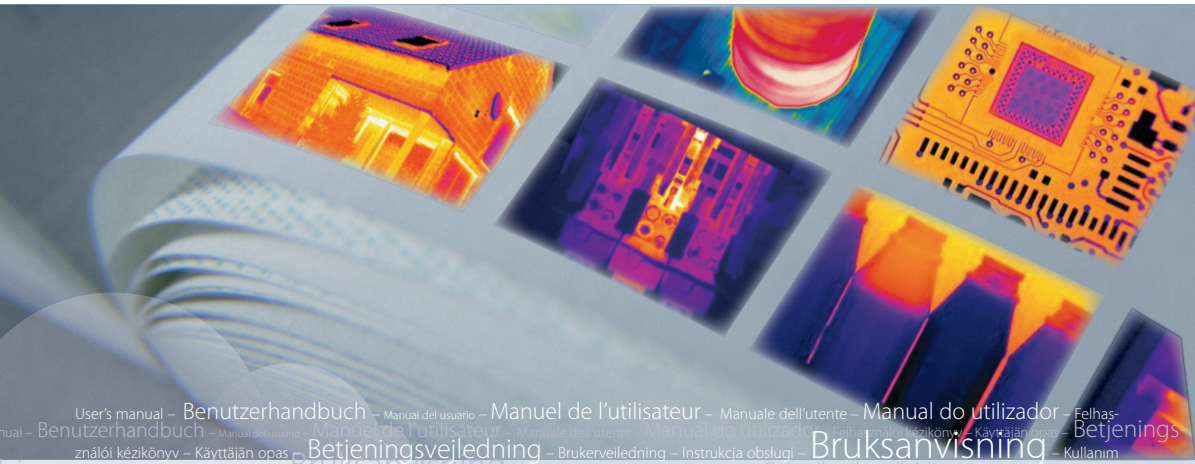
# ThermaCAM™ QuickView

Program version 2.0




# User's manual


| | |
|---|---|
| **Publ. No.** | 1558344 |
| **Revision** | a139 |
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# ThermaCAM™ QuickView

*User's manual*

Publ. No. 1558344 Rev. a139 – ENGLISH (EN) – January 25, 2006

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# 1 Notice to user

**Typographical conventions**

This manual uses the following typographical conventions:

- **Semibold** is used for menu names, menu commands and labels and buttons in dialog boxes.
- *Italic* is used for important information.
- `Monospace` is used for code samples.
- UPPERCASE is used for names on keys and buttons.

**Comments & questions**

Make a report of errors you find, as well as your suggestions for new revisions. Send an e-mail to:

documentation@flir.se

**Technical support**

When you need technical support, make sure that you have the following information on hand:

- The camera model name
- The camera serial number
- The communication protocol, or method, between the camera and your PC (for example, Ethernet, USB, or FireWire)
- Operating system on your PC
- Full name, publication number and revision number of the manual

You find the addresses and telephone numbers to local sales offices on the back cover of this manual.

**Software updates**

FLIR Systems regularly issues software upgrades and service releases on the support pages of the company website:

http://www.flirthermography.com

To find the last upgrades and service releases, make sure you select **USA** in the **Select country** box in the top right corner of the page.

**Training**

To read about infrared training, visit this site:

http://www.infraredtraining.com

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# 2 Installation



## 2.1 *Software requirements*

**PC**

ThermaCAM™ QuickView supports USB and FireWire communication for the following PC operating systems:

- Windows 2000 (with SP-4)
- Windows XP (with SP-2)

**Camera**

If you intend to use ThermaCAM™ QuickView with a B, E, P or S series camera, you must make sure that your camera software version is supported (See section 12.1 – Making sure that the camera has the correct software version on page 52.).

## 2.2 Installation of ThermaCAM™ QuickView



**General**

Before you install ThermaCAM™ QuickView, close all programs.

**Procedure**

Follow this procedure to install ThermaCAM™ QuickView:

| | |
|---|---|
| **1** | Insert the ThermaCAM™ QuickView installation CD into the CD-ROM drive. The installation should start automatically.<br>If the installation does not start automatically, follow this procedure:<br>**1** Double-click **My Computer** on **Desktop**.<br>**2** Right-click the CD-ROM drive and click **Explore**.<br>**3** Double-click SETUP.EXE.<br>**4** Go to Step 2 below. |
| **2** | Select the preferred language. |
| **3** | ThermaCAM™ QuickView needs some prerequisites. If they are not already installed on your computer, click **OK** when the installation wizard asks if you want to install the software. |
| **4** | ThermaCAM™ QuickView needs Microsoft® .NET Framework 2.0. If this software is not already installed on your computer, click **OK** when the installation wizard asks if you want to install the software.<br>Installation of Microsoft® .NET Framework 2.0 can take several minutes. |
| **5** | In the ThermaCAM™ QuickView installation wizard dialog box, click **Next**. |
| **6** | In the license agreement dialog box, carefully read and accept the license agreement and click **Next**. |
| **7** | In the customer information dialog box, enter your customer details and click **Next**. |
| **8** | Click **Install**. |
| **9** | Click **Finish**. |
| **10** | If the installation wizard asks you to restart your computer, do so. |

## 2.3 Installation of USB & FireWire drivers



**Procedure**

Before you use ThermaCAM™ QuickView with your camera, you must follow this procedure:

| | |
|---|---|
| **1** | Start the camera. |
| **2** | Do one of the following:<br>■ If your camera model is InfraCAM or BCAM, select **QuickView** in the camera program (**USB cable** → **QuickView**).<br>■ If your camera model is not an InfraCAM or BCAM, go to Step 3 below. |
| **3** | Connect the camera to the PC. |
| **4** | When the computer has detected the camera, follow the on-screen instructions to install USB or FireWire drivers. |

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# 3 Supported file formats



**General**

ThermaCAM™ QuickView supports radiometric and non-radiometric file formats.

**Radiometric file formats**

ThermaCAM™ QuickView supports the following radiometric file formats:

- ThermaCAM™ radiometric *.jpg
- ThermaCAM™ radiometric *.img
- ThermaCAM™ radiometric 8-bit *.tif
- ThermaCAM™ radiometric 8/12-bit *.tif
- ThermaCAM™ radiometric 12-bit *.tif
- ThermoTeknix® *.tgw
- ThermoTeknix® *.tmw
- ThermoTeknix® *.tlw

**Non-radiometric file formats**

ThermaCAM™ QuickView supports the following non-radiometric file formats:

- *.jpg
- *.bmp

# 4 Workflow

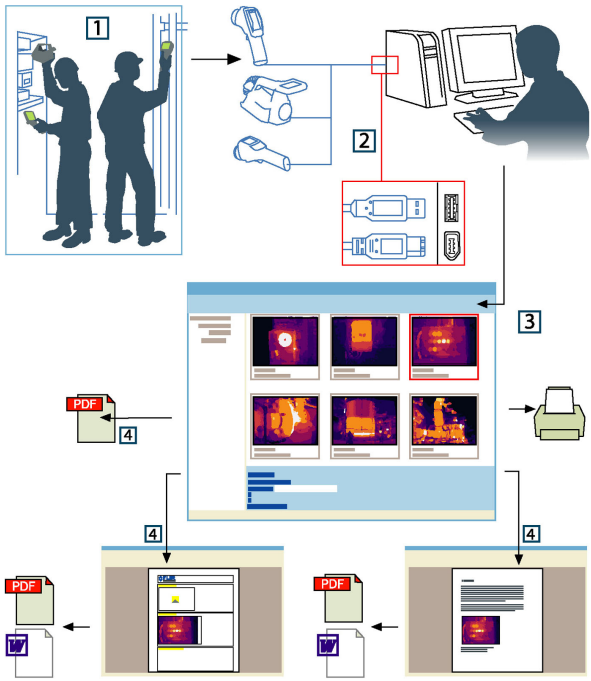


**General**

When you make an infrared inspection you follow a typical workflow. This section gives an example of an infrared inspection workflow.

