M144-EW38U-001

HIGH PERFORMANCE SQUARE CAMERA

OPERATION MANUAL

Thank you for choosing our high quality camera. Before attempting to connect or operate, please read and follow these instructions.

CAUTIONS

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicate that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

This product should not be mixed with other commercial wastes purchased this product, or their local government office, for details of where and how they can take item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.
Household users should contact either the retailer where they for disposal.

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER(OR BACK). NO USER. SERVICING TO QUALIFED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient mangnitude 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) instruction in the literature accompanying the appliance.

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.

Use Class 2 Power Supply Only.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions;

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note -
This equipment has been tested and found to comply with the 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 his own expense."

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.

Caution -
Any changes or modifications in construction of this devices which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

⚠ CAUTION ⚠

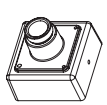
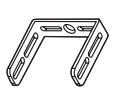
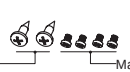
1. A regulated DC12V 300mA power supply is recommended for use with this camera for the best picture and the most stable operation. An unregulated power supply can cause damage to the camera. When unregulated power supply is applied, product warranty will be out of subject.
2. It is recommended that the camera is used with a monitor that has a CCTV quality 75 video impedance level. If your monitor is switched to high impedance then please adjust accordingly.
3. Do not attempt to disassemble the camera to gain access to the internal components. Refer servicing to your dealer.
4. Never face the camera towards the sun or any bright or reflective light, which may cause smear on the picture and possible damage to the CCD.
5. Do not remove the serial sticker for the warranty service.

IMPORTANT SAFETY INSTRUCTION

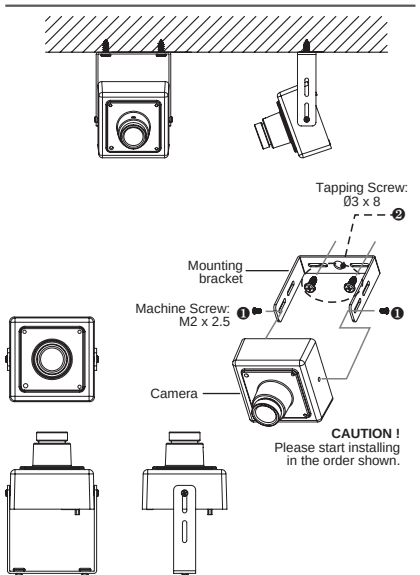
1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers,stoves, or other apparatus (including amplifiers) that produce heat.
9) 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 are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) 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.

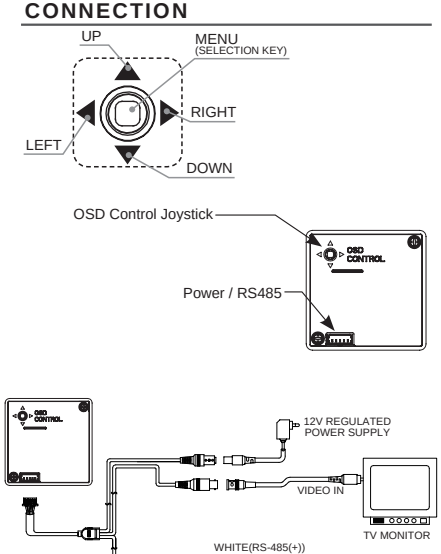
COMPONENTS

Square Camera	
Mounting Bracket	
Screw	 Tapping Ø3 x 8 (2ea) — Machine M2 x 2.5(4ea)
Operation Manual	
Cable	

