

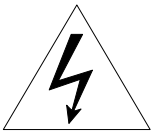
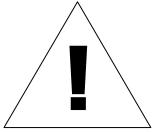
**H.264 FULL HD NETWORK OUTDOOR DOME**

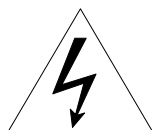
# **ZN-DNT352XE**

**Installation Manual**

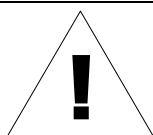


## INFORMATION TO USER

	<div><b>CAUTION</b> RISK OF ELECTRIC SHOCK, DO NOT OPEN</div>	
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SEERVCE PERSONEL.</p>		



This symbol is intended to alert the user to the presence of un-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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# 1. FEATURES

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## Camera

- Full HD outdoor dome IP camera (Vandal proof)
- High quality compression in real time streaming
- 1/2.7" High Quality CMOS Image Sensor
- True Day / Night (ICR) and WDR
- Improvement of color rolling suppression

## Streaming

- Dual streaming mode (such as different codec/resolution/bit rate and so on.)
- De-interlacing on DSP
- Burnt-in text supported
- Unicast/Multicast supported

## Video/Audio

- Video compression: H.264/MPEG4 (Planned for the future release.)/MJPEG, 25/30FPS@1080p(PAL/NTSC)
- Audio compression: G.711(μLaw, aLaw)/PCM
- Analog video out for external monitors
- Video motion detection supported
- Two-way mono audio supported

## Network

- RTSP/ HTTP protocol supported
- 10/100 Base-T Ethernet

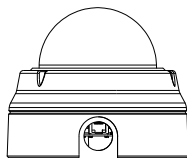
## Additional Features

- Micro SD card supported
- PoE supported
- Built-in Video Content Analysis (Planned for the next release.)
- SDK (Software Development Kit) provided

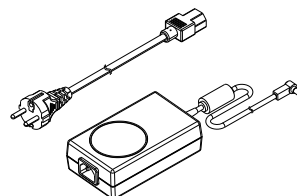
## 2. PACKAGE CONTENTS

Unpack carefully and handle the equipment with care. The packaging contains:

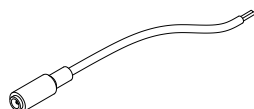
**Camera**



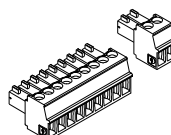
**DC power adaptor**



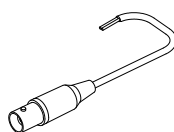
**DC Jack Cable**



**9-pin and 2-pin terminal block**



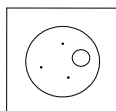
**Video out cable**



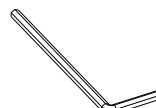
**Screws and anchors**



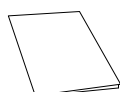
**Installation template**



**Hex wrench driver**



**Quick installation guide**

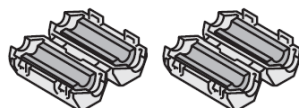


**Silicon waterproof band**



**Clamping core**

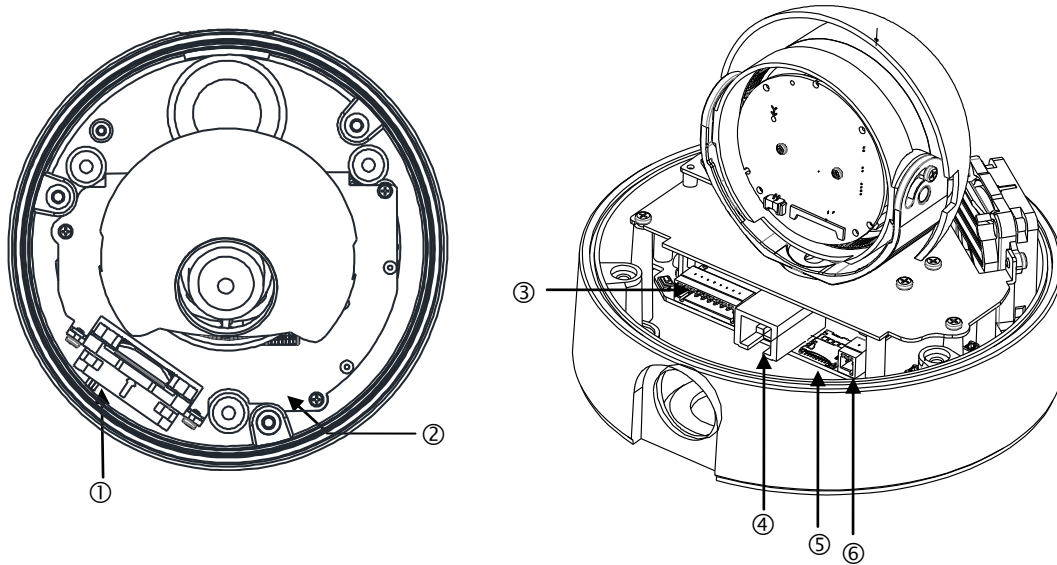
To prevent electromagnetic interference



### Note

The above contents are subject to change without prior notice.

## 3. PART NAMES



\* Models herein and their appearance are subject to change without any prior notice.

### ① Fan

The fan and heater (underneath the black panel) are implemented for controlling temperature and moisture of the internal device.

### ② Reset button

The reset button can be used for restarting the device or resetting it to Factory Default. Refer to 6.3. *Reset* and 6.4. *Factory Default* for more details. Reset button is located under PCB.

### ③ Video output, audio and IO terminal connector

A 9-pin terminal block is included in the device package. Connect this terminal block into this connector for cable connection of video output, audio input/output and digital input/output. Refer to 5.1. *Connector* for more details.

### ④ LAN connector

This is a RJ45 LAN connector for 10/100 Base-T Ethernet.

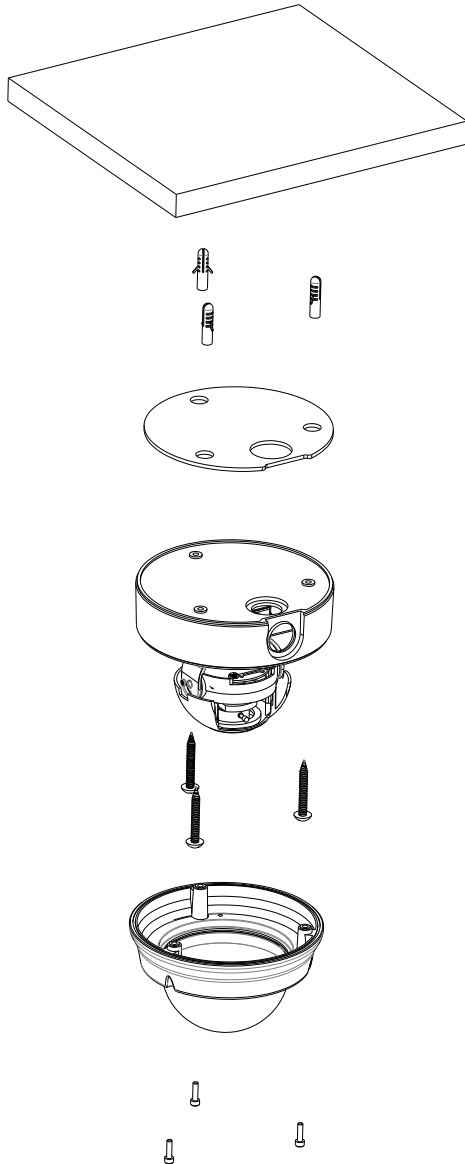
### ⑤ Micro SD card slot

It is a memory card slot for external storage.

### ⑥ Power Adaptor Connector (DC 12V)

The camera needs a DC 12V 1A adapter for power supply.

## 4. INSTALLATION



1) Place the installation template that is provided in the package on the desired position of installation.

2) Attach the waterproof silicon band on the bottom plate of the device.

3) Drill three holes on the template and insert anchor blocks into the holes. Fasten the camera with screws.

4) Make sure the cables are properly connected by checking the LED button.

5) Adjust the lens position by referring to 4.2. *Setting the Lens Position*.

6) Put the dome cover on the main body of the camera. Make sure the main body and the cover fit each other into place.

7) Fasten the cover with screws.



