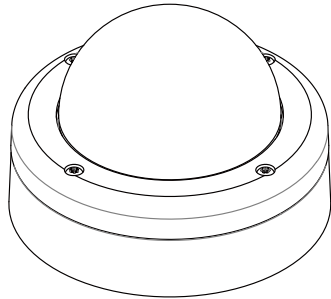




High Resolution Outdoor Dome Camera User Guide



V531-DC034-204
VER. 05/2016

Regulatory Compliance

- Emissions: - CE-EN55022
- EN55011
- FCC-47 CFR Part 15 Subpart B
- ANSI C63.4
- ICES-003
- Immunity: - CE-EN55024
- EN50130-4



FCC COMPLIANCE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from the receiver circuit.
- Consult the dealer or an experienced Radio/TV technician for help.

CISPR 22 WARNING:
This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

POWER SUPPLY REQUIREMENTS:
For use with listed Audio/Video product and only connected to 15W or less power supply.
*Power supply should be a NEC Class 2 / LPS Supply.

EQUIPMENT MODIFICATION CAUTION:
Equipment changes or modifications not expressly approved by seller.
The party responsible for FCC compliance could void the user's authority to operate the equipment and could create a hazardous condition.

This class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

About this Sheet

Thank you for purchasing this product. Before operating this unit, please read this sheet carefully. For detailed descriptions about the unit's specification, please refer to the following content.

Product illustration only for installation or adjustment reference, please take the product as standard.

Product specifications subject to change without notice. Certain product names mentioned herein may be trade names and/or registered trademarks of other companies.

Hardware Kit Contents

- Rubber sealing o-rings x 4
- Torx key bit x 1
- Wall plugs x 4
- T3 1/4" screws x 4
- Rubber caps x 4
- 1/2" cable entry grommet (3/4" Grommet fitted to enclosure) x 1
- 3/4" threaded sealing plug (1/2" sealing plug fitted to enclosure) x 1
- O-ring (fitted on 3/4" threaded sealing plug) x 1
- Power lead x 1
- External OSD board x 1

Camera Specification

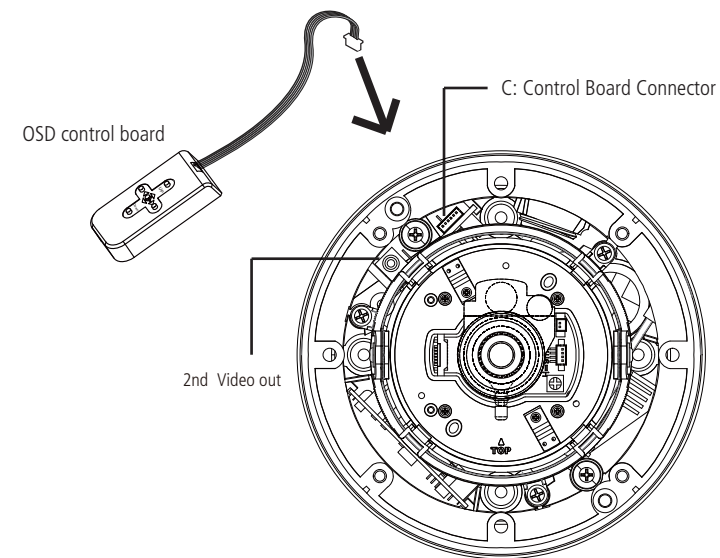
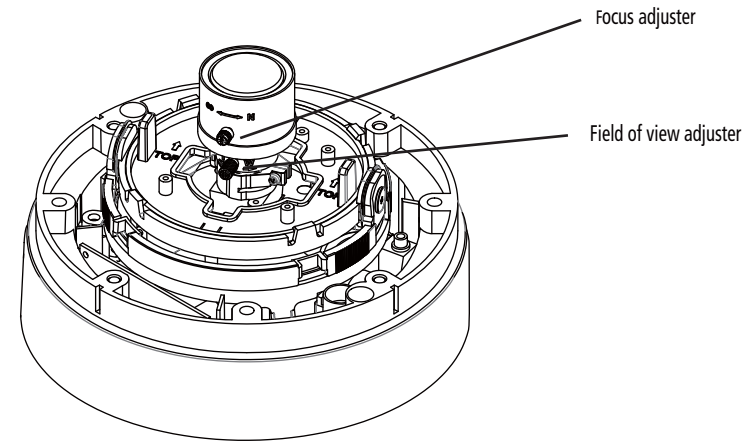
General Specifications		
TV System	NTSC	PAL
Image Sensor	Sony 1/3" Super HAD-II Wide Dynamic	
Effective Picture	976(H) x 494(V)	976(H) x 582(V)
Scanning Frequency	60Hz	50Hz
Resolution	700 TVL	
Minimum Illumination	0.3Lux(F1.2,50IRE, AGC ON)	
S/N Ratio	50dB (100 IRE, F1.2)	
Video Output	Composite (75 Ω BNC unbalanced connector)	
2nd Video Output	Yes (supports installation check)	
Power Source	12 VDC ±10% / 24 VAC ±20%	
Power Consumption	Normal:2.2W	
Operating Temperature	-10°C ~ +50°C	
Storage Temperature	-20°C ~ +60°C	
Dimensions	φ 136mm x 94.2mm (H)	

