

Level 2 Thermography

Test and Measurement Instruments C.C. Tel: +27 11 683 4365

A prerequisite for ITC Level 2 is that the student must hold a level 1 certificate.

The five day level 2 training course prepares you for qualification as a level 2 certified Thermographer. You will learn about topics in Infrared Thermography to both deepen and broaden your knowledge about infrared physics, heat science, infrared measurement equipment and its application. As a Level 2 Thermographer you shall provide guidance to category 1 personnel in the areas of equipment selection, techniques, limitations, data analysis, corrective actions and reporting.

In order to attend a Level 2 Thermography Course, you shall

- hold a valid Level 1 Thermography certificate,
- prepare a case study to be presented at the Level 2 course and submitted towards qualification at course closing. Details and guidelines on the case study will be issued 2-3 weeks prior to the course start date.

Course Content

Introduction to Thermography:	Review of Level 1 Thermography
Temperature:	Conversion factors between Kelvin, Celsius, Fahrenheit.
Heat Transfer Theory:	Convection, conduction and radiation – Radiation Laws.
Thermography:	Blackbodies, emissivity.Planks, Boltzman, Newton, Wein's laws Optical filters, optical materials, anti-reflective coatings. Atmospheric transmission and attenuation. Detector technologies and calibration. Measurement techniques.
IR Measurement Systems Overview:	Details of different thermal imaging camera parameters including, NETD, IFOV, MFOV
IR Windows and window materials:	Window measurement formulae, spectral transmittance of different materials
Transient Thermographic NDT:	Transient Thermographic methods analyzed.
ITC Certification Test:	ITC qualification test to be held on last day of course.

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Please bring with you a scientific calculator, your laptop with software loaded and your Thermal Imaging camera as they will be used extensively throughout the course. There will be some reading required during the evenings.

Useful reference books for level 2 courses,

ASNT Level III Study Guide	ISBN 1-57117-015-4
Common Sense Approach to Thermal Imaging	ISBN 0-8194-3722-0
Infrared Thermography Principles & Practice	ISBN 0903132338
Infrared Thermography Applications	ISBN 090313232x

ISO 18434-1 Condition Monitoring and Diagnostics of Machines- Thermography

ISO 13372 Condition Monitoring and Diagnostics of Machines- Vocabulary

ITC Level 2 course dates for RSA 2013

ITC-CER-5201 ITC Cert. Course L2 - attendance, 1 pers. 5 days \$2,800

6 th to 10 th May	ITC Level 2 Thermography	Johannesburg
28 th Oct to 1 st Nov	ITC Level 2 Thermography	Johannesburg

Minimum number of delegates is 10, maximum is 15.

Additional dates can be scheduled also in different cities but on request

The ITC Level 2 course can be run onsite anywhere within RSA and is classed as a group booking. If you would like to find out more about the onsite training including pricing and availability contact your distributor.

If you would like to book yourself on a training session contact,

- **Your FLIR distribution partner, Test and Measurement Instruments C.C.**

[http://www.instrumentsgroup.co.za/index_files/thermography LTC1 courses in south africa.htm](http://www.instrumentsgroup.co.za/index_files/thermography_LTC1_courses_in_south_africa.htm)