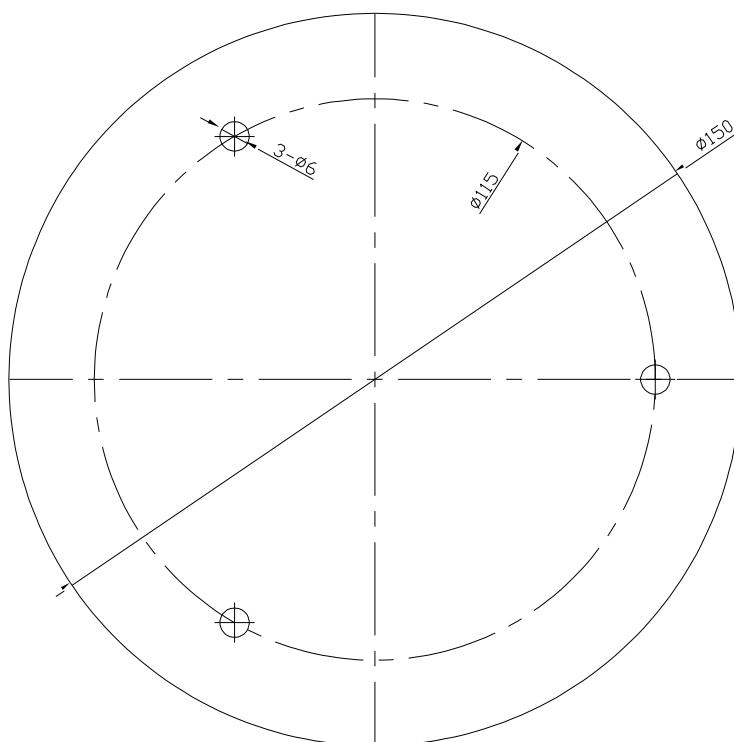
### Note

When assembling the main body of the camera and its dome cover, make sure they fit each other into place.

**Caution**

The camera may fall off the ceiling even after the proper installation and mounting. To prevent any accident, make sure the ceiling is firm and stable enough to support the camera. If any reinforcement is needed, consult with your safety personnel and proceed with the installation.

## 4.1. Installation Template

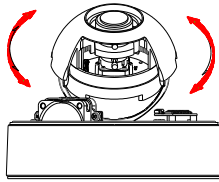




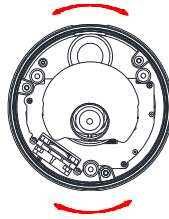
## 4.2. Setting the Lens Position

Set the lens position and adjust the zoom and focus by performing procedures as below.

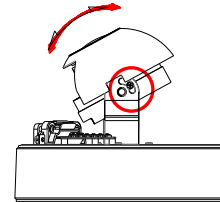
- 1) Remove the dome cover.
- 2) Adjust the lens to the desired position by manually moving its body in the following directions.



A. Rotate the lens



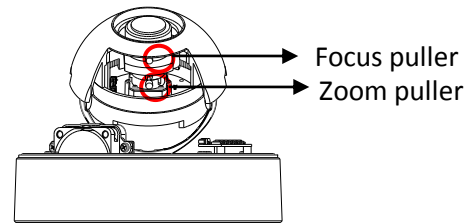
B. Pan the lens bottom holder



C. Tilt the lens

- 3) Connect to the web page of the device to see its real-time image. Refer to *step 6. Configuration* for details about using its web page.

- 4) Unscrew the zoom puller by turning it counterclockwise. Move it left or right and set the lens to the desired zoom position. After the setting, tighten the zoom puller again by turning it clockwise.