**Figure**

10548003;a5




**Explanation**

This table gives an explanation to the figure above:

| | |
|---|---|
| **1** | Use your camera to take your infrared and/or visual images. |
| **2** | Do one of the following:<br>▪ **Method 1:** Move the images using a USB or FireWire cable.<br>▪ **Method 2:** Move the images using a CompactFlash card.<br>For more information, see the following sections:<br>▪ Section 6 – Connecting the camera on page 15<br>▪ Section 8.1 – Moving images on page 23 |

| | |
|---|---|
| 3 | In ThermaCAM™ QuickView, do one or more of the following:<br>■ Change how the images are viewed.<br>■ Handle files.<br>■ Analyze images.<br>■ Add image descriptions.<br>For more information, see the following sections:<br>■ Section 7 – Viewing images on page 19<br>■ Section 8 – Handling files on page 23<br>■ Section 9 – Analyzing images on page 35<br>■ Section 10 – Adding & editing image descriptions on page 47 |
| 4 | Do one of the following to create an infrared report:<br>■ On the **File** menu, click **Save As PDF** to create a simple Adobe® Acrobat PDF report.<br>■ Drag-and-drop images into Microsoft® Word, add your own comments and descriptions and use Microsoft® Word to create a report.<br>■ Drag-and-drop images into ThermaCAM™ Reporter (an add-on to Microsoft® Word) and use ThermaCAM™ Reporter to create the report.<br>For more information, see section 11 – Creating reports on page 49. |

**NOTE**

- Some steps in this section can only be done if your camera supports radiometric images.
- If you drag-and-drop images into ThermaCAM™ Reporter all radiometric information in the images will be discarded.

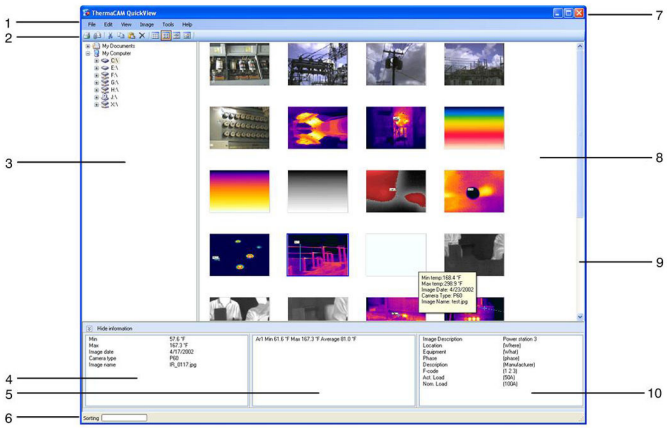
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# 5 Window elements & toolbar buttons

## 5.1 *Window elements*

**Figure**

10548203;a4




**Explanation**

This table gives an explanation to the figure above:

| | |
|---|---|
| **1** | Menu bar |
| **2** | Toolbar |
| **3** | Folder pane |
| **4** | Pane for information about the image |
| **5** | Pane for information about measurement functions & values |
| **6** | Status bar |
| **7** | Minimize, Maximize, and Close buttons |
| **8** | Image pane |
| **9** | Scroll bar |
| **10** | Pane for image description and text comments |

## 5.2 Main toolbar buttons

**Main toolbar buttons**

| | |
|---|---|
|  | Click to print the selected image (or images), using a local or network printer. |
|  | Click to e-mail the selected image (or images) to a mail recipient, using your default mail client. |
|  | Click to cut an image from a folder. |
|  | Click to copy an image to Clipboard. |
|  | Click to paste an image to a folder. |
|  | Click to delete an image from a folder. |
|  | Click to display the images as small thumbnails. |
|  | Click to display the images as medium thumbnails. |
|  | Click to display the images as large thumbnails. |
|  | Click to display one single image at a time. |

# 5.3 Image toolbar buttons

**NOTE**

- Some features and measurement tools in this section are only available if your camera supports radiometric images.
- To deselect an image toolbar button, press ESC.

**Image toolbar buttons**

| | |
|---|---|
|  | Click to select the **Select** tool.<br>You use this tool when you want to move spots and areas inside the image. |
|  | Click to select the **Flying Spot** tool.<br>You use this tool to create a flyting spot meter. When you move the flying spot meter over the image area, the temperature will be displayed at the location of the flying spot meter. |
|  | Click to select the **Spot** tool.<br>You use this tool to create a spot meter that you can put anywhere on the image. The spot meter and the temperature it displays will be saved in the image when you save the image.<br>To move the spot meter, use the **Select** tool. |
|  | Click to select the **Area** tool.<br>You use this tool to click-and-drag in the image to create an area.<br>To move the box, use the **Select** tool. |
|  | Click to select the **Isotherm Above** tool.<br>You use this tool to assign a color to all temperature levels above a specified temperature level. |
|  | Click to select the **Isotherm Below** tool.<br>You use this tool to assign a color to all temperature levels below a specified temperature level. |
|  | Click to select the **Isotherm Interval** tool.<br>You use this tool to assign a color to all temperature levels between two specified temperature levels. |

5

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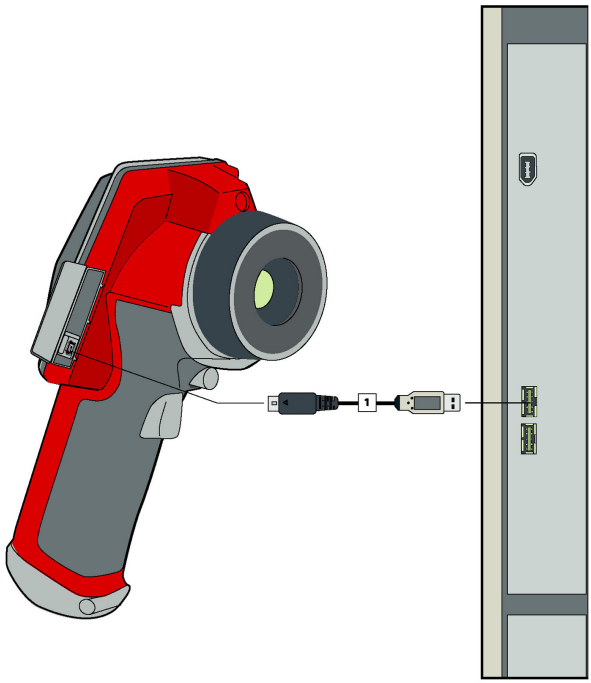
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# 6 Connecting the camera