Functional Specifications		
Sense Up		ON / OFF
Shutter Speed	AES	NTSC: 1/60 ~ 1/100000 PAL: 1/50 ~ 1/100000
	MES	1/50 (1/60), 1/120 (1/100), 1/250, 1/500, 1/1K, 1/2K, 1/4K, 1/10K
Wide Dynamic Range (WDR)		WDR/OFF/ATR-EX
High-Light Compensation (HLC)		ON/OFF
Backlight Compensation (BLC)		Full Range
AGC Gain Control		44.8 dB
Day/Night		SDN(AUTO, COLOR, NIGHT)
White Balance Control		ATW / Manual / Push / Push Lock / USER1,2
Auto White Balance Range		Indoor: 1800K~10500K Outdoor: 6500K~10500K
Mirror		OFF/N-FLIP/H-FLIP/HV-FLIP
Defog		ON/OFF
Sync System		INT / LL
Motion Detection		4 Areas
Privacy Zone		Up to 15 Masks
Digital Noise Reduction		3D DNR
Digital Zoom		255X Max
DIS		ON/OFF

Lens Specifications

Lens Specifications			
Focal Length	2.5 ~ 6 mm	2.8 ~ 10 mm	9 ~ 22 mm
F-No.	F1.6	F1.2	F1.4
Iris Range	F1.6 ~ F360C	F1.2 ~ F360	F1.4 ~ F360C
Minimum Object Distance	0.5 m	0.15 m	1 m
Field of View	Diagonal	145.5° ~ 59.1°	125.0° ~ 36.0°
	Horizontal	111.6° ~ 47.3°	94.6° ~ 28.8°
	Vertical	82.2° ~ 35.5°	68.4° ~ 21.6°
		41.9° ~ 16.3°	32.1° ~ 13.1°
		23.3° ~ 9.8°	

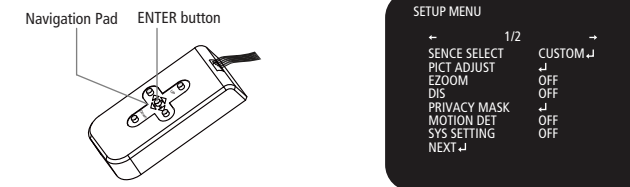
Camera Overview



Camera Adjustments and Programming

In addition to the levers for Focus and Field of View, all settings are made by keys on the OSD control board.

- Press the **ENTER** button, and the **OSD Menu** will be displayed.
- Use the **Navigation Pad** to select the desired menu option.
- Pressing the **ENTER** button (on any item with the **↵** symbol) will open the sub-menu or confirm the configuration.



