FLIR SYSTEMS™

The Global Leader in Infrared Cameras

ThermaCAM® P45HSV
INFRARED CAMERA

The ThermaCAM P45HSV is the a highly refined infrared inspection system. Its powerful new features and conveniences enable the professional thermographer to work with unprecedented efficiency and productivity.

- > High Thermal Sensitivity
- > Precise Temperature Measurement
- > Outstanding Thermal Image Quality
- > JPEG Image Storage

- > Removable CompactFlash™ Memory
- > Interchangeable Optics
- > Built-in Laser LocatIR™
- > Built-in LED Target Illuminator

Features both thermal and visual camera capabilities – at the touch of a button!

Extraordinary Thermal Sensitivity and Imaging Quality

Thermal sensitivity of 0.05° C coupled with a 76,000 pixel display provides extremely accurate, high-resolution 16-bit thermal images. Plus, the state-of-the-art 320 x 240 uncooled microbolometer detector means the P45HSV is ready to go in seconds. The built-in external 4-inch LCD screen displays digital images of corresponding thermal images captured by the IR system.

Easy to Operate

Ergonomic, intuitive controls make operation seamless and efficient. A user-friendly joystick, familiar menus, and soft control buttons on both the camera body and detachable handle provide for easy one-handed operation. The built-in Laser LocatIR™ provides point-and-shoot accuracy.

Rugged and Lightweight

The P45HSV was designed for use in harsh environments. It has an IP54 industrial encapsulation and high shock rating. Plus, at under 4.4 lbs., it is the lightest full-featured infrared camera available.

Flexible Viewing Options

The built-in color viewfinder is ideal for outdoor applications, while the detachable 4-inch color LCD on the camera's handle adjusts to any viewing angle, and may be used to operate the camera via redundant controls - for optimal use in hard-to-reach areas - indoors and out.

Flexible Image Storage

Windows-friendly JPEG images can be transferred to a removable CompactFlash® memory card, for infinite memory capacity. The camera may be set up to automatically capture images at preset intervals.

Special Features Boost Your Efficiency

A brilliant LED target illuminator automatically turns on when required by visual lighting conditions. Powerful auto-focus saves time and effort. Sound and color alarms warn when targets exceed temperature maximums set by the user.

Voice Recording

The P45HSV can record up to 30 seconds of audio with each image.

Wide Range of Accessories

Optional optics include: microscopic, wide-angle and telescopic to address diverse application requirements. Infrared heads-up displays (IR HUD) are available, to augment situational awareness. Power options include lightweight, rechargeable, long-life Li-Ion batteries, and the ability to operate the P45HSV from external power sources.

Optional Software Does the Work for You!

ThermaCAM Reporter software, the industry standard for automated report generation, makes it easy to integrate thermal and visual images along with text into MS Word by simple drag-and-drop, for great looking reports. ThermaCAM Database software enables you to trend, archive, and organize inspection data and reports quickly and easily. ThermaCAM Image Builder knits multiple IR images together to create a single radiometric composite.

Imaging Performance

Thermal

Field of view/min focus distance	19° x 14° / 0.3 m
Spatial resolution (IFOV)	1.1 mrad
Thermal sensitivity (N.E.T.D) @ 50/60Hz	50 mK at 30° C (86° F)
Electronic zoom function	2,4 interpolating
Focus	Automatic or manual
Digital image enhancement	Normal and enhanced
Detector type	Focal plane array (FPA) uncooled microbolometer; 320 x 240 pixels
Spectral range	7.5 to 13 μm

Visual

Built-in digital video	640 x 480 pixels, full color

Image Presentation

Viewfinder	Built-in high-resolution color LCD (TFT)
External display	Built-in high-resolution color LCD (TFT) 4" LCD with integrated remote control RS 170 EIA/NTSC or CCIR/PAL
Video output	S-Video

Measurement

Temperature ranges	-40° C to +120° C (-40° F to +248° F), Range 1 0° C to +250° C (+32° F to 482° F), Range 2 +150° C to +500° C (302° F to 932° F), Range 3 Up to +1500° C (+2732° F), optional
Accuracy (% of reading)	± 2 °C or ± 2%
Measurement modes	Up to 10 movable spots. Automatic temperature difference (Δ) and placement and reading of maximum and minimum temperatures. Up to 5 movable circle areas or boxes. Up to 2 isotherms. Line profile.
Emissivity correction	Variable from 0.1 to 1.0 or select from listings in pre-defined material list
Measurement correction	Automatic corrections based on user input for reflected ambient temperature, distance, relative humidity, atmospheric transmission, and external optics
Optics transmission correction	Automatic, based on signals from internal sensors

Image Storage

Type	Removable CompactFlash® (256 MB) memory card (up to 1,000 images); built-in Flash memory (100 images)
File format – THERMAL	Standard JPEG; 14 bit thermal measurement data included
File format –VISUAL	Standard JPEG linked with corresponding thermal image
Voice annotation of images	Input via supplied headset up to 30 seconds of voice clip per image stored with image

System Status Indicator

LCD display	Shows status of battery and storage media. Indication of power, communication and storage modes.

Laser LocatIR™

Classification type	Class 2 Semiconductor AlGaInP Diode Laser: 1 mW/635 nm (red)

Power Source

Battery type	Li-Ion, rechargeable, field-replaceable
Battery operating time	2 hours continuous operation
Charging system	In camera (AC adapter or 12V from car) or 2 bay intelligent charger
External power operation	AC adapter 90/2260 VAC, 50/60Hz or 12V from car (cable with standard plug optional)
Power saving	Automatic shutdown and sleep mode (user-selectable)

Environmental

Operating temperature range	-15° C to +50° C (5° F to 122° F)
Storage temperature range	-40° C to +70° C (-40° F to 158° F)
Humidity	Operating and storage 10% to 95%, non-condensing
Encapsulation	IP 54 IEC 529
Shock	Operational: 25G, IEC 68-2-29
Vibration	Operational: 2G, IEC 68-2-6

Physical Characteristics

Weight	2.0 kg (4.4 lbs) w/battery and top handle (includes remote control, LCD, video camera and laser) 1.4 kg (3.1lbs) excluding battery and handle
Size	100mm x 120mm x 220 mm (3.9" x 4.7" x 8.7") camera only
Tripod mounting	1/4"– 20

Camera includes:

- IR camera with visual camera, Laser LocatIR, remote control w/ LCD display
- High-output multi-LED target light
- Carrying case, lens cap, shoulder strap, hand strap
- Manual (multi-lingual)
- Batteries (2)
- Power supply
- Battery charger
- S-Video cable
- Video cable with RCA plug
- USB cable
- 256 MB CompactFlash® card
- ThermaCAM® QuickReport software

Lenses (optional)

Field of view/minimum focus distance

- 3X Telescope (5.6º x 4.2º/4m)
- 2X Telescope (10º X 7.5º/1.2m)
- 0.5X Wide angle (37º x 28º/0.1 m)
- 0.3X Wide angle (68º x 51º/0.1 m)
- 162 μm Close-up (52mm x 39mm/150mm)
- 88 μm Close-up (28mm x 21mm/80mm)
- 38 μm Close-up (12mm x 9mm/19mm)

Interfaces

USB / RS232	Image (thermal and visual), measurement data, voice and text transfer to PC
Remote control	Removable handle with redundant controls and LCD

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