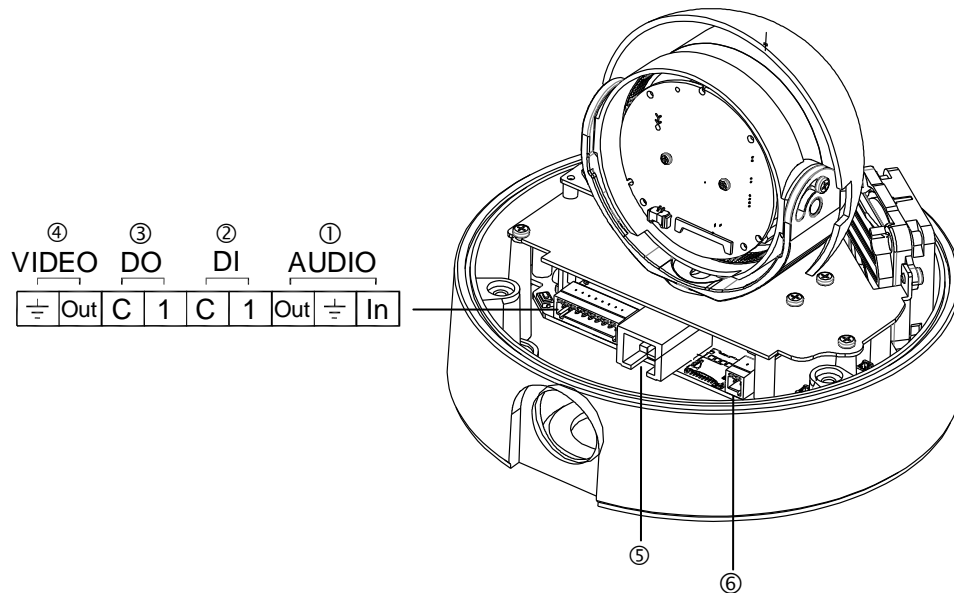
- 5) Unscrew the focus puller by turning it counterclockwise. Move it left or right and adjust the image focus. After the setting, tighten the focus puller again by turning it clockwise.

## 4.3. Setting the Image Attribute

You can set the image attribute of camera through the webpage.

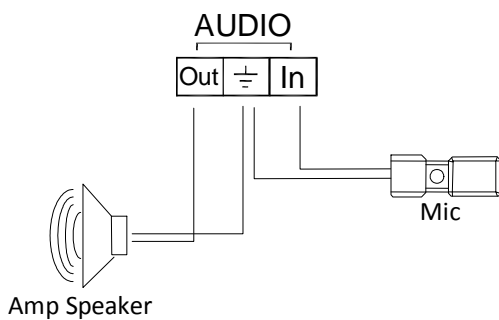
The menu of image attribute can be seen under **Setup > Video & Audio > Camera**. Brightness, contrast, saturation and sharpness can be adjusted.

## 5. CONNECTIONS



### ① Audio input/output

The camera has a mono audio input and a mono audio output. Since the output power for the audio is low, an amplifier speaker is needed for a clearer sound (Do not use a headphone or earphone directly to the camera).



### ② Analog video output connection

Connect a display device (such as a monitor) to the video output connector and check if the camera is installed properly.

### ③ Sensor (DI) connection

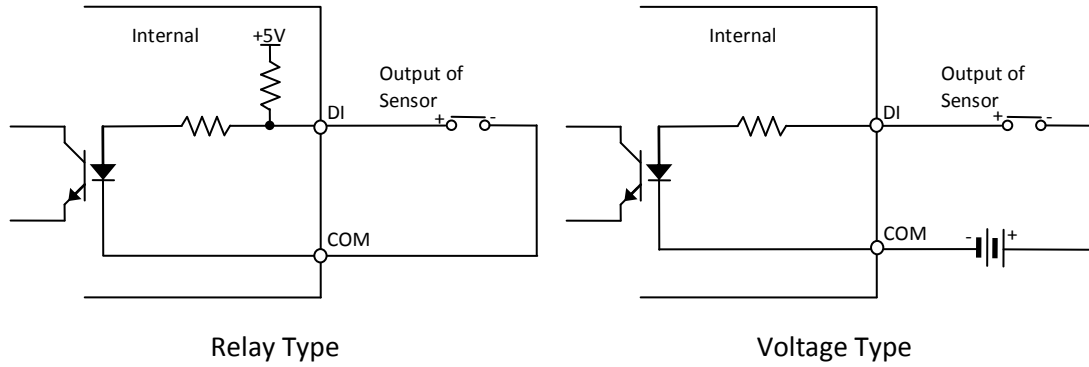
The camera provides 1 channel D/I. It can be connected to either a voltage type sensor or a relay type sensor as the following figures. It can be selected by software.

Input voltage range: 0VDC minimum to 5VDC maximum, Max 50mA

Input voltage threshold: 1.5V

**Caution**

Do not exceed the maximum input voltage or relay rate.



