

VVRD28V12MHDAW
VVRD28V12MHDAIRW

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.

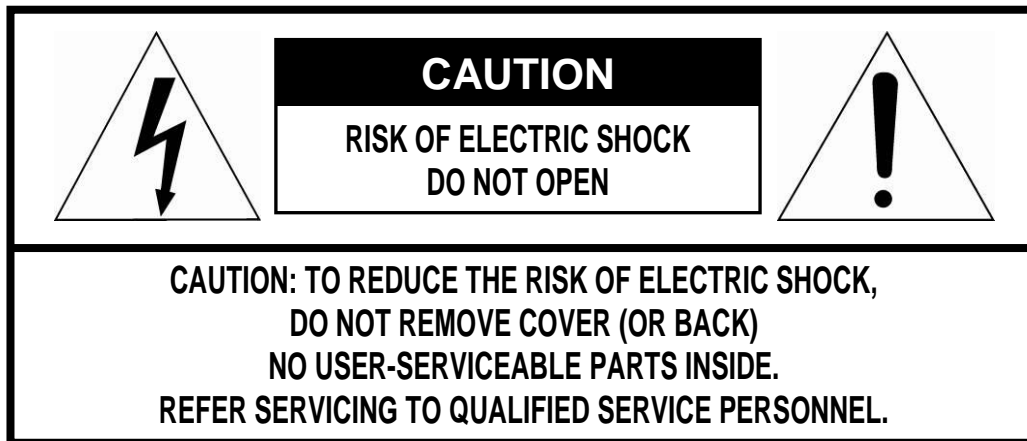
* This symbol indicates electrical warnings and cautions.

** 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 F1.4 3MP motorized lens (controlled via tact switch or coax telemetry)
- 1.0Lux (colour), 0.1Lux (mono). IR model is 0Lux – IR on
- True Day/Night operation
- 28, 850nm IR LEDs
- 30m IR illumination
- Smart IR
- 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)
- HSBLC (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.

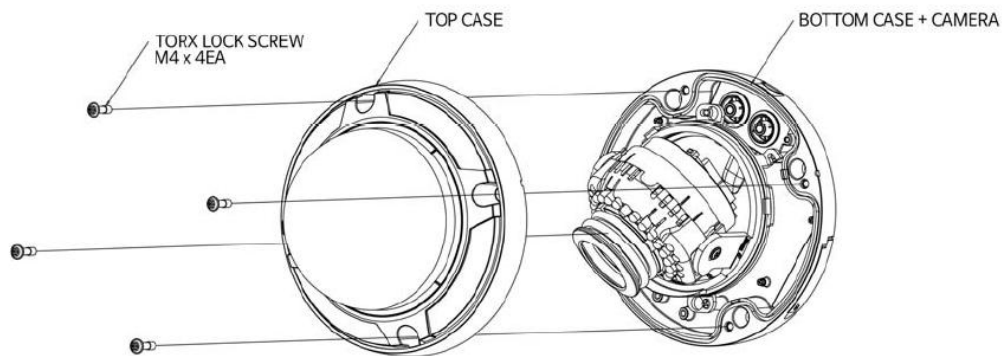
The content of the package includes:

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

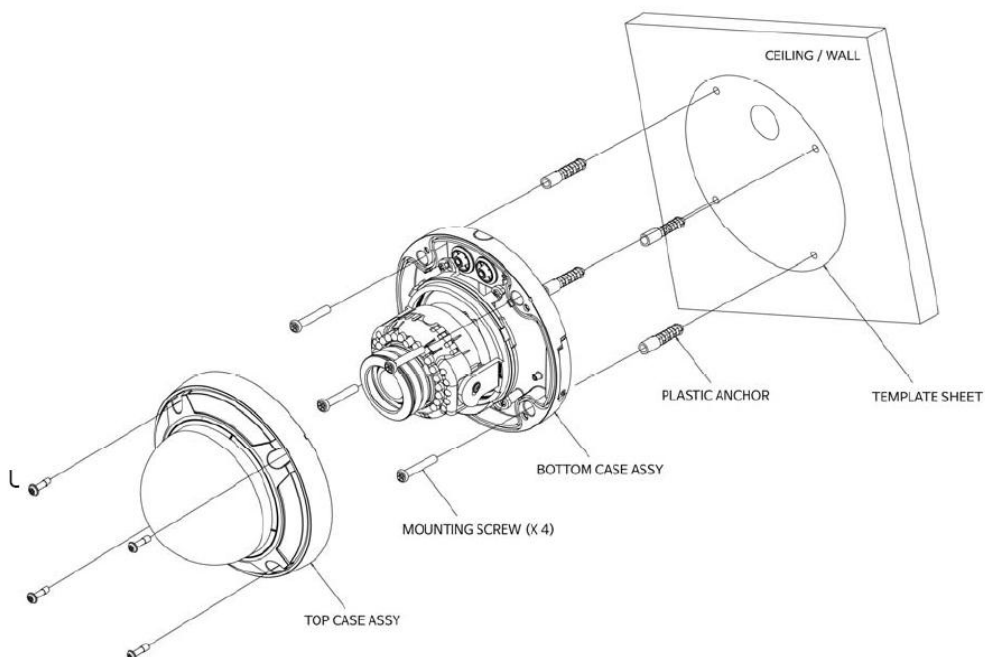
2.2 Camera Overview

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

- 1) Loosen the four torx screws located the front of the housing leaving the screws intact in the bubble (top case).

