

- Eclipse Product:** Eclipse ER Indirect Air Heater
- Submitted by:** Exothermics – Toledo, Ohio USA
- Application:** Providing clean heat for the Dairy Industry: Spray Drying Whey
- Description:**

Every day, this industry-leading dairy products manufacturer churns out the highest quality products available on the market ... while simultaneously saving money on fuel costs.

This is accomplished thanks to the twin “best in class” indirect air heaters, shown at the right, that were engineered and built by Exothermics, Inc.



Exothermics was contacted by a major cheese manufacturer to provide an air heater that would deliver clean, heated process air for the operation of a new whey spray dryer. Exothermics' solution was a pair of Eclipse ER Indirect Air Heaters operating side-by-side. Not only do these air heaters produce clean hot air for this customer, free of combustion by-products and other contaminants, but they do so with impressive fuel efficiency.

Operating specifications for the project included the delivery of 25,000 SCFM of heated air (max outlet of 360°F), providing a net heat transfer of 19.5MM BTU/hr at greater than 90% efficiency.

Each heater incorporates a sinusoidal heat exchanger which transfers heat from its combustion chamber to the clean process air side of the unit. A recirculation fan improves the effectiveness of the heat exchanger for more fuel efficient operation. The ER is engineered to deliver maximum fuel efficiency without the need for a secondary heat exchanger. In fact, these ER heaters are transferring >90% of the heat energy to the process.

The ER Indirect Air Heaters were sold as a completely packaged system including the heat exchangers, recirculation fans, combustion chambers, burners, combustion air blowers, gas trains, and control panels. The gas trains and burner safety systems are NFPA 86 and EN 746-2 compliant.

Customer Benefits: The customer has been extremely pleased with the performance of the ER heaters. The operating specifications were achieved and in some cases, the ER heaters exceeded the customer's expectations.

Spray Dryer Applications

