Predator Hybrid
(Analogue & HD/IP)
Installation/Configuration Manual

The Predator Hybrid camera is shipped from 360 Vision Technology in analogue mode.

When in analogue mode. Please note: No IP Video.

Table of Contents

1 Safety and Precautions

1. Please read these notes before attempting to operate the 360 Vision Predator Hybrid, 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. To prevent risk of injury caused by the Predator Hybrid or mounting options becoming detached, fit a suitable safety chain or lanyard.

8. Connection of data signals and power should only be made using a pre-made Predator Composite cables.

9. Use only 360 Vision Predator Hybrid power supplies. These have suitable terminals for all the wires in the Predator composite cable.

10. Please handle the Predator Hybrid with care, as improper handling may cause damage within this unit.

2 Housing Dimensional Drawing
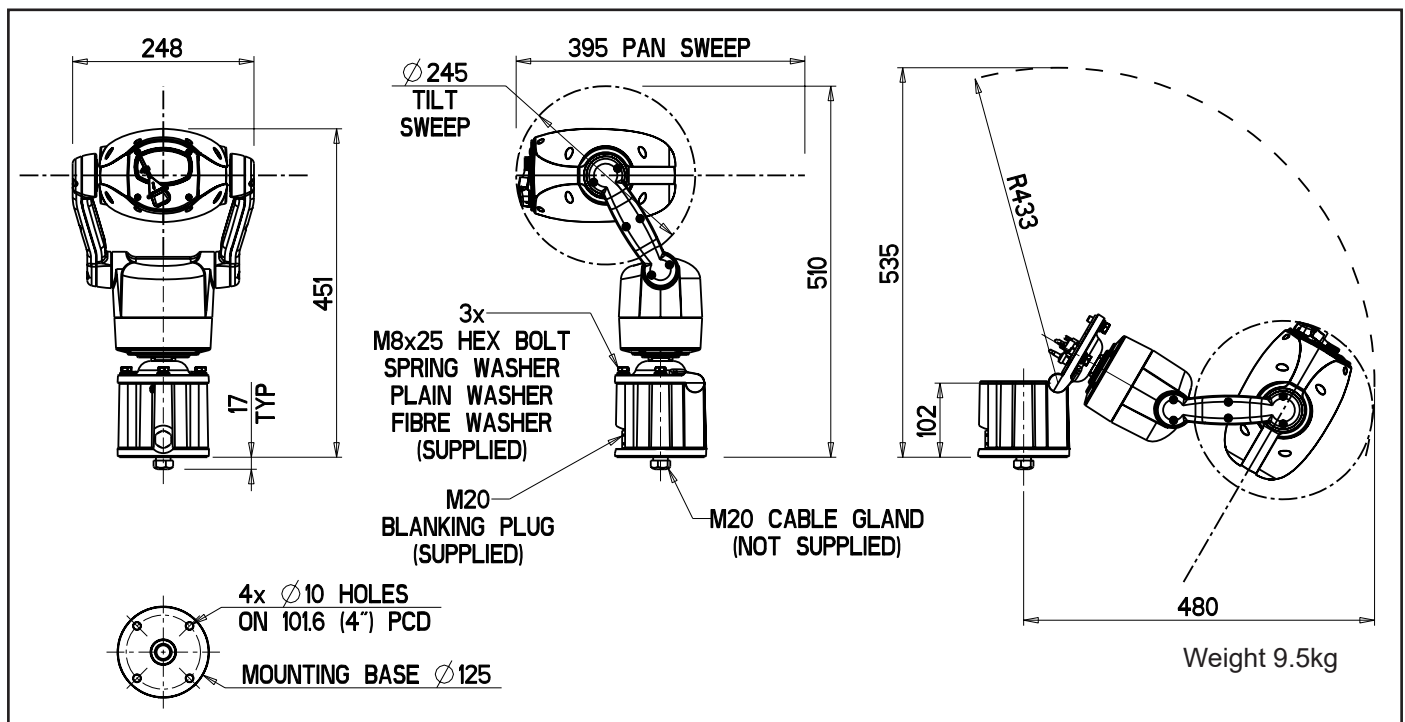
HMA Predator No Lamps (shown)

All versions of the Predator Hybrid are built with the integral HMA (Hinged Mount Adapter). The HMA is fitted during manufacture and is NOT available as an option for the installer to add to an existing Predator.
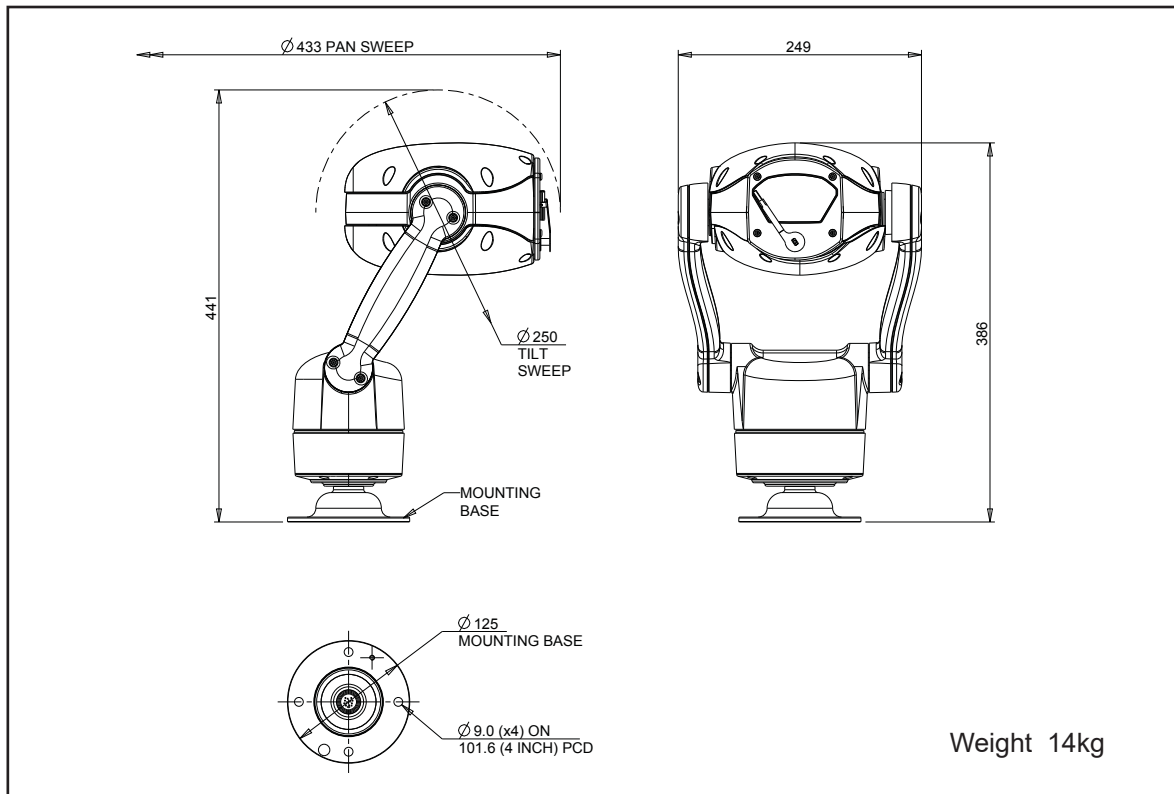
Predator Stainless Steel no lamps.

3 Bracket Dimensional Drawing
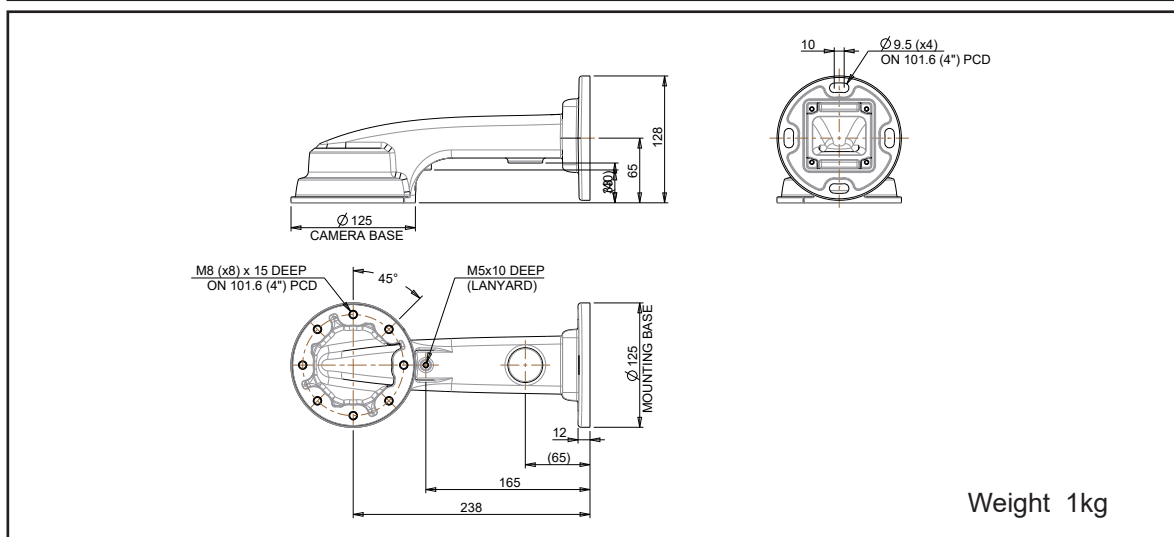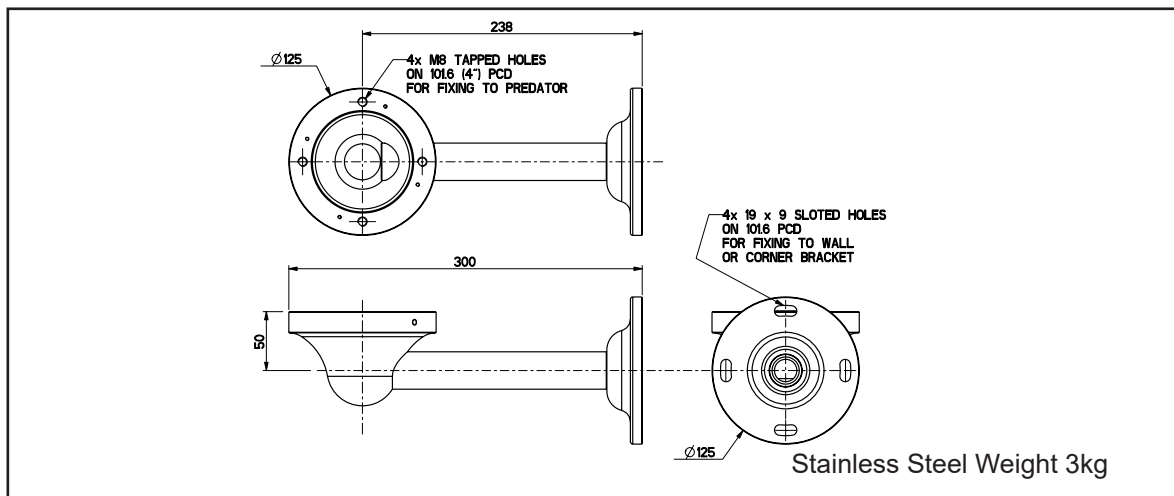
Predator Wall Bracket

Weight 2.5kg

Predator PMB Bracket

Weight 1kg
Stainless Steel Weight 3.6kg
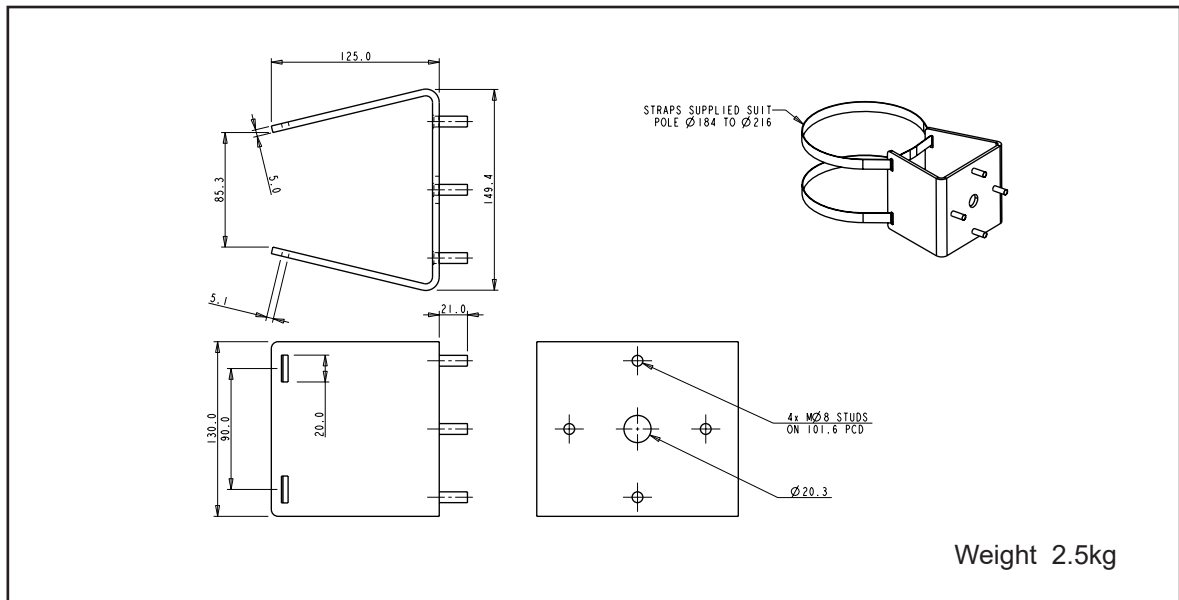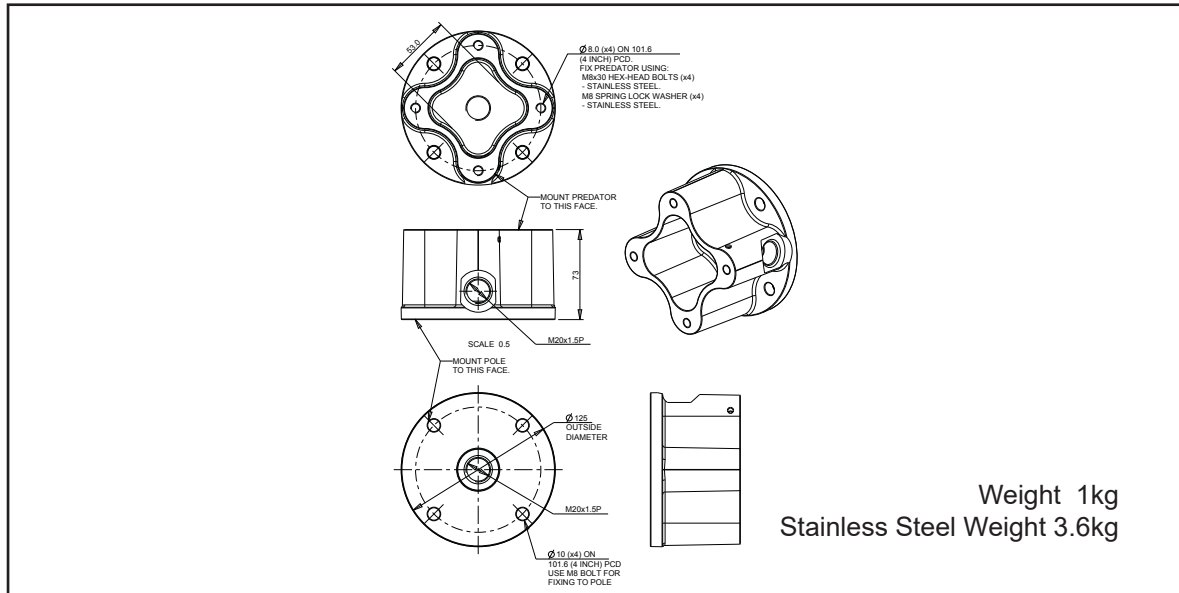
Predator PMA Bracket

