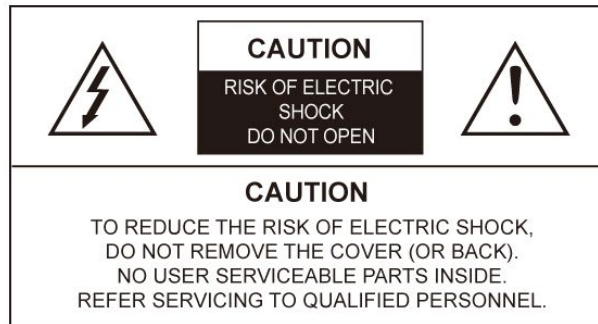# HARDWARE INSTALLATION GUIDE

VPD200SM2Ti / VPD200PM2Ti FULL HD NETWORK PTZ Camera

Version 1. 0. 3
Released on 1st of June., 2013

By selecting this product, you have decided to use a professional device that guarantees highest quality and reliability. We would like to thank you very much for your confidence and kindly ask you to read the following instructions carefully before installation and operation in order to take full advantage of all quality features regarding this product.

The lighting flash with an arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of non-insulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

INFORMATION

This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at its own expense.

WARNING

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

CAUTION – To prevent electric shock and risk of the fire hazards

-Do NOT use power source other than that specified.
-Do NOT expose this appliance to rain or moisture.

Trademarks

All names used in this manual for hardware and software are probably registered trademarks of respective companies.

This installation should be made by a qualified service person and should conform to all local codes.

Table of content

Hardware Installation Guide

1. Precautions

- Please read the manual carefully before the installation in order to set up the camera correctly and to obtain the best picture quality.

- Please keep the manual in good condition for your future reference and service application.

- Installation and services should be only carried out by an authorized personnel according to local safety regulations.

- If any liquid or solid matter gets into the housing, immediately disconnect the camera from power supply and have it checked by your authorized dealer before reusing.

- Avoid installing the camera at extremely hot or cold places.

- If you are not a certified person, never try to dismantle the camera. To avoid electric shock, never remove the screws or covers. There are no parts inside that need maintenance by the user. All maintenance should be carried out by qualified personnel.

- Avoid installing the camera at a place of high humidity.

- Avoid installing the camera at the place exposed to gas or oil.

- Keep the top glass of the lens always clean in order to obtain the best picture quality all the time. Be careful not to be stained by fingerprint.

- Don't face the camera directly toward sunlight or sunlight reflecting area. Sensor may go defective at this condition.

- Please give a special attention to keep the unit from dangerous drop or external shock during the process of transportation or handling.

- Never try to touch the camera in wet hand. It may cause an electric shock.

- Do not expose the camera to radioactivity. It causes a serious damage on the Sensor.

2. Limitation of liability

This publication is provided "AS IS" without warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for any particular purpose, or non-infringement of the third party's right. This publication could include technical inaccuracies or typographical errors. Changes are added to the information herein, at any time, for the improvements of this publication and/or the corresponding product(s).
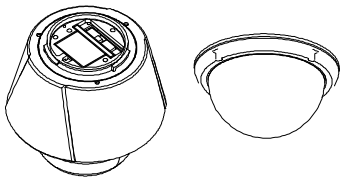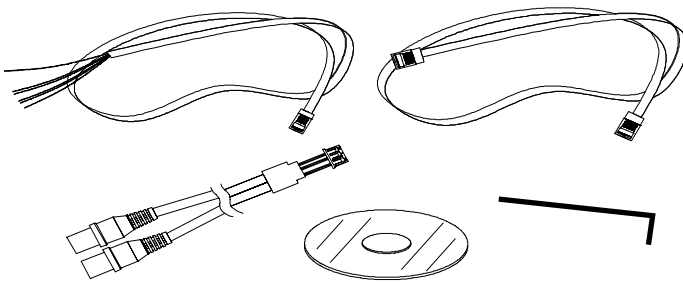
3. Disclaimer of warranty

