

INFRARED TESTING

What is Infrared Testing?

Infrared testing, known as infrared thermography, is the use of infrared camera technology to identify hot spots in electrical components that are hidden from the human eye. All electrical objects emit infrared radiation in relation to their temperature. Infrared cameras capture this emission and compare it to the surrounding temperature. This provides a temperature differential that can indicate if excessive heat is being generated. While some overheating can be normal, temperature differentials of just ten degrees may indicate a deficiency. A 30 degree differential can indicate a major fault, requiring immediate corrective action. By utilizing infrared testing, these types of deficiencies can be found and corrected before they cause a fire or other electrical disruption to your facility.

How is it Done?

- ▶ Technician pre-plans the survey.
- ▶ Review operating conditions and past problems with facility.
- ▶ Maintenance electrician must accompany technician during testing.
- ▶ Panel covers and dead fronts need to be removed by electrician.
- ▶ System must be under normal load to ensure accurate testing.
- ▶ Survey is performed using the pre-planned route.
- ▶ A report is furnished by the vendor, indicating trouble areas found.
- ▶ Recommendations are issued based on results.

Available for Infrared Testing:

- Bushings
- Surge Arrestors
- Conductors
- Transformers
- Switchgear
- Service Panels
- Motors

Can Identify:

- Overloaded or Undersized Conductors
- Loose/Bad Connections
- Unbalanced Currents
- Insulation Breakdown
- High Resistance Contacts
- Areas of High Resistance
- Hot Spots

Why is Testing Needed?

Malfunctioning electrical equipment is a major cause of fires. Even small electrical problems can lead to significant property damage and business interruption. Most electrical equipment causes heat while operating. This not only includes electrical switchgear and panels, but also motors, branch wiring, connection points, fixtures, etc. In a well maintained system, this heat is safely dissipated to the surrounding area. However, faults such as loose connections, worn insulation or corrosion can cause an electrical arc and fire. If defective components are identified early enough for maintenance to be performed, many of these losses could be prevented.