

Model RFP for Classroom Air Cleaners

This is a self-contained Model RFP for classroom air purifiers, also known as in-room air cleaners or IRACs. School districts can use it largely as-is, making only a few decisions before issuing it.

HOW THIS DOCUMENT IS LAID OUT

Shaded boxes are for you, not for vendors. They explain where a number came from, what choices you have, and what to watch for. Nothing in a shaded box belongs in the solicitation you issue. Everything outside the boxes is template language.

Items in [square brackets] are placeholders for district-specific information. Appendix A lists the decisions worth making before you issue.

This document covers the technical specification, evaluation, and pricing sections of a solicitation. It does not contain your submission deadline, questions deadline, contact information, bid validity period, insurance and bonding requirements, standard terms and conditions, or non-collusion language. Drop Sections 1 through 6 and Appendix A into your district's standard solicitation front matter rather than issuing this document on its own.

The [Target Product Profile \(TPP\)](#) and this RFP play different roles. The TPP is a call to innovation: an aspirational, market-shaping target for where classroom air purifiers should go. This RFP is the practical companion for buying today. Some TPP targets are forward-looking, and the market will grow into them over time, so this RFP separates requirements a district can expect products to meet now from aspirational targets that earn extra credit. The TPP is published separately and is incorporated into this RFP by reference: [Target Product Profile for Classroom Air Purifiers](#).

THREE THINGS TO KNOW BEFORE YOU ISSUE THIS RFP

1. **Sound is one of the primary determinants of whether the program lasts.** Devices that are irritating get switched off, and a device that is off delivers nothing. Sound here is specified per device, at a level set to protect the loudest seat in the room.
2. **Expect three to five devices in a standard classroom.** No one product currently on the market delivers a classroom clean-air goal quietly on its own.

Several devices running at low speed, spread across the room, can achieve high levels of air cleaning at low sound levels.

3. **Core metrics have a floor and a goal.** The floor is what a bid must clear to be considered. The goal is where the points are.

1. Introduction

1.1 District background

[District Name] serves [X] students across [X] schools and is soliciting proposals to supply and support classroom air purifiers, also called in-room air cleaners, for the rooms listed in Section 2. The District seeks effective, continuous air cleaning at a sound level low enough that the devices are never switched off, with a limited maintenance burden the District can carry for the life of the equipment.

1.2 Objectives

- Deliver the clean-air goal listed for every room in Section 2, at the setting the devices run during instruction.
- Hold sound low enough that no teacher has cause to turn a device down or off, including during testing.
- Keep filter changes and routine upkeep within the capacity of existing facilities staff.
- Sustain performance across a multi-year deployment through device durability, filter availability, and, where the District elects it, device-level visibility.

1.3 Reference target

The **Target Product Profile for Classroom Air Purifiers** [insert published URL], produced by the Inspired Air Fund and the Center for Green Schools, is incorporated into this RFP by reference. Where this RFP is silent or unclear, the TPP governs.

2. Rooms and Clean-Air Targets

2.1 Scope of supply

The successful vendor shall supply air purifiers sized to each room in the Room Inventory, together with mounting hardware for the configurations the District selects in Appendix A.1, replacement filters priced under Section 5, installation and filter-change documentation, and the manufacturer warranty required in Section 3. Installation, central monitoring, and maintenance services are priced separately in Section 5.

2.2 Clean-air minimum and goal

Every room carries two clean-air figures, both measured as smoke CADR delivered by the room solution at the day-to-day setting defined in Section 3.

Clean-air delivered	How it is calculated	What it does
Minimum (pass/fail)	$0.667 \times \text{floor area} \times (\text{ceiling height} \div 8)$, using 12 ft where the ceiling is higher.	A proposal that does not reach the minimum in a room is set aside without being scored. This is the floor, not the objective.

Clean-air delivered	How it is calculated	What it does
	Ex. About 675 CFM for a 900 sq ft classroom with 9 ft ceilings.	
Goal (scored)	The larger of 40 CFM per design occupant and the room minimum. Ex. 1,000 CFM for a 25-student classroom.	Scoring under Section 4.3 measures every proposal against the goal. Full marks on clean air require reaching it.

