

Infrared Equipment Sales
Inspection Services
IR Security & Surveillance Systems
Software Support Systems
Training Programs

May 19, 2011

AEA Equipment Bid 2011

Mark Williams

Monroe Infrared Technology Inc. is pleased to offer our NY Weatherization & Energy Professionals the following Thermal Infrared Imagers, accessories and training options. Because of the variety of imagers we are now offering, we thought it would be better handled with a table selection and brief explanation of each imager's features, rather than the standard form. Brochures are also included on each imager for more detailed specifications and capabilities. If at any time you have questions, do not hesitate to call MITI with questions. We appreciate the opportunity to supply imagers and support services to all Energy & Roofing Professionals.

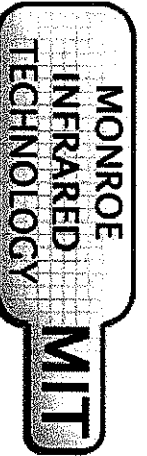
Please issue the Purchase Orders for any of the Imaging equipment and accessories listed, direct to the following address:

Monroe Infrared Technology Inc.
PO Box 1058
Kennebunk, Maine 04043
Fax: 207-985-3146

We are always striving to come up with new and unique imagers, and improved training programs to fit our customer's needs. Please be assured that when we come up with these new products we will offer you full access to these products at reasonable prices so you can have the best performing IR program possible. Thank you for continuing to look to MITI for your IR imaging equipment and program needs. Please be sure to understand we offer additional discount if multiple imaging systems are ordered from one agency or location. Discount is not valid on Accessories or Training Programs.

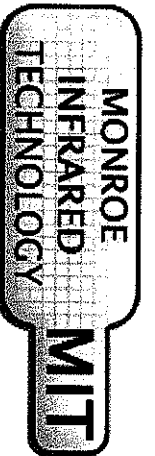
MITI is pleased to offer AEA and all associated contractors that use and supply services to AEA, the discounted prices on the following equipment. Thank you for letting us be of service!

Headquarters: P. O. Box 1058 • Kennebunk, ME 04043
1-800-221-0163 email: breim@monroeinfrared.com <http://www.monroeinfrared.com>
Other Locations: Utica, MI • Orlando, FL



- All of the imagers in the following table meet the requirements of:
- 1- Minimum 2-hours battery time
 - 2-Battery charger or charging cord included
 - 3- Carrying case included
 - 4- MITI Heat Find-IR Imagers are B&W display, All FLIR Imagers are B&W and Color display
 - 5- All Prices include UPS Ground Shipping to Your Location (Insurance not included)

Model	FPA Size	NETD	Video out	FOV Lens	Image storage	SD card or internal	Temp. Display	Laser Pointer	1-2X Zoom	Visual Camera w/lamp	Vis/IR Fusion & PIP	Run time hrs	Weight	Price
MITI CCIR	80x60	.075°C	N	45°H	N	N	N	N	N	N	N	3	1.5lbs	\$2,995.00
MITI HFIR-JR	160x120	.05°C	N	50°H	400 jpg Video	Handle	Y	N	N	N	N	4	2.7lbs	\$6,995.00
MITI HFIR-B&W	320x240	.07°C	N	50°H	400 jpg Video	Handle	Y	N	N	N	Y	3-4	2..7lbs	\$8,995.00
FLIR i3	60x60	.15°C	N	12.5°H	5,000	MicroSD	Y	N	N	N	N	5	12oz	\$995.00
FLIR i5	80x80	.10°C	N	17°H	5,000	MicroSD	Y	N	N	N	N	5	12oz	\$1,295.00
FLIR i7	120x120	.10°C	N	25°H	5,000	MicroSD	Y	Y	N	N	N	5	12oz	\$1,650.00
FLIR E30bx	160x120	.10°C	Y	25°H	1,000	SD	Y	Y	Y	N	N	4	1.76lbs	\$1,995.00
FLIR E40bx	160x120	.045°C	Y	25°H	1,000	SD	Y	Y	Y	Y	Y	4	1.76lbs	\$3,195.00
FLIR E50bx	240x180	.045°C	Y	25°H	1,000	SD	Y	Y	Y	Y	Y	4	1.76lbs	\$4,395.00
FLIR E60bx	320x240	.045°C	Y	25°H	1,000	SD	Y	Y	Y	Y	Y	4	1.76lbs	\$5,995.00
FLIR E30	160x120	.10°C	Y	25°H	1,000	SD	Y	Y	Y	N	N	4	1.76lbs	\$2,010.00
FLIR E40	160x120	.05°C	Y	25°H	1000	SD	Y	Y	Y	Y	Y	4	1.76lbs	\$3,195.00
FLIR E50	240x180	.05°C	Y	25°H	1000	SD	Y	Y	Y	Y	Y	4	1.76lbs	\$4,395.00
FLIR E60	320x240	.05°C	Y	25°H	1,000	SD	Y	Y	Y	Y	Y	4	1.76lbs	\$5,995.00



