Mobile Infrared Camera

Model number: RB BID-SYSTEM

Due to the coal supply forms and cost-reduction requirements, many thermal power plants use coal types that differ from the original design specifications or burn open-pit coal, which is more prone to slagging and contamination. To mitigate the risks of boiler contamination and coking, thermal power plants employ methods such as coal blending, boiler heating surface soot blowing, and spraying nanophase materials on furnace heating surfaces. However, coking and contamination remain significant technical challenges that threaten the safe operation of boilers.

Mobile Infrared Camera System for Boiler Tube and Furnace Inspection. It utilizes high-performance multi-spectral technology and applies a specialized filtering algorithm to process the images. The system ‘s unique high-temperature-resistant design allows for continuous operation without requiring boiler shutdowns, enabling real-time monitoring of the coking condition on the water-cooled walls and heater surfaces. This system helps coal-fired power plants operate more efficiently, extract more energy from coal, and increase overall productivity.

This type of boiler coking detector is designed to operate under the harshest conditions, particularly for boilers or kilns exposed to heavy smoke and dust, such as electric coal-fired boilers, waste-to-energy and biomass power generation boilers, and solid waste incineration rotary kilns.

Key Features

- Realize continuous monitoring and improve soot-blowing strategies;
- Visualize and analyze corrosion areas;
- Identify problematic operating areas early;
- Boiler maintenance is based on the operating status of the heating surface;
- Record and analyze historical coking data;
- Intelligent soot-blowing: optimize combustion efficiency through on-demand blowing;
- Applicable to various fuels (coal, oil, natural gas) and biomass;
- Self-protection function (online).

System features

- Visualization ——can observe furnace areas that the original operator could not observe;
- Quantification —— can quantitatively analyze the amount of coking and slagging of boiler heating surface tubes;
- Positioning ——can accurately locate the coking and slagging position of boiler heating surface tubes;

- Real-time ——can observe the operating status of boiler heating surface tubes in the furnace in real time;
- Intelligence —— can trigger signals to achieve selective soot blowing control (online optional function);
- Predictability ——can identify problematic areas early, facilitating timely intervention by operators;
- Controllability ——can be arbitrarily positioned in the furnace according to operator settings (online);
- Continuity ——can continuously monitor the operating status of boiler heating surface tubes..

Technical parameter

Equipment usage conditions	
Cooling gas:	
Gas pressure:	0.4MPa (not less than 4 kg pressure)
Gas flow:	500L/min
temperature:	20 ℃ to 35℃
Clean instrument gas or nitrogen must be used, otherwise the unclean cooling gas will contaminate the lens, resulting in the lens blur, and the resulting image damage will not be within the normal warranty range.	

Rendering