



# Affiniti Thermal IP Installation/Configuration Manual



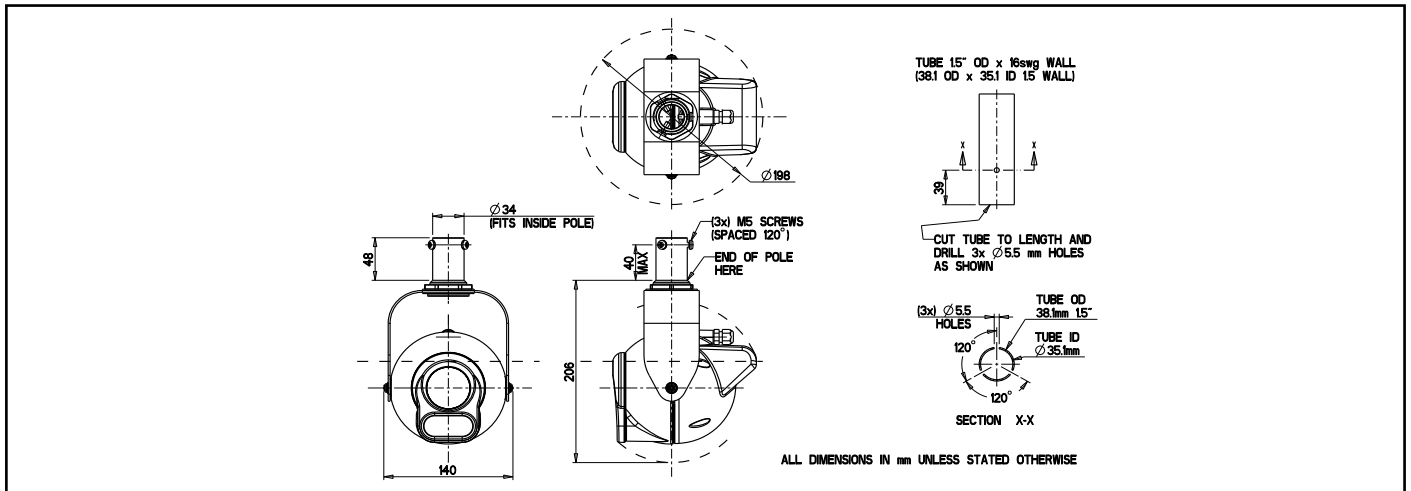
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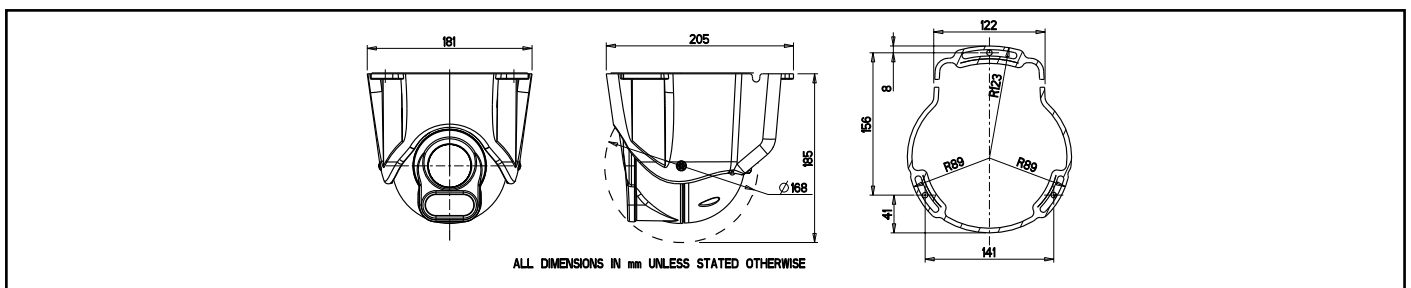
## 1 Safety and Precautions

1. Please read these notes before attempting to operate the 360 Vision Affiniti, and keep for future reference.
2. DO NOT disassemble or remove covers. This will break the water seals and invalidate the warranty.
3. All servicing and repairs must be handled by 360 Vision Technology.
4. Avoid pointing the camera directly towards a bright light source (sunlight), or expose the camera to intensive light situations as this may damage the camera pick-up device.
5. Installation should be carried out by suitably qualified personnel, in accordance with local codes of practice and regulations.
6. 360 Vision Technology Limited accept no liability for any damage caused by incorrect or improper installation.
7. Please handle the Affiniti with care, as improper handling may cause damage within this unit.

