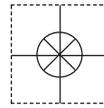


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# User's Guide

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# OSXL160 IRSee Software



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---

It is the policy of OMEGA Engineering, Inc. to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

**WARNING:** These products are not designed for use in, and should not be used for, human applications.

*OSXL160*  
**IRSee Software**  
**User Manual**



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# 1. Software Installation

---

Welcome to Use IRSee Report

## 1.1 Introduction

---

This IRSee Report version has a friendly user interface, 4 methods for measure analysis, and the function to save analysis report in Microsoft Word format.

## 1.2 System Requirements

---

The files of the IRSee Report consist of IR image, visible light (photo) and graphic file, all of which are far bigger than normal text files, thus the following standards of the computer hardware configuration should be met:

### *1.2.1 Hardware Requirements*

---

- CPU PENTIUM III with 1.4 GHz processor or faster
- 256 MB RAM or above
- HD space above 20GB
- Screen resolution above 1024 x 768

### *1.2.2 Operating System Requirements*

---

IRSee Report is compatible with Microsoft Windows 2000, XP, or Vista. It provides a multi-language version for users.

## 1.3 Software Installation

---

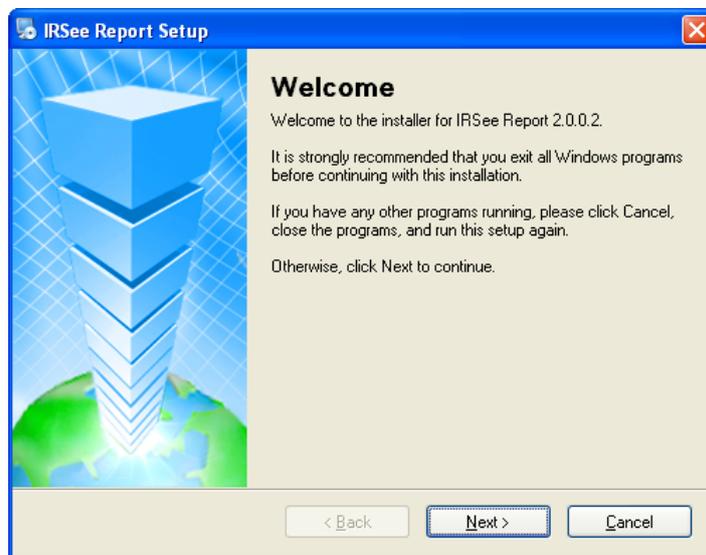
The instructions of IRSee Report installation and necessary precautions before using this software will be given in detail hereinafter:

Please follow the instructions when installing IR Analysis software application. Place software CD-ROM into CD drive, and run setup.exe in the CD root directory.

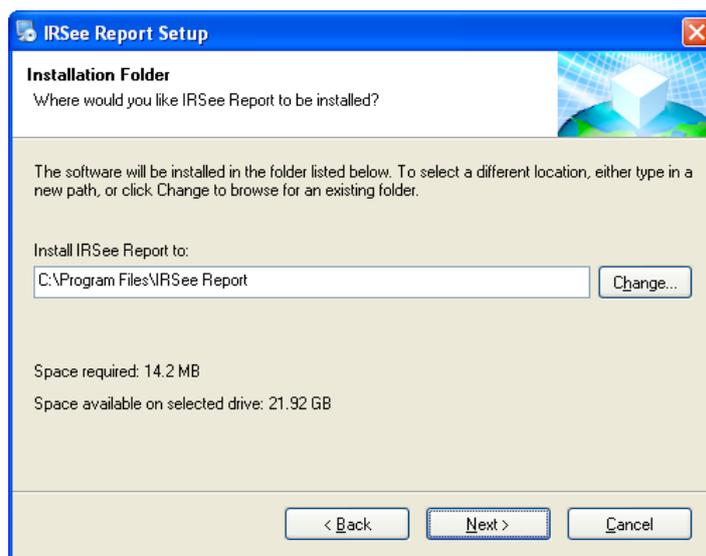
The default route is C:\Program Files\ IRSee Report. You can change directory when installing.

Attention: users who are operating Vista please close user account control to prevent warning.

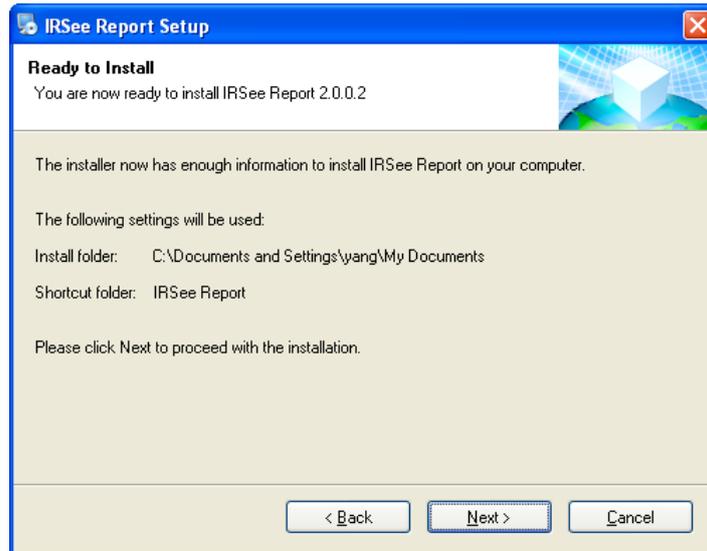
- After running setup.exe, the system shows a welcome interface.



