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THERMACAM[®] **PM 595**

High Performance Handheld Infrared Camera



T H E C O M P L E T E
P R E D I C T I V E
M A I N T E N A N C E
S O L U T I O N



THERMACAM®

THE WORLD STANDARD FOR IR PREDICTIVE MAINTENANCE

FLIR SYSTEMS THERMACAM PM 595 SETS THE PACE FOR THERMOGRAPHIC INSPECTIONS, OFFERING UNIQUE CAMERA AND SOFTWARE CAPABILITIES TO MAKE YOUR PREDICTIVE AND PREVENTIVE MAINTENANCE TASKS EASIER, FASTER, AND MORE ACCURATE.

POWERFUL FEATURES SPEED INFRARED SAVINGS

- MAINTENANCE-FREE UNCOOLED DETECTOR**
Patented solid state microbolometer sensor needs no cryogenic cooling, making it the simplest, most reliable IR camera technology available.
- HIGH DEFINITION LONGWAVE PERFORMANCE**
Superb image quality, high precision measurement accuracy and longwave solar reflection immunity provide outstanding performance for most all predictive maintenance applications.
- POINT-AND-SHOOT SIMPLICITY**
Fitting comfortably in the palm of your hand, the lightweight **ThermaCAM PM 595** requires one button press to obtain perfectly adjusted thermal images. A second button stores images to the removable PCMCIA memory card.
- DIGITAL IMAGE, VOICE, AND TEXT ANNOTATION**
Speed surveys and accurately record and report details with fail-safe image and data storage. Embed up to 30 seconds of voice annotation with each image file. Select automatic report text in the field from pre-loaded choices in the camera.
- WIZARD-GUIDED REPORT GENERATION**
Create comprehensive reports easily using step-by-step Wizard guided functions within the **ThermaCAM Reporter™ Software Suite**.

Based on the technology of FLIR Systems' highly successful AGEMA 570 Series, the first microbolometer-based thermographic system, FLIR now enters the next generation of uncooled IR camera technology – introducing the **ThermaCAM PM 595** high performance uncooled longwave FPA infrared predictive maintenance system. Featuring new electronics, sensor technology, and double the processor speed, the PM 595 stands unchallenged in its ability to meet the needs of any predictive maintenance program.

In business today, it's all about reaching for the next level of productivity, improving efficiency, maximizing yields, and building the skills of your staff. Making this happen isn't easy. Tens of thousands of maintenance professionals around the world have learned that by applying modern technology to their problems, they can be more effective. FLIR Systems understands this, and for more than 33 years, continues to pioneer the advancement of high performance infrared cameras specifically for solving predictive maintenance problems.

Whatever the need, there is a **ThermaCAM** system right for any application and budget with a wide range of models to choose from. Best of all, **ThermaCAM** models are upgradeable, so the system bought today will meet the predictive maintenance requirements of tomorrow.



INFRARED SOLUTIONS

PUT THE THERMACAM PM 595 TO WORK FOR YOU

Making infrared thermography work successfully as a predictive maintenance tool is simple. Nearly everything that uses or transmits power gets hot before it fails. With the new **ThermaCAM**, seeing and documenting this change in temperature is as easy as using a home camcorder.

EXPERIENCE INFRARED PREDICTIVE MAINTENANCE SAVINGS THROUGHOUT YOUR FACILITY

Putting the **ThermaCAM PM 595** to work finding energy savings and avoiding costly downtime is fast and easy. The **ThermaCAM's** ease-of-use and versatility can be rapidly applied to a wide variety of money-saving applications, indoors and out. Simple point-and-shoot operation gets you clear, informative images of potential problem areas. A comprehensive array of application-specific accessories fine tunes the camera's performance for most any target size or distance. Compare the **ThermaCAM's** versatility with any other IR camera, and understand why the **ThermaCAM** is **#1** with plant engineers.