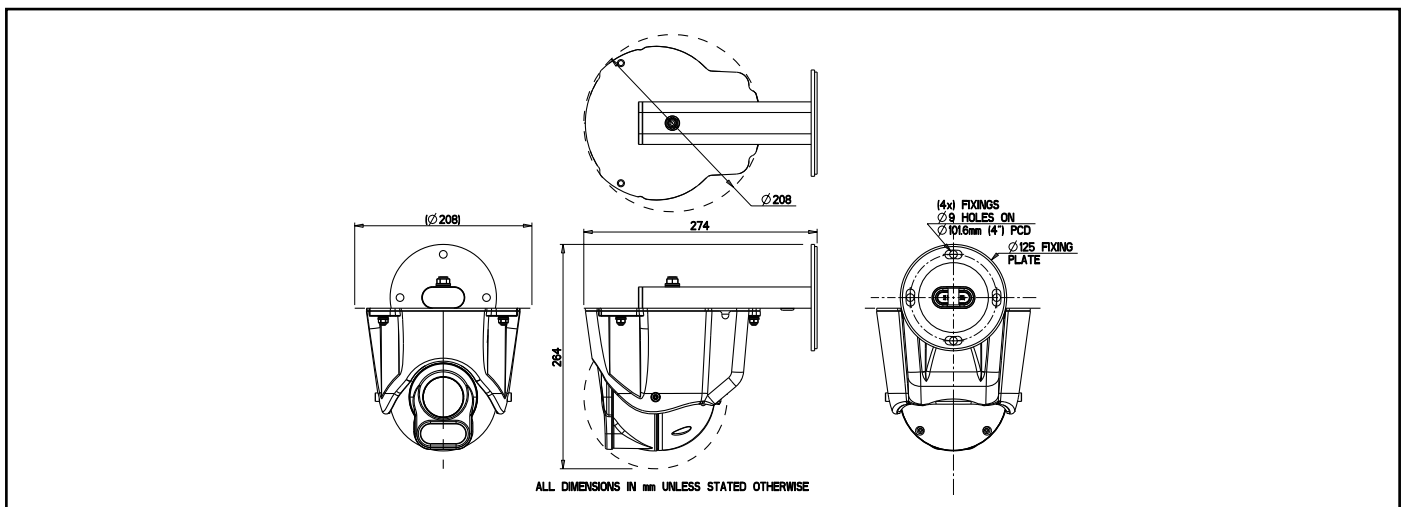
## 2 Dimensional Drawing



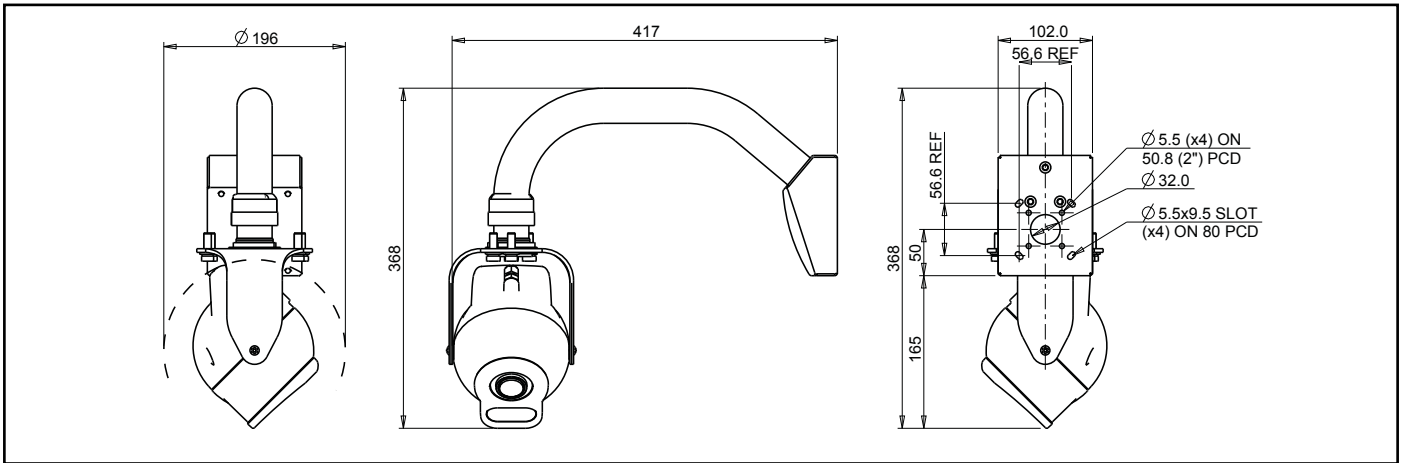
Pole Mount



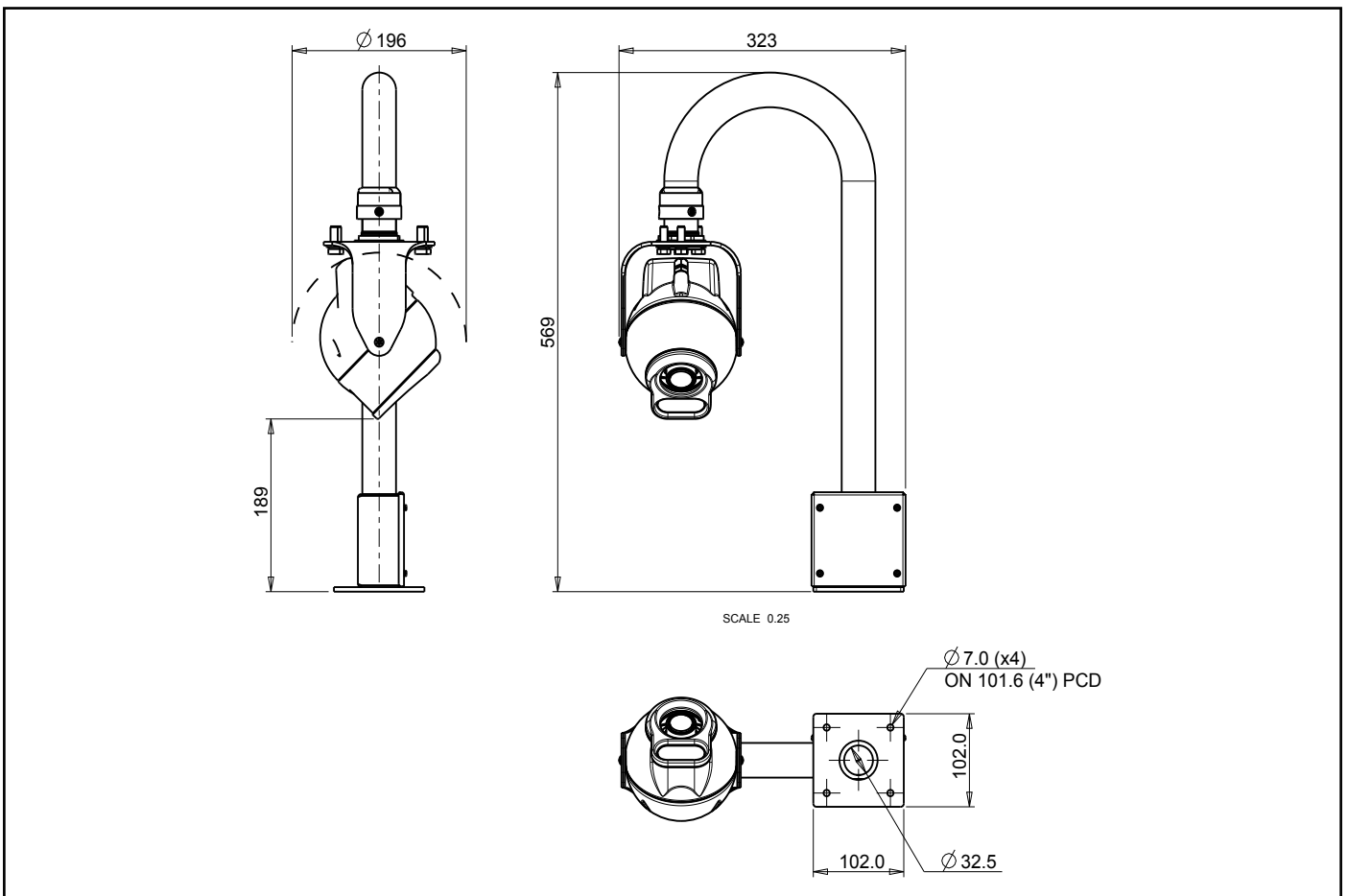
Soffit/Ceiling Mount



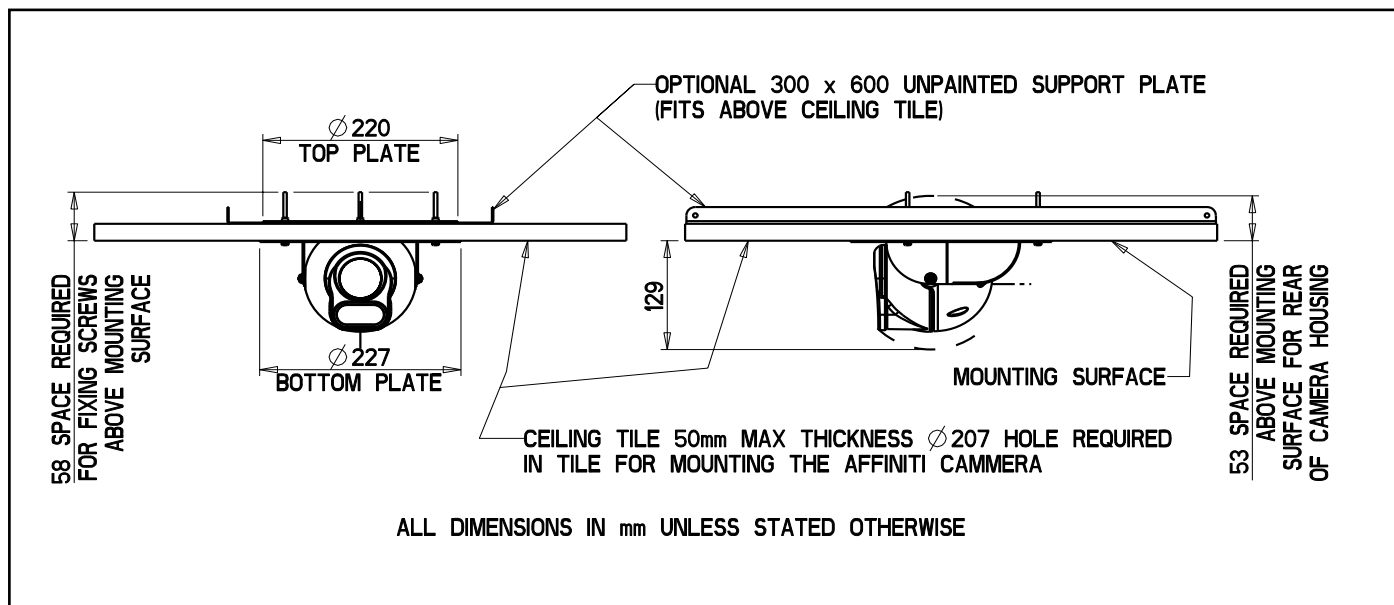
Wall Mount



Wall Mount



Swan Neck/Pole mount

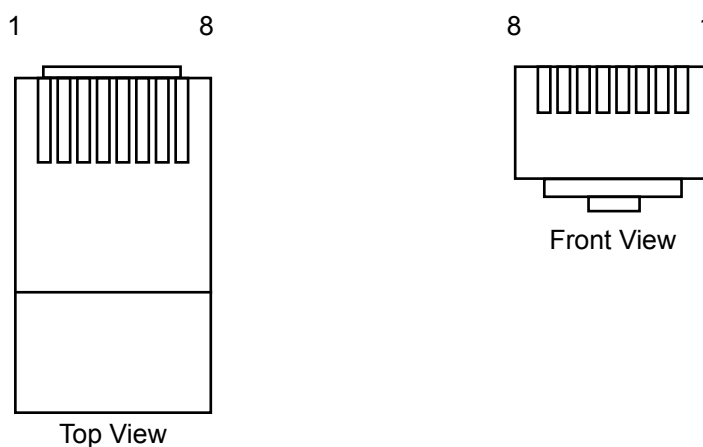


False Ceiling Mount

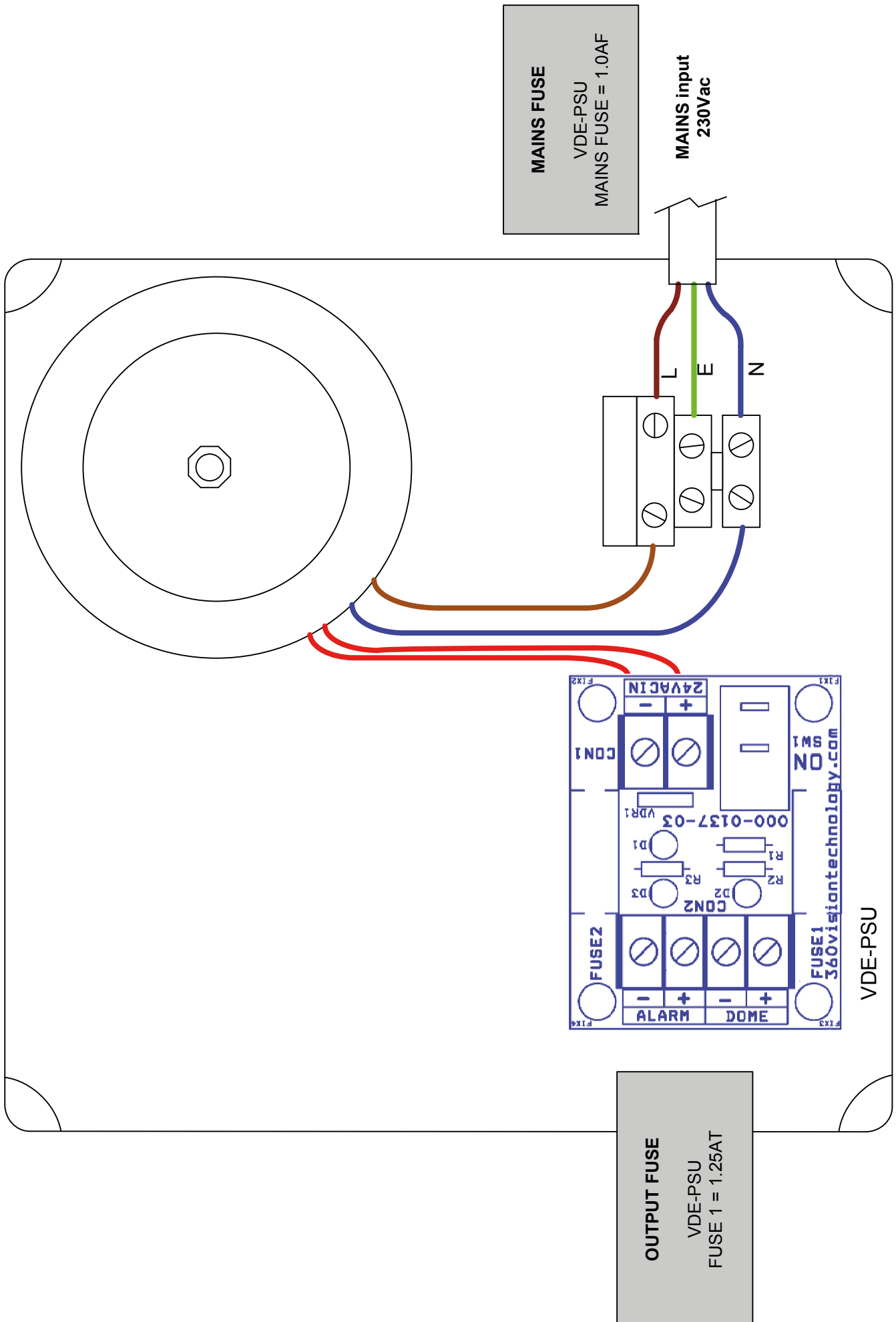
### 3 Connections

The Affiniti Thermal IP is fitted with a 3 metre CAT5 cable, using the below connections.

RJ45	CAT5, CAT5e, CAT6 Cable	Signal
Pin 1	White with Orange Band	Tx+
Pin 2	Orange	Tx-
Pin 3	White with Green Band	Rx+
Pin 4	Blue	
Pin 5	White with Blue Band	
Pin 6	Green	Rx-
Pin 7	White with Brown Band	
Pin 8	Brown	



The Affiniti Thermal IP is fitted with a 3 metre power cable, connect the camera to the PSU dome connections.