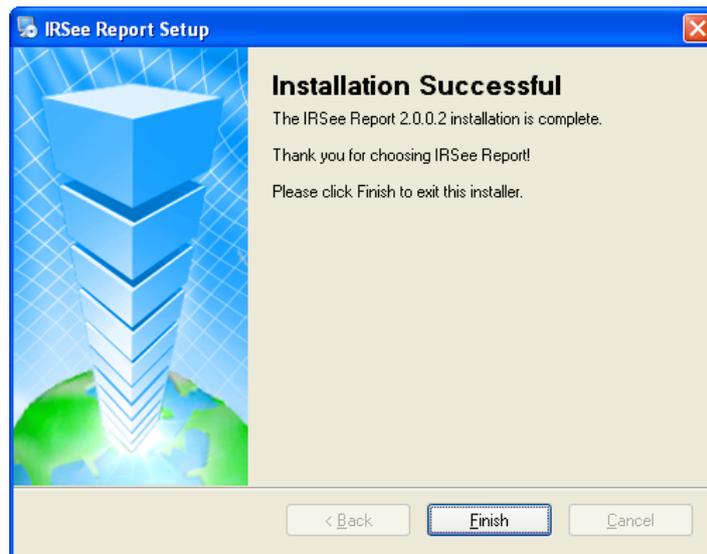
Select Next,



the system shows the default route. Press Browse to change the route.



Select Next, the system will copy IRSee Report into PC. Or select Back



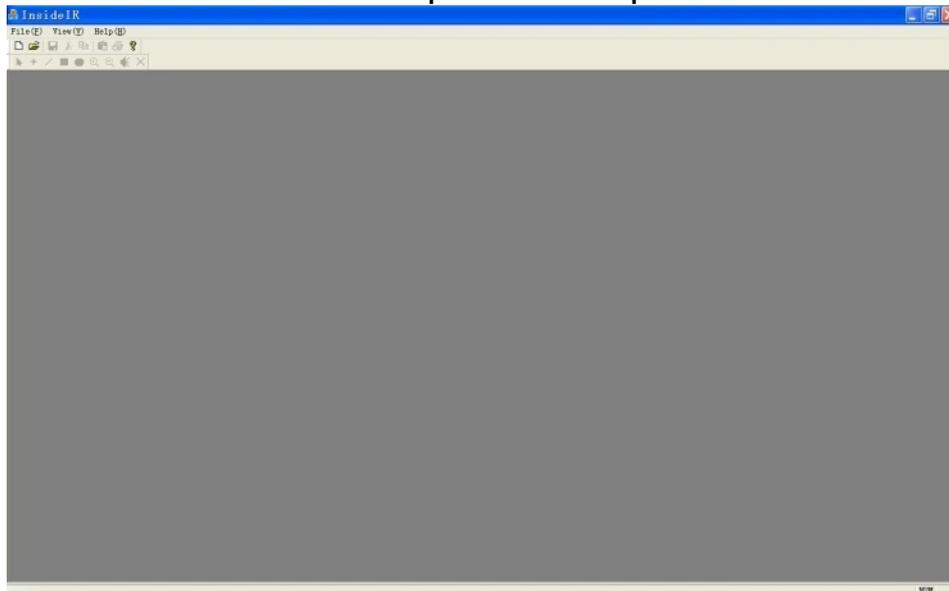
Select Finish to confirm installation.

# 1.4 Starting-up Software

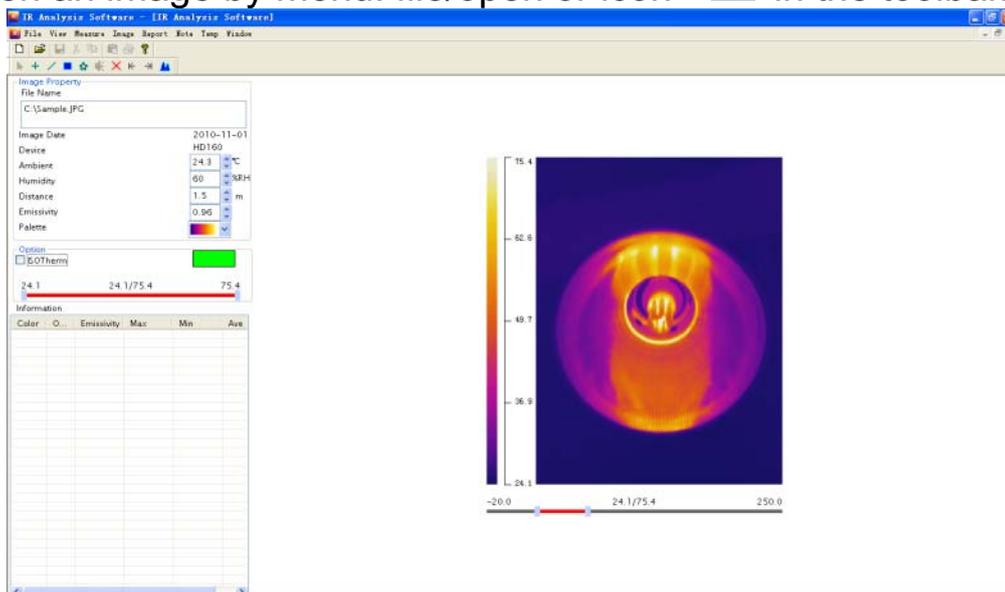
The following icon appears on Windows desktop after installing IRSee Report.