- Use the **Navigation Pad** to move the cursor to **EXIT**; then press the **ENTER** button to write the new settings to memory and complete the configuration.
- To move to next page of the OSD menu, select **↵** and press **ENTER**. Similarly, to move to the previous page of the OSD menu (or to move one hierarchy level up), select **⏪** or **RETURN** and press **ENTER**.
- To quit or give up the configuration, select **EXIT** and press **ENTER** to the sub menu to select **NOT SAVE**.
- To reset the camera to the factory setting, select **CAMERA RESET** and press **ENTER** (if **CAMERA RESET** is not visible on the OSD menu, please select **NEXT/BACK** and press **ENTER** until **CAMERA RESET** appears).

Camera OSD Menu

```

PAGE1
SCENE SELECT  FULL AUTO  SHUTTER / AGC  AUTO  AE LEVEL  001 ~ 250
              INDOOR    AGC MAX  6.0DB ~ 44.8DB
              OUTDOOR  SENS UP  AUTO / OFF
              BACKLIGHT  SHUTTER  256FLD ~ 1/10000
              ITS      FIX      AGC MAX  6.0DB ~ 44.8DB
              CUSTOM  SHUTTER  256FLD ~ 1/10000
              AGC MAX  6.0DB ~ 44.8DB
              SPEED  000 ~ 255
              DELAY CNT  001 ~ 255
              ATW(*1)  ATW FRAME  001 ~ 255
              ENVIRONMENT  INDOOR / SUNNY / SHADE / AUTO
              PUSH  RGAIN  000 ~ 255
              USER1  BGAIN  000 ~ 255
              USER2  RGAIN  000 ~ 255
              BGAIN  000 ~ 255
              MANUAL  LEVEL  00 ~ 63
              PUSH LOCK
              OFF
              HLC/BLC  HLC  CLIP LEVEL  000 ~ 255
              BLC(*2)
              OFF
              ATR-EX  CONTRAST  LOW / MID / HIGH(*4)
              CLEAR FACE  LOW / MID / HIGH / OFF
              WDR  CONTRAST  LOW / MID / HIGH
              CLEAR FACE  OFF / LOW / MID / HIGH
              DNR  LEVEL  0 ~ 6
              DAY/NIGHT  DAY  BURST  ON/OFF
              NIGHT  BURST  ON/OFF
              AUTO  CNTL SIGNAL  INT/EXT1/EXT2
              DELAY CNT  DAY->NIGHT
              NIGHT->DAY
              IR OPTIMIZER  OFF
              ON  MODE  AUTO
              CENTER
              IR AREA  TOP  0 ~ 6
              BOTTOM  0 ~ 6
              LEFT  0 ~ 8
              RIGHT  0 ~ 8
              WEIGHT  00 ~ 15
              LEVEL  0-12
              IR LED  OFF
              FIX  LEVEL  000 ~ 255
              DAY/NIGHT  LEVEL MIN  001 ~ 255
              LEVEL MAX  001 ~ 255
              COLOR NIGHT  OFF
              ON  COLOR GAIN  LOW / MID / HIGH
              IR SHADE COMP  OFF
              ON  PATTERN  SET1 / SET2 / SET3
              POSH  000 ~ 959
              POSV  000 ~ 490
              LEVEL  OFF / LOW / MID / HIGH
              LENS SHD COMP  OFF
              ON  PATTERN  SET1 / SET2 / SET3
              POSH  000 ~ 959
              POSV  000 ~ 490
              DEFOG(*5)  OFF
              ON  LEVEL  LOW / MID / HIGH
              FLK LESS  OFF
              AUTO  MODE  GAIN CNTL
              SHUTTER FIX
              ON  MODE  GAIN CNTL
              SHUTTER FIX
              ANTI CR  AUTO/OFF/ON
              BRIGHTNESS
              CONTRAST
              SHARPNESS
              HUE
              COLOR GAIN
              DIS  ON/OFF
              EZOOM  OFF
              ON  MAG/PAN/TILT
              AREA SEL  1-15
              DISPLAY  OFF / ON
              POSITION
              COLOR  WHITE / BLACK / RED / GREEN / BLUE /
              YELLOW / CYAN / MAGENTA
              TRANSP  0.00 / 0.50 / 0.75 / 1.00
              MOSAIC  OFF / ON
              MOTION DET  OFF
              ON  DETECT SENSE
              INTERVAL
              BLOCK DISP
              MASK AREA
              MOTION AREA  AREA SEL  1-4
              MODE
              TOP
              BOTTOM
              LEFT
              RIGHT
              SYS SETTING  SYNC MODE  INT/LL(*6)
              LENS  MANUAL
              AUTO  TYPE
              MODE
              ADJUST
              SPEED
              FLIP  OFF/N/H/V/H
              LCD/CRT
              COMMUNICATION  PROTOCOL
              ADDRESS
              BALDRATE
              DATABIT
              PARITY
              STOPBIT
              CAMERA ID  OFF
              ON  POS
              EXIT
              PAGE2
              LANGUAGE  ENGLISH/中文/ESPAÑOL/PORTUGUES/RYCCKN/FRANCAIS/DEUTSCH/日本語
              VERSION
              MAINTENANCE  W.PIX MASK  MANUAL  REGISTRATION
              CAMERA RESET  REG.POINT
              CURSOR COLOR
              BLINK
              REG.NUMBER
              EXIT  SAVE
              NOT SAVE
              CANCEL
              BACK
              AUTO  RUN
              DATA CLEAR
  
