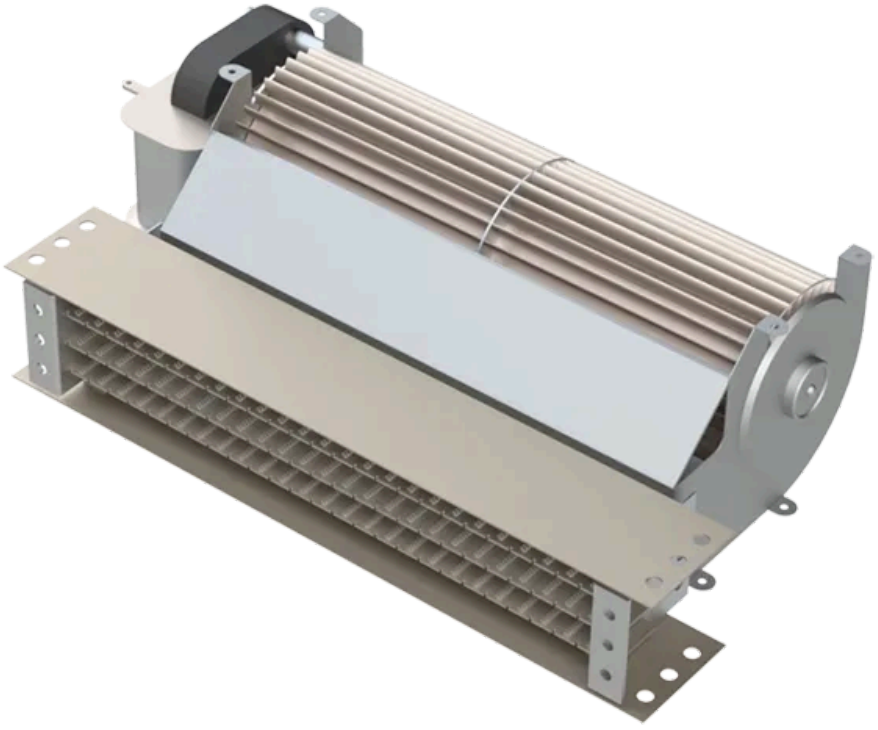
Crossflow Blower Heaters for the Food Service Industry

by Tim O'Shea

Crossflow (tangential) blower heaters are compact, wide-throw heating assemblies that pair a long, low-profile heater with a tangential fan. Together, the heater and fan create a broad, even air curtain. This airflow pattern is ideal for drop-in food warming cabinets, pizza holding cabinets, catering transport boxes, pass-through stations, and buffet lines due to the consistent surface temperatures delivered across trays and pans without hot spots or scorching. Modern electric crossflow heater modules also integrate safety features and precise temperature control, which makes them a practical, lower-risk alternative to gas-fired warming systems.

Why Crossflow is Especially Well Suited to Food Warming



Uniform coverage - The tangential blower produces a long, even flow that blankets a tray or cabinet shelf, eliminating cold corners and possible overcooking. This delivers more consistent results, reducing product waste and increasing customer satisfaction.

Compact footprint & simple integration - Crossflow heater assemblies are thin by design and mount directly to the blower exhaust or into a plenum. In short, they can fit into slim warming drawers and retrofit existing cabinets with minimal redesign.

Precise control & safety - Electric heater elements (including coil and PTC options) respond quickly to control inputs and are easier to pair with thermostats and thermal cutouts than open-flame gas systems. This is a major advantage when considering food-safety and liability reduction.

Making the Switch from Gas: The Practical Benefits

Cleaner Kitchens and Better Indoor Air Quality

Gas appliances emit combustion byproducts and can complicate ventilation requirements in compact kitchens or service counters. Electric crossflow heaters eliminate combustion emissions at the point of use, making simplifying compliance with indoor air and ventilation codes a breeze.

Tighter Temperature Control and Food Quality

Electric systems provide fast, repeatable control over element output. The combination of a controlled heater and a crossflow fan yields gentle, even warming that preserves texture and moisture, which is especially important for prepped plates or catering trays. Tight temperature control ensures that the food reaches the customer as if it just left the chef's pan.

Reduced Maintenance & Improved Uptime

Electric heaters avoid burners, pilot lights, and combustion-related components that require routine servicing. Fewer moving parts in the heating sub-system translate to lower preventative maintenance cost and less downtime for service.

Opportunity for Electrification and Efficiency Programs

When paired with efficient blowers and controls, electric warming systems can take advantage of broader electrification incentives and energy-efficiency programs. Recent energy studies and electrification reports identify net benefits when electric heating is combined with efficient system design and controls.