Double click the icon to startup IRSee Report.



Open an image by menu: file/open or icon  in the toolbar.



Select a working language by menu: view/ Language.  
IR Analysis software has 10 different working languages, namely: English, Italian, Chinese (simplified & traditional), Japanese, Russian, French, German, Korean, Spanish and Portuguese. After selecting a language, a dialog box appears. Press YES to confirm.

## 2. IRSee Report User Interface

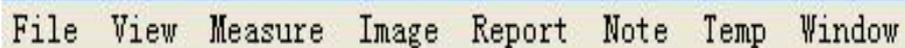
---

IRSee Report is a standard Windows application and compatible with Windows 2000, XP, and Vista. It supports all common Windows operations.

### 2.1 Main Menu and Toolbar

---

There are 8 items in the main menu, namely: File, View, Measure, Image, Report, Note, Temperature, and window.



File View Measure Image Report Note Temp Window

#### 2.1.1 File

---

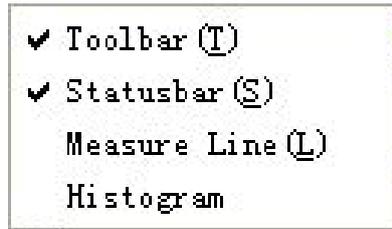
There are 4 items in File sub-menu: New, Open, Close and Exit.

New(N)...	Ctrl+N
Open(O)...	Ctrl+O
Close(P)...	Ctrl+P
<hr/>	
Exit(E)...	Ctrl+E

#### 2.1.2 View

---

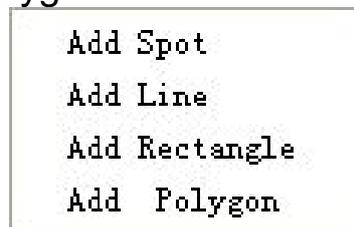
There are 4 items in View sub-menu: Toolbar, Status Bar, Line Measure and Histogram.



### 2.1.3 Measure

---

There are 4 items in the Measure sub-menu: Add Spot, Add Line, Add Rect. and Add Polygon.



### 2.1.4 Image

---

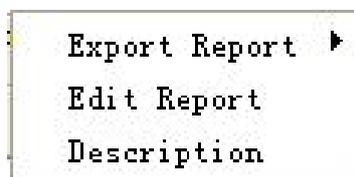
There are 2 items in the Image sub-menu: Reference Image and Save Image.



### 2.1.5 Report

---

There are 3 items in the Report sub-menu: Export Report, Edit Report and Description.



### 2.1.6 Note

---

Note sub-menu contains Voice Annotation item. (If the image is stored without voice annotation, this item is gray).

### 2.1.7 Temperature

---

There are 2 items in this sub-menu: Celsius and Fahrenheit.

- Celsius
  - Fahrenheit
- 

### 2.1.8 Window

---

There are 3 items in this sub-menu: new, cascade and tile.

- New Window(N)
  - Cascade(C)
  - Tile(T)
- 

✓ 1 Untitled

### 2.1.9 Toolbar

---



## 3. IRSee Report Introduction

---

### 3.1 Add IR Image

---

Click button  in the toolbar or “File/open” to add an IR image. If there are more than one image in one folder, use  or  button to select an image.

