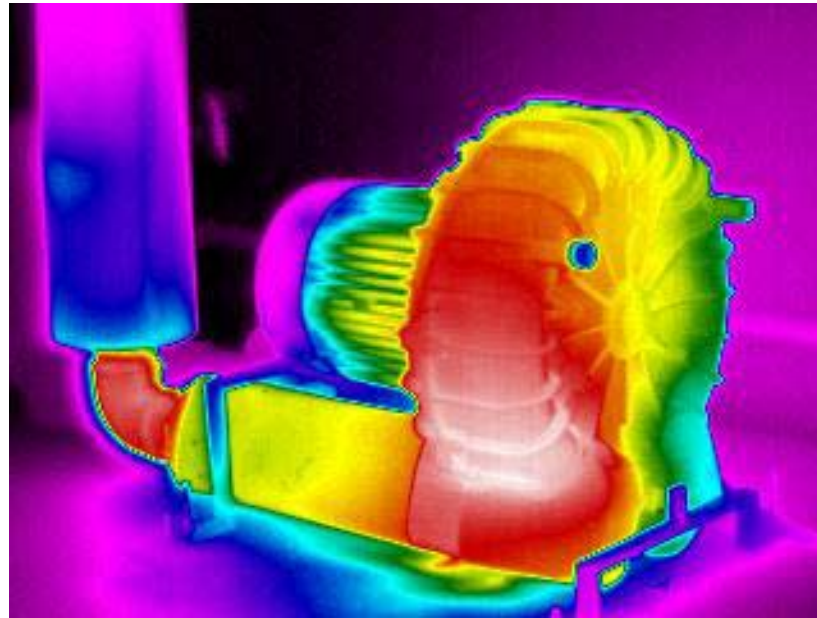




Thermal Imaging Solutions Worldwide



CERTIFIED
MEMBER



IRT Consult, Inc.

Established to provide a Thermal Imaging & Optical Gas Imaging service to clients throughout the USA & Worldwide.

CEO: Darren Whyte
Qualifications: Certified Level 2 Thermographer
Certified Infra Red Building Inspector
Qualified Industrial Mechanic (Fitter) with 19 years experience
BOSIET & HUET Trained & Certified for Offshore Assignments

Offices: Pompano Beach, Florida
Brooklyn, New York

Staff: 17 Thermographers at various locations throughout the US.
6 Admin staff located between New York & Florida Offices



Thermal Imaging Equipment

We strive to ensure that we use state of the art thermal imaging equipment. The following is a cross section of the equipment which we have at our disposal:

- Flir Systems ThermaCAM SC640
- Flir Systems ThermaCAM P640
- Flir Systems ThermaCAM S60
- Flir Systems ThermaCAM P60
- Flir Systems ThermaCAM PM375
- Flir Systems ThermaCAM B400



We also have at our disposal a Flir Systems Gas FindIR HSX Optical Gas Imaging camera which is used to identify fugitive gas leaks.

This camera is unique in that it can “see” gas leaks, which otherwise may go undetected.

This camera can survey vast areas in a relatively short period of time.

Contacting IRT Consult, Inc.

If you require information or wish to receive a quotation then we can be contacted via 1 easy Toll Free Number:

Toll Free Phone: 800-683-8088

Toll Free Fax: 888-483-1831

Alternatively we can be contacted via the contact us page on

www.irtconsult.com

Or by E-mail:

info@irtconsult.com

What is Infrared Thermography?

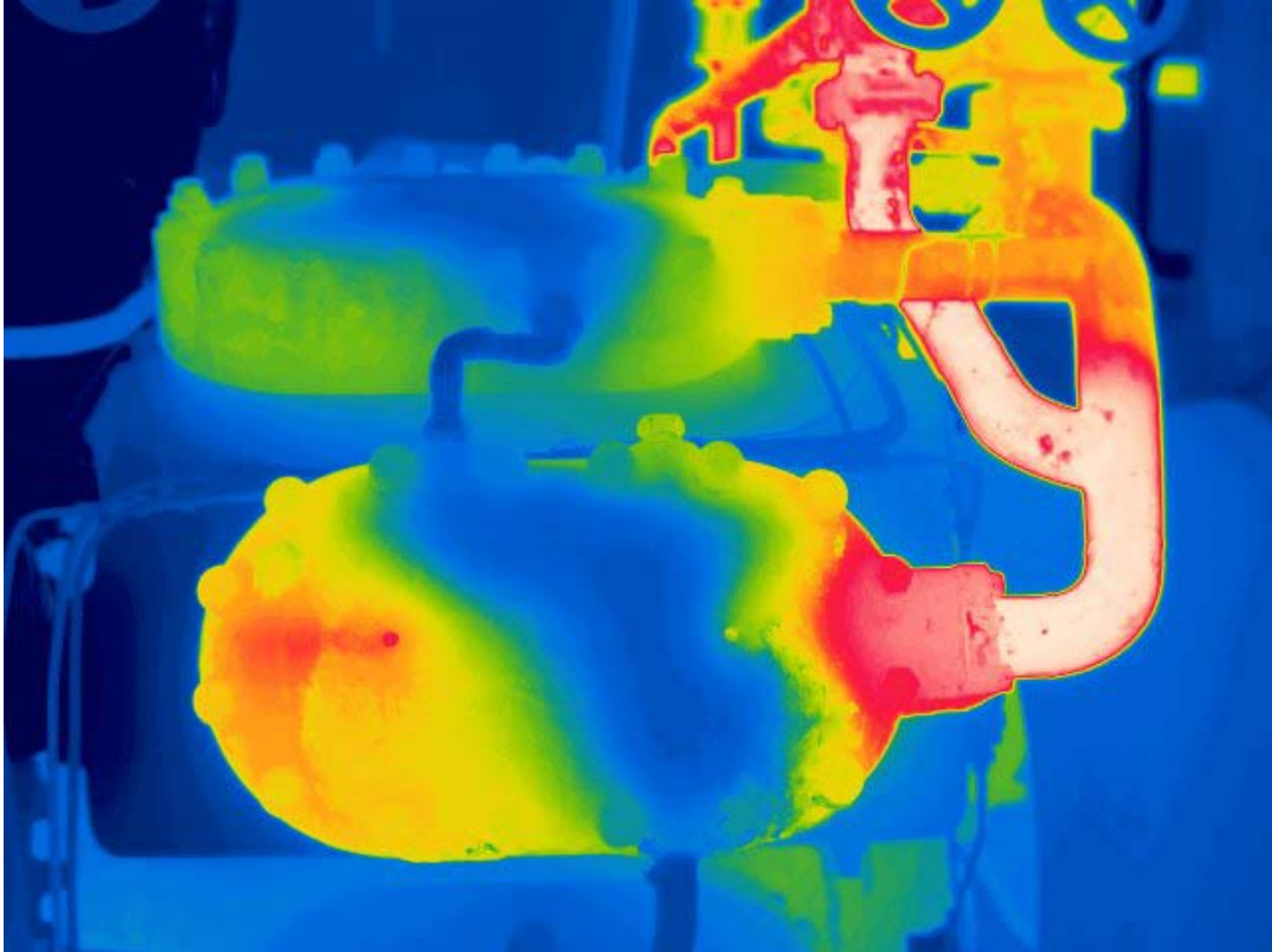
Infrared Thermography is the Science of acquisition and analysis of thermal information from non-contact thermal imaging devices