```

Note
 *1 This can not be changed from ATW except CUSTOM mode.
 *2 BLC can be selected on CUSTOM mode.
 *3 This can not be changed except CUSTOM mode.
 *4 This is MID on FULL AUTO, OUTDOOR and ITS mode,
 LOW on INDOOR mode, HIGH on BACKLIGHT mode.
 *5 This can not be changed except CUSTOM mode.
 *6 The default SYNC Mode is set as INT.
 The SYNC Mode can be selected as LL on OSD menu but the
 actual mode is INT when the power is DC12V.
 This item has subsequent adjustment screens

Installation

Precautions

- Do not attempt to dismantle the camera module mounted within the dome. There are no user serviceable parts within the camera module. Refer servicing to qualified personnel.
- Handle the camera with care. Do not abuse the camera. Avoid striking or shaking it. Improper handling and storage could damage the camera.
- Do not operate the camera beyond its temperature, humidity or power source rating. Please refer to the environmental information provided overleaf.

Emissions

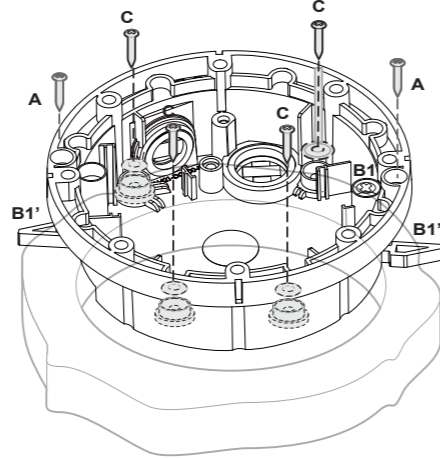
- FCC COMPLIANCE:** This equipment complies with Part 15 of the FCC rules for intentional radiators and Class B digital devices when installed and used in accordance with the instruction manual. Following these rules provides reasonable protection against harmful interference from equipment operated in a commercial area. This equipment should not be installed in a residential area as it can radiate radio frequency energy that could interfere with radio communications, a situation the user would have to fix at their own expense.

Weather Resistance

- IP66 Rated

1 Prepare the dome for installation

- Remove dome cover by loosening four cover screws using the supplied Torx driver.
- Remove camera assembly (if fitted) to have the dome ready for installation.
- Choose a mounting method from A, B and C to continue to Step 2.

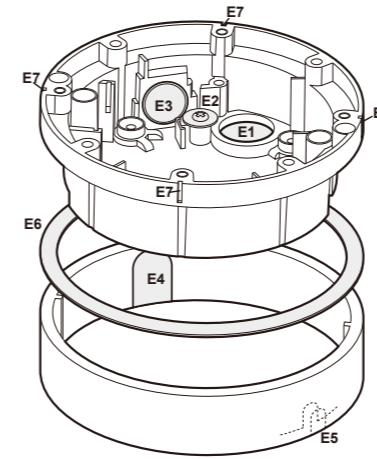


A
Flush mount using screws

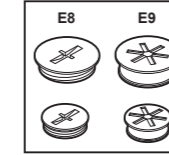
B
Flush mount using locking arms
Turn silver-colored screws clockwise to first extend the locking arms and then tighten them against the mounting surface. Tighten the screws sufficiently to compress the o-ring moisture seals located underneath the screwheads, however: **DO NOT OVERTIGHTEN.**

C
Surface mount using outer ring
Rubber o-rings to maintain moisture seal when fixing externally.