In no event shall seller be liable to any party or any person, except for replacement or reasonable maintenance of the product, for the cases, including but not limited to below:
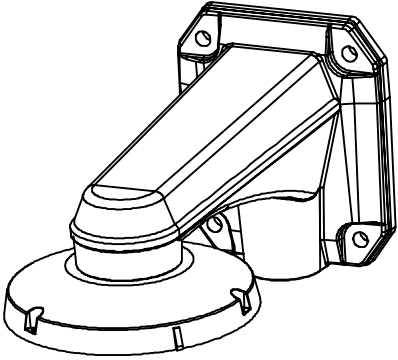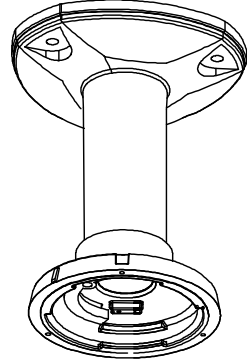
(1) Any damage and loss, including without limitation, direct or indirect, special, consequential or exemplary, arising out of or relating to the product;

(2) Personal injury or any damage caused by inappropriate use or negligent operation of the user;

(3) Unauthorized disassemble, repair or modification of the product by the user;

(4) Inconvenience or any loss arising when images are not displayed, due to any reason or cause including any failure or problem of the product;

(5) Any problem, consequential inconvenience, or loss or damage, arising out of the system combined by the devices of third party.

(6) Any claim or action for damages, brought by any person or organization being photogenic subject, due to violation of privacy with the result of that surveillance-camera's picture, including saved data, for some reason, becomes public or is used for the purpose other than surveillance.
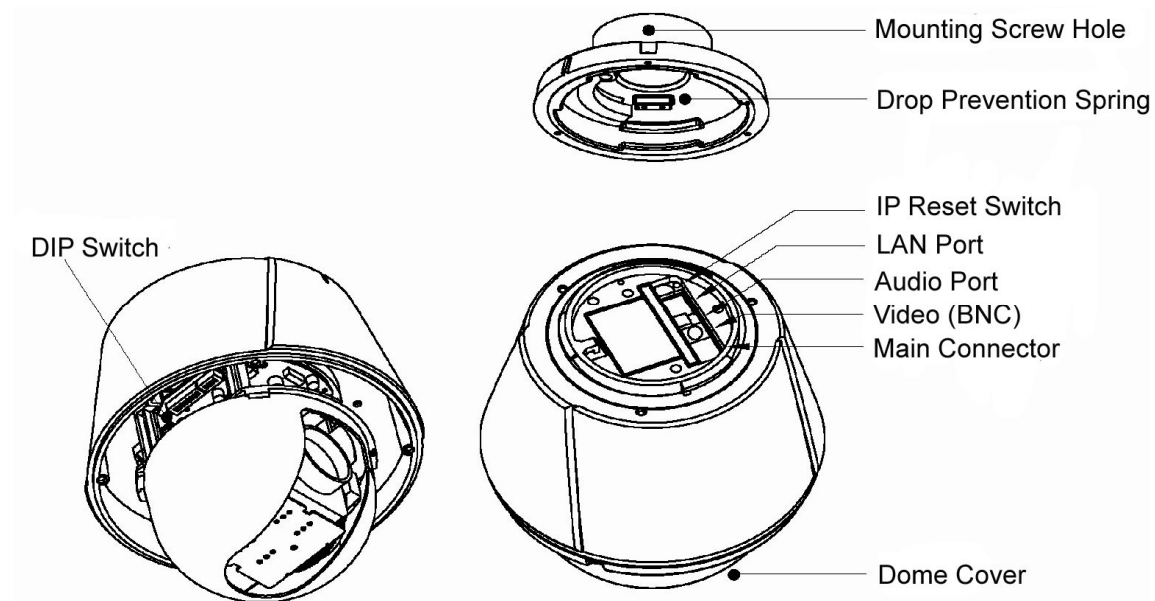
4. Package Contents

● Main body & Dome Cover	● Accessories
	[Main Cable, Wrench, Cross LAN cable, Audio cable, CD]

Note: Mount Brackets are optional.

