



INFRARED THERMOGRAPHY LEVEL II TRAINING COURSE PROGRAMME

Level-II Quantitative Thermography

LC Engineering Services Sdn. Bhd. will be conducting Level-II certification course for Infrared Thermography affiliating with one of the oldest independent Infrared training and certification firm, Infraspection Institute, U.S.A.

Infraspection Institute literally pioneered the infrared training industry through consulting, technical publications, research, standards development and software development. All of our instructors are highly experienced, practicing thermographers.

Our courses integrate theory, practice, and case studies in a fun, relaxed atmosphere designed to maximize your learning experience. Course tuition includes Student Reference Manual and and Infraspection Institute Certified Infrared Thermographer® exam. The exam will be held at the end of the course, and successful candidates will receive Level-II Certification directly from Infraspection Institute, U.S.A. The Level-II Certificate meet and exceeds the American Society of Non-destructive Testing's SNT-TC-1A recommended practice.

Level II Certified Infrared Thermographer is a five day course for the application of quantitative thermal imaging and temperature measurement for P/PM, Condition Monitoring, Quality Assurance and Forensics Investigations.

This course covers advanced infrared theory, equipment calibration, error sources, cross-verification with contact thermometers, advanced equipment operation, use of windows and filters, assigning temperature limits and repair priorities, and quantitative report generation.

Infrared Thermography Level-II Curriculum

1. Thermometry Fundamentals

- Temperature scales and conversions
- Absolute and relative temperatures
- Classes and benefits of contact thermometers
- Classes and benefits of non-contact thermometers
- Identifying and reducing errors

2. Advanced IR Theory

- Units for measuring radiant power
- Relationship between power and temperature
- Planck's blackbody curves

3. Temperature Measurement Error Sources and Corrections

- Calibration
 - how IR sensors are calibrated
 - how to check calibration
 - calibration/accuracy specifications
- Reflectance
 - shielding techniques
 - measuring & compensating for with direct and reflector methods
- Emittance
 - how emittance varies
 - using default and table values
 - how to measure emittance
- Transmittance
 - filters to view through materials and atmospheres
 - filters to measure temperatures of material surfaces and atmospheres
 - measuring material transmittance
- Target Width/Distance Ratios
 - calculating target size/distance

4. Traceable Temperature Limits: How Hot is Too Hot

- Delta-T classifications
 - NETA, Mil Spec, and other standards
- Absolute temperature classifications
 - ANSI, IEEE, NEMA standards for electrical systems
 - correction formula for load and ambient temperature
 - other standards for mechanical systems
- Developing limits for your equipment
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5. Preparing Quantitative Reports

- Data to gather
- Report procedures
- Image processing software capabilities
- Report generation software capabilities

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