



→ Maintenance of Rotary Kilns



Kilnscan

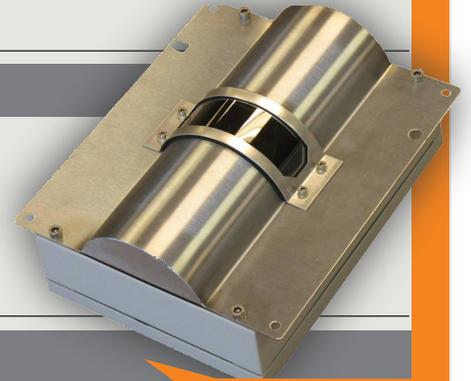


KILN SHELL

TEMPERATURE MONITORING

➤ KILN SHELL THERMAL MONITORING

Real-time, 24/7 monitoring of the temperature of the kiln shell using Kilnscan infrared scanner allows to instantly display information about the status of the refractory lining and internal coating. It also provides valuable data about energy losses and various stresses in the kiln shell. Kilnscan contributes to optimizing kiln efficiency and availability, increasing production rate, reducing operating costs, improving the burning process and saving energy.



→ KILNSCAN SCANNER HEAD

➤ HIGH PERFORMANCE DIAGNOSIS SYSTEM

With the best spatial and thermal resolution, Kilnscan monitors each individual refractory brick over the whole length of the kiln. It tracks hot spots, tyre slip, rings formation, brick failures, thermal warp and more, to prevent short- and longer-term damages. With more than 1,300 units operating around the world, HGHI thermal scanners are used in plants to warn of potential failures and trigger preventive actions.

➤ MAIN FEATURES

- High spatial resolution to detect the failure of any single brick
- High sensitivity support in-depth analysis of temperatures and to provide early warning of any suspicious evolution
- Automatic calibration with internal reference to prevent any drift of measurements
- Flexible and modular architecture to adapt to any plant configuration, minimize hidden or "shadow" areas and display a seamless single view of the whole kiln
- Unique scan angle, up to 140°, to monitor long shells from shorter distance
- Set of external references for unsurpassed accuracy including in adverse atmospheric conditions
- Rugged and proven system, designed for providing unsurpassed long-term reliability in very demanding environments



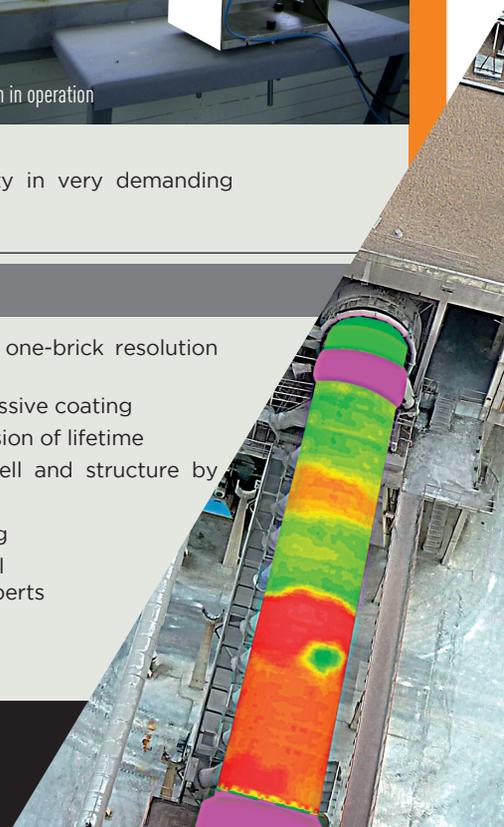
→ Kilnscan in operation



→ Extending kilnshell lifetime

➤ BENEFITS

- Real-time temperature map, with a true one-brick resolution over the whole shell
- Early warning in case of hot spots or excessive coating
- Monitoring of refractory status and extension of lifetime
- Indicator of stresses induced in the shell and structure by thermal inhomogeneities
- Timely preventive maintenance scheduling
- Direct transfer of data to the Plant Control System for fast reaction, and to support experts systems and information analysis