# Affiniti Thermal IP Configuration

## 4 Locating the Affiniti Thermal IP on your Network

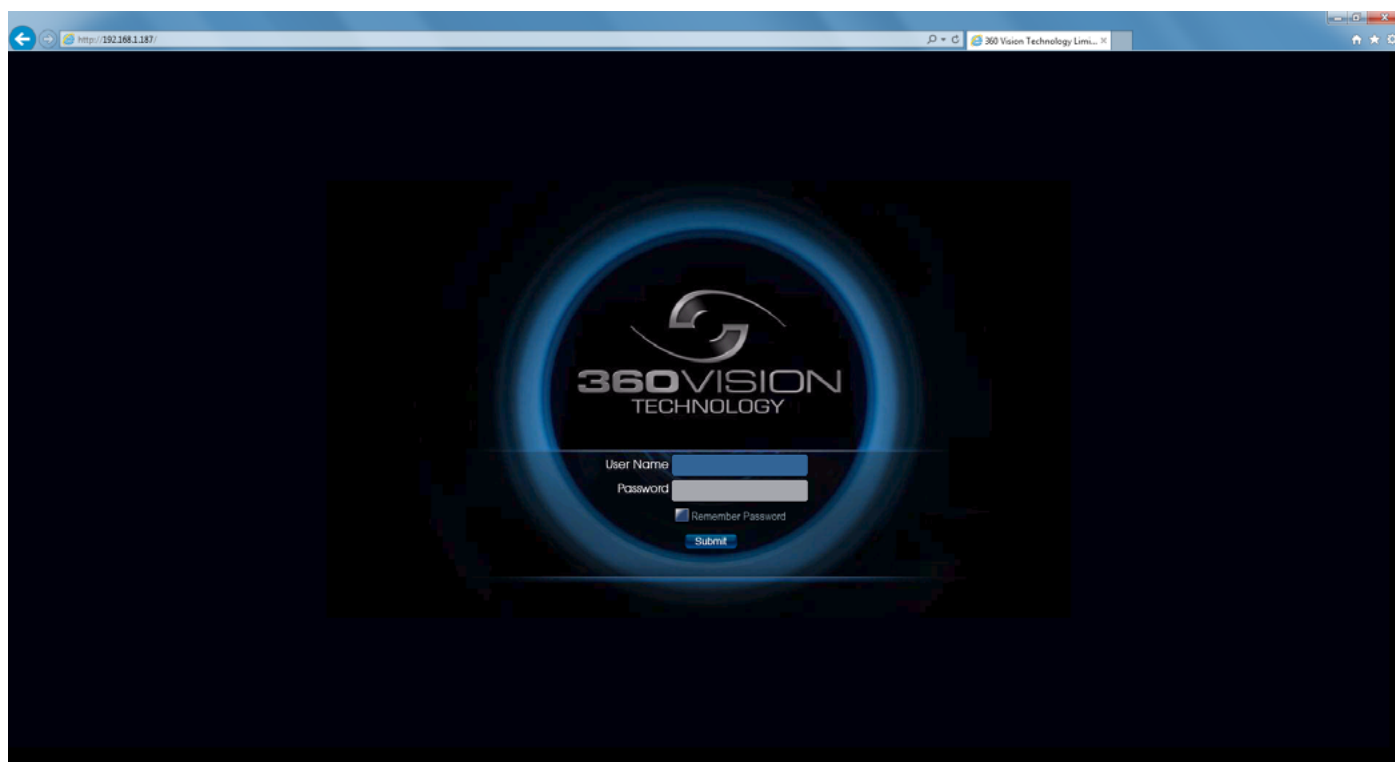
Default IP Address	192.168.1.187
Subnet	255.255.255.0
Gateway	192.168.1.4

Using the DVR management software or 'Onvif Device Manager' (which can be found on the CD supplied or from the 360 Vision Technology ftp web site) to find the IP address of the Affiniti Thermal IP. Note the ports used by the Affiniti Thermal IP are:-

Protocol	Port
ONVIF/HTTP	80 TCP
RTP Stream 1	6970 TCP/UDP
RTCP Stream 1	6971 TCP/UDP
RTP Stream 2	6972 TCP/UDP
RTCP Stream 2	6973 TCP/UDP
RTSP	554 TCP
360 SDK	3600 TCP
360 Event	9001 TCP

## 5 Connecting to the Affiniti Thermal IP

Type in the IP address of the Affiniti Thermal IP into the address bar of Windows Internet Explorer and install the plug-ins as required. The web page of the camera will then appear.



