

# Valmet Acoustic Pyrometer

Instantaneous gas temperature data from any area of your boiler

Valmet Acoustic Pyrometer is a non-contact measurement device that obtains highly accurate instantaneous gas temperature data from any location within your boiler. The system helps boiler operators significantly reduce slagging by maintaining optimal furnace exit gas temperatures. It also helps you manage critical temperature profiles to aid in emissions reduction, as well as reduce tube damage or leaks by preventing hot spots and thermal shock. Using Acoustic Pyrometer to balance combustion, you can also improve heat transfer rates.



Model AP204



Model AP106

Acoustic Pyrometer Signal Generators can be mounted vertically or horizontally to accommodate space restrictions.



Acoustic Pyrometer Signal Receivers detect sounds in the boiler via a tube through the wall and are housed in pressuresealed NEMA 4 enclosures.

## Significant Advantages over Traditional Technologies

**Accuracy:** The Acoustic Pyrometer system provides instantaneous, spatially averaged temperatures with less than 1% error.

**Reliability:** The Acoustic Pyrometer system is designed for superior reliability in hot, dirty environments. Ports are cleared by periodic air blasts, and components are not sensitive to dust or dirt.

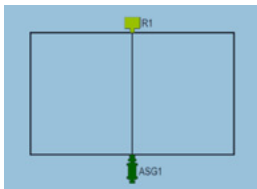
**Configuration Flexibility:** The Acoustic Pyrometer system can be configured to meet your monitoring needs. ASGs or ASRs can be added as desired. Boiler tube bends are not required to mount the receivers.

**Leak Detection Capability:** The Acoustic Pyrometer system constantly listens to boiler noises, measuring against preset noise thresholds and time durations, and identifies persistent sounds indicative of tube leaks.

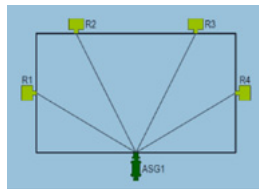
## How Acoustic Pyrometer Works

The Acoustic Pyrometer system utilizes the principle that the velocity of sound through a medium is related to the temperature of the medium. Acoustic Pyrometer generates a sound wave with a very sharp rise time and measures the time it takes to traverse the chamber. When the distance between the sound source and the receiver is known, the average temperature between the two points can be determined. The system can distinguish between equipment sounds, such as sootblowers, which are of limited duration, and persistent sounds, such as tube leaks. Instantaneous temperature data is spatially averaged and provides zonal temperature maps.

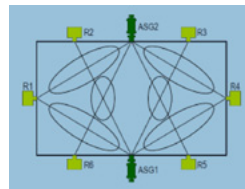
## Measurement Examples / Temperature Mapping



Single-path Measurement

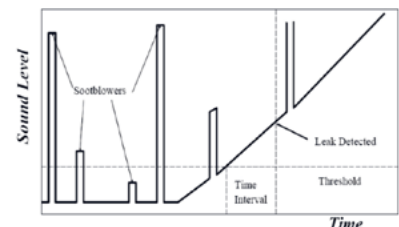


Multi-path Measurement

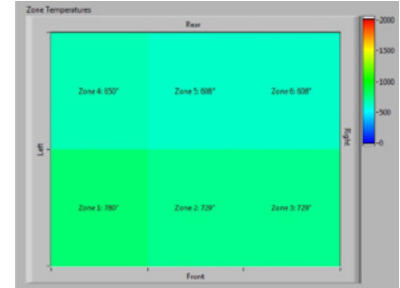
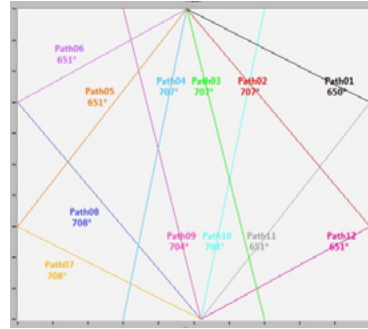
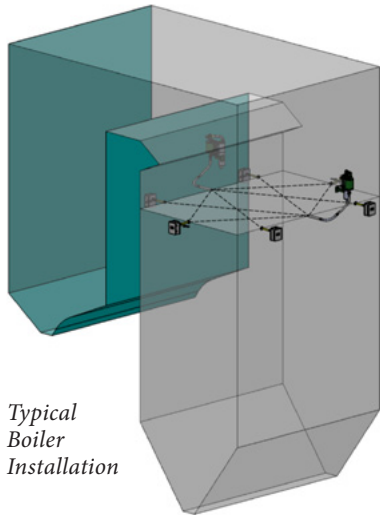


Zonal Measurement

## Leak Detection



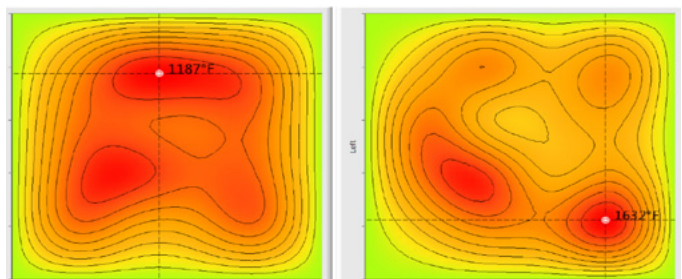
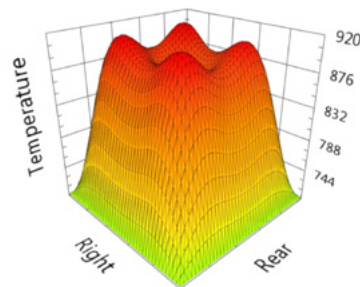
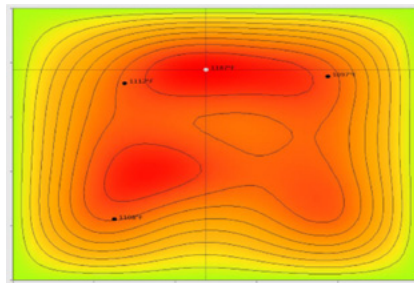
## Acoustic Pyrometer – Planar temperature map from any area of your boiler



### Temp View Display Software

This software provides a clean and easy to understand interface to represent the zone temperatures that get mapped from the boiler by Acoustic Pyrometer. This can be monitored under two dimensional, three dimensional or multiple plane views. Key features are remote display, replay, hot-spot detection and cursor temp.

**This accessory is sold separately or can be incorporated into the Valmet Acoustic Pyrometer system.**



For more information, contact your local Valmet office. [www.valmet.com](http://www.valmet.com)

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