Weight 2.2kg
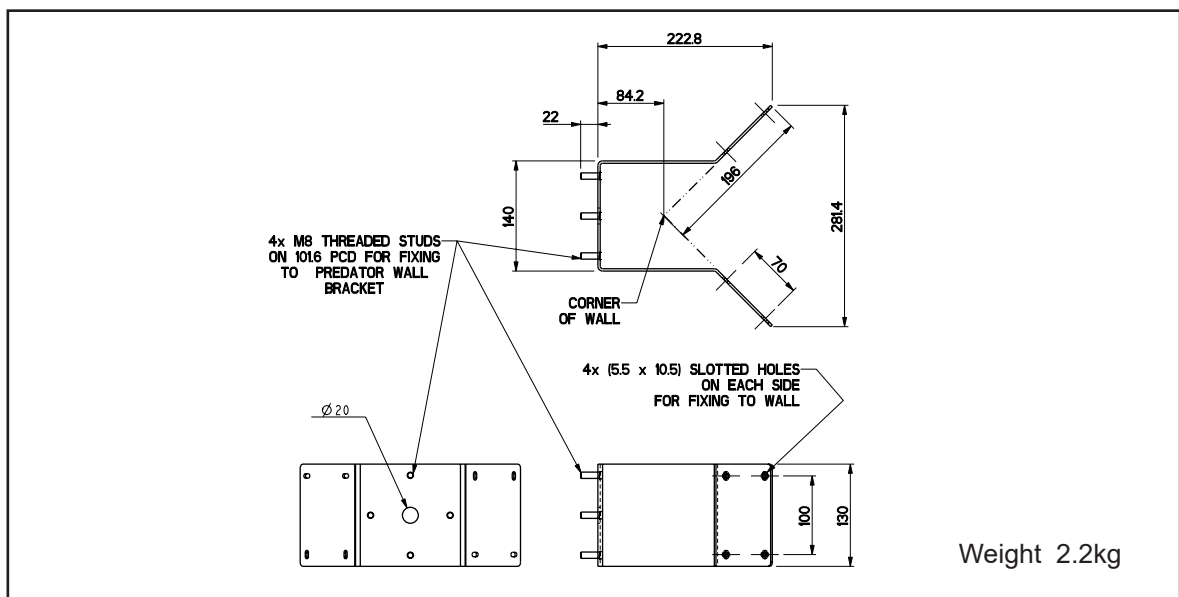
Predator Corner Bracket

4 Connections

Predator Composite Cable
This pre-made Predator Composite Cable is available in 3m, 10m, 25m and 40m lengths. It contains video coax, power and data cables. One end is fitted with the IP68 12-way connector for direct connection to the Predator, the other is supplied with all cables stripped and tinned ready to be connected to the two-part connectors which are supplied with the Predator Hybrid power supply.

Connecting the composite cable to the Predator Hybrid
Route the cable through the brackets and cable glands before connecting it to the Predator Hybrid. Ensure that the pins and sockets are lined up correctly, insert the connector and tighten the locking ring to make the connector water tight.

It is important that the water should not be allowed to pool around the connector, as this will increase the risk of contamination and corrosion which may cause poor connections.

The connector on the base of the Predator Hybrid is rated IP68, when it is correctly connected and the locking ring is tight.

Predator Hybrid 12-way connector pin-out.

Socket 12-pin socket (solder side view) fitted by 360 Vision to the composite cable
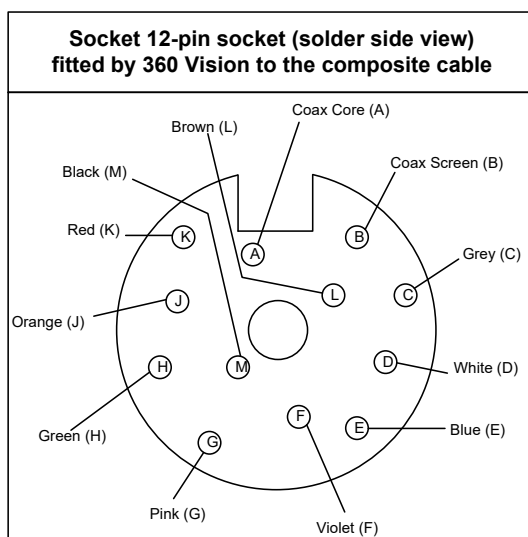
**Cables for Ethernet Connection to Predator Hybrid IP Power Supply**

Use CAT5, CAT5e or CAT6 cable for Ethernet Connections to Predator Hybrid power supply (PREDHYB-PSU-SM).

Maximum Distance from Network Switch/Router to PREDHYB-PSU-SM			
Using PRED-3m	Using PRED-10m	Using PRED-25m	Using PRED-40m
90m	80m	50m	3m

When using PRED-25M or PRED-40M the distance can be increased to 100m if a Network Switch is fitted local to the Predator Hybrid Power Supply.

Enclosure Dimensions
255 x 180 x 100mm

MAINS FUSE

PREDHYB-PSU-SM
MAINS FUSE 3 = 2AF

**MAINS input
100 - 240Vac**

PREDHYB-PSU-SM

Model Number: PREDHYB-PSU-SM
Serial Number: yymmndd-xxxx

Input Voltage:100-240VAC 50/60Hz
Input current: 2.1A

Output Voltage: 30V DC
Output Current: 6.2A

Vo
Adj

Io
Adj

360
USE

To Analogue
Controller

OUTPUT FUSE

PREDHYB-PSU-SM
FUSE 1 = 6.3AT
FUSE 2 = 1AT
FUSE 4 = N/A

Camera Network/
Ethernet connection

DO NOT USE	
WHITE	30Vdc(-)
GREY	30Vdc(+)
GREEN	30Vdc(-)
PINK	30Vdc(+)

VIOLET	Rx-
BLUE	Rx+
ORANGE	Tx-
RED	Tx+
BLACK	D-
BROWN	D+
Coax Screen	
Coax Core	

Use pre-made cable PRED-3M,
PRED-10m, PRED-25m or
PRED-40m to connect to
Predator.

NOTE - All wires in composite
cable must be connected.

5 Connections to Predators with HMA

When the HMA (Hinged Mount Adaptor) is fitted to the Predator Hybrid, the 'Predator Composite Cable' is not used. Connections between the power supply and Predator use conventional cables as detailed below.

30Vdc Power connections between Predator PSU and Predator that is fitted with HMA

Cable Size	No IR	SIR110	SIR140WL
0.75mm²	85m	32m	32m
1.00mm²	113m	43m	43m
1.25mm²	141m	54m	54m
1.50mm²	170m	65m	65m
2.50mm²	283m	108m	108m
3.00mm²	340m	130m	130m
4.00mm²	450m	173m	173m

Camera current draw table.

	No Lamps	IR80/ SIR110	IR110WL/ SIR140WL
Power Up	1.2A	1.2A	1.2A
Idle (No Lamps)	0.83A	0.83A	0.83A
PTZ/Wiper (No Lamps)	1.45A	1.45A	1.45A
Idle (IR Lamps)	N/A	2.3A	2.3A
PTZ/Wiper (IR Lamps)	N/A	3.1A	3.1A
Idle (White Lamps)	N/A	N/A	2A
PTZ/Wiper (White Lamps)	N/A	N/A	2.7A
Voltage at PSU	30Vdc	30Vdc	30Vdc
Voltage at Camera (PTZ/IR Fast tour)	28.5Vdc (No Lamps)	27Vdc	27Vdc
Current/Voltage test at cable length (1.5mm²)	40m	40m	40m

Ethernet connections between Predator PSU and Predator that is fitted with HMA.

The Ethernet connection uses standard CAT5, CAT5e or CAT6 cables fitted with RJ45 connectors.

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	

Gain access to connectors in the HMA

- Ensure that the fixed part of the HMA is securely bolted to the top of the pole.

- The hinged part of the HMA (Hinged Mount Adapter) is fastened to the fixed part using three M8x25 long hex head bolts. Use a spanner (13mm) to remove the three bolts. Each bolt is fitted with a split spring lock washer, a plain metal washer (which prevents the split washer from damaging the fibre washer) and a fibre washer (which prevents the paint on the hinged part from being damaged unnecessarily.

- Open the hinge taking care that the gasket is not damaged and support the weight of the Predator. Gently open the HMA until the lanyard is able to take the weight. If the lanyard appears to support the weight of the Predator, there is no need to continue to support the Predator. The connection circuit board can now be seen.
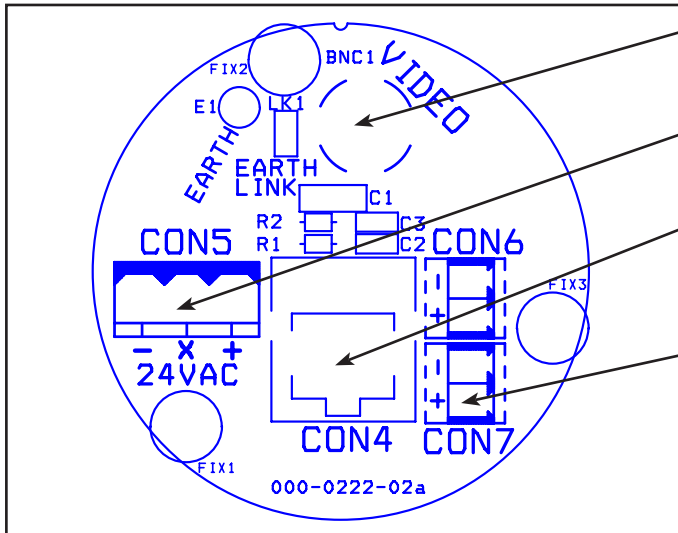
Analogue Camera output
Use BNC 1 for analogue video output.

Power Connections
Connect 24Vac/30Vdc to CON5.

Ethernet Connections
Connect Ethernet cable to HMA Predator connection board using a RJ45 connector (CON4).

RS485 Connection
Use CON7 to connect the RS485 twisted pair data to the Predator Hybrid.

Please make sure there is adequate spare cable (20cm) for when the camera is resting on the lanyard, failure to do this could damage the connector circuit board.
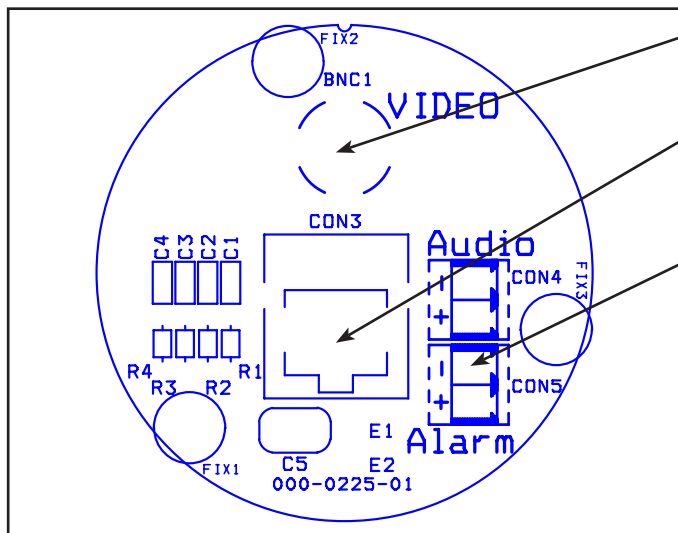
Analogue Camera output
Use BNC 1 for analogue video output.

POE/Ethernet Connections
Connect Ethernet cable to HD HMA Predator connection board using a RJ45 connector (CON3).

RS485 Connection
Use CON5 to connect the RS485 twisted pair data to the Predator Hybrid.

Please make sure there is adequate spare cable (20cm) for when the camera is resting on the lanyard, failure to do this could damage the connector circuit board.

Enclosure Dimensions
255 x 180 x 100mm

MAINS FUSE
PREDHYB-PSU-SM
MAINS FUSE 3 = 2AF

**MAINS input
100 - 240Vac**

PREDHYB-PSU-SM

Model Number: PREDHYB-PSU-SM
Serial Number: yymmndd-xxxx

Input Voltage:100-240VAC 50/60Hz
Input current: 2.1A

Output Voltage: 30V DC
Output Current: 6.2A

Io Adj
Vo Adj

To Analogue Controller (Optional)

360 USE

OUTPUT FUSE
PREDHYB-PSU-SM
FUSE 1 = 6.3AT
FUSE 2 = 1AT
FUSE 4 = N/A

To Camera

N/A
30Vdc(-)
30Vdc(+)

RS485 D-
RS485 D+
Coax Screen
Coax Core

From Camera (Optional)

000-0240-02
360visiontechnology.com

RJ45 CONNECTION
TO NETWORK

RJ45 CONNECTION
TO CAMERA

Enclosure Dimensions
255 x 180 x 100mm

PRED-POE-PSU

Data In

Data &
Power Out

MAINS FUSE

MAINS FUSE = 1.6AF

N

E

L

MAINS input
100 - 240Vac

Predator Hybrid
Analogue
Installation/Configuration Section

6 Basic Twisted Pair/RS485 Data Wiring

The Predator is capable of being controlled by either Coax Telemetry or Twisted Pair Telemetry (RS485). Below are wiring configurations for two wiring formats used for Twisted Pair Telemetry (RS485). The Predator camera **_cannot_** be wired in a Daisy Chain configuration as the RS485/twisted pair circuit is terminated end of line.

Daisy Chain ⚠ **(Cannot be used with the 360 Predator)**

RS485 twisted pair cable is wired to each camera in a "chain". Only the last camera is to have the RS485 (end of line) termination on, all other cameras in the chain must have the RS485 termination off.
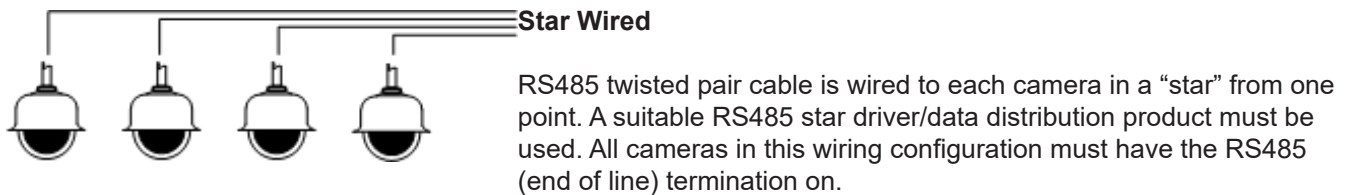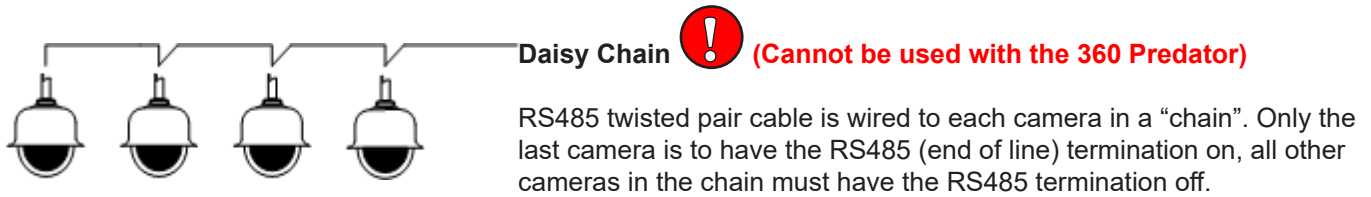
Star Wired

RS485 twisted pair cable is wired to each camera in a "star" from one point. A suitable RS485 star driver/data distribution product must be used. All cameras in this wiring configuration must have the RS485 (end of line) termination on.

7 Predator Protocol/Address setup.

All Predator cameras are supplied set to 360 Vision protocol, camera twisted pair address 1. When the Predator is switched on, an OSD (On Screen Display) is shown on the image from the camera for approx 20 seconds.

> PRO:360VTL   CAM:0001   S
> *Hybrid 2 Software Version*
>
> *Hybrid Dual*
>
> *PAL*

PRO: Protocol being used for telemetry (e.g. 360 Vision Technology Ltd)
CAM: Camera RS485 ID (e.g. Cam 1)
S or L: Short or Long cable run. Use the utility to set whether the coax used to send video is under or over 300m.
Second Line: Shows the Predator Software Version loaded into the camera.
Third Line: Shows current Hybrid mode.