MOUNTING POSITION



CONNECTION



DIY CABLE CONNECTION

OSD MENU STRUCTURE

MAIN MENU	1st Sub MENU	2nd Sub MENU	3rd Sub MENU	4th Sub MENU	5th Sub MENU
EXPOSURE	AUTO	HIGH LUMINANCE	FLICKERLESS	OFF / ON	
			BRIGHTNESS	000 ~ 255	
		LOW LUMINANCE	MODE	AGC, SLOW, AGC→SLOW, SLOW→AGC, OFF	
			AGC MAX	6, 12, 18, 24, 30, 36	
			DSS MAX	2, 4, 8, 16, 32, 64, 128, 256	
			BRIGHTNESS	x0.25, x0.5, x0.75, x1.0	
		RETURN			
	MANUAL	MODE	SHUT, SLOW		
		SHUT	SHUT MODE ONLY 1/50(PAL), 1/60(NTSC), 1/100(NTSC), 1/120(PAL), 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 SLOW MODE ONLY 2, 4, 8, 16, 32, 64, 128, 256		
		AGC	6, 12, 18, 24, 30, 36, 42, 44.8		
		RETURN			
WHITE BAL	PUSH				
	ATW	SPEED	000 ~ 255		
		DELAY CNT	000 ~ 255		
		ATW FRAME	x0.5, x1.0, x1.5, x2.0		
		ENVIRONMENT	INDOOR,OUTDOOR		
		RETURN			
	USER1	B-GAIN	000 ~ 255		
		R-GAIN	000 ~ 255		
		RETURN			
	USER2	B-GAIN	000 ~ 255		
		R-GAIN	000 ~ 255		
		RETURN			
	ANTI CR				
	MANUAL	LEVEL UP	PUSH ENTER		
		LEVEL DOWN	PUSH ENTER		
		PRESET			
		RETURN			
	PUSH LOCK				
DAY&NIGHT	COLOR				
	AUTO	BURST	OFF, ON		
		DELAY CNT	000 ~ 255		
		DAY -> NIGHT	000 ~ 255		
		NIGHT ->DAY	000 ~ 255		
		RETURN			
	BW	BURST	OFF, ON		
		RETURN			
WDR / BLC	WDR MODE	OFF, ON	LEVEL	000 ~ 015	
			CONTRAST1	000 ~ 007	
			CONTRAST2	000 ~ 004	
			RETURN		
	BLC MODE	OFF, ON	BLC ZONE	CENTER, TOP, BOTTOM, LEFT, RIGHT	
			LEVEL	000 ~ 015	
			RETURN		
	HLC MODE	OFF, ON, AUTO	CLIP LEVEL	000 ~ 255	
			SCALE	000 ~ 015	
			RETURN		
DNR	2DNR MODE	OFF, ON			
	2DNR LEVEL	000 ~ 015			
	3DNR MODE	OFF, ON			
	3DNR LEVEL	000 ~ 063			
	RETURN				
IMAGE	HV-FLIP	OFF, ON			
	FREEZE	OFF, ON			
	EZOOM	1.0x, 1.5x, 2.0x, 2.5x, 3.0x			
	CONTRAST	000 ~ 063			
	SHARPNESS	000 ~ 015			
	RETURN				

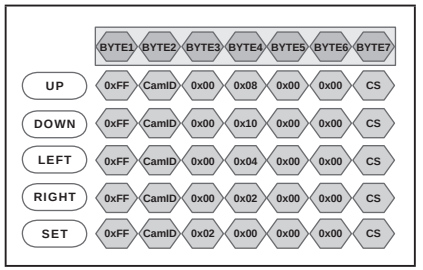
MAIN MENU	1st Sub MENU	2nd Sub MENU	3rd Sub MENU	4th Sub MENU	5th Sub MENU
SPECIAL	CAMERA TITLE	OFF, ON	DISPLAY THE TITLE EDITING MENU		
			RETURN		
	LANGUAGE	ENGLISH / Русский / ESPAÑOL / DEUTSCH / FRANCAIS / PORTUGUÊS / 日本語			
	COMM ADJUST	CAM ID	001 ~ 255		
		BAUDRATE	2400 / 4800 / 9600 / 19200 / 38400 bps		
		ID DISPLAY	OFF, ON		
		APPLY & RETURN			
	PRIVACY	AREA SEL	1/15 ~ 15/15		
		MODE	OFF, ON		
		POSITION	NEXT:PUSH ENTER		
		COLOR	WHITE, BLACK, RED, GREEN, BLUE, YELLOW, CYAN, MAGENTA		
		TRANSP ARENCY	0.00, 0.50, 0.75, 1.00		
		MOSAIC	OFF, ON		
		RETURN			
	MOTION DET	OFF, ON	DETECT SENCE	000 ~ 127	
			BLOCK DISP	OFF, ON	
			DETECT AREA	EXIT: HOLD ENTER	
			MONITOR AREA	AREA SEL	1/4 ~ 4/4
				MODE	OFF, ON
				TOP	000 ~ 015
				BOTTOM	000 ~ 015
				LEFT	000 ~ 023
				RIGHT	000 ~ 023
				RETURN	
FACTORY DEFAULT					
EXIT					
SAVE&EXIT					

