Lens Selection Software

User Manual
User Manual

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About this Manual

This Manual is applicable to Lens Calculator software.

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website (http://overseas.hikvision.com/en/).

Please use this user manual under the guidance of professionals.

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Chapter 1 Overview

1.1 Introduction

The Lens Selection software can create the camera deployment on the live map according to your requirement, calculate the installation parameters, field of view, pixel density. Also it can calculate the maximum detected distance of fire source and line crossing object for thermal camera. The supported camera types are: box camera, speed dome, thermal camera, network camera, analog camera, 360° Panoramic+PTZ Camera, 180° Panoramic+PTZ Camera, and fisheye camera. You can also export the solution of camera deployment in pdf file.

1.2 Running Environment

**Operating System:** Microsoft Windows 10 / Microsoft Windows 7 / Windows 2008 32 / 64-bit
Windows XP / Windows 2003 32-bit
**CPU:** Intel Pentium IV @ 3.0 GHz or better
**RAM:** 1G or better
**Video Card:** RADEON X700 Series
**Display:** 1024*768 resolution or better

1.3 Conventions

In order to simplify the description, we define the “Lens Selection software” as “software” in the following chapters.
Chapter 2 Operate Lens Selection Software

After launching the Lens Selection software, the main interface of the software is shown below:

![Software Interface]

2.1 Flow Chart

The general operating process is as following:

1. Add Camera
2. Configure Parameters
3. Manage Camera in Camera List
4. Display Camera on Map
5. Save Solution and Export Report

*Note:* For different camera type, some parameters and detailed steps are different.
2.2 Add Camera and Configure Parameters

Purpose:
You can select the camera model, set the camera basic parameters, filed of view parameters, and range of view parameters according to your requirement.

Before you start:
Select the unit as Metric or Imperial in the upper-right corner.

2.2.1 Add Box Camera to Camera List

Purpose:
You can select the box camera model, set the basic parameters, filed of view parameters, and range of view parameters according to your requirement, also you can view the camera mounting view, and add the configured camera to the camera list.

Steps:
1. Click the camera model on the left panel.
2. Select camera type as box camera in the drop-down list.
3. (Optional) Filter the camera model according to focal length, resolution and keywords.
4. Double-click the camera to select a camera model.
5. Select the lens model.
   The available lens models will be displayed on the left panel.
6. Set the basic parameters, filed of view parameters, and range of view parameters as you desired.

<table>
<thead>
<tr>
<th>Basic Parameters</th>
<th>Resolution</th>
<th>The value is fixed.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sensor Size</td>
<td>The value is fixed.</td>
</tr>
</tbody>
</table>
| Focal Length     |            | Each lens model has a range of focal length. **Note:** When the value is out of range, the fields will become yellow. You should reselect the lens model.

The configured parameters will be displayed in the mounting view automatically.

In mounting view, different colors indicate different monitoring levels and the recognition capability are different.

- **Confirmed:** 500 pix/m. For person monitoring, the software can recognize the person’s face.
- **Recognized:** 250 pix/m. For person monitoring, you can recognize the person’s face.
- **Detected:** 30 pix/m. For person monitoring, you can recognize the person’s cloth color and behavior.
- **Blurred:** less than 30 pix/m.

7. (Optional) Adjust the parameters in mounting view.
- Adjust Mounting Position: Drag and move the icon 🔄 to adjust the mounting position
of camera.

- Adjust Mounting Angle: Rotate the icon to adjust the mounting angle in vertical plane.

- Adjust Range of View Parameters: Drag and move the icon vertically to adjust the height of view, drag and move the icon horizontally to adjust the distance of view.

8. (Optional) Click **Pixel Map** in the lower-right corner to preview the monitoring result of long shot, including person and license plate picture. The pixel density of close shot and long shot will be displayed under the picture.

9. (Optional) Click **Scale Map** in the lower-right corner to preview the imaging result of close shot and long shot.

<table>
<thead>
<tr>
<th>Black Tree</th>
<th>Imaging result of long shot.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Tree</td>
<td>Imaging result of close shot.</td>
</tr>
</tbody>
</table>

You can adjust the height according to actual object height.

10. (Optional) Click ☑ to hide or show the pixel and scale map.
11. Click **Add** to save the camera in camera list.