To change the above settings in the camera, 360 Predator utility software, a USB/RS485 cable (PRED-USB-485) and a laptop are required.
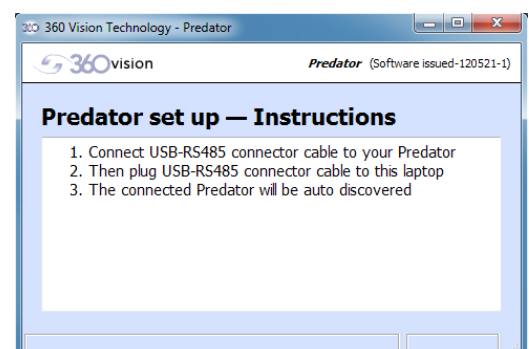
The Predator utility and PRED-USB-485 cable drivers can be found on the CD (shipped with the camera), 360 Vision Technology technical support or 360visiontechnology.com/downloads/ web site.

Install the software (Predator-issued-120521-1-installer.exe) on the laptop being used. Connect the RS485 end of the cable fitted with a 3 way connector to the Predator PSU 3 way RS485 port. Run the utility on the laptop and then connect the USB end of the cable into the laptop. The utility will then search for new comms ports and then will look for the camera across all baud rates used.

Settings that can be altered from this software are:

- Protocol: 360 (Coax/RS485), Pelco P 2400/4800/9600, Pelco D 2400/4800/9600, Pelco Coaxitron (Extended version), VCL (Coax/RS485), Ultrak (RS485), Forward Vision (RS485), Molynx (Coax/RS485)*
- Coax Cable length: Longer than 300m or shorter than 300m.
- RS485 Address: Used on RS485 systems only.

*Molynx Coax is only available when the camera is ordered with this requirement.

360 Vision Technology - Predator

360vision   *Predator* (Software issued-120521-1)

Predator set up — Instructions

1. Connect USB-RS485 connector cable to your Predator
2. Then plug USB-RS485 connector cable to this laptop
3. The connected Predator will be auto discovered

8 Predator OSD

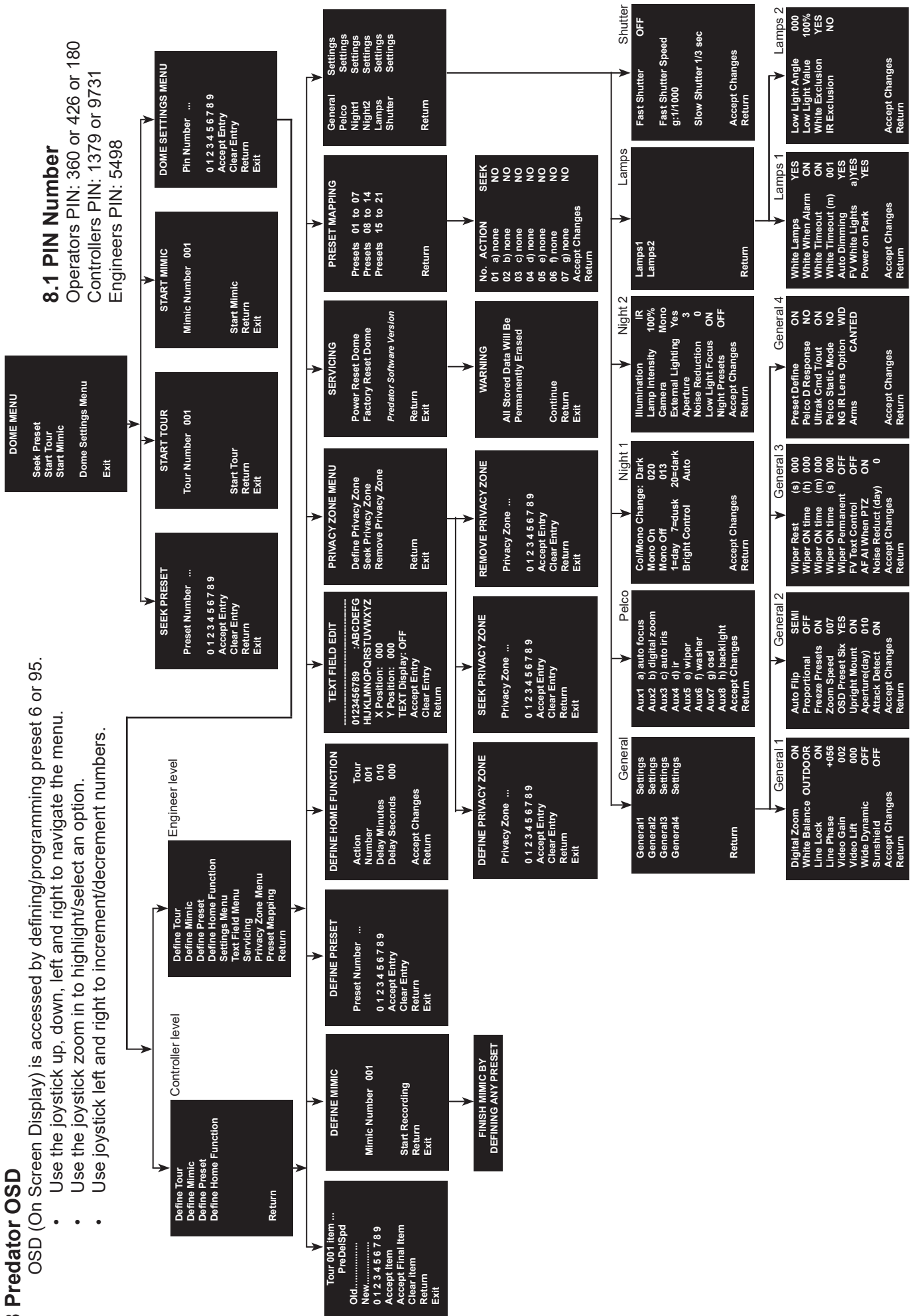OSD (On Screen Display) is accessed by defining/programming preset 6 or 95.

- Use the joystick up, down, left and right to navigate the menu.
- Use the joystick zoom in to highlight/select an option.
- Use joystick left and right to increment/decrement numbers.

8.1 PIN Number

Operators PIN: 360 or 426 or 180
Controllers PIN: 1379 or 9731
Engineers PIN: 5498

DOME MENU

Seek Preset
Start Tour
Start Mimic

Dome Settings Menu

Exit

SEEK PRESET

Preset Number …

0 1 2 3 4 5 6 7 8 9
Accept Entry
Return
Exit

START TOUR

Tour Number 001

Start Tour
Return
Exit

START MIMIC

Mimic Number 001

Start Mimic
Return
Exit

DOME SETTINGS MENU

Pin Number …

0 1 2 3 4 5 6 7 8 9
Accept Entry
Clear Entry
Return
Exit

Controller level

Define Tour
Define Mimic
Define Preset
Define Home Function

Return

Engineer level

Define Tour
Define Mimic
Define Preset
Define Home Function
Settings Menu
Text Field Menu
Servicing
Privacy Zone Menu
Preset Mapping
Return

DEFINE MIMIC

Mimic Number 001

Start Recording
Return
Exit

FINISH MIMIC BY DEFINING ANY PRESET

DEFINE PRESET

Preset Number …

0 1 2 3 4 5 6 7 8 9
Accept Entry
Return
Exit

DEFINE HOME FUNCTION

Action   Tour
Number   001
Delay Minutes   010
Delay Seconds   000

Accept Changes
Return

Tour 001 item …
PreDelSpd
Old……………
New……………
0 1 2 3 4 5 6 7 8 9
Accept Item
Accept Final Item
Clear item
Return
Exit

TEXT FIELD EDIT

.... :ABCDEFG
0123456789
HIJKLMNOPQRSTUVWXYZ
X Position: 000
Y Position: 000
TEXT Display: OFF
Accept Entry
Clear Entry
Return

PRIVACY ZONE MENU

Define Privacy Zone
Seek Privacy Zone
Remove Privacy Zone

Return
Exit

DEFINE PRIVACY ZONE

Privacy Zone …

0 1 2 3 4 5 6 7 8 9
Accept Entry
Clear Entry
Return
Exit

SEEK PRIVACY ZONE

Privacy Zone …

0 1 2 3 4 5 6 7 8 9
Accept Entry
Clear Entry
Return
Exit

REMOVE PRIVACY ZONE

Privacy Zone …

0 1 2 3 4 5 6 7 8 9
Accept Entry
Clear Entry
Return
Exit

SERVICING

Power Reset Dome
Factory Reset Dome

Predator Software Version

Return
Exit

WARNING

All Stored Data Will Be
Permanently Erased

Continue
Return
Exit

PRESET MAPPING

Presets 01 to 07
Presets 08 to 14
Presets 15 to 21

Return

No.	ACTION	SEEK
01	a) none	NO
02	b) none	NO
03	c) none	NO
04	d) none	NO
05	e) none	NO
06	f) none	NO
07	g) none	NO

Accept Changes
Return

Settings

General   Settings
Pelco   Settings
Night1   Settings
Night2   Settings
Lamps   Settings
Shutter   Settings

Return

General

General1   Settings
General2   Settings
General3   Settings
General4   Settings

Return

Pelco

Aux1 a) auto focus
Aux2 b) digital zoom
Aux3 c) auto iris
Aux4 d) ir
Aux5 e) wiper
Aux6 f) washer
Aux7 g) osd
Aux8 h) backlight
Accept Changes
Return

Night 1

Col/Mono Change: Dark
Mono On   020
Mono Off   013
1=day 7=dusk 20=dark
Bright Control   Auto

Accept Changes
Return

Night 2

Illumination   IR
Lamp Intensity 100%
Camera   Mono
External Lighting Yes
Aperture   3
Noise Reduction 0
Low Light Focus ON
Night Presets   OFF
Accept Changes
Return

Lamps

Lamps1
Lamps2

Return

Shutter

Fast Shutter   OFF

Fast Shutter Speed
g:1/1000

Slow Shutter 1/3 sec

Accept Changes
Return

Lamps 1

White Lamps   YES
White When Alarm   ON
White Timeout   ON
White Timeout (m) 001
Auto Dimming   YES
FV White Lights   a)YES
Power on Park   YES

Accept Changes
Return

Lamps 2

Low Light Angle   000
Low Light Value   100%
White Exclusion   YES
IR Exclusion   NO

Accept Changes
Return

General 1

Digital Zoom   ON
White Balance OUTDOOR
Line Lock   ON
Line Phase   +056
Video Gain   002
Video Lift   000
Wide Dynamic   OFF
Sunshield   OFF
Accept Changes
Return

General 2

Auto Flip   SEMI
Proportional   OFF
Freeze Presets   ON
Zoom Speed   007
OSD Preset Six   YES
Upright Mount   ON
Aperture(day)   010
Attack Detect   ON
Accept Changes
Return

General 3

Wiper Rest   (s) 000
Wiper ON time   (h) 000
Wiper ON time   (m) 000
Wiper ON time   (s) 000
Wiper Permanent   OFF
FV Text Control   OFF
AF AI When PTZ   ON
Noise Reduct (day) 0
Accept Changes
Return

General 4

Preset Define   ON
Pelco D Response NO
Ultrak Cmd T/out ON
Pelco Static Mode NO
NG IR Lens Option WID
Arms   CANTED

Accept Changes
Return

9 OSD Operation/Navigation

Dome menu
- Seek Preset
- Start Tour
- Start Mimic
- Dome Settings Menu

Define Tour

A tour of presets is stored in the Predator as a list of tour points. Each tour point consists of a preset number, the dwell time for which the Predator will pause and the speed parameter that will be used to seek the preset. Each of the four tours of presets can contain between 2 and 90 points.

When programming a tour of presets it is necessary to first store all the required presets into the Predator and to define the required dwell times and speeds of travel that you will require the Predator to use when the tour is started.

A maximum of four individual tours of presets can be stored in each Predator. Each tour can have between 2 and 90 points, each point can be a preset in the range 1 to 360. Different points can use any preset number, including repeats of ones that have been used before. The speed that the camera will travel at to reach the preset can be in the range 1°/sec (slowest) to 100°/sec (fastest). To seek the preset at maximum speed, set speed to 0. The delay (dwell) at each point is defined in seconds, range 1 to 100.

This page will open on Tour 1, use the joystick left and right to change to another tour. To add item 1, use the joystick to tilt down. This will highlight the number line so that the tour can be programmed. Use the joystick to navigate along the number line and zoom in to select the number. This will add the number in to the NEW tour. Add in the figures for the item/point in the tour using the sequence labelled above (PREDELSPD. PRE is preset position, DEL is delay in seconds and SPD is speed at °/second). This is how the camera will be programmed to move to a preset for a period of time at a set speed. All nine figures must be added into the item. Figures must be added in three i.e. preset 21 will be added as 021.

Example of an item/point

021005100 = Move to preset 21 for 5 seconds at 100°/sec

Highlight ACCEPT ITEM and zoom in, this will add the item/point into the tour. The OLD item/point will be shown on the screen. If these settings are acceptable, highlight the ACCEPT ITEM option and zoom in. There is no need to add in these points again. Keep adding points until the tour is complete. On the final item/point of the tour highlight and zoom in on ACCEPT FINAL ITEM. This will complete the tour programming.

Define Mimic (*Before going into the OSD screen to programme a Mimic tour it is recommended to move the camera in to the start position, any movement or delay will be recorded once the recording has started.*)

When a mimic tour is started, the Predator will perform all the actions which were defined when the mimic was programmed. Up to four mimic tours can be defined.

Highlight and zoom in on START RECORDING, this will allow a mimic tour to be programmed into the camera. The mimic tour can then be used to playback any manual movement, preset seek or delay. Program a preset to end the mimic tour program.

Define Preset

Before going into the OSD screen to programme a preset, the camera must be in the position required. Once in the OSD you cannot manually move the camera.

Define Home Function

The camera will perform an ACTION (goto preset, start preset or mimic tour), after a period of inactivity. Use the NUMBER option to set which preset or tour to start, and the DELAY MINUTES/SECONDS to input the inactivity time period.

General Settings Menu

Offers more camera options.

General 1

- Digital Zoom - Use this option to enable or disable digital zoom.
- White Balance - Change the camera white balance settings to suit the area.
- Line Lock - Used to line lock the camera.
- Line Phase - Can be used to manually adjust the line phase.
- Video Gain - Used to adjust the video level to suit different lengths of coax cable.
- Video Lift - Used to adjust the frequency of the video level to suit different lengths of coax cable.
- Wide Dynamic - Enable WDR. Options available are ON, Auto and Off. Default is off.
- Sunshield - Reduces tilt range of the camera for when a sunshield is fitted.

General 2

- Auto Flip - Use this option to set how the camera behaves when full tilt down is reached.
    Semi - Requires a second tilt down command when at full tilt down to spin camera 180°.
    Full - Automatically spins the camera 180°.
- Proportional - Automatically reduces/increases pan/tilt speed depending on zoom ratio.
- Freeze Presets - This option freezes the image, when moving between presets.
- Zoom Speed - Select zoom speed of the lens. Options are slow, medium, high and highest.
- OSD Preset Six - Go into OSD using preset 95 and you can switch off OSD access using preset 6.
- Upright Mount - Can be used to flip the image, so the camera can be used on a pole or a ceiling. Default is pole.
- Aperture(day) - Can be used to increase the picture detail. Default is 10.
- Attack Detect - Camera will re-initialise camera motors so that camera looks back to the original position, if the camera is physically forced/moved. Default is on.

General 3

- Wiper Rest - Input a rest time for the wiper. *(See also Special Presets page 45).*
- Wiper On Time (h, m, & s) - Input a time period for the wiper operation. *(See also Special Presets page 45).*
- Wiper Permanent - Enable or disable the permanent wiper time period.
- FV Text Control - Used on systems using Forward Vision protocol. Will add ANPR text on screen when camera is put into fast shutter mode.
- AF AI When PTZ - Auto focus/iris will activate when PTZ is used, can be switched off. Default is on.
- Noise Reduction (day) - Used to reduce noise. NR must be set to suit the environment. Default is off.

General 4

- Define Preset - Option to enable/disable the setting of presets. Default is on.
- Pelco D Response - Used on systems using Pelco D protocol where a response from the camera is required. *Do not use if the system doesn't require a response as it will have an affect on the telemetry control of the camera.*
- Ultrak CMD T/out - Disables Ultrak KD6 100mS command timeout.
- Pelco Static Mode - Disables PTZ control.
- NG IR Lens Option - Choice of wide or narrow IR lenses that will be used when activated. Requires additional IR alarmcard.
- Arms - Set if the Predator arms are CANTED or STRAIGHT. FOR PRODUCTION USE ONLY

Pelco

Used when using Pelco protocol auxiliary commands. Associate a function of the camera to a Pelco Aux command.