SPECIFICATION

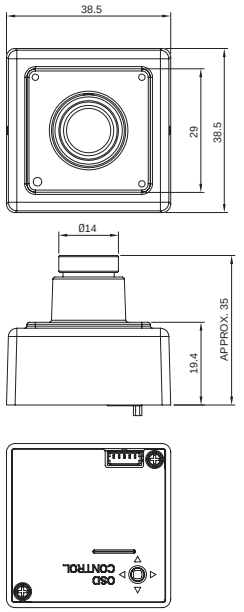
Signal Format	NTSC	PAL
Image Device	1/3" 960H SONY Double Scan Super HAD CCD II	
Scanning System	2 : 1 Interlace	
Scanning Frequency	H:15.734KHz, V:59.94Hz	H:15.625KHz, V:50Hz
Total Pixels	1028(H) X 508(V)	1028(H) X 596(V)
Effective Pixels	976(H) X 494(V)	976(H) X 582(V)
H.Resolution	750TV Lines	
Electronic Shutter	1/60 ~ 1/100,000sec	1/50 ~ 1/100,000sec
S/N Ratio	More than 50dB (AGC OFF, 3DNR ON)	
Min.Illumination	Color:0.1Lux (30IRE@F2.0, AGC 36dB) 0.000001Lux (DSS x256)	
Gamma	γ=0.45	
Video Output	1.0 Vp-p Composite(75Ω)	
Sync System	Internal	
Lens	Board Lens	
Digital Zoom Ratio	3x	
Digital Slow Shutter	OFF, 2 ~ 256 Field	
Flickerless	ON / OFF	
WDR	ON / OFF (Level adjustable)	
BLC	ON / OFF (Level adjustment, Area selection)	
HLC	ON / AUTO / OFF (Level adjustable)	
AGC	OFF, 6 ~ 36dB	
DNR(2D/3D)	ON / OFF (Level adjustable)	
Image Function	Image reverse (Normal / Flip), Freeze, Contrast, Sharpness	
Day & Night	COLOR / BW / AUTO (DIGITAL D/N)	
Motion Detection	4 Zones (Level adjustable, Area adjustment)	
Privacy Masking	15 Zones (Area adjustment)	
White Balance	ATW / PUSH / USER1 / USER2 / ANTI CR / MANUAL / PUSH-LOCK	
OSD	Built in (Joystick)	
RS-485	Protocol (Pelco-D)	
Operating Temperature	14°F ~ 122°F (-10°C ~ +50°C)	
Storage Temperature	-4°F ~ 140°F (-20°C ~ +60°C)	
Humidity	Less than 80%	
Power Consumption	DC 12V (±10%) Max 140mA	
Weight	Approx. 131g	
Dimension(mm)	38 (W) x 38 (H)	

Specifications and designs are subject to change for improving the functionality of this product without notice.

Pelco "D" Protocol Commands



* Sync Byte : FFh(BYTE1)
* Address : Camera ID (001~255) (01h ~ FFh)
* Check sum : It is 8 bit(module 256) sum of the payload bytes(BYTE2~BYTE6)
  BYTE7 = BYTE2+…+BYTE6
ex) if BYTE2+…+BYTE6 = 1FCh, then BYTE7 = FCh

DIMENSIONS

Unit(mm)