ILLUMINATING EDUCATION WITH INFRARED

Bringing thermal imaging into the classroom





www.flir.com/education







THERMAL IMAGING IN A CLASSROOM

FLIR thermal cameras give students the opportunity to learn about heat and temperature in an interactive and engaging way. Instead of reading about friction they're able to see how it works in real life. Rather than explain insulation, they can see firsthand the rate and speed of heat loss. FLIR gives students the ability to discover the science behind everyday science.

MAKING SCIENCE PHENOMENA EASY TO UNDERSTAND

Many concepts that involve heat and heat transfer are very theoretical and not always easy for students to understand. A thermal imaging camera makes theory clearly visible making it easy for teachers to explain. A few concepts that can be easily visualized with a thermal imaging camera include:

- Thermal properties of materials and objects
- Heat conduction, convection, & radiation
- Heat insulation
- Friction
- Energy transformation
- Phase change

FLIR Systems has collected examples of how thermal imaging can be used in the classroom. These include both student and teacher guidelines of how to conduct the experiment. For an overview of available experiments please consult our website: www.flir.com/education



Thermal images from the FLIR C2 can be easily downloaded to a PC, Mac or tablet for viewing and analysis.

FLIR C2: PERFECT TOOL FOR VISUALIZING TEMPERATURE

The FLIR C2 is a full-featured, pocket-sized thermal camera. Affordable, lightweight and small it is the perfect tool for classroom use.

FLIR C2 produces thermal images of 80 x 60 pixels. Temperatures can be read from each of the 4,800 pixels. Images can be stored inside the camera and recalled for on camera analysis. Additionally, the C2 Education Kit includes software for real-time streaming and recording of thermal movies. Thermal images and movies can be replayed in the software for on PC analysis.

FLIR C2 is easy-to-use. A brilliant 3" intuitive touch screen with auto orientation allows easy and quick access to all camera functions.

FLIR C2 also incorporates a visible camera. FLIR patented Multi-Spectral Dynamic Imaging (MSX) overlays the thermal image with the visual image so that you get clear easy to understand thermal images.





Thermal image without MSX.



Thermal image now using the MSX-setting. Note that more details are visible.

SPECIAL PRICE EDUCATIONAL KIT

FLIR Systems is bringing the power of thermal imaging to elementary schools, high schools and other educational institutes with the special priced C2 Education Kit.

FLIR C2 Education Kit includes:

- FLIR C2 thermal imaging camera
- Tripod mount
- ResearchIR Software
- Access to FLIR education content with lectures, experiments and teacher's guides.

This kit is available with an exclusive discount for educators and students. It has been specifically designed as a complementary technology to classroom instruction and student labs.





KEY FEATURES

0	Light, slim profile
0	Bright 3" touchscreen
0	Built-in LED work light & flash
4	Big snapshot button stores thermal, visible, and MSX in each JPEG
6	Easy-access on-off button powers up fast
6	USB Micro-B File transfer and data streaming
0	Visible Camera
8	Thermal Camera
9	Intuitive User Interface

A thermal imaging camera records the intensity of radiation in the infrared part of the electromagnetic spectrum and converts it to a visible image. Our eyes are detectors that are designed to detect electromagnetic radiation in the visible light spectrum. All other forms of electromagnetic radiation, such as infrared, are invisible to the human eye.

X-Rays

Visible

Ultra-

Violet

Infrared energy was discovered in 1800 by astronomer Sir Frederick William Herschel. In an effort to learn more about why different colors of light had different temperatures, he directed sunlight through a glass prism to create a spectrum and then measured the temperature of each color. He found that the temperatures of the colors increased from violet to red.

The primary source of infrared radiation is heat or thermal radiation. We experience infrared radiation every day. The heat that we feel from sunlight, a fire or a radiator is all infrared. Although our eyes cannot see it, the nerves in our skin can feel it as heat. The warmer the object, the more infrared radiation it emits.

Microwaves

Radio

VHF

UHF

After noticing this pattern Herschel decided to measure the temperature just beyond the red portion of the spectrum in a region where no color was visible. To his surprise, he found that this region had the highest temperature of all. Go to www.FLIR.com/Herschel to

watch the full video story

BELGIUM

FLIR Systems 2321 Meer Belgium PH: +32 (0) 3665 5100

Gamma

Rays

HONG KONG

Asia Pacific Headquarters FLIR Systems Co. Ltd. Room 1613 -16, Tower 2, Grand Central Plaza, No. 138 Shatin Rural Committee Rd, Shatin, New Territories, Hong Kong PH: +852 2792 8955

KOREA

FLIR Systems Korea Co., Ltd 6th Floor, GuGu Building, 145-18, Samsung-Dong, Kangnam-Gu, Seoul, Korea 135-090 PH:+82-2-565-2714~7

AUSTRALIA

Visible

Infrared

MWIR

FLIR Systems Australia Pty Ltd 10 Business Park Drive Notting Hill Vic 3168, Australia PH: 1300 729 987 (NZ: 0800 785 492)

SWIR

PORTLAND

Corporate Headquarters FLIR Systems, Inc. 27700 SW Parkway Ave. Wilsonville, OR 97070 USA PH: +1 866.477.3687

BRAZIL

FLIR Systems Brasil Av. Antonio Bardella, 320 Sorocaba, SP 18052-852 Brasil PH: +55 15 3238 7080

CHINA - SHANGHAI

LWIR

FLIR Systems Co., Ltd. K301-302, No. 26 Lane 168 Daduhe Road, Putuo District Shanghai, 200062, P.R. China PH: +86-21-5169 8628

JAPAN

FLIR Systems Japan K.K. Meguro Tokyu Bldg. 5F, 2-13-17 Kami-Osaki, Shinagawa-ku, Tokyo, 141-0021, Japan PH: +81-3-6271-6648

INDIA

FLIR Systems India Pvt Ltd. 1111, D-Mall, Netaji Subhash Place, Pitampura, New Delhi – 110034. INDIA PH : +91-11-4560 3555

www.flir.com NASDAQ: FLIR

Equipment described herein may require US Government authorization for export purposes. Diversion contrary to US law is prohibited. Imagery for illustration purposes only. Specifications are subject to change without notice. @2015 FLIR Systems, Inc. All rights reserved. 250315_EN



Infrared