Night 1

- Col/Mono Level - Col/Mono level settings can be changed to suit the site requirements. Options are dark, medium and light. Default is dark. This sets when the camera goes into 'night mode'.
- Mono On - Range is 7 to 25. A lower value will set the level on when the scene is brighter, a higher value will set the level on when the scene is darker.
- Mono Off - Range is 1 to 20. A lower value will set the level off when the scene is brighter, a higher value will set the level off when the scene is darker.
- Bright Control - Options are automatic or normal activation.

Night 2

- Illumination - When the camera goes into dark mode, what illumination is required. Options are none, IR and White Light. Please note illumination type will only work if the camera has this option fitted to the camera. Default is None.
- Lamp Intensity - Choose lamp intensity, options 100%, 80%, 60%, 40% and 20%. Default is 100%.
- Camera - Choose when the camera goes into dark mode, what the image will be. Options are mono or colour.
- External Lighting - Sets how the camera will focus (when in mono) to suit the light source in the scene. If this is set incorrectly the image may not be in focus.
- Aperture - Can be used to increase the picture detail. Default is 3.
- Noise Reduction - Used to reduce noise with scenes of low illumination. NR must be set to suit the environment. Default is 1.
- Low Light Focus - This can be set to on or off. When it is set to low the method used to focus the camera is suited to low light conditions. Default is on.
- Night Presets -This can be used to set the presets to different settings if required.

Lamps

Offers more camera options.

Lamps 1

- White Lamps - Set if white lights are to be used.
- White When Alarm - Set if white lights are to be used if an alarm is triggered. This feature works with 360 Standalone alarmcard or 360 Vision Matrix only.
- White Timeout - Use if a white light timer is required. Default is on.
- White Timeout (m) - Set white light timer, for automatic switch off.
- Auto Dimming - When selected the camera will reduce the lamp power, when looking in scenes where there is too much light.
- FV White Lights - Used when using Forward Vision protocol, can be used to select what lamps are controlled from the lamp command.
- Power on Park - When the camera powers up, it will go to a preset position. Preset 150. Default is off.

Lamps 2

- Low Light Angle - Sets angle when reduced illumination intensity is used.
- Low Light Value - Sets illumination intensity.
- White Exclusion - Option to be used if a white light exclusion area is to be used, set area using presets 151 (left) & 152 (right).
- IR Exclusion - Option to be used if a infra red light exclusion area is to be used, set area using presets 153 (left) & 154 (right).

Predator lamps are used to improve the illumination of distant dark objects. The Predator lamps are normally set to maximum intensity to increase the distance at which objects can be seen. When the Predator lamps are ON and the camera tilts downwards to view nearby objects, the illumination could be too bright. This could cause the quality of the image to be reduced. Some Predators include the 'intelligent lighting' feature which allows the intensity of the illumination to be reduced when the Predator tilts down below a particular angle (i.e. the 'Low Light Angle'). Below this angle the power to the lamps is reduced to the percentage value that has been set (i.e. 'Low Lights Value').

Shutter

- Fast Shutter - Option to enable fast shutter and set speed of the shutter.
- Slow Shutter - Option to alter the slow shutter speed. Altering this figure will have an effect on the low light capabilities of the camera.

Text Field Menu

Navigate along alpha-numeric characters and use zoom in to select. Choose text position by inputting x and y co-ordinates. Set text display to on, if required.

Servicing

- Power Reset - This will reboot the camera, no settings will be lost.
- Factory Reset - This will reboot the camera and all the settings will be lost, except camera protocol and address settings.
- Predator Software Version - This shows the software version of the camera.

Privacy Zone Menu

Can be used to obscure a scene within an image e.g. private residence. Move the camera to the position required for the privacy zone before going into the camera OSD. You cannot manually move the camera once in the OSD. Use the zoom to set the size of the privacy zone. Privacy zone will cover the whole scene viewed when set.

- Define Privacy Zone - Used to set a privacy zone.
- Seek Privacy Zone - Used to seek a privacy zone.
- Remove Privacy Zone - Used to remove a privacy zone.

Preset Mapping

Use this option to re-map a function to a preset.

Options are:-

- none
- auto focus on
- auto iris on
- ir light
- wiper
- white light
- fast shutter
- WDR
- ambient
- 20% lamp intensity
- 40% lamp intensity
- 60% lamp intensity
- 80% lamp intensity
- 100% lamp intensity
- video switch
- white day
- ir-mono
- mono
- normal night
- washer on
- washer off
- low power on
- low power off

Predator Hybrid
HD/IP
Installation/Configuration Section

Predator Hybrid Configuration

10 Locating the Predator Hybrid 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, 'ONVIF Device Manager' or 360 Vision Discovery Tool (which can be found on the CD supplied, from 360 Vision Technology web site or technical support) to find the IP address of the Predator Hybrid. Note the ports used by the Predator Hybrid 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

11 Connecting to the Predator Hybrid

Type in the IP address of the Predator Hybrid into the address bar of a internet browser and install the plug-ins as required. The web page of the camera will then appear.
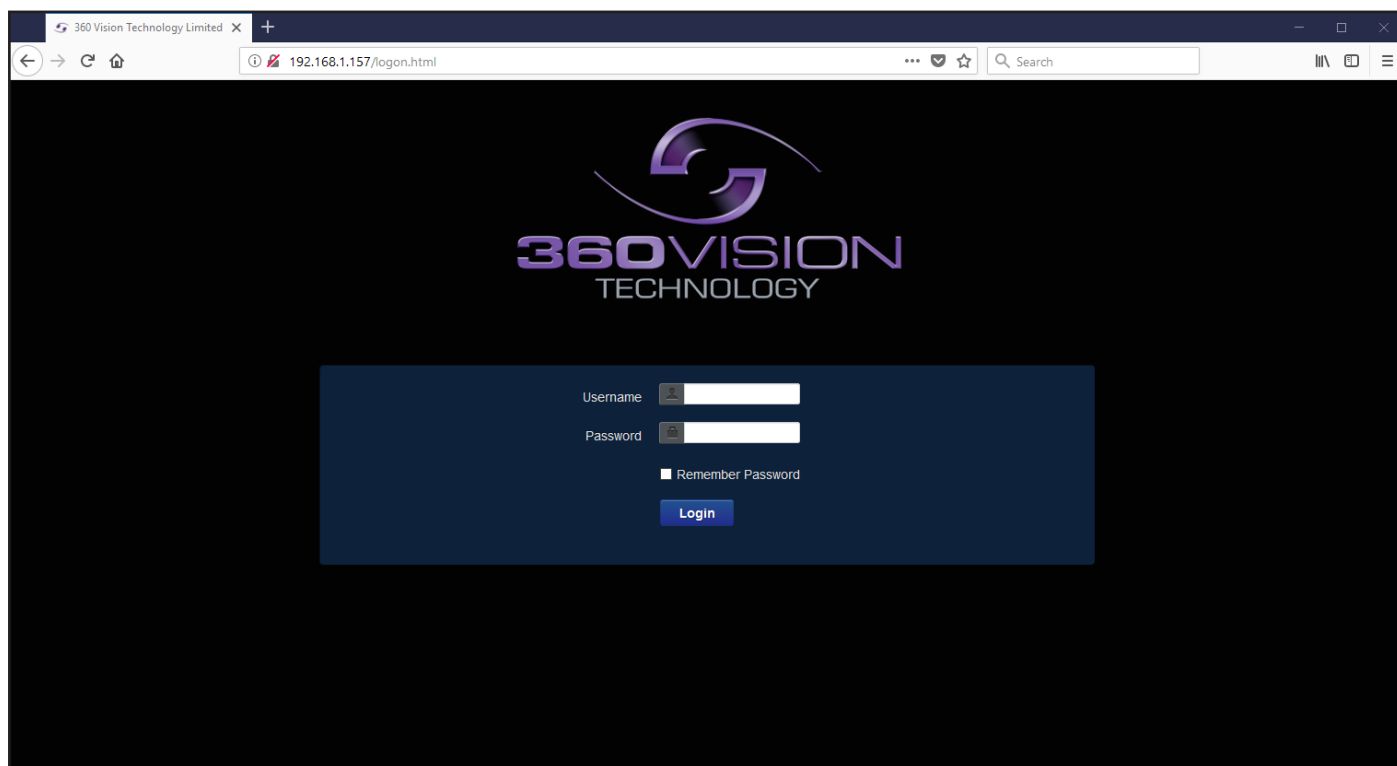
Predator Hybrid Web Page Login screen

If you select the box 'Remember Password' it could compromise the security of the Predator camera.

Select Login

The web page will show JPEG images every second *(See Browser - page 43)*.
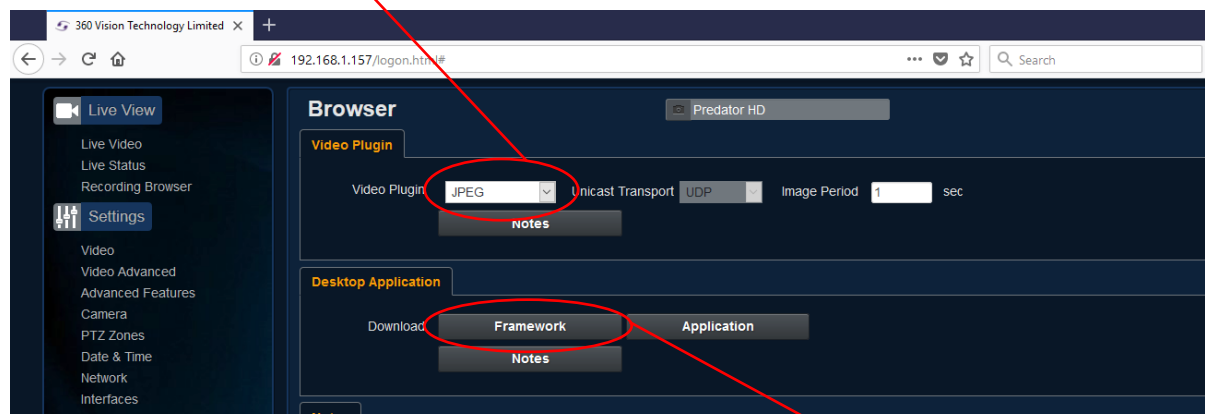
For live video please use the 360 HD Discovery/Config Tool, this can be downloaded from the camera web page.

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

1   Live View
2   Settings
3   Add/Edit Users
4   Maintenance
5   Browser
6   Logout

11.1 Live View
11.1.1 Live Video
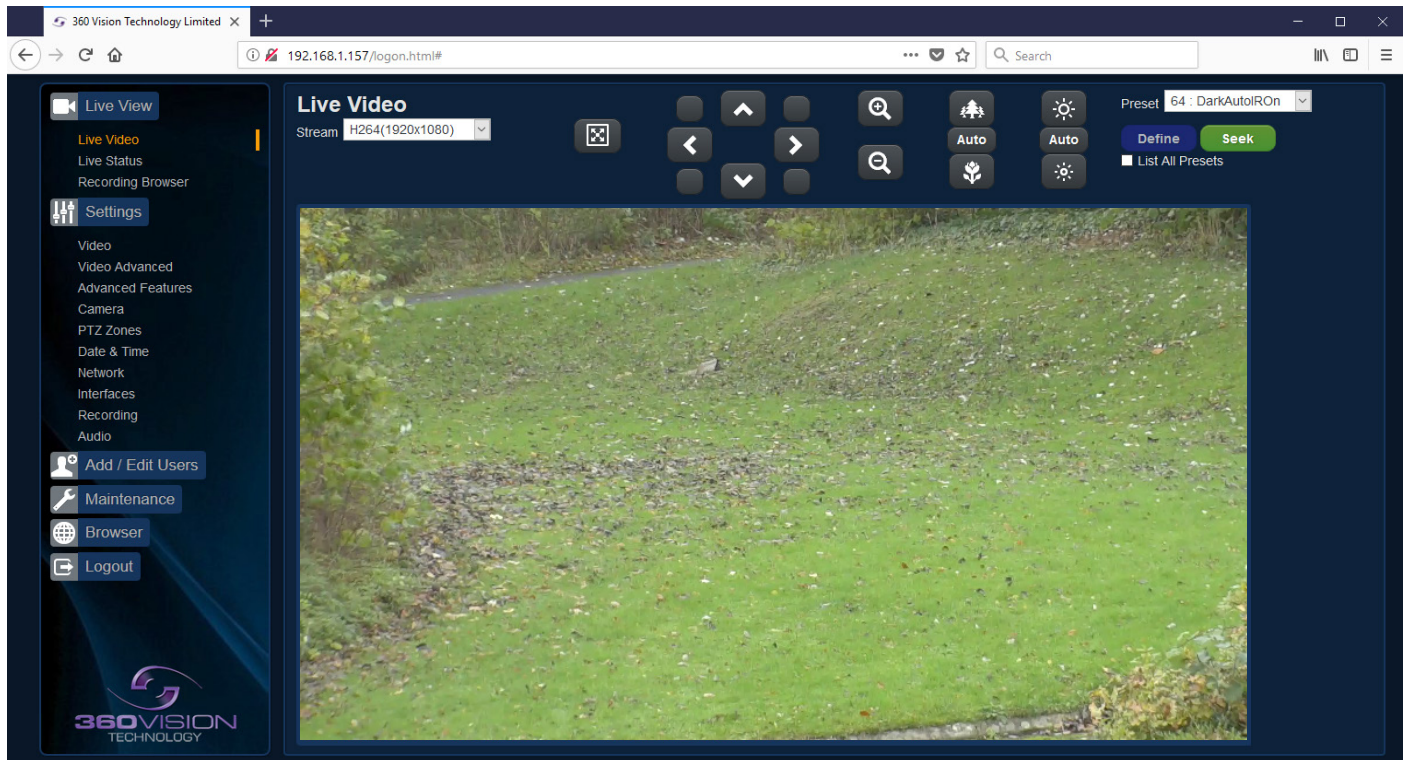
The Live Video page offers options to:-
- Stream - Choose required stream from drop down selection.
- 1x Display - Use to show selected stream as full screen.
- Pan/Tilt - Use the up down left and right buttons to move the camera to the desired position.
- Zoom In/Out - This will operate the optical and digital zoom (if digital zoom is enabled).
  (See Camera - Digital Zoom - page 31)
- Focus Far/Auto/Near - This will operate the manual focus near, far or automatically focus as required.
  (See Camera - AF AI when PTZ - page 31)
- Iris Open/Auto/Close - This will operate the manual iris open, close or automatic as required.
  (See Camera - AF AI when PTZ - page 31)
- 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 28)*
- List all presets - Use to show all presets or programmed presets in drop down selection box.

11.1.2 Status

Status page

- Save - Used to save the status page information as a HTML file.
- Refresh - Select an automatic page refresh option.
- Camera - Shows information relating to the camera time & date settings, the version of codec and mainboard software loaded
- Video Streams - Shows the current video streams configuration.
- Streaming - Shows the IP address of the PC that is receiving the video streams.
- System - Shows how long the camera has been powered, how much bandwidth it is using etc
- Current Status - Shows the camera function information, ie PTZ positions, wiper and lamp activity etc.
- Frame Statistics - Gives information about the video stream, how big the frames are, how big the I frames are, how long it is taking to transmit the frames.
- Recording - (Only available on Edge Recording Predator) - Gives information about the current file being recorded.
- Audio Output - (Only available on Edge Recording Predator) - Gives information about the current file being played.