## 6.1 *Connecting the camera: InfraCAM & BCAM cameras*

**Figure**

10717303;a2




**Explanation**

This table gives an explanation to the figure above:

| | |
|---|---|
| **1** | USB communication cable<br><br>This cable is connected from the USB connector on the right side connector panel of an InfraCAM or BCAM camera to the USB connector on the rear connector panel of a computer. |

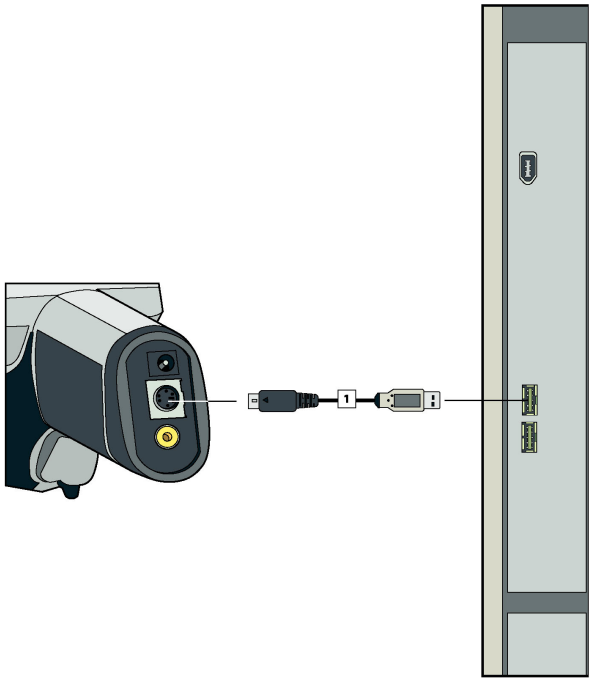
**NOTE**

Before you can use the full functionality of ThermaCAM™ QuickView, you must select **QuickView** in the camera program (**USB cable → QuickView**).

# 6.2 Connecting the camera: E & B series cameras

**Figure**

10717203;a2




**Explanation**

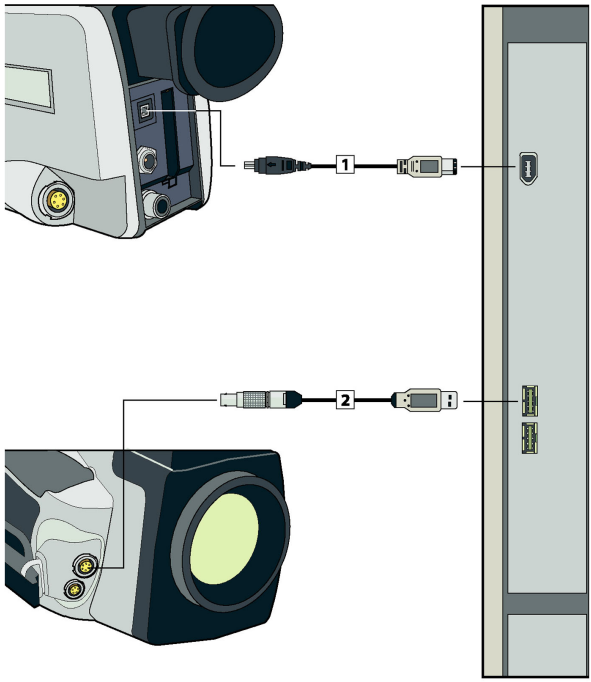
This table gives an explanation to the figure above:

| | |
|---|---|
| **1** | USB communication cable<br>This cable is connected from the USB connector on the rear connector panel of an E or B series camera to the USB connector on the rear connector panel of a computer. |

# 6.3 Connecting the camera: P & S series cameras

**Figure**

10717103;a2






**Explanation**

This table gives an explanation to the figure above:

| | |
|---|---|
| **1** | FireWire communication cable<br>This cable is connected from the FireWire connector on the rear connector panel of a P or S series cameras to the FireWire connector on the rear connector panel of a computer. |
| **2** | USB communication cable<br>This cable is connected from the USB connector on the right front side of a P or S series camera to the USB connector on the rear connector panel of a computer. |

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# 7 Viewing images

## 7.1 *Changing view settings*

**General**

Infrared and visual images can be displayed in four different sizes:

- **Small Thumbnails** image view
- **Medium Thumbnails** image view
- **Large Thumbnails** image view
- **Single Image** image view

You can use two different methods to change the view settings:

- **Method 1:** Use a menu command.
- **Method 2:** Use the main toolbar buttons.

**Method 1**

On the **View** menu, do one of the following:

- Click **Small Thumbnails**.
- Click **Medium Thumbnails**.
- Click **Large Thumbnails**.
- Click **Single Image**.

**Method 2**

On the main toolbar, do one of the following:

- Click **Small Thumbnails** .
- Click **Medium Thumbnails** .
- Click **Large Thumbnails** .
- Click **Single Image** .

## 7.2 Changing zoom factor

**General**

You can change zoom factor for an image.

**Procedure**

Follow this procedure to change zoom factor for an image:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | Do one of the following:<br>▪ On the **View** menu, click **Single Image**.<br>▪ On the main toolbar, click **Single Image** .<br>▪ Double-click the image. |
| **3** | Do one of the following:<br>▪ Right-click the image, click **Zoom** and select the zoom factor.<br>▪ On the **Image** menu, click **Zoom** and select the zoom factor. |

**NOTE**

This menu command is only available if your camera supports radiometric images.

## 7.3 Rotating images

**General**

You can rotate one image or a group of images in 90 degree increments.

**Procedure**

Follow this procedure to rotate one image or a group of images:

| | |
|---|---|
| **1** | Do one of the following:<br>■ To select one image, click the image one time.<br>■ To select images that are adjacent to each other, SHIFT-click the images.<br>■ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | On the **Image** menu, do one of the following:<br>■ Click **Rotate Left**.<br>■ Click **Rotate Right**. |

## 7.4 Changing palette

**General**

You can change the palette that the camera uses to display the different temperatures in the image. A different palette can make it easier to make an analysis of the image.

**Procedure**

Follow this procedure to change the palette for one image or a group of images:

| | |
|---|---|
| **1** | Do one of the following:<br>■ To select one image, click the image one time.<br>■ To select images that are adjacent to each other, SHIFT-click the images.<br>■ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | On the **Image** menu, click **Palette** and select the palette you want to use. |

**NOTE**

- This menu command is only available if your camera supports radiometric images.
- In some camera models, **Palette** is called **Color**.

# 8 Handling files

## *8.1 Moving images*

### 8.1.1 Moving images from your camera to your computer

**General**

You can use two different methods to move images from your camera to your computer:

- **Method 1:** Move the images using a USB or FireWire cable.
- **Method 2:** Move the images using a CompactFlash card.

