



Improve Efficiency



Reduce Costs



Improve Safety

# FLARE STACK MONITORING

## USING AUTOMATED INFRARED CAMERAS TO MONITOR FLARE STACKS

### THE CUSTOMER'S CHALLENGE

Flare systems are often a last line of defense to prevent dangerous hydrocarbon pollutants from entering into the atmosphere. Various technologies have been used to monitor flares but they are often ineffective at minimizing smoke from stake combustion, an important indicator of burn efficiency. These technologies are often required to be in contact with the process which makes them "consumed" over time with the result that they need to be replaced. Other technologies, including ultraviolet flame detectors, have limited performance when looking through smoke. Flaring without the pilot flame releases gas into the air, increasing the risk for explosions and negative environmental impact. During normal operation, the importance of a well working flaming process is important for the environment and cost of operation.

### A SOLUTION

Thermal imaging technology can help oil and gas companies to recognize the difference between the heat signature of a flare stack flame and the surrounding background (usually the sky or clouds). A FLIR handheld thermal camera, such as the FLIR T540, is an ideal tool to see if the flare or pilot flame is burning correctly and efficiently. For the best results, a fixed installed camera, such as the FLIR A310, can provide 24/7 temperature information and help improve the overall monitoring process. In addition to detecting stack flame, these thermal cameras can be positioned to monitor the igniter flame.

### THE RESULTS

A handheld thermal camera allows a user to complete a quick spot check of the flare to make sure it is burning efficiently. A fixed thermal camera provides a way to automatically control the monitoring process, allowing users to set up alarms for critical situations and create reports. Thermal imaging helps oil and gas companies ensure that the assist gas-to-waste ratio is properly adjusted, and it minimizes upset conditions that require immediate adjustment of the air or steam volume to maintain proper combustion. As a bonus, automated assist gas injection control can help companies prevent excessive steam consumption and provide significant cost savings. Data can be collected, allowing users to analyze and optimize the combustion process — saving the environment and avoiding excessive costs.

For more information about FLIR in the oil and gas industry or to schedule a product demonstration visit: [www.flir.com/oilandgas/processing-refining](http://www.flir.com/oilandgas/processing-refining)

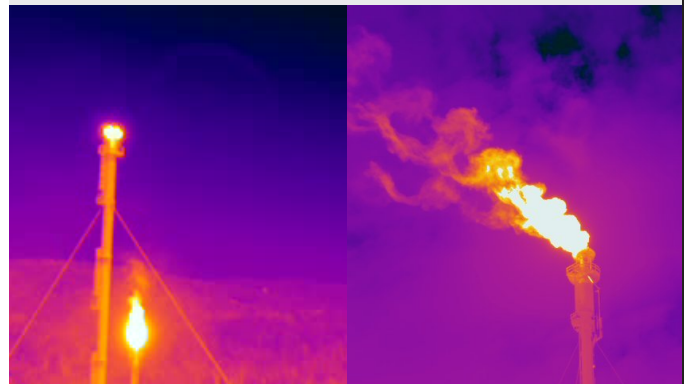
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Various technologies are used to monitor flares, but they have limited performance when looking through smoke.



Thermal imaging can "see" through smoke, enabling inspectors to do quick spot-checks or continuously monitor flare stacks.

