

SPECIAL FEATURES

HIGH EFFICIENCY

The Fibergas-II™ burner is designed to be the most efficient infrared emitter through the use of high temperature alloy matrix. The matrix panel provides even distribution and proper air fuel velocities which promote combustion precisely at the burner face.

HIGHER FACE TEMPERATURES

The amount of usable energy available to any process is governed by heat output and emitter temperature. Through testing with an infrared temperature measuring instrument, the Fibergas-II™ burner has been shown to produce a temperature of 1800°F (982°C). High emitter temperatures such as these not only assure maximum heat output but deliver radiation in wavelengths useable for most drying applications.

HIGHEST RADIANT OUTPUT

Physics dictates the maximum output of a radiant body operating at a given temperature. At 1800°F (982°C) the maximum radiant output would be approximately 48,000 BTU/ft²/hr. The Fibergas-II™ burner achieves 48,000 BTU/ft²/hr, which is the highest radiant output on the market today.

MULTIPOSITION

The Fibergas-II™ burner operates in all positions horizontally, face-up or face-down. The versatility provides for incorporation into the most demanding areas. The low ¾"- 2½" (19mm-63.5 mm) depth profile is easily retrofitted in existing equipment.

With new product and process technology under continuous development, production equipment is required to give precise and flexible control over production quality, while operating efficiently with minimum maintenance. With over 50 years of experience, Casso-Solar Technologies has been providing our customers the competitive edge.

MATCHING THE BURNER OUTPUT

Maximum absorption of energy is accomplished by matching the output of the heat source with the absorption curve of the material to be processed. An example would be drying water from a cellulosic material. In this case, the absorption peak of the water is between 2.6 microns and 3.0 microns. Operation of the burner between 1260°F and 1500°F (682°C and 815°C) would produce the most efficient energy transfer.

QUALITY THROUGH CONTROL

The extremely low mass matrix provides rapid response to control commands. Heat-up from cold start-up occurs within seconds and cooling to touch is faster yet. Such quick response times insure that the Casso-Solar Technologies Fibergas-II™ heater will react as the system control dictates. Stability at setpoint allows process temperatures to be maintained within extremely tight tolerances.

SUPERIOR TURN DOWN RATIOS

3.2:1 turn down ratios are attainable with the low porosity burner matrix. The emitter face is easily controlled to 1380°F and as high as 1800°F (760°C and 982°C). With such a large operating range, any concern about operating at low fire rates is eliminated.

QUICK ON/OFF

Cold start-up to 90% power will be accomplished within 10 seconds and shutdown from 90% power to "cool to touch" will take 10 seconds. With cool down rates this fast, web fires, melt downs and scrapped product will be totally avoided. No additional cooling or shielding devices are required for safe shutdown.

SPECIAL EDGE SEAL DESIGN

Fibergas-II™ panels incorporate a unique edge which allows radiant output to the full perimeter of the radiant surface. The design does not require any additional cooling source or special cooling channels to keep edges from degradation. This simplifies system design, reduces hardware requirements and maintenance.

EASY INSTALLATION WITH STANDARDIZED GAS TRAIN AND CONTROL

The Fibergas-II™ emitter is easily installed with a premix combustion system, ignition and flame safety devices and control system.

HEAVY DUTY CONSTRUCTION

The Casso-Solar Technologies Fibergas-II™ heater is manufactured to be resistant to mechanical and thermal shocks. Please contact our experienced sales engineers to confirm the correct application of the Fibergas-II™ heater.

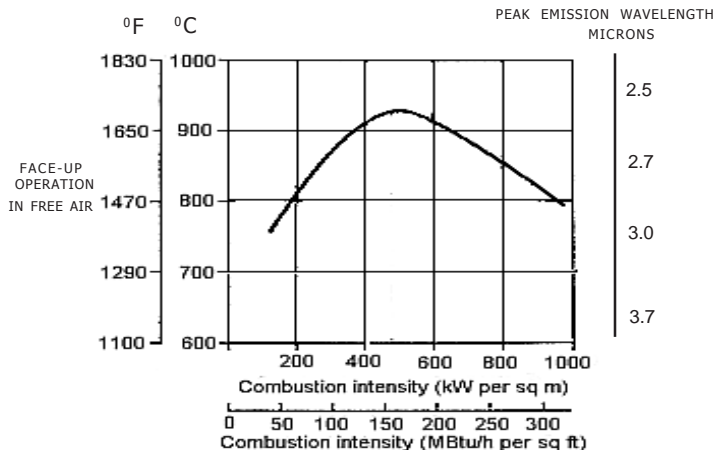
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WIDE AREA FLAT PANELS

Construction allows the flat panel heater to be used over wide areas without discontinuity. The edge design provides for direct abutment to adjacent burners, producing a continuous radiance face devoid of cold spots. Striping is avoided even on the most sensitive products. Burners are available in sizes up to 12" x 72". Special sizes are available either in flat or three dimensional shapes.



QUICK WARM-UP and COOL DOWN

Due to the highly porous nature of the mat as well as the thin combustion zone, the Fibergas-II™ burner is operating in radiant mode a few seconds after ignition. When the burner is shut down, with the air fan switched on, the cooling is so fast that the burner surface can be touched with bare hands in a few seconds.

WATER RESISTANT

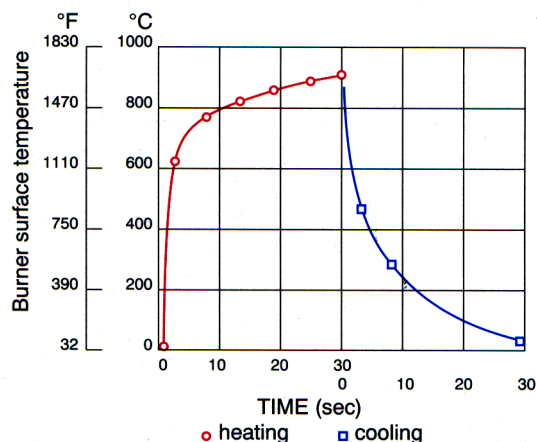
Even in tough applications with periodic exposure to water spray, the emitter will not degrade. Short term decreased output is temporary until the water is vaporized.

LOW EMISSIONS

Surface combustion with the Fibergas-II™ burner leads to extremely low emissions of NO_x, CO and unburned fuel components. As a result of the intimate contact between the gases and the fibers, flame temperature is significantly reduced leading to far lower NO_x levels than other burner technologies. In radiant combustion mode NO_x emissions are below 10 ppm at 0% O₂.

EMISSION OUTPUT CURVE

The emission output curve at left compares face temperature versus energy output. An example would be a Fibergas-II™ burner operating at 100 MBTU/ft²/hr input corresponding to a face temperature of 1580°F (860°C). This would produce a peak emission wavelength of 2.55 microns.



MARKETS / PROCESSES WHICH BENEFIT BY USING THE FIBERGAS™ BURNER

Textiles	Glass	Converting	Food Industry
Preheating Predrying Heat Setting Curing Coatings	Laminating Tempering Annealing Bending Ink Drying/Firing	Laminating Drying Curing	Browning Baking Grilling Defrosting
Plastics	Pulp and Paper	Finishing	Retrofit for:
Drying Thermoforming Stretching Annealing	Predrying Drying Profiling	Drying Curing Preheating Powder coating Boosting	Impingement Ceramic Burners Radiant Ceramic Burners Perforated Ceramic Tile Burners Wire Mesh Burners