**Method 1**

Follow this procedure to move images from your camera to your computer using a USB or FireWire cable:

| | |
|---|---|
| **1** | To display the **Transfer Images** dialog box, connect your camera to your computer. |
| **2** | Click one of these buttons:<br>▪ **Copy all images to the destination folder**<br>▪ **Move all images from the camera to the destination folder** |
| **3** | To select a different file destination, click **Browse**. |
| **4** | To move the images, click **OK**. |

**Method 2**

Follow this procedure to move images from your camera to your computer using a CompactFlash card:

| | |
|---|---|
| **1** | Remove the CompactFlash card from your camera and insert it into a CompactFlash reader that is connected to your computer. |
| **2** | In the folder pane, go to the disk drive for the CompactFlash card. |
| **3** | Do one of the following:<br>▪ On the **Edit** menu, click **Move To Folder** to move the image/images to the destination folder.<br>▪ Move the images to the destination folder using a drag-and-drop operation. |

**SEE ALSO**

For information about how to connect your camera, see these sections:

- Section 6.1 – Connecting the camera: InfraCAM & BCAM cameras on page 15
- Section 6.2 – Connecting the camera: E & B series cameras on page 16
- Section 6.3 – Connecting the camera: P & S series cameras on page 17

## 8.1.2 Moving images on your computer

**General**

You can move one image or a group of images from the image pane to a destination folder, or to a different application on your computer.

**Procedure**

Follow this procedure to move one image or a group of images:

| | |
|---|---|
| **1** | Do one of the following:<br>▪ To select one image, click the image one time.<br>▪ To select images that are adjacent to each other, SHIFT-click the images.<br>▪ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | Do one of the following:<br>▪ On the **Edit** menu, click **Move To Folder** to move the image/images to the destination folder.<br>▪ Move the image/images to the destination folder using a drag-and-drop operation. |
| **3** | Release the mouse button. |

## 8.2 Copying images

**General**

You can copy one image or a group of images from the image pane to a destination folder, or to a different application on your computer.

**Procedure**

Follow this procedure to copy one image or a group of images:

| | |
|---|---|
| **1** | Do one of the following:<br>■ To select one image, click the image one time.<br>■ To select images that are adjacent to each other, SHIFT-click the images.<br>■ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | Do one of the following:<br>■ On the **Edit** menu, click **Copy To Folder** to copy the image/images to a destination folder.<br>■ Right-click the image/images and click **Copy**.<br>■ Press CTRL + C. |
| **3** | Do one of the following:<br>■ Select a destination folder or a different application and press CTRL + V.<br>■ Select a destination folder or a different application and click **Paste** on the **Edit** menu. |

## 8.3 Saving images to a different file destination

**General**

You can save an image to a different file destination on your PC.

**Procedure**

Follow this procedure to save an image to a different file destination:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | Do one of the following:<br>▪ Right-click the image and click **Save As**.<br>▪ On the **Image** menu, click **Save As**. |
| **3** | In the **Save As** dialog box, follow this procedure:<br>**1** Select a file destination.<br>**2** Select a file format. |
| **4** | Click **Save**. |

## 8.4 Cutting & pasting images

**General**

You can cut & paste one image or a group of images to a destination folder, or to a different application.

**Procedure**

Follow this procedure to cut & paste one image or a group of images:

| | |
|---|---|
| **1** | Do one of the following:<br>▪ To select one image, click the image one time.<br>▪ To select images that are adjacent to each other, SHIFT-click the images.<br>▪ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | Do one of the following:<br>▪ Right-click the image/images and click **Cut**.<br>▪ On the main toolbar, click the **Cut** button.<br>▪ On the **Edit** menu, click **Cut**.<br>▪ Press CTRL + X |
| **3** | In the destination folder or the target application, do one of the following:<br>▪ Right-click and click **Paste**.<br>▪ On the main toolbar, click the **Paste** button.<br>▪ On the **Edit** menu, click **Paste**.<br>▪ Press CTRL + V. |

## 8.5 Deleting images

**General**

You can delete one image or a group of images.

**Procedure**

Follow this procedure to delete one image or a group of images:

| | |
|---|---|
| **1** | Do one of the following:<br>■ To select one image, click the image one time.<br>■ To select images that are adjacent to each other, SHIFT-click the images.<br>■ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | Do one of the following:<br>■ Press DELETE.<br>■ On the main toolbar, click the **Delete** button. |

**NOTE**

When you delete one image or a group of images, you can still restore them from the Recycle Bin.

## 8.6 Renaming images

**General**

You can rename one image or a group of images.

**Rename one image**

Follow this procedure to rename one image:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | Do one of the following:<br>▪ Right-click the image and click **Rename**.<br>▪ On the **Edit** menu, click **Rename**. |
| **3** | In the **Rename Image** dialog box, type the new name for the image you want to rename. |
| **4** | To rename the image, click **OK**. |

**Rename a group of images**

Follow this procedure to rename a group of images:

| | |
|---|---|
| **1** | Do one of the following:<br>▪ To select images that are adjacent to each other, SHIFT-click the images.<br>▪ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | Do one of the following:<br>▪ Right-click the images and click **Rename**.<br>▪ On the **Edit** menu, click **Rename**. |
| **3** | In the **Rename Images** dialog box, set the parameters for **File name** and **Automatic numbering**. |
| **4** | To rename the images, click **OK**. |

## 8.7 Sorting images

**General**

You can sort a group of images according to a specified sorting key.

**Sorting keys**

You can use these sorting keys:

- **Name**
- **Date**
- **Type**
- **Size**

**Procedure**

Follow this procedure to sort a group of images:

| | |
|---|---|
| **1** | Do one of the following:<br>■ To select images that are adjacent to each other, SHIFT-click the images.<br>■ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | On the **View** menu, do one of the following:<br>■ Click **Sort By** → **Name**.<br>■ Click **Sort By** → **Date**.<br>■ Click **Sort By** → **Type**.<br>■ Click **Sort By** → **Size**. |

## 8.8 Printing images

**General**

You can print one image or a group of images on a local or network printer.

**Procedure**

Follow this procedure to print one image or a group of images:

| | |
|---|---|
| **1** | Do one of the following:<br>■ To select one image, click the image one time.<br>■ To select images that are adjacent to each other, SHIFT-click the images.<br>■ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | Do one of the following:<br>■ Right-click the image/images and click **Print**.<br>■ On the **File** menu, click **Print**. |
| **3** | In the **Print** dialog box, make the necessary changes and click **OK**. |

## 8.9 Sending images by e-mail

**General**

You can send one image or a group of images by e-mail.

**Procedure**

Follow this procedure to send one image or a group of images by e-mail:

| | |
|---|---|
| **1** | Do one of the following:<br>■ To select one image, click the image one time.<br>■ To select images that are adjacent to each other, SHIFT-click the images.<br>■ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | Do one of the following:<br>■ Right-click the image/images and click **Send To** → **Mail Recipient**.<br>■ On the **File** menu, click **Send To** → **Mail Recipient**. |

## 8.10 Sending images to ThermaCAM™ Reporter

**General**

You can send one image or a group of images to ThermaCAM™ Reporter. ThermaCAM™ Reporter is an advanced reporting program for infrared and visual images.

