ThermaCAM® S65HSV
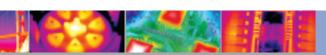## INFRARED CAMERA

The ThermaCAM® S65HSV is a highly refined infrared research system. Its powerful new features and conveniences enable the professional thermographer to work with unprecedented efficiency and productivity. Working in concert with ThermaCAM Researcher reporting and database software, the S65HSV fully automates the process of collecting, reporting, and archiving infrared images and thermal data.

> Bluetooth® Voice Recording Technology

> Burst & AVI Recording

> Radiometric FireWire®

> Radiometric JPEG Image Storage

> Auto-focus/Auto-hot-spot Tracker

> Detachable Remote Control/LCD Handle

> Built-in Ram/CompactFlash® Card

> Built-in Laser LocatIR™ Target Pointer

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

Extraordinary Thermal Sensitivity and Imaging Quality

Thermal sensitivity of 0.05C coupled with a 76,000pixel display provides extremely accurate, high-resolution 14-bit thermal images in real time. Plus, the state-of-the-art 320 x 240 uncooled microbolometer detector means the S65 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 programmable buttons (allowing feature customization) 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 S65HSV was designed for use in harsh environments. It has an IP54 environmental encapsulation, and a robust industrial shock rating. 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

Images can be stored in Windows-friendly JPEG format, removable CompactFlash® memory card, or internal flash RAM. The camera may be set up to automatically capture images at preset intervals.

Burst and AVI Recording

Powerful burst recording captures moving targets for sequences up to 16 minutes long. Sequences may be played back on the camera or transferred to a PC for further analysis. Nonradiometric moving images may be optionally recorded in AVI file format for convenient report playback using industry-standard players.

Store User Profiles

Personal camera settings may be stored on the S65HSV, for several users, a time-saving feature.

Special Features Boost Your Efficiency

A brilliant LED target light automatically turns on when visual image mode is selected. Powerful auto-focus and auto-hot-spot features save time and effort. The S65HSV can automatically indicate the temperature and position of the hottest spot in the image and instantly calculate the difference between different measurement points. Sound and color alarms warn when targets exceed temperature maximums set by the user.

Voice Recording with Bluetooth Technology…and More

The S65HSV can record up to 30 seconds of voice comment with each image. A cordless Bluetooth earpiece eliminates all cable connections, increasing operator safety. In addition, text comments for each image can be entered manually or preloaded from a PC with optional ThermaCAM Reporter software.

Wide Range of Accessories

Optional optics include: microscopic, wide-angle and telescopic to address diverse application requirements. Infrared heads-up displays (IRHUD) are available, to augment situational awareness. Power options include lightweight, rechargeable, long-life Li-Ion batteries, and the ability to operate the S65HSV from external power sources.

Optional Software Does the Work for You!

ThermaCAM Researcher reporting and analysis software analyzes your data in real time. 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.

ThermaCAM® S65HSV Technical Specifications

Imaging Performance

Thermal	
Field of view/min focus distance	20° x 15° / 0.3 m
Spatial resolution (IFOV)	1.1 mrad
Electronic zoom function	2, 4, 8, interpolating
Focus	Automatic or manual
Digital image enhancement, on/off	Normal and enhanced
Detector type	Focal plane array (FPA) uncooled microbolometer; 320 x 240 pixels
Spectral range	7.5 to 13 µm
Thermal sensitivity	50 mK at 30° C (86° F)
Visual	
Built-in Visual Camera	640 x 480 pixels, full color

Image Presentation

Viewfinder	Built-in high-resolution color LCD (TFT)
Video output	RS170 EIA/NTSC or CCIR/PAL
External display	Built-in high-resolution color LCD (TFT) 4" LCD with integrated remote control

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 +100° C to +500° C (+212° F to +932° F), Range 3 +250° C to +1500° C (+482° F to +2732° F), Range 4
Accuracy (% of reading)	± 2° C or ± 2% (3.6° F)
Measurement modes	Up to 10 movable spots. Automatic temperature difference (∆) and placement and reading of maximum and minimum temperatures. Up to 5 movable circle areas or boxes. Up to 2 isotherms. Line profile.
Emissivity corrections	Variable from 0.1 to 1.0 or select from listings in pre-defined material list
Measurement features	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; built-in Flash memory (50 images); built-in (128 MB) RAM memory for burst and AVI recording
File format - THERMAL	Standard JPEG; 14 bit thermal measurement data included
File format - VISUAL	Standard JPEG inked with corresponding thermal image
Voice annotation of images	Input via supplied Bluetooth® wireless headset up to 30 seconds of digital voice clip per image stored with image
Text annotation of images	Predefined by user and stored with image

System Status Indicator

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

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 110/220 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℃ to +50℃ (5°F to 122°F)
Storage temperature range	-40℃ to +70℃ (-40°F to 158°F)
Humidity	Operating and storage 10% to 95%, non-condensing IEC 359
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

ThermaCAM S65HSV System Includes:

- IR camera with visual camera, Laser LocatIR, remote with LCD display
- High-output multi-LED target light
- Bluetooth wireless headset
- Carrying case, lens cap, shoulder strap, hand strap
- User manual (multilingual)
- Batteries (2)
- Power supply
- Battery charger
- FireWire® (IEEE 1394) cable
- Video cable with RCA plug
- USB cable
- 256 MB CompactFlash card
- ThermaCAM QuickView™ software

Lenses (optional)

Field of view/ minimum focus distance	3X Telescope (5.6º x 4.2º/4m) 2X Telescope (10º X 7.4º/1.2m) 0.5X Wide angle (37º x 28º/0.1m) 0.3X Wide angle (68º x 51º/0.1m) 164 µm Close-up (52mm x 39mm/150mm) 88 µm Close-up (28mm x 21mm/80mm) 38.5 µm Close-up (12mm x 9mm/19mm)

Interfaces

Firewire output (IEEE 1394)	Real-time digital transfer of radiometric thermal images or digital video (DV) out
USB / RS232	Image (thermal and visual), measurement data, voice and text transfer to PC
IrDA	Two-way data transfer from laptop, PDA
Remote control	Removable handle with redundant controls and LCD

Laser LocatIR™

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

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