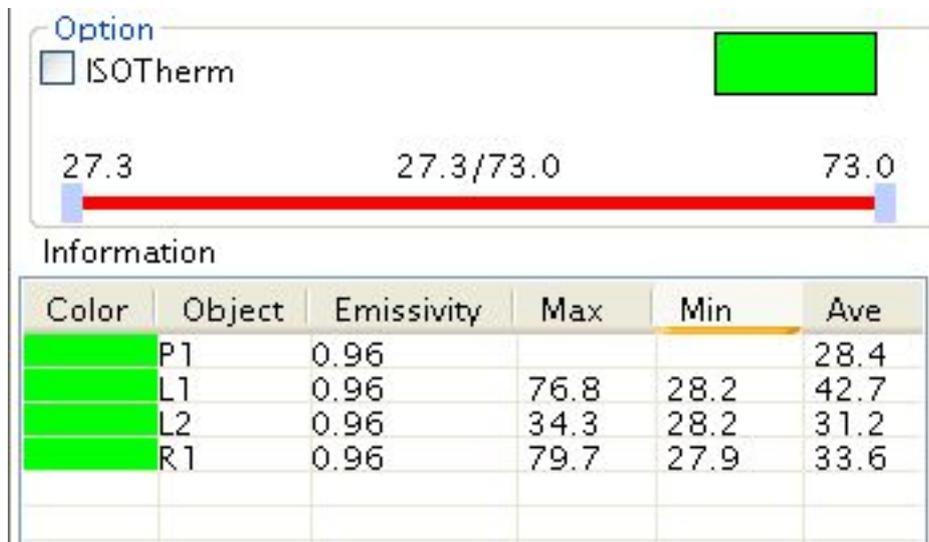
### 3.2 Analyze IR Image

---

#### 3.2.1 Establish Analysis

---

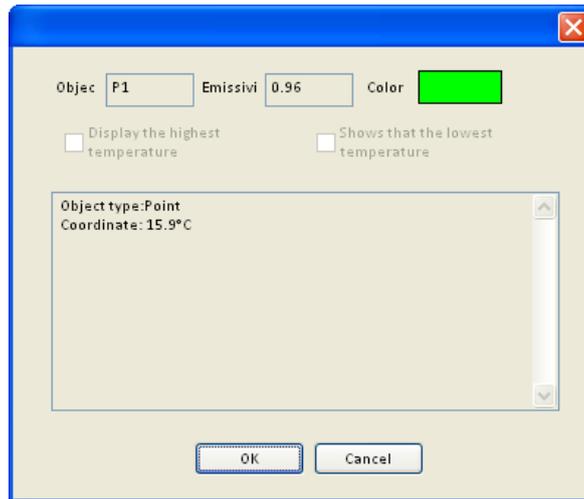
Add an IR image to analyze it. There are 4 analysis methods: Spot, Line, Area and Irregular Polygon analysis. The result displays in the Marker box.



#### 1. Spot (added spot) analysis

Click icon  in measure toolbar and move cursor on IR image. Click left button on the spot that you are going to measure. Now the measure spots added in the IR image. It is possible to add up to 20 measure spots. The spots also can be added by clicking

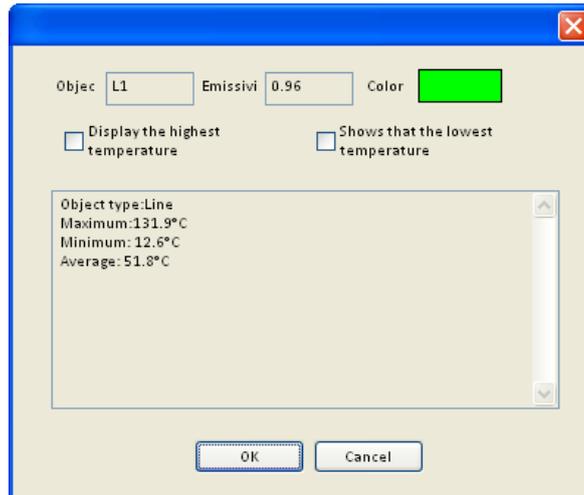
sub-menu “Add Spot” in menu “measure”. After a spot has been added, the attributes of this point will be showed in the marker box. When the cursor is above the measure point, it turns into , then click the right button to open the attribute and delete menu. Select attribute menu, the advanced attributes of the measure point will appear.



Select delete menu to delete that spot.

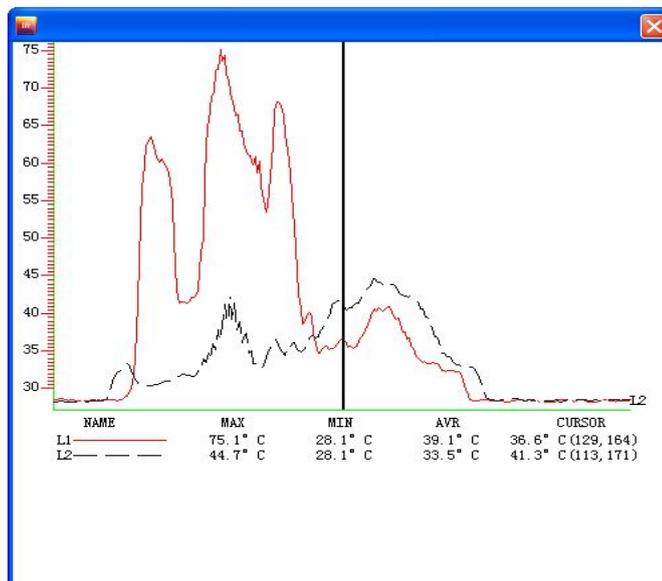
## 2. Line (added line) analysis

Click icon  in measure toolbar and move cursor on IR image. Press left button on the point that you are going to measure, not to release until drag it to the end-point. Now a measure line has been fixed. It is possible to add up to 10 measure lines. The lines can also be added by clicking sub-menu “Add line” in menu “measure”. After adding a line, the basic attributes of this measure line will appear in the marker box. When the cursor is above the measure line, it turns into , then click the right button to open the attribute and delete menu. Select attribute menu, the advanced attributes of the measure line will appear.



Select display highest/lowest temperature item, the maximum/minimum temperature will be showed in the measure line. (icon \* denotes the maximum temperature and icon+ denotes the minimum temperature) Select delete menu to delete that measure line.

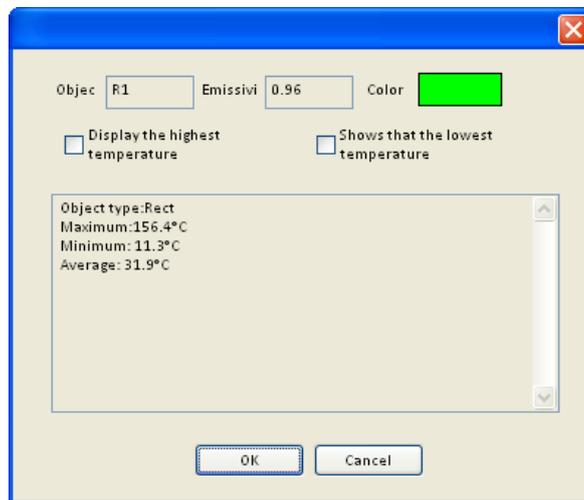
If you want to get a visualized picture of the temperature trend of the measure line, click “Line Measure” in sub-menu “View”.



