

# EcoArch Energy Efficient Ventilation System



**Since its introduction in 2007, the Avtec EcoArch has taken the commercial kitchen ventilation market by storm. And with good reason—the EcoArch is the most energy-efficient, operations-friendly, exhaust-only hood on the market.**

# EcoArch Energy Efficient Ventilation System

## ENERGY-EFFICIENT DESIGN

The combination of our innovative arch top and front-mounted, high-velocity exhaust slots reduces the amount of exhausted CFM by up to 60% compared to traditional CFM rates. This translates into an annual energy savings approaching 55%, which is better than all major competitors.

## PATENTED AERODYNAMIC ARCH

The height/design configuration of our arch-top hood is critical to minimizing turbulence and maximizing the amount of heated air that can be contained and exhausted. Contaminated air is rolled away from the chef and directed to our front-located exhaust plenum where the vast majority of it is instantly exhausted out of the reservoir area. In contrast, when trapped, heated air hits the perpendicular surface of competitive, flat-top hoods and “explodes” in a turbulent, multi-directional manner adversely affecting performance.

## HIGH-VELOCITY EXHAUST SLOT

The front-located, high-velocity exhaust slot runs the entire length of the hood along the top. This location, coupled with the arch design, is key to mastering the capture of contaminated air at very low exhaust requirements. It creates a rate of speed higher than the updraft velocities developed during the cooking process and allows heated air to flow directly to the filter medium.

## FRONT-LOCATED EXHAUST VENTS / GREASE FILTERS

Vents and filters are easy to reach, remove, clean and replace. In all aspects of the EcoArch system, ease of use is inherent. This is especially important in kitchen environments challenged by skilled labor shortages and turnover.

## OPTIONAL HEAT SENSORS

Heat sensors automatically turn on the exhaust fan when heat from a cooking operation is detected. Our heat sensors are clearly visible. Other hood systems put them in the exhaust collar, slowing response time and making ordinary cleaning of sensors much more difficult.



## QUALITY CONSTRUCTION

The EcoArch has gained a reputation for superior design and reduced complexity. Compared to competitors, its first-rate construction shrinks service costs and minimizes the chance smoke, heat, and grease will escape into the kitchen environment, which increases energy costs (air-conditioning load) and decreases productivity (unpleasant workspace). If the hood is located in an open where it is visible to patrons, this can make the environment uncomfortable for the customer too.

## LIGHT FIXTURE ALTERNATIVES

This feature allows users to maximize lighting at the cooking surface with the least amount of energy consumption. Incandescent light fixture shown. Optional recessed fluorescent light fixtures available.



## OPTIONS

- PBB ceiling-mounted, perforated make-up air plenum box
- Ceiling enclosure panels
- Hanging rods
- Pre-piped wet chemical fire extinguishing system
- End-mounted cabinet for fire system
- Wall flashing
- Hood-mount fan on/off buttons

### SMALLER DUCT WORK

Minimizes roof penetration; lowers upfront cost.

### CONTEMPORARY APPEARANCE

The smooth, curved lines of the EcoArch enhance visual appeal and ease cleaning.

### FRONT-MOUNTED MAKE-UP AIR PLENUM

Make-up air is introduced to the kitchen space by way of a full length, make-up air plenum located along the front of the hood. Make-up air is introduced at low velocities so as not to interfere with the hood's performance and to provide additional comfort for employees. The make-up air plenum can be mounted flush with the ceiling or extended down as shown, and, can be mounted next to the hood (as shown) or further away from the hood depending on job site conditions.

### CHEF-FRIENDLY

The EcoArch is designed to direct heated, contaminated air away from the chef immediately. The front-mounted exhaust plenum, high-velocity exhaust slot and aerodynamic arch are critical design features in accomplishing this objective. Competitive hoods don't compare.

### QUIET OPERATION

Not only does the EcoArch reduce the amount of exhausted CFM by up to 60% compared to traditional CFM rates (which can translate into energy savings over 50%), but it does so more quietly than any other hood.

### COLLAR SYSTEMS

The EcoArch has energy-efficiency ratings on both single-duct-collar and dual-duct-collar systems. Hood sections nine feet and above are more energy efficient with a dual-collar system. Unlike competitors, the EcoArch requires smaller duct work, so on larger hoods, this savings easily offsets the cost of dual collars customers prefer for the increased energy efficiency.

### FAN EFFICIENCY

Unlike some competitors, the EcoArch does not require a secondary fan to optimize performance—the EcoArch does not need to blow extra air around to achieve energy efficiency and capture our rates. The secondary fans, located either on the hood or in another room, require ancillary duct work and carry additional installation expense and operational cost. A secondary fan is a more expensive solution to energy efficiency.