### 2.2.2 Add Fisheye Camera to Camera List

**Purpose:**
You can select the fisheye camera model, set the basic parameters, filed of view parameters, and range of view parameters according to your requirement, also you can view the camera mounting view, and add the configured camera to the camera list.

**Steps:**
1. Click the camera model on the left panel.

2. Select camera type as fisheye camera in the drop-down list.

3. (Optional) You can filter the camera model according to focal length, resolution and keywords.

4. Double-click the camera to select a camera model.

5. Set the basic parameters and range of view parameters as you desired.

<table>
<thead>
<tr>
<th>Basic Parameters</th>
<th>Resolution</th>
<th>The value is fixed.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sensor Size</td>
<td>The value is fixed.</td>
</tr>
<tr>
<td></td>
<td>Focal Length</td>
<td>The value is fixed.</td>
</tr>
<tr>
<td></td>
<td>Installation Height</td>
<td><strong>Note:</strong> The value should be larger than or equal to the object height.</td>
</tr>
</tbody>
</table>

The configured parameters will be displayed in the mounting view automatically.
In mounting view, different colors indicate different monitoring levels and the recognition capability are different.

- **Confirmed**: 500 pix/m. For person monitoring, the software can recognize the person’s face.
- **Recognized**: 250 pix/m. For person monitoring, you can recognize the person’s face.
- **Detected**: 30 pix/m. For person monitoring, you can recognize the person’s cloth color and behavior.
- **Blurred**: less than 30 pix/m.

6. (Optional) Adjust the parameters in mounting view.
   - Adjust Mounting Height: Drag and move the icon 🌅 to adjust the mounting height.
   - Adjust Range of View Parameters: Drag and move the icon 🌅 vertically to adjust the height of view, drag and move the icon 🌅 horizontally to adjust the distance of view.

7. (Optional) Click **Pixel Map** in the lower-right corner to preview the monitoring result of long
shot, including person and license plate picture.
The pixel density of long shot will be displayed under the picture.

8. (Optional) Click to hide or show the pixel map.
9. Click Add to save the camera in camera list.

2.2.3 Add Thermal Camera to Camera List

Purpose:
You can select the thermal camera model, set the basic parameters, filed of view parameters, and range of view parameters according to your requirement, also you can view the camera mounting view, and add the configured camera to the camera list.

Steps:
1. Click the camera model on the left panel.

2. Select camera type as thermal camera in drop-down list.
3. (Optional) You can filter the camera model according to focal length, resolution and keywords.
4. Double-click the camera to select a camera model.

5. Set the basic parameters, filed of view parameters, and range of view parameters as you desired.

<table>
<thead>
<tr>
<th>Basic Parameters</th>
<th>Resolution</th>
<th>The value is fixed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focal Length</td>
<td></td>
<td>The value should be within the range.</td>
</tr>
</tbody>
</table>

6. (Optional) Set the thermal smart parameters to calculate the maximum detected distance of
fire source, line crossing object and hot object.
The configured parameters will be displayed in the mounting view automatically.

In mounting view, different colors indicate different monitoring levels and the recognition capability are different.

- **Confirmed**: 500 pix/m. For person monitoring, the software can recognize the person’s face.
- **Recognized**: 250 pix/m. For person monitoring, you can recognize the person’s face.
- **Detected**: 30 pix/m. For person monitoring, you can recognize the person’s cloth color and behavior.
- **Blurred**: less than 30 pix/m.

7. (Optional) Adjust the parameters in mounting view.
   - **Adjust Mounting Position**: Drag and move the icon to adjust the mounting position of camera.

   ![Diagram](image)

   - **Adjust Mounting Angle**: Rotate the icon to adjust the mounting angle in vertical plane.

   ![Diagram](image)
• Adjust Range of View Parameters: Drag and move the icon \( \equiv \) vertically to adjust the height of view, drag and move the icon \( \equiv \) horizontally to adjust the distance of view.

8. (Optional) Click **Pixel Map** in the lower-right corner to preview the monitoring result of long shot, including person and license plate picture.
   The pixel density of long shot will be displayed under the picture.

9. (Optional) Click **Scale Map** in the lower-right corner to preview the long shot imaging result of person, vehicle and ship.