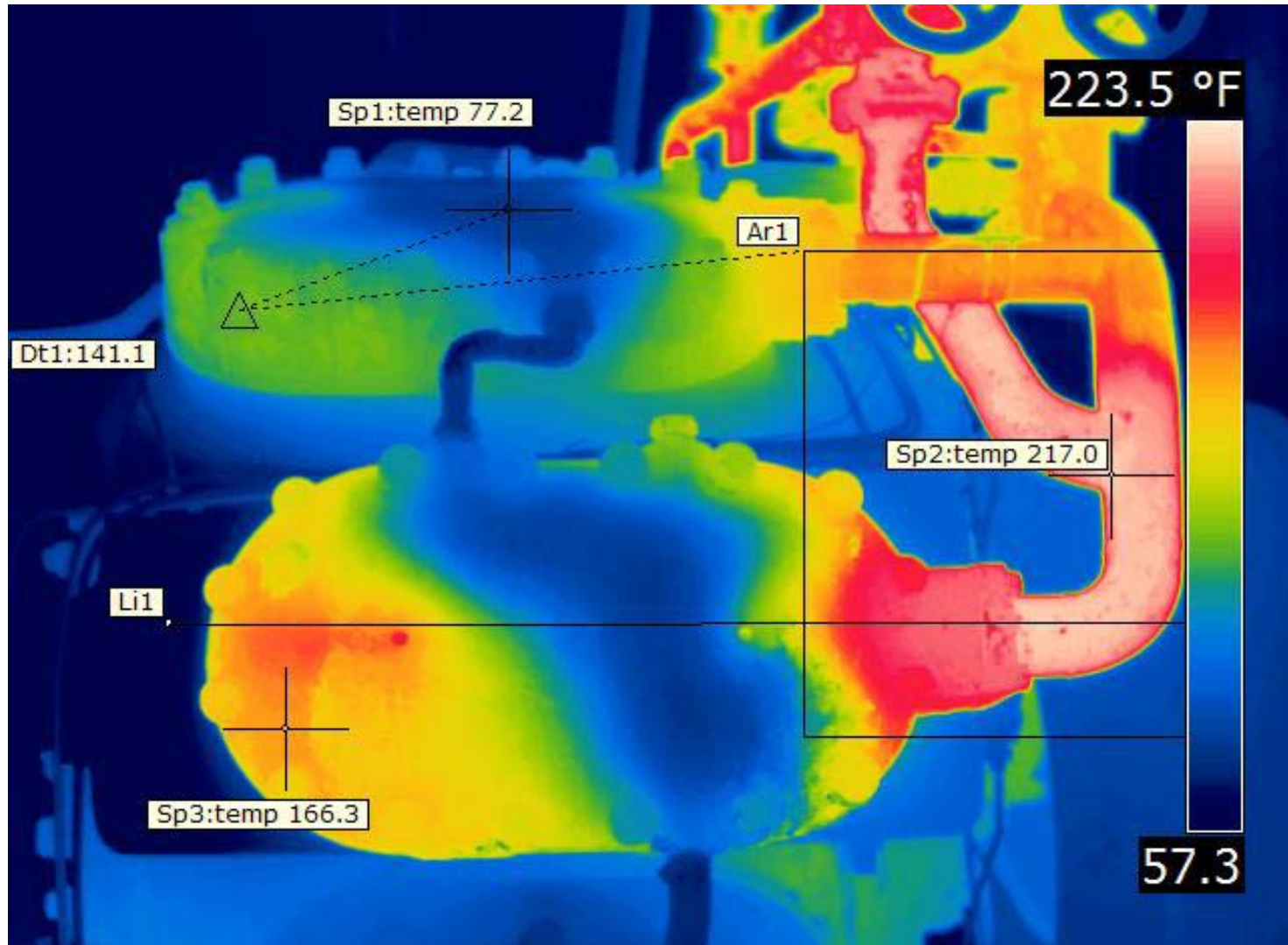
Thermography as a Thermal Analysis Tool

- **It is non-contact – uses remote Sensing**
 - Keeps the Operator out of Danger
 - Does not intrude upon or affect the target at all
- **It is two-dimensional.**
 - Comparison between areas of the target is possible
 - The image allows for excellent overview of the target
 - Thermal patterns can be visualized for analysis
- **It is real time.**
 - Enables very fast scanning of stationery targets
 - Enables capture of fast moving targets
 - Enables capture of fast changing thermal patterns

