

FLIR K-SERIES

PROFESSIONAL AFFORDABLE THERMAL
IMAGING CAMERAS FOR FIREFIGHTING



The World's Sixth Sense®

FLIR K-SERIES

IN THE HEAT OF THE BATTLE, A THERMAL IMAGING CAMERA IS INDISPENSABLE – A VITAL TOOL THAT HELPS YOU QUICKLY VISUALIZE YOUR PLAN OF ATTACK, LOCATE HOT SPOTS, AND SAVE LIVES.

Ideally, every engine and truck company should have at least one high-performance TIC on hand. Since FLIR K-Series cameras arrived on the scene, now that's more feasible.

Affordable K-Series TICs offer new, easier ways to see more clearly in the darkest, smokiest environments by showing big, bright thermal images to help you maneuver more strategically, stay better oriented, and find victims faster.





The World's **Sixth Sense**®

FLIR: THE WORLD LEADER IN THERMAL IMAGING CAMERAS

FLIR is the world leader in the design, manufacturing and marketing of thermal imaging cameras. Wherever thermal cameras are being used – in applications as diverse as predictive maintenance, building diagnostics, R&D and automation, or for night vision applications in maritime safety, security, or the military – FLIR is there.

FLIR's K-Series camera models have been developed specifically to meet the demanding requirements of firefighting use. In every phase of the K-Series design process, FLIR has worked directly with firefighters around the world to make sure their unique needs have been met.

EXTENDED WARRANTY

All new K-Series cameras are protected, after registration on www.flir.com/registration, by our exclusive FLIR 2-5-10 Warranty that includes 2 years of coverage on batteries, five years on the camera, and ten years on the detector.



FLIR K-SERIES

The Ultimate Firefighting Tool

SEE THROUGH SMOKE

Thermal cameras can see through smoke and other obscurants, giving you a better idea of where you and your team are as you make your way through the fire scene. K-Series cameras become vital during fire attack, helping you find people trapped in a fire, and allowing you to clearly assess the effectiveness of your extinguishing strategy.



MEASURE TEMPERATURES

K-Series thermal cameras can accurately measure temperatures from a distance, enabling you to monitor for the presence of hot gases rising to the ceiling. This can help prevent the situation from escalating into a dangerous rollover.



FIND HOT SPOTS

Use your K-Series TIC during overhaul to carefully monitor for hot spots that can cause a fire to reignite. These hot spots will clearly show up on a thermal image, so you'll know right where to aim the hose to cool and extinguish them.



SEARCH AND RESCUE

Thermal cameras allow you to see clearly in complete darkness. That's why during SAR missions, your FLIR K-Series TIC will be an invaluable tool to find missing or injured people at night and in smoke-filled conditions. K-Series can also help with rescue efforts during the day, by spotting the heat of a person who may be hidden among foliage, for example.



PREVENT WILDFIRES

Scan areas threatened by the potential of brush and forest fires to find hidden embers and other hot spots to take action before they burst into flame.



Different color modes for various situations

Change color modes on the K45, K55 and K65 with the touch of a button. Change color modes on the K2 using free FLIRTools software. K33 and K53 are always in TI basic color mode.

TI BASIC



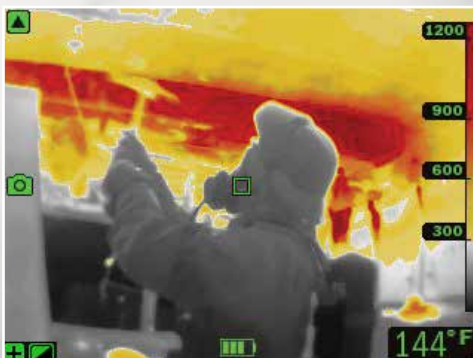
For initial fire attack and life rescuing operations.

BLACK AND WHITE FIRE FIGHTING



Same as the TI Basic mode but a grey scale image.

FIRE



For use in context with higher background temperatures where a lot of open flames are present, particularly in structural fires.

SEARCH & RESCUE



For use with lower temperature situations, such as initial rescue efforts after traffic accidents, searches in wooded landscapes, etc.

HEAT DETECTION



Used for finding hotspots. The hottest 20% of the scene is colored in red.

BUILDING ANALYSIS MODE (K2)



For building inspections.

FLIR

Extremely
imaging for



K2

affordable thermal firefighters

The FLIR K2 is a rugged, reliable, and extremely economical TIC, producing thermal images at 160 x 120 pixel resolution, displayed on a bright 3" screen. The K2 helps firefighters find their way through thick smoke, assess situations with confidence, and expedite decisions.

