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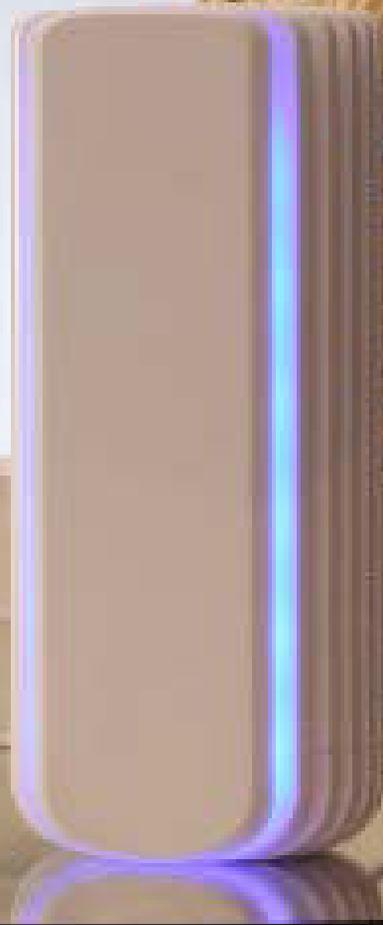
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Tapping Into On-Demand IAQ Profits



New technologies offer benefits to customers and contractors alike.

BY AARON ENGEL

Photos courtesy of Fresh-Aire UV.

On-demand indoor air quality (IAQ) is still an emerging niche for most contractors. Despite that fact, a Florida service contractor foresees that market commanding 12.5% of its HVAC business in 2018.

The Internet of Things (IoT) and the rise of smart, connected homes has created the on-demand IAQ category, which a Florida contractor committed heavily to late last year and has already surpassed 150 installations.

“On-demand IAQ requires educating the customer, but once we install them, they love them,” said Dan Cloutier, HVAC division director, Florida Energy Water & Air (FEWA). “I’ve never had a customer ask to take one out, and I haven’t had any on-demand IAQ systems fail.”

The on-demand IAQ HVAC niche promises exponential sales increases as service crews introduce their customer-base to on-demand IAQ during service calls over the next two years, Cloutier said. While the sales potential is promising, profitability looks even better as the contractor claims on-demand IAQ systems offer significantly better margins than unitary equipment.

What is on-demand IAQ?

On-demand IAQ is the interconnection of equipment, such as whole-house air purifiers, air quality monitors, smart/wireless thermostats and similar devices. The interconnection is made via the home’s Wi-Fi network and the IoT, which is a network of physical devices, vehicles, buildings, or other items embedded with electronics, software, sensors, actuators and network connectivity that enable them to exchange data compatibly.

When there is a need for improved IAQ, due to excessive airborne particulates or volatile organic compounds (VOC), the air quality monitor wirelessly signals the thermostat, which in turn activates the air handler’s blower. This circulates the air and enables the installed whole house air purifier to reduce contaminants in real-time. Beyond particulate and VOC reduction, the UV-C section of the whole house air purifier reduces viruses, bacteria and mold that thrive within, as well as pass through the air handler during activation.

Currently, on-demand IAQ units are available to HVAC contractors at wholesale distributors as a bundled air quality



« A service tech shows a customer how to program their thermostat for IAQ.

monitor, a Wi-Fi thermostat and an air cleaning device for installation in the air handler to enable whole house air purification. On-demand IAQ is also available bundled as an air quality monitor/whole house air purifier duo for those contractors that want to use their own preferred brand of Wi-Fi thermostat.

There are many whole house air purifiers, air quality monitors and Wi-Fi thermostats already on the market, but the emergence of IoT makes it possible to integrate them so they can communicate with each other and enable their full potential. An air quality monitor may provide some useful information but does nothing by itself to improve air quality. Likewise, a whole-house air purifier is only effective when the HVAC system fan is circulating air. Smart and connected home IAQ devices solve this problem by working together to automatically respond to changing conditions inside the home in real time, or in other words—on-demand IAQ.