Where a room sits in a region subject to wildfire smoke or sustained high outdoor particulate levels, the minimum rises to $1.0 \times \text{floor area} \times (\text{ceiling height} \div 8)$, again using 12 ft where the ceiling is higher.

BEFORE YOU ISSUE: WHERE THESE TWO NUMBERS COME FROM

The minimum is the two-thirds rule, AHAM's long-standing guidance for matching an air cleaner to a room and the basis of the Center for Green Schools fact sheet on room air cleaners. It is a number the current market can meet. Setting the floor here means serious vendors can bid rather than being disqualified over a gap that belongs to the market rather than to them.

The goal is ASHRAE Standard 241's equivalent clean airflow rate for classrooms, 40 CFM per person, which for a 25-student classroom is 1,000 CFM. This is our best current estimate for what will effectively limit respiratory infection risk for students and teachers. No single listed product delivers that quietly; reaching the goal means multiple devices per room.

The ceiling adjustment caps at 12 ft. The two-thirds rule assumes an 8 ft ceiling and scales unreasonably at gymnasium heights. Size rooms above 12 ft using Appendix A.5 rather than the formula alone.

The wildfire minimum comes from AHAM's wildfire guidance, a smoke CADR roughly equal to the room's floor area. For a standard classroom that lands near 1,000 CFM, so in smoke-affected regions the floor and the goal are effectively the same number.

BEFORE YOU ISSUE: HOW EXISTING VENTILATION AND FILTRATION FIT IN

Neither the minimum nor the goal is reduced by clean air a room already receives. If your school has invested in ventilation or upgraded its filters, that work counts for a lot. It just does not count the same way against both of the jobs a classroom air cleaner does.

Ventilation helps with germs, not with particles. Bringing in outdoor air dilutes what people breathe out, so it genuinely counts toward the ASHRAE 241 infection target, and a well-ventilated school is partway there already. It does not lower fine particles, because outdoor air is where most of them come from. On a smoky or high-pollution day, unfiltered outdoor air makes a classroom worse rather than better. (Outdoor air does dilute particles generated inside the room, from a copier or a science lab, but in most schools the larger source is what drifts in from outside.)

Central filtration helps with both, and is not enough on its own. If your air handlers run MERV-13 or better, you are removing particles from the air they deliver, which is real progress. Two things still argue for in-room units on top of it. First, there is no level of fine-particle pollution known to be safe, so the aim is to get levels as low as you reasonably can rather than to clear a threshold and stop. Second, school HVAC systems typically deliver the equivalent of one to five air changes per hour at the room, meaning they replace or clean the room's full volume of air one to five times an hour. That is well short of what the ASHRAE 241 figure requires for a full classroom. In-room units close the gap, and they also keep working when the central system cycles down, when a room sits at the end of a long duct run, or when outdoor conditions force the dampers shut.

What to do with this. If documented ventilation and central filtration together deliver more than roughly 400 CFM of equivalent clean air per classroom, you are covering much of the infection target and may reasonably work to the minimum rather than the goal where budget is tight. Districts in regions subject to wildfire smoke or sustained high outdoor pollution should stay at the goal. On a smoke day you want every bit of in-room particle removal you can get, and that is exactly when outdoor air stops being available to you.

To estimate what your rooms already deliver, see the [USGBC School IAQ Fact Sheet on ventilation](#).

2.3 Room Inventory

Vendors shall propose a solution for each room type below. A solution may be one device or several of the same model, whichever reaches the room's clean-air figures within the sound requirement in Section 3.2.