● Wall Mount Bracket	● Ceiling Mount Bracket
[Screws : Torx Secrew M4×18, Hex Lag #14×50]	[Screws : Torx Screw M4×18, Anchor Bolt 3/8"×70]

5. Cable Connection
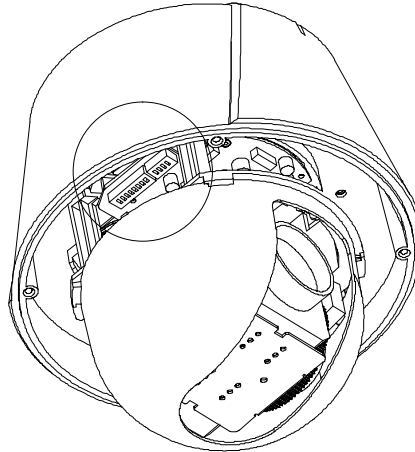

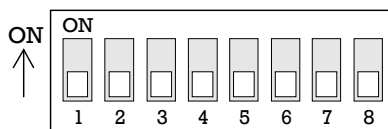|		
•	**Dome Cover**	Do not detach protection vinyl from dome cover before finishing all installation process to protect dome cover from scratches or dust.
•	**DIP Switch**	Sets up camera ID and protocol.
•	**Drop Prevention Spring**	This part keeps the camera from dropping during installation and maintenance. After install the Bracket, please, hang the spring to the drop prevention hook of main body as shown in picture for further tasks.
•	**Mounting Screw Hole**	This hole is for screws that assembles the main body with a bracket.
•	**IP Reset Switch**	Reset its network configuration to the factory defaults. You will lose all data that had been entered previously. To initialize the system to the factory default, press the reset button for more than 5 seconds.
•	**LAN Port**	Used for the Ethernet connection
•	**Audio Port**	Used for the audio in/out connection.
•	**Video (BNC)**	Used for the composite video out or HD-SDI video out connection according to models
•	**Main Connector**	Used for the power wire, the RS-485 communication cable, alarm in/out connection cable according to models.

6. Installation

DIP Switch Setup

When you control the camera through RS-485, before installation, you should set the DIP switches to configure the camera ID, communication protocol.
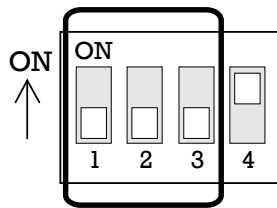

Camera ID setup

- ID numbers of camera are set up with binary numbers..

  See the examples shown below

Pin	1	2	3	4	5	6	7	8
ID Value	1	2	4	8	16	32	64	128
ex) ID=5	on	off	On	off	off	off	off	off
ex) ID=10	off	on	Off	on	off	off	off	off

- The camera ID range is 1~255. **Camera ID must not be 0**.
- **Factory default of Camera ID is 1.**
- Match the camera ID with Cam ID setting of your DVR or Controller to control the camera.

Communication Protocol Setup

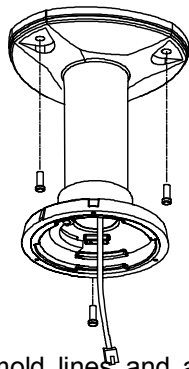- Select the appropriate Protocol with DIP switch combination.

Switch State			
P0 (Pin 1)	P1 (Pin 2)	P2 (Pin 3)	Protocol/Baud rate
OFF	OFF	OFF	PELCO-D, 2400 bps
ON	OFF	OFF	PELCO-D, 9600 bps
OFF	ON	OFF	PELCO-P, 4800 bps
ON	ON	OFF	PELCO-P, 9600 bps
Otherwise			Reserved

- If you want to control using DVR or P/T controller, their protocol must be identical to camera. Otherwise, you can not control the camera.