**Procedure**

Follow this procedure to send one image or a group of images to ThermaCAM™ Reporter:

| | |
|---|---|
| **1** | Do one of the following:<br>■ To select one image, click the image one time.<br>■ To select images that are adjacent to each other, SHIFT-click the images.<br>■ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | Do one of the following:<br>■ Right-click the image/images and click **Send To** → **ThermaCAM™ Reporter**.<br>■ On the **File** menu, click **Send To** → **ThermaCAM™ Reporter** |

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# 9 Analyzing images

**NOTE**

- Some features and measurement tools in this section are only available if your camera supports radiometric images.
- To deselect an image toolbar button, press ESC.

**General**

Do one or more of the following steps to analyze your images:

- Use the **Flying Spot** tool.
- Create a spot.
- Create a measurement area.
- Create an isotherm
- Move a spot or an area
- Delete a spot or an area
- Delete an isotherm
- Change isotherm levels.
- Change temperature levels.
- Change object parameters.
- Auto-adjust the image.

**SEE ALSO**

For more information, see these sections:


- Section 9.1 – Using the Flying Spot tool on page 36
- Section 9.2 – Creating a spot on page 37
- Section 9.3 – Creating an area on page 38
- Section 9.4 – Creating an isotherm on page 39
- Section 9.6 – Moving a spot or an area on page 41
- Section 9.7 – Deleting a spot or an area on page 42
- Section 9.8 – Deleting an isotherm on page 43
- Section 9.5 – Changing isotherm levels on page 40
- Section 9.9 – Changing temperature levels on page 44
- Section 9.10 – Changing object parameters on page 45
- Section 9.11 – Auto-adjusting an image on page 46

# 9.1 Using the **Flying Spot** tool

**Procedure**

Follow this procedure to use the **Flying Spot** to see the temperature:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | To set **Single Image** view, do one of the following:<br>▪ On the **Image** menu, click **Single Image**.<br>▪ On the main toolbar, click the **Single Image** button.<br>▪ Double-click the image. |
| **3** | On the image toolbar, click the **Flying Spot** button. |
| **4** | To display the temperature, move the **Flying Spot** tool to any position on the image. |

## 9.2 Creating a spot

**Procedure**

Follow this procedure to create a spot:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | To set **Single Image** view, do one of the following:<br>▪ On the **Image** menu, click **Single Image**.<br>▪ On the main toolbar, click the **Single Image** button.<br>▪ Double-click the image. |
| **3** | On the image toolbar, click the **Spot** button. |
| **4** | To create a spot, click in the image at the position where you want the spot. |

## 9.3 Creating an area

**Procedure**

Follow this procedure to an create an area:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | To set **Single Image** view, do one of the following:<br>▪ On the **Image** menu, click **Single Image**.<br>▪ On the main toolbar, click the **Single Image**  button.<br>▪ Double-click the image. |
| **3** | On the image toolbar, click the **Area**  button. |
| **4** | To create an area, click-and-drag in the image. |

## 9.4 Creating an isotherm

**Procedure**

Follow this procedure to create an isotherm:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | To set **Single Image** view, do one of the following:<br>▪ On the **Image** menu, click **Single Image**.<br>▪ On the main toolbar, click the **Single Image** button.<br>▪ Double-click the image. |
| **3** | On the image toolbar, click one of the following buttons:<br>▪ **Isotherm Above**<br>▪ **Isotherm Below**<br>▪ **Isotherm Interval** |

**NOTE**

In some camera models, **Isotherm** is called **Color alarm**.

## 9.5 Changing isotherm levels

**Procedure**

Follow this procedure to change isotherm levels:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | To set **Single Image** view, do one of the following:<br>▪ On the **Image** menu, click **Single Image**.<br>▪ On the main toolbar, click the **Single Image** button.<br>▪ Double-click the image. |
| **3** | On the image toolbar, click the **Select** button. |
| **4** | To change isotherm levels, click-and-drag the bar in the temperature scale. |

**NOTE**

In some camera models, **Isotherm** is called **Color alarm**.

## 9.6 Moving a spot or an area

**Procedure**

Follow this procedure to move a spot or an area:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | To set **Single Image** view, do one of the following:<br>▪ On the **Image** menu, click **Single Image**.<br>▪ On the main toolbar, click the **Single Image** button.<br>▪ Double-click the image. |
| **3** | Click the **Select** tool. |
| **4** | Click the spot or the area one time and hold down the mouse key. |
| **5** | To move spot or the area, move the mouse. |

## 9.7 Deleting a spot or an area

**Procedure**

Follow this procedure to delete a spot or an area:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | To set **Single Image** view, do one of the following:<br>▪ On the **Image** menu, click **Single Image**.<br>▪ On the main toolbar, click the **Single Image** button.<br>▪ Double-click the image. |
| **3** | Click the **Select** tool. |
| **4** | Click the spot or the area one time. |
| **5** | Press DELETE. |

## 9.8 Deleting an isotherm

**Procedure**

Follow this procedure to delete an isotherm:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | To set **Single Image** view, do one of the following:<br>▪ On the **Image** menu, click **Single Image**.<br>▪ On the main toolbar, click the **Single Image** button.<br>▪ Double-click the image. |
| **3** | Click the **Select** tool. |
| **4** | Right-click the image and click **Delete Isotherm**. |

# 9.9 Changing temperature levels

**General**

At the bottom of the infrared image you can see two sliders. By dragging these sliders to the left or to the right you can change the top and bottom levels in the temperature scale.

**Changing the top level**

Follow this procedure to change the top level in the temperature scale:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | To set **Single Image** view, do one of the following:<br>▪ On the **Image** menu, click **Single Image**.<br>▪ On the main toolbar, click the **Single Image**  button.<br>▪ Double-click the image. |
| **3** | To change the top level in the temperature scale, drag the right slider right or left. |

**Changing the bottom level**

Follow this procedure to change the bottom level in the temperature scale:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | To set **Single Image** view, do one of the following:<br>▪ On the **Image** menu, click **Single Image**.<br>▪ On the main toolbar, click the **Single Image**  button.<br>▪ Double-click the image. |
| **3** | To change the bottom level in the temperature scale, drag the left slider right or left. |

**Changing the top & bottom level at the same time**

Follow this procedure to change the top & bottom level in the temperature scale at the same time:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | To set **Single Image** view, do one of the following:<br>▪ On the **Image** menu, click **Single Image**.<br>▪ On the main toolbar, click the **Single Image**  button.<br>▪ Double-click the image. |
| **3** | To change the top & bottom level in the temperature scale at the same time, SHIFT-drag the left or right slider left or right. |

9

## 9.10 Changing object parameters

**General**

You can change the object parameter values for an image. Object parameters have an effect on the infrared radiation that the camera measures.

**Recommended values**

If you are unsure about the values, the following values are recommended:

| | |
|---|---|
| Atmospheric temperature | +20°C (+69°F) |
| Distance | 1.0 m (3.3 ft.) |
| Emissivity | 0.95 |
| Reflected apparent temperature | +20°C (+69°F) |
| Relative humidity | 50% |

**Procedure**

Follow this procedure to change object parameters:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | On the **Image** menu, click **Object Parameters**. |
| **3** | Type a value in the text box for each object parameter that you want to change. |
| **4** | Click **OK**. |

## 9.11 Auto-adjusting an image

**General**

You can auto-adjust one image or a group of images. When you auto-adjust an image you adjust it for best image brightness and contrast.