Room type	How many	Floor area (sq ft)	Ceiling ht (ft)	Occupancy	Minimum (CFM)	Goal (CFM)
Standard classroom	[]	[~900]	[~9]	[~25]	675	1,000
Large classroom / lab	[]	[]	[]	[]	[]	[]
Small office / conference	[]	[]	[]	[]	[]	[]
Library / media center	[]	[]	[]	[]	[]	[]
Cafeteria	[]	[]	[]	[]	[]	[]

Room type	How many	Floor area (sq ft)	Ceiling ht (ft)	Occupancy	Minimum (CFM)	Goal (CFM)
Gymnasium	[]	[]	[]	[]	[]	[]
Multipurpose / auditorium	[]	[]	[]	[]	[]	[]
Other: []	[]	[]	[]	[]	[]	[]

BEFORE YOU ISSUE: FILLING IN THE INVENTORY

Fill in the counts, then run both formulas from 2.2 for each room type. Floor area, ceiling height, and occupancy are what the formulas need, so get them approximately right rather than leaving them blank. Where a size is missing the standard-classroom defaults apply, and a vendor is sizing by guesswork.

Worked examples. A 900 sq ft classroom, 9 ft ceiling, 25 students: minimum 675 cfm, goal 1,000 cfm. A 700 sq ft portable, 8 ft ceiling, 22 students: minimum 467 cfm, goal 880 cfm. A 1,400 sq ft library, 12 ft ceiling, 40 students: minimum 1,400 cfm, goal 1,600 cfm. A 4,000 sq ft gymnasium at 22 ft: the ceiling adjustment caps at 1.5, giving a minimum of 4,000 cfm, and this is a room to size under Appendix A.5 rather than from the formula alone.

3. Technical Requirements

Day-to-day setting. The setting the devices run at during instruction, every day, all year. This is the design point. Every clean-air requirement and every score in this RFP is measured here. A device that only reaches its rated performance at a setting a teacher would turn down has not met this specification.

Boost setting. Any setting above the day-to-day setting, used outside instructional hours or during an acute event such as wildfire smoke or a local outbreak. Boost performance is reported and scored. It never substitutes for performance at the day-to-day setting, and it carries no sound limit since it's meant for intermittent temporary use.

Loudest occupied position. The seat or standing position in the room, in normal use, closest to any device. The per-device limits in 3.2 are set to protect this position. Neither the District nor the vendor calculates it at bid time; it is verified by measurement after installation.

Filtration here means the physical removal of particles from air. This procurement does not include ionization, plasma, UV, photocatalytic oxidation, or other active air-treatment technologies.

WHY THE SCOPE IS FILTRATION ONLY

Mechanical filtration is the only air-cleaning approach with a settled third-party performance test, a settled safety record, and no by-products to argue about. Active technologies vary widely in both, and a district running a competitive solicitation has no practical way to referee the claims.

A vendor may point out that ASHRAE 241 allows its equivalent clean airflow target to be met by several means, including some this RFP excludes. Holding to filtration alone is a more stringent reading of the same number, not a different number.

To learn more about mechanical vs. electronic air cleaners, see the USGBC School Fact Sheets on [In-Room](#) and [Electronic Air Cleaners](#).

3.1 Clean air delivery and filtration

Specification	Requirement	Vendor response
Clean air delivered	The devices serving a room shall together deliver at least that room's minimum from the Room Inventory, measured as smoke CADR at the day-to-day setting. Delivery is scored against the room goal under Section 4.3.	
Test basis	Third-party smoke CADR report under ANSI/AHAM AC-1 or equivalent, from an accredited laboratory, reported at every operating setting rather than at maximum only.	
Filter type	Mechanical filtration. Efficiency classified under HEPA (IEST, EN 1822, or ISO) or MERV (ASHRAE 52.2). This RFP does not favor one classification. It rewards delivered clean air per decibel, which in practice favors lower-pressure-drop media.	
Pre-filter	A coarse or washable pre-filter is encouraged to extend main-filter life.	
Filter life	Minimum one year of continuous operation at the day-to-day setting. Three years or more scores higher.	
Performance over filter life	Report smoke CADR and sound at the day-to-day setting when new and at the recommended replacement point.	
Technology scope	Mechanical filtration only. No ozone-generating or electronic air-cleaning components.	