Accessories for Imagers

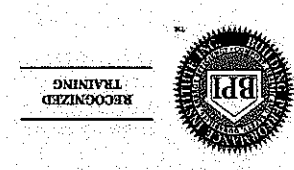
Model	Battery Options	Holster	Optional Software	Extended Warranty
MITI HFIR-JR	4-5 hour \$295.00	N	NA	1 Year- \$1,500.00
MITI HFIR-HR	3-4 hour \$295.00	N	NA	1 Year- \$2,400.00
Extech i3, i5, i7	None-internal	Y- \$65	None	NA
ALL FLIR E Series	4-5 hour \$85.00	Y \$95.00	Image Builder \$250.00 Reporter Pro \$250.00	1 Year- \$395-\$895

Training Options

MITI offers on site training on any thermal imaging system purchased. There are also other training programs held at the locations listed below.

Model	On Site 2-Day Provided by MITI	Other Training Options
MITI HFIR	\$4,995.00 (includes travel)	4-day Certification for Level 1 - \$1,695.00 pp (various locations is USA)
FLIR B Series	\$4,995.00 (includes travel)	4-day Certification for Level 1 on site \$12,995 (includes travel)

-End of AEA Bid Prices from Monroe Infrared Technology Inc-



IR Energy Auditor Training

**Level 1
DAY 1**

Understanding IR and Buildings

MORNING SESSION

Registration & Introduction

Course Overview

Basic Understanding of IR Theory

IR Equipment Operation

Understanding Energy Heat Transfer

Ways Building Loose Heat

Inspection Conditions Required

AFTERNOON SESSION

The House as a System

Inside vs. Outside Inspections

Air/Moisture Movement Through Bldgs.

Air Infiltration/Exfiltration

IR Camera Breakout (Hands on, in field)

What the Imagers "see"

Field Documentation (Quality Images)

MORNING SESSION

Review & Questions from Day 1

IR Camera Breakout (hands on)

AM vs PM results

Using IR with the Blower Door

Insulation vs Air leakage Images

Moisture Image

Field Documentation

AFTERNOON SESSION

Review of Field Work

Identify Field Variables to Consider

Multi Family Buildings

Loading Images to PC for Analysis

Creating Reports

Course Review

Course Exam (25 Questions)

Have a Great Day!

Course Critique

Day 4	Day 3	Day 2	Day 1
Standards	Associated Tools	Infrared Fundamentals	Class Intros
Reporting	Camera labs	Guidelines	Infrared Intro
Review	Camera labs	Guidelines	Weatherization overview
Lunch	Lunch	Lunch	Lunch
Exam	Camera labs	Camera Demos	Camera Operations
Q/A & Certificates	Case Studies	Heat Transfer	Camera Operations
	Review & Quiz	Review & Quiz	Review
			4-5
			3-4
			2-3
			1-2
			12-1
			11-12
			10-11
			9-10
			8-9

