

Nortek, which manufactures central air conditioners under several brands and was a pioneer in inverter technology for central air conditioners, also uses microchannel technology now in all of its central air conditioners. In *microchannel technology*, the individual copper tubes that surround a central air conditioner's condenser and compressor have been replaced by an aluminum channel of tubes that contain holes through which the refrigerant flows, says Tim Alford of Nortek. These holes are much smaller than are those that are in conventional copper tubes, and more tubes exist in an air conditioner that has the microchannel design, which creates more surface area for heat transfer. Consequently, this technology helps to improve the efficiency of the air conditioner, so it uses up to 50 percent less refrigerant than do conventional models, Alford says.

Microchannel technology has an additional benefit—lower installation, maintenance or repair costs for consumers if the air conditioner has to have additional refrigerant, Alford says. In addition, central air conditioners that use microchannel technology take up less

space next to your home than do models that don't have the technology. For example, Nortek's previous 16 SEER, 2-ton air conditioners were 31-1/2 inches wide by 31-1/2 inches deep. When Nortek switched to microchannel technology, the width and depth of these models were reduced by 8-3/4 inches to 22-3/4 inches. Other manufacturers are beginning to incorporate microchannel technology in their central air conditioners, Alford says.

**CONTROL FREAK.** Besides efficiency, manufacturers of central air conditioners also are focused on Wi-Fi connectivity.

Barga says more than half of Trane's central air conditioners have Wi-Fi connectivity that allows for increased functionality. Included in this is the automatic communication of diagnostic fault-code alerts to the contractor from the air conditioner. When a problem with your central air conditioner arises, it sends an alert to a mobile app that your contractor downloaded. (You'll receive a similar notice that's sent to a mobile app that you download.) This ultimately saves you money, because these warn-

ings tell the contractor what's required so he/she can fix the problem, which keeps him/her from having to make a costly trip to your home to analyze the situation, Yates says. The app also allows the contractor to view a troubleshooting chart and the operating manual, which further helps to save time and, thus, money during a repair, he adds.

Connected central air conditioners also allow consumers to program a smart thermostat via their app and adjust it when they aren't home. Rheem's Farooq Mohammad tells us that his company is betting on increased interest from consumers to control their air conditioner on the go, so they can enjoy more-precise comfort and energy savings.

Wi-Fi connectivity is common among premium central air conditioners that cost at least \$4,000. At least three manufacturers added Wi-Fi connectivity to their midrange models, and it's expected to become much more common in the next 2 years.

Experts agree that the next step in the functionality of connected central air conditioners will be monitoring, which

*(Continued on page 64)*

## Best Buys in Ductless Split-System Air Conditioners

### Best Buy Categories

- [P]—Premium selection
- [M]—Midrange selection
- [E]—Economy selection



SEE PAGE 64

Best Buys in ductless split-system air conditioners were selected based on energy efficiency, noise level, features, brand reliability and warranty.

We considered only wall-mounted models.

Best Buys are for a series of models.

Peak seasonal energy-efficiency ratio (SEER) is the ratio of output in Btu and watts that are used.

Not all manufacturers publish MSRPs for ductless split-system air conditioners. In cases where a manufacturer didn't provide an MSRP, our MSRP is based on input from contractors and installers' price books.

Best Price isn't available, because retail prices include instal-

lation charges that vary among contractors and regions.

### [P] Mitsubishi M

MSRP: \$1,500–\$2,000

>>The M is a repeat Best Buy selection, because it continues to set itself apart from the competition among ductless split-system air conditioners. This model's peak SEER is the highest that we found by 2.5 points. No other ductless split-system air conditioner provides more indoor-fan speeds (six) than does this model.

#### Features:

- \* Output: 6,000–34,200 Btu/hr.
- \* Peak SEER: 33.1
- \* Warranty: 7 yrs. compressor; 5 yrs. parts

### [M] Comfort-Aire VMH UltraV

MSRP: \$1,149–\$1,866

>>The VMH UltraV delivers the highest efficiency among ductless split-system air conditioners that



Mitsubishi M

we found in this price range. We wish that its parts warranty were longer than 2 years.

#### Features:

- \* Output: 9,000–24,000 Btu/hr.
- \* Peak SEER: 25.0

- \* Warranty: 7 yrs. compressor; 2 yrs. parts

For more information about the above Best Buys, contact the manufacturers directly. See page 63.