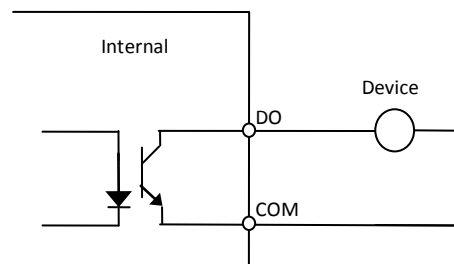
#### ④ Alarm (DO) connection

Only the relay type is supported.

Relay Rating: Max 24VAC 500mA or 12VDC 1A

**Caution**

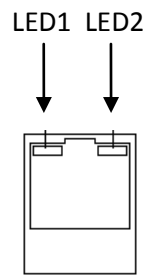
Do not exceed the maximum relay rating.

**Caution**

Must connect GND port which is located between systems.

**⑤ LAN connection**

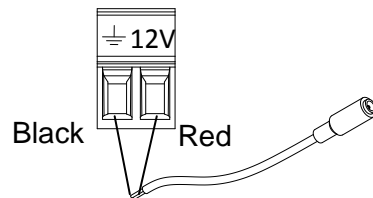
This is a RJ45 LAN connector for 10/100 Base-T Ethernet. Connect a LAN cable.



This LED lights up as orange and turns green when the encoder is powered on.

**⑥ 12V DC Power**

A 12 DC power connector is required for this device.



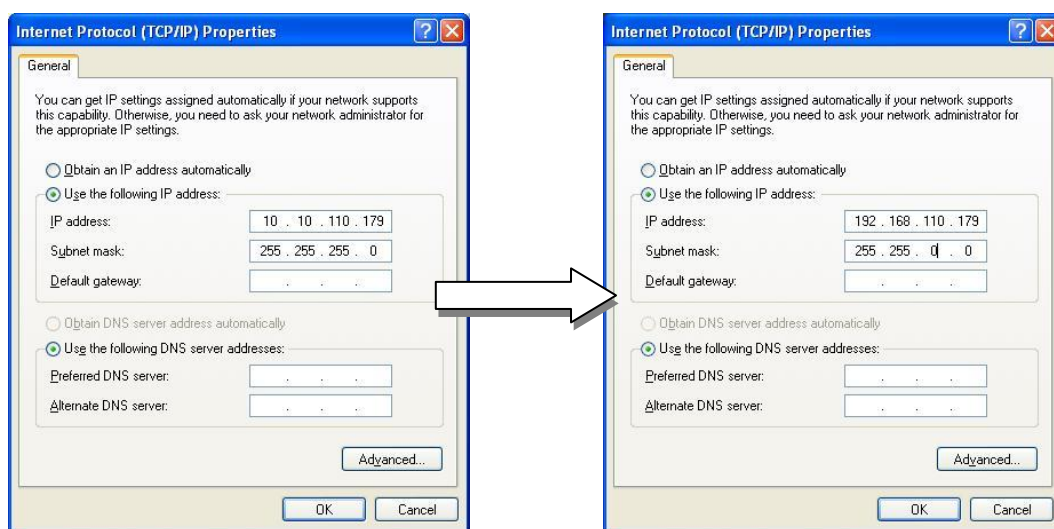
## 6. CONFIGURATION

### 6.1. Set up network environment

The default IP address of your IP device is 192.168.XXX.XXX. You can find the available IP address from the MAC address of your device. Please make sure the device and your PC are on the same network segment before running the installation. If the network segment between your PC and the device is different, change your PC's settings as below.

IP address : **192.168.xxx.xxx**

Subnet mask: **255.255.0.0**



### 6.2. View video on web page

View the live video on a web page using your IP device and its IP address. You can use the IPAdminTool or enter the IP address on the web page.

## 6.2.1. View video using IPAdmin Tool

IPAdminTool automatically searches all activated network encoders and IP cameras and shows the product name, IP address, MAC address and etc. IPAdminTool is provided with SDK at the following SDK path.

{SDK root}\BIN\TOOLS\AdminTool\

To use the IPAdminTool and view the live video on a web page:

1. Start IPAdminTool. Names and info of currently activated devices appear as a list.
2. Right-click on the desired device and select **Web view**.
3. When the dialog box appears to request user name and password, enter the default value for the administrator account (case-sensitive) as below:  
**ID: root**  
**Password: pass**
4. Click the installation warning message on the view page and click the Install button on the warning message box. If the page is not responding after the installation, refresh the page.