When the cursor is on the black vertical line, it turns into , click left button, not to release to drag the black vertical line and change the cursor position accordingly.

### 3. Area (added Area) analysis

Click icon  on measure toolbar and move cursor on IR image. Press left button on the point that you are going to measure, not to release until drag it to the end-point. Now an area has been fixed. Up to 20 areas can be added. The areas can also be added by clicking “Add area” in menu “Measure”. After an area has been added, the attributes of this area will be showed in the marker box. When the cursor is inside the measure area, it turns into , then click the right button to open the attribute and delete menu. Select attribute menu, the advanced attributes of the measure area will appear.



Select “display highest/lowest temperature” item, the maximum/minimum temperature will be showed in the measure area. (icon \* denotes the maximum temperature and icon+ denotes the minimum temperature) Select delete menu to delete that measure area.

#### 4. Irregular Polygon (added Irregular Polygon) analysis

Click icon  on measure toolbar and move cursor on IR image. Click left button to fix the borderline of the Polygon, click right button to confirm it. Up to 10 measure Polygons can be added. The Polygons can also be added by clicking sub-menu “Add Polygon” in menu “Measure”. After a Polygon has been added, the attributes of this Polygon will be showed in the marker box. When the cursor is inside the measure Polygon, it turns into , click the right button to open the attribute and delete menu. Select

attribute menu, the advanced attributes of the measure Polygon will appear.

### 5. Isotherm analysis

Select isotherm analysis check box  ISOTherm within image selection box. Set the upper/lower limit temperature of the IR image by upper/lower limit temperature slide. Now the range of the isotherm color will be displayed within the image. Press isotherm analysis check box again to cancel isotherm analysis. The default isotherm color is green. Click the color zone to open color selection box and change the color.



### 3.2.2 Adjust Measure Analysis

When the cursor is in pickup state, press left button, not to release, drag the cursor to move those analysis targets. In pickup state, the cursor possesses the following forms:

1.  Move measure spot.
2.  Move measure line.
3.  Adjust the starting (ending) point.
4.  Move the whole area.

5. Adjust area. Select the measure area you are going to adjust, click left button and 8 hot spots appear, drag those hot spots to adjust the area size.
6.  Move the whole polygon.
7.  Adjust Polygon.

### 3.3 Histogram

---

The histogram shows the statistical information of the current image temperature. When adjusting the temperature slide bar in main window, the histogram changes accordingly. It is also possible to change the histogram color by adjusting the temperature slide bar in the histogram dialog box.

You can change the number of the current column in the

histogram by adjusting button  .

The functions of the buttons in the toolbar are as follow (from left to right):

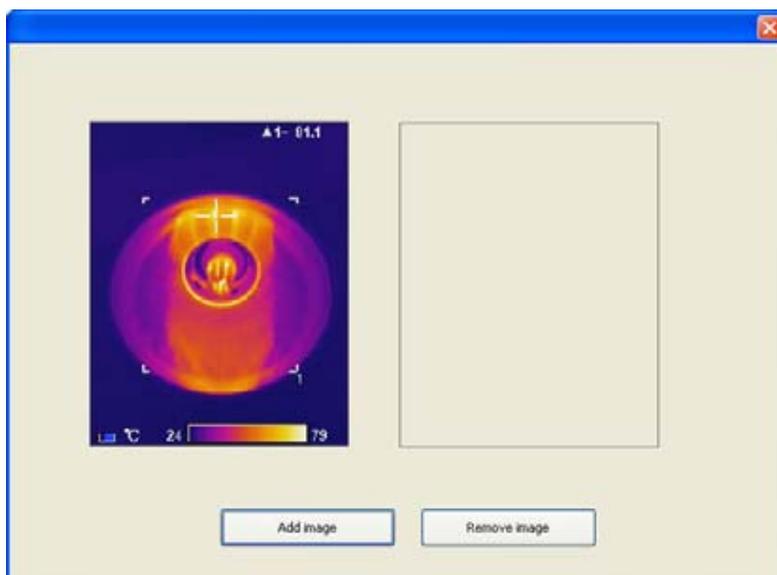


1. The ordinate switches between percentage and absolute number.
2. The histogram color switches between gradual change and consistency in red.
3. Switches between to show gridding background and not.
4. Save histogram as image in any format in common use.
5. Change histogram background color.
6. Switches between to show the exceeding column and not.
7. Reset the histogram as initial state.

### 3.4 Save IR Image and add Reference

---

Click reference image under image menu to open a box showed in the following picture and add a visible light image:



Click “add image” button to add an image; Click “remove image” button to delete an image. If a visible light image has been added, it will be showed automatically in the report. After finishing IR image analysis, click “save image” in image menu to open the following box:

### 3.5 Voice Annotation Playback

---

If the IR image contains voice annotation data, the audio button  in measure toolbar is in active state, otherwise, it is in inactive state (gray). Click this icon to open the voice dialog box. Click play, pause, continue and stop to operate the voice record.

### 3.6 Temperature

---

Click pull-down menu Celsius/Fahrenheit in Temperature menu to switch between Celsius and Fahrenheit. The default is Celsius.

