



Industrial Vision for Extreme Environments

- Brand new 'slimline' M215S processor for easy installation into racks or cabinets
- OPC option for simple data networking
- Dual channel processor to run kiln and cooler imaging pyrometers together
- High level of measurement accuracy

The Spyrometer® 4 System

Kiln and Cooler Pyrometer System with Video Overlay



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High Temperature Safety. **Amplified.**

 www.mirion.com

Imaging Systems

Measure what you see.

High temperature industrial imaging systems from Mirion have been helping operators and engineers optimize and remotely view kilns, boilers, furnaces and glass tanks for over thirty years. Our market-leading Spyrometer® 4 system combines temperature measurement, real-time video and image processing into an enhanced video experience showing measurement information overlaid onto a live video image. The M555 imaging pyrometer takes the video image and the temperature information, multiplexes it, sends it via coaxial cable

to the M215S image processor in the control room and displays it on a monitor. The M215S image processor provides on-screen temperature measurement facilities and the data can easily be interfaced to your control system using an Ethernet link or 4-20mA outputs.

The Spyrometer® 4 system provides operational benefits to a number of key industries, some of which are summarized below.



Spyrometer® 4 System Features:

- Two imaging pyrometers into one processor
- Continuous, clear real-time video
- Easy-to-use interface
- 32 moveable and sizeable temperature measurement areas, programmable for minimum, maximum or average temperatures
- 16 channels, 4-20mA output and OPC link
- Multiple temperature trending capabilities
- Zoom-in and snapshot features with archive capability

Rotary Cement Kilns and Clinker Coolers

Kiln operators can obtain accurate and reliable burning zone temperature measurements from the Spyrometer® system.

Accurate temperature measurement allows fuel consumption to be optimized, saving up to 2% of fuel costs whilst still confidently maintaining kiln stability and product quality. Performance of secondary or alternative fuels can also be closely monitored and quantified.

Installation of a Spyrometer® 4 system on a cooler allows the progression of surface temperature along the bed of the clinker to be accurately measured.



Furnaces and Boilers

A Spyrometer® system installed on a furnace, power boiler or other high temperature reactor vessel will enable the operator to measure key process temperatures and maximize process efficiency. The system also allows operators to identify any upset conditions in their processes to ensure safe and efficient running.

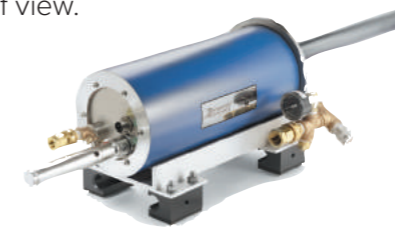
Other Applications

Spyrometer® systems can benefit many industrial applications worldwide. For example, in the steel industry, the system is used on reheat furnaces to monitor areas of non-uniform heating and to track bars through the mill. In the glass industry, Spyrometer® can be used for accurate refractory temperature measurement and to monitor flame impingement. Many other applications can benefit from the unique features and performance of the Spyrometer® 4 system.



M555 Spyrometer®

This patented combination of a dual wavelength, non-contact pyrometer and imaging system gives the operator the ability to see process conditions while measuring the temperature of virtually any area in the field of view.



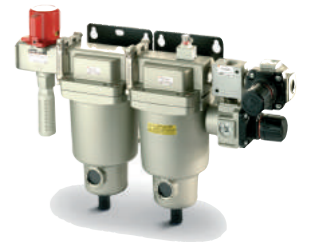
M215S Dual Pyrometer Imaging Processor

The M215S Processor supports one or two M555 Spyrometers®. The application software provides up to 32 overlaid temperature measurement zones per imaging pyrometer, which are fully adjustable for size and measurement mode through the user interface. This gives operators the ability to view process conditions from two plant locations and to perform temperature measurement of virtually any object or region in each field of view.



M408 Air Filter

A constant supply of clean air is essential for imaging system operation and protection. The M408 Two-Stage Air Filter helps to provide clean air in industrial environments; it is also used in applications where there is a higher air contaminate content level and where local control and regulation of the air supply to the Spyrometer® is required.



M356 Retract System

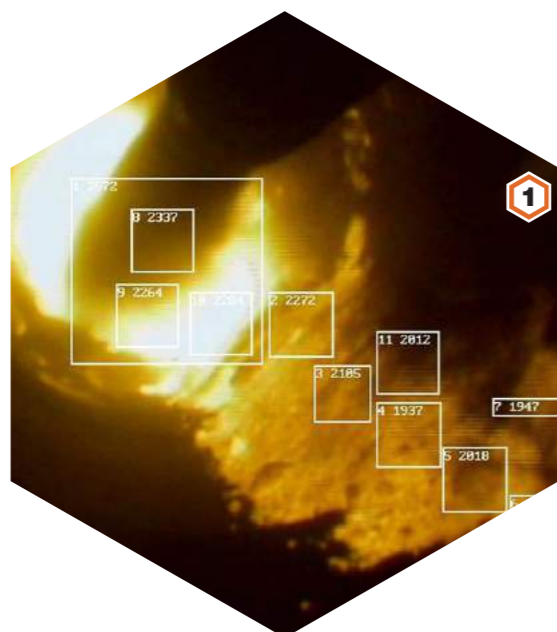
High temperature imaging systems are cooled by air or water. If the plant's supply of air pressure, or occasionally water or electricity, is interrupted the M356 Pneumatic Automatic Retract System will retract the imaging pyrometer from the most severe heat, protecting it from serious damage. The M356 retraction system now includes a ruggedized safety air reservoir and additional options such as locking pistons for downward-inclined installations.





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How the Spyrometer® 4 System works ...



