



Enlighten the Unseen

WASTE-TO-ENERGY

Thermal Monitoring of the
combustion process in grate furnaces



WASTE-TO-ENERGY PLANTS : OPTIMIZE COMBUSTION PROCESS OF WASTE INCINERATORS

Converting waste into energy such as power and heat through combustion is an innovative process reducing our impact on the environment. The main challenge of incineration plants is to increase the **waste-to-energy efficiency** by monitoring each step of the process. One of these major steps is the combustion process on grate furnaces. Its optimization increases the **steam output** vs. ton of waste burnt, as well as the **quality of the slag** to make it more valuable. HGH's **Pyroscan visible and thermal camera** monitors this process providing key data to the plant control system.

The Pyroscan camera is a heat resistant thermal imager providing a real time and accurate temperature measurement of the burning zone. Two possible configurations are available.



PYROSCAN SERIES : HIGH TEMPERATURE CAMERAS

● PYROSCAN

with water cooled endoscope to capture images close to the burning process without attenuation of signal.



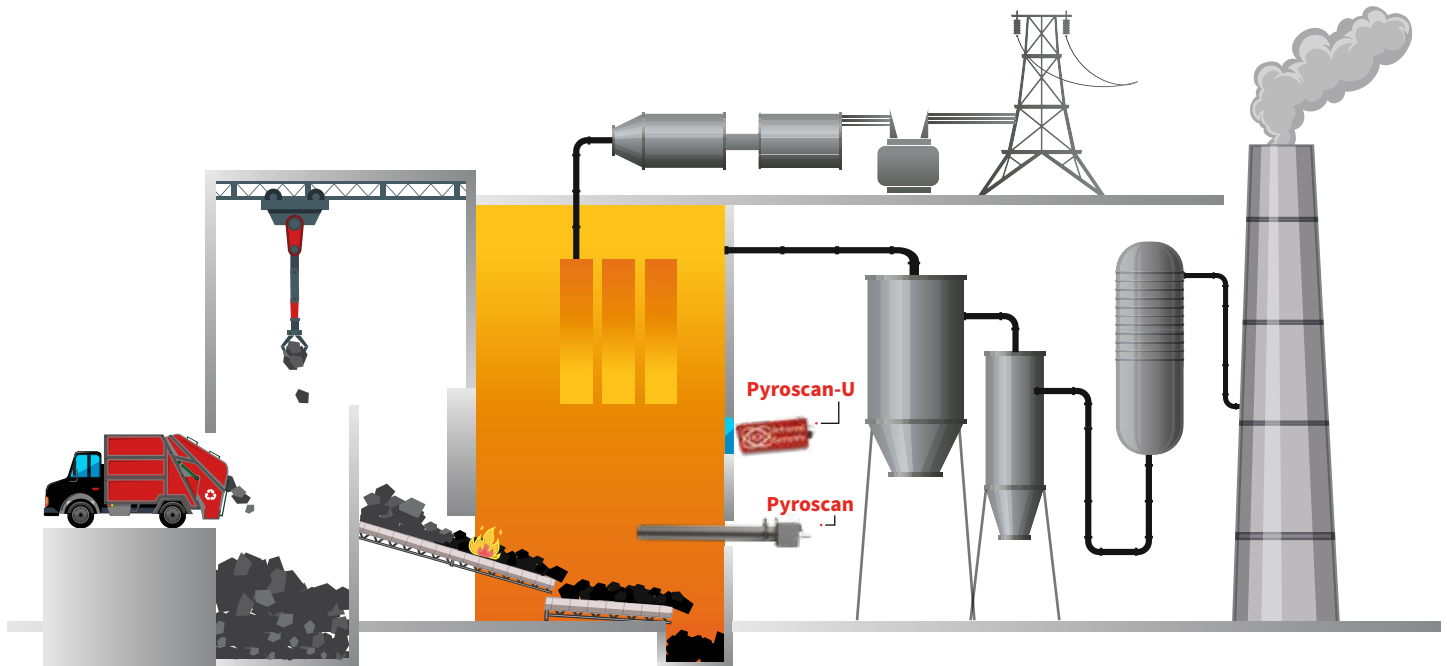
● PYROSCAN-U

installed outside the high temperature burning zone of furnaces, looking at the calcination area through a standard window. No cooling means is required for this model.



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INTEGRATED SOFTWARE FOR COMBUSTION VISUAL AND THERMAL MONITORING

Whatever the model, the PYROSCAN thermographic camera comes with the Pyromancer software processing the images and providing powerful tools to user to analyse the **temperature data of the burning process** through a **simple and intuitive HMI**. The Pyromancer software also includes features dedicated to the waste-to-energy conversion application process:

- Real time and simultaneous display of the visible and thermal image
- Interface with the Plant Control System through OPC link and 4-20 mA
- HGH's exclusive flame front location measurement function



FOCUS ON THE FLAME FRONT FUNCTION – BENEFITS FOR THE USER

The accurate control of the location where the combustion stops, or flame front, is of paramount importance for the effective operation of the installation. To that aim, HGH has developed a dedicated algorithm specially designed in partnership with worldwide leaders in waste incineration to provide **accurate and real-time flame-front detection in grate furnaces** of waste-to-energy plants. The location of flame front is transferred in real-time to the furnace control system which will adjust the **speed of the grate** and the **air flow in various areas**, and which will turn on burners if needed.

- Real time adjustment of the grate speed and the air flow based on the flame front location data
- Improvement of the waste to energy conversion efficiency
- Improvement of the slag incineration quality



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