Affiniti Thermal IP Web Page Login screen

Enter the User Name (default is **admin**)  
Enter the Password (default is **9999**)

If you select the box 'Remember Password' it could compromise the security of the Affiniti Thermal IP camera.

Select Submit

There are four main tabs on the left of the web page/screen.

- 1 Live Video
- 2 Add/Edit Users
- 3 Settings
- 4 Maintenance

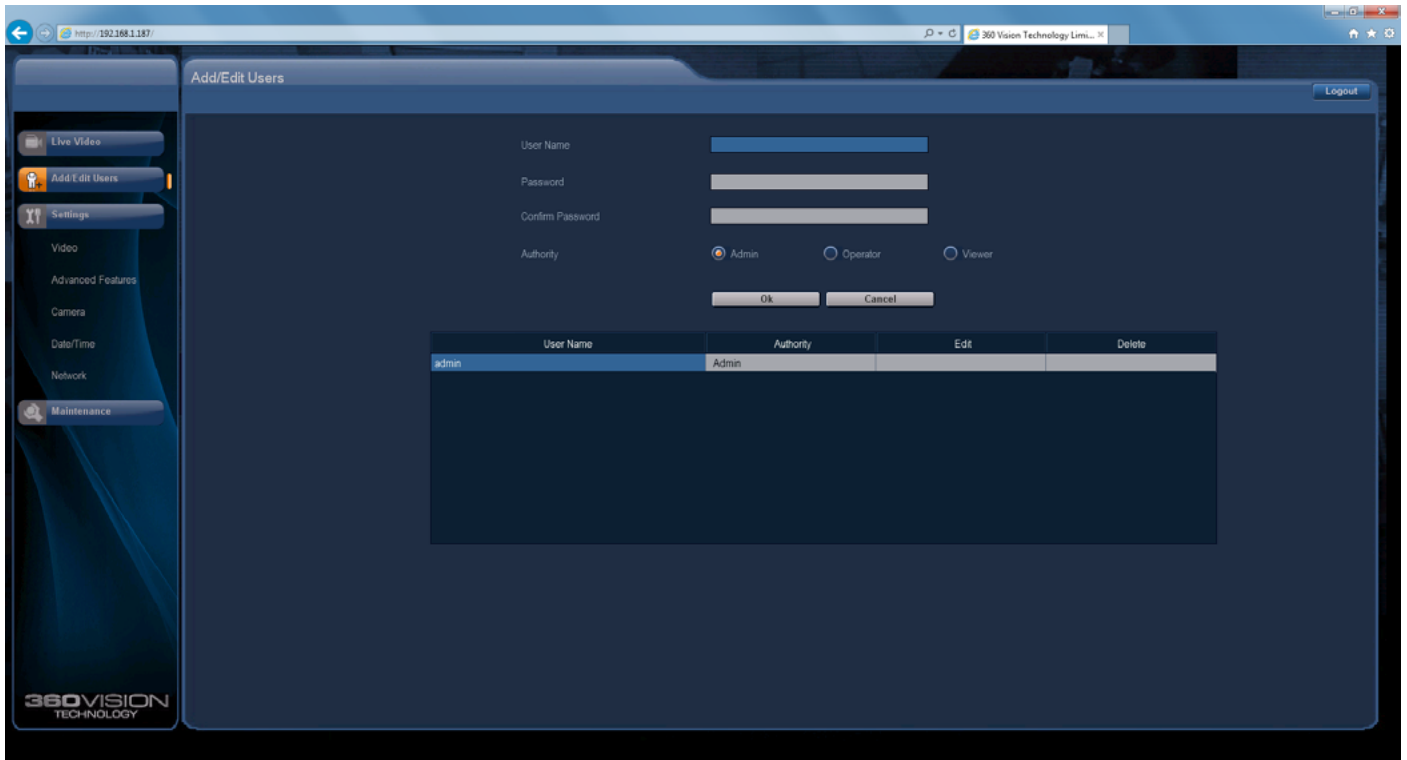


## 5.1 Live Video

The Live Video page offers options to:-

- Display all Streams - This will show both streams (if dual streams are enabled).  
(See *Video - Stream Type - page 10*)
- Preset Seek/Define - This will allow admin and operator user levels to seek or define presets (Viewer user level can only seek presets). (See *Advanced Features - Presets - page 12*)
- Logout - Allows the user to logout of the configuration web pages.

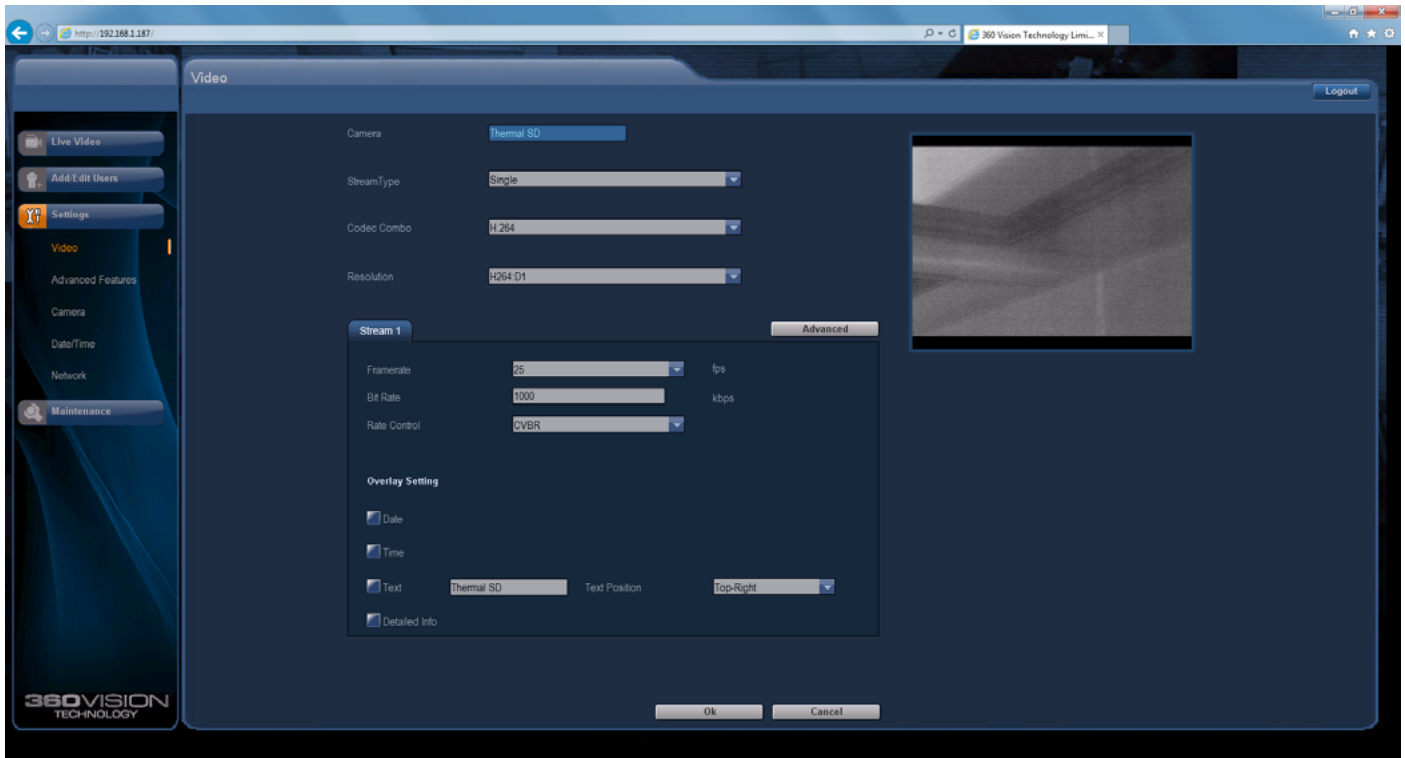




## 5.2 Add/Edit Users

The Add/Edit Users page, allows the admin user to create both operator and viewer level login details. The admin user login password, can also be changed here. The web page admin password is also the Onvif admin password. Care must be taken, when changing the admin password.

There is no way of recovering the Affiniti Thermal IP admin password if forgotten.



