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## **How electricians use thermal imaging - by Brian Leborgne**

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Interstate Electric Services

Today, electricians have many modern tech tools at their fingertips. But there's one tool you may not immediately expect electricians to have in their arsenal: thermal imaging cameras. These cameras use infrared thermography to help electricians safely analyze and diagnose potential electrical problems. Excessive heat is the enemy of critical electrical components. As a part of a structured maintenance program, our electricians and licensed thermographers use thermal imaging on a circuit breaker to check for loose connections, determine if there are any issues with breaker contacts that result in hotspots, or assess whether the load on the breaker is properly balanced. Once diagnosed, they'll fix the problem and then scan once again with thermal imaging to ensure their work solved the issue.

Prior to easily accessible thermal imaging, most testing had to be performed using physical contact measurement techniques. To ensure safety, power to the system had to be turned off. This was cumbersome, not only because of the power disruption to the client's building, but also because subsequent testing could involve restoring and disconnecting power multiple times. The use of thermal imaging can help prevent unnecessary power shutdowns or service interruptions.

There are additional benefits of thermal imaging the electricians at Interstate appreciate. The first is a favorite of our customers: we can easily provide images that visually demonstrate the problem, as well as an "after" image showing we've solved it properly. Second, thermal imaging is completely contact-free, so our electricians don't have to physically touch equipment to determine heat levels. This is especially important as we try to reduce physical contact with equipment within facilities in the wake of COVID-19. Finally, because thermal imaging works in real-time, our electricians can watch while equipment heats or cools, which can be useful in diagnosing problems.

At Interstate, we have licensed thermographers on our team who can provide valuable insight into a project very quickly. As part of our recent, award-winning project with the University of New Haven, Interstate used thermal diagnostic imaging to ensure that the load in the switchgear was properly balanced as per the electrical specification. By routinely performing these diagnostic services facilities can extend the life of their critical power systems.

Thermal imaging technology has advanced a lot in recent years with features like higher resolution screens, smartphone integration, and laser-assisted focus, which measures distance to precisely determine the position of the lens for the most accurate image possible. Electricians benefit greatly by being able to see heat with thermal imaging. It enables them to both pinpoint and diagnose/solve problems faster.

At Interstate, we're using these tools more than ever to reduce the amount of time needed for diagnostics and to make our projects run more efficiently.

For more information about thermal imaging or to ask us any questions, please don't hesitate to get in touch!

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