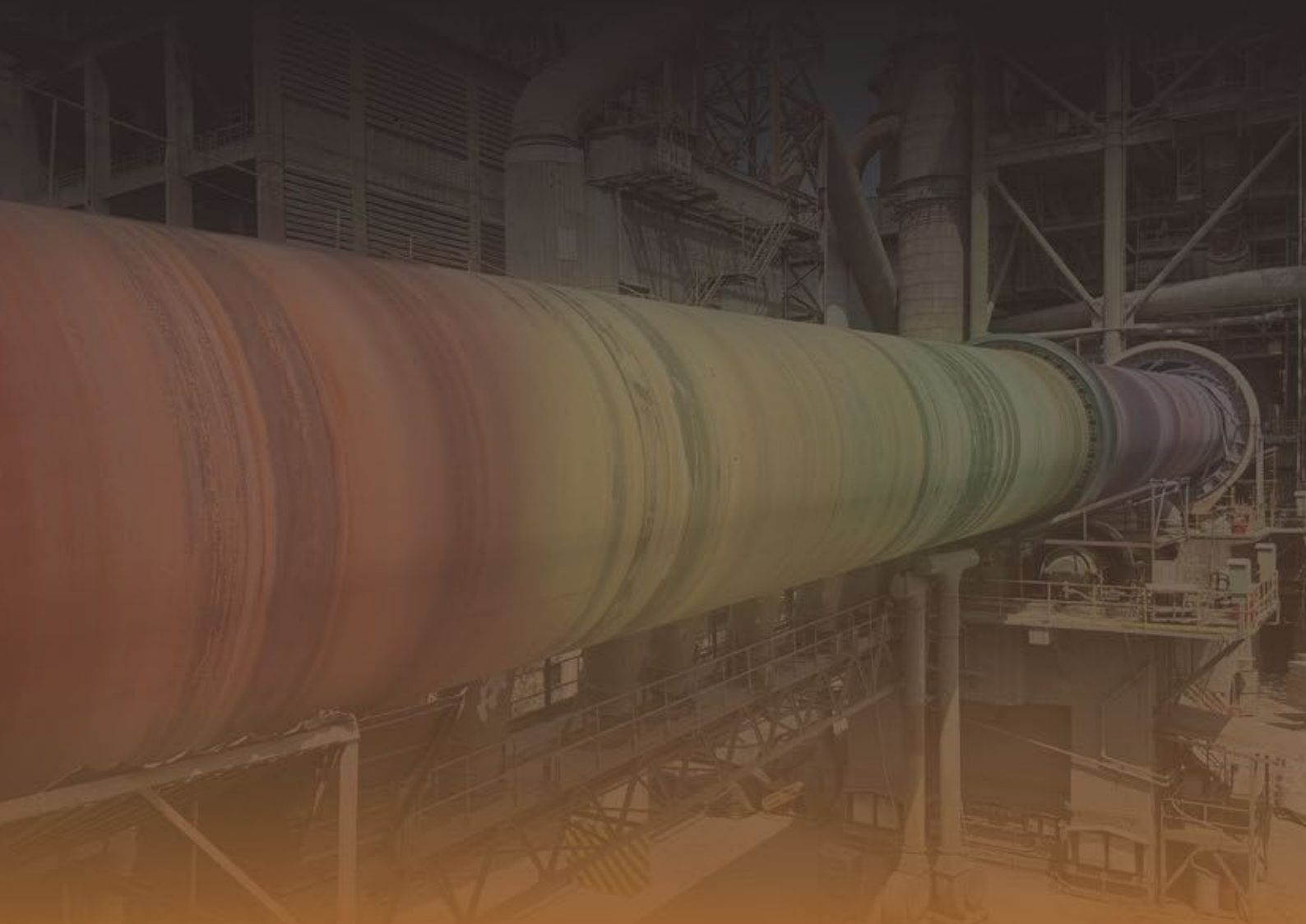




INDUSTRIAL  
**THERMOGRAPHY**

# **ROTARY KILNS** THERMOGRAPHY

**Improve your Pyro-process reliability  
& Reduce the maintenance costs**



[hgh-infrared.com](http://hgh-infrared.com)