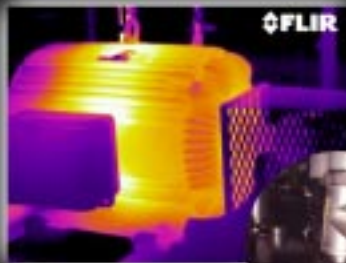
Connection problem on 200 Amp fused disconnect



Overheating on water-cooled supply cable for robotic welder



Plugged cooling fins on 13.8KV transformer



Overheated windings in a motor



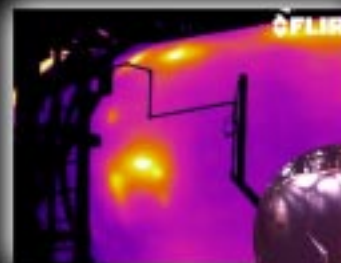
Bad connections on a capacitor bank



Thermal profile of a reactor refractory at a chemical facility



Wet insulation on a flat roof



Refractory breakdown on a refinery piping system



Heat buildup on cylinder heads of a compressor





PATENTED UNCOOLED DETECTOR

ThermaCAM PM 595 uses the most advanced uncooled microbolometer detector technology available providing outstanding longwave imaging performance and precision temperature measurements, indoors and outdoors, regardless of weather.



VIEW HIGH DEFINITION IMAGES ON AN INTERCHANGEABLE VIEWFINDER OR LCD SCREEN

Choose a display option that is best suited for a particular environment or viewing preference! ThermaCAM PM 595 produces crisp, highly detailed images that can be viewed on a large-format LCD panel or high-resolution viewfinder. Either option is powered by the camera and provides a full range of adjustability for any viewing angle.