ON FILTER-LIFE DATA, AND WHAT YOU CAN REASONABLY ASK FOR

Filters lose airflow as they load, and a device sized with no margin falls below its target months before anyone notices. But there is no US standard test for CADR over the life of a filter. AHAM AC-1 measures a clean filter, which is the best case and the only number most vendors hold. Also ask for any loaded filter data they have, since that directly informs how frequently you'll have to change filters. Score it rather than gating on it (Section 4.3, criterion 3).

3.2 Sound

Specification	Requirement	Vendor response
Per-device sound limit	No single device shall exceed 41 dBA A-weighted sound pressure at 1 meter, free field, at the day-to-day setting. Lower scores substantially higher, on a scale reaching full marks at 31 dBA (Section 4.3, criterion 2).	
Device count	The 41 dBA limit applies to solutions of one to four devices per room. A solution using five or six devices in a room shall hold each device to 40 dBA at 1 meter; seven or more, to 39 dBA. These figures assume rooms up to roughly 1,200 sq ft; size larger rooms under Appendix A.5.	
Sound data	A-weighted sound pressure at 1 meter, free field, from an accredited laboratory, with octave-band data, at every operating setting. ANSI/AHAM AC-2 sound power is accepted in its place, converted at 8 dB: a 49 dBA sound power reading corresponds to 41 dBA at 1 meter. Manufacturer-measured figures, and any figure published without a stated test distance and condition, are not accepted.	
Spectrum	Octave-band sound pressure at 1 meter from 63 Hz to 8 kHz shall be reported at the day-to-day setting. Spectral balance is scored rather than gated at bid time; the NC-30 contour applies to the installed room under Acceptance below.	
Tonality	No prominent discrete tone at any occupied-hours setting, assessed under ANSI S1.13. Blade-pass tones, motor whine, and electronic tones are the usual offenders and are the most common cause of teacher complaint at otherwise acceptable levels.	
Interaction between devices	Devices serving the same room shall not produce audible beating or warble when run together at the day-to-day setting. Where the design relies on identical units running at the same nominal speed, the vendor shall state how this is avoided.	
Stability	No audible cycling, surging, or step changes in fan speed during instructional hours. Where output adjusts automatically, the rate of change shall be slow enough not to draw attention. Sound character shall not change audibly as the filter loads.	
Acceptance	The District may verify in a sample of installed rooms: LAeq over one minute at the loudest occupied position with devices off and again at the day-to-day setting, using a sound level meter meeting IEC 61672 class 2 or better. Octave-band sound pressure at that position shall fall at or below an NC-30 contour. Where measured levels exceed 45 dBA, or where more than [20] percent of teachers in equipped rooms report	

Specification	Requirement	Vendor response
	the devices as disruptive within the first term, the vendor shall remediate at its own cost or accept return of the units.	
Boost setting	At least one setting above the day-to-day setting, for unoccupied hours and acute events. Clean air and sound at each boost setting shall be reported. Boost shall be centrally schedulable or triggerable and shall never be the default state. No sound limit applies at boost settings.	

WHERE THE 41 DBA NUMBER COMES FROM

Two numbers matter and only one of them is knowable at bid time: What affects a classroom is the level at the loudest occupied seat, and what a laboratory can certify is the level of a single device at a stated distance.

At the loudest seat a student is roughly a meter or two from one device, and that device dominates what they hear. Additional devices elsewhere in the room add only reverberant energy, which accumulates slowly. So the per-device ceiling barely moves as device count rises: 41 dBA holds the worst seat at or below 45 dBA for up to four devices.

Wall and ceiling mounting is partly to help with sound. Raising the source above the seated ear plane increases the distance to the nearest ear and cuts the direct-field contribution at the worst seat.

WHY 45 DBA IN THE ROOM, AND WHY THE SCORING PULLS WELL BELOW IT

45 dBA is a tolerance threshold rather than a learning threshold. Teachers report being bothered by a single device at levels as low as 43 dBA, while the same total level spread across several quieter units draws fewer complaints.

ANSI/ASA S12.60 sets 35 dBA as the background target for an unoccupied classroom. At 45 dBA many children manage but young students, English learners, and children with hearing loss do less well.