Infrared Image Analysis

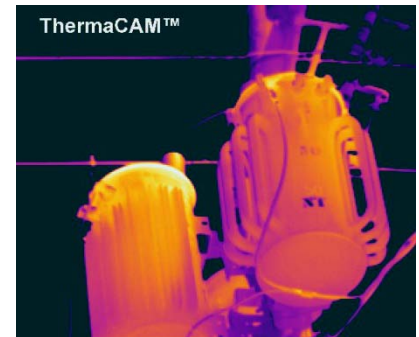
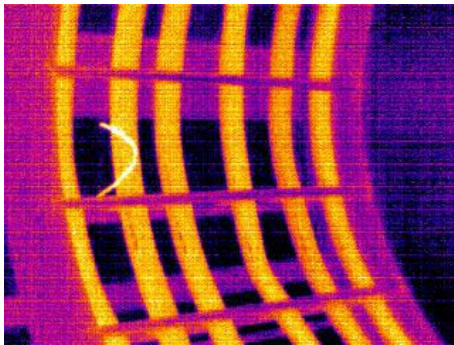


Infrared Image Analysis

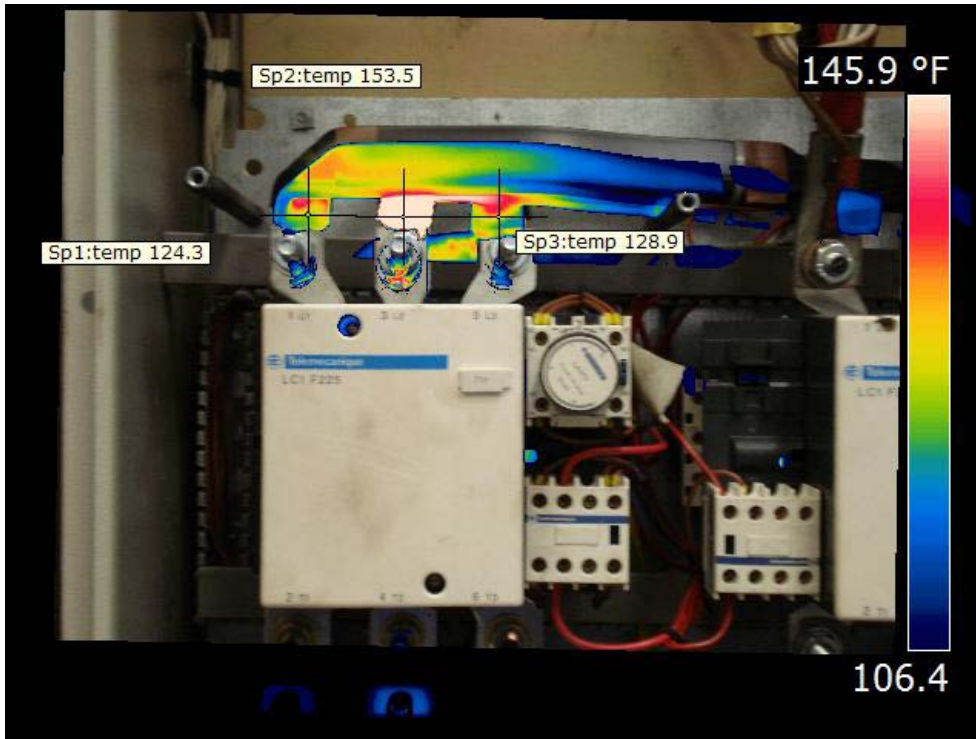


IRT Consult Thermal Imaging Applications

- **Electrical Equipment Inspection**
- **Mechanical Equipment Inspection**
- **VOC Leak Detection**
- **Energy Audits**
- **Environmental Monitoring**
- **Research & Development**
- **Quality Control & Process Monitoring**
- **Non-destructive Testing**
- **Limited by your imagination**



Electrical Equipment Inspection

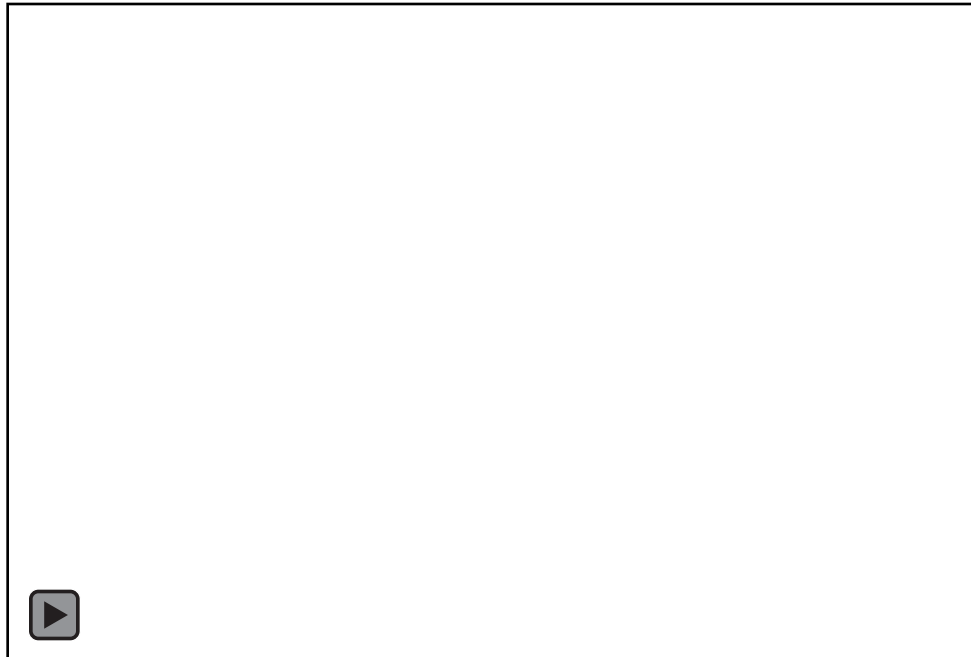


- Identification of Overloaded Equipment
- Identification of overheated components
- Identify loose connections
- Identify over tightened connections
- Identify Cable faults
- Identify Phase Imbalances
- Identify faulty components