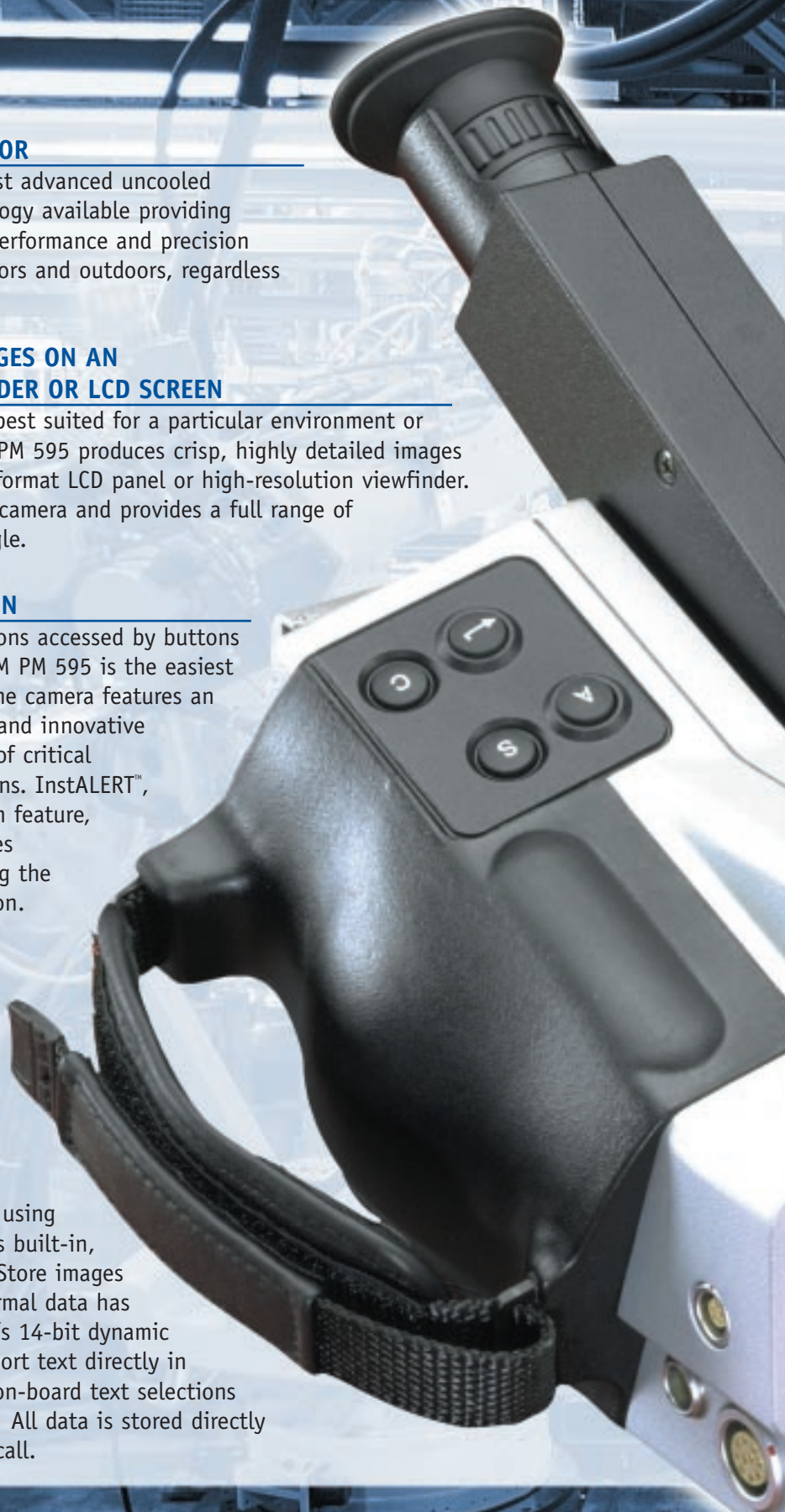
POINT-AND-SHOOT OPERATION

With dedicated automatic functions accessed by buttons under your fingertips, ThermaCAM PM 595 is the easiest IR camera to get results from. The camera features an intuitive multi-lingual interface and innovative features for instant recognition of critical temperatures and alarm conditions. InstALERT™, a new, semi-transparent isotherm feature, quickly highlights and categorizes problem areas, while also viewing the fine details of a thermal condition.



CAPTURE THE DETAILS WITH DIGITAL IMAGE, VOICE, AND TEXT ANNOTATION

Speed through surveys accurately recording and reporting details with fail-safe image and data storage. Embed up to 30 seconds of voice annotation with each image file using VoiceTrak™, ThermaCAM PM 595's built-in, digital, voice-recording system. Store images with confidence that all the thermal data has been captured using ThermaCAM's 14-bit dynamic range. Finish up by selecting report text directly in the field by using ThermaCAM's on-board text selections from your own pre-defined lists. All data is stored directly inside the image file for later recall.



WIZARD-GUIDED REPORT GENERATION SYSTEM

No one else gets you from the field to final report faster than FLIR Systems. The seamless integration of the ThermaCAM PM 595 camera and ThermaCAM Reporter™ Software ensures that field inspection data is quickly transformed into a maintenance report. Microsoft Windows®-based and simple to use, ThermaCAM Reporter integrates powerful image-analysis and report-generation tools enabling you to automatically format both simple and multi-page reports, as well as perform detailed analysis and trending. Wizard functions guide you step-by-step through the reporting process, allowing even occasional users to generate professional reports.



PRECISION TEMPERATURE MEASUREMENT

Built-in intelligence makes accurate measurements a snap with the ThermaCAM. The PM 595 auto adjusts temperature level and span to deliver the best image possible. Its automatic calibration system uses four internal temperature references, automatic lens identification, and advanced mathematical algorithms to ensure industry leading measurement performance in most environmental conditions. And the ThermaCAM's innovative Emissivity QuickSelect™ takes the guess-work out of selecting emissivity values by providing a pre-customized drop-down list of common materials to be inspected.



ONE-HANDED CORDLESS OPERATION

The lightweight ThermaCAM PM 595 fits comfortably in the palm of your hand and requires no external cables to operate. Whether you have to climb ladders, work in confined spaces or operate from a vehicle, the 595's compact ergonomic design will be right at home in your environment. Instant-on operation and helpful default settings make the PM 595 easy for even novice thermographers to use.



