

Level 3

Infrared Thermography Certification Training

The Institute of Infrared Thermography presents: Level III Infrared Thermography. The staff at the Institute of Infrared Thermography has been active in this industry and has been training individuals and companies internationally for the past 27 years! This Level III course is the culmination of this experience.



Level III

This course is provided to advance a Level II Thermographer to the level where they are able to initiate and manage an Infrared Thermographic Program, establish techniques and procedures, interpret codes, standards and procedures, and designate the particular NDT methods to be used. The course will provide an understanding of the information necessary to direct other thermographers to provide written procedures and purchase suitable equipment.

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Level III Infrared Certification Topical Outline

PRINCIPLES AND THEORY

Conduction, Convection, Radiation

The Nature of Heat and Heat Flow-

-Exothermic and Endothermic conditions, friction, fluid flow, thermal resistance, thermal capacitance.

Temperature Measurement Principles

Proper Selection of Thermal/Infrared

Testing

Differences between IR/T and other methods

Complimentary roles of other methods,

EQUIPMENT/MATERIALS

Contact Temperature Measurement Equipment

- ★ Thermometers
- ★ Thermocouples
- ★ Resistance thermometers
- ★ Thermochromic Change Devices

Pyrometers

Infrared Imagers

- ★ Focal Plane Arrays
- ★ Single Detector scanners
- ★ Staring array

Performance of Non-contact Devices

- ★ Absolute accuracy
- ★ Repeatability
- ★ Spot size ratio
- ★ IFOV, MRTD

TECHNIQUES

Calibration of Equipment

Quantifying Emissivity

Evaluating background radiation

Ex/Endothermic investigations

Electrical inspections
Chemical processes
Welding
Moisture in Insulation

Infrared Training at its Best

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TECHNIQUES CONT'D

Friction Investigations

Bearings, Drive belts, Couplings, Gears,

Fluid Flow

Piping, Valves, Heat Exchangers, HVAC Systems, Filters, Cooling ponds.

Thermal Resistance

Insulation Systems, Refractory, Furnaces

Thermal Capacitance

Tank levels, Building envelopes, Roof moisture, Paper machines, Coating disbands

PROCEDURES

Existing Codes and Standards

ASNT – American Society for Non-Destructive Testing

ASTM – American Society for Testing and Materials

ANSI – American National Standards Institute

IEEE – Institute of Electrical and Electronics Engineers

Written Program Procedures and Documentation

Reporting

Database Management

Cost Justification

Software Programs

Inspection Reports

Familiarity with other NDT Methods

HEALTH AND SAFETY

SAFETY FOR PERSONNEL

Safety Standards

INFRARED PROGRAM INITIATION AND MANAGEMENT

Selecting Equipment

Understanding Various Certification Procedures

Managing Level I and II Thermographers

The Institute's Training Courses are Dynamic, Practical, Informative and Valuable!

