

**Installation and Configuration Guide for Dual-lens  
Face Recognition Camera**

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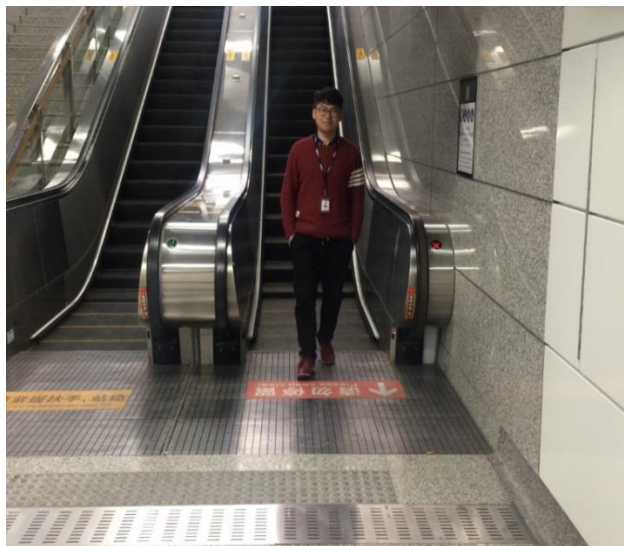
## Chapter1. Installation specification

### 1.1 Installation

The accuracy rate of face recognition is great involved with installation location, ambient light (such as too dark, too bright) and so on. In order to ensure the better effect, it raises some installation suggestions as follows:

- 1) Installation position should be the standard passageways or the Entrances/ Exits, which insures the direction of traffic is particular and capture the Enter/Leave personnel' faces in the direction.
- 2) Choose the stable lighting condition with adequate illumination. Light compensation is necessary to ensure the facial features are visible under the condition of insufficient light or backlight.