**Procedure**

Follow this procedure to auto-adjust an image:

| | |
|---|---|
| **1** | Do one of the following:<br>■ To select one image, click the image one time.<br>■ To select images that are adjacent to each other, SHIFT-click the images.<br>■ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | On the **Image** menu, click **Auto-adjust**. |

# 10 Adding & editing image descriptions

**General**

You can add image descriptions to radiometric and non-radiometric *.jpg images. The image description will be saved in the image file and can be retrieved by other programs from FLIR Systems, and by programs from other companies.

**NOTE**

- A description can not be more than 255 characters.
- Press ENTER to start a new line.
- An image from a FLIR Systems infrared camera may already contain an image description.

**Adding an image description**

Follow this procedure to add an image description:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | On the **Image** menu, click **Image Description**. |
| **3** | In the **Image Description** dialog box, type the text you want to save as an image description. |
| **4** | To save the image description, click **OK**. |

**Editing an image description**

Follow this procedure to edit an image description:

| | |
|---|---|
| **1** | To select an image, click the image one time. |
| **2** | On the **Image** menu, click **Image Description**. |
| **3** | In the **Image Description** dialog box, edit the text. |
| **4** | To save the changed text, click **OK**. |

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# 11 Creating reports

**General**

You can create reports which include one or many infrared and/or visual images. The reports are saved in Adobe® Acrobat PDF format. To download the free reader, go to this web page:

*http://www.adobe.com/products/acrobat/readermain.html*

**Structure**

When you create a report, each page will be created according to this structure:

- Company logo (possible to change)
- Image
- Image description
- Analysis
- Text comments
- File name
- Date

**Procedure**

Follow this procedure to create a report:

| | |
|---|---|
| **1** | Do one of the following:<br>■ To select one image, click the image one time.<br>■ To select images that are adjacent to each other, SHIFT-click the images.<br>■ To select images that are not adjacent to each other, CTRL-click the images. |
| **2** | Do one of the following:<br>■ Right-click the image/images and click **Save As PDF**.<br>■ On the **File** menu, click **Save As PDF**. |
| **3** | In the **Save As** dialog box, type a file name and a file destination for the report. |
| **4** | Click **OK**. |

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# 12 Troubleshooting

**Troubleshooting overview**

Do one or more of the following steps to troubleshoot communication between the camera and the PC:

- Make sure the PC have the latest drivers. If not, download them from *http://www.flirthermography.com*
- Make sure the camera has the correct software version.
- Restart the camera to make sure the problem can be repeated.
- Troubleshoot connection problems.
- Give a user Local Administrator Rights.
- Give a user rights to install and uninstall device drivers.
- Troubleshoot password-protected screensaver problems.
- Show camera information and send data to the service department.

**SEE ALSO**

For more information, see these sections:


- Section 12.1 – Making sure that the camera has the correct software version on page 52
- Section 12.2 – Restarting the camera on page 53
- Section 12.3 – Troubleshooting connection problems on page 54
- Section 12.4 – Giving a user Local Administrator Rights on page 55
- Section 12.5 – Giving a user rights to install and uninstall device drivers on page 56
- Section 12.6 – Troubleshooting password-protected screensaver problems on page 57
- Section 12.7 – Showing camera information on page 58

## 12.1 Making sure that the camera has the correct software version

**General**

If you intend to use ThermaCAM™ QuickView with a B, E, P or S series camera, you must make sure that the camera software is supported.

**Software version**

ThermaCAM™ QuickView supports these versions of camera software for B, E, P or S series cameras:

- B/E series cameras: boot2 version 2.7.2.1 (or higher)
- B/E series cameras: appl version 1.7.18.1 (or higher)
- P/S series cameras: boot2 version 2.4.2.1 (or higher)
- P/S series cameras: appl version 2.4.4.1 (or higher)

You can find the boot2/appl version in the **Camera info** dialog box.

## 12.2 Restarting the camera

**Procedure**

Follow this procedure to restart the camera:

| | |
|---|---|
| **1** | Disconnect the camera from the PC. |
| **2** | Restart the camera. |
| **3** | Restart the PC. |
| **4** | Connect the camera to the PC. |

## 12.3 Troubleshooting connection problems

**Problem**

Connection problems exist if one or both of these things occur:

- The error message **Cannot connect to camera** is displayed.
- The notification windows are not displayed when you connect the camera.

**Procedure**

Do one of the following steps to troubleshoot connection problems:

- Make sure that your camera is connected to your computer.
- If your camera model is InfraCAM or BCAM, select **QuickView** in the camera program (**USB cable** → **QuickView**).
- Make sure that the operating system of your computer is supported.

## 12.4 Giving a user Local Administrator Rights

**Problem**

On Windows 2000 and Windows XP only administrators and users with appropriate rights can install and uninstall device drivers.

This section gives information about how to give a user Local Administrator Rights.

**NOTE**

You must log in as Administrator (or as a user with administrator rights).

**Procedure**

Follow this procedure to give a user Local Administrator Rights:

| | |
|---|---|
| **1** | Open the **Control Panel** (**Start Menu** → **Settings** → **Control Panel**). |
| **2** | Double-click **Administrative Tools**. |
| **3** | Double-click **Computer Management**. |
| **4** | Double-click **Local Users And Groups**. |
| **5** | Select **Groups** and double-click **Administrators**. |
| **6** | Add the relevant users, or the name of a group containing the right users. |

## 12.5 Giving a user rights to install and uninstall device drivers

**Problem**

On Windows 2000 and Windows XP only administrators and users with appropriate rights can install and uninstall device drivers.

This section gives information about how to give a user rights to install and uninstall device drivers.

**NOTE**

You must log in as Administrator (or as a user with administrator rights).

**Procedure**

Follow this procedure to give a user rights to install and uninstall device drivers:

| | |
|---|---|
| **1** | Open the **Control Panel** (**Start Menu** → **Settings** → **Control Panel**). |
| **2** | Double-click **Administrative Tools**. |
| **3** | Double-click **Local Security Policy**. |
| **4** | Double-click **Local Policies**. |
| **5** | Select **User Rights Assignment**. |
| **6** | Double-click **Load and Unload Device Drivers**. |
| **7** | Add the relevant users, or the name of a group containing the right users. |

## 12.6 Troubleshooting password-protected screensaver problems

| | |
|---|---|
| **Problem** | If you change user for a computer, or use a password-protected screen saver, the camera icon in the status area can disappear. |
| **Procedure** | Disconnect and reconnect the USB or FireWire cable between your camera and your computer. |

## 12.7 Showing camera information

**General**

If there is a problem with your camera, or if it needs service, you can show camera information, save the information as an image and send the image to the service department.

This will make it easier for the service department to diagnose the problem.