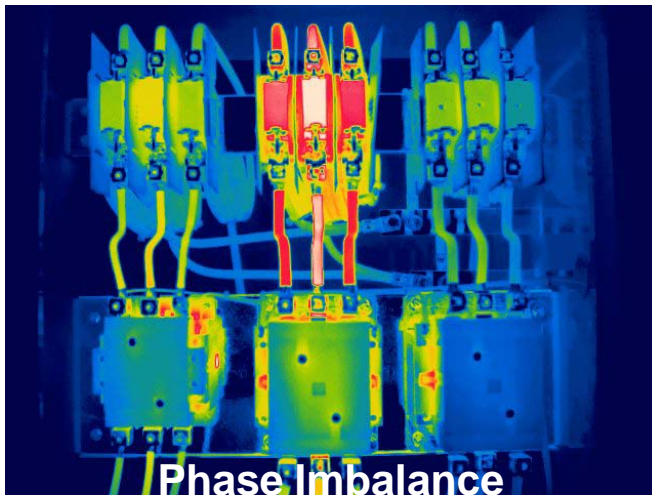
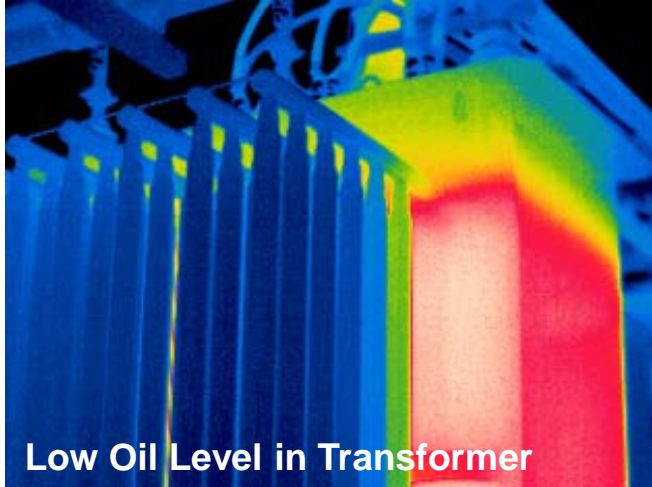
When to request an Electrical Inspection:

- If the site uses Electricity (Commercial, Industrial, Etc.)
- If there is a potential for electrical equipment to potentially start a fire
- If there is equipment which is critical to the operation
- If you want to reduce your companies exposure to Fire / Explosion Risk

Transformer Explosion

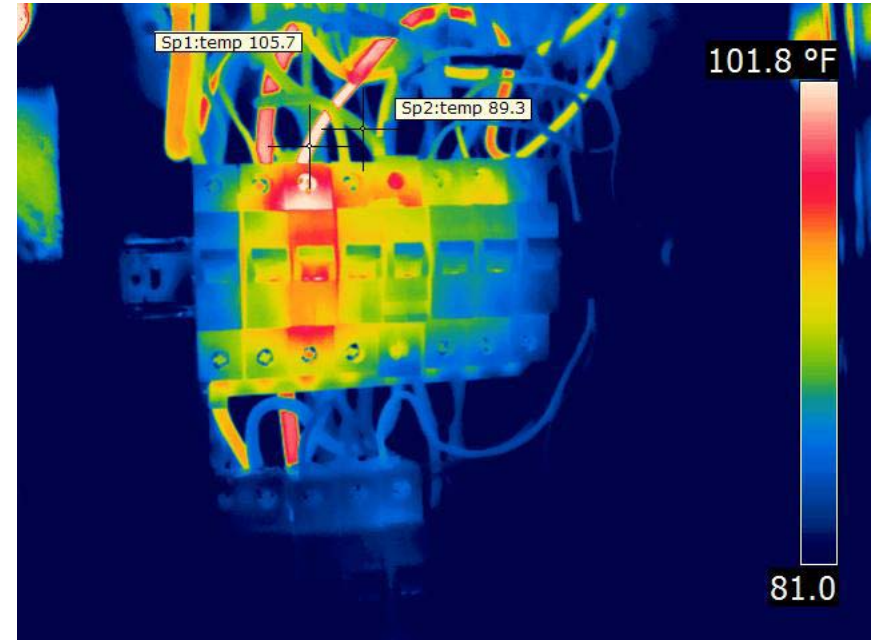
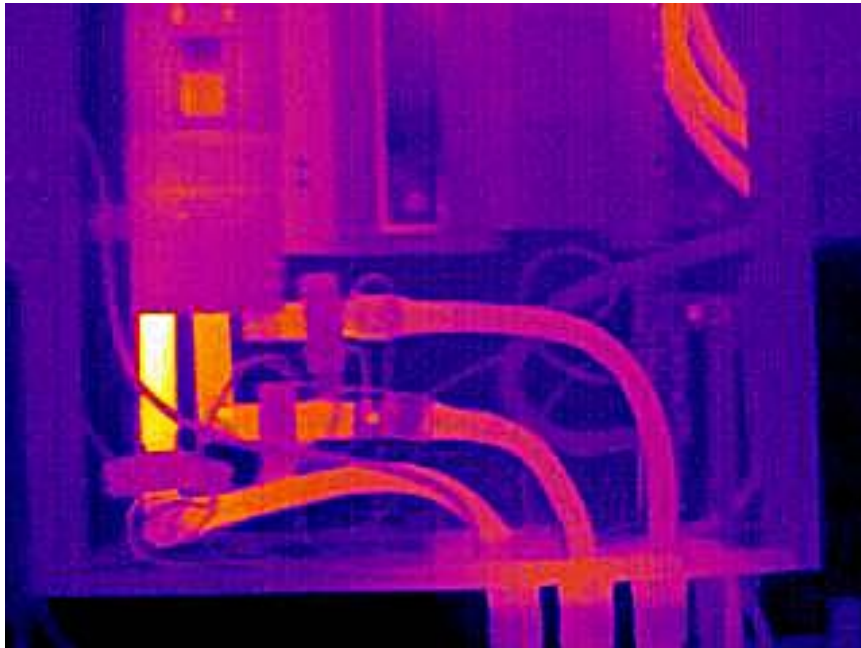