The equipment

The Florida contractor uses a two-component bundle (air quality monitor and air purifier) with its own preferred compatible Wi-Fi thermostat brands. Cloutier tends to use thermostats that are compatible and easily programmable with the air quality monitor, since the two must communicate with each other. The thermostats must also have multiple sensor capability for sensing different areas of larger homes. Most importantly, the thermostat allows the service tech to log the contractor's phone number into each thermostat so the homeowner can easily contact them without hunting for a decal. The company's preferred air cleaning device in-

corporates a combination UV/titanium dioxide-infused carbon air purification system.

How it works

The air quality monitor is the brains of the connected system. It turns on the blower fan when an IAQ degrading event takes place. The contractor's preferred air quality monitor emits an orange light during excessive particulate or VOC periods. This visual confirms the system is operational, especially when it activates the system fan. The system shuts off once IAQ is returned to predetermined set points, and the air monitor emits a blue "okay" light.

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The air quality monitor is the brains of the connected system.

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“Presenting IAQ equipment almost always prompts the question ‘How do I know this works?’” said Cloutier. “The air monitor's orange and blue lights answer that question.”

Aside from the air quality monitor's lights, end-users notice the on-demand IAQ system is working because VOC odors from sources such as home furnishings, paints, household cleaning chemicals, pets and cooking are not present, according to

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The contractor believes in UV lamps enough to include them in 95% of its new air conditioning installations.

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Cloutier. For skeptical homeowners, especially those with new homes, he sometimes promises to remove any system if a difference isn't noticed in 30 days. He has yet to remove a system and knows he is also backed by the manufacturer should there be an unsatisfied customer. Customers also ask about operational costs. Consumers perceive running a fan as wasteful when temperature/humidity are already satisfied. However explaining that an air handler's fractional horsepower fan doesn't require much more than pennies per day to run usually quells those fears.

The contractor's service techs receive incentives for selling on-demand IAQ. It is not uncommon for some service techs to sell an average of four units weekly. Every service truck has a stock of four units. The contractor believes in UV lamps enough to include them in 95% of its new air conditioning installations. The UV light is included as part of the flat pricing it sells as a total system.

"I don't want the customer coming back to me in a year or so telling me there's mold on the coil," Cloutier said. "It raises our initial cost against the competition, but I think customers appreciate we're not installing a bare-bones system and we're adding accessories that increase value and health."

With rising salaries, health benefits, truck expenses and other costs required to keep a service crew operational, many contractors don't want service call time taken to educate customers, however Cloutier disagrees. "This is a relationship business and educating customers makes them more comfortable with us and builds relationships that eventually turn into referrals," he said.

An on-demand IAQ system installation requires approximately 30-minutes, which includes plugging in the air quality monitor, downloading the optional app to the customer's smartphone, replacing the thermostat with a Wi-Fi model, installing the combination UV/titanium dioxide-infused carbon air purification system in the air handler and showing the customer how to operate the app. The service tech also fills out the whole house air purifier manufacturer's two warranty cards. The air purifier is available with a one-year or two-year UV lamp option, as well as a low-voltage or high-voltage model. The manufacturer contacts the contractor and the homeowner when the UV lamp is due for replacement.

Training techs to sell

The contractor has 10 service crews within its six branches and all service techs are trained and incentivized to sell all types of HVAC aftermarket equipment. For any type of IAQ equipment, service techs use a mold kit to spot biological growth inside the air handler coil area.

"We aren't a mold remediation company, so we call them 'protein' kits," said Cloutier. "We're careful not to be alarmists, like some HVAC companies that advertise on TV. Instead we educate the customer on why mold occurs and how to prevent it."

Each service tech uses a short, company-written script as a foundation for educating customers. The script states facts, such as nine-out-of-ten units have some type of biological growth and that a germicidal (UV) system can help prevent

the growth. The script also discusses eliminating VOCs in the home with carbon media. Techs also present facts such as the decline of residential IAQ due to current building codes mandating tighter, leak-free homes without the introduction of outdoor air.

With the help of laptops, techs conduct three-minute presentations to homeowners that discuss the features and benefits with easy-to-understand graphics, as well as a brochure explaining the on-demand IAQ process.