### 5.3 Video

The Video page, offers options to setup:-

- Camera - Add or edit the camera name.
- Stream Type - Choice of single or dual video streams.
- Codec Combo - Choose which compression format, the stream will use.
- *(See page 20 for table of options).*
- Resolution - Set what resolution the stream will use. *(See page 20 for table of options).*

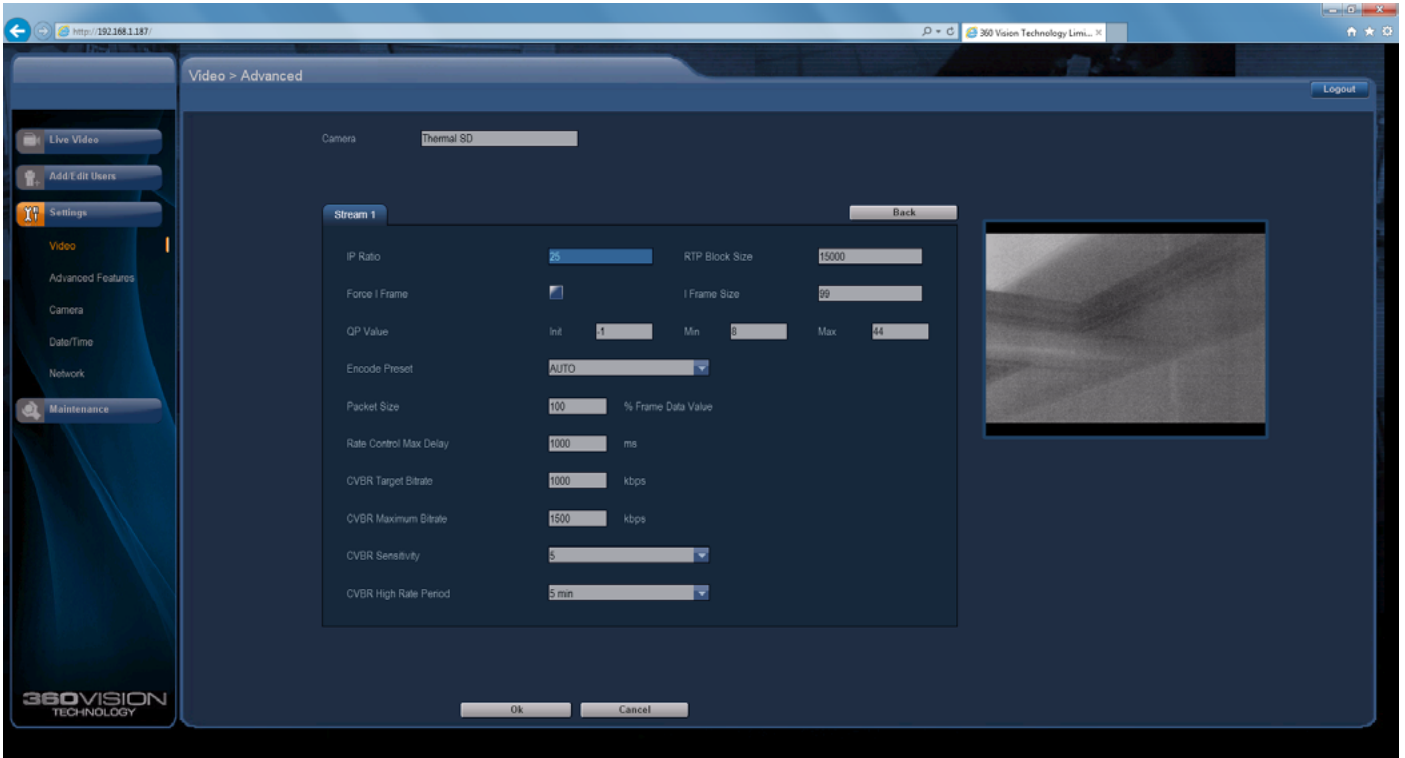
Stream Tabs, offer options to:-

- Framerate - Configure how many frames per second (fps) the stream uses.
- Bit Rate - Set the bit rate that the stream will use. Type in figure in Kbps. *(E.g. 4000Kbps is 4Mbps)*
- Rate Control - Configure the rate control of the stream, choices are VBR (Variable), CBR (Constant), CVBR (Constrained Variable, limited to 8Mbps) and Off.
- Date - Selecting this option will show the date as text on the video stream.  
*(See section - Date/Time - page 15).*
- Time - Selecting this option will show the time as text on the video stream.  
*(See section - Date/Time - page 15).*
- Text - Selecting this option will show the selected text on the video stream. Positions available are top left or right of the image.
- Detailed Info - This will show the information about the stream on the video.

**OK** to program the new settings into the Affiniti Thermal IP.

**Cancel** to abandon the changes to the video settings.

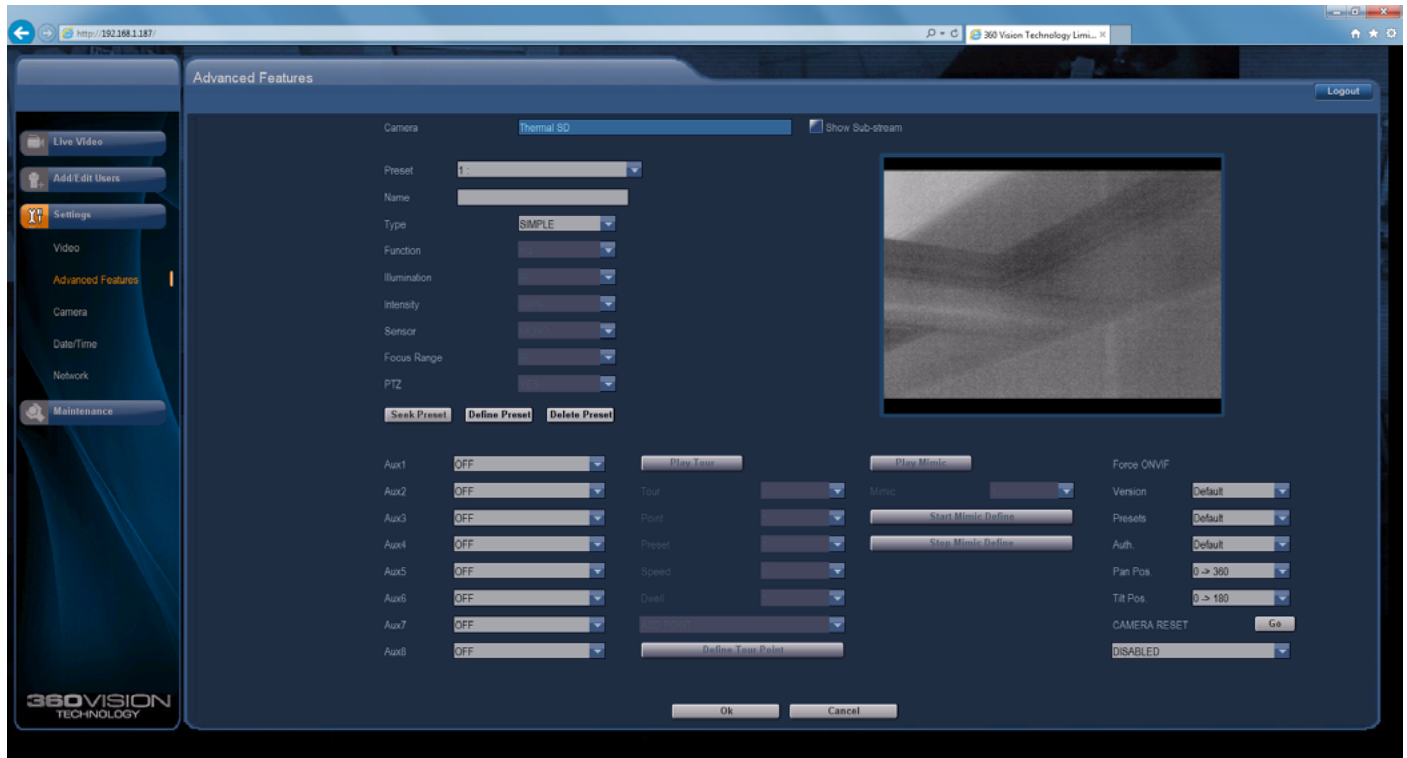
**Advanced** to gain access to advanced stream settings.