5. Install the setup.exe file by clicking the link shown on the main page.



6. Follow the instructions of the dialog boxes and complete the installation.



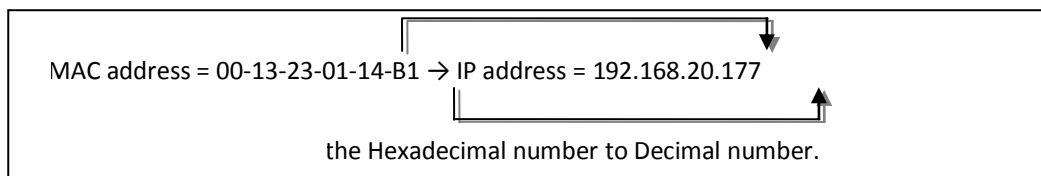
- When the dialog box appears to request user name and password, enter the default value for the administrator account (case-sensitive) as below:  
**ID:** root  
**Password:** pass
- Refresh the page and check if the live image is displayed successfully.

## 6.2.2. View video using IP address

View the live video on a web page using your IP device and its IP address. To have the correct IP address ready and use it on a web page:

- Convert a MAC address to an IP address or check the IP address on the IPAdminTool. Refer to *Appendix (D). Hexadecimal-Decimal Conversion Table*.

(The MAC address is attached on the side or bottom of the device.)



- Open a web browser and enter the IP address of the device.
- Click **Continue to this website** on the Security Certificate Alert page.
- Click **pop-up blocked** and install the ActiveX control as below. You need to install the ActiveX for displaying the images.
- Wait for a few seconds while the web page loads. The live video is displayed.

## 6.3. Reset

- While the device is in use, press the Reset button.
- Wait for the system to reboot.

## 6.4. Factory Default

- Press reset button and hold.
- Release the Reset button after 5 seconds until LED blinks.
- Wait for the system to reboot.

The factory default settings can be inferred as follows:

IP address:	192.168.xx.yy
Network mask:	255.255.0.0
Gateway:	192.168.0.1
User ID:	root
Password:	pass

# APPENDIX (A): SPECIFICATIONS

## Summary

Camera Module		
CMOS	Image Sensor	1/2.7" 1080p CMOS
	Effective Pixels	1920x1080
	Scanning system	Progressive scanning
ELECTRICAL	Resolution	1920 x 1080
	Min. Illumination	Color: 1.0 lux, F1.2 BW: 0.001 lux, F1.2
	AGC Control	Auto
Lens		3.0~9.0mm Vari-Focal F1.2
Day & Night		Removal IR Cut Filter
Video		
Compression Format		H.264, MPEG-4 <sup>1</sup> , MJPEG Selectable per Stream
Number of Streams		Dual Stream, Configurable
Resolution		1920x1080, 1280x720, 800x450, 480x270, 320x180
Compression FPS		25/30fps@1080p
Motion Detection		Built-in
Burnt-in Text (Digital)		Video stream overlay text
Output		Analog video output for installation only
Audio		
Input/output		1/1 channel
Compression Format		G.711
Function		
Digital Input/output		1/1 channel
RS-485		Not supported
Network		10/100 Base-T
Power over Ethernet		Supported
Protocol		TCP/IP, UDP/IP, HTTP, RTSP, RTP, RTCP, RTP/UDP, RTP/TCP, SNTP, mDNS, UPnP, SMTP, SOCK, IGMP, DHCP, FTP, DDNS, SSL v2/v3, IEEE 802.1X, SSH, SNMP v2/v3
SD Slot		Supported (MicroSD) ※ Micro SD Card is not included

<sup>1</sup> Planned for the next release.