Building a niche

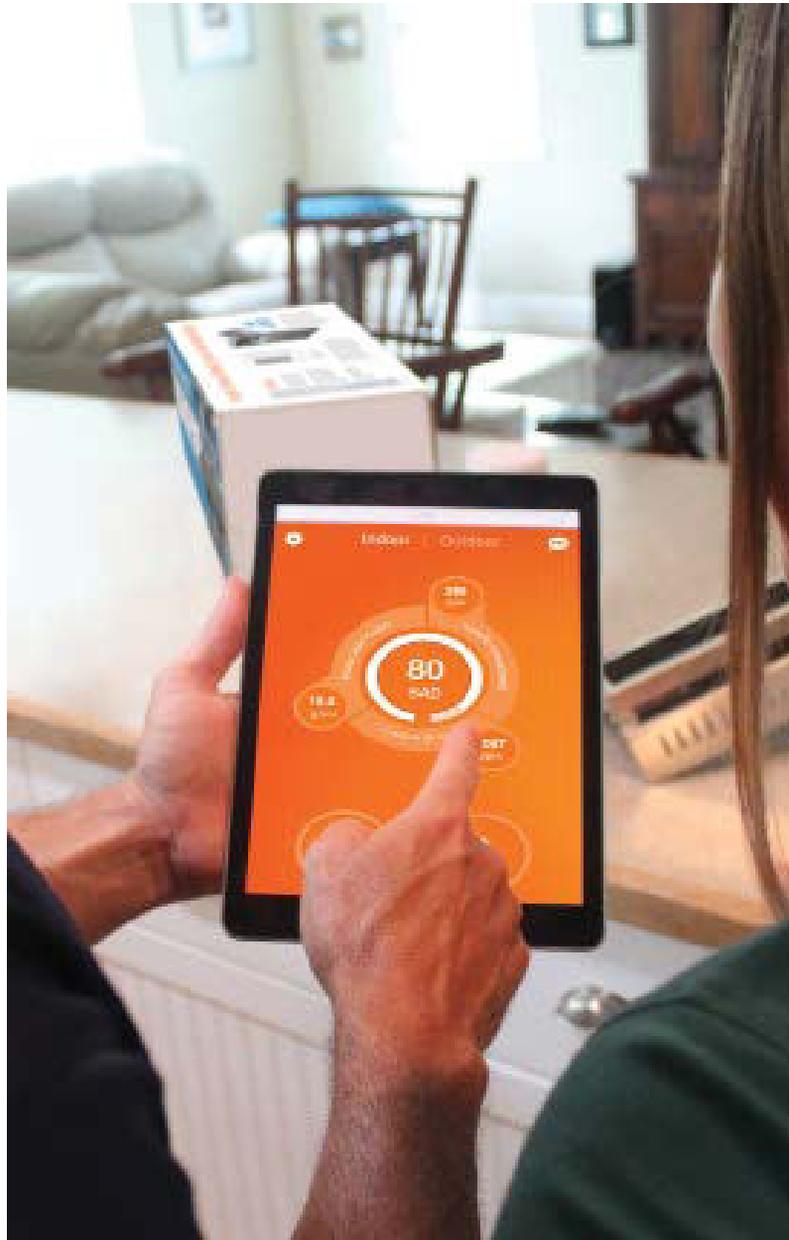
Cloutier is a longtime advocate of UV light systems for disinfecting air conditioning coils and eliminating airborne biological contaminants. Then, when combination UV/titanium dioxide-infused carbon air purification systems came on the market as air purification strategy for VOCs and odor removal, the contractor embraced the technology. Thus, it has more than a 15% a month growth rate in just combination UV/titanium dioxide-infused carbon air purification systems since incorporating them more than a year ago.

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The continuing tightening of residential building envelopes, combined with little or no outdoor air introduction is a driver for on-demand IAQ.

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In five years, the contractor expects IAQ to be 15-18% of its HVAC business, with the on-demand segment playing a major role. To reach those goals, it will continue searching, testing and introducing new IAQ products to its product lineup.



⤴ On-demand IAQ uses apps to operate and monitor the system.

The continuing tightening of residential building envelopes, combined with little or no outdoor air introduction is a driver for on-demand IAQ. In Florida, Cloutier expects even more business for on-demand IAQ because of a new Florida building code that mandates testing and replacing air handler enclosure door seals for additional efficiency. “This new code will definitely drive up the on-demand IAQ business, but a lot of contractors still aren’t committing to it,” Cloutier said. 🌩

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