CETEC assessment of the HA800 air purifier in office settings

Evaluating indoor air quality improvements using WELL air-quality benchmarks

In CETEC's six-hour closed-office manual-mode assessment at London South Bank University, average PM2.5 and PM10 concentrations were 77.5% and 86.4% lower at hour 4, when the HA800 was operating, than at hour 2, when it was off. The hour-2 PM2.5 average was already low at 1.51 µg/m³. Separately, CETEC reported a 59.1% reduction in meeting-room total volatile organic compounds (TVOC).







CETEC report photographs: HA800 (left), LSBU exterior (top right), meeting space (bottom right).

The assessment

CETEC, an indoor environmental testing specialist that provides WELL performance-verification services, assessed the HA800 in a closed office, an open office and a meeting room. The work used air-quality benchmarks from the WELL Building Standard, which addresses how buildings support people's health and well-being, to provide context for the measurements.

CETEC investigated manual and automatic operation in separate assessments. Each followed the same six-hour sequence: two hours with the HA800 off, two hours operating and two hours off again. This allowed the researchers to observe air quality before, during and after operation.

HA800 OFF · 2 hours	HA800 ON · 2 hours	HA800 OFF · 2 hours

Key findings

Closed office · manual mode · hourly averages

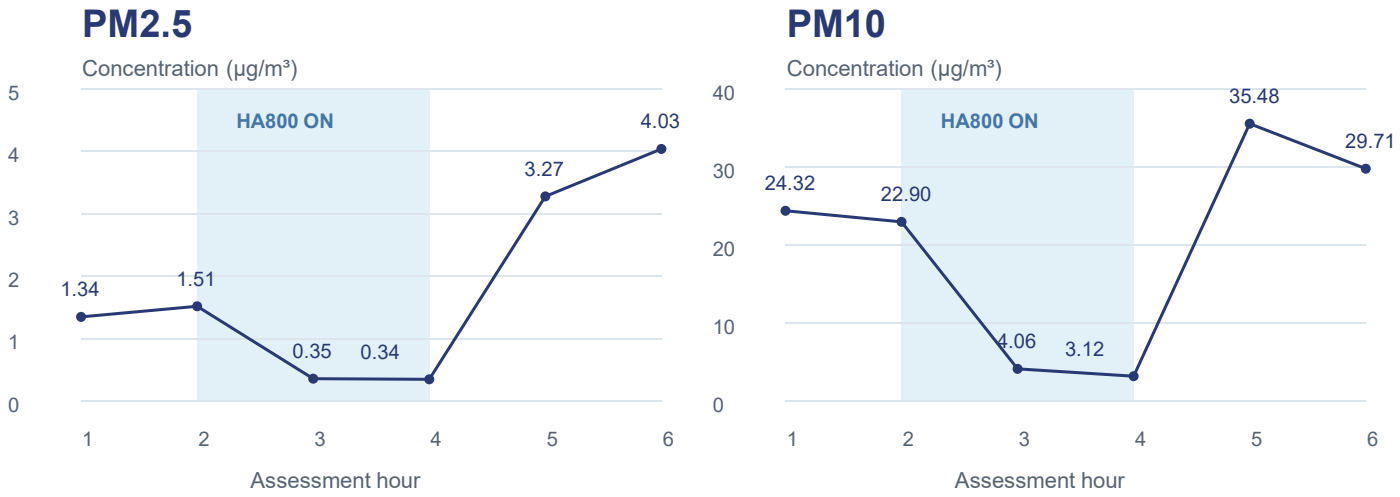
Measure	Hour 2: off	Hour 4: operating	Reduction
PM2.5	1.51 µg/m³	0.34 µg/m³	**77.5%**
PM10	22.90 µg/m³	3.12 µg/m³	**86.4%**

Meeting room · reported TVOC

232 → 95 µg/m³ | 59.1% reduction

Concentrations are shown in micrograms per cubic metre of air (µg/m³).

PM2.5 and PM10 describe airborne particles in two size ranges; PM2.5 refers to the finer particles. TVOC is a combined measure of volatile organic compounds in the air.



Closed office · manual mode. Panels use different vertical scales. Lines connect the six reported hourly values.

Changes in indoor air quality

Particle concentrations fell while the HA800 was operating. After it was switched off, they rose again, reaching 4.03 µg/m³ for PM2.5 and 29.71 µg/m³ for PM10 at hour 6 in the closed office. Alongside this particle reduction, CETEC reported lower TVOC concentrations in the meeting-room comparison.

The particle percentages compare reported averages at hours 2 and 4 in the closed-office manual-mode assessment. The available reports do not identify the specific sampling periods or analytical method for the separate meeting-room TVOC figures.

Conclusion

The closed-office assessment showed lower particle concentrations while the HA800 operated in manual mode, and CETEC reported lower TVOC in a separate meeting-room comparison. CETEC concluded that automatic mode was more efficient than manual mode in its assessment, attributing this to automatic fan-speed selection. Healthy Air Technology recommends automatic mode for office use where particle levels vary.

Sources: CETEC, Q23020231 / LON_ASMT-AQ_LSBU_HAT Eval HA-800: manual (3 Mar 2023, slides 8, 16–19) and auto (21 Jul 2023, slides 5, 13–15); Amrouche et al., UKIEG poster (7 Sep 2023, p. 2). CETEC reports held by Healthy Air Technology.