

Level 1 Thermography Certification Course

5 day workshop

Gain a internationally recognised qualification in a rapidly growing industry.

Course Date:

14th - 18th May 2018

Penrose, Auckland

Presented by

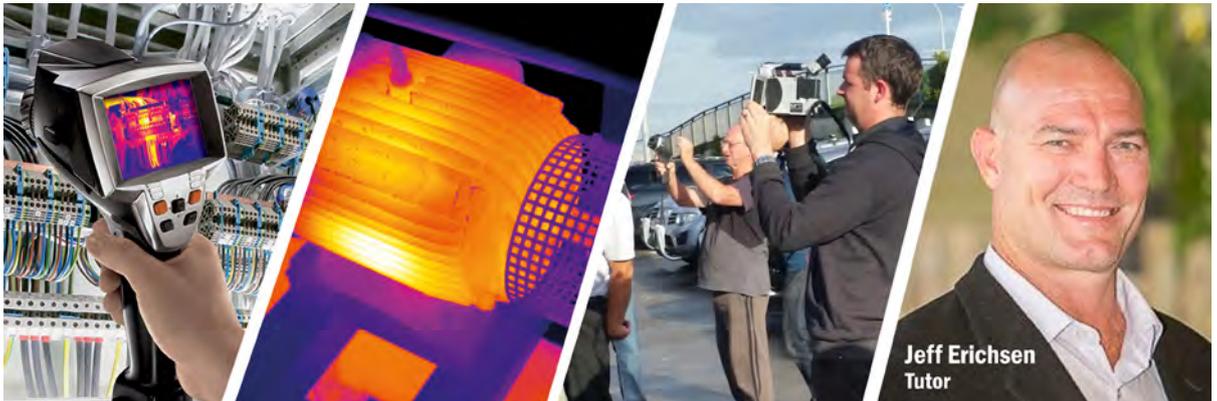
Eurotec Ltd

with tutor Jeff Erichsen

Director of Operations of the Asia Pacific Region for Advanced Infrared Resources

Jeff Erichsen is an expert trainer and advisor for infrared thermography.

For more information on Jeff, see Bio on page 4.



“Extremely valuable information. Highlighted how much I didn’t know about some areas in my field, and showed how much time is wasted trying to diagnose some faults. What an incredible tool for preventative maintenance”

Sacha Vroegrijk, Kaipara Connected Ltd

“If you are passionate about maintenance then this course is the one to take. It will blow your mind”

Andrew Ball, Machine Maintenance Services Ltd

To get the most out of the hands on workshops, if available please bring your camera with you. Don't have a camera? Eurotec can provide cameras for the duration of the course.



Level

1

Level 1 Thermography Certification Course Registration Form

Name: _____ Company: _____

Address: _____ Post Code: _____

Phone: (Work) _____ (Mob) _____ Email: _____

Fees:

\$1950 + GST per attendee. Payment or order number required on receipt of registration.
(Morning Tea, Lunch and Afternoon Tea are provided throughout the course)

Attendees (Please print – Name as to appear in Certificate):

Name	Phone	Email

Payment options please choose one:

Order Number:

Trading Account 1*	<table border="1" style="width: 100%; height: 20px;"> <tr> <td> </td><td> </td> </tr> </table>																				

Direct Credit 2*	Account No: 02-0256-0169221-00
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Credit Card Number	VISA or MASTERCARD	<table border="1" style="width: 100%; height: 20px;"> <tr> <td> </td><td> </td> </tr> </table>																				

1* 30 day trading account subject to application approval.

Exp Date	<table border="1" style="width: 100%; height: 20px;"> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>					

2* For Direct Credit, please email a remittance advice to confirm payment.

Name on Card: _____

Signature: _____

Course Date: Monday 14th May - Friday 18th May, 2018

Location: 750C Great South Road, Penrose, Auckland

Time: 8am to 4pm (Mon-Thurs), Half Day Friday.

Email form to: taldrige@eurotec.co.nz or Fax to 09 5253334 (payment or order number required on receipt of registration)

Payment is required in advance. Course fee is non-refundable, but is transferrable to another course date.

5 Day Level 1 Certification/Operator Course Outline

This course meets or exceeds the recommended training curriculum of ASNT-TC-1A for Level 1 Thermal/Infrared Certification as well as ISO 18436-7. The course is a good mixture of audio, visual, and kinetic presentation material.