### 5.4 Advanced Video/Stream

		Stream 1	
IP Ratio/GOP value (type in a number)		25 (default)	E.g. 1 'i-frame' every 25th image.
RTP Block Size		15000 (default)	Range 0 (Ethernet MTU), 1440 to 65500
Force I Frame (Tick box to select Yes)		Yes No (default)	Forces camera to send an 'i-frame' when OK is selected.
I Frame Size		99	Range 0 to 99 (average frame size x value/10 = i frame size)
QP Value (Quantization Parameter).	Init Min Max	-1 (default) 8 (default) 44 (default)	For engineers use only. <b>DO NOT ADJUST.</b> Always use the default settings.
Encode Preset		Auto (default) Custom SVC	
Packet Size (% of Frame Data Value)		100 (default)	

**OK** to program the new settings into the Affiniti Thermal IP.  
**Cancel** to abandon the changes to the advanced video settings.  
**Back** to return to the video settings.



## 5.5 Advanced Features

The Advanced Features page, offers options to:-

- Camera - Cannot be edited, shows label/name given to the camera.  
(See section Video - Camera - page 10).

A 'Preset' is a stored view. When a preset is defined, it will store the pan, tilt, zoom, focus and iris positions. Use the up, down left and right buttons to move the camera to the desired position and then use the zoom buttons to set the image as required.

Set Preset using the following options:-

- Preset - Choose from a list of presets using the drop down box.
- Name - Edit the preset name to suit/help identify the position.
- Type - Options available are:-
  - Night - Allows different options to be used for the preset when in dark mode.
  - Simple - For setting a simple preset, no lamp options.
  - Wiper - Feature not available.
  - Washer - Feature not available.
  - Re-Map - Choose which function/preset you want to re-map to the new preset number above.
  - Tour - Set the preset to start or stop a preset tour.
  - Mimic - Set the preset to start or stop a mimic tour.
  - User - Used on systems supporting 360 SDK.
- Function - Function option will change to suit the above type.
- Illumination - Feature not available.
- Intensity - Feature not available.
- Sensor - Presets have the choice of being either colour or mono, when the scene is dark. Feature not available.
- Focus Range - Sets how the camera will focus when in mono. Options are ambient or IR. Feature not available.

Use the **Seek preset** button to test the preset.  
**Define preset** button to set the above parameters.  
**Delete preset** to remove the preset.

### Force Onvif Version

Can be used to change the Onvif version reported by the camera to the VMS, options are:-

- Default - Onvif 2.40
- V2.02
- V2.20
- V2.40

Ok setting and then re-boot camera from web page to apply.

### Presets

- Default - Used on certain VMS servers. Uses mix of text and 'P' zero-pad number as preset tokens.
- Number only - Used on certain VMS servers. Uses numbers as preset tokens.
- 'P' zero-pad number - Used on certain VMS servers. Uses P001 to P360 as preset tokens.
- 

### Auth

Used on Vicon VMS, allows the anonymous user to set as admin, viewer or operator.

### Pan/Tilt Position

Used on VMS systems that apply different Onvif parameters.

### Camera Reset

- Power reset - This will reboot the camera, no settings will be lost.
- Factory reset - This will reboot the camera and all the settings, except IP address will be lost.

Select option from the drop down box, and then click on perform reset.

**OK** to program the new settings into the Affiniti Thermal IP.  
**Cancel** to abandon the changes to the advanced feature settings.



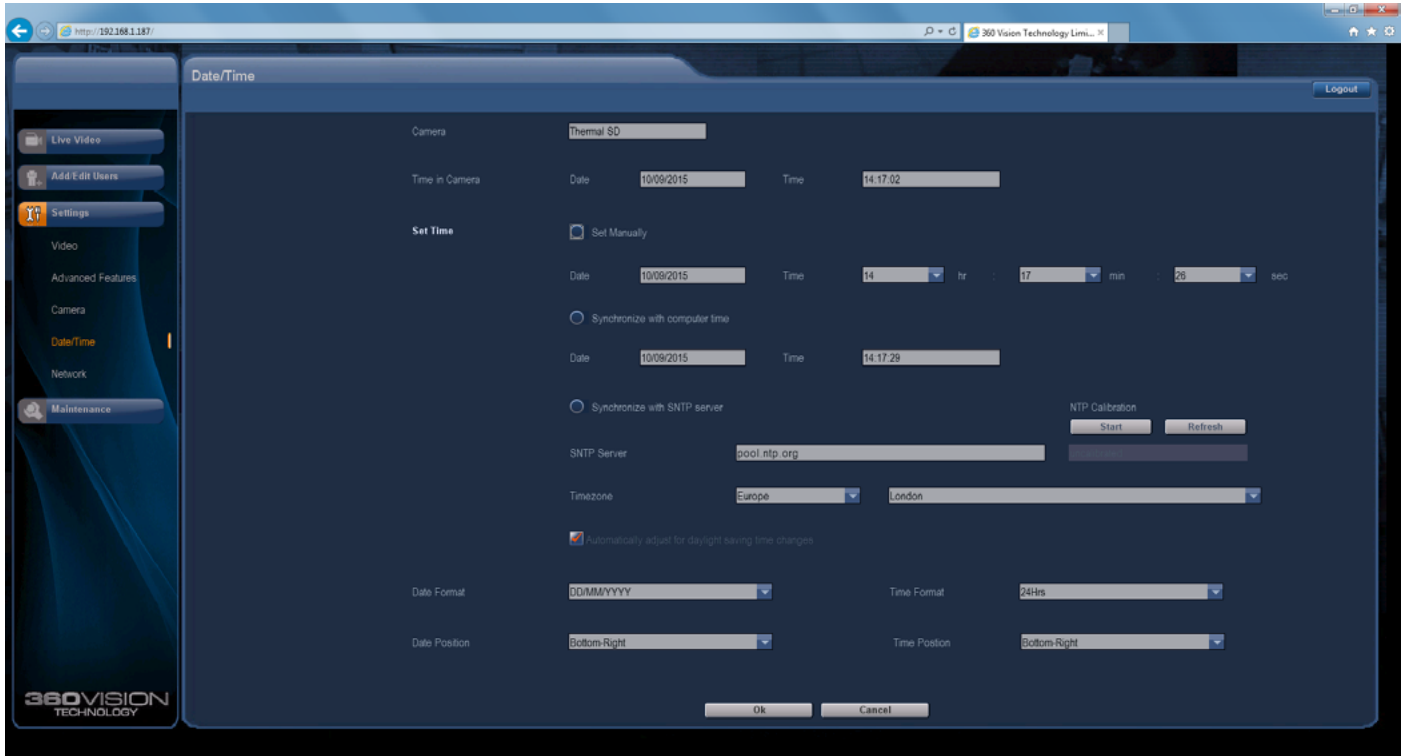
## 5.6 Camera

- Camera - Cannot be edited, shows label/name given to the camera.  
*(See section Video - Camera - page 10).*

The Camera page, offers options to:-

- Digital Zoom - Feature not available.
- White Balance - Feature not available.
- Wide Dynamic range - Feature not available.

- Sun Shield - Feature not available.
- Auto Flip - Feature not available.
- Zoom speed - Feature not available.
- Attack Detect - Feature not available.
- Proportional Zoom - Feature not available.
- Freeze Preset - Feature not available.
- Day Aperture - Feature not available.
- Sensor Frame Rate - Feature not available.
- Upright Mount - Can be used to flip the image, so the camera can be used on a pole or a ceiling.
- AF/AI when PTZ - Feature not available.
- Power on Park - Feature not available.
- Fast Shutter - Feature not available.
- Pan/Tilt Speed - Feature not available.
- Night Changeover - Feature not available.
- Custom On Level - Feature not available.
- Custom Off Level - Feature not available.
- Night Brightness - Feature not available.
- Night Illumination - Feature not available.
- Night Intensity - Feature not available.
- Night Sensor - Feature not available.
- Night Focus Range - Feature not available.
- Night Focus Sens - Feature not available.
- Night Aperture - Feature not available.
- Night Noise Reduction - Feature not available.
- Night Presets - Feature not available.
- Thermal Gain Mode - Automatic, Low Gain Only, High Gain Only, Manual.
- Thermal Gain Control - Histogram, Linear and Auto Bright.
- Wiper Rest Time - Feature not available.
- Wiper On Time - Feature not available.
- Auto Dimming - Feature not available.
- White Lamps - Feature not available.
- White Timer - Feature not available.
- White Exclusion - Feature not available.
- Home Action - This sends the camera to a preset after a period of inactivity.
- Home Number - This sets the preset, the camera will go to.
- Home Timer - This sets the time for the period of inactivity.
- Steady Shot - Feature not available.
- Status Refresh Rate - Can be used to help speed up telemetry control of the camera, by slowing down the refresh rate.
- Thermal Colour - White Hot, Black Hot, Fusion, Ice and Fire, Rain, Red Hot, Green Hot, Rainbow, Globow, Ironbow1, Ironbow2, Sepia, Colour1 and Colour2.