- ix. Wall Insulation defect, damage,
 - 1. wall w/ foam (A)
 - 2. wall w/ cellulose (B)
 - 3. wall w/ Insulating Sheathing (Reflective) (C)
 - 4. wall w/ batts (D)
- x. Air exfiltration lab
- xi. Blower door lab
- xii. Window efficiency lab
- xiii. Lab discussion
- 1. Resources and Existing Standards (12 – 30)
 - i. American
 - ii. Canadian
 - iii. European
 - iv. Audit Software
 - v. newsletter
 - vi. Forum
 - vii. Conference
- m. Reporting (63 – 90)
 - i. Quick report
 - ii. Reporter 8
 - iii. Templates
- n. Exam (0 – 60)
- o. Survey and certificates (0-30)
- p. Wrap-up Q&A

ASNT Recognized Level I





ASNT Recognized Level I



- g. Camera Demos (0-60)
 - i. Emissivity
 - ii. Reflectivity
 - iii. Transmissivity
 - iv. Trefl
 - v. SSR
 - vi. Range
 - vii. Angle
 - viii. Distance
- h. Heat transfer basics (72 - 120)
 - i. Qualitative and Quantitative Thermography
 - ii. Temperature units
 - iii. Modes of heat transfer
 - iv. how heat transfer applies to homes
 - v. How heat escapes from your home—putting it all together
 - 1. Conduction formula showing heat through wall section
 - 2. Temperature drop across sections of wall material
 - vi. Heat inertia or
 - 1. Large mass i.e. concrete
 - 2. water
 - vii. Understand dew point concept and why it is important for moisture detection
 - viii. Dew point temperature, psychrometric charts
- i. Using Associated Tools (73 – 60)
 - i. Dew point
 - ii. Blower door
 - iii. R Calculator
- j. Case Studies and in-depth discussion (45 – 90)
 - i. Wall / ceiling types
 - ii. Missing insulation detection
 - iii. Damaged insulation detection
 - iv. Improperly installed insulation detection
 - v. Moisture damage detection and validation
 - vi. Equipment efficiency and operation
 - vii. Diffuser problems detection
- k. Application lab exercises (0 – 180)
 - i. Camera parameters
 - 1. Focus
 - 2. Distance
 - 3. Emissivity
 - 4. Reflectivity
 - 5. Transmissivity
 - 6. Trefl
 - ii. Conduction
 - iii. Convection
 - iv. Wind
 - v. Direct / indirect
 - vi. Viewing angle
 - vii. Dew point lab
 - viii. Moisture or evaporative lab

Residential Energy Auditing Course Objectives and Agenda

Course Objectives

- ◆ Primary Objective:
 - Provide an understanding of IR thermography
 - Camera operation
 - Inspection Tools
 - Physic of infrared
 - Reporting
- ◆ Understand caveats and pitfalls that can present challenges

1. Course Agenda (15-60)
 - a. Introductions (15-60)
 - i. Instructor
 - ii. Students
 - iii. Class guideline
 - iv. Student profile
 - b. Introduction to IR thermography (28-90)
 - i. Define
 - ii. Usefulness
 - iii. Technology Image comparisons
 - iv. Benefits
 - v. Weatherization Examples
 - vi. Other application examples
 - c. Weatherization survey overview (35-60)
 - i. Energy cost
 - ii. Inspection tips and tricks
 - iii. Inspection image examples
 - d. IR camera setup and operation (49-360)
 - i. Camera specifications definitions
 - ii. Getting good thermal and visual images
 - iii. Proper working distance for your optics
 - iv. Focus and temperature range considerations
 - v. Thermal tuning—adjusting level and span
 - vi. Image composition—getting the right working distance
 - e. IR Understanding Fundamentals(40-120)
 - i. Spectrum
 - ii. Physics laws
 - iii. Emissivity, reflectivity, apparent temperature
 - iv. Why the IR camera “sees” heat
 - v. Practical applications
 - f. Practical Guidelines (43 - 60)
 - i. Measurement Parameters
 - ii. Viewing Angles
 - iii. Environmental conditions apropos to finding problems