3.3 Operation and controls

- The device runs continuously at its day-to-day setting whenever powered, with no teacher action required to start it or keep it running.
- A teacher may switch the device off or change its speed. All other settings, including the day-to-day setting itself, are set centrally or by an administrator and are protected against student tampering.

- After a power interruption the device returns automatically to its programmed day-to-day setting, not to whatever setting it was last left on.
- Operating status is visible at a glance, with a distinct fault indication.
- Filter status is indicated from the actual condition of the filter, such as measured pressure drop or airflow, rather than from a runtime timer. The vendor shall describe the mechanism and how the District can verify it.

ON FILTER INDICATORS

Runtime timers are the common approach and they are close to useless, because a filter in a dusty gym and one in a quiet office age at very different rates. Condition-based indication is better, the technology is uneven, and a vendor claim here is hard to check on paper.

The practical test is whether the vendor can explain the mechanism. Differential pressure across the filter, or a measured drop in airflow, is real. "Proprietary algorithm" with no stated input usually is not. Score it accordingly (Section 4.3, criterion 5).

3.4 Filters, maintenance, and service life

- Designed service life of seven years or more.
- Manufacturer warranty of at least three years. Five years or more scores higher.
- Filter replacement is tool-free or uses simple hand tools, doable by one person in under three minutes, with no removal of the device from its mounting.
- Replacement filters available for the full supported life of the device. Standard sizes preferred, non-proprietary strongly preferred, with published pricing held or escalated on a stated schedule.
- ENERGY STAR certified where the device falls within the scope of the ENERGY STAR room air cleaner specification. Where it does not, the vendor shall state why.
- Smoke CADR per watt reported at the day-to-day setting, and power draw reported at every setting.

ON ENERGY STAR, AND ONE TRAP TO AVOID

Do not restrict this to specifying only ENERGY STAR Most Efficient products. Its eligibility criteria exclude air cleaners with a smoke or dust CADR above 600 CFM, so it would disqualify the higher-capacity devices you most want bidding.

ENERGY STAR also measures efficiency under its own test procedure rather than at whatever you have set as the day-to-day setting, so treat the certification as a floor and use the reported smoke CADR per watt at the day-to-day setting as the number you actually compare across bids.

3.5 Form factor, mounting, and placement

- The product shall be offered with a manufacturer-supplied wall or ceiling mounting option, certified by the manufacturer for that installation. Whether any given room is mounted or floor-placed is the District's decision under Appendix A.1.
- Mountings shall be removable and shall not require permanent alteration of the building structure.
- Devices serving the same room are ideally distributed across it, not grouped along a single wall or in a single zone.
- No device within 3 ft of a student seat, the teacher's normal working position, or a reading or small-group area.
- Airflow shall not be directed at occupants.
- Floor-placed devices shall be movable by one adult, stable by design, and tip-resistant or securable.
- Form, size, and footprint are left to the vendor, provided every other requirement is met.

MOUNTING: WHAT TO CHECK BEFORE YOU COMMIT TO IT

Mounting is worth having available: it keeps devices out of the way of teachers, students, and custodians, it helps keep perceived noise levels down, and it can help reduce exposure to airborne disease.

Listing. A device listed as portable is listed for portable use, and screwing it to a wall is a listing problem under NEC 110.3(B) as your jurisdiction adopts it. Section 3.5 therefore asks for a manufacturer-supplied mounting option certified for that installation rather than just a bracket. Check that what a vendor offers carries it.

Power. Confirm device power type, local code requirements, and receptacle availability to ensure mounting is possible as-is. Where additional electrical work is required, districts can scope and cost it separately to inform device placement decisions.

3.6 Connectivity and device management

The device shall deliver its full rated clean-air and sound performance on its own. No network connection, account, subscription, dashboard, or app may be required for the device to run correctly at its day-to-day setting. Network connectivity and centralized management, meaning visibility into device status, filter condition, and uptime across rooms from one place, are optional and scored as extra credit. All schools might benefit from centralized fleet management, but this may be especially important for large school systems managing a very large number of devices. Where the District elects to require management software under Appendix A.3, integration with the District's building automation system is acceptable.