- Adjust the DIP switch after turning off the camera. If you changed the camera protocol by changing the DIP switch, the change will be effective after you reboot the camera.

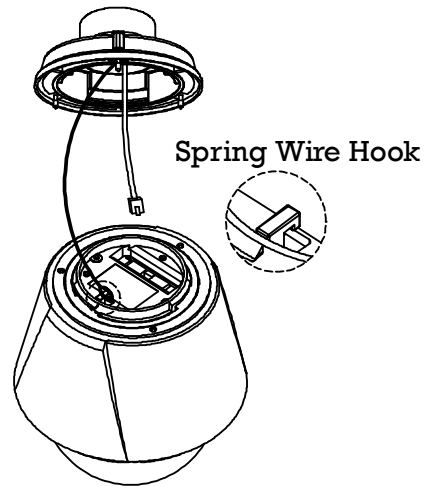- **Factory default of protocol is "Pelco-D, 2400 bps".**

Installation Camera with Brackets

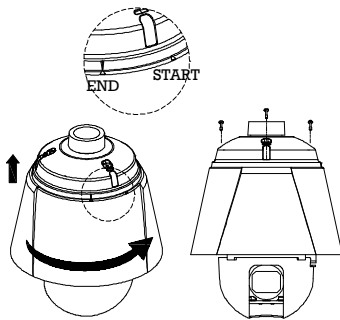## Installation using Ceiling Mount Bracket

① Remove the ceiling tile from the ceiling and cut a hole whose diameter is 30~40mm on the ceiling tile to pass the wire(s) and cable(s) through to the upside of the ceiling. (In case of the wiring and cabling through the mounting surface only) Then prepare the ceiling mount bracket. Pull the wire(s) for the system as below. (Anchor Bolt 3/8" × 70)
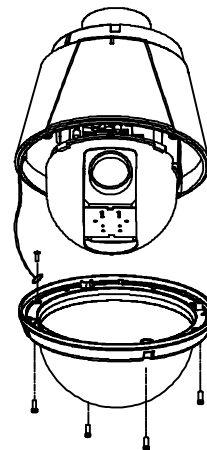
② Hook up "Drop Prevention Spring" on main body to prevent camera from unexpected drop and pull the wire(s) and cable(s) for the system as below

Spring Wire Hook

③ Line up the mold lines and assemble main body to mount adaptor and turn it. And assemble the main both with the camera mount adaptor with the screws. (Torx screw M4X18). Please make sure the screws are tightly assembled for waterproof.

④ Screw the dome cover to the main body and remove the protection vinyl from the dome cover.
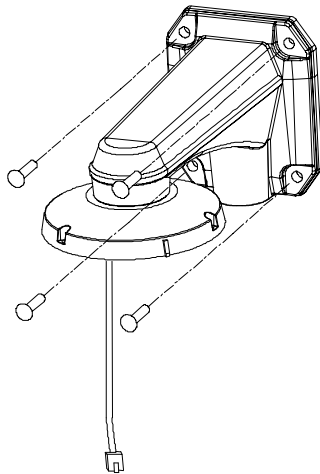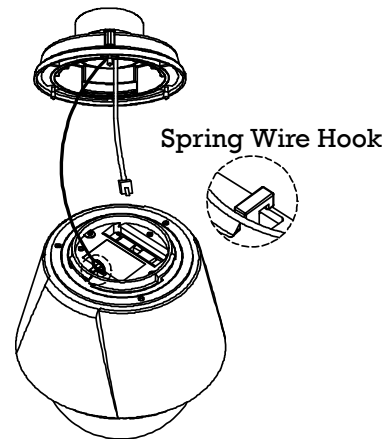
Notice
- Before starting the installation, make sure that the Camera ID and Protocol are set up properly.
- To adjust the installation height from the mounting surface, the pipe and coupler should be needed between the surface mount part of the ceiling mount bracket and the camera mount part of the ceiling mount bracket. Note that they are not supplied by the manufacturer.