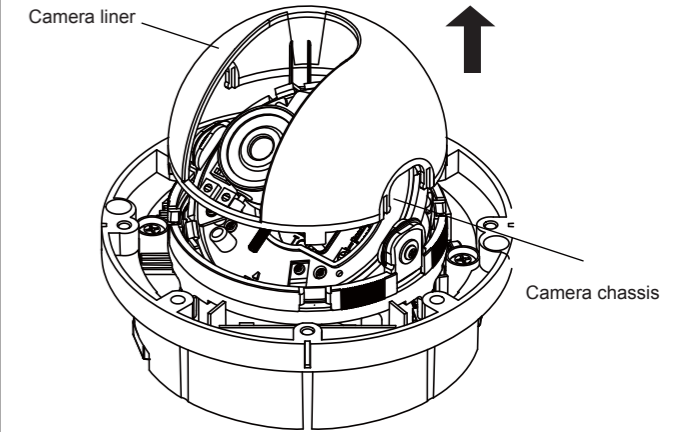
3 Open the required cable entry



- E1: Threaded base cable entry ($\frac{1}{4}$ " sealing plug (E8) and cable entry grommet (E9) supplied)
- E2: Washer and screw cable retainer
- E3: Threaded side entry (with $\frac{1}{2}$ " sealing plug (E8) fitted)
- E4: Outer ring large knock-out for conduit entry
- E5: Outer ring small knock-out for cable-only entry
- E6: Large rubber gasket
- E7: Cover index slots
- E8: Cable entry sealing plugs
- E9: Cable access grommet



6 Remove Camera Liner



2 Use Template to Prepare Mounting Area

Mounting methods

There are three mounting ways:

- A: Flush mount using screws
- B: Flush mount using locking arms
- C: Surface mount using the outer ring

Note: Always use the template provided.

Flush mount

Create an aperture in the mounting surface to a diameter of 4.3" (110mm) as indicated by "T5".

A. Using screws:

Create two holes at template positions "T2" of diameter $\frac{1}{4}$ " (7mm) and insert a wall plug into each. Use 2 x (no. 12 x $\frac{1}{2}$ ") screws.

B. Using locking arms:

Place the enclosure (with the locking arms retracted) into the opening. Use a cross-head screwdriver to rotate the screws B1 (See Step 1) until the locking arms, face of the mounting surface. Tighten the screws sufficiently to compress the o-ring moisture seals located underneath the screwheads, however: **DO NOT OVERTIGHTEN.**

Surface mount

C. Using the outer ring:
Create four holes of diameter $\frac{1}{4}$ " (7mm) at template positions "T1". Use 4 x wall plugs and 4 x (no. 12 x $\frac{1}{2}$ ") screws. When mounting externally, use a rubber o-ring at each mounting hole in the base to ensure moisture resistance.

Cable entry (in all cases)