**Procedure**

Follow this procedure to show camera information and save it as an image:

| | |
|---|---|
| **1** | Start ThermaCAM™ QuickView. |
| **2** | Start the camera. |
| **3** | Do one of the following:<br>▪ If your camera model is InfraCAM or BCAM, select **QuickView** in the camera program (**USB cable** → **QuickView**).<br>▪ If your camera model is not an InfraCAM or BCAM, go to Step 4 below. |
| **4** | Connect the camera to the PC. |
| **5** | In ThermaCAM™ QuickView, right-click the camera symbol and click **Show Camera Information**. This will display a web page in the image pane. |
| **6** | Press ALT + PRINT SCRN. |
| **7** | Start **Microsoft® Paint**.<br>(**Start** → **Programs** → **Accessories** → **Microsoft® Paint**). |
| **8** | In **Microsoft® Paint**, do one of the following:<br>▪ On the **Edit** menu, click **Paste**.<br>▪ Press CTRL + V. |
| **9** | On the **File** menu, click **Save As**. |
| **10** | In the **Save As** dialog box, follow this procedure:<br>**1** Select a file destination.<br>**2** Select a file format. |
| **11** | Click **Save**. |

**NOTE**

Instead of saving the information as an image, you can write it down and keep it on hand when you make a call to the service department.

# 13 About FLIR Systems

FLIR Systems was established in 1978 to pioneer the development of high performance infrared imaging systems and is the world leader in the design, manufacturing and marketing of thermal imaging systems for a wide variety of commercial, industrial and government applications. Today, FLIR Systems includes the history of four major companies with outstanding achievements in infrared technology since 1965—the Swedish AGEMA Infrared Systems (formerly AGA Infrared Systems), and the three U.S. companies Indigo Systems, FSI, and Inframetrics.

10722703;a1



**Figure 13.1 LEFT:** Thermovision® Model 661 from 1969. The camera weighed approximately 25 kg (55 lb.), the oscilloscope 20 kg (44 lb.), the tripod 15 kg (33 lb.). The operator also needed a 220 VAC generator set, and a 10 L (2.6 US gallon) jar with liquid nitrogen. To the left of the oscilloscope the Polaroid attachment (6 kg/13 lb.) can be seen. **RIGHT:** InfraCAM from 2006. Weight: 0.55 kg (1.21 lb.), including battery.

The company has sold more than 40,000 infrared cameras worldwide for applications such as predictive maintenance, R & D, non-destructive testing, process control and automation, machine vision and many others.

FLIR Systems has three manufacturing plants in United States (Portland, OR, Boston, MA, Santa Barbara, CA) and one in Sweden (Stockholm). Direct sales offices in Belgium, Brazil, China, France, Germany, Great Britain, Hong Kong, Italy, Japan, Sweden and USA—together with a world-wide network of agents and distributors—support our international customer base.

FLIR Systems is at the helm of innovation in the infrared camera industry. We anticipate market demand by constantly improving our existing cameras and developing new ones. The company has set milestones in product design and development such as the introduction of the first battery-operated portable camera for industrial inspections, the first uncooled infrared camera, to mention but a few innovations.

FLIR Systems manufactures all vital mechanical and electronic components of the camera systems itself. From detector design and manufacturing over lenses and system electronics, to final testing and calibration, all production steps are done and supervised by our own engineers. The in-depth expertise of these infrared specialists ensures the accuracy and reliability of all vital components that are assembled into your infrared camera.

## *13.1 More than just an infrared camera*

At FLIR Systems we recognize that our job is to go beyond just producing the best infrared camera systems. We are committed to enabling all users of our infrared camera systems to work more productively by providing them the most powerful camera-software combination. Especially tailored software for predictive maintenance, R & D and process monitoring is developed in-house. Most software is available in a wide variety of languages.

We support all our infrared cameras with a wide variety of accessories to adapt your equipment to the most demanding infrared applications.

## *13.2 Sharing our knowledge*

Although our cameras are designed to be very user-friendly, there is a lot more to thermography than just knowing how to handle a camera. Therefore, FLIR Systems has founded the Infrared Training Center (ITC), a separate business unit, which provides certified training courses. Attending one of the ITC courses will give you a real hands-on learning experience.

The staff of the ITC is also there to provide you with any application support you may need in putting infrared theory into practice.

## *13.3 Supporting our customers*



FLIR Systems operates a worldwide service network to keep your camera running at all times. If there should be a problem with your camera, local service centers have all the equipment and know-how to solve it within the shortest possible time. Hence, there is no need to send your camera to the other end of the world or to talk to someone who is not speaking your language.

## 13.4 A few images from our facilities

10401303;a1

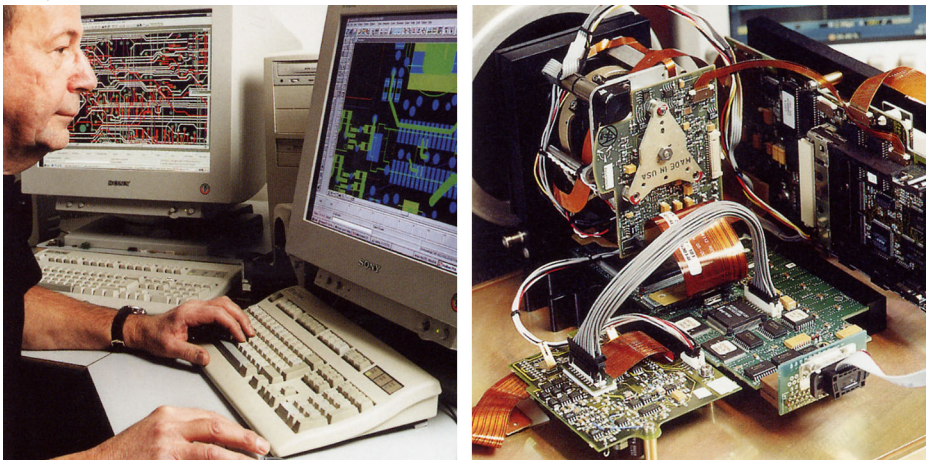


**Figure 13.2 LEFT:** Development of system electronics; **RIGHT:** Testing of an FPA detector.

10401403;a1



**Figure 13.3 LEFT:** Diamond turning machine; **RIGHT:** Lens polishing.

10401503;a1

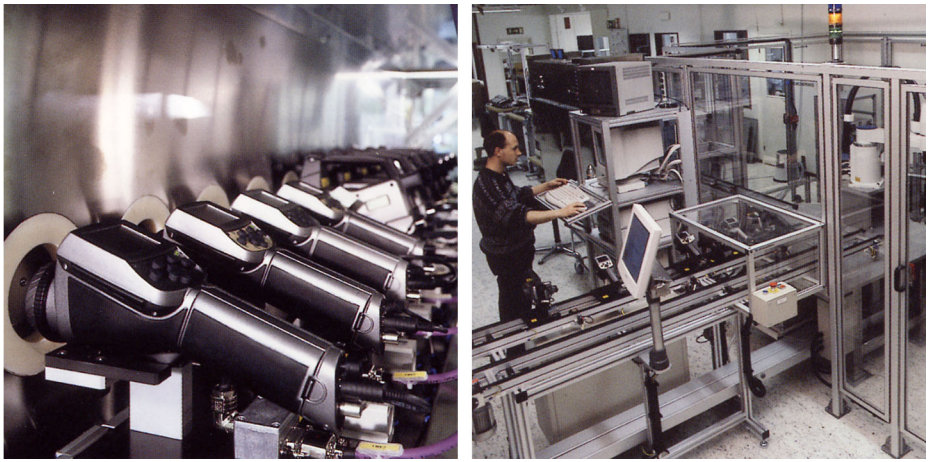


**Figure 13.4 LEFT:** Testing of IR cameras in the climatic chamber; **RIGHT:** Robot for camera testing and calibration.