Installation using Wall Mount Bracket

① Make a hole whose diameter is 30~40mm on the mounting surface to pass the wire(s) and cable(s) through the mounting surface. (In case of the wiring and cabling through the mounting surface only) Then prepare the wall mount bracket. Pull the wire(s) and cable(s) for the system as below. Attach the wall mount bracket to the mounting surface. (Hex Lag #14×50)

② Hook up "Drop Prevention Spring" on main body to prevent camera from unexpected drop and pull the wire(s) and cable(s) for the system as below.

Spring Wire Hook

③ Line up the mold lines and assemble main body to mount adaptor and turn it. And assemble the main both with the camera mount adaptor with the screws. (Torx screw M4X18). Please make sure the screws are tightly assembled for waterproof.

④ Screw the dome cover to the main body and remove the protection vinyl from the dome cover.

END   START

Notice
- Before starting the installation, make sure that the Camera ID and Protocol are set up properly.

Wiring/Cabling & Connecting

Port Description

- Main Cable

Port Pin Number (RJ45)	Connector / Wire Color	Signal
1	BLACK	DC 12V
2	BROWN	GND
3	ORANGE	ALARM OUT/COM
4	WHITE	OUT 2
5	YELLOW	OUT1
6	GREEN	SENSOR IN/COM
7	BLUE	IN 1
8	GRAY	IN 2

- Audio Cable

Port Pin Number	Connector/ Wire Color	Signal
1	RCA (Yellow)	Audio IN
2		Audio GND
3	RCA (White)	Audio OUT

Connecting Power

1. Carefully check the voltage and current capacity of the rated power. The rated power is indicated in the back of main unit.

2. After confirming the power source, connect power adaptor and connect the 12V DC connector to the system

- For the DC input models, be careful with the polarity of DC power. The system should be

permanently damaged by wrong DC input.

- In case that the length of the power wire is very long, there may be voltage drop and the system may not work properly. Make the length of the power wire as short as possible.

Connecting Network

1. Plug network cable to Ethernet port (RJ-45 network port).

Connecting Video

1. To display video through the composite connect each port to a monitor using BNC coaxial cable

Connecting Audio

Audio is full-duplex. It is possible to set the mode as Tx-only, Rx-only or Tx-Rx.
1. Connect audio input and output ports to audio devices accordingly.
2. The Audio signal required is line level, so an audio equipment with an amp, mixer or other amplifier should be used.

Connecting Sensor and Alarm

Connect sensor and alarm devices to corresponding terminals accordingly.

- Sensor Input

- Relay Output

Maximum allowable electrical load of relay is shown bellow table.