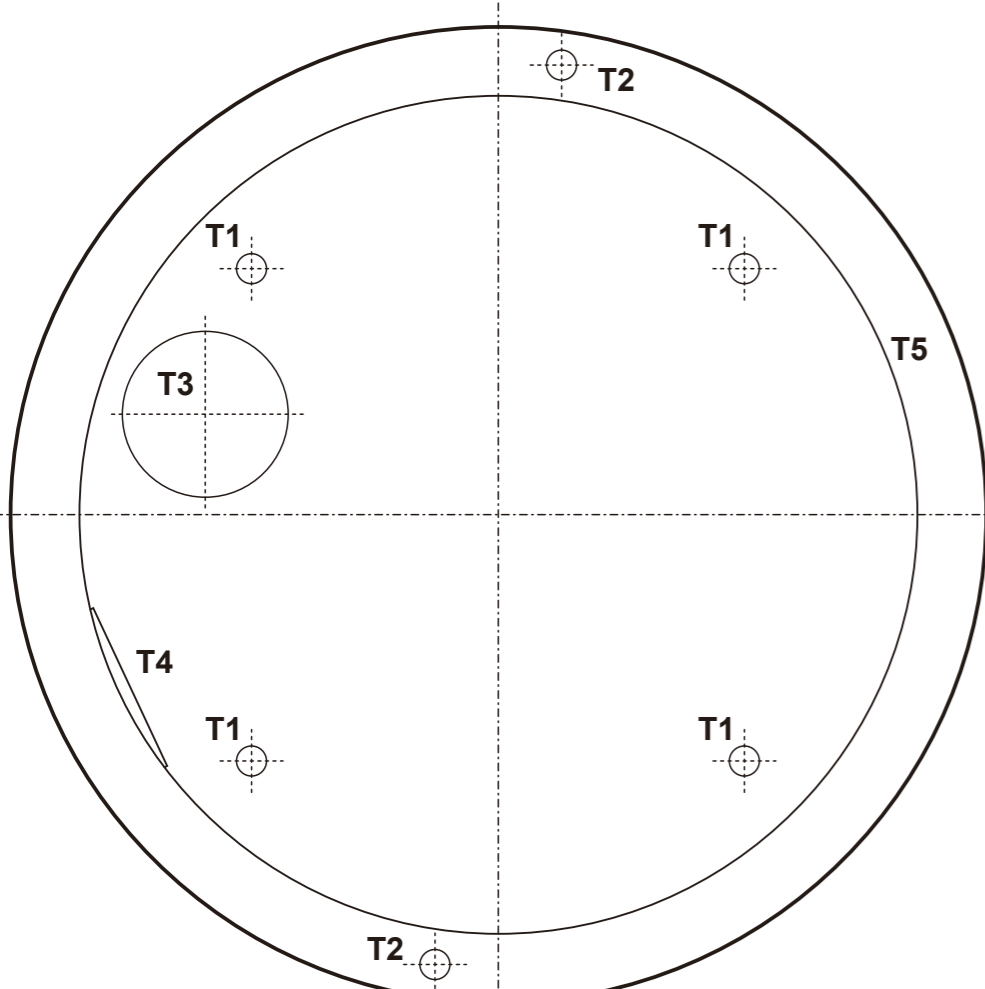
Use either the base cable entry "T3" or the side cable entry "T4" (or E3 and E4 in Step 3). Both cable entries are threaded for use with locking collars (threads are $\frac{1}{4}$ " NPT on the base and $\frac{1}{2}$ " NPT on the side knockout).

When mounting externally

When mounting externally using the four base holes, use the supplied rubber o-rings (See C in Step 1) within the mounting holes to ensure a moisture resistance. Ensure the cable entry through either knockout panels is suitably sealed against moisture ingress. Regardless of whether the locking arms are used for installation or folded away (in favor of another installation method), always ensure the locking arms screws are tight enough to compress the rubber o-rings to maintain the moisture seal.

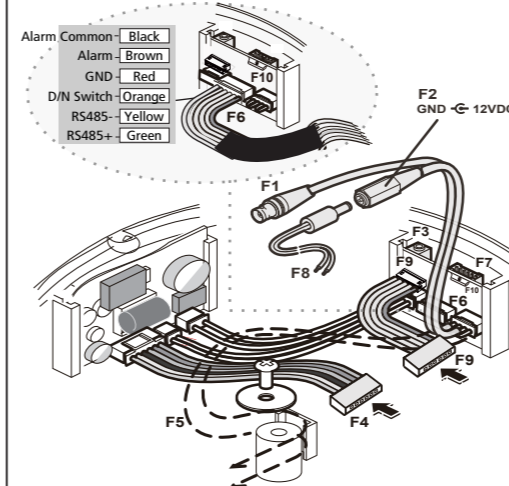
Note

- Using one of the mounting schemes discussed above, fix the dome enclosure (and outer ring, if necessary) in place.
- When flush mounting or surface mounting using the outer ring, ensure that the large rubber gasket (E6) is in place under the lip of the dome enclosure.
- IMPORTANT:** If the dome is being mounted externally using the four base holes, use the supplied rubber o-rings within each of the four mounting holes of the dome base to ensure moisture resistant seals (see C in Step 1).