### FASTEST PAYBACK

Less make-up air is required for the EcoArch, so duct work, fans, etc are smaller thereby reducing installation costs. Couple this with a design that significantly lessens HVAC energy costs and features that allow it to operate at a lower cost than competitors, and the EcoArch handily garners the best-in-class-for-value title.



### OPTIONAL CONTROL PANEL

Controls for the EcoArch can be on the outside of the hood making access by kitchen staff convenient. Some competitive hood systems locate controls inside the hood so routine adjustments are a more burdensome process.

**ecoAZUR**<sup>®</sup>  
powered by *intellinox*<sup>™</sup>

## OPTIONAL ECOAZUR DEMAND CONTROL KITCHEN VENTILATION (DCKV)

The Avtec EcoAzur takes DCKV to a new level of performance, maximizing your energy savings in off-peak operational hours where cooking demand is low to idle. Its evolutionary design is easy to maintain and easy to install and start-up. Save energy the smart way.

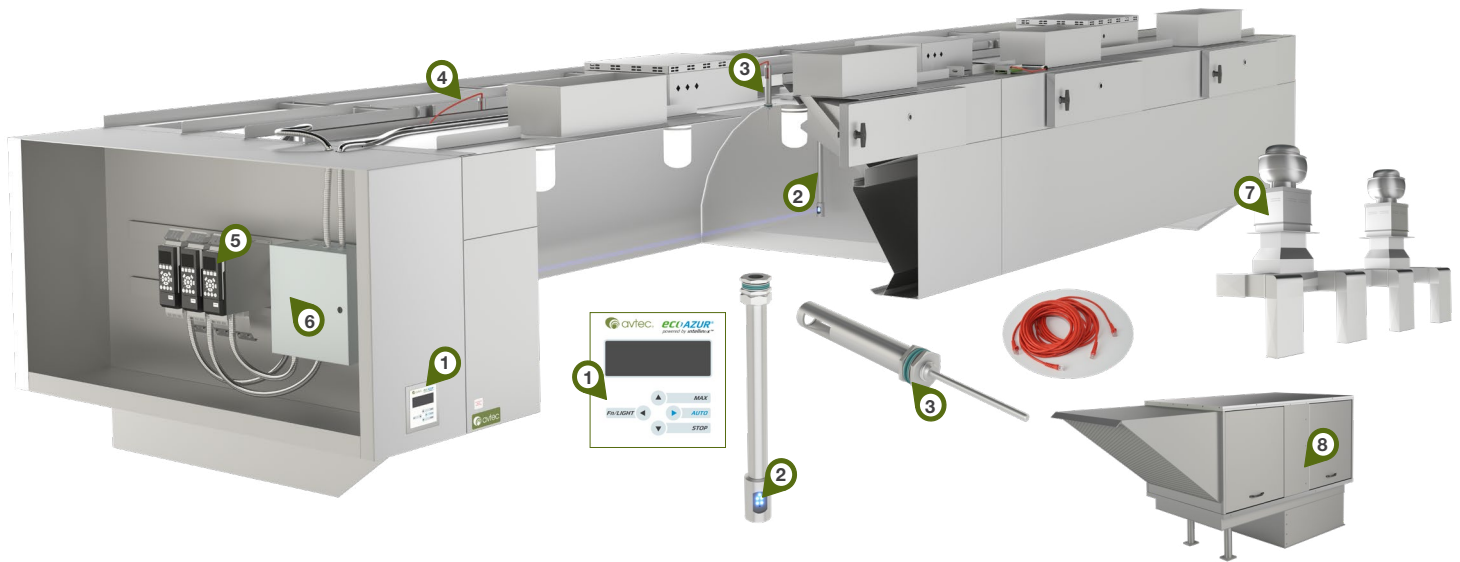
To maximize your energy savings you have to be able to detect any sign of cooking, even low heat which may only produce vapors or smoke that won't set off the heat sensors. The optics of EcoAzur react to even the lowest start-up emissions and turn your fan on before smoke fills your kitchen.

- Control two or more hoods, each with its own optic and heat sensors
- Control the speed and exhaust rates of multiple fans
- Manage the energy of one or more make-up air units
- Communicate with your Building Management System (BMS)



### HOW IT WORKS

During cooking, steam or fumes are produced and the temperature rises. EcoAzur detects fumes, steam, or temperature change (or any of the three), and adjusts the ventilation system accordingly to maintain optimal air quality and maximize comfort. Once the temperatures return to normal within the hood and all fumes and vapor are gone, EcoAzur brings the exhaust and make-up air rates back to the preset level, or as low as 30% of full speed.