3.7 Cost

Vendors shall express cost as five-year total cost of ownership per room, covering devices, filters, and energy, and as dollars per CFM of clean air delivered at the day-to-day setting. The District sets no fixed price ceiling. Bids are ranked against each other on cost per CFM under Section 4.3, criterion 4.

3.8 Safety

- Certified by a Nationally Recognized Testing Laboratory for electrical and fire safety, for example UL 507.
- The device shall contain no ozone-generating component. Where the device includes any electronic air-treatment or ionizing component, provide UL 2998 validation. A purely mechanical device may satisfy this with a manufacturer statement that it contains no such component.
- No lead, cadmium, or other hazardous materials. Low-VOC materials throughout.
- The internal fan shall be fully guarded at all times, including during filter replacement. No accessible sharp edges, pinch points, or hot surfaces. Cords secured. Stable against tipping.
- FCC Part 15 Class B.

4. Evaluation and Scoring

4.1 How scoring works

- Evaluation runs in three steps.
- **Gates.** Every proposal must clear each pass/fail condition in 4.2. A proposal that misses any of them is set aside without being scored.
- **Score.** Each remaining proposal is scored out of 100 on the criteria in 4.3, judged on the vendor's proposed standard-classroom solution. The standard classroom is scored because it is the bulk of the purchase in almost every district. Other room types are checked pass/fail against their own minimums and priced under Section 5; they do not change the 100-point score unless the District chooses to weight them.
- **Extra credit.** Up to 12 further points under 4.4, which reward features that help a deployment survive past its first year and break ties between close bids.

A NOTE ON HOW YOU APPLY THIS

Score the data the vendor submitted, not the claims in the brochure. Where a required figure is missing, the proposal fails the relevant gate rather than scoring zero on that line. The most common way these procurements go wrong is a bid that reads well, cites a room-size rating instead of a tested CADR, and is never asked for the lab report.

On sound, the figure to check is the test condition rather than the number. A quoted "38 dB" means nothing without a stated distance and whether it was a free field. A bid that cannot produce accredited data at 1 meter, or AC-2 sound power to convert from, has not met the gate.

The two criteria that carry half the points, clean air and sound, both measure distance from the goal rather than compliance with the floor. Expect a bid sitting exactly on both gates to give up all 20 sound points and 10 of the 30 clean-air points before anything else is assessed.

The formulas under 4.3 are for your evaluation team. You do not need to publish them, though publishing them tends to produce better bids.

4.2 Pass/fail conditions

- The proposed room solution delivers at least the room minimum from the Room Inventory, measured as smoke CADR at the day-to-day setting.
- No device exceeds 41 dBA A-weighted sound pressure at 1 meter, free field, at the day-to-day setting, per accredited-lab data. Solutions of five or six devices per room are held to 40 dBA, and seven or more to 39 dBA.
- Accredited-lab sound data at 1 meter, with octave bands, is provided at every operating setting, or ANSI/AHAM AC-2 sound power from which it can be converted.
- No prominent discrete tone is present at any occupied-hours setting under ANSI S1.13.
- Third-party ANSI/AHAM AC-1 smoke CADR data is provided from an accredited laboratory at every operating setting.
- The vendor accepts the acceptance-testing and remediation terms in Section 3.2.
- Mechanical filtration only, with no ozone-generating or electronic air-treatment components.
- NRTL certification for electrical and fire safety, and FCC Part 15 Class B.
- The device starts at its day-to-day setting on power-up with no teacher action, and returns to it after a power interruption.
- Replacement filters are non-proprietary or widely available, with published pricing and a commitment to supply them for the full supported life of the device.