- Celsius
  - Fahrenheit
- 

### 3.7 Window

---

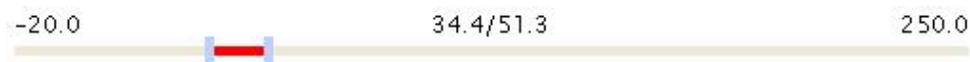
There are 3 sub-menus in the Window menu: new, cascade and tile.

## 4. Image Adjustment

---

Click the pull-down menu at the right of “color palette”. There are 12 different color codes. The image will show in different color according to different color code.

The slide bar below the image denotes the temperature the camera has been set when taking IR images. The two ends of the slide bar denote the upper/lower limit temperature of the color code. Adjust upper/lower limit width of the color code to change the image color.

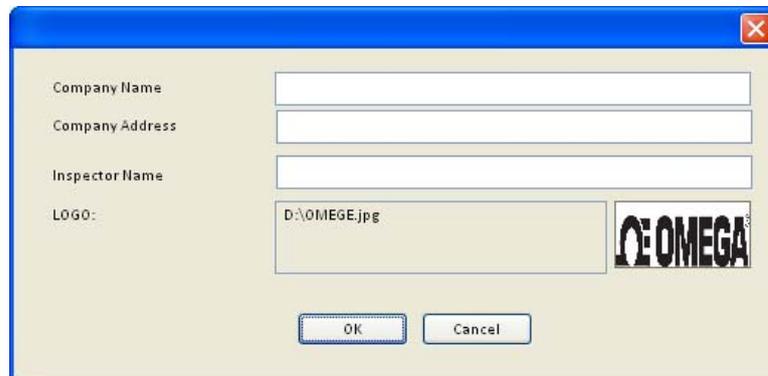


## 5. Report

---

### 1. Edit Report

Click Edit Report sub-menu in Report menu to open edit dialog box.



Filling in company name, company address and inspector name in the form, click right button in the blank area of the LOGO line to open add/delete image dialog box by using which User can add/delete image. After filling, a user-defined report header is created.

### 2. Description

Click Description submenu in Report menu to open Edit dialog box.

The image shows a software dialog box with a blue title bar and a close button in the top right corner. The dialog box contains several input fields and two buttons at the bottom. The fields are labeled as follows:

- Object Name: 220KV transformer
- Object Position: WenEr Road
- Object Type: (empty)
- Object Number: 10001-001
- Maintenance Level: Grade One
- Inspection Date: 2010-08-08
- Next Inspection Time: 2011-08-08
- Problem Description: (empty text area with scroll bars)
- Disposition Measure: (empty text area with scroll bars)

At the bottom of the dialog box, there are two buttons: "OK" and "Cancel".

The items hereinabove will be exported automatically in the report.

### 3. Export report

Two kinds of reports can be exported: the default report and the user-defined report. The default report contains information header of OMEGA company. If end-users need header that contains your own corporate information, please edit the report and export that report.

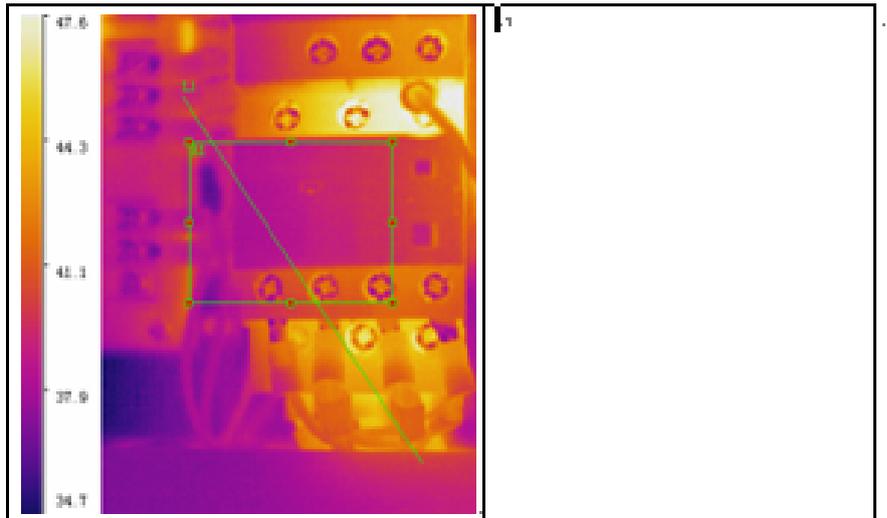
The saving route of the document can be changed. After clicking save button, the IR Analysis software will create a Word report automatically. If reference image is not selected, the report contains the following data: IR image, target parameter form, result analysis form (which contains spot temperature, the maximum/ minimum temperature of the line or the area), temperature trend picture of line measure and histogram etc.