## 5.7 Date/Time

- Camera - Cannot be edited, shows label/name given to the camera.  
(See section Video - Camera - page 10).
- Time in Camera - Cannot be edited, shows the current date and time of the camera.

The Date/Time page, offers options to:-

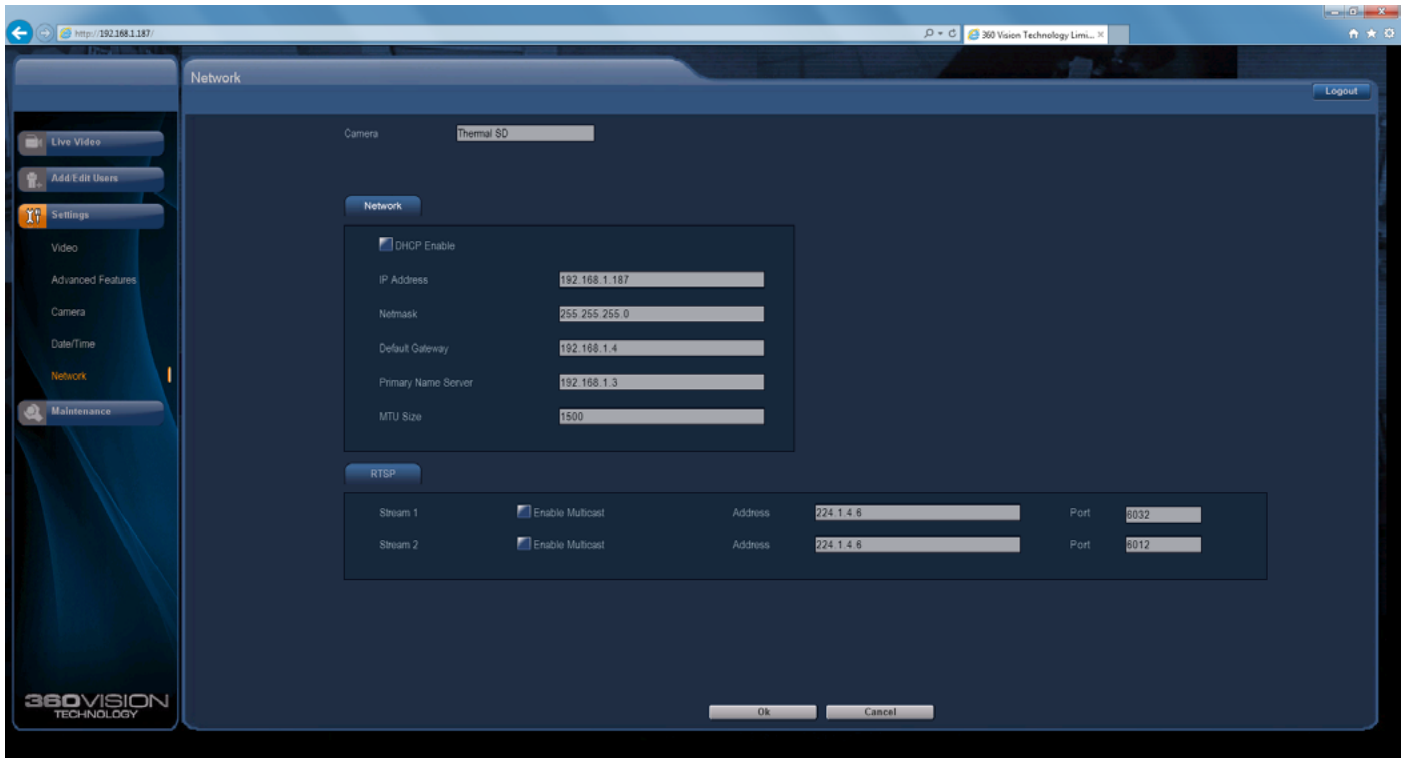
- Set Manually - Input time/date manually.
- Synchronize with Computer Time - Put a tick in the button and then click OK, to apply the local computer date/time to the camera.
- Synchronize with SNTP Server - Put a tick in the button and then click OK, to apply the local server date/time to the camera.
- SNTP Server - Input the address of the time server required, default is pool.ntp.org.
- Time Zone - Select time zone to suit the location of the camera/system.
- Date Format - Select from the drop down the date format.
- Time Format - Choose 24hr or 12hr time display.
- Date Position - Choose date text to bottom right or left of the image.
- Time Position - Choose time text to bottom right or left of the image.  
(See section Video - Stream Tabs - page 10).

### NTP Calibration

This is used to calibrate the codec clock to a SNTP server so that the codec time is more accurate.

- Start - Click on this option to start the process. Synchronize with SNTP Server option must be selected with access to the SNTP server. The process takes approx 20 minutes.
- Refresh - Use this option to manually refresh the web page to show how much of the process has been done, or if it is complete.

**OK** to apply the new settings into the Affiniti Thermal IP.  
**Cancel** to abandon the changes to the date/time settings.



## 5.8 Network

- Camera - Cannot be edited, shows label/name given to the camera.  
(See section Video - Camera - page 10).

The Network page, offers options to:-

- DHCP Enable - Allows the camera to be set using a dynamic IP address.
- IP Address - Input a static IP address, if DHCP is not used.

Note: Power reset required to change camera IP address.

- Netmask - Input the Network Subnet Mask.
- Default Gateway - Input the Network Gateway.
- Primary Name Server - Input the Domain name server, if required.
- MTU Size - Option to change the MTU size, default is 1500 bytes.

RTSP Tab - (See Stream Tables - page 20).

Tick the box to enable 'multicast'. If the box is not ticked then 'unicast' is selected.

- Multicast Stream 1 - Set IP address and port for stream 1.
- Multicast Stream 2 - Set IP address and port for stream 2.

RTSP protocols allow 'multicast' or 'unicast' transmission. In addition to the 'multicast' feature being available on the Affiniti Thermal IP, the 'multicast' feature must also be available on the receiving device.

### Unicast

If lots of receivers (users) want to receive video streams from the Affiniti Thermal IP, each receiver will have a separate video stream. This would increase the network bandwidth used. E.g. five users would require five video streams, that typically will require five times the bandwidth.