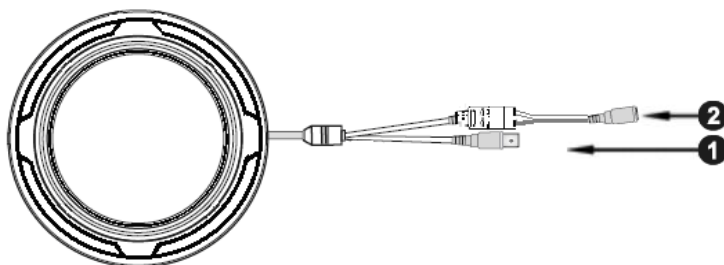


- 2) Place the Template in the location you want the camera to be fitted and make the mounting holes and cable hole in the required location.



2.3 Connections / Tact Switch Operation & Lens Control

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



1. Video Out (BNC)
2. 12VDC/24VAC power connection (12VDC is polarity dependant)

On the inside of the VVRD28V12MHDA(IR)W, there is a removable top case, which provides access to the tact switch for the OSD and a Video Out mode switch (HD / CVBS).



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 Left Button 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, but using the Right Button.

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

Tact Switch for motorized lens control.

Without being in the OSD:

Up – Zoom in

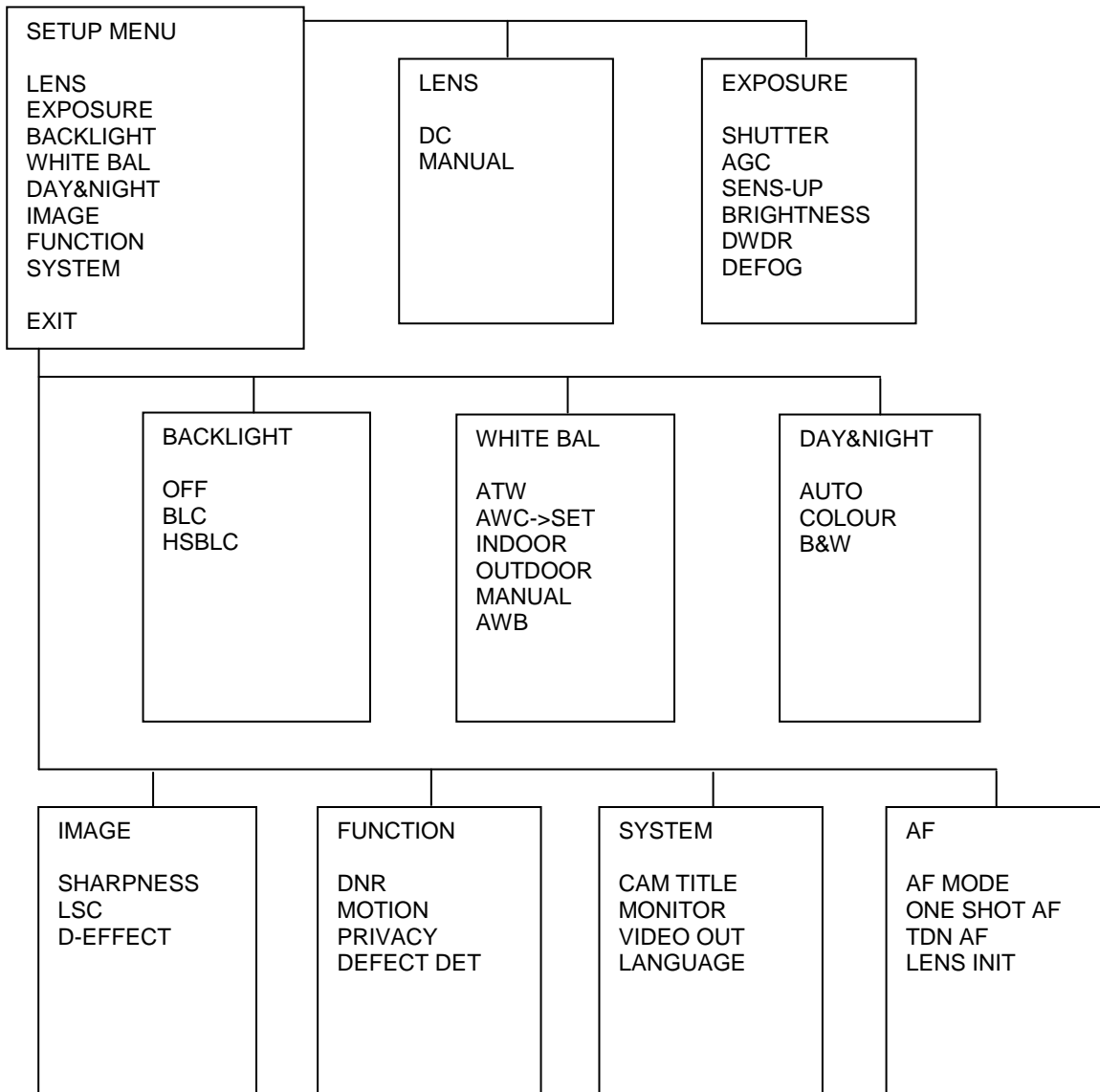
Down – Zoom out

The lens will then autofocus the lens based on the overall scene being viewed.

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 Fastrax-C – this will give 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

Manual:

Speed: 1/25, 1/50, 1/100, 1/250, 1/700, 1/1000, 1/1600, 1/2500, 1/5000, 1/7000, 1/10000
1/30000

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 AF

AF MODE: Semi, Auto, Manual.

SEMI: Waits until the zoom function has finished before focusing

AUTO: Tracks closely with the zoom

MANUAL: Once the camera is zoomed in using Semi or Auto, the Up / Down buttons allow manual focusing

ONE SHOT AF: Will focus the camera

TDN AF: Off / On