11.1.3 Recording Browser
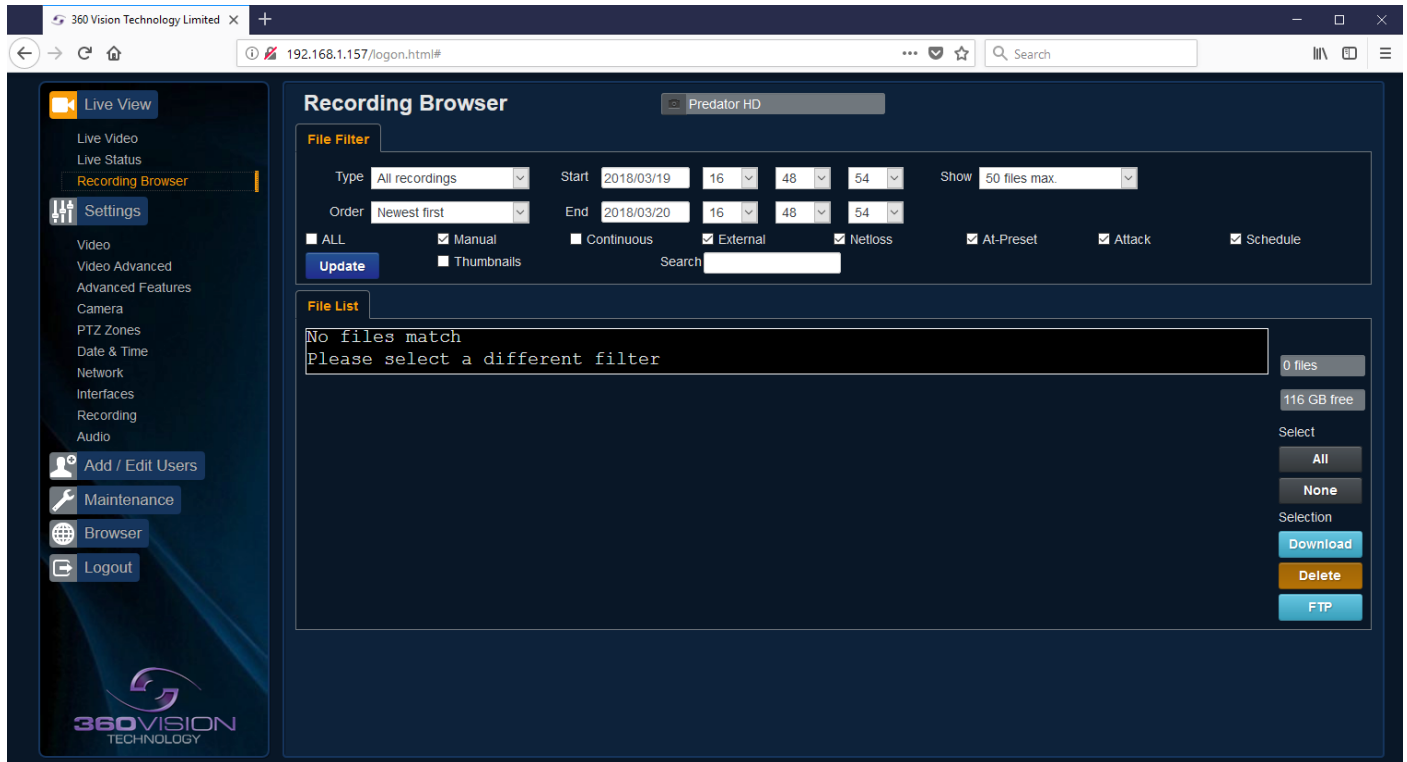
Only available on Edge Recording Predator

Recording browser web page offers access to files loaded onto the storage device. This includes recordings which can be filtered to show specific requirements.

- Type - Select which type of file you are interested in, choices are all recordings, video recordings, image recordings and audio files.
- Show - Choose how many files that will displayed on the page.
- Order - Choose what order the files are displayed in, choices are newest or oldest first.
- Filter - Choose what recording trigger is to be used for the filter.
- Search - Search filename using the YYYYMMDDhhmmss-x-name.avi format.
- Update - Used to apply any filter changes.
- FTP - Click to send selected file in the table to the FTP server *(See Network - page 36).*
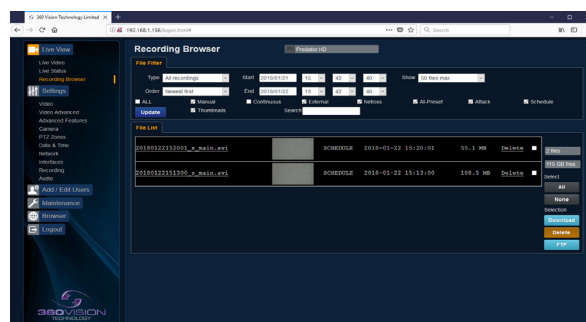
Recording Browser Screen with thumbnails

11.2 Settings
11.2.1 Video
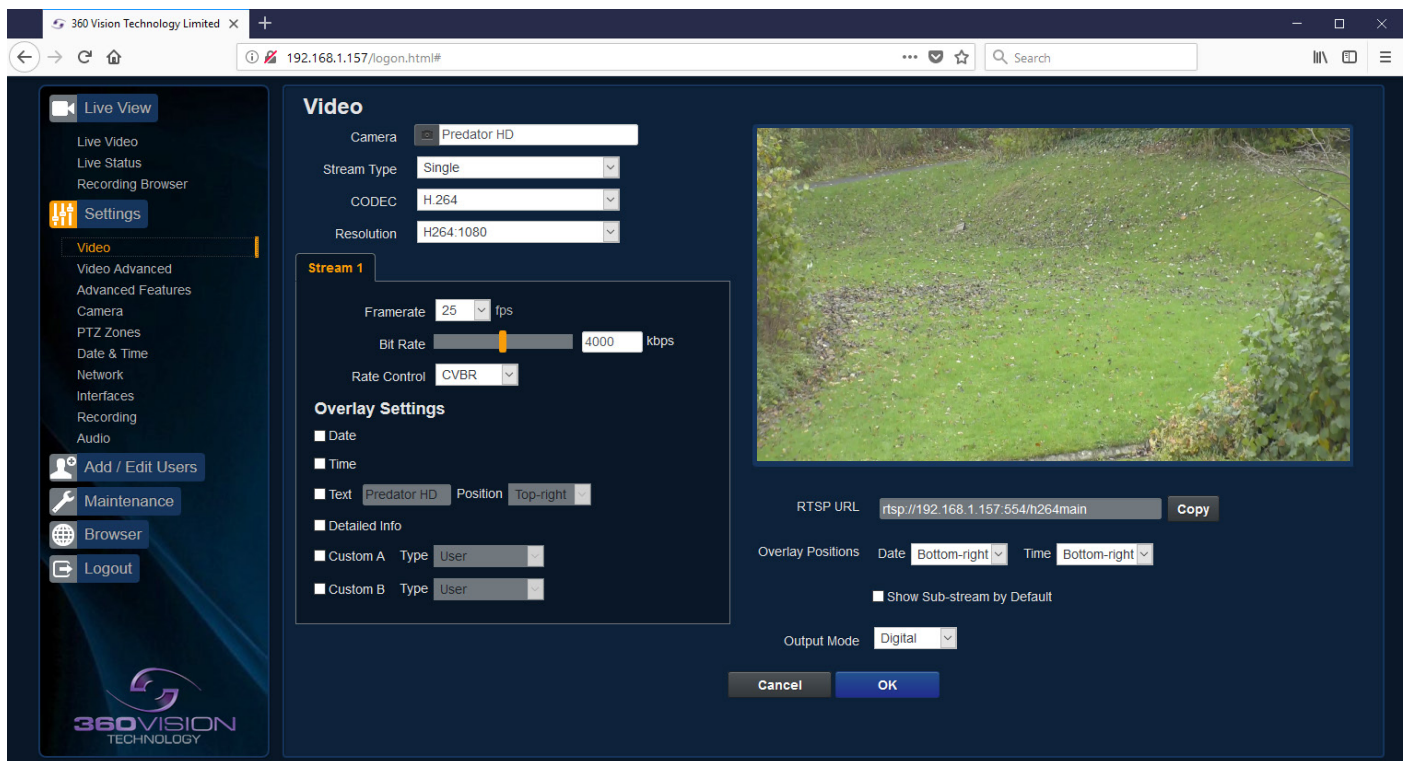
The Video page,offers options to setup:-
- Camera - Add or edit the camera name.
- Stream Type - Choice of single or dual video streams.
- CODEC - Choose which compression format, the stream will use.
  (See page 47 for table of options).
- Resolution - Set what resolution the stream will use. *(See page 47 for table of options).*

Stream Tabs, offer options to:-
- Framerate - Configure how many frames per second (fps) the stream uses.
  (See Camera - Sensor Frame Rate - page 31).
- 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), and CVBR (Constrained Variable, limited to 8Mbps).

Overlay options
- Date - Selecting this option will show the date as text on the video stream.
  (See Date/Time - page 35).
- Time - Selecting this option will show the time as text on the video stream.
  (See Date/Time - page 35).
- 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.
- Custom A - Used to enable the option to display text when the camera is operated. See options for text selections below. Text will be shown on top line of video.
  (See PTZ zones - page 34).
- Custom B - Used to enable the option to display text when the camera is operated. See options for text selections below. Text will be shown on second from top line of the video.
  (See PTZ zones - page 34).

Text selections available are
- User - For SDK use.
- Zone - Used to show text that has been programmed into the camera setup.
  (See PTZ zones - page 34).
- PTZ Status - Shows camera PTZ co-ordinates.
- Camera Status - Shows the current state of the camera, what focus, iris and sensor mode the camera is in.
- Pan Compass - Used to display compass readings when the camera is operated.
  (See PTZ zones - page 34).
- Current Preset - Used to show the stored preset text when the camera is at the preset position.

RTSP URL
- Copy - Use this option to copy the RTSP URL

Overlay Options
- 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.
- Show Sub-stream - Shows second sub-stream if enabled.

Hybrid Mode
- Choice of analogue or digital/IP video output.
  Camera will perform an automatic reboot when this option is changed.

OK to program the new settings into the Predator.
Cancel to abandon the changes to the video settings.

11.2.2 Video Advanced
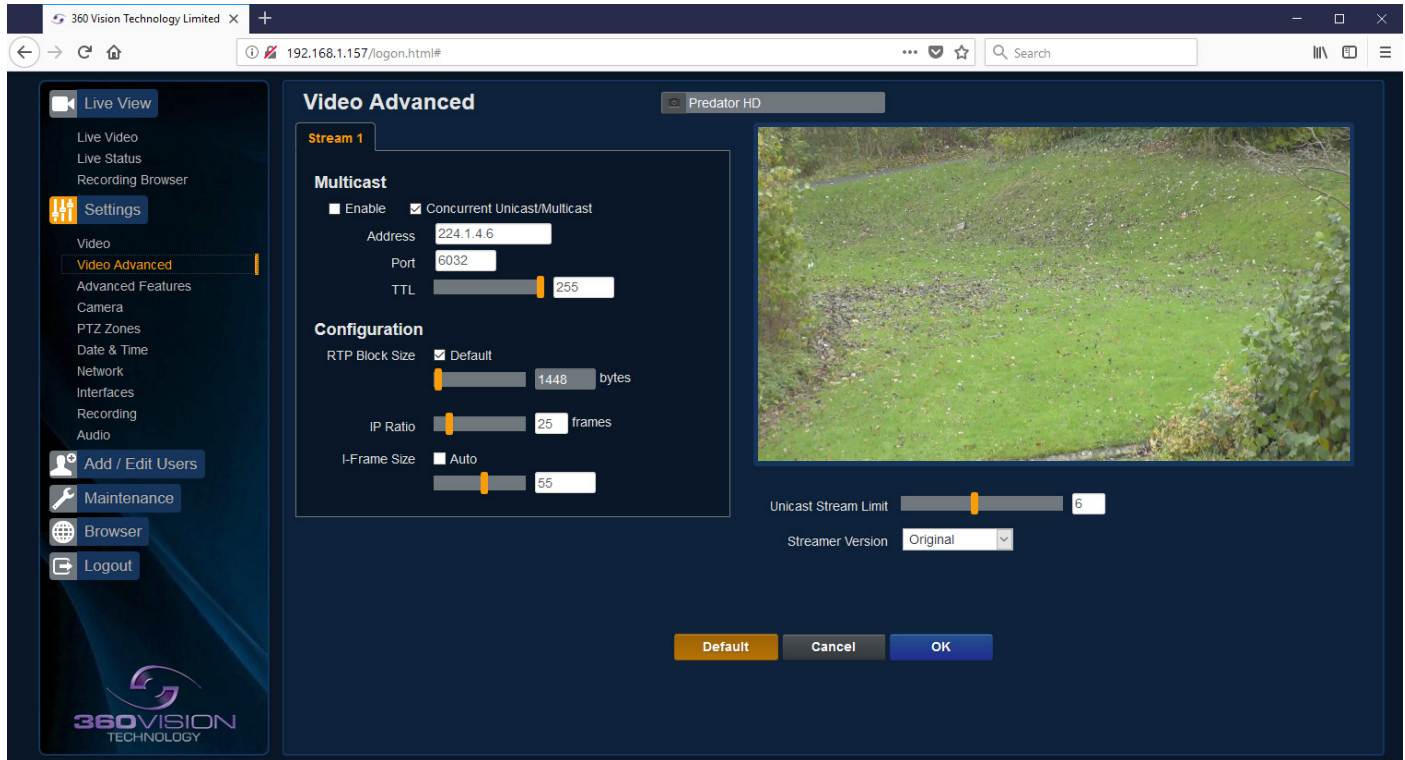
Multicast - *(See Stream Tables - page 47).*
Tick the box to enable 'multicast'. If the box is not ticked then 'unicast' is selected.

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

Concurrent Uni/Multicast - Enable to allow concurrent unicast/multicast streams.

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

Unicast
If lots of receivers (users) want to receive video streams from the Predator HD, 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 Predator HD chooses a 'new UDP address' (Typically an address which is outside the normal range of addresses for the network to which the Predator HD 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 Predator HD 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.

Configuration
Use the below settings to set how the video is sent, adjusting the settings can help to eliminate any 'stutter' or 'pulsing' on the video image.

	Stream	Description
RTP Block Size	1448 (default)	Range 1440 to 65500
IP Ratio	25 (default)	E.g. 1 'i-frame' every 25th image.
I Frame Size	55 (default)	Range 0 to 99 (Average frame size x value/10 = i frame size)

Unicast Stream Limit
   • Used to set the unicast stream limit.

Streamer Version
   • Option allows the user to set the video streamer version. Options are original and 2016a.

OK to program the new settings into the Predator.
Cancel to abandon the changes to the advanced video settings.
Default is used to factory reset the video stream settings.

11.2.3 Advanced Features
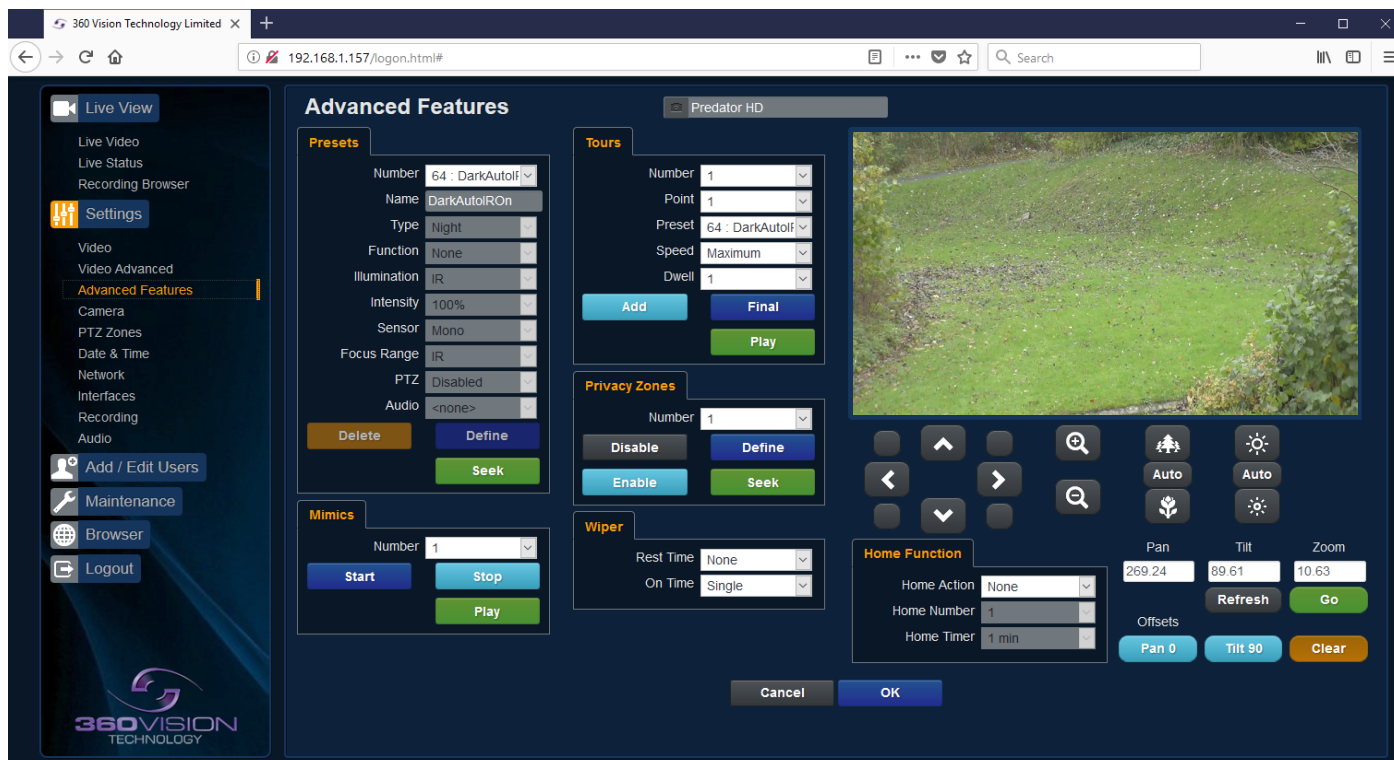
The Advanced Features page, offers options to:-
   • Camera - Cannot be edited, shows label/name given to the camera.
   (See section Video - Camera - page 25).