FOOD SERVICE INDUSTRY PAIN POINTS

Commercial kitchens and food-service operations face mounting pressure to balance performance, safety, and efficiency. Traditional gas-based warming systems often fall short in several critical areas:

Rising Energy Costs

Fluctuating fuel prices and growing electrification incentives are driving operators to seek alternatives that deliver the same heating performance with better energy predictability. Electric crossflow heaters provide targeted heat only where it's needed, cutting waste and operating costs over time.

Health Code and Ventilation Compliance

Gas-fired equipment can complicate compliance with evolving health and safety codes by introducing combustion byproducts into confined kitchen spaces. Electric crossflow blower heaters eliminate direct emissions, reducing ventilation requirements and helping operators stay ahead of regulatory standards.

Durability in Harsh Environments

Food-service equipment must endure frequent cleaning, high humidity, and long operating hours. Farnam's crossflow heater assemblies are built with robust materials and integrated safeguards to maintain reliability even under continuous use and repeated sanitation cycles.

Uptime and Reliability

In fast-paced service environments, downtime is costly. Electric heaters have fewer moving parts and no burners or pilot assemblies to service. This ultimately results in higher system availability and fewer emergency repairs compared to gas systems. By addressing these core challenges, crossflow blower heaters empower food-service professionals to achieve greater operational stability, compliance, and efficiency while maintaining consistent, high-quality warming performance.

How Farnam's Purpose-Built Heaters Stand Apart from its Competitors

Direct-to-Blower Mounting and Flexible Form Factors

Farnam's crossflow heaters are engineered to mount directly to the exhaust of common tangential blowers, removing the need for extra ducts or adapters and simplifying retrofit and new-design integration. Standard lengths (5", 7", 10", 12", 15") accommodate a wide range of cabinet widths and tray configurations.

Application-Focused Engineering and Support

Farnam emphasizes engineering support and custom sizing, with options for single/dual wattage, dual-voltage configurations, and integrated over-temperature protection. That capability means food-equipment OEMs and service operators can tune heater performance to the exact temperature ranges required for warming without over-spec'ing or sacrificing safety.

Recognized Safety and Component Certifications

Farnam lists UL-recognized components and integrated thermal cutouts and fuses, which are critical checklist items for commercial food equipment certification and for risk-averse procurement.

Breadth of Food-Service Experience

Farnam showcases heater technologies across food-service categories (cook to serve, food holding, etc.), and offers materials and mounting options suited to commercial environments. This aspect is refreshing to customers, delivering more practical solutions when compared with vendors who sell general-purpose fans or commodity heaters.

Implementation Blueprint

Assess the Warming Profile Needed

Map out and measure tray sizes, throughput, and allowable surface-temperature ranges. Crossflow heaters are especially effective where a long, narrow heating profile is preferred.

Define the Control Strategy

Choose Between on/off thermostats, PTC elements, or pulse-width control depending on the response time and stability required.

Request a Farnam Application

Review Farnam's food-service team can match standard lengths and wattages or design a custom mounting/heater assembly to replace a gas-fired element with a direct-mount crossflow heater that minimizes cabinet rework.

Engineer for Safety

Farnam integrates protective features such as airflow switches, thermal fuses, high-limit cutoffs, and interlocks directly into its crossflow heater assemblies. This built-in protection reduces the complexity of control panel design and makes regulatory approval more straightforward.

Validate & Tune

Begin with a focused Design of Experiments (DOE) to chart surface temperatures and drying times across the required width. Once the data is collected, set operating points accordingly. Properly matching wattage and minimizing excess temperature flips typically results in lower energy use per unit.

How to Evaluate a Crossflow Heater Supplier: A Practical Checklist

When selecting a supplier for biology and medical lab use, prioritize:

Air Cleanliness & Materials: Choose heaters with enclosed surfaces or tube-over designs that won't shed or outgas into the airstream.

Control Capability: Confirm compatibility with PID controllers and sensor types used in the instrument.

Safety Features: Integrated thermal fuses, hi-limit switches, and clear UL/CE documentation reduce certification issues.

Customization & Lead Time: Small instruments often require non-standard lengths, watt density tuning, or low-profile mounts, so it is important to verify engineering support.

Validation Support: Ask for performance data, thermal maps, and test reports to help with IQ/OQ/PQ where needed.