INTELLIGENT POWER SYSTEM

For reliable, uninterrupted operation in the field, ThermaCAM uses long-life NiMH batteries which are contained in a fully sealed internal compartment and provide over two hours of continuous use. An intelligent four bay battery charging system is included with the camera that charges a battery in approximately one hour.



THERMACAM® REPORTER™

FAST, FLEXIBLE, INTEGRATED REPORTING

No one else gets you from capturing images in the field to final report faster than FLIR Systems. Thermographers need to rapidly evaluate and analyze inspection results and then generate comprehensive reports quickly. From start to finish, the ThermoCAM family of infrared cameras and software offers a complete predictive maintenance solution.

Windows®-based and simple to use, **ThermaCAM Reporter Software** integrates powerful image analysis and report generation tools for accurate evaluation of inspection results. Analysis functions, text, and voice comments are digitally stored with camera images in the field, and then automatically downloaded and embedded into result tables and report text.

REPORTER

Powerful Windows-based image analysis and Wizard-guided report generation package.

REPORT VIEWER

Read-only program for reviewing and sharing reports created with Reporter Software with no additional licensing costs.

REPORT OLE

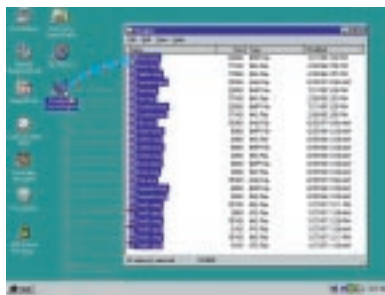
A software module used to place images into popular desktop word processing, spreadsheet and presentation applications. Allows you to format and analyze images through OLE-2 in-place activation capability.

DATABASE

Robust Windows-based program for storing, tracking and searching reports and images.



Integrated digital voice and text annotation allow the user to streamline surveys and accurately record and report details for each stored image.



Easy as Click, Drag, Drop, Print. ThermoCAM QuickReport™ allows users to create standard reports instantly. Simply drag image files to the QuickReport icon, send the completed file to any printer, and you have a professional, high-impact report in minutes.



Fast, one-step report generation



Powerful temperature analysis



Voice comments playback



Wizard guided report preparation



Customized report layout



OLE-2 Compliant



Multi-lingual



Database option



Automatic insertion of text fields from camera



ACCESSORIES AND SERVICES

FLIR SYSTEMS COMPLETES THE SOLUTION

ACCESSORIES AVAILABLE TO MEET ANY APPLICATION

Customize **ThermaCAM PM 595** to fit your needs by adding lenses, filters, remote control capability or field accessories. FLIR Systems offers a complete line of systems, software, accessories and service, tailored to meet a variety of predictive maintenance programs.

REMOTE CONTROLS Support applications where the camera needs to be remotely operated, for example, vehicle-mounted or remote monitoring applications.

HIGH-TEMPERATURE OPTION For evaluation of extremely high-temperature targets prevalent in petrochemical refineries, steel mills and other industrial facilities.

POWER OPTIONS Long life, no-memory NiMH Batteries, extended-use battery belts, vehicle power adapters and intelligent four bay battery charging stations assure continuous power for rigorous inspection schedules.

WIDE ARRAYS OF LENSES Maximize **ThermaCAM PM 595's** utility and adaptability to many different temperature measurement situations and target materials.

HIGH CAPACITY PC CARDS Store both 14-bit and 8-bit.BMP images, along with text and voice comments captured in the field for automatic report generation and analysis.



Complete Predictive Maintenance System includes an IR Camera, reporting software, PC, and accessories



ThermaCAM PM 595 Intelligent Battery Charging System

CUSTOMER COMMITMENT

With more than **30,000** systems in use worldwide and sales and service centers in over 60 countries, **FLIR Systems** is the undisputed leader in infrared imaging. Our dedication to customers is evident in everything we do, from designing products to meet your needs, to providing applications support, service and training worldwide. *We are committed to delivering the complete predictive maintenance solution.*

OBTAIN TRAINING AND CERTIFICATION FROM THE INFRARED TRAINING CENTER

At FLIR Systems, we recognize that producing the best infrared cameras is not enough. The key to successful implementation of a predictive maintenance program is having proper thermography training. That's why we developed the **Infrared Training Center (ITC)**. The **ITC** provides unsurpassed **ThermaCAM** operator training, as well as comprehensive Level I, Level II, and Level III Thermographer Certification programs.