## Electrical Characteristics

Power Source	DC 12V / PoE IEEE802.3af (Class 0)
Power Consumption	1100mA (Heater On)
Video Output	1 Vp-p, 75Ω, Composite
Audio Input	Linein, 1.43Vp-p (Min 1.35Vp-p, max 1.49 Vp-p), 39 KΩ
Audio Output	Lineout, 46mW Power, 16 Ω
D/I	Max 50mA@5VDC, TTL level 4.5V threshold
D/O	Max 500mA@24VAC or 1A@12VDC On-state resistance: 50 Ω (max continuous)

## Environment Condition

Operating Temperature	Operating Range DC12V : -40°C ~ 50°C (-40°F ~ 122°F) PoE : 0 °C ~ 50 °C (32°F ~ 122°F) Cold Start DC12V : -20°C (-4°F) PoE: 0 °C (32°F)
Operating Humidity	Up to 85% RH

## Mechanical Condition

Material	Aluminum Die Casting
Color	White
Dimension	Housing : 115 (∅) x 129(H) mm Dome : 100(∅) mm
Weight (Approx)	1.2kg

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## APPENDIX (B): POWER OVER ETHERNET

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The Power over Ethernet (PoE) is designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af Power-over-Ethernet (PoE) standard. IEEE 802.3af allows for two power options for Category 5 cables.

The PoE module signature and control circuit provides the PoE compatibility signature and power classification required by the Power Sourcing Equipment (PSE) before applying up to 15W power to the port.

The high efficiency AC/DC converter operates over a wide input voltage range and provides a regulated low ripple and low noise output. The AC/DC converter also has built-in overload and short-circuit output protection.

Note: For proper activation of 12V PoE, the Category 5 cable must be shorter than 140m and conform the PoE standard.

### PoE compatibility

#### With non Power Sourcing Equipment (PSE)

When it is connected with non PSE, the power adaptor should be connected.

#### With power adaptor

Connecting both PSE and power adaptor does not do any harm to the product, but power adaptor will be the only power source for the device as it has priority over PSE. In this case, disconnecting power adaptor while it is operating will cause the device to reboot. And PoE will be the power source for the device after the reboot.

### Power classification

The PoE Power Class supported by the IP device is Class 0.

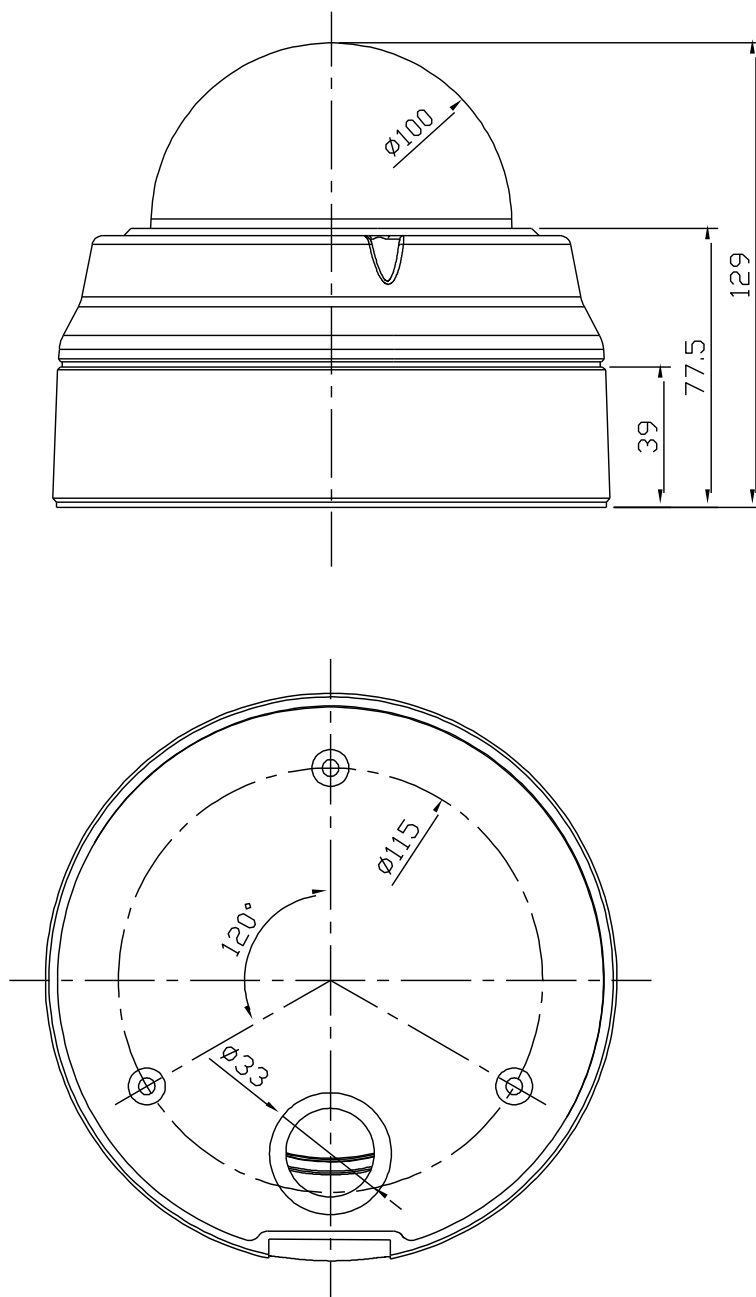
Class	Usage	Minimum Power Levels Output at the PSE	Maximum Power Levels at the Powered Device
0	Default	15.4W	0.44 to 12.95W



