

Installation and Configuration Guide for 7series Face Capture 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

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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 °.
- 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:

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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 = 2.1D 8426 Face Recognition camera



(2)

The selection of lens focal length: f = 2.9D 2MP Bullet Face capture camera (1)

- 3) The height of camera: $H = \tan(\alpha^{\circ}) \times D + 1.5$
- 4) D : The monitoring distance
- 5) The height below the head sets as average value 1.5 m
- 6) α is the elevation angle

7) Elevation angle is recommended as 10°, $\tan(10^\circ) \approx 0.18$, $\tan(15^\circ) \approx 0.27$, $\tan(20^\circ) \approx 0.36$

1.4 Installation Position and Lens Query Table

Camera Model	Monitoring Width W	Lens Focal Length	Monitoring Distance	Installation Height of Camera	Elevation angle α °
2MP	2.5m	2.8-12mm	1.0m	1.7m	10°
2MP	2.5m	2.8-12mm	2.8m	2.0m	10°
2MP	2.5m	2.8-12mm	4.1m	2.2m	10°
2MP	2.5m	8-32mm	2.8m	2.0m	10°
2MP	2.5m	8-32mm	5.6m	2.5m	10°
2MP	2.5m	8-32mm	8.3m	3.0m	10°
2MP	2.5m	8-32mm	11.1m	3.5m	10°
4MP	3.3m	2.8-12mm	1.2m	1.7m	10°
4MP	3.3m	2.8-12mm	3.4m	2.1m	10°
4MP	3.3m	2.8-12mm	5.1m	2.4m	10°
4MP	3.3m	3.8-16mm	1.7m	1.8m	10°
4MP	3.3m	3.8-16mm	4.3m	2.3m	10°
4MP	3.3m	3.8-16mm	7.0m	2.76m	10°
4MP	3.3m	11-40mm	4.8m	2.4m	10°

For 7 series face capture camera:



4MP	3.3m	11-40mm	8.0m	2.9m	10°
4MP	3.3m	11-40mm	13m	3.8m	10°
4MP	3.3m	11-40mm	17m	4.5m	10°
6MP	4.0m	2.8-12mm	1.5m	1.8m	10°
6MP	4.0m	2.8-12mm	4.1m	2.2m	10°
6MP	4.0m	2.8-12mm	6.2m	2.6m	10°
6MP	4.0m	3.8-16mm	2.1m	1.8m	10°
6MP	4.0m	3.8-16mm	5.0m	2.4m	10°
6MP	4.0m	3.8-16mm	8.8m	3.0m	10°
6MP	4.0m	11-40mm	6.1m	2.6m	10°
6MP	4.0m	11-40mm	12m	3.6m	10°
6MP	4.0m	11-40mm	17m	4.5m	10°
6MP	4.0m	11-40mm	22.2m	5.5m	10°
8MP	5.3m	2.8-12mm	1.9m	1.8m	10°
8MP	5.3m	2.8-12mm	5.5m	2.5m	10°
8MP	5.3m	2.8-12mm	8.3m	3.0m	10°
8MP	5.3m	3.8-16mm	2.7m	2.0m	10°
8MP	5.3m	3.8-16mm	7.0m	2.7m	10°
8MP	5.3m	3.8-16mm	11.1m	3.5m	10°
8MP	5.3m	11-40mm	7.6m	2.8m	10°
8MP	5.3m	11-40mm	14m	4.0m	10°
8MP	5.3m	11-40mm	20m	5.1m	10°
8MP	5.3m	11-40mm	27.7m	6.5m	10°





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:

HIKVISION	Live View	Playback	Picture	Application	Configuration			👤 admin	👔 Help	E+ Logout	
.											~
Local	Live View	Parameters									
E System	Protocol	I	TCP		O MULTICAST	O HTTP					
Network	Play Per	rformance	 Shortest Delay 	 Balanced 	 Fluent 						
Video/Audio	Rules		Enable	 Disable 							
🔝 Image	Feature	Information Overlay	C Enable	 Disable 							
Event	Image F	ormat	JPEG	O BMP							
Storage	Record Fi	ile Settings									
Co VCA	Record I	File Size	O 256M		O 1G						
	Save rec	cord files to	C:\Users\wuhui5	@hikvision.com\W	/eb\RecordFiles	Browse	Open				
	Save do	wnloaded files to	C:\Users\wuhui5@hikvision.com\Web\DownloadFiles Browse Open				Open				
Distance and City Cottings			-								
	Picture an	na Chp Setungs									
	Save snapshots in live view to		C:\Users\wuhui5@hikvision.com\Web\CaptureFiles			Browse	Open				
	Save snapshots when playback to		C:\Users\wuhui5@hikvision.com\Web\PlaybackPics		Browse	Open	No	te		×	
	Save clips to		C:\Users\wuhui5@hikvision.com\Web\PlaybackFiles		Browse	Open					
	E	Save							Save su	icceeded.	
				©Hikvision	Digital Technology Co., Ltd	. All Rights Reserved.					