MSX® MULTI-SPECTRAL DYNAMIC IMAGING

The K2 uses FLIR's patented MSX technology that etches key details from the built-in visible light camera onto the thermal image, helping firefighters identify structures and surroundings without compromising the thermal image.

COMPACT AND EASY TO USE

FLIR K2 is a compact, light thermal imaging camera that can be easily attached to SCBA gear. An intuitive user interface lets firefighters focus on the job at hand. And a single large button makes the camera simple to activate even with heavy gloves on.

MULTIPLE IMAGE MODES

FLIR K2 can be set to one of five different imaging modes depending on the primary use of the unit. Modes can be changed using the FLIR Tools software program that can be downloaded for free from FLIR at www.flir.com/tools.

RUGGED & RELIABLE

Engineered to survive tough operating conditions, the K2 withstands a 2-meter drop onto concrete, is water resistant (IP67) and is fully operational up to +260°C / +500°F (for up to 3 minutes).

MULTIPLE FIREFIGHTING APPLICATIONS

Use the FLIR K2 for a wide variety of firefighting applications. See through smoke to help guide your team and prioritize their fire attack efforts. Find stranded victims faster under the murkiest conditions. Scan for hotspots during overhaul. And deploy the K2 for SAR missions.

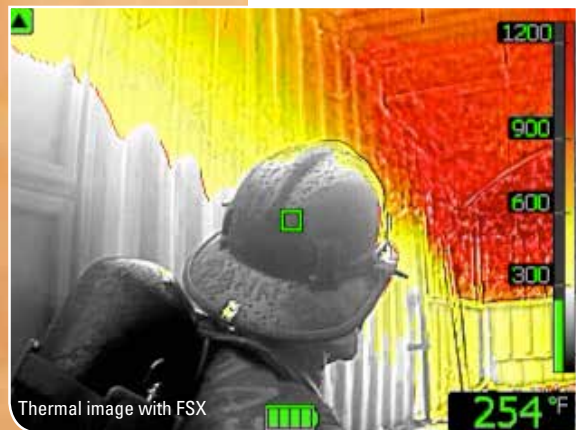


FLIR

Ultra-crisp



Thermal image without FSX



Thermal image with FSX

FLIR IN-TRUCK CHARGER

Easy to mount, the optional in-truck charger can secure and recharge your K-Series camera and an extra battery so they're ready to go.

IN-CAMERA VIDEO STORAGE [K53/K55/K65]

The K53, K55 and K65 can store up to 200 images or video files (video up to 5 minutes per clip) --ideal for on site assessment and for training purposes.



K33/K45/K53/K55/K65

thermal images

The maintenance-free uncooled microbolometer sensor produces clear and detail-rich images of 240 x 180 pixels [FLIR K33/K45] or 320 x 240 pixels [FLIR K53/K55/K65]. Thermal images are presented on a large bright 4" display, helping you navigate and make quick and accurate decisions.

FSX™ FLEXIBLE SCENE ENHANCEMENT

Using in-camera processing, FSX enhances K45, K55 and K65 images, producing ultra-sharp thermal images which show the extra structural detail that helps make it much easier for firefighters and rescue teams to find their way.

EASY TO USE, EVEN WITH GLOVES ON

An intuitive and simple user interface allows you to focus on the job at hand. The FLIR K45, K55 and K65 can be controlled by 3 large buttons, the K33 and K53 by one large button.

RUGGED & RELIABLE

The Kxx-Series cameras are designed to meet tough operating conditions. They're able to withstand a drop from 2 meters onto a concrete floor, are water resistant (IP67), and fully operational up to +260°C/+500°F for 5 minutes.



K65: Approved by NFPA, the National Fire Protection Association



The K65 complies fully with the NFPA 1801:2013 standard for thermal imaging cameras used by firefighters, which focuses on interoperability/usability, image quality and durability.



The FLIR K65 camera connectors (left) are fully sealed and the battery (right) can be fixed inside the camera with a screw.

MODEL COMPARISON

| Model | Image quality | Buttons | Still image | Recording | Zoom | Color modes | NFPA |
|-------|---------------|---------|-------------|-----------|------|-------------|------|
| K33 | 240 x 180 | 1 | | | | TI Basic | |
| K45 | 240 x 180 | 3 | ✓ | | ✓ | Selectable | |
| K53 | 320 x 240 | 1 | ✓ | ✓ | | TI Basic | |
| K55 | 320 x 240 | 3 | ✓ | ✓ | ✓ | Selectable | |
| K65 | 320 x 240 | 3 | ✓ | ✓ | ✓ | Selectable | ✓ |



K33 / K53: CONTROLLED BY ONE SINGLE BUTTON

Although all FLIR K-Series are extremely easy to use some firefighters prefer the most straightforward model available. They want to stay 100% focused on the fire attack and do not want to zoom or change color modes in the heat of the battle. FLIR Systems has developed the FLIR K33 / FLIR K53. Both models have only one button: on/off.