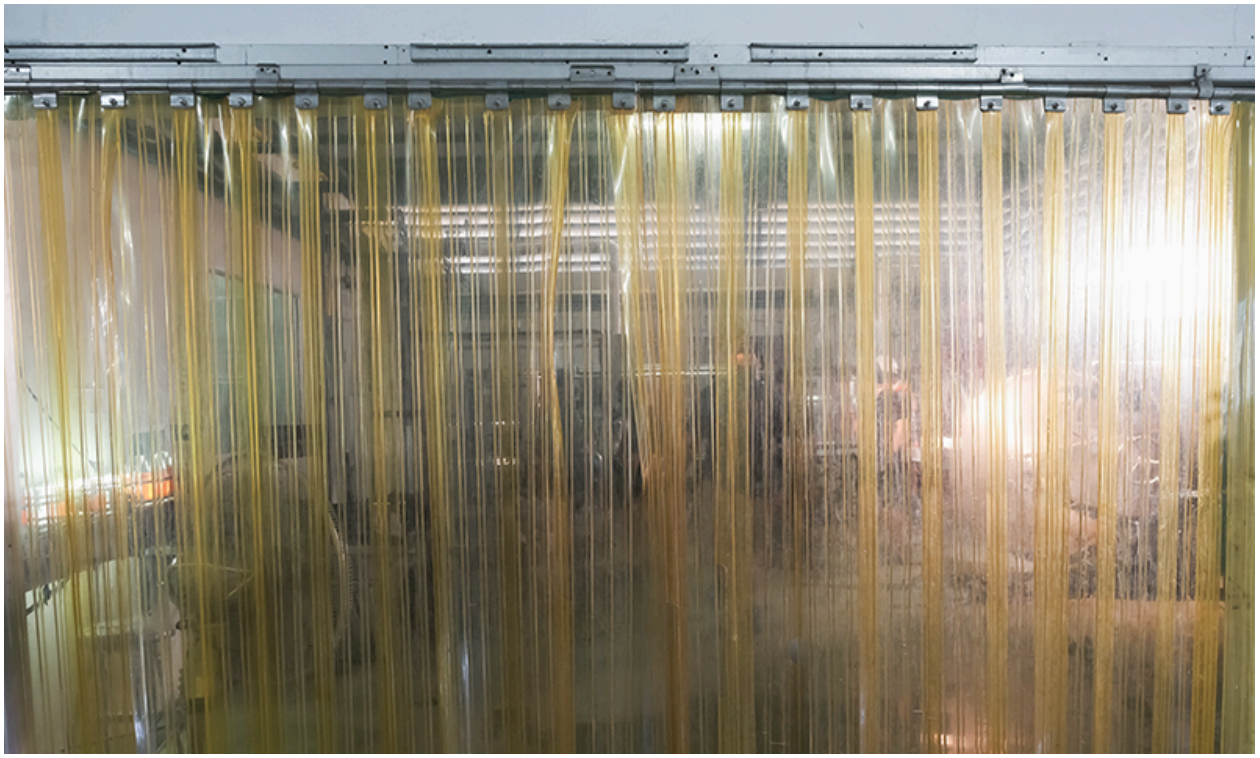
Farnam publicly highlights lab and medical project experience, which can accelerate qualification.

Next Steps for R&D or Procurement Teams

Electric crossflow blower heaters give food-service OEMs and facility teams a practical path to cleaner, safer, and more controllable warming. For projects that demand uniformity, unrivaled reliability, and certified safety, Farnam's purpose-built crossflow heater assemblies make a compelling alternative to gas. Customer confidence can be guaranteed, thanks to Farnam's

industry-leading experience providing the engineering support needed to convert concepts into reliable equipment on the line.