4.3 Scored criteria (100 points)

#	Criterion	Points	What earns points
1	Clean air at the day-to-day setting	35	Total smoke CADR the room solution delivers at the setting it will actually run at, measured against the room goal rather than the minimum. A solution that only reaches the minimum earns roughly two-thirds of these points.
2	Per-device sound	25	How far below 41 dBA at 1 meter the loudest device in the solution sits at the day-to-day setting. Two points per decibel: full marks at 31 dBA, half marks at 36 dBA, none at 41 dBA.
3	Five-year cost per CFM	20	Five-year cost per classroom, covering devices, filters, and energy, divided by clean air delivered. Scored against the lowest cost per CFM among bids that cleared the gates.
4	Filters and maintenance	10	Filter change under three minutes and tool-free (4). Filter indicator driven by measured condition rather than a timer, with the mechanism described (3). Filters non-proprietary, standard size, stocked and priced for the supported life (3).
5	Operation, mounting, durability	10	Runs correctly by default (4). Certified mounting option offered, airflow not aimed at occupants, tip- and tamper-safe (3). Warranty of five years or more and stated service life of seven years or more (3).

FOR YOUR EVALUATION TEAM: THE FORMULAS

1. Clean air. $30 \times (\text{CADR delivered} \div \text{room goal})$, capped at 30. The goal, not the minimum, is the denominator. For a standard classroom that is 1,000 CFM, so a solution at the 675 CFM minimum scores 20.3.

2. Per-device sound. $20 \times (41 - \text{dBA at 1 meter}) \div 10$, held between 0 and 20. Use the accredited-lab figure at the day-to-day setting, and where devices differ, use the loudest. Score against 41 regardless of device count, so a solution that uses more devices and is therefore held to a tighter gate is not scored on a different scale.

3. Five-year cost per CFM. Once all bids are in: $15 \times (\text{lowest cost per CFM among passing bids} \div \text{this bid's cost per CFM})$.

4 and 5 are checklists. Award the stated points for each item met.

4.4 Extra credit (up to 12 points)

- A boost setting delivering at least 1.5 times the room goal, with clean air and sound reported at that setting (4 points).
- Networked view of device status, filter condition, and uptime across the fleet. Counted as a plus, never as a safety feature (3 points).
- Onboard particle sensing (3 points).
- Independent third-party validation of clean air and in-room sound in a real classroom, beyond the vendor's own laboratory testing (2 points).

4.5 Scoring worksheet

Copy one per vendor.

Criterion	Max	Vendor's figures	Score
1. Clean air at day-to-day setting	30	_____ CFM across _____ devices	
2. Per-device sound	20	_____ dBA at 1 m (loudest device)	
3. Clean air held over filter life	15	_____ % retained	
4. Five-year cost per CFM	15	\$_____ / CFM	
5. Filters and maintenance	10	(checklist)	
6. Operation, mounting, durability	10	(checklist)	
Subtotal	100		
Extra credit	+12		
Total	112		

WORKED EXAMPLE, FOR YOUR EVALUATION TEAM

A 900 sq ft classroom, 9 ft ceiling, 25 students. Minimum 675 CFM, goal 1,000 CFM. A vendor proposes four identical devices per room, each delivering 260 CFM smoke CADR at

36 dBA at 1 meter at the day-to-day setting, with accredited-lab data. The room gets Four devices at 260 CFM = 1,040 CFM. The solution retains 88 percent of new-filter CADR at the recommended replacement point. Once all bids are in it prices at \$2.00 per CFM against a low bid of \$1.80. Filter change is 2.5 minutes tool-free with a pressure-drop indicator and standard filters. It runs by default with automatic boost, offers a certified mounting option, and carries a five-year warranty against a seven-year stated life.

Gates: 1,040 CFM clears the 675 minimum, and 36 dBA clears the 41 dBA limit that applies to a four-device solution. The proposal is scored.

Criterion 1: $30 \times (1,040 \div 1,000) = 31.2$, capped at 30.0

Criterion 2: $20 \times (41 - 36) \div 10 = 10.0$

Criterion 3: $15 \times (0.88 \div 0.90) = 14.7$

Criterion 4: $15 \times (1.80 \div 2.00) = 13.5$

Criterion 5: $4 + 3 + 3 = 10.0$

Criterion 6: $4 + 3 + 3 = 10.0$

Total: 88.2 of 100, before extra credit. Criterion 2 is where bids separate. This one sits 5 dB under the limit and takes half the sound points. A competitor delivering the same 1,040 CFM across five devices at 31 dBA each takes all 20, and wins on sound alone despite being held to a tighter 40 dBA gate.