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:-
- Number - 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 that include lamps
    (See also Camera - Night Presets - page 31)
    Simple - For setting a simple PTZ preset, no lamp options.
    Wiper - Set the preset to activate the wiper.
    Washer - Set the preset to activate the washer.
    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.
    Auxiliary - Can be used to recall an auxiliary command.
    Audio - Can be used to play a sound. **Only available on Edge Recording Predator.**
    Power - Used to set the pan/tilt motors to use full or part power.
- Function - Function option will change to suit the above type.
- Illumination - Choice of illumination for preset with night presets function enabled. Options are IR, White Light and off.
- Intensity - Set lamp intensity for the preset using the illumination chosen above.
- Sensor - Presets have the choice of being either colour or mono, when the scene is dark.
- Focus Range - Sets how the camera will focus when in mono. Options are ambient or IR. The Focus Range setting will set the camera focus, (when in mono) to suit the light source in the scene. *If this is set incorrectly the image may not be in focus, when in mono at night.*
- PTZ - Camera can be set to pan, tilt and zoom or not. This can be used to operate the sensor or lamp function.
- Audio - Choose audio file to be used. **Only available on Edge Recording Predator.**

- Seek - Use this to test the preset.
- Define - Use this to set/define the preset.
- Delete - Use this to delete/remove the preset.

Mimics
When a mimic tour is started, the Predator Hybrid will perform all the actions which were defined when the mimic was programmed. Up to four mimic tours can be defined.

- Play - Starts the selected mimic tour.
- Start - Use this to start programming a mimic tour. Move the camera, seek presets and/or use the lens to define the actions to be saved for the mimic.
- Stop - Use to end the programming of the mimic tour into the Predator Hybrid.

The mimic and preset tours will repeat continuously until manually interrupted either by an alarm or user intervention.

Tours
A tour of presets is stored in the Predator Hybrid as a list of tour points. Each tour point consists of a preset number, the dwell time for which the Predator Hybrid will pause and the speed parameter that will be used to seek the preset. Each of the four tours of presets can contain between 2 and 90 points.

When programming a tour of presets it is necessary to first store all the required presets into the Predator Hybrid and to define the required dwell times and speeds of travel that you will require the Predator Hybrid to use when the tour is started.

A maximum of four individual tours of presets can be stored in each Predator Hybrid. Each tour can have between 2 and 90 points, each point can be a preset in the range 1 to 360. Different points can use any preset number, including repeats of ones that have been used before. The speed that the camera will travel at to reach the preset can be in the range 1°/sec (slowest) to 100°/sec (fastest). To seek the preset at maximum speed, set speed to 0. The delay (dwell) at each point is defined in seconds, range 1 to 100.

- Play - Starts the selected preset tour.
- Add - Use to add a new point to the tour.
- Final - Use to indicate that this point is the last point in the tour.

Privacy Zones
A privacy zone can be used to obscure a scene with in an image e.g. private residence.

Use the drop down box to select the privacy zone preset 1 to 24. Move the camera so that the scene to be obscured is in the centre of the image. Use zoom to set the size of the privacy zone.

- Define - Defines the image as a privacy zone preset.
- Seek - Seeks the selected privacy zone preset.
- Enable - Sets the selected privacy zone preset as a privacy zone.
- Disable - Disables the privacy zone of the selected privacy zone preset.

Up to eight privacy zones can be viewed at the same time. The privacy zone feature is not available when the camera is within 20° of the camera pointing vertically up or down.

Wiper
- Rest Time - Set wiper rest time.
- On Time - Set time period for how long wiper will run.

Home Function
The camera will perform an action (goto preset, start preset or mimic tour), after a period of inactivity.

- Home Action - This sends the camera to a preset, tour or mimic.
- Home Number - This sets the preset, tour or mimic the camera will go to/start.
- Home Timer - This sets the time for the period of inactivity.

PTZ position co-ordinates are also shown, use the refresh button to refresh the data if the camera has been moved.

PTZ position co-ordinates can also be added manually, use the go button to send the camera to the coordinates set.
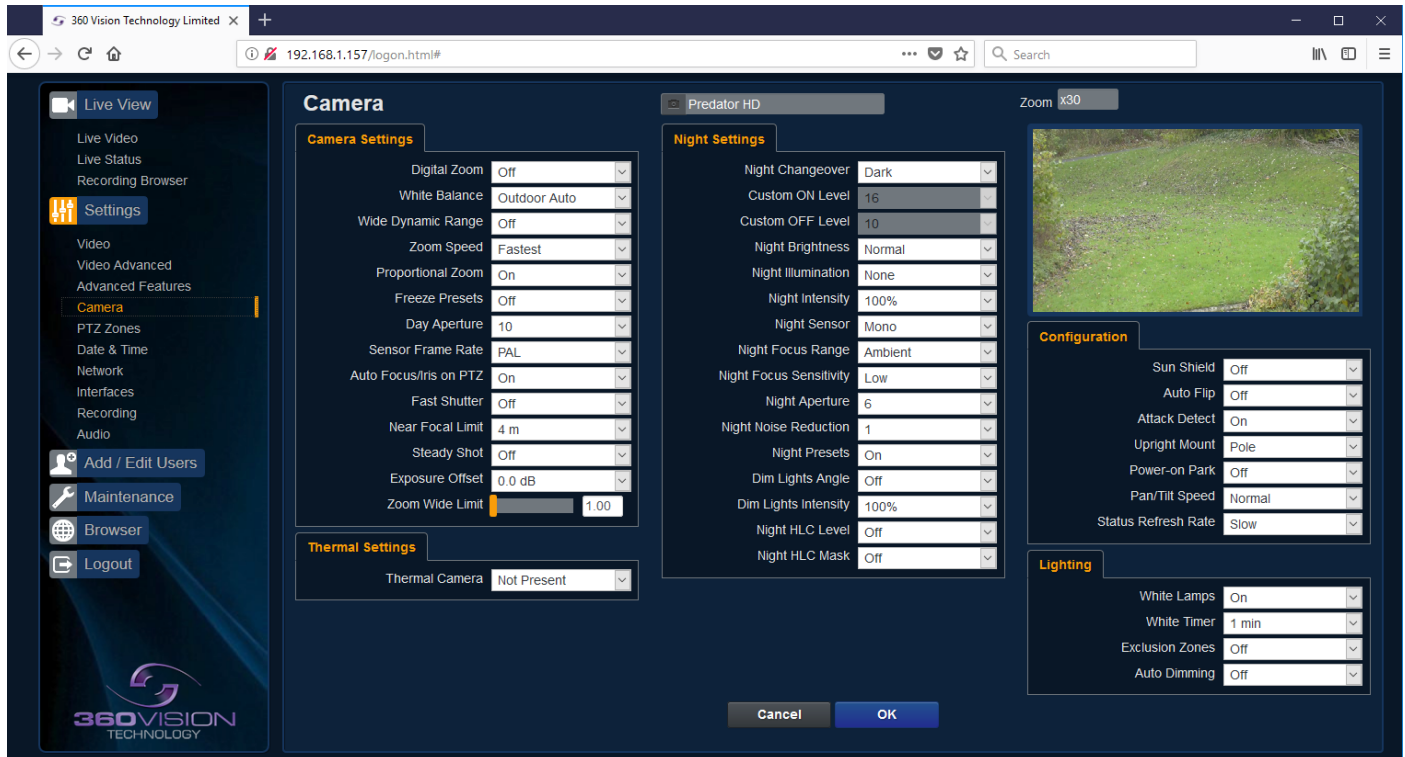
Pan/Tilt Offset
Used to set current pan/tilt to zero.
- Set - Set current position to zero.
- Clear - Clear current zero position.

OK to program the new settings into the Predator.
Cancel to abandon the changes to the advanced feature settings.

11.2.4 Camera

- Camera - Cannot be edited, shows label/name given to the camera.
  (See section Video - Camera - page 25).

The Camera page, offers options to:-
- Digital Zoom - Enable digital zoom. Default is off.
- White Balance - Select White Balance settings to suit camera location.
  (See page 49 for table of options).
- Wide Dynamic range - Enable WDR. Options available are ON, Auto and Off. Default is off.
- Zoom speed - Select zoom speed of the lens. Options are slow, medium, high and highest.
- Proportional Zoom - Automatically reduces/increases pan/tilt speed depending on zoom ratio. Default is on.
- Freeze Preset - This option freezes the image, when moving between presets. This can help reduce the bandwidth. Default is off.
- Day Aperture - Can be used to increase the picture detail. Default is 10.
- Sensor Frame Rate - Can be used to set the camera to suit PAL (25fps) or NTSC (30fps). Unit must be rebooted for settings to apply. Default is PAL.
- Auto Focus/Iris on PTZ - Auto focus/iris will activate when PTZ is used, can be switched off. Default is on.
- Fast Shutter - Select fast shutter if using the Predator Hybrid camera on a ANPR system. Default is off. *(See page 49 for table of options).*
- Near Focal Limit - Can be used to set the near focal limit. This will help in scenes where the camera is focusing on objects near to the camera, causing the camera to be out of focus on distant objects. Default is 4m.
- Steady Shot - Can be used to reduce camera shake from the picture.

Steady Shot – The viewed picture is made from a window which shows part of the full picture from the camera sensor. This means that part of the picture is wasted. The viewed part of the picture is moved automatically to use some of the wasted part so that the observed picture is stable and has compensated for the vibrations and minor movements of the Predator Hybrid. The maximum amount of picture stability is achieved for all zoom settings. The part of the picture that is wasted reduces the resolution of the viewed picture when the camera is set to 1080P and steady shot is selected. When the camera is set to 720P it is usual for no resolution to be lost when steady shot is selected.

Stable Zoom – In this mode, when the picture is zoomed fully out (wide angle) the steady shot feature has no effect. As the picture is zoomed out the effect of the vibrations is naturally minimized. As the picture zooms in, the part of the picture that is viewed is a window within the whole (unzoomed) picture. The unused part of the picture is used to allow the viewed part of the picture to be moved automatically to compensate for the vibrations. In this mode, the viewed picture has full resolution for all of the zoom range, but the camera does not compensate for the vibrations when the picture zoom is at or near to the fully zoomed out setting.

Extended Zoom – This option doesn't produce a steady picture, instead of which, a window within the whole picture is viewed i.e. the scaling of the picture is altered slightly which gives the advantage that the normal 30x zoom has been extended to 36x zoom. This is effectively a digital zoom and as such, when 1080P is used, the resolution of the picture has been slightly reduced. When the camera is set to 720P it is usual for full resolution to be achieved for the full range of zoom settings.

- Exposure Offset - Used to set the camera exposure setting.
- Zoom Wide Limit - Used to set the camera zoomed out limit.

Thermal Settings
- Thermal Camera - If a thermal camera is fitted this option when enabled will give control options of the thermal camera.
- Thermal Colour - White Hot, Black Hot, Ice and Fire, Glow Bow and Iron Bow.
- Thermal Gain Control - Histogram, Linear and Auto Bright.

Night Settings
- Night Changeover - Night Changeover settings can be changed to suit the site requirements. Options are dark, medium, light and custom. Default is dark.
  This sets when the camera goes into 'dark mode'.
- Custom On Level - Range is 7 to 25. A lower value will set the level on when the scene is brighter, a higher value will set the level on when the scene is darker. Default is 7.
- Custom Off Level - Range is 1 to 20. A lower value will set the level off when the scene is brighter, a higher value will set the level off when the scene is darker. Default is 1.
- Night Brightness - This controls the exposure compensation, by artificially brightening the image. Options are normal and auto. Default is normal.
- Night Illumination - Choose which type of light source is required for when the camera is in dark mode. Options are IR or white light if supported by the camera.
- Night Intensity - Set what power the lamps will run at. Default is 100%.
- Night Sensor - Can be set to colour or mono. Default is mono.
- Night Focus Range - Sets how the camera will focus (when in mono) to suit the light source in the scene. If this is set incorrectly the image may not be in focus.
- Night Focus Sensitivity - This can be set to normal or low. When it is set to low the method used to focus the camera is suited to low light conditions. Default is low.
- Night Aperture - Can be used to increase the picture detail. Default is 6.
- Night Noise Reduction - Used to reduce noise with scenes of low illumination. NR must be set to suit the environment. Default is 1.
- Night Presets - This can be used to set the presets to different settings if required. Default is on.

Predator lamps are used to improve the illumination of distant dark objects. The Predator lamps are normally set to maximum intensity to increase the distance at which objects can be seen. When the Predator lamps are ON and the camera tilts downwards to view nearby objects, the illumination could be too bright. This could cause the quality of the image to be reduced. Some Predators include the 'intelligent lighting' feature which allows the intensity of the illumination to be reduced when the Predator tilts down below a particular angle (i.e. the 'Dim Light Angle'). Below this angle the power to the lamps is reduced to the percentage value that has been set (i.e. 'Dim Lights intensity').

- Dim Lights Angle - Sets angle when reduced illumination intensity is used.
- Dim Lights Intensity - Sets illumination intensity.
- Night HLC Level - Set a value to help mask high intensity light sources, options are low, medium and high.
- Night HLC Mask - Sets a mask for the light source, options are 1 (white) to 15 (grey).

Configuration
- Sun Shield - Reduces tilt range of the camera for when a sunshield is fitted.
- Auto Flip - Use this option to set how the camera behaves when full tilt down is reached.
    Tilt - Requires a second tilt down command, when at full tilt down to spin camera 180°.
    Limit - Automatically spins the camera 180° when full tilt down is reached.
- Attack Detect - Camera will re-initialise camera motors so that camera looks back to the original position, if the camera is physically forced/moved. Default is on.
- Upright Mount - Can be used to flip the image, so the camera can be used on a pole or a ceiling. Default is pole.
- Power on Park - When the camera powers up, it will go to a preset position. Preset 150. Default is off.
- Pan/Tilt Speed - Can be used to set the pan/tilt speed. Options are Normal, 20%, 40%, 60%, 80% Slower, 20%, 40%, 60% or 80% Faster. Default is normal.
- Status Refresh Rate - Can be used to help speed up telemetry control of the camera, by slowing down the camera internal refresh rate.

White Lights
- White Lamps - Set if white lights are to be used.
- White Timer - Set white light timer.
- Exclusion Zones - Option to be used if a white light exclusion area is to be used, set area using presets 151 (left) & 152 (right), IR light exclusion area is required, set area using presets 153 (left) & 154 (right) or white & IR light exclusion zone.
- Auto Dimming - When selected the camera will reduce the lamp power, when looking in scenes where there is to much light.

OK to program the new settings into the Predator.
Cancel to abandon the changes to the camera settings.