2 M215S DUAL IMAGING PROCESSOR

- Gives operators the ability to view process conditions from two plant locations and perform temperature measurement
- Transmits data to plant control via OPC link



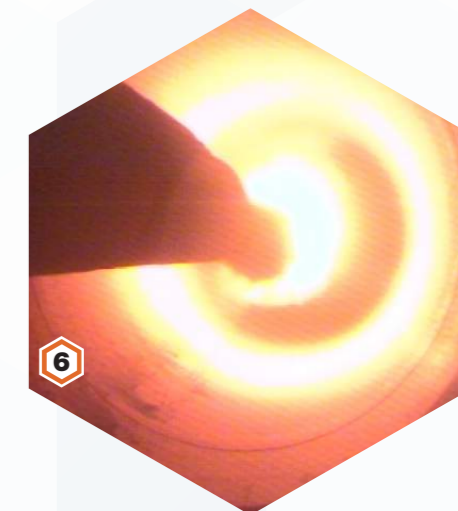
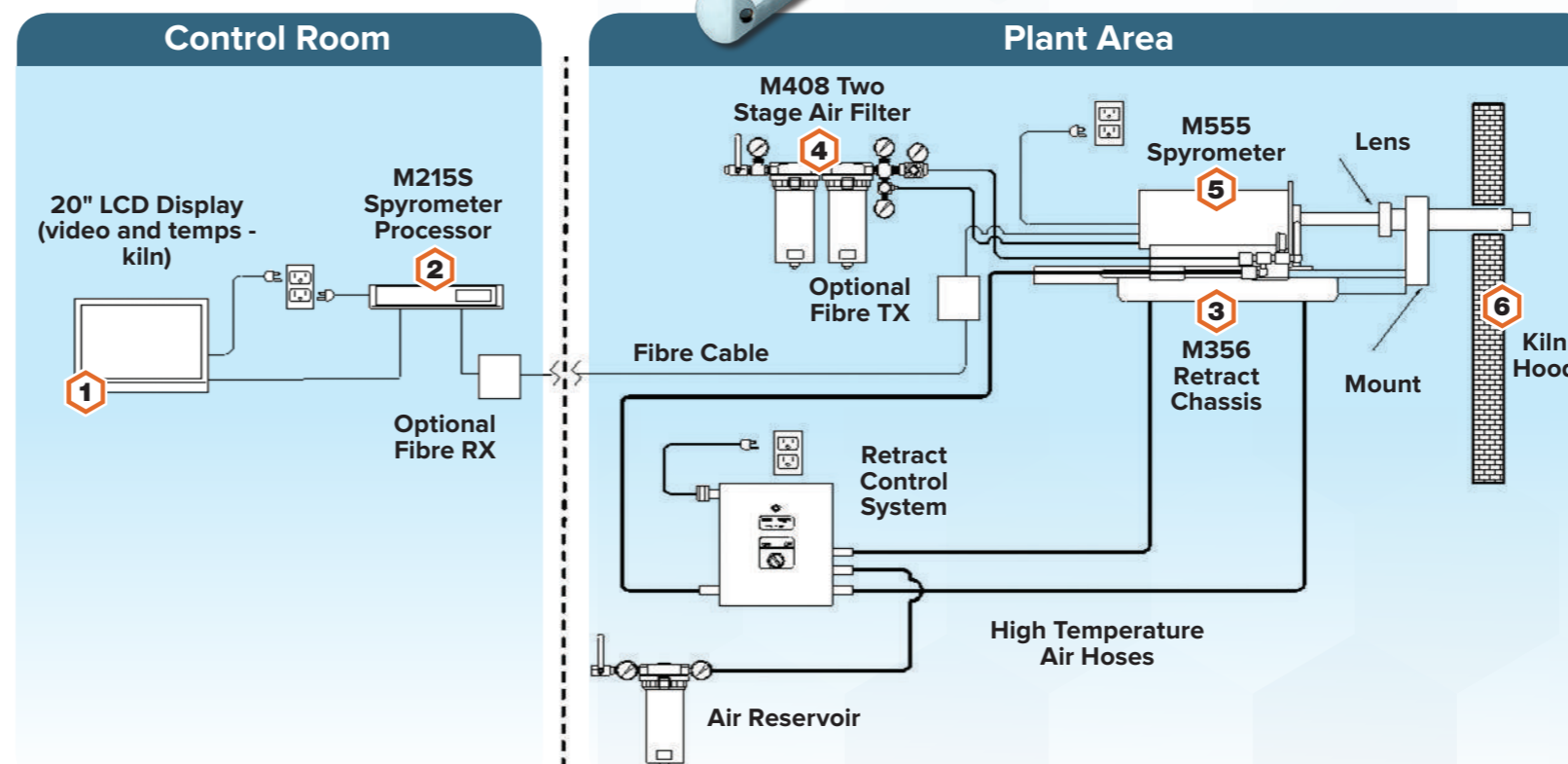
4 M408 AIR FILTER

- Purges air which serves to cool and clean the Spyrometer® enclosure and lens
- Constant supply of clean air, essential for proper imaging system operation and protection



5 M555 SPYROMETER®

- Captures process conditions while measuring the temperature of any area in the field of view
- Multiplexes the video image temperature information and sends it to the control room



3 M356 RETRACT

- Retracts the Spyrometer® from the most severe heat if the plant supply of air pressure, water or electricity is interrupted, protecting it from damage
- Allows the operator time to arrive at the location and manually pull the lens clear of the viewport



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Mirion Technologies (IST) Ltd and Mirion Technologies (Imaging), LLC are ISO 9001:2008 certified companies (certificates available on request or at www.mirion.com)

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