

24/7 Kiln shell temperature monitoring and Process Optimization at LafargeHolcim Bouskoura plant, Morocco, using HGH thermography solutions

HGH Infrared Systems has equipped LafargeHolcim Bouskoura plant with KILNSCAN kiln shell scanner and PYROSCAN dual pyrometric camera to ensure efficient preventive maintenance and process optimization.

Plant operators need a real-time and continuous monitoring of the kiln shell temperature in order to be alerted in case of a hot spot occurrence. Hence Kilnscan monitors the temperature from an external point of view with a unique reference pyrometer for unsurpassed accuracy in adverse weather conditions. Whereas Pyroscan looks at the kiln from the inside to optimize the clinker calcination process and provides the visualization of clinker chute. Pyroscan helps operators to stabilize the burner settings, and to improve the clinker sintering process.

The HGH's bundle solution comprising IR scanner and camera meets perfectly the client's requirements in terms of high performance.

Amine Mnaouer, Plant Maintenance Manager at LafargeHolcim cement plant says *"The use of HGH scanner brings great added value for the management of the clinker manufacturing process as well as the prevention of any incident of the kiln shell. It is an essential tool for the good operation of the kiln."* He adds *"The PYROSCAN camera enabled us to reinforce the kiln monitoring tools and to better control the flame quality. Pyroscan's data provides a high contribution for the 'kiln Master' system for automated kiln control."*

Focus on HGH Kiln shell scanner and dual pyrometric cameras HGH Infrared Systems, who is celebrating its 40 years anniversary this year, offers to the Cement Industry high resolution KILNSCAN kiln shell scanners and PYROSCAN cameras for kilns & coolers:

While rotary kilns have been used for more than a century, monitoring a burner remains a challenge, even more so at a time when energy sustainability is so important.

Because of standard fuel restrictions and to reduce overall emissions, the use of alternative fuels is constantly increasing, making control of the flame pattern, size and temperature essential to ensure kiln stability. Continuous monitoring of the kiln shell temperature and the generation of real-time, sharp temperature maps inside kilns and coolers are a key part of this process.

To meet cement producers' requirements in this area, HGH Infrared Systems has designed its Pyroscan and Kilnscan solutions. While Pyroscan looks at the kiln from the inside, Kilnscan monitors the temperature of the outside of the kiln shell and is located some distance away from it.

Main benefits

- Thermal monitoring using Pyroscan :
 - The many possible configurations of the system provide a high level of flexibility to tailor a solution adapted to any application in a kiln or a cooler.
 - As Pyroscan has the highest resolution of any high temperature camera on the market, operators benefit from visible and thermal images of incomparable sharpness.

- Each pixel's temperature is measured using the High Dynamic Range operating mode which eliminates saturated and under-exposed areas.
- The system is supplied with its own software combining ease of use and intuitive HMI, with a complete function toolbox allowing image and temperature display, analysis and recording.

➤ Kiln shell monitoring using Kilnscan :

- Kilnscan can be installed in various configurations to accommodate any masking and complexity of the environment around the kiln. The exclusive 140° field of view option is especially useful when the scanner head has to be installed close to a long kiln.
With the best spatial and thermal resolution on the market, Kilnscan allows the user to see small details and detect the failure of a single refractory brick anywhere on the kiln shell.
- The software associated to the scanner encompasses an exhaustive set of functions to process, display and record data and trends. It also includes exclusive functions such as Thermal Warp Monitoring which provides information about the stresses generated in the kiln by thermal inhomogeneities.
Several types of interfaces are available to control other systems and to interface with the plant DCS.
- The rugged design of the scanner head supports operation in any environment.