Related Products



Crossflow Blower Heaters and Air Curtains

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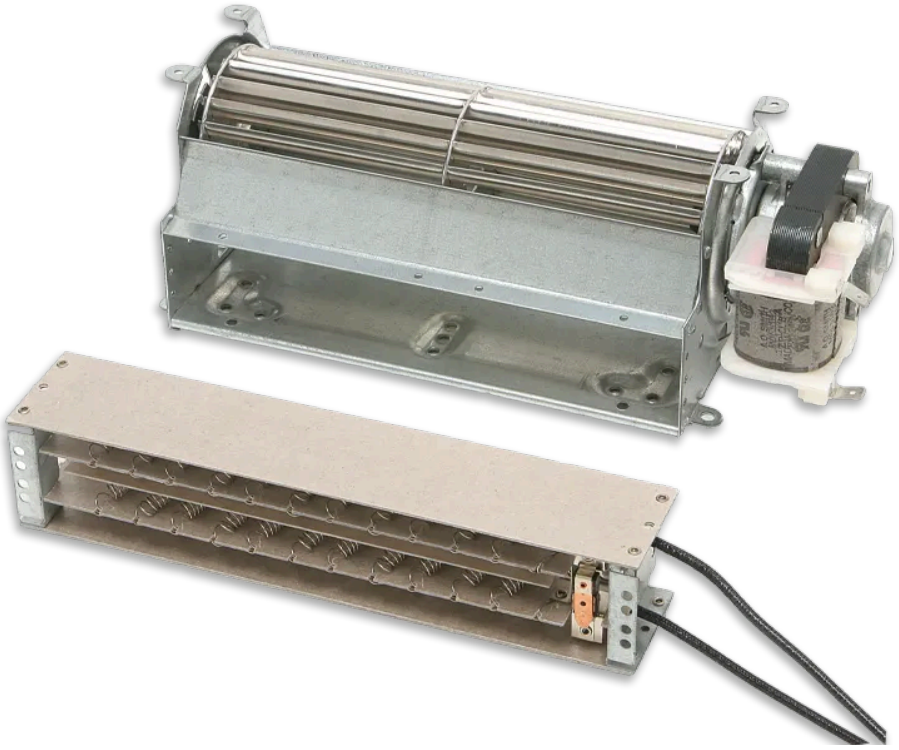

Crossflow Blower Heater: Uniform Wide-Air Heating

TUTCO Farnam crossflow blower heaters deliver even, energy-efficient heat for HVAC systems, air curtains, industrial dryers, appliances, and process heating.

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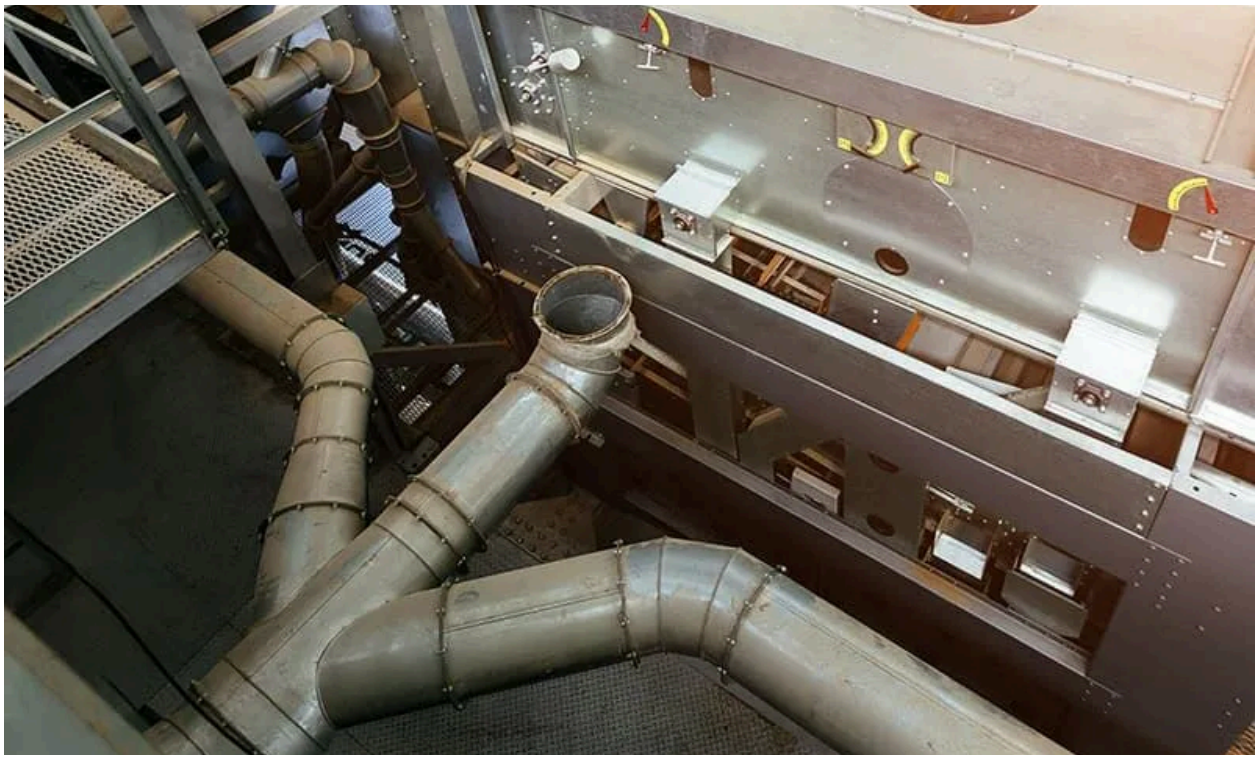

Industrial Dryers and Crossflow Blower Heaters

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