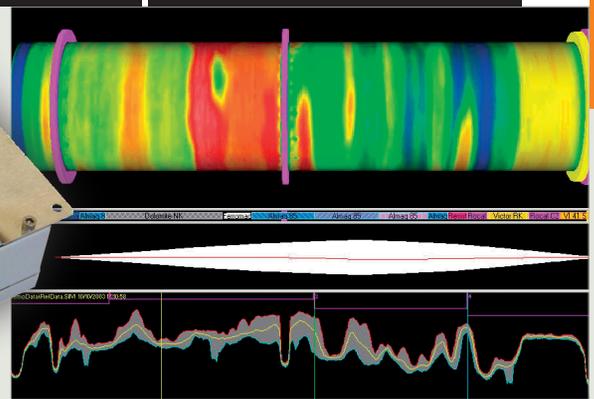


KILN SHELL

TEMPERATURE MONITORING



→ Scanner installation



→ Kiln monitoring with Kilnscan software

➤ KILNSCAN SOFTWARE : A COMPREHENSIVE TOOLBOX

Using exclusive algorithms, Kilnscan software benefits from experience accumulated over years to process high-quality measurements from the scanner head and make all relevant information available at a glance on displays in control rooms or on maintenance workstations.

Data can be transmitted to process control systems through plant networks, and recorded locally or remotely for further analysis over long durations.

Main features of Kilnscan software include:

- **Complete**, user-configurable and **intuitive HMI**
- Synchronized and flexible **2D or 3D real-time thermal view** of the whole kiln and of specific areas
- Min/max/avg **temperature profiles** along the kiln, with comparison with user-defined reference profiles
- **User-defined alarm sections** with high- and low-temperature independent thresholds, and temperature trend thresholds
- Monitoring of **tyre slip** and warning on critical values
- Real-time calculation and display of **thermal warp**, indicating imbalance and stresses induced in the structure of the installation
- Calculation of remaining **brick thickness and coating thickness** at any point along the kiln, management of refractories
- Calculation of radiative & convective **heat loss**
- Various **interfaces** (OPC, 4-20mA, dry contact outputs) for coupling to plant systems, automatic fan control...
- Recording and **display of trends** over long durations
- Viewer mode to replay sequences and access scanner functions for a posteriori event analysis
- Automatic or triggered **export and recording of data** and thermal views

➤ EXPERT SERVICES – TRAINING & COMMISSIONING

With more than 30 year experience in supplying scanners and providing support to clients with high expectations, our team of highly-skilled engineers are recognized as experts in industrial infrared systems and technologies.

HGH team is committed to providing the best service so as to allow our clients worldwide to optimize the use, availability and benefits of our systems.

We are available to support our clients all along the lifecycle of the equipment:

- Support during preparatory installation and configuration studies
- Commissioning and training
- Remote support for fast intervention during operation
- Site visits for preventive maintenance, setting adjustment, sanity checks and complementary training
- Full system check-up and calibration in our workshops

Customized services can also be offered in reply to specific requests.



→ HGH service - Training&commissioning

Above information is subject to changes without notice



www.hgh-infrared.com

Headquarters

HGH SYSTEMES INFRAROUGES

10 rue Maryse Bastié
91430 Igny, France
Phone: +33 1 69 35 47 70
Fax: +33 1 69 35 47 80
Email: sales@hgh.fr

US Office

ELECTRO OPTICAL INDUSTRIES

320 Storke Rd., Ste. 100
Goleta, CA 93117, USA
Phone: 805.964.6701
Fax: 805.967.8590
Email: sales@electro-optical.com

Asia Office

ASIA INFRARED SYSTEMS

541 Orchard Rd., #09-01 Liat Towers
Singapore 238881
Phone: +65 6933 1394
Email: sales@hgh-infrared.com