5. Pricing

- For each room type in the Room Inventory, vendors shall provide:
- The proposed device or devices and how many per room.
- Smoke CADR delivered per room, and A-weighted sound pressure at 1 meter per device, both at the day-to-day setting.
- Unit price, and the resulting dollars per CFM of clean air delivered.
- Replacement main-filter price and expected life at the day-to-day setting.
- Five-year total cost of ownership per room, covering devices, filters, and energy at [X] cents per kWh across a [1,900] hour school year.
- Installation, mounting hardware and labor, central monitoring, and maintenance shall be priced separately and shall not be bundled into the device price.

6. Submission Requirements

- Third-party ANSI/AHAM AC-1 smoke CADR report from an accredited laboratory, at every tested setting.
- Accredited-lab sound data: A-weighted sound pressure at 1 meter, free field, with octave bands, at every operating setting, or ANSI/AHAM AC-2 sound power in its place. State the test distance and condition.
- Completed Room Inventory response with a proposed solution and device count for every room type.

- Performance over filter life: clean air and sound when new and at the recommended replacement point, with the loading method stated.
- Written acceptance of the acceptance-testing and remediation terms in Section 3.2.
- NRTL and FCC documentation.
- Confirmation of mechanical filtration only, and UL 2998 validation where any electronic component is present.
- Mounting option specification and manufacturer certification for that installation.
- Filter availability commitment for the supported life, with pricing.
- Warranty terms and stated service life.
- Installation, operation, and filter-replacement documentation.
- Appendix A. Decisions for the District
- Everything below is a choice to make before issuing. The rest of the document can usually be left as it stands.

Decision	Options and how to choose
A.1 Mounting configuration	Floor placement, wall or ceiling mounting, or mixed by room. Every compliant product offers a certified mounting option, so this is a deployment decision. Mounting keeps devices out of reach and buys back a few decibels at the loudest seat. It also carries the electrical work described under Section 3.5. Price that work before committing a whole building.
A.2 Tighter sound limits	Two cases worth considering. Hard-surfaced rooms, meaning no acoustic ceiling tile and a hard floor, hold sound rather than absorbing it and need roughly 3 dBA more headroom: use 38 dBA at 1 meter. Early grades and speech or hearing rooms, where young children and children with hearing loss lose more to background noise: consider 36 dBA at 1 meter, which holds the loudest seat near 40 dBA. Either change narrows the field and raises cost per room.
A.3 Central monitoring	Whether to require network connectivity and a management dashboard, or leave it as scored extra credit. Requiring it narrows the field and raises cost. Most districts should leave it optional for a first deployment.
A.4 Operating schedule	Continuous whenever powered; scheduled against a central calendar, with boost before school or during breaks; or occupancy-based, reducing when a room is empty. Vendors describe what their device supports and how it is protected from occupant tampering.
A.5 Large and high-ceilinged spaces	Rooms above 12 ft, or above roughly 1,200 sq ft, are not sized well by the formula in 2.2 and the device count rule in 3.2 does not apply cleanly. List them with area, ceiling height, and occupancy, and ask vendors to propose against the room volume with a stated equivalent air change rate. Gymnasiums and auditoriums are usually better served by fewer high-capacity devices, since occupants sit further from any one unit and the per-device sound constraint is looser.

Decision	Options and how to choose
A.6 Acceptance sample and teacher-report threshold	How many installed rooms to measure, and what share of teacher reports triggers remediation under Section 3.2. Section 3.2 carries [20] percent as a suggested figure; replace the bracket with your own. A first deployment is worth measuring more heavily than a repeat order.
A.7 Optional services	Installation, mounting, central monitoring, maintenance contracts, bulk logistics. Price separately so they can be compared or dropped.
A.8 Your own solicitation front matter	This document is the technical, evaluation, and pricing content. Add your district's submission deadline, questions deadline and contact, bid validity period, insurance and bonding requirements, standard terms and conditions, and non-collusion language before issuing.