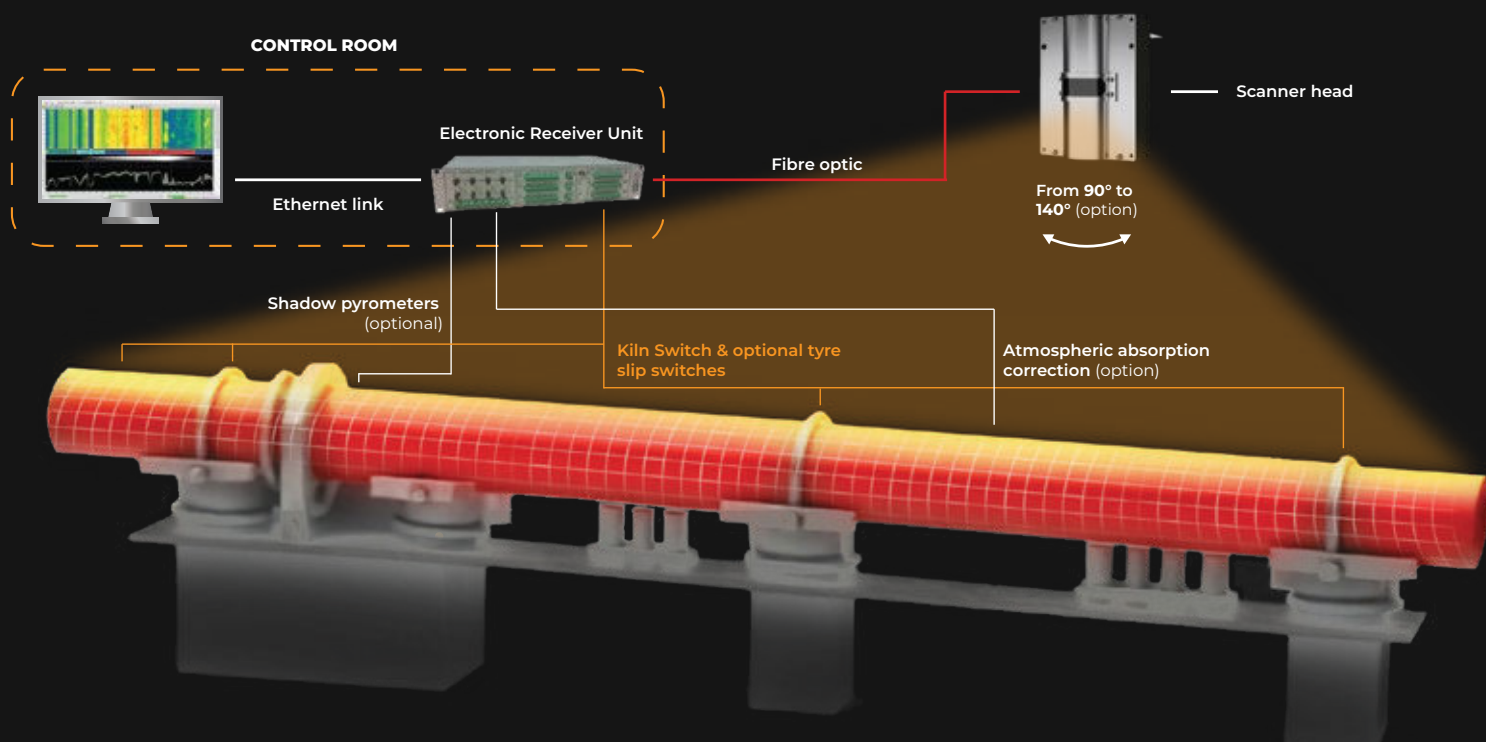
# KILNSCAN

23

The **Kilnscan** solution continuously provides an accurate monitoring of the kiln shell temperature. By providing early failure warnings, Kilnscan solution widely improves the kiln efficiency and its long-term reliability

Kilnscan system is the essential tool for **preventive maintenance** of the kiln. it also widely contributes to **reduce the operating costs**.

