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ECLIPSE RATIOSTAR
DUCT BURNERS

Modular design flexibility and high performance for duct heating applications.

The RatioStar is a direct-fired air heating burner designed for duct heating applications. It is ideal for applications in which the oxygen content in the process air flow is low or where a short flame length is required.

Typical Applications

- Air heating processes that require optimum heat distribution in process air flows.
- Air heating processes that require optimum combustion efficiency (on-ratio control).
- Low oxygen process air flows that require additional heat.
- Process air flows with high inlet temperatures up to 1100ºF (600ºC), where standard air heating burners cannot be used.
- Processes that require low emissions of CO, NO_X and unburned hydrocarbons.

Burner Design

The RatioStar uses a modular design which can be adapted to almost any desired configuration. The RatioStar burner module dimensions are relatively small at 6"x 6" (150 mm x 150 mm). Each burner module consists of a flame stabilizer and a gas nozzle and is built from high quality stainless steel. The stabilizer is designed to create a swirl in the combustion air. The modular burner heads are configured in rows of up to 24 modules. Propagation modules are used to connect individual burner rows together to provide cross ignition.

Operating Range

The capacity per burner module is 425,000 BTU/hr (125 kW) at a fuel pressure of 34" w.c. (85 mbar) at the gas nozzle. At this capacity, the flame length is approximately 5 feet (1.5 m). The minimum capacity per burner module is 42,500 BTU/hr (12.5 kW). This results in a turndown from nominal capacity of 10:1. The process air flow upstream of the burner may have temperatures of up to 1110ºF (600ºC). Downstream temperature is limited to a maximum of 1830ºF (1000ºC). The burner is fired at an excess air percentage of 15% to 20%.The RatioStar operates on both natural gas and propane.

The modular design of the RatioStar provides the flexibility to create a wide range of burner matrix configurations. Eclipse engineers can design a complete RatioStar duct system with gas train and air blower to meet specific customer process heating requirements.

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Innovative Thermal Solutions

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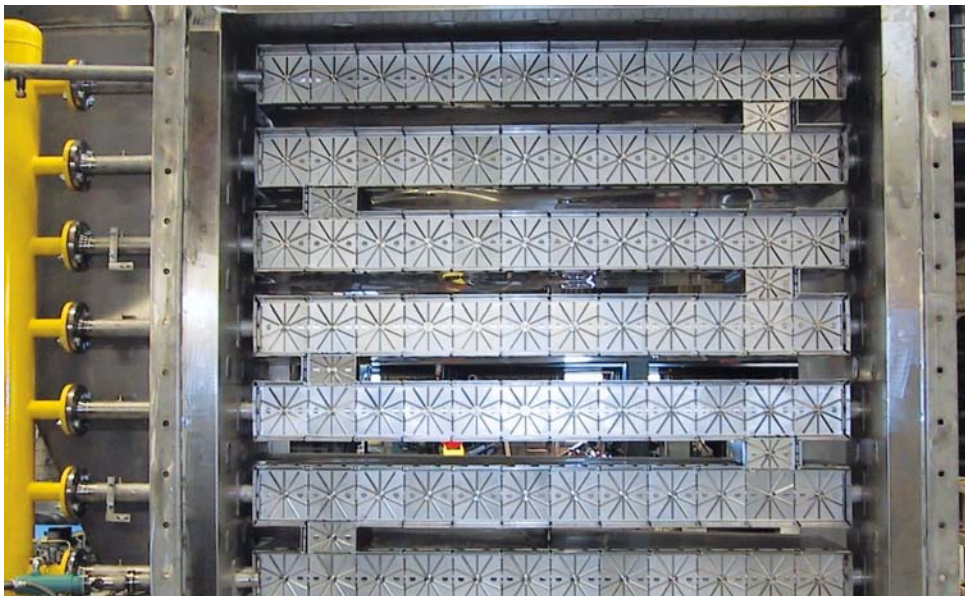

A (7) row RatioStar duct burner unit is shown with propagation modules.

Complete RatioStar system with air and gas inlet with linked valve control.

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