### IR Image Analysis Report

Company Name	OMEGA	Company Address	
Inspector Name		Inspection Date	
Object Name		Object Position	
Object Type		Object Number	
Maintenance Level		Next Inspection Time	

IR Image

Reference Image



Basic Information

Image Saving date	2014-08-23		
Coefficient	0.96	Target Distance	4.00m
Ambient Temperature	29.89%	Relative Humidity	60% RH

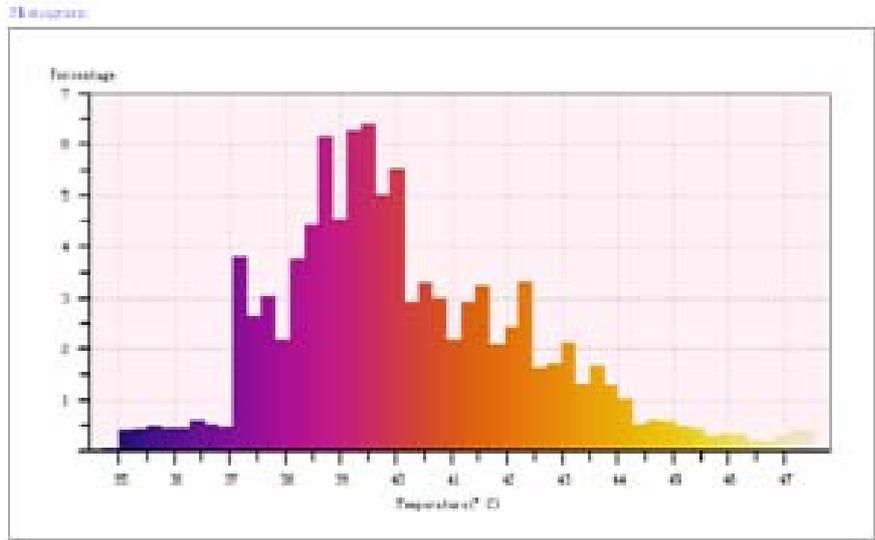
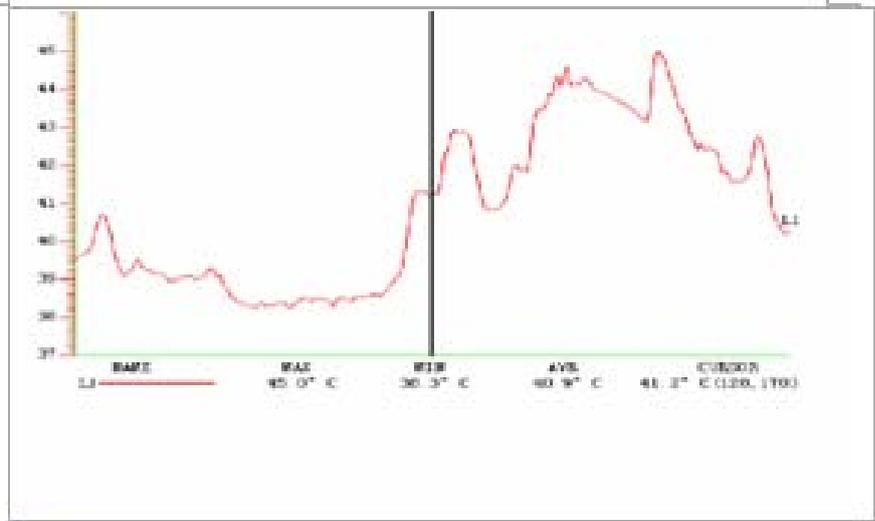
Problem and Measure

Problem Description	Disposition Measure

Analysis Result

Label	Max Value	Min Value	Average Value
L1	46.89%	39.29%	40.94%
R1	46.49%	39.29%	40.34%

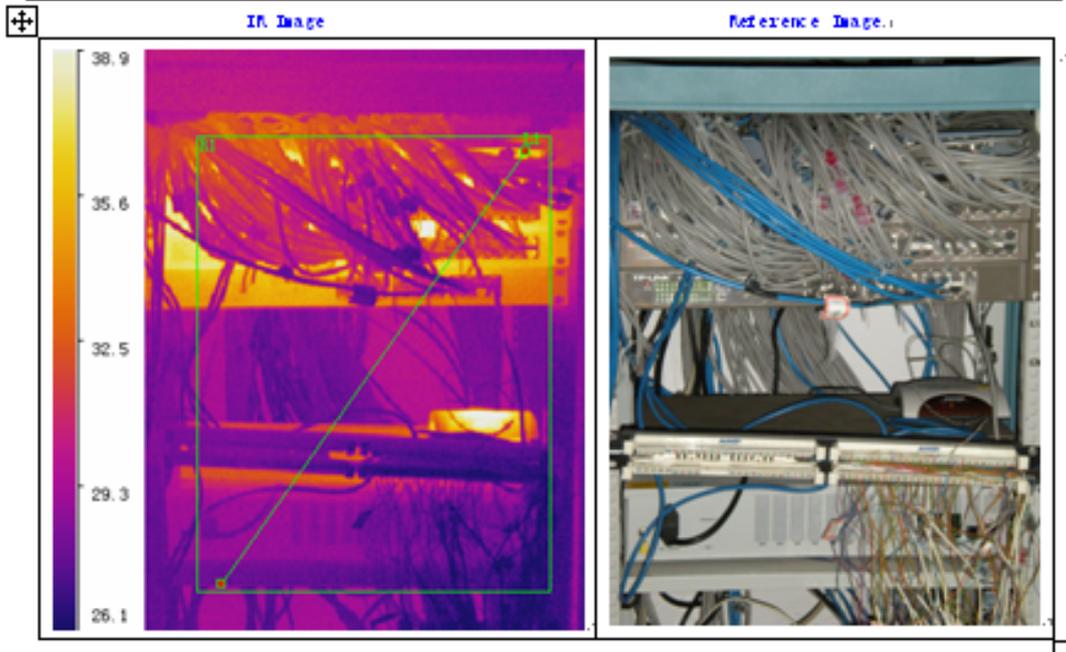
Line Temperature Analysis Graph



If reference image is selected, and the image has been added, the report contains the following data: IR image, visible light image, target parameter form, result analysis form (which contains point temperature, the maximum/ minimum temperature of the line or the area), temperature trend picture of line measure and histogram etc.