## KILNSCAN SOLUTION LAYOUT



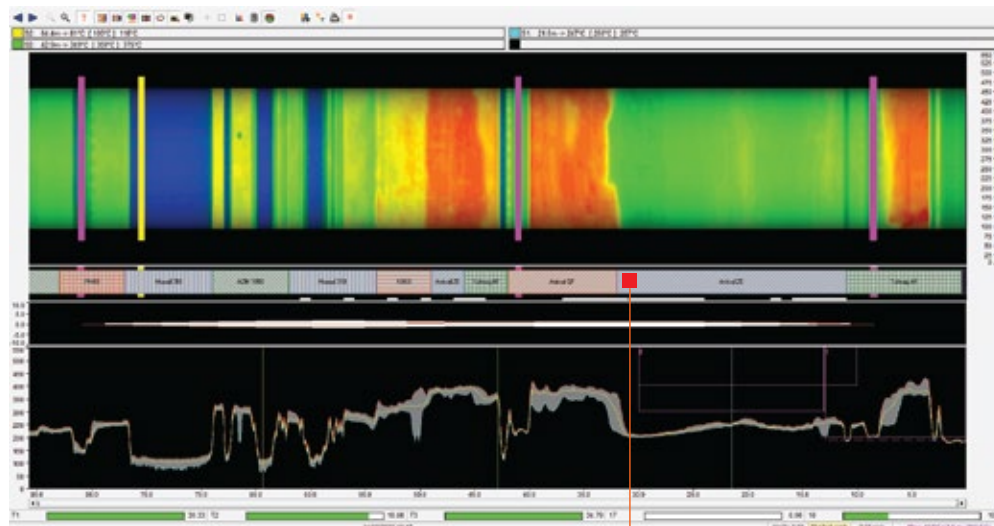
## ADVANTAGES

- Real time view
- High measurement accuracy
- Custom measurement points
- Widest field of view: 140°
- High resolution: one single brick detected

## TRACKING

- Hot spots
- Tyre slip/migration
- Rings formation
- Brick losses
- Thermal warp
- Potential failures

irreversible damage prevention  
preventive actions triggering



Thermal Map

Brick Lining

Thermal warp

Thermal Profile

Tyre slip monitoring

Reference Pyrometer for Atmospheric absorption Correction

Heat loss

## COOLING FANS AUTO CONTROL



## KILNSCAN INTERFACE WITH PLANT DCS

OPC link (UA/DA)  
8-16 outputs 4/20mA  
16 Alarm outputs

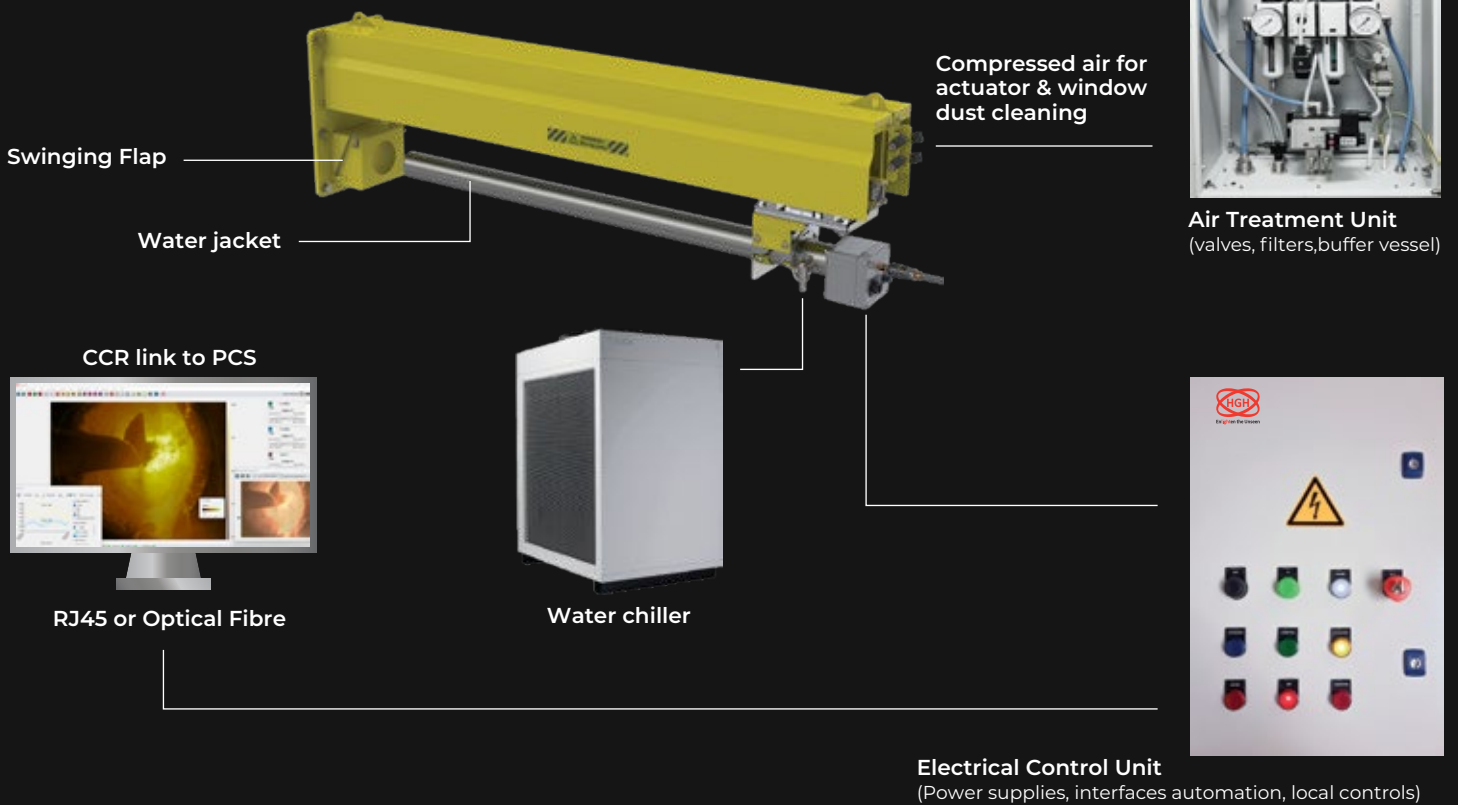
- Cooling fans control by zones (on/off, speed control, sequencing...)
- Scanner Data auto-sending to DCS
- Recordings & alarms auto-sending to DCS
- Tyre slip values