## 1. CONTROL TOUCH PAD

- Control up to five hoods or control up to 20 combinations of exhaust fans, make-up air units and dampers, with one control
- Each hood exhaust rate is displayed as a percentage of full speed, four hoods at a time
- Manual Over-Ride Button to full exhaust speed
- On/off hood light switch (EcoAzur, EcoAzur PLUS only)

## 2. OPTIC SENSORS

- Set of two per hood
- The EcoAzur light wave is the most efficient of all light beams
- Maximizes energy savings by allowing lowest ramp down speeds
- Continuous recalibration for optimal performance/reliability
- Machined from solid stainless steel bar stock for strength and beauty
- Easy to clean with spray washable durability, or simply wipe clean in place — optics flash when they need to be cleaned
- No special purge fans needed to maintain functionality

## 3. HEAT SENSORS

- Supplied along each hood
- Best used in conjunction with optics sensors
- Temperature span level fully customizable

## 4. PLUG-N-PLAY COMPONENTS

- Factory installed, easy installation
- Plug-N-Play of all key components and communications
- Field wiring simplified with use of RJ45 cable connections

## 5. VARIABLE SPEED DRIVES (VFD)

## 6. CONTROL PANEL

## 7. EXHAUST FANS

## 8. MAKE-UP AIR UNIT

## AVAILABLE MODELS

### EcoAzur LITE

When budgets are a concern, EcoAzur LITE offers energy savings using a heat-only system at a more economical price. This entry level option is the only upgradeable system that allows the additions of optics in the future. EcoAzur LITE gives you the ability to control one hood, one exhaust and one supply fan. Unit is standard with heat sensors. Optic sensors can be added as an option.

- One hood with heat sensors (optics optional)
- Control the speed and exhaust rates of one exhaust fan
- Manage the energy of one make-up air unit

### EcoAzur PLUS

When managing one hood with multiple ducts or multiple hoods to one fan and one make-up unit, the EcoAzur PLUS system provides modulating dampers at each duct to allow localized control by opening and closing dampers in sections of hoods and cooking zones as needed. All while saving energy using the optics and heat sensors of the EcoAzur system.

- Two or more hoods, each with optics and heat sensors
- Control the speed and exhaust rates of multiple fans
- Manage the energy of one or more make-up air units
- Communicate with your BMS
- Control multiple duct connections when using common fans — modulating dampers allow precise control of exhaust air at each duct
- Control each hood even if they have a common fan
- With Modulation Dampers, manage exhaust rates at each duct collar within the same hood and manage multiple hoods tied into a common fan
- Field install Modulating Dampers without cleaning, cutting or welding duct work

## Energy Savings Example

TEMP	HOOD TYPE	LENGTH	ANNUAL COST	ANNUAL SAVINGS
LOW	Standard	10'	\$4,264	<b>30%</b>
LOW	EcoArch	10'	\$2,985	
<b>COST SAVINGS:</b>			<b>\$1,279</b>	
MEDIUM	Standard	10'	\$6,396	<b>42%</b>
MEDIUM	EcoArch	10'	\$3,731	
<b>COST SAVINGS:</b>			<b>\$2,665</b>	
HIGH	Standard	10'	\$8,528	<b>44%</b>
HIGH	EcoArch	10'	\$4,797	
<b>COST SAVINGS:</b>			<b>\$3,731</b>	

**Light Duty** if operating: steamers, ovens, kettles, or pasta cookers  
**Medium Duty** if operating: ranges, griddles, fryers, braising pans, rotisseries  
**Heavy Duty** if operating: broilers, woks

## Why Choose Avtec EcoArch Energy Efficient Ventilation Systems?

### Significant Energy Savings

Achieve up to 44% reduction in energy consumption by minimizing air loss, resulting in less conditioned air being required.

### Enhanced Workplace Productivity

Noise reduction improves employee satisfaction by fostering better focus, reducing errors, and facilitating clearer communication.

### Improved Safety and Ease of Maintenance

Front-access filters eliminate the need to reach over hot equipment, making cleaning safer and more convenient. This design also encourages regular maintenance compared to rear filter systems.

### Optimized Airflow for a Safer Environment

Smoke, steam, and grease are directed upward and away from kitchen staff, contributing to a safer and more efficient workspace.

### Lower Installation Costs

Requires smaller ductwork, fans, and roof penetrations, reducing overall installation expenses.

### Modern and Professional Aesthetic

The smooth, visible arch design enhances the kitchen's visual appeal and reinforces a professional image.