4 Connect the wiring

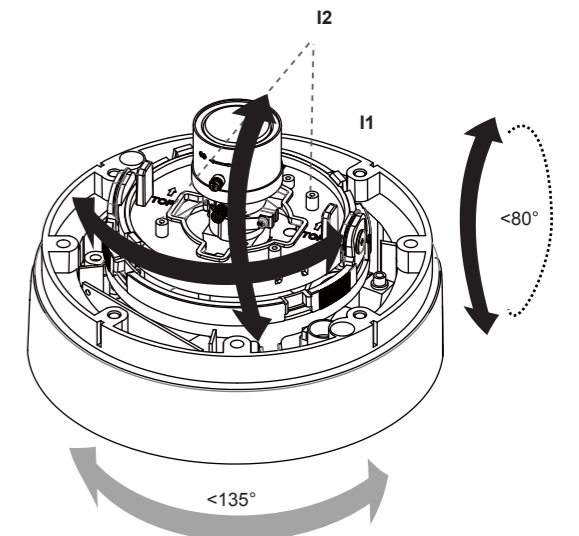
- Connect F1 and F2 to your video-out and power-in cables.
- If needed, use F8 (wire-ended adapter lead) with power supply cables.
 - Note: (1) 12VDC: Connect the red lead to +ve and black lead to -ve.
 - (2) 24VAC: Connect either way; polarity is not important.
- Connect the camera to F4
- To focus the camera, use F3, a service jack for temporary video connection.



NEC Class 2 / Limited Power Source Supply Required

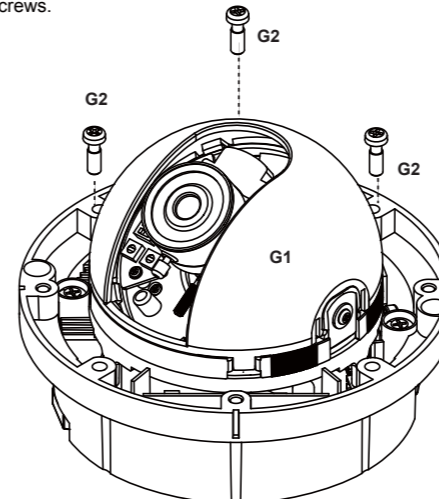
- F1: Video output
- F2: Power 12VDC or 24VAC input
- F3: Service jack socket
- F4: Camera lead fly connector
- F5: Cable trap pillar, washer and screw
- F6: RS485/ Alarm/ D/N Switch
- F7: OSD controller connector
- F8: Wire-ended power adaptor lead
- F9: OSD lead to camera
- F10: RS 485 Terminal Resistor Switch

7 Adjust Camera Position and Test

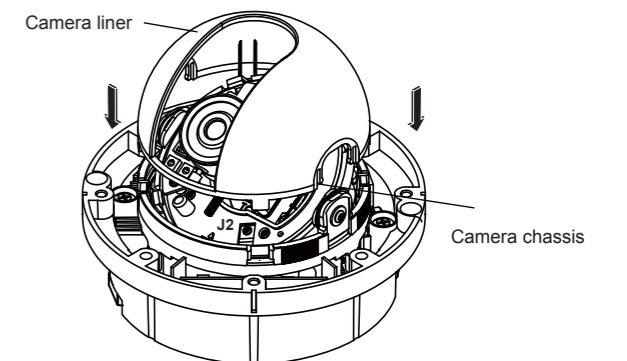


5 Fit Camera Assembly

Place the complete camera assembly (G1) onto the three mounting pillars (G2) and tighten three gimbal screws.



8 Replace Camera Liner



9 Replace Dome Cover

Replace the dome cover (four small internal ribs within the cover locate within four corresponding index slots (E7) within the enclosure body - these restrict the lid to only four possible orientations and ensure that the cover screw holes are correctly aligned). Use the supplied Torx key to tighten the four cover screws. **DO NOT OVERTIGHTEN.**