#### Note

Unlike the other way, disconnecting PSE or PoE doesn't reboot the device as long as a power adaptor is connected.

## APPENDIX (C): DIMENSIONS



(Unit: mm)

# APPENDIX (D): HEXADECIMAL-DECIMAL CONVERSION TABLE

Refer to the following table when you convert the MAC address of your device to IP address.

Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec
00	0	25	37	4A	74	6F	111	94	148	B9	185	DE	222
01	1	26	38	4B	75	70	112	95	149	BA	186	DF	223
02	2	27	39	4C	76	71	113	96	150	BB	187	E0	224
03	3	28	40	4D	77	72	114	97	151	BC	188	E1	225
04	4	29	41	4E	78	73	115	98	152	BD	189	E2	226
05	5	2A	42	4F	79	74	116	99	153	BE	190	E3	227
06	6	2B	43	50	80	75	117	9A	154	BF	191	E4	228
07	7	2C	44	51	81	76	118	9B	155	C0	192	E5	229
08	8	2D	45	52	82	77	119	9C	156	C1	193	E6	230
09	9	2E	46	53	83	78	120	9D	157	C2	194	E7	231
0A	10	2F	47	54	84	79	121	9E	158	C3	195	E8	232
0B	11	30	48	55	85	7A	122	9F	159	C4	196	E9	233
0C	12	31	49	56	86	7B	123	A0	160	C5	197	EA	234
0D	13	32	50	57	87	7C	124	A1	161	C6	198	EB	235
0E	14	33	51	58	88	7D	125	A2	162	C7	199	EC	236
0F	15	34	52	59	89	7E	126	A3	163	C8	200	ED	237
10	16	35	53	5A	90	7F	127	A4	164	C9	201	EE	238
11	17	36	54	5B	91	80	128	A5	165	CA	202	EF	239
12	18	37	55	5C	92	81	129	A6	166	CB	203	F0	240
13	19	38	56	5D	93	82	130	A7	167	CC	204	F1	241
14	20	39	57	5E	94	83	131	A8	168	CD	205	F2	242
15	21	3A	58	5F	95	84	132	A9	169	CE	206	F3	243
16	22	3B	59	60	96	85	133	AA	170	CF	207	F4	244
17	23	3C	60	61	97	86	134	AB	171	D0	208	F5	245
18	24	3D	61	62	98	87	135	AC	172	D1	209	F6	246
19	25	3E	62	63	99	88	136	AD	173	D2	210	F7	247
1A	26	3F	63	64	100	89	137	AE	174	D3	211	F8	248
1B	27	40	64	65	101	8A	138	AF	175	D4	212	F9	249
1C	28	41	65	66	102	8B	139	B0	176	D5	213	FA	250
1D	29	42	66	67	103	8C	140	B1	177	D6	214	FB	251
1E	30	43	67	68	104	8D	141	B2	178	D7	215	FC	252
1F	31	44	68	69	105	8E	142	B3	179	D8	216	FD	253
20	32	45	69	6A	106	8F	143	B4	180	D9	217	FE	254
21	33	46	70	6B	107	90	144	B5	181	DA	218	FF	255
22	34	47	71	6C	108	91	145	B6	182	DB	219		
23	35	48	72	6D	109	92	146	B7	183	DC	220		
24	36	49	73	6E	110	93	147	B8	184	DD	221		

# REVISION HISTORY

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MAN#	DATE(M/D/Y)	Comments
01A.01	05/02/2012	First release version