FLIR K2

| Imaging and optical data | |
|--|--|
| IR resolution | 160 × 120 pixels |
| Thermal sensitivity/NETD | < 100 mK @ +30°C (+86°F) |
| Field of view (FOV) / focus | 47° × 35° |
| Image frequency | 9 Hz |
| Focal Plane Array (FPA) / Spectral range | Uncooled microbolometer / 7.5–13 μm |
| Start-up time | < 30 sec. (IR-image, no GUI) |
| Start-up time from sleep mode | < 10 sec. |
| F-number | 1,1 |
| Visual camera | |
| Built-in digital camera | 640 × 480 pixels |
| Digital camera, FOV | 73° × 61°, adapts to the IR lens |
| Sensitivity | Minimum 10 lux |
| Image presentation | |
| Display | 3 in. LCD, 320 × 240 pixels, backlit |
| Image modes – switchable using FLIR Tools software | TI Basic fire-fighting mode (default) Black-and-white fire-fighting mode Fire mode Search-and-rescue mode Heat detection mode Cold detection mode Building analysis mode |
| Auto-range | Auto, non-selectable |
| Measurement | |
| Object temperature range | –20°C to +150°C (–4°F to +302°F) 0°C to +500°C (+32°F to +932°F) |
| Accuracy | ±4°C (±7.2°F) or ±4% of reading, for ambient temperature 10°C to 35°C (+50°F to 95°F) |
| Measurement analysis | |
| Spotmeter | 1 |
| Isotherm | Yes |
| Automatic heat detection | Heat detection mode (the hottest 20% of the scene is colored) |
| Data communication interfaces | |
| Interfaces | Update from PC and Mac devices |
| USB | USB Micro-B |
| Power system | |
| Battery | Li Ion, 4 hours operating time |
| Charging system | 2-bay charger, vehicle charger available |
| Charging time | 2.5 h to 90% capacity, charging status indicated by LEDs |
| Charging temperature | 0 °C to +45 °C / 32 °F to 113 °F |
| Environmental data | |
| Designed to meet NFPA 1801 specification | Vibration, impact acceleration resistance, corrosion, viewing surface abrasion, heat resistance, heat and flame, product label durability |
| Operating temperature range | –20°C to +55°C (–4°F to +131°F) +85°C (+185°F): 15 minutes +150°C (+302°F): 10 minutes +260°C (+500°F): 3 minutes |
| Storage temperature range | –40°C to +70°C (–40°F to +158°F) |
| Encapsulation | IP 67 (IEC 60529) |
| Drop | 2 m (6.6 ft.) on concrete floor (IEC 60068-2-31) |
| Physical data | |
| Camera weight, incl. battery | 0.7 kg (1.54 lb.) |
| Camera size (L × W × H) | 250 × 105 × 90 mm (9.8 × 4.1 × 3.5 in.) |
| Tripod mounting | UNC ¼"-20 |
| Packaging | |
| Packaging, contents | Infrared camera, battery (2 ea.), battery charger, lanyard strap, power supply, printed documentation, USB cable, user documentation |

