



VFDA28V12HDA-xxx

Please read this manual thoroughly before use and keep it handy for future reference.

Before You Begin

Read these instructions before installing or operating this product.

Note: This installation should be made by a qualified service person and should conform to local codes. This manual provides installation and operation information. To use this document, you must have the following minimum qualifications:

- A basic knowledge of CCTV systems and components
- A basic knowledge of electrical wiring, low-voltage electrical connections and IP networking/infrastructure

Intended use

Only use this product for its designated purpose; refer to the product specification and user documentation.

Customer Support

For assistance in installing, operating, maintaining and troubleshooting this product refer to this document and any other documentation provided. If you still have questions, please contact Norbain Technical Support and Sales:

Norbain SD, 210 Wharfedale Road, Winnersh Triangle, Wokingham, Berkshire RG41 5TP, England.

UK +44 (0) 118 912 5000 / Vista Technical Support +44 (0) 118 912 5125

Note: You should be at the equipment and ready with details before calling Technical Support.

Conventions Used in this Manual

Boldface or button icons highlight command entries. The following **WARNING**, **CAUTION** and **Note** statements identify potential hazards that can occur if the equipment is not handled properly:



* **WARNING:**

Improper use of this equipment can cause severe bodily injury or equipment damage.



* **CAUTION:**

Improper use of this equipment can cause equipment damage.

Note: Notes contain important information about a product or procedure.



This apparatus is manufactured to comply with the radio interference.

A Declaration of Conformity in accordance with the following EU standards has been made. The manufacturer declares that the product supplied with this document is compliant the provisions of the EMC Directive 2004/108/EC, the CE Marking Directive 93/68 EEC and all associated amendments.

RoHS
COMPLIANT



All lead-free products offered by the company comply with the requirements of the European law on the Restriction of Hazardous Substances (RoHS) directive: 2011/65/EU, which means our manufacture processes and products are strictly "lead-free" and without the hazardous substances cited in the directive.

The crossed-out wheeled bin mark symbolizes that within the European Union the product must be collected separately at the product end-of-life. This applies to your product and any peripherals marked with this symbol. Do not dispose of these products as unsorted municipal waste.

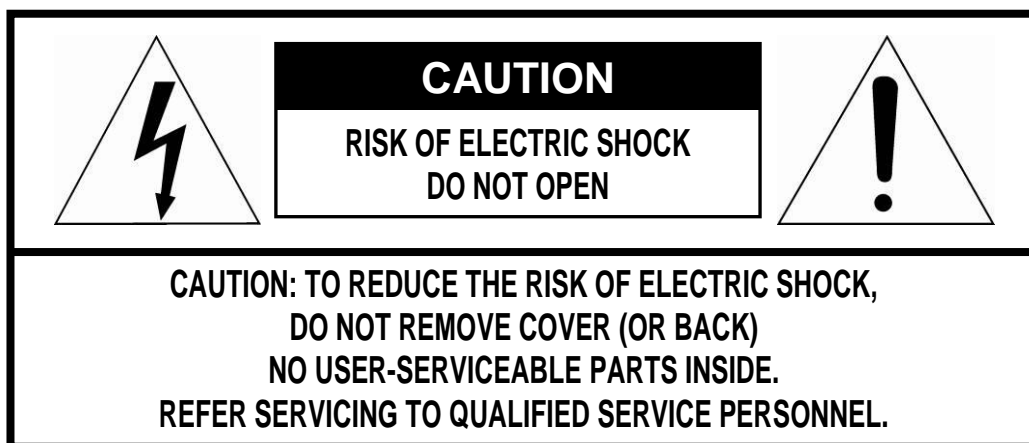
* This symbol indicates electrical warnings and cautions.

** This symbol indicates general warnings and cautions.

NORBAIN SD reserves the right to make changes to the product and specification of the product from time to time without prior notice.

WARNINGS AND CAUTIONS:

To reduce the risk of fire or electric shock, do not insert any metallic objects through the ventilation grills or other openings on the equipment.



IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Clean only with dry cloth.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
9. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
10. Only use attachments/accessories specified by the manufacturer.
11. Unplug this apparatus during lightning storms or when unused for long periods of time.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
13. **CAUTION – THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.**
14. *Use satisfy clause 2.5 of IEC60950-1/UL60950-1 or Certified/Listed Class 2 power source only.*

CE COMPLIANCE STATEMENT

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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1 — Introduction

1.1 Features

- 1/2.9" Sony 2.2MP Exmor CMOS
- 1080p in TVI and AHD, 1000TVL in CVBS
- 2.8-12mm F1.2 2MP manual lens
- 1.0Lux (colour), 0.1Lux (mono)
- True Day/Night operation
- Auto electronic shutter (1/25 to 1/50,000) and manual electronic shutter modes
- Day & Night – Auto, Colour, B&W (Monochrome)
- OSD - On Screen Display (via tact switch on flying lead or coax telemetry)
- DWDR
- AGC (Auto Gain Control)
- DNR (Digital Noise Reduction)
- Auto and manual white balance modes (ATW/AWC/Manual/AWB)
- BLC (Back Light Compensation)
- HSBLIC (Peak White Inversion)
- Flickerless
- Sens-Up
- 4 Privacy zones
- 4 motion detection zones
- Functions (Mirror, Brightness, Sharpness, Flip)
- 12/24V operation
- Use clause 2.5 of IEC60950-1/UL60950-1 or Certified/Listed Class 2 power source only.

2 — Installation and Configuration

2.1 Package Contents

Installation of the camera must be performed by qualified service personnel in accordance with all local and national electrical and mechanical codes.

Carefully remove the camera and its accessories from the carton and verify that they were not damaged in shipment.

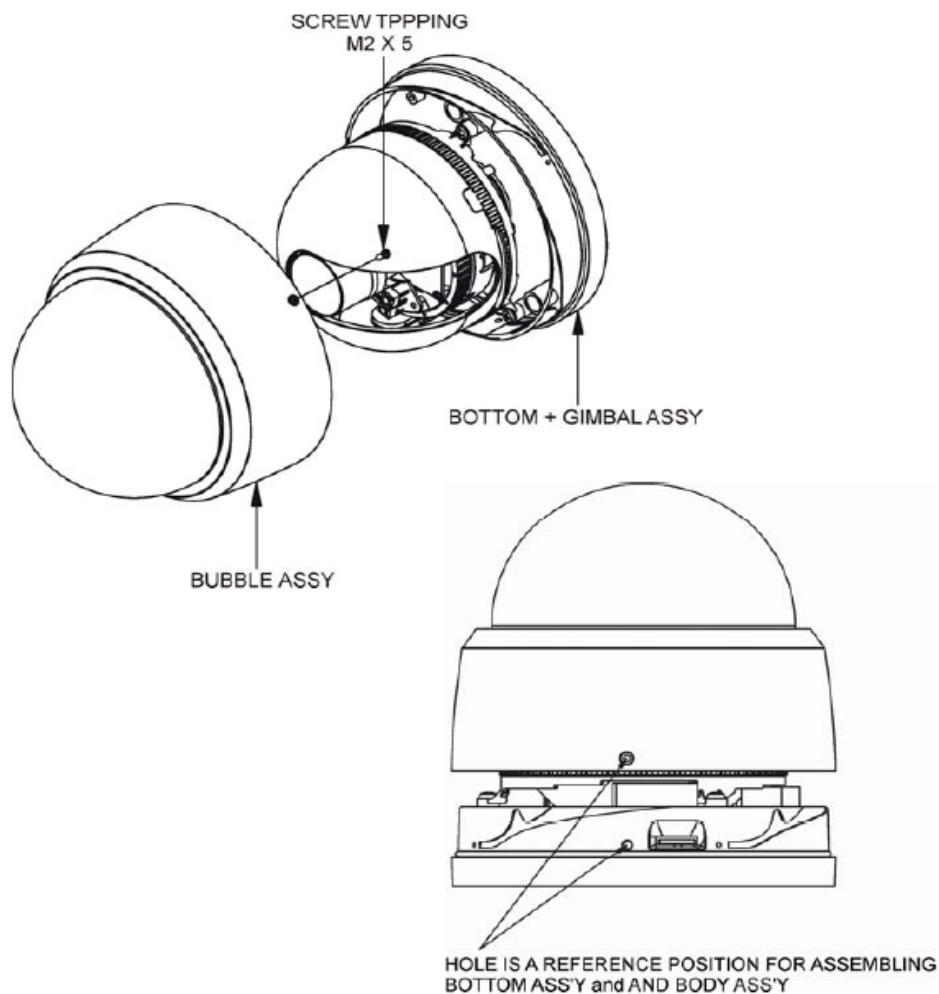
The content of the package includes:

1. Camera
2. Accessory pack
3. Template Sheet
4. This manual

2.2 Camera Overview

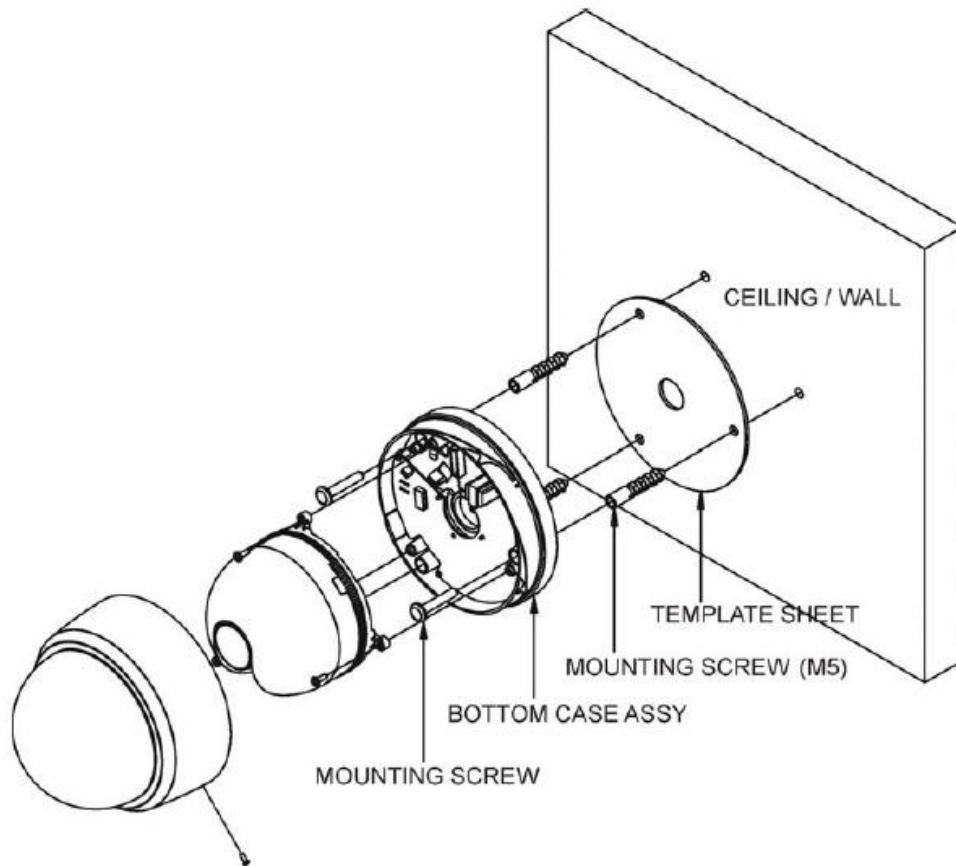
See the line diagram in the relevant section in this manual for dimensions.

- 1) Place the Template in the location you want the camera to be fitted.



To remove dome cover, turn the dome cover counterclockwise until locators reach end of travel and pull off. The liner should then also be able to be lifted / pulled off.

2) Make mounting holes and cable hole in the required location.