# PYROSCAN

The **Pyroscan** system features a high dynamic range (HDR) pyrometric camera for internal monitoring of the rotary kiln. The simultaneous flame display of the **visible and thermal image** enables to detect any change during the combustion process.

## PYROSCAN SOLUTION LAYOUT

- Fully self-monitored system
- Automated retraction system
- Withstand the hardest environments.



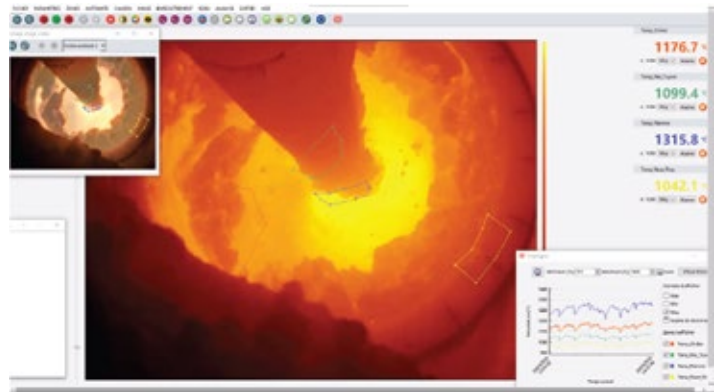
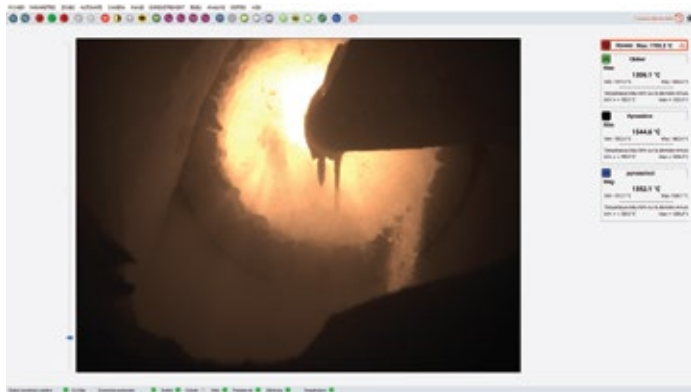
## ADVANTAGES

- Real time display of visible and thermal image
- High precision temperature measurement (HGH's exclusive signal dynamic range control): no saturation or dark under-lit area.
- High efficiency cooling system
- Custom configuration: Unlimited number of user-defined lines, points and temperature measurement areas