The hands-on workshops ensure that the students leave the course with confidence in their ability to operate their IR equipment. Certification will be granted to students who successfully complete the written requirements. Class size is limited to give maximum interaction between instructor and students.

Introduction to Infrared Thermography and predictive maintenance

Basic Thermal Physics

Introduction to Temperature
Matter, Energy, Temperature
Temperature scales
Introduction to Heat

Basic Heat Transfer Theory

Thermodynamics
Change of State
Specific Heat
Conduction, Convection, Radiation

Electromagnetic Radiation

The Electromagnetic Spectrum
Infrared Explained
Introduction to Planck's Curves

The Infrared Image

How an Infrared Image is Produced

Qualitative Thermography

Operating Your Equipment

How Your Camera Works
Detectors-Focal Plane Arrays (FPA)
3 Main Controls: Focus, Level, Span
Getting a Good Image Workshop

Infrared Radiation Physics

The Stephan Boltzmann Law
Wein's Law
Planck's Law
Emission, Reflection, Transmission
Emissivity

Temperature Measurement Workshop
Emissivity Testing Workshop

Imaging and Analysis Factors

Inspection Techniques
Atmospheric Attenuation
Field of View
Instantaneous Field of View
Instantaneous Measurement Field of View
IMFOV Workshop
Infrared Lenses
Infrared Windows

Applications (As pertinent to class)

Introduction to Applications
Reporting
Electrical Inspections
Mechanical Inspections
Process Inspections
Building Inspections
Flat Roof Inspections
Class Application Discussions
Workshop

Software

General Software Discussion

Level 1 Examination





Quality, personalised training to international standards.



Jeff Erichsen The Director of Operations for the Asia Pacific Region for Advanced Infrared Resources has been involved in the condition monitoring of heavy mobile equipment and fixed plant in the mining industry since early 2013. He stumbled upon the technology in late 2012 and immediately recognised its prospective value in his field and began to heavily research its uses.

Jeff States:

I am a passionate maintenance professional that specialises in the condition monitoring of most machinery operating on a mine site. In 2013 I had to research and review relevant information and ISO standards to then carefully collect and collate the data on the types of machinery I was familiar with. Following that, I spent most of my first year developing my own standards, procedures and methodologies for each type of equipment that I had worked on. This involved many hours of before and after repair testing with thermography and mechanical methods to validate my findings. What we now have is a full working infrared condition monitoring system that offers our clients unprecedented predictive maintenance opportunities.

I have also carried out many thermography surveys on electrical switchboards, distribution boards, motor circuit control boards and power distribution components, sub-stations and lines. This has given me a depth of knowledge in the fascinating field of electrical thermography.

I am an active committee member of the Australian Professional Thermography Association (AUSPTA) which assists the Australian Institute of Non-Destructive Testing (AINDT) and Standards Australia in the development and implementation of standards in relation to Infrared Thermography.

It was at this time that I was fortunate enough to meet Mr Wayne Ruddock of Advanced Infrared Resources. I took to Wayne's no bull approach immediately and asked Wayne to mentor me, particularly in the area of scientific data collection for the research and development at the Neurophysics Institute in the area of rehabilitation.

I am looking forward to providing you with Infrared Thermography Training in such a thorough, practically focussed training course.

Professional Background:

- *Director and Trainer at Advanced Infrared Resources Australia Pty Ltd.*
- *Director of Operations for the Asia Pacific region for Advanced Infrared Resources Canada.*
- *Director & Full Time Thermographer at Infrared Inspections & Technologies.*
- *Level 3 Certified thermographer through Advanced Infrared Resources Canada (August 2017)*
- *Level 1 & 2 ITC (Infrared Training Centre) Certified Thermographer through the University of Melbourne.*
- *Cat 1 AINDT (Australian Institute of Non-Destructive Testing) Certified Thermographer.*
- *Active AUSTPA (Australian Professional Thermographers Association) Committee Member.*
- *Active research partner with the Neurophysics Institute, Gold Coast, Queensland, Australia. Researching the use of Infrared Thermography in the validating of non-linear biological transitions in blood flow during the rehabilitation process.*
- *Twice presenting at the Sirfrt national condition monitoring forum Australia.*
- *6 times presenting at the AUSPTA national thermography conferences.*
- *20+ years in the mining industry as a heavy mobile equipment fitter.*