Electrical Inspection Images



Electrical Meter Fire

Electrical Inspection Images

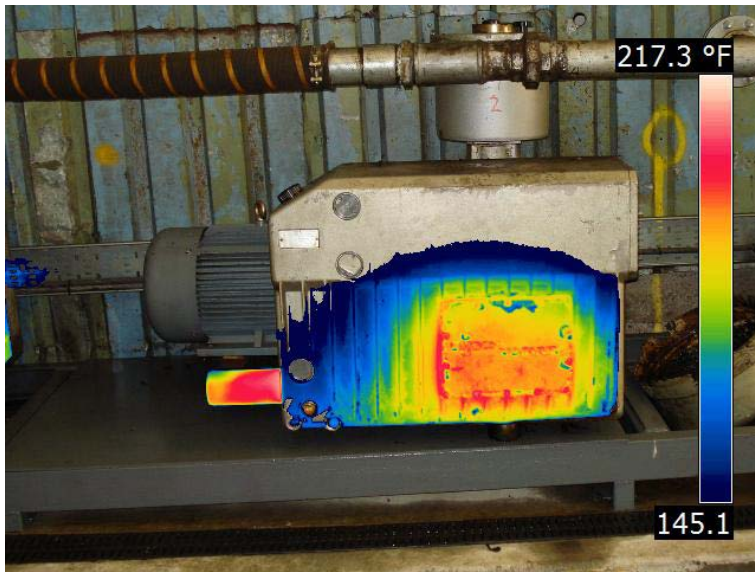


Mechanical Inspection

It's not only electrical equipment which can fail during production, mechanical items such as:

Pumps, Gears, Clutches, Bearings, Belts, Heat Exchangers, Pressure Accumulators, Conveyors, etc. can have a tendency to fail.

Mechanical failure costs \$ 000's in lost production, orders, wages, etc.



IR Inspection of mechanical equipment can identify failing equipment before it becomes a problem.

Regularly surveying mechanical equipment (Trending) allows continual monitoring of it's condition & even prediction of when it may fail.

Mechanical Inspection

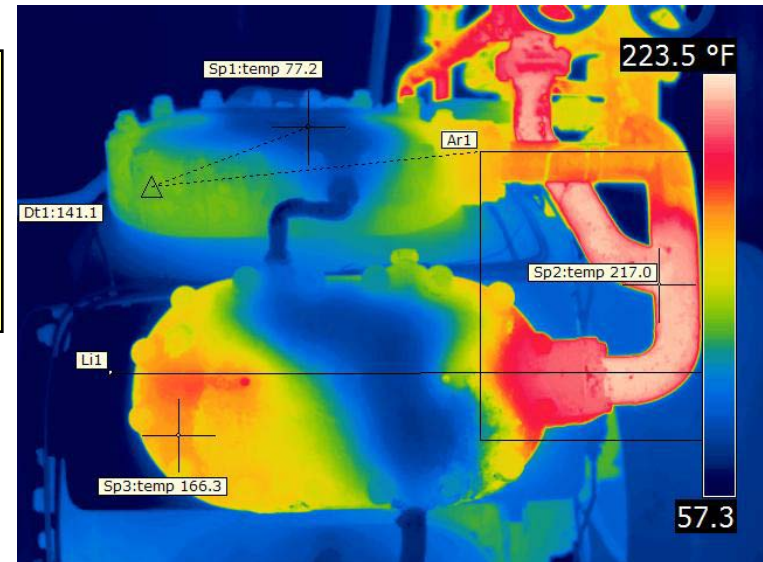
Can you afford not to inspect?

If your facility cannot afford the expense of production equipment breaking down, then the cost conscious Facilities/Maintenance Manager should schedule a Thermographic Survey without delay.

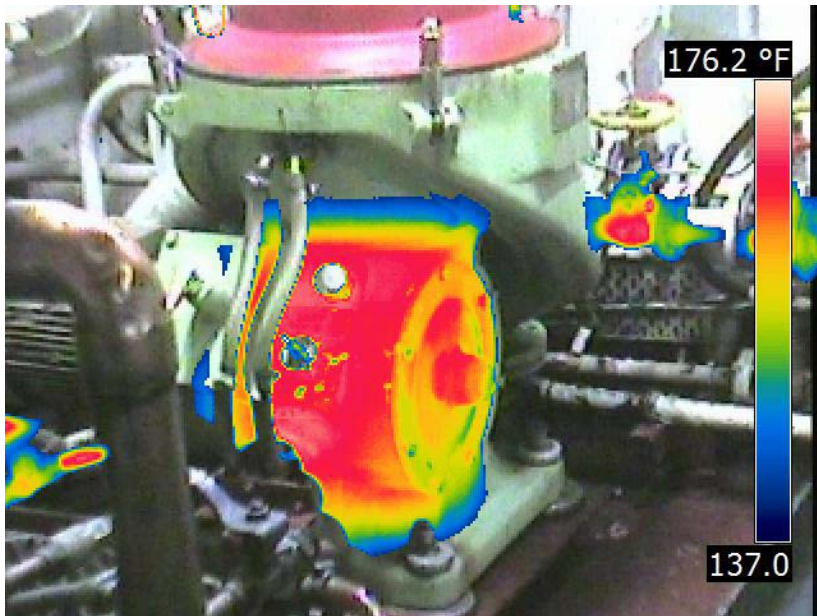
**Image of \$ 140,000
refrigeration compressor.
Monitored to ascertain if
cooling system working.**

Benefits:

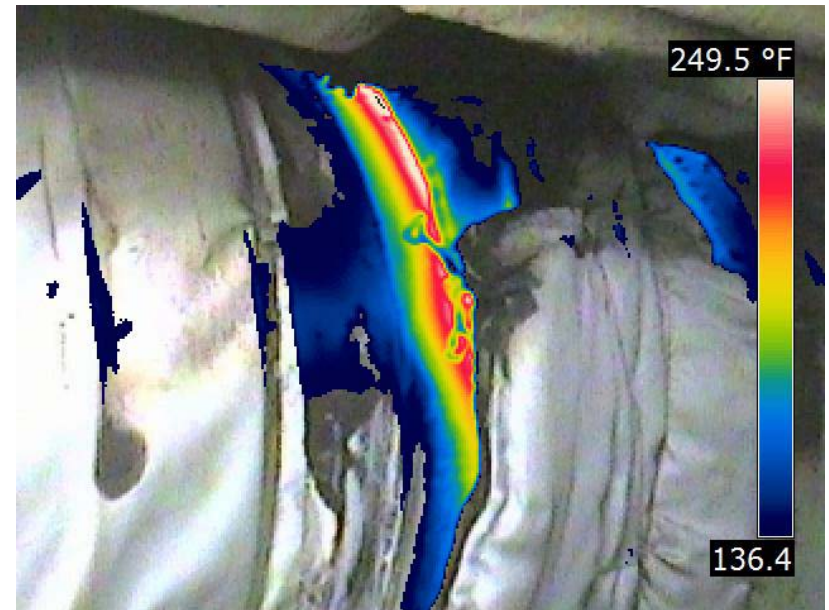
- Increase equipment reliability
- Decrease expensive downtime
- Increase production/output
- Every \$ spent = \$ 4 in benefits (Various case studies)



Mechanical Inspection Images



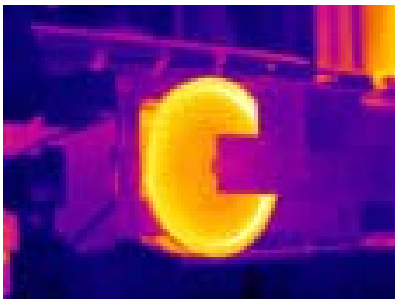
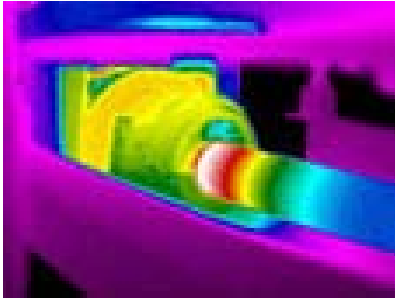
Ref. Temp. 150 F



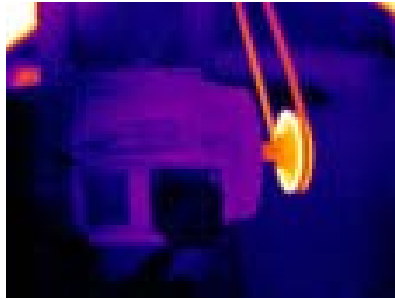
Inspection of Insulation on Ships Exhaust.

