

HEPA Filtration Equipment Specification

The below table provides the minimum recommended specification for air cleaning units (ACUs) in education and childcare settings. Please compare this specification against the specification for any ACUs you are considering for your setting. This will help ensure it is fit for purpose.

| HEPA Filtration | | | |
|--|--|-------------------------|-------------------------|
| Design Parameters | | | |
| Number of occupants | Up to 8 | Up to 16 | Up to 32 |
| Ventilation Rate (l/s/person) | 6.25 | 6.25 | 6.25 |
| Clean Air Delivery Rates* ¹ (l/s) | 50 | 100 | 200 |
| Clean Air Delivery Rates* ¹ (m ³ /hr) | 180 | 360 | 720 |
| Noise | | | |
| Sound power level limit, L _{WA} , of a single unit at set point to achieve required flow rate / [dBA]* ² | ≤ 43 dB L _{WA} | ≤ 46 dB L _{WA} | ≤ 49 dB L _{WA} |
| Filtration | | | |
| Filtration to EN 1822:2019 classification | HEPA H13 /ISO35H as the minimum | | |
| Percentage of airflow filtered | 100% | | |
| Pre-Filtration | ISO Coarse 60% (as specified by meeting ISO 16890:2016 – the International Organization for Standardization’s specifications and requirements for air filters) | | |
| Replacement coarse and HEPA filters | Assuming 8 hours a day operation, 1 year supply of filters provided. | | |
| Features | | | |
| Mountings | Free Standing - Floor Mounted | | |
| Min Length of Power lead | 4m | | |
| Power requirements | Mains Powered with 13A 240v Power Supply | | |
| Ease of filter changes | Tools required for changing filters are provided | | |
| Certification | | | |
| Pre-filter efficiency | 3 rd party certification of HEPA unit efficiency performance to ISO 16890:2016 or equal and approved | | |
| HEPA filter classification | 3 rd party certificate of HEPA filter classification to EN 1822:2019/ISO 29463 or equal and approved | | |

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| Acoustics Performance | <ul style="list-style-type: none"> UKAS-accredited (or equal and approved) acoustic laboratory test evidence that demonstrates that the sound power level from all units combined, measured with at least Engineering level accuracy according to BS EN ISO 3740: 2019 and associated series of Standards, meets the values identified above. This should identify the flow rates and associated sound power level for different operational conditions. If accredited laboratory tests are not available at the current time, this information may be sought in future. |
| Ultraviolet technology (if installed in the enclosed air cleaning unit) | <ul style="list-style-type: none"> 3rd party certification (i.e., external independent competent laboratory tests highlighting safety (non-ozone producing and minimal or no UV leakage) and efficacy (sufficient dose and associated inactivation). Provide details of UV dose and dwell time, and whether the UVGI is applied to the air stream or to a filter. |
| Conformity Assessment | UKCA or CE marking and associated UK/EU Declaration of Conformity |
| Sensors and controls | |
| Sensor | Automatic Filter Sensor (i.e., filter performance warning) |
| Controls | <ul style="list-style-type: none"> The devices shall be under the control of the user User shall be able to set the device to automatically stop in hour increments up to 8 hours |
| Miscellaneous | |
| Warranty | <ul style="list-style-type: none"> Warranties must be provided in case of breakage or system failure that is not the fault of the consumer. Such Warranties must be to suit the operational life for the consumables, and these must be no less than 1 year. |
| Deleterious Risks | <ul style="list-style-type: none"> All solutions should be designed to, insofar as is reasonably practicable, obviate any: Ozone Production or other harmful chemical by-products UV-C Leakage and any associated direct exposure to skin and eyes Damage to the surrounding environment Electrical Risk or Inefficient electricity consumption Fire risk |

NOTES:

*1 The clean air delivery rate (CADR) is a commonly used metric that can be useful for comparing devices. In the absence of this test-derived data, the CADR can be estimated from the product data sheet:

$$CADR = \eta_f \times \dot{Q}$$

where η_f is the fractional removal efficiency of particles that pass through the device and \dot{Q} is the volumetric flow rate of air through the device (e.g., m³/hr).

*2 The intentions of the performance requirement is that the sound pressure level, L_{Aeq} , in any space (from all units combined) does not exceed 40 dB L_{Aeq} . If N units are required, the limit for each is reduced by $10 \cdot \log(N)$ dB. E.g., if two units are required (N = 2) the limit for each is 3 dB less than the values indicated in the table.