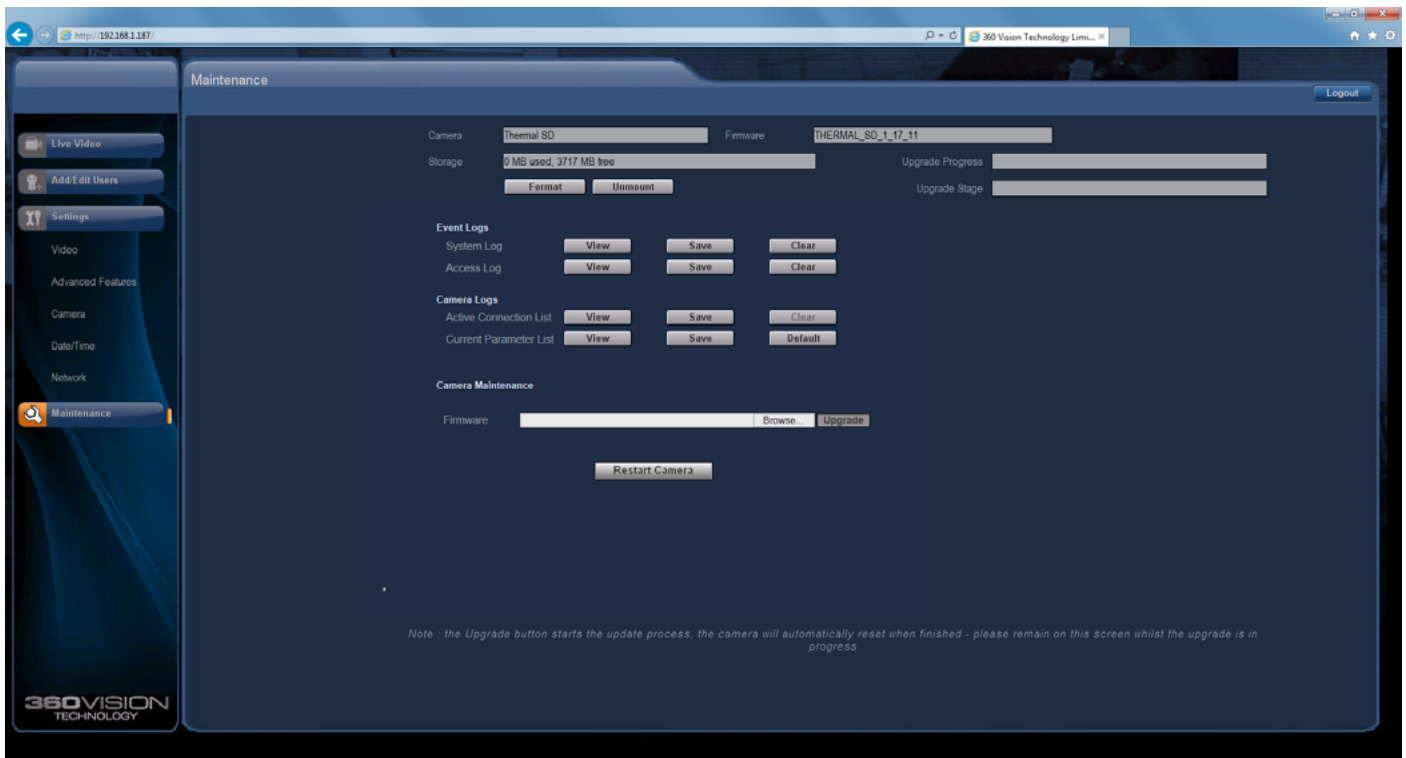
### Multicast

If the receivers of the video streams are suitable for using 'multicast' and the video streams will all have the same format, then it may be possible to use 'multicast'. In this mode, the CODEC in the Affiniti Thermal IP chooses a 'new UDP address' (Typically an address which is outside the normal range of addresses for the network to which the Affiniti Thermal IP is connected) and sends a video stream to the 'new UDP address'. Multiple receivers can then access this single video stream. Consequently the bandwidth that is required by the Affiniti Thermal IP is typically reduced to the single video stream.



When using 'multicast' all intermediate network-switches and routers must be set to allow the stream from the 'new UDP address' to be routed correctly.

**OK** to apply the new settings into the Affiniti Thermal IP.  
**Cancel** to abandon the changes to the network settings.



## 5.9 Maintenance

- Camera - Cannot be edited, shows label/name given to the camera.  
*(See section Video - Camera - page 10).*
- Firmware - Current firmware loaded onto the camera.
- Hardware - Current mainboard software loaded onto the camera.
- Storage - Used and free space on the memory device. Used for the firmware update process.
- Format - You can use this option to format the storage device. Please stay on the web page while it is doing this. Once formatted the Unmount button will show as mount. Use this to mount the device so that it can be used by the camera.
- Unmount - Select this option to unmount the storage, once you have confirmed this is what you want to do it will report back that the process is successful.

### Event logs

- System Log - Currently not available.
- Access Log - Currently not available.

### Camera Log

- Active Connection log - Currently not available.
- Current Parameter log - View - Selecting this option shows the current stream settings.  
 Save - Allows the current camera stream settings to be copied and then pasted as a text file.  
 Clear - Selecting this option will default the Affiniti Thermal IP camera settings. Admin login details are required to perform this action.

## Camera Maintenance

- Firmware - Browse to codec file and then click on open. The camera codec will then be updated. The Affiniti Thermal IP camera will re-boot once the update has been performed.

**DO NOT** interfere with this process as it may stop the camera from working.

Contact 360 Vision Technical Support for the link to the codec update files.

## 6 Network Settings Recovery

When network settings are changed, the IP address, Net Mask and Gateway are validated before they are saved. However if the settings are such that the Affiniti Thermal IP has settings which mean that it cannot be seen on the user's network, it may become necessary to use the 'Network Settings Recovery' feature as described below.

The 'Network Settings Recovery' IP address may conflict with an IP address that is already defined on the network, it may be necessary to disconnect the Affiniti Thermal IP from the network and control it locally using a network connection to a laptop so that the IP address can be set to a suitable setting before the Affiniti Thermal IP is reconnected to the main network.

Procedure for 'Network Settings Recovery'

Disconnect the Affiniti Thermal IP from the network, until process is complete.

Turn power to the Affiniti Thermal IP OFF for 3 seconds.

Turn power to the Affiniti Thermal IP ON for approx. 1 minute.

Repeat the above three times.

On the final power ON, leave the power switched on for at least 5 minutes to allow the Affiniti Thermal IP to initialise. *(See section [Locating the Affiniti Thermal IP on your network - page 7](#)).*

## 7 Special Presets

Thermal Camera	Seek 102	Digital Zoom Off
	Seek 103	Digital Zoom x2
	Seek 104	Digital Zoom x4
	Seek 105	Display Blue Spot, Read Spot Temperature
	Seek 106	Remove Spot Temperature
	Seek 107	Turn Off all thermal alarms
	Seek 108	Perform FFC

## 8 Important - Care of Painted Surfaces

The powder coating applied to the Affiniti Thermal IP external housing is recognised as being in the forefront for quality and finish. However, in order to preserve the aesthetic finish it is recommended that the coating is regularly cleaned.

Regular cleaning on a maximum three month interval, using warm and mild detergent must be undertaken. Abrasive cleaners including strong solvent must NOT be used at any time.

In areas where the coating may come in contact with concentrated atmospheric pollutants [marine, chemical and especially bird droppings] it would be prudent to clean more frequently e.g. monthly.

Full documentation of the cleaning schedule MUST be maintained to ensure that a warranty claim can be considered.

If damage occurs to the coating (e.g. the Affiniti Thermal IP is dropped, scrapped etc), repairs MUST be carried out immediately.

When the Affiniti Thermal IP is installed in areas where there is a high risk of damage from birds or their droppings, additional precautions and measures should be used to keep the birds away from the Affiniti Thermal IP e.g. fit anti-bird spikes.

## 9 Storage and Handling

Affiniti Thermal IP should be handled with care and must not be dropped. When Affiniti Thermal IP are being stored before installation they should be kept in the transit packaging and located in a dry indoor environment preferably between 1°C and 35°C which is dry and dust free. Humidity should such that water vapour is non-condensing. Affiniti Thermal IP can be allowed to be outside this range for short periods of time (24 hours maximum) for transport (e.g. in aircraft or vans) but must never be allowed to be outside the normal operating temperature range of -40°C to +60°C even during storage. Before installation the Affiniti Thermal IP should be clean and dry. (If necessary it should be cleaned and dried taking care that the glass is not scratched).

## 10 Warranty

This information and/or any technical information – whether received verbally or writing – is given in good faith but without warranty and this also applies where proprietary rights of third parties are involved. The information provided does not release you from your obligation to check its validity and to test the products suitability for the intended purpose(s) and use(s). The application, use and installation of the products either in isolation or in conjunction with other products used, provided and installed by you on the basis of the technical advice issued are beyond our control and therefore remain entirely your own responsibility.

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## 11 Stream Resolutions & RTSP Links

	Resolution
MJPEG (rtsp://ipaddress/mjpeg)	D1 (720 x 576)

	Resolution		Resolution
H.264 (rtsp://ipaddress/h264main)	D1 (720 x 576)	MPEG4 (rtsp://ipaddress/mpeg4main)	D1 (720 x 576)

	Resolution	
	H.264	MJPEG
H.264 (rtsp://ipaddress/h264main) & MJPEG (rtsp://ipaddress/mjpeg)	D1 (720 x 576)	D1 (720 x 576)

	Resolution	
	MPEG4	MJPEG
MPEG4 (rtsp://ipaddress/mpeg4main) & MJPEG (rtsp://ipaddress/mjpeg)	D1 (720 x 576)	D1 (720 x 576)

	Resolution	
Dual MPEG4 (rtsp://ipaddress/mpeg4main) (rtsp://ipaddress/mpeg4sub)	D1 (720 x 576)	D1 (720 x 576)
	D1 (720 x 576)	QVGA (432 x 240)

	Resolution	
Dual H.264 (rtsp://ipaddress/h264main) (rtsp://ipaddress/h2644sub)	D1 (720 x 576)	D1 (720 x 576)
	D1 (720 x 576)	QVGA (432 x 240)

	Resolution	
	H.264	MJPEG
H.264 (rtsp://ipaddress/h264main) & MPEG4 (rtsp://ipaddress/mpeg4sub)	D1 (720 x 576)	D1 (720 x 576)