FLIR K33/K45/K53/K55/K65

| | K33/K45 | K53/K55 | K65 |
|--|---|---|-----|
| Certifications | | | |
| Certified according to NFPA1801:2013 specification | No | | Yes |
| Imaging and optical data | | | |
| IR resolution | 240 x 180 pixels | 320 x 240 pixels | |
| Thermal sensitivity | < 40 mK @ +30°C (+86°F) | < 30 mK @ +30°C (+86°F) | |
| Contrast optimization | Digital image enhancement using FSX | | |
| Field of view (FOV) / focus | 51° x 38° / fixed focus | | |
| Image frequency | 60 Hz | | |
| Zoom for K45/K55/K65 | 2x, digital zoom | | |
| Zoom for K33/K53 | No | | |
| Focal Plane Array (FPA) / Spectral range | Uncooled microbolometer / 7.5–13 μm | | |
| Start-up time | < 17 sec. (IR-image, no GUI) | | |
| Start-up time from sleep mode | < 4 sec. | | |
| Image storage | Up to 200 JPEG images on internal memory (not available on K33) | | |
| Video storage | No | 200 files in total, with a maximum duration of 5 minutes per video clip | |
| In-camera video recording format | No | Non radiometric MPEG-4 to internal Flash Memory | |
| Image presentation | | | |
| Display | 4" LCD, 320 x 240 pixels, backlit | | |
| Image modes for K45/K55/K65 | <ul style="list-style-type: none"> TI Basic NFPA fire-fighting mode / Black-and-white fire-fighting mode / Fire mode Search-and-rescue mode / Heat detection mode Thumbnail gallery | | |
| Image modes for K33/K53 | TI Basic | | |
| Auto-range | Yes, mode dependent | | |
| Measurement | | | |
| Object temperature range | -20 °C to +150 °C / -4 °F to +302 °F, 0 °C to +650 °C / 32 °F to +1,202 °F | | |
| Accuracy | ±4°C or ±4% of reading for ambient temperature, 10°C to 35°C / 50 °F to 95 °F | | |
| Measurement analysis | | | |
| Spotmeter | 1 | | |
| Isotherm | Yes, According to NFPA and mode dependent | | |
| Automatic heat detection | Heat detection mode (the hottest 20% of the scene is colored) | | |
| Set-up | | | |
| Color palettes | Multiple palettes, mode dependent | | |
| Regional adjustments | Units, date and time formats | | |
| Data communication interfaces | | | |
| Interfaces | USB-mini | | |
| USB | USB Mini-B: Data transfer to and from PC / uncompressed colorized video | | |
| Power system | | | |
| Battery | Li Ion, 4 hours operating time | | |
| Charging system | 2-bay charger, truck charger available | | |
| Charging time | 2 hours to 85% (3 hours and 25 minutes) capacity, charging status indicated by LED's | | |
| Charging temperature | 0 °C to +45 °C / 32 °F to 113 °F | | |
| Environmental data | | | |
| Operating temperature range | -20°C to +85°C (-4°F to +185°F) / +150°C (+302°F): 15 min / +260°C (+500°F): 5 min | | |
| Storage temperature range | -40 °C to +85 °C (-40 °F to +185 °F) | | |
| Humidity (operating and storage) | IEC 60068-2-30/24 h 95% relative humidity +25°C to + 40°C (+77°F to +104°F) / 2 cycles | | |
| Relative humidity | 95% relative humidity +25°C to + 40°C (+77°F to +104°F) non-condensing | | |
| Directives | <ul style="list-style-type: none"> Designed to meet NFPA 1801:2013 specification: <ul style="list-style-type: none"> Vibration Impact acceleration resistance Corrosion Viewing surface abrasion Heat resistance Heat and flame Product label durability | Certified according to NFPA 1801:2013 specification: <ul style="list-style-type: none"> Vibration Impact acceleration resistance Corrosion Viewing surface abrasion Heat resistance Heat and flame Product label durability Ex-certified according to ANSI/ISA 12.12.01-2013 and meets Class I Division 2 Gas Groups C and D T4 | |
| EMC | <ul style="list-style-type: none"> EN 61000-6-2:2005 (Immunity) EN 61000-6-3:2011 (Emission) FCC 47 CFR Part 15B (Emission) | | |
| Magnetic fields | EN 61 000-4-8, Test level 5 for continuous field (severe industrial environment) | | |
| Encapsulation | IP 67 (IEC 60529) | | |
| Shock | 25 g (IEC 60068-2-27) | | |
| Vibration | 2 g (IEC 60068-2-6) | | |
| Drop | 2.0 m / 6.6 ft., on concrete floor (IEC 60068-2-31) | | |
| Safety (power supply) | CE/EN/UL/CSA/PSE 60950-1 | | |
| Physical data | | | |
| Camera weight, incl. battery | <1,1 kg / 2.4lb | | |
| Camera size (L x W x H) | <120 x 125 x 280 mm / <4.7 x 4.9 x 11" | | |
| Tripod mounting | UNC ¼"-20 | | |
| Packaging | | | |
| Packaging, contents | K45/K55/K65 box contents: Infrared camera, Battery (2 ea.), Battery charger, Hard transport case, Power supply, Printed documentation, USB cable, User documentation K33/K45/K53/K55 (not K65) also includes: Lanyard strap, Neck strap, Retractable lanyard. K65 also includes: Torx screwdriver (T20) | | |
| Optional accessories | Extra battery, battery charger, hard case, retractable lanyard, strap lanyard, neck strap, USB-cable, tripod adapter, in-truck charger | | |

To speak to a thermal imaging camera expert,
please contact us.

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www.flir.com/fire

For more information about FLIR's firefighting thermal imaging cameras,
please visit www.flir.com. NASDAQ: FLIR

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