# PYROSCAN SOFTWARE

## KILN APPLICATION



The **Pyroscan** solution contributes to the process optimisation through the monitoring of

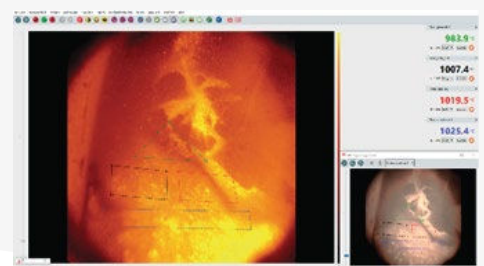
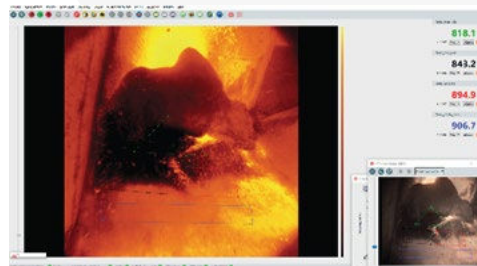
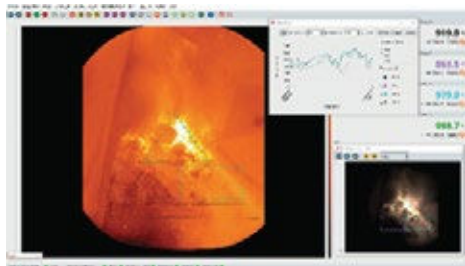
- Burner tip: early detection of rhino horn
- Nose ring: early detection of damaged segment
- Refractory and coating temperature

Thanks to accurate **flame shape** and **temperature monitoring**, the operator can instantly:

- Visualize the burner adjustment impacts
- Optimize the combustion process
- Reduce fossil fuels consumption (alternative fuels).

## CEMENT INDUSTRY SPECIAL APPLICATION: CLINKER COOLER MONITORING

The **Pyroscan** solution enables the clinker fall and bed temperature visualization & measurement into the cooler. This combined monitoring of visible and thermal image allows the early detection of “snowman” and “red river” but also the automated trigger of air blasters at chute area or the adjustment of grate speed and air blower flow.



- Snowman' formation detection/ trigger of air blasters at chute area
- Clinker bed control
- Red river detection/alarm with T°
- Clinker T° monitored by zones
- Adjustment in real time of grates speed & air blowers flow

# SUPPORT & MAINTENANCE

## OF YOUR EQUIPMENT

Our customers' satisfaction is and will always be our top priority. In order to offer the best service possible each day, we are committed to bringing our expertise and pro-active approach to our customers.

In order to guarantee maximum availability and optimal performance, we offer a wide range of services and support:

- Installation and commissioning
- Warranty extension and maintenance contracts
- Preventive maintenance
- Remote diagnosis
- Training of your teams
- Our priorities: Optimize your productivity, provide fast support and reduce your carbon footprint.



### Installation and commissioning

Commissioning plays an important role in our business. Our commissioning team will give you all the keys for the best start with your new product. This is an important step in our projects. We ensure a quick start and quick handling, adapted to your needs. Our engineers take care of implementing the appropriate parameters, making adjustments and optimizing the reliability and performance of your equipment.



### Warranty extension and maintenance plans

With the HGH Warranty Extension and our maintenance contracts, you keep your equipment in operational condition, control your costs, reduce risks and have the assurance of privileged service from our Customer Support teams.

The HGH Maintenance contracts can include: the training of your teams, the supply of spare parts, technical assistance, preventive and corrective maintenance on site by our engineers.