Step 2: Go to [System]-[System Settings]-[VCA Resource]. If the VCA resource is at smart Event mode, switch to Face Capture mode. Switch VCA resource will take effect after reboot.

HIKVISION	Live View	Playback	Picture		Application	Configuration	
Local	Basic Information	Time Settings	DST	RS-232	VCA Resource	About	
🖂 System	O Smart Event						
System Settings	Face Capture	e					
Maintenance							
Security	🗎 s	ave					
User Management							
Network							
Video/Audio							
Image							
Event							
Storage							
CA VCA							
Counting							



Step 3: Enter [configuration]-[VCA]-[Shield Region] interface. Set shield region if you want to block some area where no need to capture faces.

Step 4: 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】: Choose **Best Shot** or **Quick Shot** mode.

The other parameters of Advanced Configuration are generally set as default without modification. Best shot: The camera will capture the best face picture after the person leave the area. Quick shot: The camera will capture the face image at the first time when the face grade to the capture threshold.



【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.

C Capture Interval **J** 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.

2.2 Configure the parameter via IVMS-4200

Step 1: It is necessary to install Storage Server if the camera doesn't install SD card.

Step 2: Configure the Storage Server. Enter [Remote Configuration]-[Storage]-[General].

1) Format HDD.

Control Panel	🚔 Device I	Management									
Server 🗃 Group											
Organization		Device for Manag	gement (1)								· ·
📾 Encoding Device	e/Door Station	+ Add Device	🗹 Modi	fy 🗙 Delete	🔅 🕸 Remot	te Confi 🏶 🤇	CVR Configura	🏶 SAN C	Configura Filt	ter	\$ 48
📑 Storage Server		Nickname	IP	Device	Serial No.			Net Status			
+ Add New Device	туре	face	10.5.3.102	DS-NV	R-V120B201607	713-68F728C1949C		0			
					Rei	mote Configuratio	on				:
	🖃 🚳 System		(Configuring	the HDD P	arameters					
	🎡 Device In	nformation		HDD No.	Capacity(GB)	Free Space(GB)	Status	Туре	HDD Group	Property	
	 Device Information General Time 			✓ D	122.01	0.74	Normal	Local	Group00	Read/Write	
				E	122.01	92.19	Unformatted	Local	Group00	Read/Write	
	🎡 System I	Maintenance		🗆 F	121.72	78.48	Unformatted	Local	Group00	Read/Write	
	🎡 Log			D P	50.00	32049.85	Unformatted	Local	Group00	Read/Write	
	🎡 User			🗆 Z	3071.87	76.31	Unformatted	Local	Group00	Read/Write	
	速 🔇 Network										
	🖃 🚷 Storage			Format	U	pdate					
	🔅 General										

2) Configure Quota Ratio for record and picture.



Step 3: Enter [Control Panel]-[Storage Schedule]. Configure the Capture Schedule and check Picture Storage.

Control Panel 📻 Sto	rage Schedule 🗧 🔤	Device Management					
Camera	Storage Schedule					📄 Copy to 📘 Save	
Search	Storage of Encoding Se						
🖃 🗔 face	Recording Schedule:	All-day Template	_	Edit	Advanced Settings		
Cameral_face	Capture Schedule:	All-day Template	~	Edit	Advanced Settings		
	Storage Server Storage Server: Storage Content: Storage Quota:	face Recording Sche Picture Storage Additional Inform Record Quota:30% Picture Quota Ratio: Additional Information	dule nation Stor 70% on Quota:0	Storage Server Management Template 01 V Edit Advanced S Storing the alarm pictures of the camera rage Set Quota			

Step 4: Enter [Device Management]-[Remote Configuration]. Face detection function can be configured in VCA Config. The configuration is same with the way in the web.

Control Panel 55 Storage	e Schedule	📥 Devi	ce Manageme	ent					
Server 🗃 Group									
Organization	Device for Mana	gement (1)							
📼 Encoding Device/Door Station	+ Add Device	🗹 Modify	🗙 Delete	🌣 Remote 🖁	🕸 QR Code	Activate	🚨 Online U	🕂 Refresh All	ilter
E Storage Server	Nickname	IP	Devic	e Serial No.	Security	Net Status	HDD		
+ Add New Device Type	face	10.5.3.64	iDS-2CD8426G0/F-I20170722AAWR801311905			Weak	0	٥	