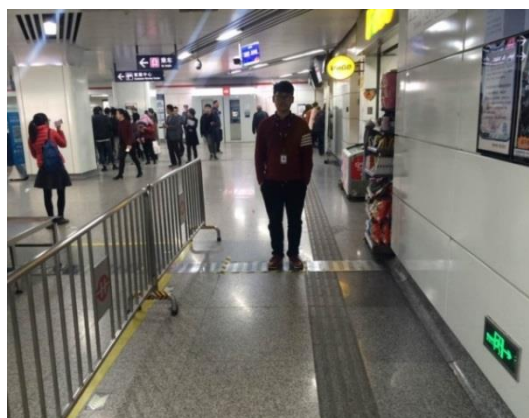
**Example of standard scenario:**



**Example of unsuitable scenario:**

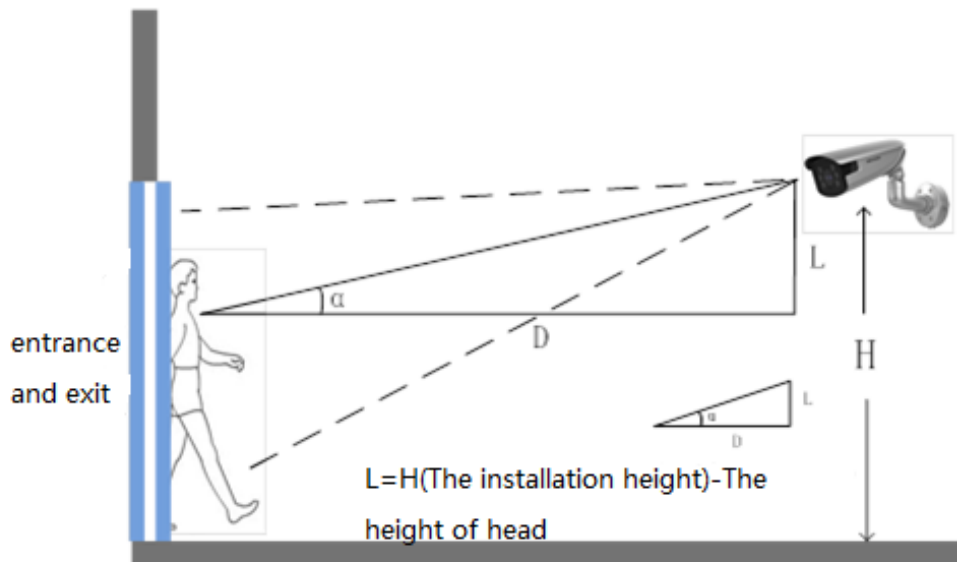


Backlight



Lack of light

## 1.2 The Installation Requirement of Camera

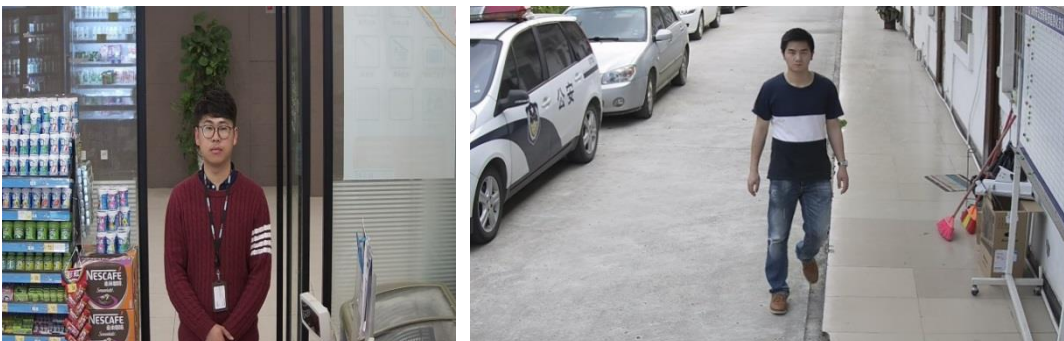


The installation diagram

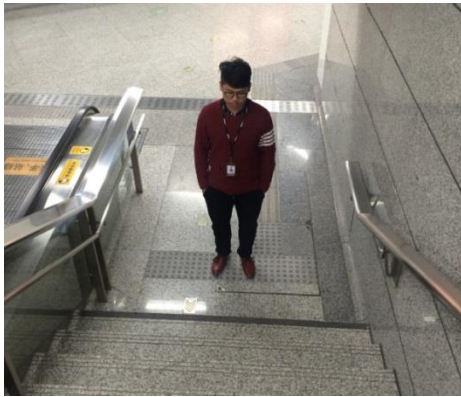
The installation position selection specification of face capture camera is as follows:

- 1) The camera should be installed in the front of passageway and capture the positive face. The horizontal angle of deflection had better be less than  $25^\circ$ .
- 2) The installation of camera needs an elevation angle, which avoids the situation that the rear face is obscured when the tandem persons go through the passageway. The vertically elevation angle should meet the below requirement:  $\alpha=15 \pm 5^\circ$ .
- 3) It requires that the covered PD (Pupil Distance) pixels needs to be larger than 40 pixels to distinguish the face details from the captured image. The practical width of face detection should be less than or equal to 3 meters with 2MP camera.
- 4) Make sure that there is no shelter between the camera lens and the passageway.

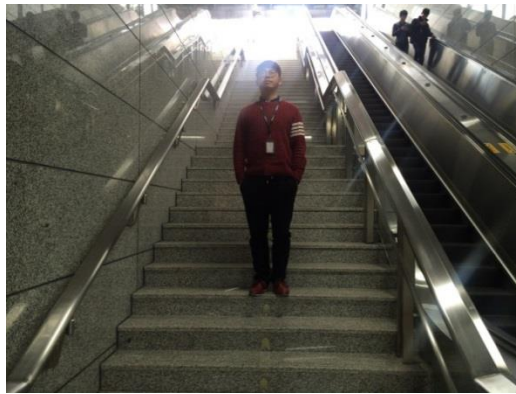
**Example of standard scenario:**



Example of unsuitable scenario:



Dip Angle is too large



Elevation Capture



The scenario is too wide



Incline installation, with shelter



The scenario is too large and the face recognition rate is low

## 1.3 The Selection of Camera Lens

1) Different cameras, lens focal lengths and monitoring widths are key points for the different monitoring distance and installation. The conversion relation between them is as follows:

2) The selection of lens focal length:  $f = 2.4D$  X626 (1)

- 3) The height of camera:  $H = \tan(\alpha^\circ) \times D + 1.5$  (2)
- 4) D : The monitoring distance
- 5) The height below the head sets as average value 1.5 m
- 6)  $\alpha$  is the elevation angle
- 7) Elevation angle is recommended as  $10^\circ$  ,  $\tan(10^\circ) \approx 0.18$ ,  $\tan(15^\circ) \approx 0.27$ ,  $\tan(20^\circ) \approx 0.36$

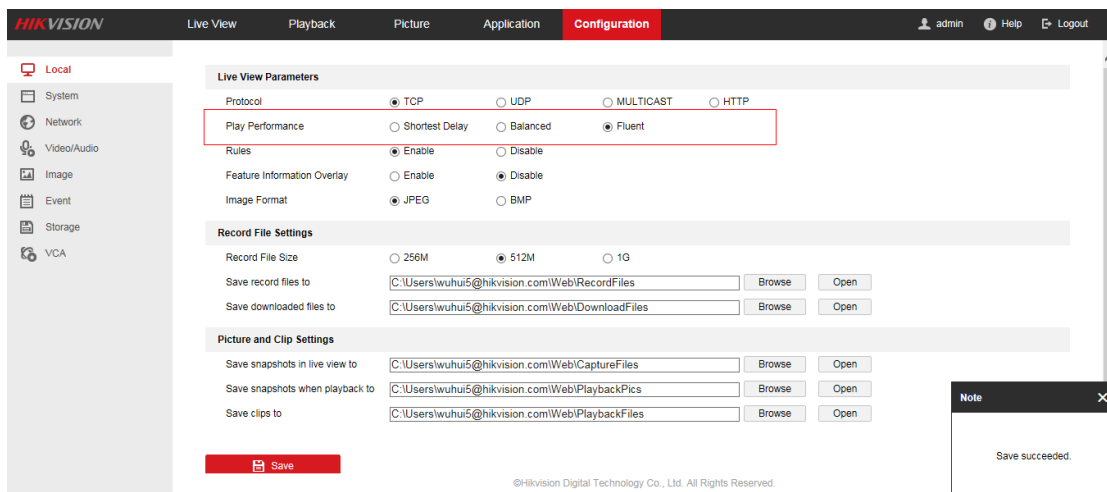
## 1.4 Installation Position and Lens Query Table

Camera Model	Monitoring Width W	Lens Focal Length	Monitoring Distance	Installation Height of Camera	Elevation angle $\alpha^\circ$
200W	3.0m	4mm	2.2m	1.9m-2.3m	$15^\circ \pm 5^\circ$
200W	3.0m	8mm	4.4m	2.3m-3.1m	$15^\circ \pm 5^\circ$
200W	3.0m	16mm	8.9m	3.1m-4.7m	$15^\circ \pm 5^\circ$

