-----Original Message-----
From: Rick_Roth@accessbusinessgroup.com
Sent: Thursday, February 12, 2004 4:24 PM
To: Abeysuriya, Milanga
Cc: Fanara.Andrew@epamail.epa.gov
Subject: Re: Draft 2 ENERGY STAR Room Air Cleaner Specification

Response/Comments to Draft 2:

The Draft2 Energy Star program contains statistical language that is
reasonably inconsistent with the existing AHAM AC-1 test procedure,
either for smoke or for dust evaluation. Again, while dust would be
acceptable, the majority of comparative data testing has historically
been aligned with smoke. The choice of the particle type is strictly
size regime, rather than source of the particles. Cigarette smoke is a
good consistent "typical" source of small particles (0.09 - 1 um),
while dust (AC Test
Fine) is a good "widely used" source of nominal particles (0.5 - 3.0
um). Typically, the large the particle size for test, the greater the
variability in results. Smoke has historically been chosen since
particles of that size range stay aloft in the environment longer, and
the results obtained are less variable than found with larger particle
regimes.

Statistically, the AHAM air cleaner program utilizes three air cleaners
tested according to the AC-1 standard method. The reported CADR is
typically an average of the three tested CADR values. A single CADR
test requires that the regression data set for both the air cleaner
operating decay and natural decay do not vary by more than 10%. The
challenge protocol for the industry stated CADR value requires that the
"audit" or "validation" test result must fall within 10% of the stated
CADR value. Comparably -- The EPA Energy Star tolerance of (-3%) would
exclude a statistically significant number of air cleaners that would
be found to be "acceptable" by either AC-1 or the AHAM industry
challenge protocol process.

Please remember, AC-1 is a true test of the actual performance of an
air cleaner- it is not a purely electronic comparison- it relies on
airflows in a room (sic chamber) and in the difference between a
natural decay and air cleaner operating decay. That is, some variation
will occur statistically from the natural decay, the air cleaner
operation, and the power use level (the latter two being manufacture
related). Also, the CADR variation and power variation are additive.
The overall variation will basically be the square root of the sum of
the squares of each variation (both power and CADR). Consequently,
requiring a (-3%) tolerance may exclude a significant number of all air
cleaner models based upon a single challenge test.

Might I then suggest that the Energy Star program consider a (-10%)
variation for products above the minimum CADR/watt level criteria while
continuing the required caveat of a maximum (-3%) deviation at the
minimum CADR/watt level. In this way, the minimum criteria to meet
Energy Star is maintained, but the model requirements are still

reasonably (but still more stringently) in line with the AC-1 method requirements.

Sincerely,

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