Drive Power	DC Power	AC Power
Max. Load	Max DC 24V, 1A	Max AC 125V, 0.5A

7. Dimension (mm)

8. Specification
8.1. VPD200SM2Ti

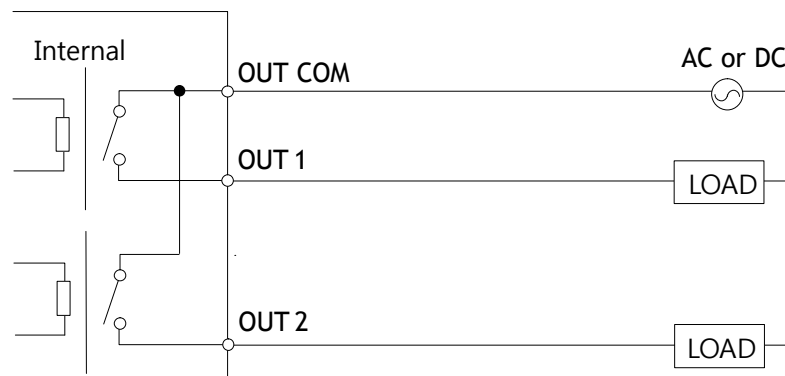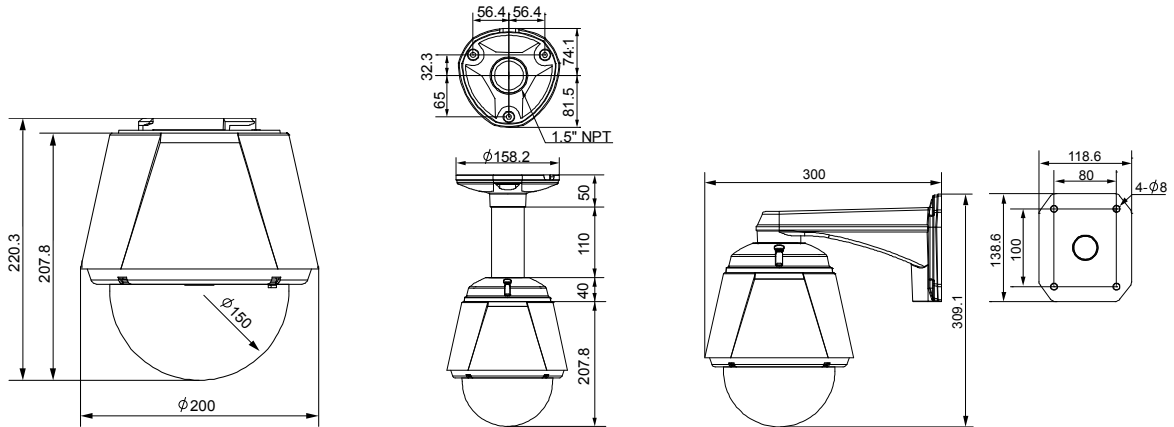| Model		Specification
Image sensor		1/2.8" 3.27M SONY Progressive scan CMOS image sensor for excellent image quality
Day & Night		Auto/Color/BW
Environment		OUTDOOR(IP66)
Optical Zoom		20X
Digital Zoom		12X
Lens		20x AF zoom (f4.7~94mm (F1.6~F3.5)]

Min. illumination / Light sensitivity (Lux)		[color] ICR off: 1.7Lux
		        ICR on: 0.3Lux
		[B/W] ICR: 0.5Lux
		        ICR: 0.095Lux

Pan Tilt Operation	Pan	360 Endless (400 deg/sec)
	Tilt	0~90 deg (400 deg/sec)
WDR/BLC		On/Off
Noise Reduction		2DNR
AE Mode		Auto, Manual, Bright, Shutter Priority, Iris Priority,
GAIN Control		Auto/Manual (-3 ~ 28dB)
Shutter Control		Auto/Manual (1/1 ~ 1/10.000 sec)
White Balance		Auto/Manual (Red, Blue Gain, Adjustable)
Video	Compression	H.264 High Profile@Level 4.0, Motion JPEG
	Resolutions	Up to 1920 x 1080
	Frame rate	H.264 Up to 30fps with 1920x1080
		MJPEG Up to 30fps with VGA resolution
	Video streaming	Support multi stream with H.264, MJPEG
		Adjustable frame rate
		VBR/CBR in H.264
	Image setting	Day & Night
		Auto White Balance
		Auto Exposure
		Effect - Color, Sharpness, Mirror/V-Flip, etc.
		Privacy Mask
	Output	BNC x1, 1.0Vp-p, 75 ohm Composite Video, NTSC/PAL
Audio	Audio streaming	Two-way, full duplex
	Compression	G.711
	Sample Rate	8KHZ
	Data Rate	64Kbps
	Audio input	Microphone input /1 x Line-In (Mono)
	Audio output	Line output/ 1 x Line-Out (Mono)
Network	Security	Password protection
		User access log
		HTTPS encryption
	Supported protocol	HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, ICMP, DHCP
System integration	Intelligent video	Motion detection up to 1920x1080 with 4x3 blocks
	Alarm trigger	Motion detection
		External input/Normal Open/Close Type
	Alarm events	File upload via ftp, e-mail
		Notification via email, FTP and TCP
	Video buffer	16MB pre-alarm and post-alarm
	Recording	Save to Micro SD card with event mode and continuous mode
	Firmware upgrade	Remote upgrade via network