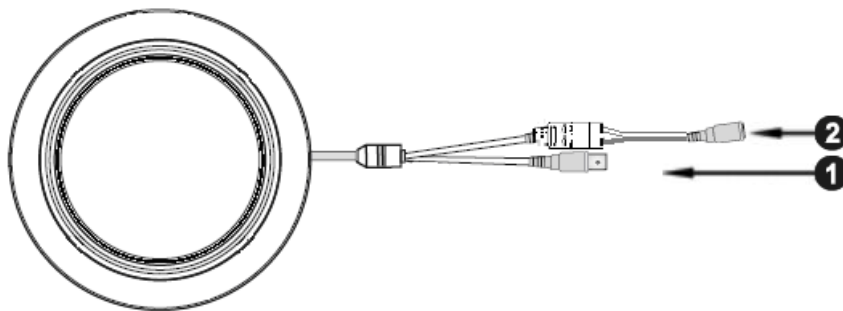


Fasten Mounting screws (2X) and align the dome camera with it like above picture. Turn the dome camera to left direction about 16 degree. The screws in the accessory kit should be sufficient, however, if not then please use fixings suitable for the application.

The assembly of the dome bubble and liner is in reverse order of disassembly Finally, lock dome window cover with locking screw from the accessory kit.

2.3 Connections / Tact Switch Operation & Lens Control

All are on the flying lead of the camera. As default, the camera is set to output TVI in HD mode



1. Video Out (BNC)
2. 12VDC/24VAC power connection. If the 2.1mm jack adaptor is not used, then please ensure the correct polarity is observed (12VDC is polarity dependant).

On the inside of the VFDA28V12HDA, underneath the liner, there is a tact switch for local OSD and a Video Out mode switch which selects between HD & CVBS on the BNC output.



Video Out mode switch (HD / CVBS)

Select between the video output mode from the BNC between HD (TVI/AHD) and CVBS (1000TVL)

Switching the HD output between TVI & AHD

With the Video Out mode switch in the HD position, TVI is the default output. If you require AHD, then without the OSD being on, push and hold the tact switch Left for c.5 secs, this puts the camera into AHD (the camera needs to be powered). The same process should be applied to put back into TVI mode, by push and holding the tact switch Right for c.5secs.