10. (Optional) Click \( \equiv \) to hide or show the pixel map.
11. Click **Add** to save the camera in camera list.

### 2.2.4 Add Other Types of Cameras to Camera List

**Purpose:**
You can select the camera model, set the basic parameters, filed of view parameters, and range of view parameters according to your requirement, also you can view the camera mounting view, and add the configured camera to the camera list.

**Steps:**
1. Click the camera model on the left panel.

2. Select camera type in the drop-down list.
3. (Optional) Filter the camera model according to focal length, resolution and keywords.
4. Double-click the camera to select a camera model.
5. Set the basic parameters, filed of view parameters, and range of view parameters as you desired.

The configured parameters will be displayed in the mounting view automatically.

In mounting view, different colors indicate different monitoring levels and the recognition capability are different.

- **Confirmed**: 500 pix/m. For person monitoring, the software can recognize the person’s face.
- **Recognized**: 250 pix/m. For person monitoring, you can recognize the person’s face.
- **Detected**: 30 pix/m. For person monitoring, you can recognize the person’s cloth color and behavior.
- **Blurred**: less than 30 pix/m.

**Note**: For 360° Panoramic+PTZ Camera & 180° Panoramic+PTZ Camera, there is a blind zone. The
zone radius will be changed with the parameters you set.

6. **(Optional) Adjust the parameters in mounting view.**
   - **Adjust Mounting Position:** Drag and move the icon to adjust the mounting position of camera.
     - ![Diagram of mounting position adjustment](image)
   - **Adjust Mounting Angle:** Rotate the icon to adjust the mounting angle in vertical plane.
     - ![Diagram of mounting angle adjustment](image)
   - **Adjust Range of View Parameters:** Drag and move the icon vertically to adjust the height of view, drag and move the icon horizontally to adjust the distance of view.
     - ![Diagram of range of view parameters adjustment](image)

7. **(Optional) Click **Pixel Map** in the lower-right corner to preview the monitoring result of long shot, including person and vehicle picture.**
   The pixel density of close shot and long shot will be displayed under the picture.

8. **(Optional) Click **Scale Map** in the lower-right corner to preview the imaging result of close shot and long shot.**
   - **Black Tree** Imaging result of long shot.
   - **Red Tree** Imaging result of close shot.
   You can adjust the height according to actual object height.
9. (Optional) Click \(\nabla\) to hide or show the pixel map.
10. Click Add to add the camera in camera list.

### 2.3 Manage Camera in Camera List

**Purpose:**
You can preview the selected camera information, edit the camera parameters and delete the camera from the camera list.

**Steps:**
1. (Optional) Click Preview to view the information of selected camera.
2. (Optional) Select the camera to edit the camera parameters, click Save Changes to save the configuration.
3. (Optional) Click Delete to remove the camera from the camera list.
4. (Optional) Click \(\nabla\) to hide or show the camera list.

### 2.4 Display Added Camera on Map

**Purpose:**
All the added cameras will be displayed on the map. You can configure the location and installation parameters of cameras on the live map.

**Steps:**
1. **Click Planning Map** to enter the live map.

![Planning Map](image)

2. **Select the camera** 📷 and drag it to the place as you desire. Different type of camera has different range of view. E.g., the range of view for fisheye is a circular area, while for box camera is a triangular area.

3. **Rotate the icon** 🔄 to adjust the camera installation angle in horizontal plane.

4. (Optional) You can make the following operations on the map:
   - Scroll the mouse wheel to zoom in and zoom out.
   - **Click Satellite** to switch the map to satellite view.

![Satellite View](image)

- Input an address or place name in search box, and click 🔍 or press Enter to search for the place.
• Click ⬇️ to anticlockwise adjust the installation angle of camera for 1°.
• Click ⬆️ to clockwise adjust the installation angle of camera for 1°.

2.5 Save Solution and Export Report

Purpose:
When the added cameras are deployed on the map, you can save the solution and export the planning view and camera information in *.pdf file.
1. Click Save to save the solution in *.hps file.
2. Click Export Report to export the camera information and solution of view in *.pdf file.
   For Mounting View, the solution of mounting view and the camera information will be displayed in the file.
   For Planning Map, the solution of camera deployment on map and the camera information will be displayed in the file.
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