Mechanical Inspection Images

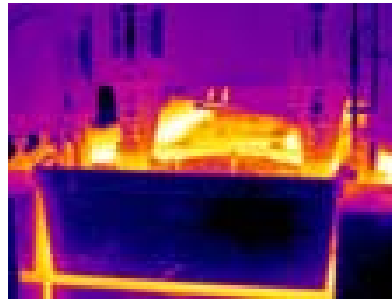
Bearings



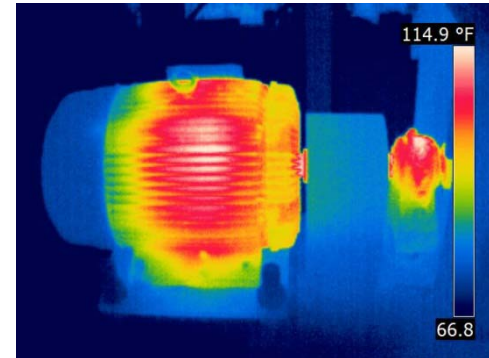
Pulleys



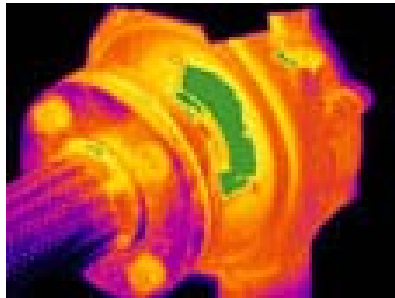
Solder Baths



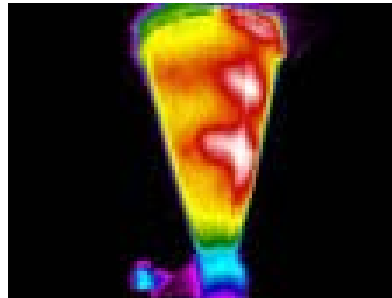
Motors



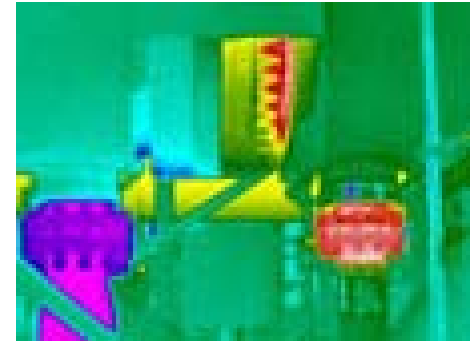
Pumps



Hoppers



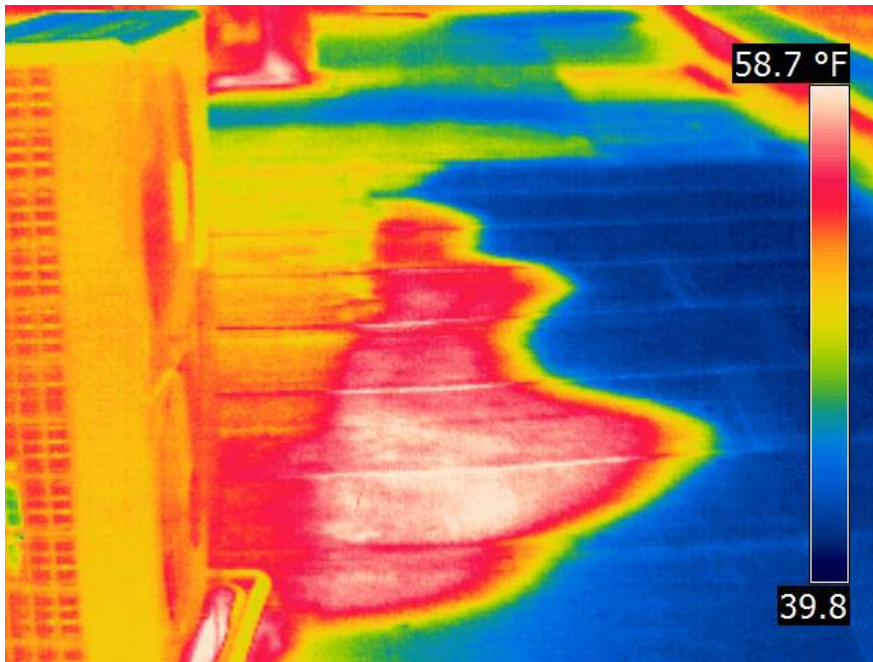
Vessels



Roof Leak Surveys

Surface damage to roof membranes will allow water to migrate into sub-surface insulation layers and can cause leaks and major structural damage over periods of time.

A thermal imaging survey of a roof will quickly identify areas where moisture is retained or trapped.



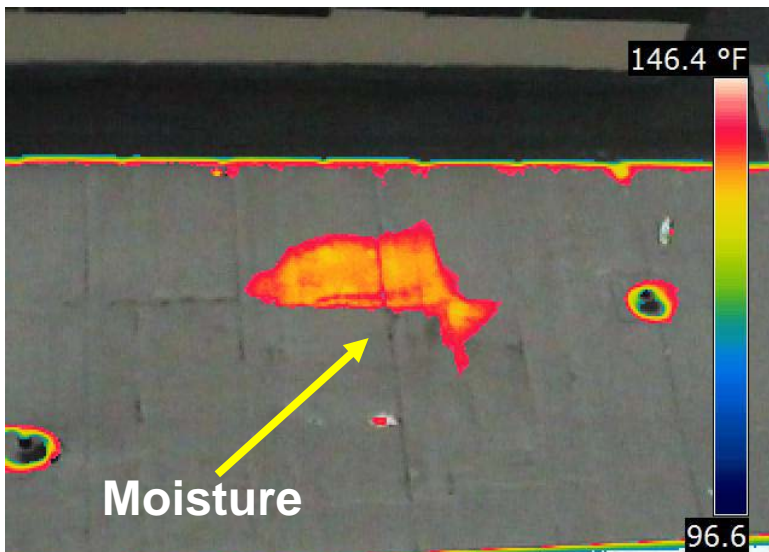
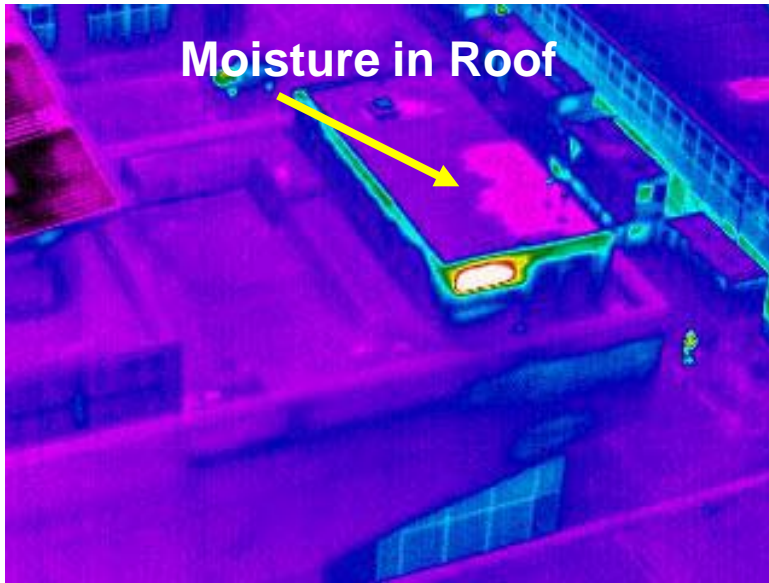
Knowing the location of trapped moisture will allow for an accurate decision to be made regarding the remedial repairs which may be necessary.

Case Study

1995 – Winn Dixie Distribution, TX

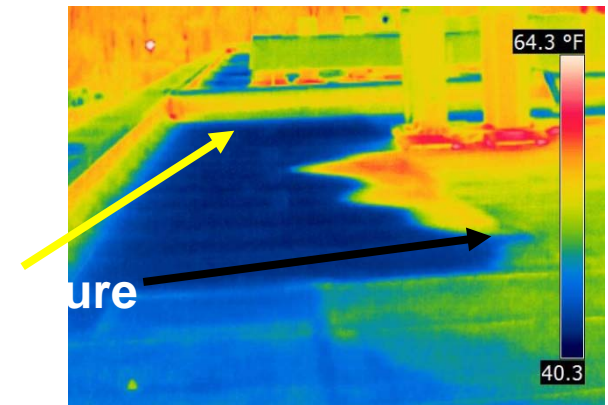
\$ 1,000,000 saved on a \$ 3,000,000 loss for Kemper Insurance by having a roof survey conducted after the roof was damaged by a storm.

Roof Leak Surveys



When to carry out a Roof Survey?