Whether it be at one of the corporate **ITC** training locations, or at your facility, the **ITC** provides the training necessary to assure a rapid implementation and payback on your **ThermaCAM**.



FLIR SYSTEMS THERMACAM PM 595 TECHNICAL SPECIFICATIONS

IMAGING PERFORMANCE	<i>Field of view/min focus distance</i>	24° x 18°/0.5 m
	<i>Spatial resolution (IFOV)</i>	1.3 mrad
	<i>Thermal sensitivity</i>	0.1° C at 30° C
	<i>Image frequency</i> <i>Electronic zoom function</i>	50/60 Hz non-interlaced 4X continuous
DETECTOR	<i>Type</i>	Focal Plane Array (FPA), uncooled microbolometer 320 x 240 pixels
	<i>Spectral range</i>	7.5 to 13 μm
IMAGE PRESENTATION	<i>Video output</i>	RS170 EIA/NTSC or CCIR/PAL, composite and S-video 14-bit digital video serial link (optional)
	<i>Viewfinder</i>	Built-in, high-resolution color LCD (TFT), optional LCD panel
MEASUREMENT	<i>Temperature range</i>	-40° C to +500° C (-40° F to 932° F) Up to +1500° C (2732° F), standard Up to +2000° C (3632° F), optional
	<i>Accuracy</i> <i>Automatic emissivity correction</i>	±2° C, ±2% Adjusted from values in predefined materials emissivity tables
IMAGE STORAGE	<i>Type</i>	High-capacity PC-Card, ATA compatible
	<i>File format</i>	14-bit IR digital image data
	<i>File format, BMP</i>	Standard Bitmap, 8-bit (image only, or image with screen graphics)
	<i>File format, IMG + BMP</i>	Every image stored in both formats
	<i>Voice annotation of images</i> <i>Text annotation of images</i>	30 sec of digital voice "clip" stored together with the image Predefined text selected and stored together with the image
LENSES (Optional)	<i>Field of view/min focus distance</i>	7° x 5.3°/6 m, 12° x 9°/ 2 m, 45° x 34°/ 0.3 m, 80°x 60°/0.2 m, 64 mm x 48 mm/150 mm (Close-Up)
	<i>Lens identification</i>	Automatic
BATTERY SYSTEM	<i>Type</i>	Internal rechargeable nickel metal hydride battery, field replaceable
	<i>Operating time</i>	2 hours continuous operation
	<i>Charging time</i>	1 hour
ENVIRONMENTAL SPECIFICATION	<i>Operating temperature range</i>	-15° C to +50° C (5° F to 122° F)
	<i>Storage temperature range</i>	-40° C to +70° C (-40° F to 158° F)
	<i>Humidity</i>	Operating and storage: 10% to 95%, non-condensing
	<i>Encapsulation</i>	IP 54 IEC 529 (metal casing)
PHYSICAL CHARACTERISTICS	<i>Weight</i>	1.9 kg (4.2 lbs), excl. battery, 2.3 kg (5.1 lbs) including battery
	<i>Size</i>	220 mm x 133 mm x 140 mm (8.7" x 5.2" x 5.5")
	<i>Tripod mounting</i>	1/4"-20
INTERFACE	<i>Remote-control options</i>	Remote-control panel or RS-232

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

FLIR SYSTEMS IS THE LEADING SUPPLIER OF INNOVATIVE IMAGING SYSTEMS TO INDUSTRIES AND GOVERNMENT AGENCIES WORLDWIDE. VISION HAS DRIVEN OUR SUCCESS AND IT GUIDES OUR FUTURE.



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