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**A note on the technical production of this manual**

This manual was produced using XML – eXtensible Markup Language. For more information about XML, point your browser to: http://www.w3.org/XML/

Readers interested in the history & theory of markup languages may also want to visit the following sites:

- http://www.gla.ac.uk/staff/strategy/information/socarcpj/
- http://www.renater.fr/Video/2002ATHENS/P/DC/History/plan.htm

**A note on the typeface used in this manual**

This manual was typeset using Swiss 721, which is Bitstream's pan-European version of Max Miedinger's Helvetica™ typeface. Max Miedinger was born December 24th, 1910 in Zürich, Switzerland and died March 8th, 1980 in Zürich, Switzerland.

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- 1926–30: Trains as a typesetter in Zürich, after which he attends evening classes at the Kunstgewerbeschule in Zürich.
- 1936–46: Typographer for Globus department store's advertising studio in Zürich.
- 1947–56: Customer counselor and typeface sales representative for the Haas'sche Schriftgießerei in Münchenstein near Basel. From 1956 onwards: freelance graphic artist in Zürich.
- 1956: Eduard Hoffmann, the director of the Haas'sche Schriftgießerei, commissions Miedinger to develop a new sans-serif typeface.
- 1957: The Haas-Grotesk face is introduced.
- 1958: Introduction of the roman (or normal) version of Haas-Grotesk.
- 1959: Introduction of a bold Haas-Grotesk.
- 1960: The typeface changes its name from Neue Haas Grotesk to Helvetica™.
- 1983: Linotype publishes its Neue Helvetica™, based on the earlier Helvetica™.

For more information about Max Miedinger, his typeface and its influences, please visit http://www.rit.edu/~rlv5703/imm/project2/index.html

**The following file identities and file versions were used in the formatting stream output for this manual:**

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20274303.xml a1
20274403.xml a1
20274503.xml a1
20274603.xml a1
20274703.xml a1
20274803.xml a1
20274903.xml a1
20275003.xml a1
20275103.xml a1
R0045.rcp a15
config.xml a4




**▪ BELGIUM**
FLIR Systems
Uitbreidingstraat 60–62
B-2600 Berchem
BELGIUM
Phone: +32 (0)3 287 87 11
Fax: +32 (0)3 287 87 29
E-mail: info@flir.be
Web: www.flirthermography.com

**▪ BRAZIL**
FLIR Systems
Av. Antonio Bardella, 320
CEP: 18085-852 Sorocaba
São Paulo
BRAZIL
Phone: +55 15 3238 8070
Fax: +55 15 3238 8071
E-mail: paul.verminnen@flir.com.br
E-mail: flir@flir.com.br
Web: www.flirthermography.com

**▪ CANADA**
FLIR Systems
5230 South Service Road, Suite #125
Burlington, ON. L7L 5K2
CANADA
Phone: 1 800 613 0507 ext. 30
Fax: 905 639 5488
E-mail: IRCanada@flir.com
Web: www.flirthermography.com

**▪ CHINA**
FLIR Systems
Beijing Representative Office
Rm 203A, Dongwai Diplomatic Office Building
23 Dongzhimenwai Dajie
Beijing 100600
P.R.C.
Phone: +86 10 8532 2304
Fax: +86 10 8532 2460
E-mail: beijing@flir.com.cn
Web: www.flirthermography.com

**▪ CHINA**
FLIR Systems
Shanghai Representative Office
Room 6311, West Building
Jin Jiang Hotel
59 Maoming Road (South)
Shanghai 200020
P.R.C.
Phone: +86 21 5466 0286
Fax: +86 21 5466 0289
E-mail: shanghai@flir.com.cn
Web: www.flirthermography.com

**▪ CHINA**
FLIR Systems
Guangzhou Representative Office
1105 Main Tower, Guang Dong International Hotel
339 Huanshi Dong Road
Guangzhou 510098
P.R.C.
Phone: +86 20 8333 7492
Fax: +86 20 8331 0976
E-mail: guangzhou@flir.com.cn
Web: www.flirthermography.com

**▪ FRANCE**
FLIR Systems
10 rue Guynemer
92130 Issy les Moulineaux
Cedex
FRANCE
Phone: +33 (0)1 41 33 97 97
Fax: +33 (0)1 47 36 18 32
E-mail: info@flir.fr
Web: www.flirthermography.com

**▪ GERMANY**
FLIR Systems
Berner Strasse 81
D-60437 Frankfurt am Main
GERMANY
Phone: +49 (0)69 95 00 900
Fax: +49 (0)69 95 00 9040
E-mail: info@flir.de
Web: www.flirthermography.com

**▪ GREAT BRITAIN**
FLIR Systems
2 Kings Hill Avenue – Kings Hill
West Malling
Kent, ME19 4AQ
UNITED KINGDOM
Phone: +44 (0)1732 220 011
Fax: +44 (0)1732 843 707
E-mail: sales@flir.uk.com
Web: www.flirthermography.com

**▪ HONG KONG**
FLIR Systems
Room 1613–15, Tower 2
Grand Central Plaza
138 Shatin Rural Committee Rd
Shatin, N.T.
HONG KONG
Phone: +852 27 92 89 55
Fax: +852 27 92 89 52
E-mail: flir@flir.com.hk
Web: www.flirthermography.com

**▪ ITALY**
FLIR Systems
Via L. Manara, 2
20051 Limbiate (MI)
ITALY
Phone: +39 02 99 45 10 01
Fax: +39 02 99 69 24 08
E-mail: info@flir.it
Web: www.flirthermography.com

**▪ SWEDEN**
FLIR Systems
Worldwide Thermography Center
P.O. Box 3
SE-182 11 Danderyd
SWEDEN
Phone: +46 (0)8 753 25 00
Fax: +46 (0)8 753 23 64
E-mail: sales@flir.se
Web: www.flirthermography.com

**▪ USA**
FLIR Systems
Corporate headquarters
27700A SW Parkway Avenue
Wilsonville, OR 97070
USA
Phone: +1 503 498 3547
Web: www.flirthermography.com

**▪ USA (Primary sales & service contact in USA)**
FLIR Systems
USA Thermography Center
16 Esquire Road
North Billerica, MA. 01862
USA
Phone: +1 978 901 8000
Fax: +1 978 901 8887
E-mail: marketing@flir.com
Web: www.flirthermography.com

**▪ USA**
FLIR Systems
Indigo Operations
70 Castilian Dr.
Goleta, CA 93117-3027
USA
Phone: +1 805 964 9797
Fax: +1 805 685 2711
E-mail: sales@indigosystems.com
Web: www.corebyindigo.com

**▪ USA**
FLIR Systems
Indigo Operations
IAS Facility
701 John Sims Parkway East
Suite 2B
Niceville, FL 32578
USA
Phone: +1 850 678 4503
Fax: +1 850 678 4992
E-mail: sales@indigosystems.com
Web: www.corebyindigo.com