## IR Image Analysis Report

Company Name	Company Address
Inspector Name	Inspection Date
Object Name	Object Position
Object Type	Object Number
Maintenance Level	Next Inspection Time



### Basic Information

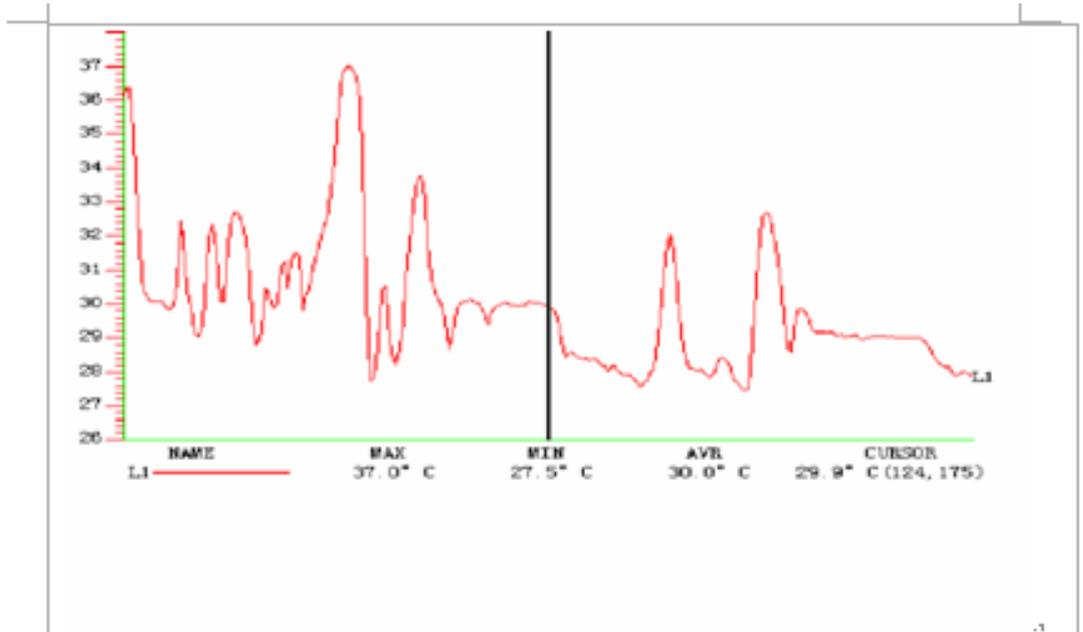
Image Saving Date	2011-01-24		
Emissivity Coefficient	0.94	Target Distance	1.50m
Ambient Temperature	30.7°C	Relative Humidity	60% RH

### Problem and Measure

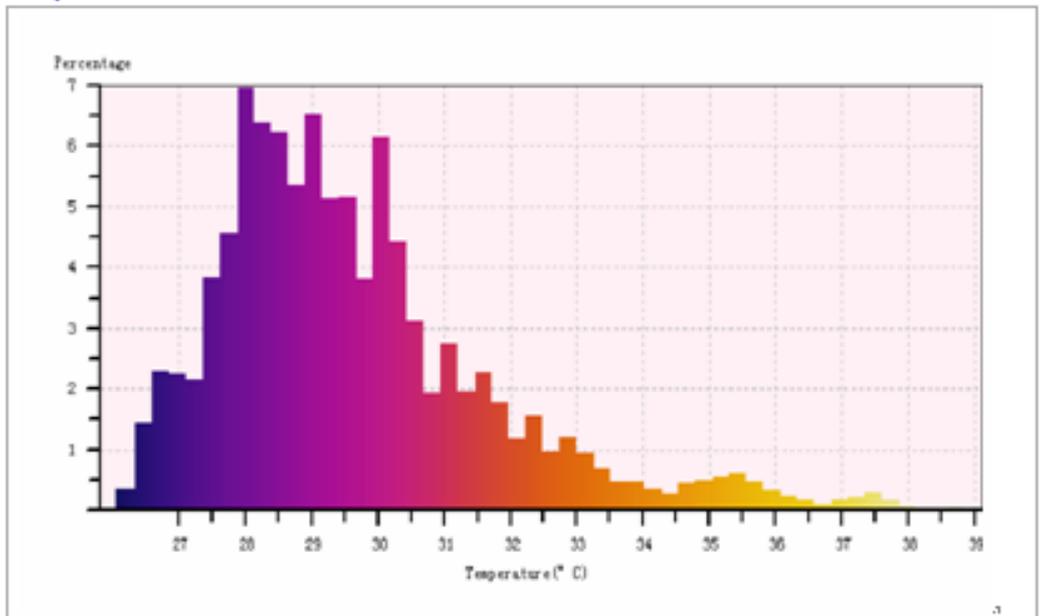
Problem Description	Dispositive Measure

### Analysis Result

Label	Max Value	Min Value	Average Value
L1	37.0°C	27.5°C	30.0°C
E1	40.5°C	24.2°C	29.7°C



File name:



If the computer has been installed with Microsoft Word software, the reports can be edited in Word document.

## WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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