HIGH-TEMPERATURE FURNACE CAMERA SYSTEMS

ELECTRIC ARC FURNACE (EAF)

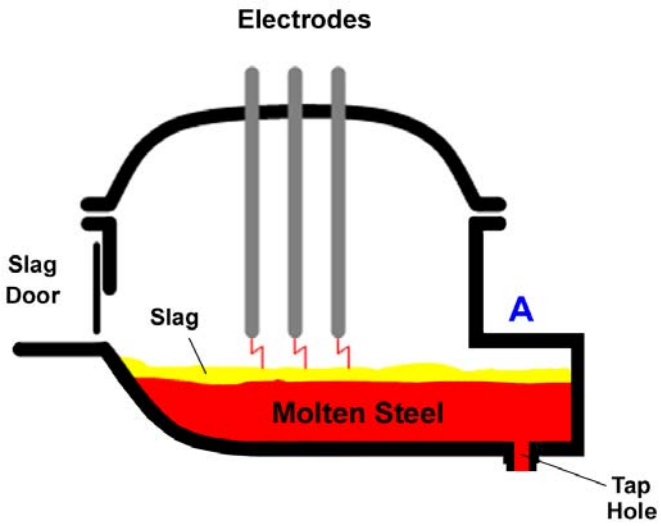
Application Highlights

An Electric Arc Furnace (EAF) is used in steelmaking to heat charged material (scrap metal) by means of an electric arc. Furnace temperatures can reach 3200°F (1760°C).

Electric Arc Furnaces consist of a water-cooled refractory lined vessel covered with a retractable lid, through which one or more graphite electrodes enter the furnace to create an arc between the charged material and the electrode(s) generating the heat required to melt the material.

Once proper temperature and chemistry is attained the liquid steel is “tapped” by tilting the furnace and allowing the molten steel to pass through a hole (taphole) that passes vertically through the narrow off-center section of the furnace into another vessel for transport to the next operation.

After completion of the tapping process the taphole is refilled with a refractory plugging composition, usually sand.



A Lenox Electric Arc Furnace Camera System is mounted through the furnace above the taphole (see **A**) allowing the operator to view slag, the tapping process, inspect the condition of the refractory, taphole and spout and monitor the refilling of the taphole. Manual observation can be eliminated with improved safety and furnace turnaround times. Can also be used to observe ladle furnaces, transfer ladles, blast furnaces and torpedo cars.

Why Use Lenox Furnace Camera Systems?

- Designed to be rugged and durable for the brutal atmosphere of the Steel industry.
- Proven reliable dual cooling system and the highest camera resolution with superior optics.
- Minimal maintenance and operating cost once correctly installed.
- Backed by an industry leading two year warranty.
- Flexibility in choice of penetration lengths, viewing angles, and water cooled models that utilize integral, low consumption air/gas-purging to prevent fouling of the lens system.
- Lenox know how, expertise and installation/field service.

The 1 and only

FURNACE CAMERA SYSTEM

DESIGNED FOR THE STEEL INDUSTRY

with extreme durability, higher resolution, a time-tested cooling system, a longer warranty, and a much lower average cost to operate.

Model 6935SC Series

Lenox Furnace Camera HD high-temperature, video furnace camera systems are designed to be mounted either directly through the wall or flush with the exterior wall of a furnace. The stainless steel camera housing employs a steel triple wall laminar flow for efficient water–cooling of the color CCD camera and the latest optical lens technology to provide clear, real time high-resolution (540 line) images , enabling operation in hostile environments up to 4250ºF (2345ºC). An integral air-purge prevents fouling of the lens system. The furnace camera is available in lengths of 24” (61cm), 31” (79cm), 36” (92cm) and provides direct viewing with a choice of 30°, 45°, 90° field of view and zoom capabilities up to 5X.

Lenox FireSight furnace camera systems consist of a high- resolution (540 line), color CCD camera and sophisticated light volume control, a Lenox exclusive that allows an operator to remotely adjust the amount of light transmitted to the camera eliminating the flaring / blooming common with other systems. Quartz optics, another Lenox exclusive, are used and can withstand temperatures up to 1200°F (649°C) higher than the glass lens used in other systems. In addition, a water-cooled lens jacket and CCTV camera housing provides cooling and protection for the furnace camera and air-purging of the lens system to prevent fouling by deposition. Designed to be mounted directly through the furnace wall these furnace cameras can be used in applications up to 3500°F (1927°C). Available with either a 24” (61cm) or 36” (92cm) lens in either direct (60° or 90°) or right-angle (55°) view configurations. Special lengths up to 126 inches (329cm) are available.

Model 6555FC Series

Please contact us for more information about our products and capabilities and to discuss your specific application.

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