Physical	API	CGI Interface document
		ActiveX Interface(ocx(dll) + document)
Physical	RESET Button	1 x Factory Reset Button
	Power Source	DC 12V/5.0A
	PoE	High PoE (PoE+) 802.3at (Optional)
	Power Consumption	Max. 36W
	Weight (Appr.)	Ceiling: 3,600g / Wall: 3,400g
	LED's	Power, Network Connection
	Dimension(mm)	Ceiling: 200(Ø) x 407.8 / Wall: 300(Ø)x309
Environ-ment	Operating Temperature	-25 degree~50 degree Celsius (-13F~122F)
	Storage Temperature	-25 degree~60 degree Celsius (-13F~140F)
Software	Included Software	NVR Lite (16 Channel), IP Installer (Windows Only)
Package Contents		Network Camera, Main Cable, Audio Cable, Lan Cable, Software CD

8.2. VPD200PM2Ti

Model		Specification
Image sensor		1/3" 2.1M Progressive scan CMOS image sensor for excellent image quality
Day & Night		Auto/Color/BW
Environment		OUTDOOR(IP66)
Optical Zoom		20X
Digital Zoom		32X
Lens		20x AF zoom (f4.7~94mm (F1.6~F3.5)]
Min. illumination / Light sensitivity (Lux)		color] 0.5 Lux DSS : 0.002 Lux [B/W] 0.1 Lux DSS : 0.001 Lux
Pan Tilt Operation	Pan	360 Endless (400 deg/sec)
	Tilt	0~90 deg (400 deg/sec)
WDR/BLC		OFF/WDR/BLC
Noise Reduction		(2D+3DNR) Auto/Off/Low/Middle/High
AE Mode		Auto, Manual, Shutter Priority, Iris Priority,
GAIN Control		Auto/Manual
Shutter Control		1/30 (25) ~ 1/60,000 sec
White Balance		Auto/One push/Manual/Indoor/Outdoor
Video	Compression	H.264 High profile, Motion JPEG
	Resolutions	Up to 1920 x 1080
	Frame rate	H.264 Up to 30fps with 1920x1080
		MJPEG Up to 30fps with VGA resolution
	Video streaming	Support multi stream with H.264, MJPEG
		Adjustable frame rate
		VBR/CBR in H.264
	Image setting	Day & Night
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		Auto Exposure
		Effect - Color, Sharpness, Mirror/V-Flip, etc.
		Privacy Mask
	Output	BNC x1, 1.0Vp-p, 75 ohm Composite Video, NTSC/PAL
Audio	Audio streaming	Two-way, full duplex
	Compression	G.711
	Sample Rate	8KHZ

	Data Rate	64Kbps	
	Audio input	Microphone input /1 x Line-In (Mono)	
	Audio output	Line output/ 1 x Line-Out (Mono)	
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		User access log	
		HTTPS encryption	
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System integration	Intelligent video	Motion detection up to 1920x1080 with 4x3 blocks	
	Alarm trigger	Motion detection	
		External input/Normal Open/Close Type	
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	Firmware upgrade	Remote upgrade via network	
	API	CGI Interface document	
		ActiveX Interface(ocx(dll) + document)	
Physical	RESET Button	1 x Factory Reset Button	
	Power Source	DC 12V/5.0A	
	PoE	High PoE (PoE+) 802.3at (Optional)	
	Power Consumption	Max. 36W	
	Weight (Appr.)	Ceiling: 3,600g / Wall: 3,400g	
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Software	Included Software	NVR Lite (16 Channel), IP Installer (Windows Only)	
Package Contents		Network Camera, Main Cable, Audio Cable, Lan Cable, Software CD	