

# NEW! ThermaCAM<sup>®</sup> P65

*The ThermaCAM P65 is the most highly refined infrared inspection system available today. Its powerful new features and conveniences enable the professional thermographer to work with unprecedented efficiency and productivity. Working in concert with ThermaCAM reporting and database software, the P65 fully automates the process of collecting, reporting, and archiving infrared images and thermal data.*



- **NEW!** VOICE RECORDING WITH WORLD-STANDARD BLUETOOTH<sup>®</sup> TECHNOLOGY
- **NEW!** FIREWIRE<sup>®</sup> AND ETHERNET CONNECTIVITY
- **NEW!** AUTOMATIC TARGET LIGHT
- **NEW!** ONBOARD AVI STORAGE PLUS REAL-TIME BURST RECORDING
- OUTSTANDING THERMAL IMAGE QUALITY PLUS VISUAL IMAGING, TOO
- HIGH THERMAL SENSITIVITY AND PRECISE TEMPERATURE MEASUREMENT
- AUTO-FOCUS PLUS AUTO-HOT-SPOT TRACKER AND DIGITAL ZOOM
- RADIOMETRIC JPEG IMAGE STORAGE
- DETACHABLE REMOTE CONTROL/LCD HANDLE
- BUILT-IN RAM PLUS REMOVABLE COMPACTFLASH<sup>®</sup> MEMORY
- BUILT-IN LASER LOCATIR<sup>™</sup> TARGET POINTER



## EXTRAORDINARY THERMAL SENSITIVITY AND IMAGING QUALITY

A thermal sensitivity of 0.08°C lets you see the smallest temperature differences clearly. The P65 is ready for action in seconds, thanks to its state-of-the-art 320 x 240 uncooled microbolometer detector. A total of 76,000 pixels provide real-time, crisp, high-resolution 16-bit thermal images. The built-in visual camera provides digital images linked with corresponding thermal images.

## REAL-TIME IMAGING

Video rate imaging (60 Hz) allows you to inspect fast moving objects and scan while moving without image smear.

## EASY TO OPERATE

Ergonomic, intuitive controls make operation seamless and efficient. User-friendly joystick, familiar menus, and soft control buttons on the camera body and the control handle provide easy one-handed operation. Use the built-in Laser LocatIR<sup>™</sup> to project a bright red dot on the exact location of a hot spot.

## RUGGED AND LIGHTWEIGHT

The P65 was designed for use in harsh environments. It has an IP54 industrial shock rating and complete environmental encapsulation. 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. The detachable 4-inch color LCD on the camera's remote-control carrying handle adjusts to any angle for optimal viewing. Or, remove the handle, operate the camera with the redundant controls on the handle, and view images while the camera itself is positioned in hard-to-reach areas.

## FLEXIBLE IMAGE STORAGE

With the P65, memory capacity is infinite. Images can be stored in Windows-friendly JPEG format on a removable CompactFlash<sup>®</sup> memory card or in internal flash RAM and can be transferred from RAM to the memory card. The camera can be set up to automatically capture images at preset intervals.

## BURST AND AVI RECORDING

Powerful burst recording function captures moving targets for sequences up to 20 minutes long. Play back the sequences on the camera or transfer to a PC for further analysis. The P65 can also record nonradiometric moving images in AVI file format for convenient playback in reports using industry-standard players.

## SPECIAL FEATURES BOOST YOUR EFFICIENCY

A brilliant LED target light automatically turns on when required by visual lighting conditions. Powerful auto-focus and auto-hot-spot features save time and effort. The P65 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<sup>®</sup> TECHNOLOGY...AND MORE

The P65 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<sup>®</sup> Reporter software.

## STORE USER PROFILES

Store your favorite camera settings (color palettes, target spots, alarms, etc.) on the P65. There's no need to upload them one-by-one each time you use the camera—a real time-saver when one camera is used by multiple operators.

## WIDE RANGE OF ACCESSORIES

Optional optics range from microscopic through telescopic to meet diverse applications requirements. Innovative, miniature wearable infrared heads-up displays (IR-HUD) are available, which can augment situational awareness. Long-life lithium-ion batteries are rechargeable from 12VDC and 120VAC sources, or operate the P65 directly from external power sources.

## OPTIONAL SOFTWARE DOES THE WORK FOR YOU!

ThermaCAM Reporter reporting and analysis software reduces the task of creating great-looking reports to simple drag-and-drop. 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® P65 TECHNICAL SPECIFICATIONS

## IMAGING PERFORMANCE

### THERMAL

Field of view/min focus distance	24° x 18° / 0.3 m
Spatial resolution (IFOV)	1.3 mrad
Thermal sensitivity @ 50/60Hz	0.08 °C at 30 °C
Electronic zoom function	2,4,8, 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
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## IMAGE PRESENTATION

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

## MEASUREMENT

Temperature ranges	-40°C to +120°C (-40°F to +248°F), Range 1 0°C to +500 °C (+32°F to 932°F), Range 2 Up to +1500 °C (+2732°F), optional Up to +2000 °C (+3632°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 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 (100 images); built-in RAM memory for burst and AVI recording
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 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.
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## LASER LOCATIR™

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

## THERMACAM® P60 SYSTEM INCLUDES:

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

## LENSES (OPTIONAL)

### Field of view/minimum focus distance

- 3X Telescope (7° x 5.3°/4m)
- 2X Telescope (12° X 9°/1.2m)
- 0.5X Wide angle (45° x 34°/0.1m)
- 0.3X Wide angle (80° x 60°/0.1m)
- 200 µm Close-up (64mm x 48mm/150mm)
- 100 µm Close-up (34mm x 25mm/80mm)
- 49 µm Macro (15mm x 11mm/19mm)
- Wearable Optics/Heads-up Display

## INTERFACES

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
Firewire output (IEEE 1394)	Real-time (60 Hz) digital transfer of radiometric thermal images or digital video (DV) out



The Global Leader in Infrared Cameras

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