

How to Avoid Hidden Problems in Your Thermal Images

FLUKE®

Application Note

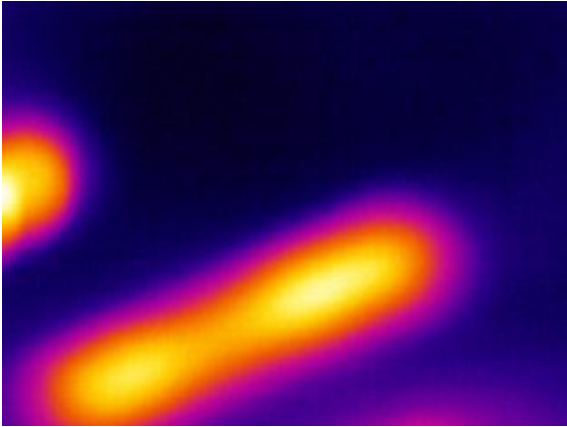


Figure 1: An out-of-focus thermal image

Did you miss out *that* problem in your thermal image?

Blurry, out-of-focus thermal images bring the worst headache in trying to find any problem in facilities.

In this digital age, every one of us has a digital camera which we use to take photographs with friends and family for leisure. We also know exactly what an out-of-focus photo means. It means that we can see almost nothing but blurry spots and this usually leads to dissatisfaction. The same problem applies when we take thermal images.

'Focus' is the single most important thing to ensure when taking thermal images for predictive maintenance. Thermal images need to be clear, sharp & focused on the right object to identify problems. Improper focus can lead to false temperature readings up to 20 degrees Celsius difference. False temperature patterns conceal problems such as bad electrical connection, overheated components and so on. Lack of details on critical features makes diagnosis difficult if not impossible. Eventually, precious time and resources are wasted on misdiagnosis, undetected problems or re-inspection effort.

Capturing in-focus thermal images can be a challenge for anyone since there are so many cables, switchgears, circuit breakers, electrical connections, motors, bearings, etc, in an industrial or commercial facility. Manual focus is definitely the first option to put all control (and thus risks) in the skill of the user.

"Focus First" – The Number One Rule For Any Thermographer

It takes time to practice and perfect using manual focus techniques on a thermal imager.

Consider a typical scenario where a thermal imager is shared among a team of 5 members, each would have less time to practice his manual focus skill. If the more experienced user is busy, he depends on his team member to take images for him to diagnose. This is when error & confusion arise from out-of-focus images.

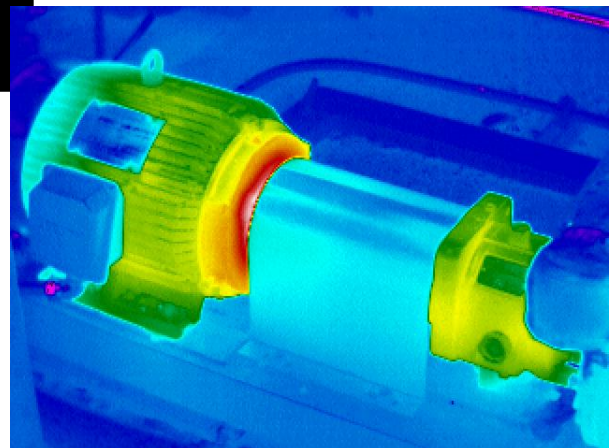


Figure 2: Potential bearings problem detected

The second option is to use auto focus feature which many thermal imagers offer. However, the surprising fact is that most professional thermographers advise against using auto focus.

What is The Problem with Most Auto Focus Systems on Thermal Imagers?



Figure 3: Passive auto focus systems often only capture near-field object

They are passive auto focus systems. In auto focus mode, the users have no control to choose which object to focus on. The imager would focus on any closest or foreground objects. For example, you want to capture a transformer behind chain link fence, but you only see the fence in your thermal image due to passive auto focus.

In the real world, many objects are located closely, in front or behind others, such as behind fences or ventilation openings. The inability to choose which object to focus on becomes a liability in passive auto focus system. That is why professional users want to focus manually and choose exactly which area, which object to see in the image.

What If There is An Auto Focus System which Allows You to Choose Exactly Which Object to Focus on?

With Fluke's experience in test & measurement tools, we challenge ourselves to solve the most critical element in using an infrared camera—focusing exactly where they need to in order to get the right information—every time.

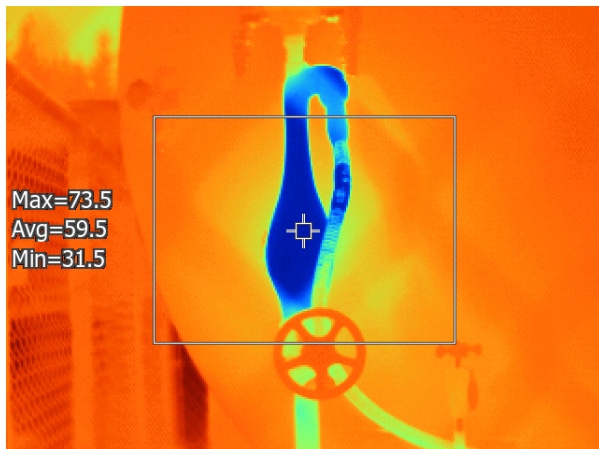


Figure 4: Fluke LaserSharp™ Auto Focus allows you to choose to focus exactly on the object of interest

Fluke LaserSharp™ Auto Focus is a unique active auto focus system on FlukeTi400 Thermal Imager series. How does Fluke's LaserSharp Auto Focus produce consistently in-focus images? We use the precision technology in our laser distance meters to calculate the distance to the intended target with a laser, then focus the camera to that exact spot.

No mistakes. Predictive maintenance has never been easier. This isn't hit-and-miss technology. This is point-and-shoot-and-get-it-right every single time performance. Now everyone can take thermal image with maximum confidence.

How to Use LaserSharp™ Auto Focus?

Using LaserSharp™ auto focus is as easy as using a laser pointer.

1. Pull and hold black trigger—laser illuminates
2. Place laser on target, release trigger—imager focuses on the target

Moreover, LaserSharp™ Auto Focus does not disable manual focus on Fluke Ti400 Thermal Imager. It offers ultimate flexibility of active auto focus and manual focus at the same time for all users from beginner to professional level. Use LaserSharp™ Auto Focus to boost confidence and jumpstart your predictive maintenance program.

Whether you are a beginner or experienced user of thermal imager, you know that **uptime matters**, **productivity matters**. You would rather spend time identifying problems, preventing and solving issue – not figuring out how infrared camera works. Leverage Fluke experience and innovation to avoid costly mistakes and bring your predictive maintenance to the next level:

- LaserSharp™ Auto Focus to ensure the best focus every single time
- Wireless capability to transfer images & communicate with wireless speed and ease
- IR Fusion® Technology with Auto Blend™ Mode to more easily locate, understand and report what the problem could be
- Connectivity to wirelessly transfer images to your PC, Apple® iPad® and iPhone®

All of these innovations can help you quickly understand what the current state is, create a report, determine next steps; all while the factory and processes are still up and running.



Fluke. *The Most Trusted Tools in the World.*

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