On: Will refocus when switching between colour/B&W and B&W/colour modes

LENS INIT: Reinitializes the lens

3.10 Exit

RESET: Full factory reset

SAVE & END: Save and exit OSD menu

NOT SAVE: Exit the OSD without saving settings

Chapter 4 — Specifications

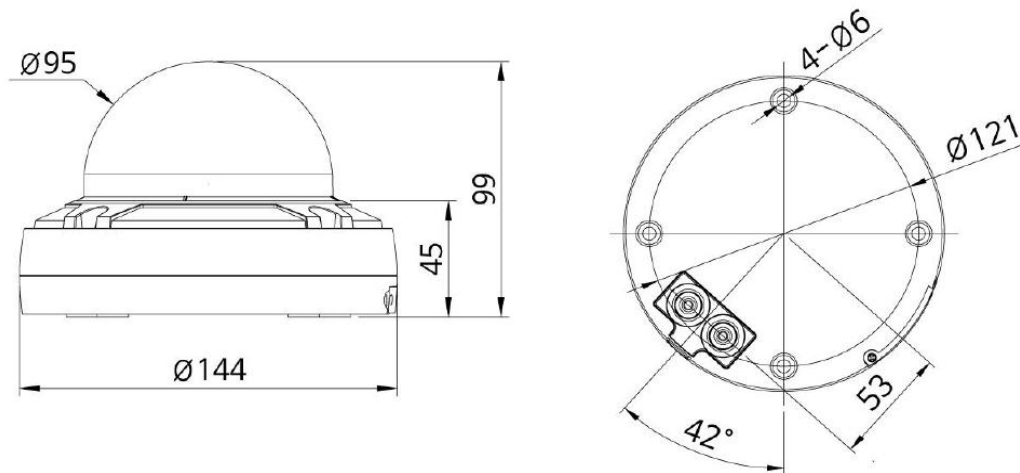
4.1 Technical Specification

Model	VVRD28V12MHD AW	VVRD28V12MHD AIRW	
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	
	Lens	2.8-12mm F1.4-360 2MP (motorised)	
	IR	n/a	28no 850nm LEDs / 30m illumination
	Min. illumination	1.0Lux (colour), 0.1Lux (mono)	1.0Lux (colour), 0Lux (mono – IR on)
	OSD Control	Tact switch (internally on PCB) or 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		
Auto Focus	Mode, One shot AF, TDN AF		
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	3.9W, 320mA @ 12VDC (IR on) 3.9W, 160mA @ 24VAC (IR on)
	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	IP66 & IK10 (BS EN 62262)	
	Humidity	0 to 90% (non-condensing)	
	Dims. (net)	144 Φ x 99 mm (H)	
	Dims. (gross)	150 (H) x 175 (W) x 145 (D) mm	
	Weight	750g (net) / 1000g (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. The exception to this and not by warranty is:

The lens must only be moved via coax telemetry or tact switch only, any attempt to move the lens manually or by force will damage the motors.

The zoom functionality is for set-up, periodic changes and day / night shift only - it is not designed for continuous use.



Vista
210 Wharfedale Road
Winnersh Triangle
Wokingham
Berkshire.
RG41 5TP

(Subject to change without notice)

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