- When leaks are detected
- Prior to acceptance of a new roof system
- Before any existing roof warranty expires
- Planned maintenance purposes
- When a pre-purchase or pre-insurance report is required
- Prior to carrying out roof replacement

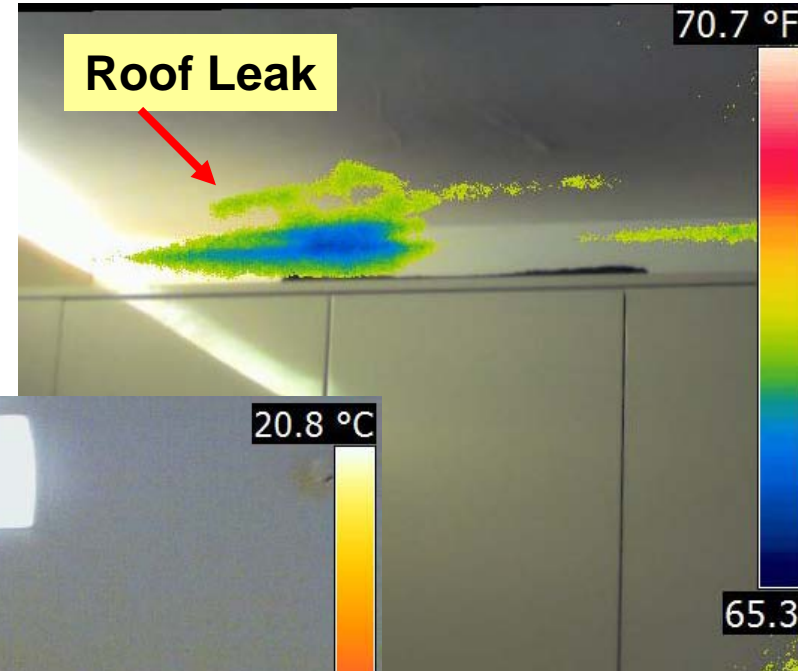


Water Intrusion Survey

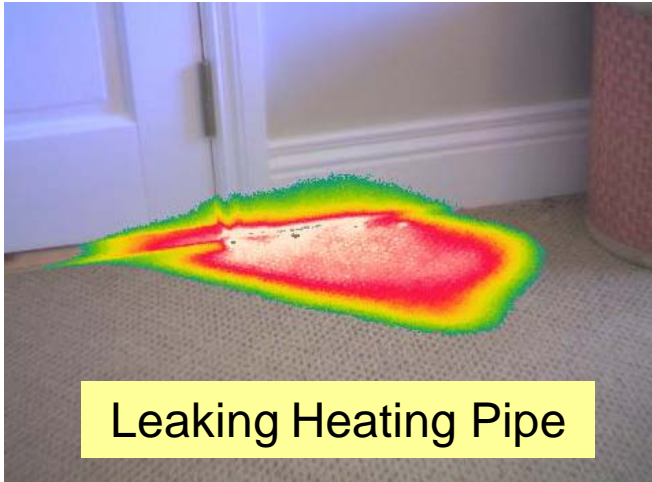
Water intrusion is a leading cause of residential insurance claims

Water can enter a property from many sources

- Leaking Pipework
- Leaking Roofs
- Leaking underfloor radiant heating systems
- Leaking toilets/showers
- Damaged siding
- Leaking windows etc.



Water Intrusion Survey



Find Water Intrusion pathways the easy way.



Assistance with LEED Certification

Thermal imaging can be used to assist companies/individuals who wish to achieve LEED Certification by identifying the following problem areas:

- Air intrusion into buildings
- Insufficient / non-existent insulation
- Damaged or incorrectly installed insulation
- Electrical equipment faults (Inefficiency)
- Identify water leakages
- Identify gas leaks which are both harmful to the environment but also pose a risk of explosion/fire
- Can identify if glazing systems are working correctly

INFRARED OPTICAL GAS IMAGING TECHNIQUES

A number of companies, both in Europe and the US, have developed optical sensing technologies which enable to visualize gas leaks in real time, so that they appear like 'smoke' on a video recorder.

A wide range of chemical species can be detected by the OGI technology. The instrument is not designed to be selective for one compound but to have the possibility to detect, to some extent, all of the chemical components that may be present in leaks at oil refineries or petrochemical sites.

IRT Consult Inc.

Provide a service in the detection of VOC Emissions and Fugitive Gas Leaks for.

Oil & Gas Industry
Environmental Agencies
Utility Companies
Disaster Recovery Groups



OPTICAL GAS IMAGING TECHNIQUES

It consists of determining the airborne VOC concentration remotely to a potential leak point by using sensitive Optical Gas Imaging cameras.

ADVANTAGES

Manpower requirement - Experience shows that typically a two person team using an OGI camera can screen in the order of 15,000 to 20,000 equipment components per day (i.e. approximately 2000 per hour). Conventional sniffing techniques are of the order of thirty times slower (i.e. about 500 equipment components can be screened per day). report no. 6/08 14

Large monitoring scope - Enables detection of leaks in non accessible locations, which would remain undetected in a conventional sniffing survey.

Mobility - Size and weight made first generation cameras difficult to maneuver in elevated and congested areas.

Improved Safety - Removes operator from hazardous environment



REMEMBER

90% of fugitives emissions originate from just over 0.13% of point sources

OGI TECHNIQUES OFFER:

- Cost effectively scanning hundreds of components simultaneously
- Reduced inspection and site survey times
- Removes operator from hazardous environment
- Rapid accurate and safe detection of fugitive gases
- 30 times faster then conventional 'sniffers'
- It enables remote point source leak detection - 15-20% are inaccessible
- Can scan from close up to several hundred metres
- A wide range of chemical species can be detected
- No interruption of operations



Optical Gas Imagers are lab tested to detect

Benzene	Isoprene	Toluene	Propane
Pentane	Ethane	Heptane	MIBK
Ethanol	Methanol	Xylene	Ethylene
1-Pentene	Methane	Hexane	Octane
Ethylbenzene	MEK	Butane	Propylene



That's all



..... for now anyway