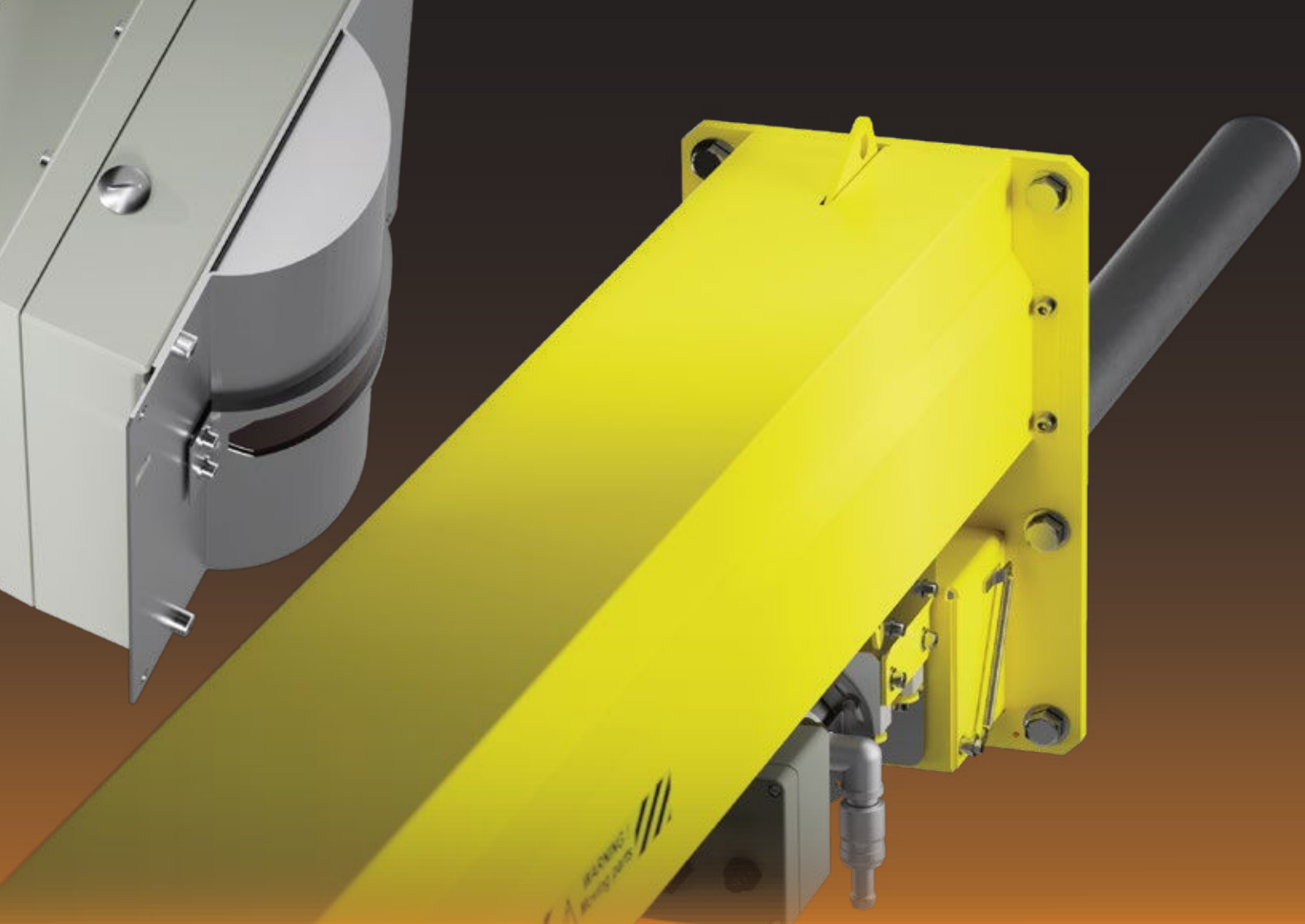
### Preventive maintenance

The preventive maintenance service consists in checking and maintaining your equipment in order to maintain its operability and reduce the risk of breakdown.



### Remote diagnostic

The remote diagnostic service offered by HGH provides you with rapid technical assistance with remote control of your equipment. Our experts will provide you with real-time diagnostics and check for possible problems with configuration, parameterization or software updates.



## THEY TRUSTED US

"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."

Source : World Cement, LH Plant Maintenance Manager

"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 monitoring system for automated kiln control."

Source : World Cement, LH Plant Maintenance Manager





**Contact us :** [hgh@hgh-infrared.com](mailto:hgh@hgh-infrared.com) | [hgh-infrared.com](http://hgh-infrared.com)

**EUROPE**

10 rue Maryse Bastié  
91430 Igny, FRANCE  
Phone: +33 1 69 35 47 70

**USA**

1240 E Campbell Rd Ste. 200,  
Richardson, TX 75081, USA  
Tel: +1 805 965 6701

**ASIA**

1 Paya Lebar Link, #04-01  
Singapore 408533  
Phone: +65 6955 8585