11.2.5 PTZ Zones
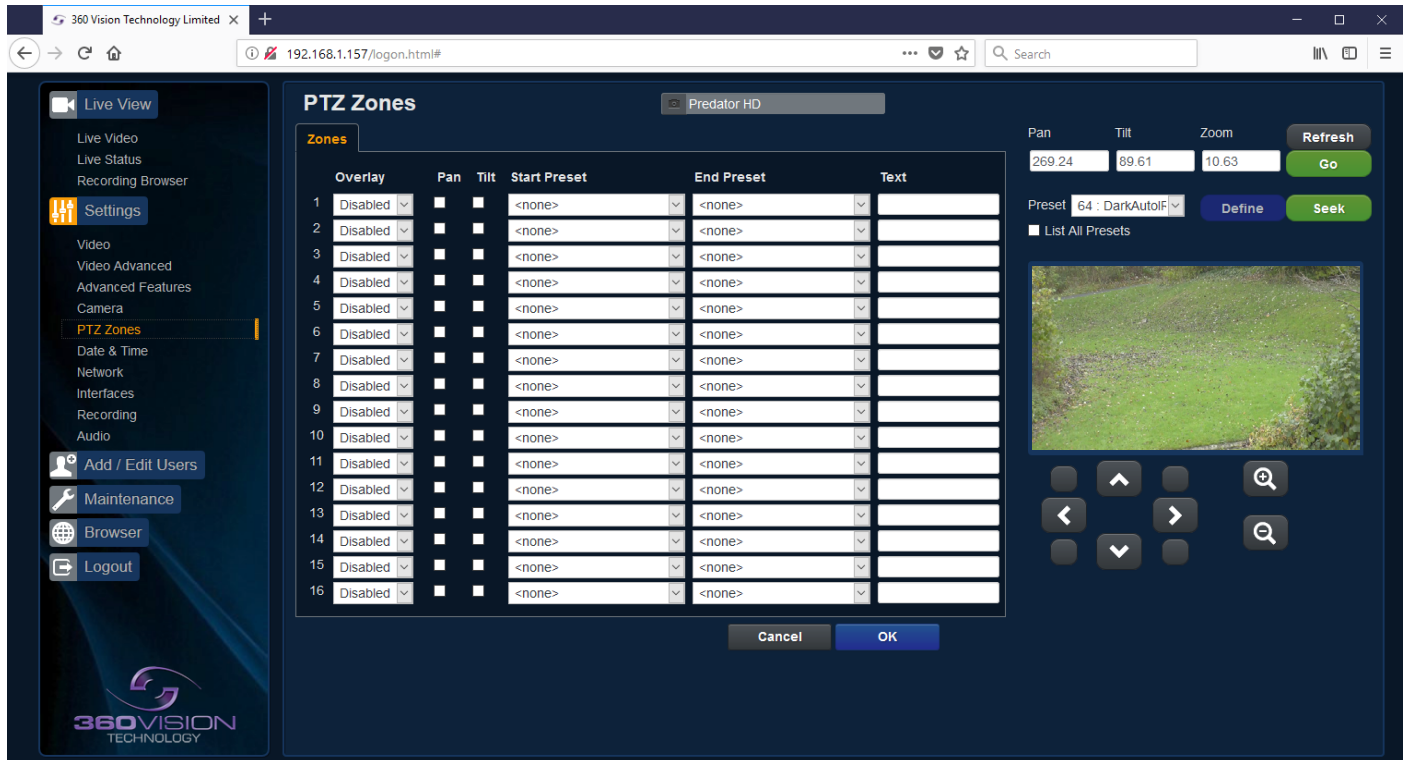
The PTZ zones page, offers options to:-
- • Camera - Cannot be edited, shows label/name given to the camera.
(See Video - Camera - page 25).

Set Text Overlays using the below options *(see also Video - page 25)*:-
- • 1-16 - Set up to 16 text overlays.
- • Pan - Used to set pan axis as the trigger for the text overlay to be displayed.
- • Tilt - Used to set the tilt axis as the trigger for the text overlay to be displayed.
- • Start Preset - Set start preset for text overlay.
- • End Preset - Set end preset for text overlay
- • Text - Input required text for sector zone overlay.

PTZ buttons can be used to move the camera so that simple preset positions can be programmed or recalled.

PTZ position co-ordinates are also shown, use the refresh button to refresh the data if the camera has been moved.

PTZ position co-ordinates can also be added manually, use the go button to send the camera to the coordinates set.

- • 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 28)*
- • List all Presets - Use to show all presets or programmed presets in drop down selection box.

OK to apply the new settings into the Predator.
Cancel to abandon the changes to the PTZ zones settings.

11.2.6 Date/Time

- Camera - Cannot be edited, shows label/name given to the camera.
  (See section Video - Camera - page 25).
- Camera Time - Cannot be edited, shows the current date and time of the camera.
- Date Format - Select from the drop down the date format.
- Time Format - Choose 24hr or 12hr time display.

Set Time
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 NTP Server - Put a tick in the button and then click OK, to apply the local server date/time to the camera.
- NTP Server - Input the address of the time server required, default is pool.ntp.org.

Time Zone

- Time Zone - Select time zone to suit the location of the camera/system.

OK to apply the new settings into the Predator.
Cancel to abandon the changes to the date/time settings.

11.2.7 Network

- Camera - Cannot be edited, shows label/name given to the camera.
  (See Video - Camera - page 25).

Network
The Network tab, 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.
- 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.
- MAC Address - Displays the camera MAC address.
- Default Recovery - Inhibit Multiple Power Cycle Method, disables the Network recovery process
  (See Network Settings Recovery - page 44)

NTP
- NTP Server - Input the address of the time server required, default is pool.ntp.org.

FTP (FTP server is used to transfer video recordings from the camera).
Only available on Edge Recording Predator
- FTP Server - Input FTP server IP address, domain name.
- Port - Set port to be used for FTP access, default is 21.
- User Name - FTP server username.
- Password - FTP server password.
- File Upload Path - Set folder name for the file transfer on FTP server.

Quality of Service
- Best Effort - Will send network packets with no quality of service policies.
- Expedited Forwarding - Will send network packets with an assured bandwidth quality of service policy.
- Custom - Input required Hex figure for quality of service policy
  - Best Effort = 0x00
  - Expedited Forwarding = 0x2E

Web Server
- HTTP access - Enable or disable HTTP access, must be connected using HTTPS.
  (See Maintenance - SSL Certificates and Keys - page 42)
- HTTPS Port - Set required HTTPS port. Default is 443.
- SSL Certificate - Choose required SSL certificate.
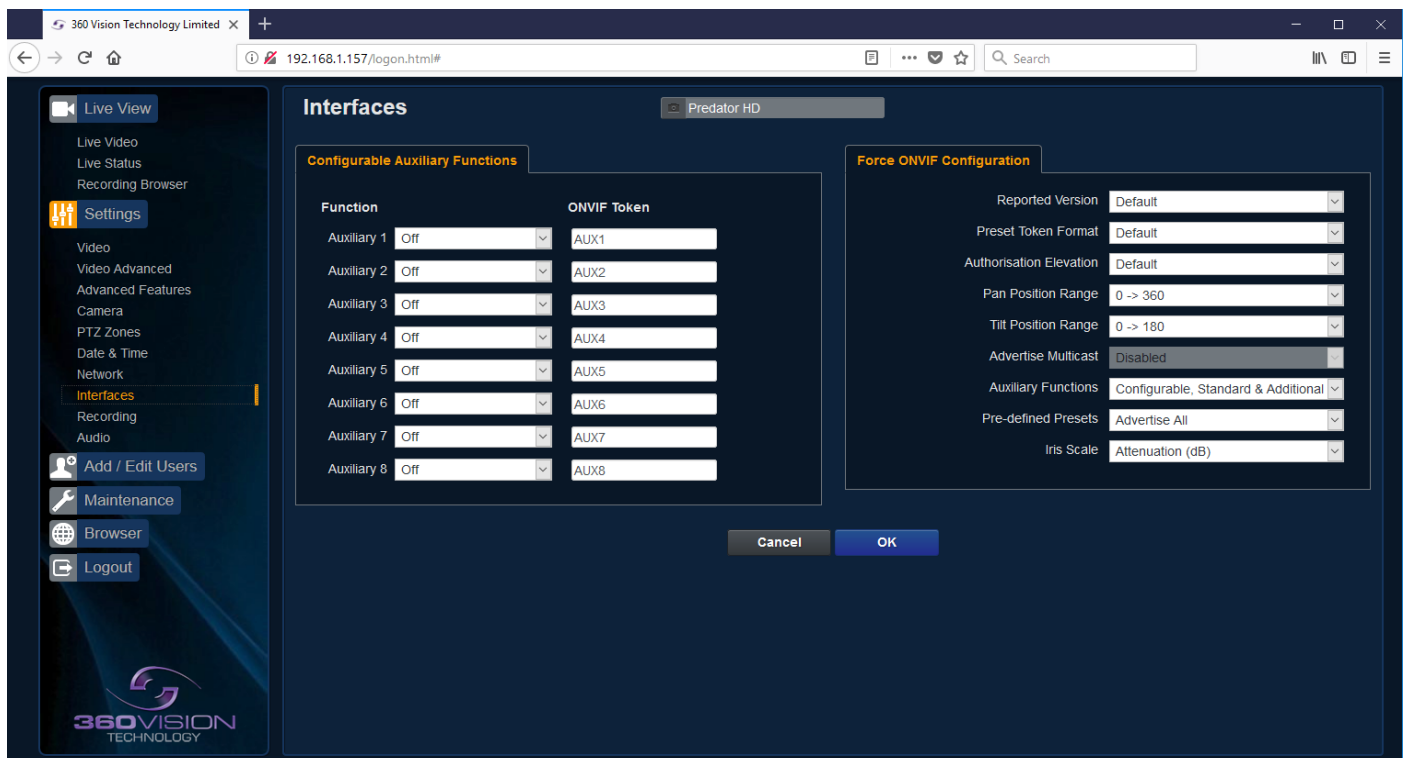- SSL Private Key - Choose required private key.

802.1x Authentication
- Authentication - Tick to enable 802.1x. Options to choose MD5 or TLS and add username/password.

OK to apply the new settings into the Predator.
Cancel to abandon the changes to the network settings.

11.2.8 Interfaces

Auxiliary Functions
Allows the camera to be configured to use ONVIF Auxiliary commands.
Features available are:-
- Force White Light On - Forces white lights on.
- Force White Light Off - Switches off forced white lights.
- Wiper On - Activates wiper.
- Wiper Off - Stops wiper.
- Dark IR Light On - Switch on IR, when dark.
- Dark White Light On -Switch on white light, when dark.
- Dark Lights Off - When dark, switch off all lamps.
- Dark Sensor Mono - Sets the camera to a mono image, when in dark mode.
- Dark Sensor Colour - Sets the camera to a colour image, when in dark mode.
- Dark Focus White - Sets the camera focus (when in mono), to suit the scene when ambient light is present.
- Dark Focus IR - Sets the camera focus (when in mono) to suit the scene when IR light is present.
- De-Fog On - Switches camera De-Fog feature on.
- De-Fog Off - Switches camera De-Fog feature off.
- Washer On - Activates wash function, sends camera to preset 359, activates wiper.
- Washer Off - Stops wash function.
- Force Night Settings - Used to set camera to night/dark settings.

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- Force Day Settings - Used to force camera to day/light settings.
- Disable Forced Settings - Switch off forced settings, camera to use settings as per light level.
- Force Mono Settings - Force camera into mono, no lamps, ambient focus range.
- Force HLC On - Switch on HLC option.
- Force HLC Off - Switch off HLC option.
- Iris Open - Opens the camera iris.
- Iris Close - Closes the camera iris.
- Iris Auto - Switches on auto iris.
- Iris Manual - Sets camera to manual iris mode.
- Power Low - Sets the motors to use low power.
- Power On - Sets the motors to use full power.

- ONVIF Token - Used to alter the name of the ONVIF Auxiliary token.

Dark relates to when the camera is in dark mode, see section Camera - Night Changeover - page 31.

Force ONVIF Version Configuration
- Reported 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.
- Preset Token Format - 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).
- Authorisation Elevation - Used on Vicon VMS, allows the anonymous user to be set as admin, viewer or operator.
- Pan/Tilt position Range - Used on VMS systems that use specific pan and tilt operation, used to set the angular position to suit the VMS ONVIF position.
- Advertise Multicast - Option no longer required. When Multicast is enabled in Advanced Video page, the stream will be advertised.
- Auxiliary Functions - Used to set how the VMS will see the ONVIF Auxiliary Token.
    Configurable - Aux 1 - 8, configurable via web page
    Standard - Standard ONVIF
    Additional - Additional control commands using the ONVIF Standard
- Pre-defined Presets
    Advertise All - Show all pre-defined presets, when the VMS requests the presets from the camera.
    Advertise Re-definable - Show re-definable pre-defined presets only e.g. Home
    Omit - Do not show the pre-defined presets, when the VMS requests the presets from the camera.
- Iris Scale - Used on certain VMS systems, options are position or attenuation (dB).

OK to apply the new settings into the Predator.
Cancel to abandon the changes to the interface settings.

11.2.9 Recording
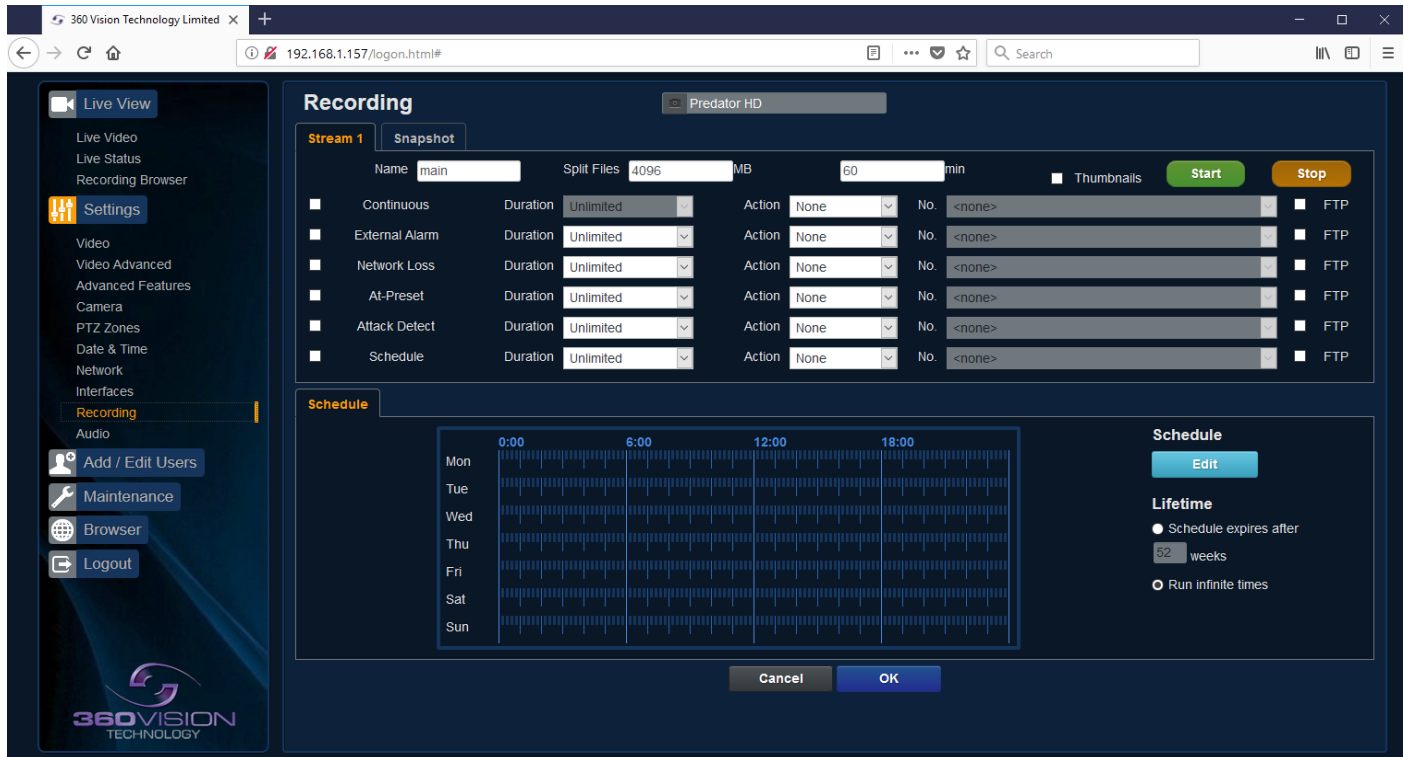
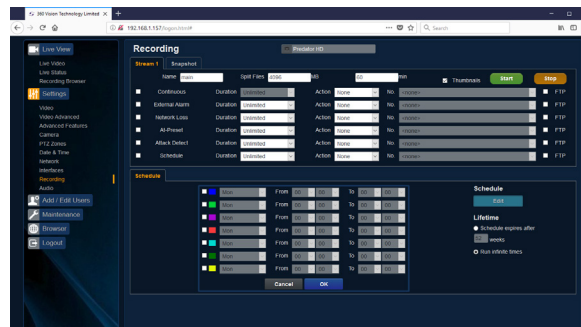

Only available on Edge Recording Predator
The role of the recording function is to store video streams as files on a storage device built into the camera. The recording function can auto-detect the necessary parameters from each configured stream, such as video compression, resolution, frame rate and bitrate. The size of the video created will depend on the video compression and bitrate used.

