Why are IQAir units offered without “air quality sensors”?

Some manufacturers offer air purifiers “air quality sensors” which supposedly switch off the air cleaner or reduce the fan speed when air quality is good and then turn back on if pollution increases.

IQAir does not incorporate any air quality sensors into its high-performance air cleaners, in spite of the fact that IQAir also manufactures ParticleScan™ laser airborne particle counters and AirVisual™ air quality monitors. The main reason why IQAir does not offer air purifiers with sensors is that such features amount to little more than technical gimmicks that function poorly and in many cases give the user a false sense of security.

IQAir research has shown that many air purifiers equipped with air quality sensors automatically shut off even though high pollution levels were still present within the room. One reason can be found in the poor quality of the sensors used. Another reason is the subjectively defined threshold level at which the air is deemed to be "clean enough" or "healthy enough“ to allow the air purifier to shut off. Whether air is really “clean enough“ in a specific environment should not be left for the air cleaner manufacturer to decide. Instead it will always depend on the application, the type of indoor environment and of course the user’s needs and sensitivities.

Also the location of most air quality sensors on the air cleaner itself (often positioned directly at the clean air outlet) is illogical because the air is of course usually cleaner close to the device than at a few meters distance (where the user is likely to be).

Most sensors that are used in air purifiers are also very cheap (less than 5 dollars), inaccurate and unreliable. For comparison: a professional laser particle counter for particulate matter ≥ 0.3 microns costs about USD 2'000. For 5 dollars, the user cannot expect a reliable sensor and therefore no reliable fan speed adjustment of the air cleaner.

Furthermore, one must question which and how many different air pollutants can actually be evaluated by a cheaper "air quality sensor" from a technical perspective. The answer is that there are currently no sensors available that can reliably detect and evaluate different types of pollutants, such as fine dust, allergens, bacteria, as well as chemical substances such as VOCs, formaldehyde and ozone all at once.

Even if the combination of highly accurate sensors for many different air pollutants in one single device should become possible one day, the definition of a "healthy" level for each pollutant would still be questionable. People often react very differently to air pollutants (especially asthmatics and allergy sufferers). What is "safe" for one individual, could possibly trigger an allergic reaction or even an asthma attack in another individual.

IQAir’s Position

It is a fact that no air pollutant, allergen or microorganism is necessary or "healthy" for humans. Consequently, the lower the pollution levels in a room, the lower the probability that the air negatively impacts our health. For this simple reason, we are of the opinion that our indoor air can almost never be classified as "clean enough", no matter whether we live in an urban or rural region. Therefore, it is not logical that an air purifier should automatically switch off when a subjectively defined air quality threshold is reached. The subjective definition by a manufacturer that a particular pollutant level is "acceptable" for all individuals is simply as false as the claim that only 2-3 cigarettes a day are “healthy“.

As a leading manufacturer in the field of indoor air filtration with over 50 years experience, IQAir is of the opinion that it is far more important to ensure that an air purifier actually achieves the advertised filtration performance, than to offer a device with technical gimmicks of questionable benefit. For that reason we individually test and certify each IQAir room air purifier for *actual* air delivery and *actual* filtration efficiency in real- life conditions. The hand-signed *Certificate of Performance* included with each system provides the ultimate guarantee that the IQAir will perform as advertised.

AirVisual - IQAir’s Smart Air Quality Monitor

If accurate measurements of pollution particles are required, IQAir offers the AirVisual Pro smart air quality monitor. This desktop monitor provides real-time measurements of particulate pollution (PM2.5), carbon dioxide (CO2), humidity as well as temperature. All measurements are displayed on a large, easy-to-read colour display. The instrument also allows comparison of indoor air quality with outdoor air quality measured by the nearest public air quality measuring station, thus allowing for adjustment of pollution control measures whenever required.

Blumenfeldstr. 15 • CH-9403 Goldach • Switzerland • Tel.: +41 71 844 0844 • Fax: +41 71 844 0845 • e-mail: info@incen.com • www.iqair.com