Inside Hot Furnaces, Kilns & Tanks

Land Instruments has specially designed the NIR borescope (NIR-b) with a short-wavelength radiometric infrared imaging camera and the ability to capture high-definition (656 by 494 pixel) thermal images with accurate temperature measurement by viewing directly inside the furnace, using borescope technology. The company says that this rugged thermal camera is additionally characterized by:

- The measurement of temperatures from 600° to 1,800^{o}C (1,112^{o} to 3,272^{o}F) from any point in the image.
- 24/7 monitoring that guarantees accurate, reliable and continuous data with no blind time.
- A 44° and 90° viewing angle inside the vessel to maximize temperature coverage across 324,000 data points.
- Dedicated software that provides key measurement data, including data points, areas of interest, automated alarms and, importantly, long-term data trending.
- A high-performance water cooling system with low-water flow requirements for even the highest temperature furnaces.
- An integrated air purge that keeps the optical system clear of debris, while consuming minimal instrument air.
- A short-wavelength sensor with low sensitivity to emissivity changes that can be used through glass or quartz view ports.
- A thermocouple at the tip of the NIR-b that alarms for removing the

instrument to prevent damage if maximum temperatures are exceeded.
- NIR-b installation into the furnace through only a small opening in the outer refractory wall (sealed to process) to give a precise, continuous internal temperature profile.
- A wide range of mounting options, including the most commonly available options to ensure easy installation and ease of use, and probe lengths for the best available fit for every installation.
- Suitability for a range of interior furnace applications, including glass melt tanks, reformer tube furnaces, reheat furnaces and cement kilns.

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