# Chapter2 Camera Configuration

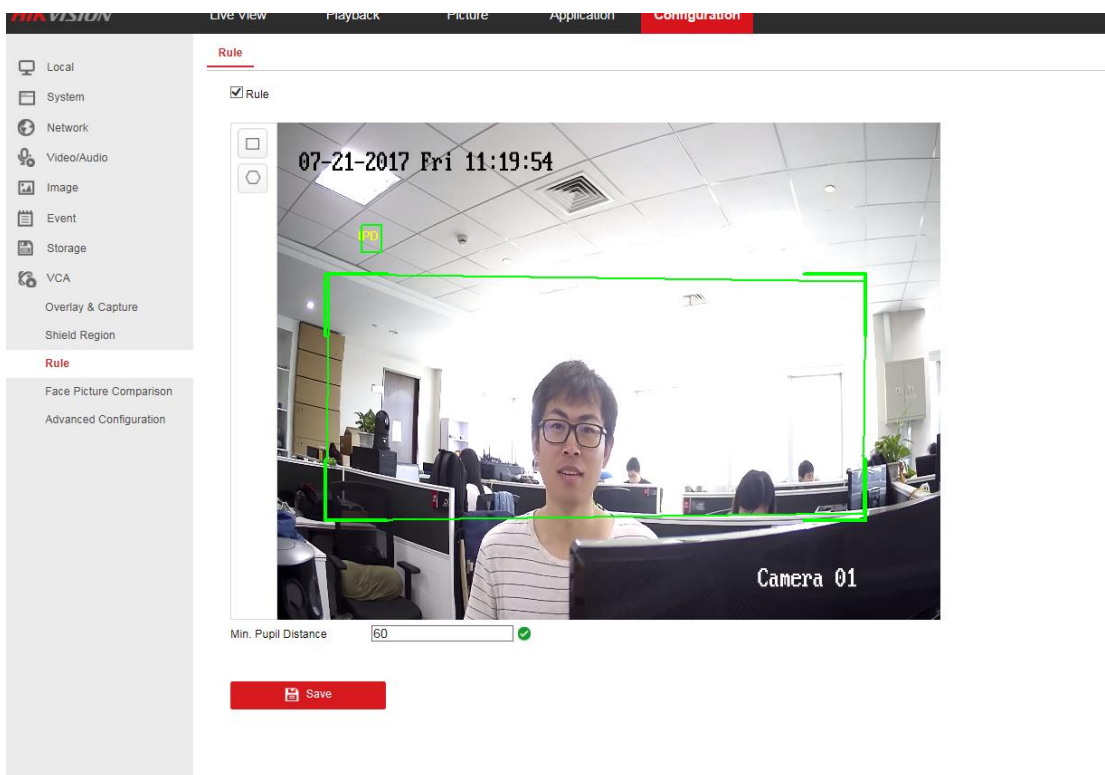
## 2.1 Configure the parameter via IE browser

Step 1: Enter [configuration]-[local], set the [play performance] as fluent; Enable [Rules]. Then Click “Save” when finishing the configuration, as shown in the below picture:



Step 2: Enter [configuration]-[VCA]-[Rule] interface, check the “Rule”. Then configure the “Min. Pupil Distance” and “Detection area”. Click “Save” when finishing the configuration.

- a) **【Min Pupil Distance】** : Minimum size filter box, which is used to control the size of the captured face. The maximum size box will be generated automatically by default, which the rectangular box is generated according to the distance between two eyes and mouth. Min Pupil Distance should be set up by drawing the box instead of entering the number directly. Moreover it is necessary to set up it, or it cannot capture face picture successfully. Different image resolutions require different box sizes. With 1080P resolution as an example, the size value of “Min Pupil Distance” shouldn’t be less than 40, and 60 is recommended.
- b) **【Rules】** : Draw a rectangle or polygonal (up to 10 sides) face detection area. The minimum value is 28\*28 pixels and the maximum size is to cover the full screen. Detection area is generally recommended to be drawn as the half of the screen area size, no more than two-thirds of the picture.



Step 3: **【Advanced Configuration】**: The parameters of Advanced Configuration are generally set as default without modification. If want to realize self-comparison or comparison with “Face Recognition NVR”, “Capture Times” is suggested to modified to 5 times, which increases the number of uploading face pictures. Click “Save” when finishing the configuration.

**【Generation Speed】** It is used to control the speed of target generation in the detection region, the higher the value, the faster the target to generate

**【Capture Times】** It is used to set up the number of capture times in the detection area during the process from entering to leaving of face..

**【Sensitivity】** It is used to control the face detection sensitivity. The higher the sensitivity, the easier it is to detect the face.

**【Capture Interval】** It will capture the face image every few frames during the process from entering to leaving the detection area. The quality of the captured image is highest among these few frames.

**【Capture Sensitivity】** It is used to set the score threshold of captured picture. The face image can be captured only the score of face is greater than or equal to the threshold.