UK too

First

certified at elevated PM10

First indicative monitor, to our knowledge

MC260473/00

valid to September 2031

CSA Group, MCERTS product
certification

Available now

Dust Module and Suite

Contact Lee for lead times in your region

If your market cites MCERTS, it has inherited PC4

Any specification that borrows MCERTS as its quality bar now borrows the tested-range rule with it. The question is the same everywhere: does the certified range cover the concentration you have to act on?

The UK is the first to regulate dust monitoring



The only independent scheme

MCERTS is the only product certification written for indicative particulate monitors.



Borrowed by tenders worldwide

Markets with no scheme of their own cite MCERTS as shorthand for independently tested.



IAQM guidance sets the method

The template most construction dust methodologies are built on, in the UK and beyond.

What the UK requires becomes what everyone else specifies next.



Three things to take back to your sites



The test matters as much as the certificate

Under PC4 a certificate covers only what was observed; read the range before you read the logo.



Check the range against your action level

190 $\mu\text{g}/\text{m}^3$ is the IAQM trigger. If the ceiling is below it, the certificate is silent where you need it.



The Dust Module is certified to 374 $\mu\text{g}/\text{m}^3$ hourly

To our knowledge the first indicative monitor certified at elevated PM10, tested against heated BAMs over three months.

Links and contact

[Certificate MC260473/00 \(PDF\)](#)

[Dust Module spec sheet and product page](#)

[Blog: Dust Module earns MCERTS certification for PM10](#)

[Webinar page and recording](#)

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THANK YOU

Questions?



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