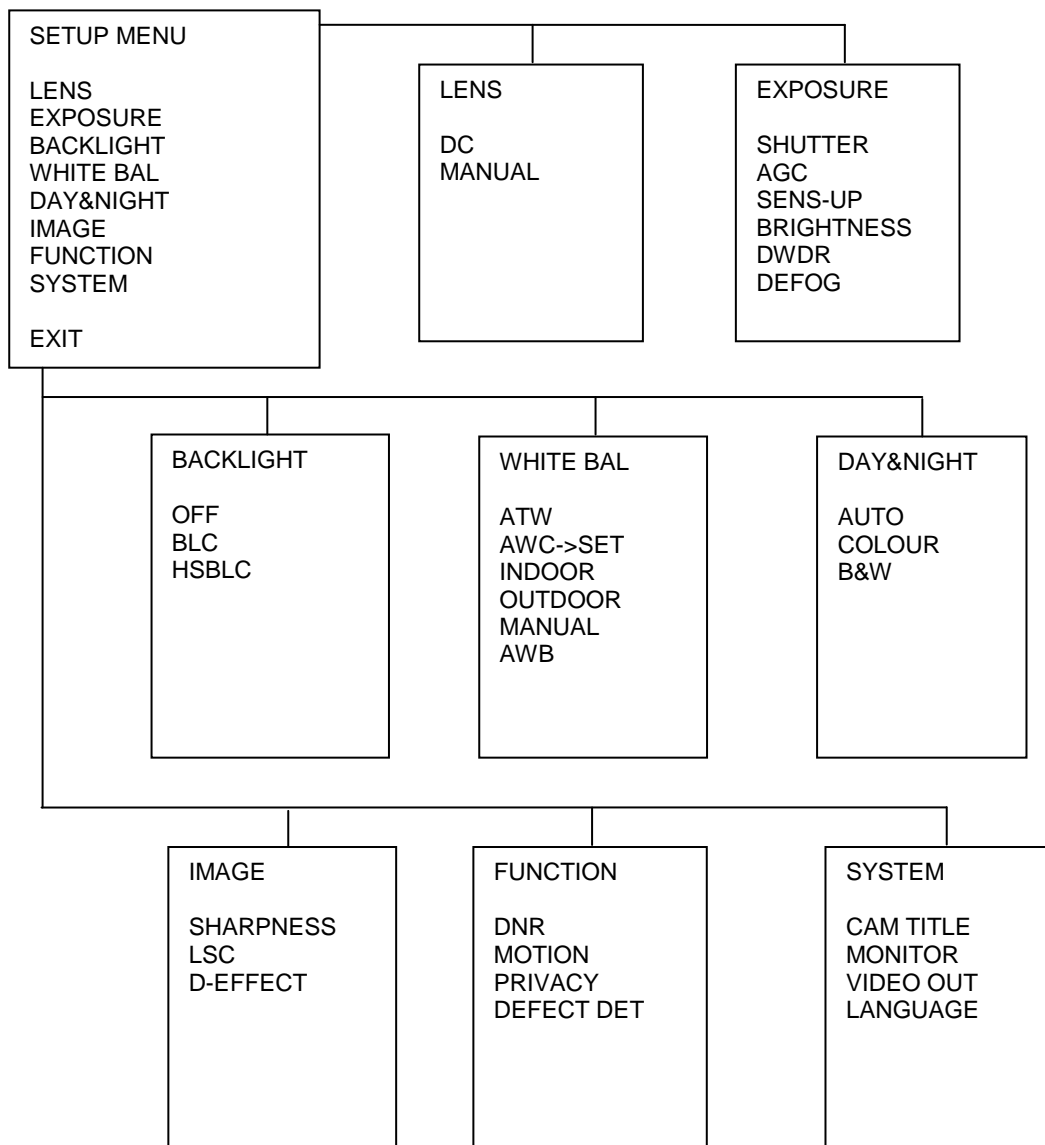
Tact Switch for OSD control

1. Left (push and hold for c.5secs for AHD)
2. Up
3. Enter (to access OSD)
4. Right (push and hold for c.5secs for TVI)
5. Down

NOTES:

- The camera is only able to output one signal at a time.
- If your DVR supports coax telemetry, for TVI select TVI / Hik-C. For AHD select Pelco-C – this will give remote OSD menu access from the DVR (you will need to refer to the DVR manual for the commands).

2.4 OSD Menu Structure



3 — OSD Menu

3.1 Lens

DC / Manual

DC:

Mode: Indoor / Outdoor

Outdoor:

Min Shutter: 1/25

Max Shutter: 1/50, FLK, 1/200, 1/400, 1/1000, 1/2000, 1/5000, 1/10000, 1/50000

Iris Speed: 1 to 15

Manual: Opens up Shutter in Exposure menu

3.2 Exposure

SHUTTER (Only if lens in Manual mode): Auto, 1/50, FLK, 1/200, 1/400, 1/1000, 1/2000, 1/5000, 1/10000, 1/50000, x2, x4, x6, x8, x10, x15, x20, x25, x30

AGC: 1 to 15

SENS-UP: Off / Auto

Auto:

Sens-up: x2, x4, x6, x8, x10, x15, x20, x25, x30

BRIGHTNESS: 0 to 100

DWDR: Off / On

Level: 0 to 8

DEFOG: Off / Auto

Auto:

Pos/Size: Use up, down, left, right buttons to adjust both position and size of area

Gradation: 0 to 2 Sens-up: x2, x4, x6, x8, x10, x15, x20, x25, x30

Default: Defaults Defog area

3.3 Backlight

OFF / BLC / HSBLC

BLC:

Level: Low, Middle, High

Area: Use up, down, left, right buttons to adjust both position and size of area

Default: Defaults BLC area

HSBLC:

Select: Area1, Area2, Area3, Area4

Display: Off / On

On: Use up, down, left, right buttons to adjust both position and size of area

Black Mask: Off / On

Level: 0 to 100

Mode: Night / All Day

Night:

AGC Level: 0 to 255

Default: Defaults HSBLC settings

3.4 White Balance

AWB, ATW, AWC->SET, Indoor, Outdoor, Manual

AWC->SET: Push enter button to set the colour balance

MANUAL:

Blue: 0 to 100

Red: 0 to 100

3.5 Day&Night

AUTO, COLOUR, B/W,

AUTO:

D>N (AGC): 1 to 240

D>N (Delay): 0 to 60

N>D (AGC): 1 to 240

N>D (Delay): 0 to 60

COLOUR: Permanent colour mode

B/W:

Burst: Off / On

IR Smart: Off / On

Level: 0 to 15

Area: Use up, down, left, right buttons to adjust both position and size of area

3.6 Image

SHARPNESS: Off / Auto

Level: 0 to 10

Start AGC: 0 to 255

End AGC: 0 to 255

LSC: Off / On

D-EFFECT:

Freeze: Off / On

Mirror: Off / On

Neg.Image: Off / On

3.7 Function

DNR:

2DNR: Off, Low, Middle, High
3DNR: Off, Low, Middle, High
End AGC: 0 to 255

MOTION: Off / On

Select: Area1, Area2, Area3, Area4
Display: Off / On

On: Use up, down, left, right buttons to adjust both position and size of area

Sensitivity: 0 to 100
Colour: Green, Blue, White, Red
Transparency: 0.00, 0.25, 0.75, 1.00

Alarm:

View Type: Off, Block, Outline, All
OSD View: Off / On
Time: 0 to 15
Default: Defaults Motion settings

PRIVACY: Off / On

Select: Area1, Area2, Area3, Area4
Display: Off / Mosaic / Inversion / Colour:

On: Use up, down, left, right buttons to adjust both position and size of area

Colour: User, White, Black, Red, Blue, Yellow, Green, Cyan
Transparency: 0.25, 0.50, 0.75, 1.00

Alarm:

View Type: Off, Block, Outline, All
OSD View: Off / On
Time: 0 to 15
Default: Defaults privacy settings

DEFECT DET:

Live DPC: On / Off

AGC Level: 0 to 255
Level: 0 to 255

White DPC: On / Off

Pos/Size: Use up, down, left, right buttons to adjust both position and size of area
Start: Cover the lens then push enter button
DPC View: Off / On
Level: 0 to 60
AGC: 0 to 14
Sens-up: x2, x4, x6, x8, x10, x15, 20, x25, x30

Black DPC: Off / On

Pos/Size: Use up, down, left, right buttons to adjust both position and size of area
Start: Cover the lens then push enter button
DPC View: Off / On
Level: 0 to 100

3.8 System

CAM TITLE: 15 alpha-numeric characters

MONITOR:

LCD:

Black Level: 0 to 60

Gamma: User, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00

Blue Gain: 0 to 100

Red Gain: 0 to 100

CRT:

Black Level: 0 to 60

Blue Gain: 0 to 100

Red Gain: 0 to 100

VIDEO OUT: PAL / NTSC

LANGUAGE: ENG, CHN1, CHN2, GER, FRA, ITA, SPA, POL, RUS, POR, NED, TUR, KOR, JPN,
HEB, ARB

3.9 Exit

RESET: Full factory reset

SAVE & END: Save and exit OSD menu

NOT SAVE: Exit the OSD without saving settings

Chapter 4 — Specifications

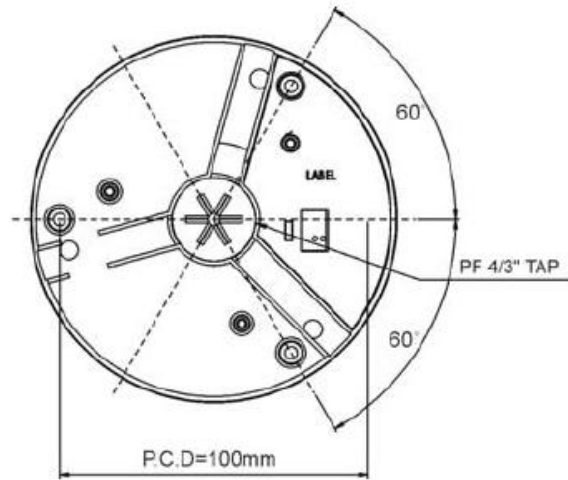
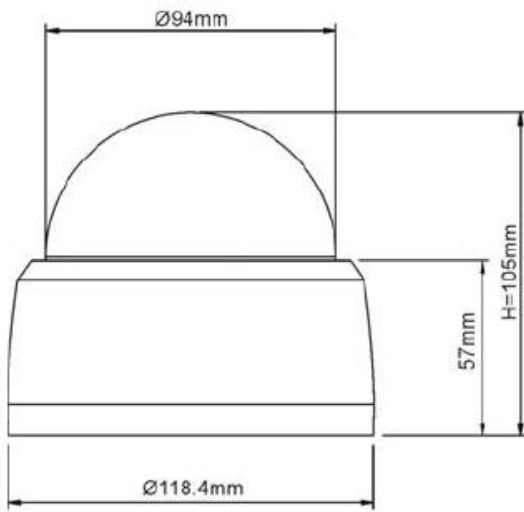
4.1 Technical Specification

Model		VFDA28V12HDA-xxx
General	Resolution	1080p (TVI/AHD) / 1000TVL (CVBS)
	Image sensor	1/2.9" Sony CMOS
	Operation	True Day Night
	Effective pixels	1920 (H) x 1080 (V)
	Scanning Freq.	PAL: 15.625KHz(H) x 50Hz(V)
	Sync. system	Internal
	Video output	1.0Vp-p (75Ω, composite)
	S/N Ratio	More than 50dB (AGC off)
	Video frame rate	1080p 25/30ips (PAL/NTSC)
	Lens	2.8-12mm F1.2-360 2MP (manual Vari-Focal)
	Min. illumination	1.0Lux (colour), 0.1Lux (mono)
	OSD Control	Tact switch (internally on PCB) or via compatible DVR
	Electronic Shutter	Auto or Manual (1/50, FLK to 1/50,000 sec)
	DWDR	Off, On (0-8)
	BLC	1 x adjustable area
	HSBLC (PWI)	4 areas
	Day & Night	Auto, Colour, B&W
	White Bal.	AWB, ATW, AWC, Indoor, Outdoor, Manual
	Motion Det.	4 areas
	Privacy	4 areas
	AGC	Off, On
	2DNR/3DNR	Low, Middle, High
	Mirror	Off, On
	Brightness	0 - 100
	Sharpness	0 - 10
	DPC	Live, White, Black
	Title	Off, On (15 characters)
	Language	EN, GER, FRA, ITA, SPA, POL, RUS, POR, NED, TUR, KOR, JPN, HEB, ARB
Connections/other	Power	12VDC (-10 to +15%) / 24VAC (+/-10%)
	Consumption	2.3W, 190mA @ 12VDC 2.2W, 90mA @ 24VAC
	Power input	2-pin terminal block with 2.1mm jack adaptor
	Video outputs	1 x BNC connector (HD & CVBS)
	Temperatures	-10 to 50°C (operating) / -20 to 50°C (storage)
	Environmental	IP30 & IK00
	Humidity	0 to 90% (non-condensing)
	Dims. (net)	Φ118.4 x 105 mm(H)
	Dims. (gross)	150 (H) x 175 (W) x 175 (D) mm
	Weight	350g (net) / 600g (gross)
	Approvals	CE & RoHS2: 2011/65/EU

* Specifications are subject to change without notice *

4.2 Line Drawing / Dimensions

All dimensions are in mm



5 — Warranty

This camera is subject to the warranty conditions valid at the time of purchase.



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(Subject to change without notice)

Version 1.0