Different options can be used to start a recording per stream, these are manual, continuous, external alarm, network loss, attack detect and schedule. Each recording can be configured with different options including recording duration.

The recorded file name will be displayed as YYYYMMDDhhmmss-x-name.avi
(x indicates the recording trigger d is manual demand, a is attack detect, s is schedule).

- Camera - Cannot be edited, shows label/name given to the camera.
  (See Video - Camera - page 25).
- Stream 1, 2 or snapshot - Choose option to configure.
- Name - Type in name of the file name to be used.
- Split files - Set size of recording by file size or time period.
- Thumbnail - If enabled before the recording, thumbnails can then be used as a filter in the multimedia page *(See Recording Browser - page 24).*
- Start/Stop - Demand a manual recording, use the start and stop to set.
- Continuous - Enable continuous recording.
- External Alarm - Trigger recording from an external string.
- Network Loss - Trigger recording from a network connection loss to the camera.
- At Preset - Start recording when the camera gets to a specific preset, tour or mimic.
- Attack Detect - Start recording if the camera is attacked
- Schedule Edit - Setup a recording schedule *(See Recording Browser - page 24).*
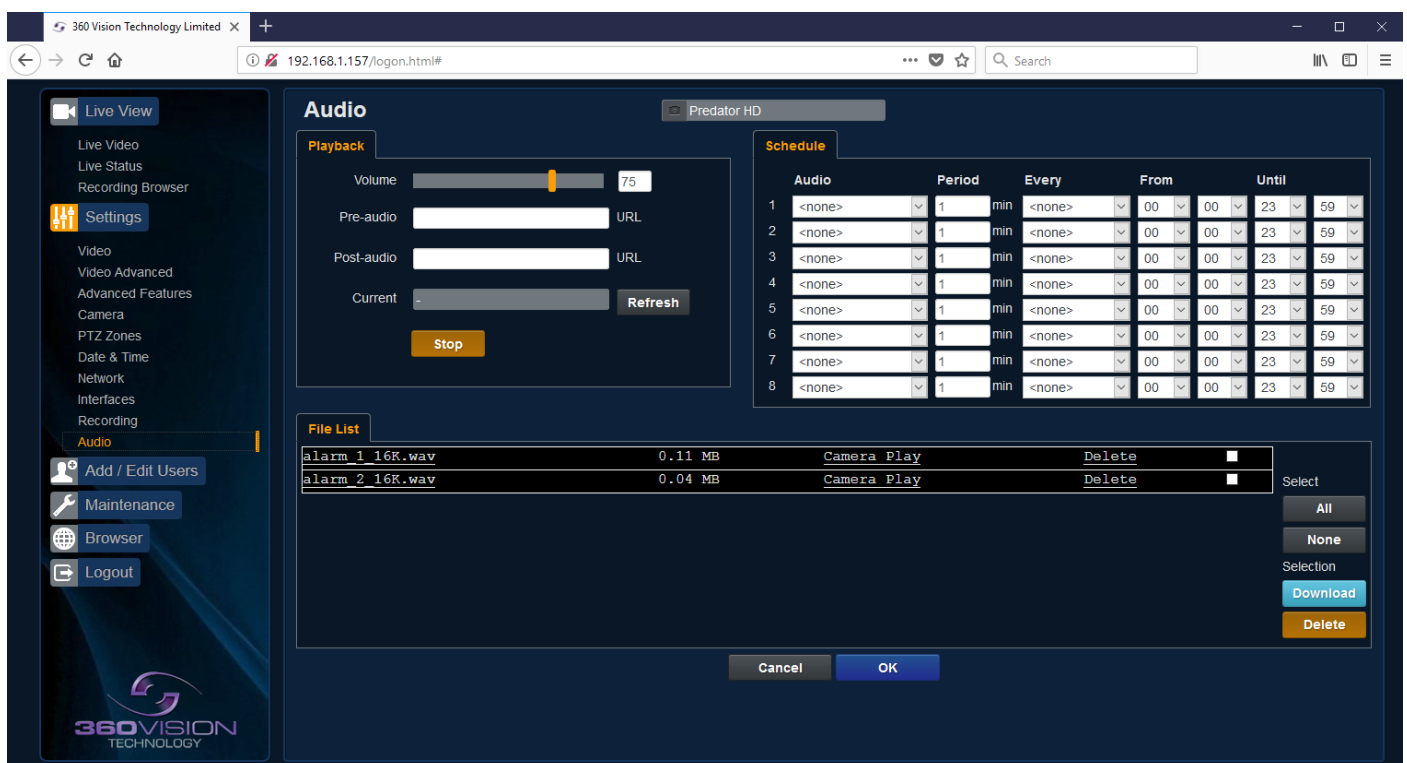- Lifetime - Recording schedule will stop after this period.

Schedule Screen

OK to apply the new settings into the Predator.
Cancel to abandon the changes to the recording settings.

11.2.10 Audio

Only available on Edge Recording Predator
- Camera - Cannot be edited, shows label/name given to the camera.
  (See Video - Camera - page 25).
- Volume - Set volume for audio playback.
- Pre-audio - Use HTTP commands to activate audio amp.
- Post-audio - Use HTTP commands to de-activate audio amp.
- Current - Current audio file being played back.
- Refresh - Update web page to show current audio file.
- Stop - Stop audio file currently being played.

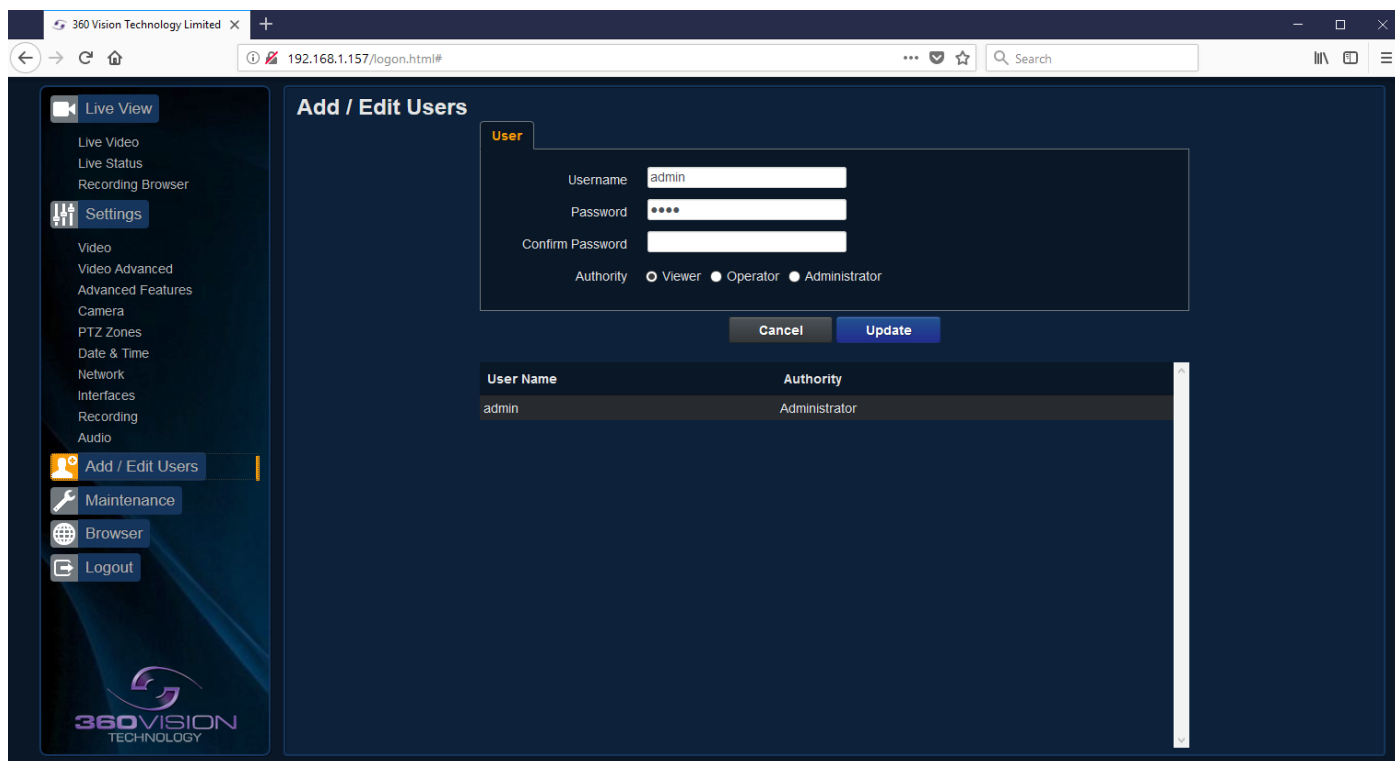Schedule
- Schedule - Used to set schedule for audio playback.

File List
- List - Shows all audio files loaded onto the camera.
- Select - Used to select all the files or none from the list.
- Delete - Used to delete the selected file.

OK to apply the new settings into the Predator.
Cancel to abandon the changes to the audio settings.

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11.3 Add/Edit Users
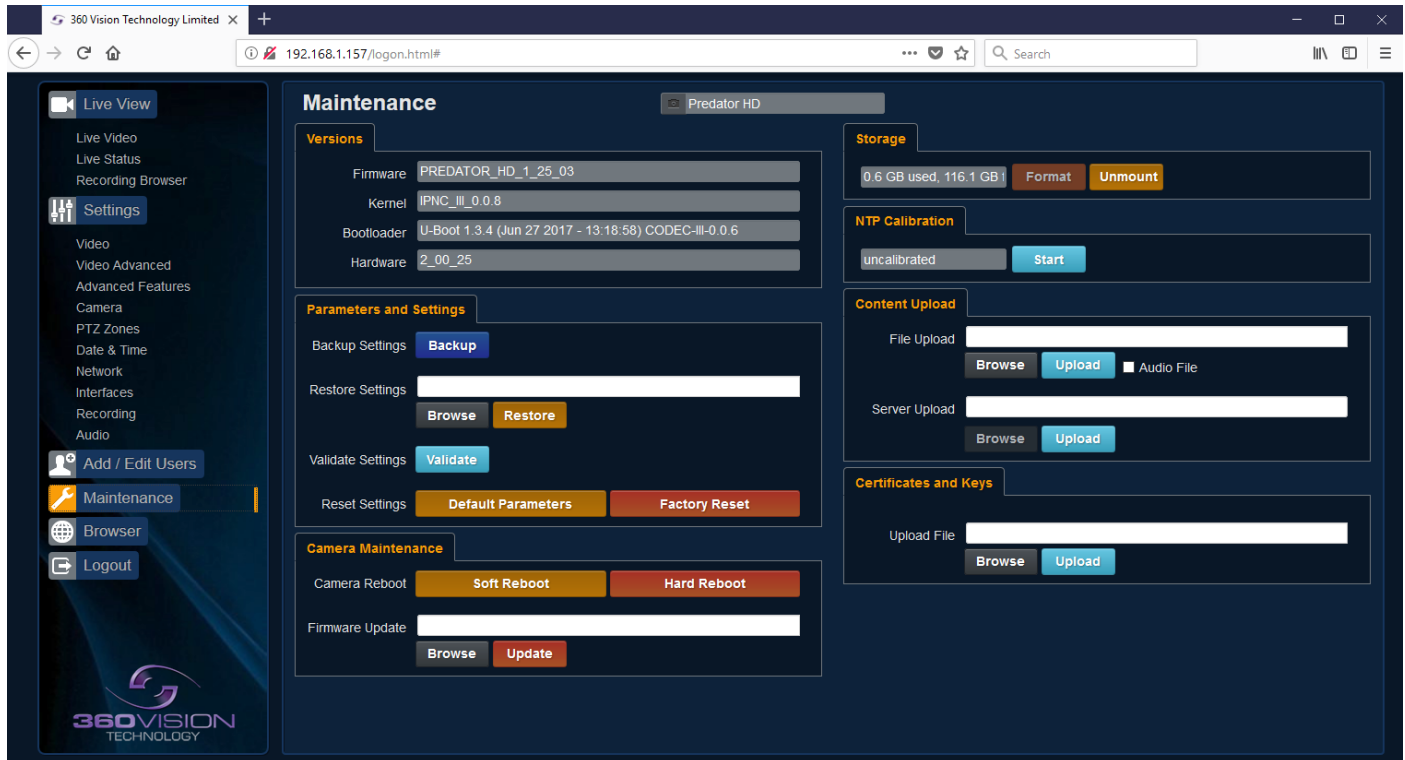

The Add/Edit Users page, allows the admin user to create both operator and viewer level login details. The admin user login password, can also be changed here. The web page admin password is also the ONVIF admin password. Care must be taken, when changing the admin password.

There is no way of recovering the Predator admin password if forgotten.

11.4 Maintenance

- Camera - Cannot be edited, shows label/name given to the camera.
  (See Video - Camera - page 25).

Version
- Firmware - Current firmware loaded onto the camera.
- Kernel - Current kernel file loaded onto the camera.
- Bootloader - Current Bootloader loaded onto the camera.
- Hardware - Current mainboard software loaded onto the camera.

Parameters and Settings
- Backup Settings - Save - Used to save the camera settings.
  The file is displayed as PREDATOR_HD_YYYYMMDD_HHMM.DAT clicking on this file will download the file to the PC download folder.
- Restore Settings - Browse to the required DAT file and then click restore. The camera will then apply the settings and reboot the camera.
  PLEASE note:- All saved camera settings including passwords will be uploaded to the camera.
- Validate Settings - Used to validate the uploaded settings, after the camera reboot process.
- Reset Settings
  - Default Parameters - Reset codec parameters i.e. video stream settings.
  - Factory reset - This will reboot the camera and all the settings, except IP address will be lost.

Camera Maintenance
- Camera reboot
  - Soft reset - This will reboot the codec, no settings will be lost.
  - Hard reset - This will reboot the camera, no settings will be lost.
- Firmware Update - Browse to codec file and then click on update. The camera codec will then be updated. The Predator camera will re-boot once the update has been performed.

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

Visit the camera Browser page (Framework), 360 Vision Technology web site or contact 360 Vision Technical Support for the link to the update application & codec update files.
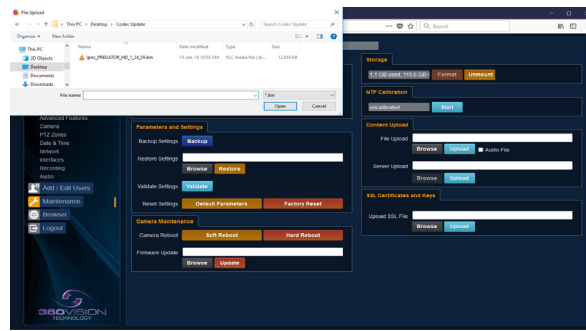
Update Screen

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. Option available when the device is unmounted.
- Unmount - Select this option to unmount the storage, once confirmed. The web page will report back that the process is successful.

NTP Calibration
Used to calibrate the codec clock to a NTP server so that the codec time is more accurate.
- Start - Click on this option to start the process. Synchronize with NTP Server option must be selected with access to the NTP server. The process takes approximately 20 minutes.

Content Upload
- Content Upload - Upload application software to camera memory.
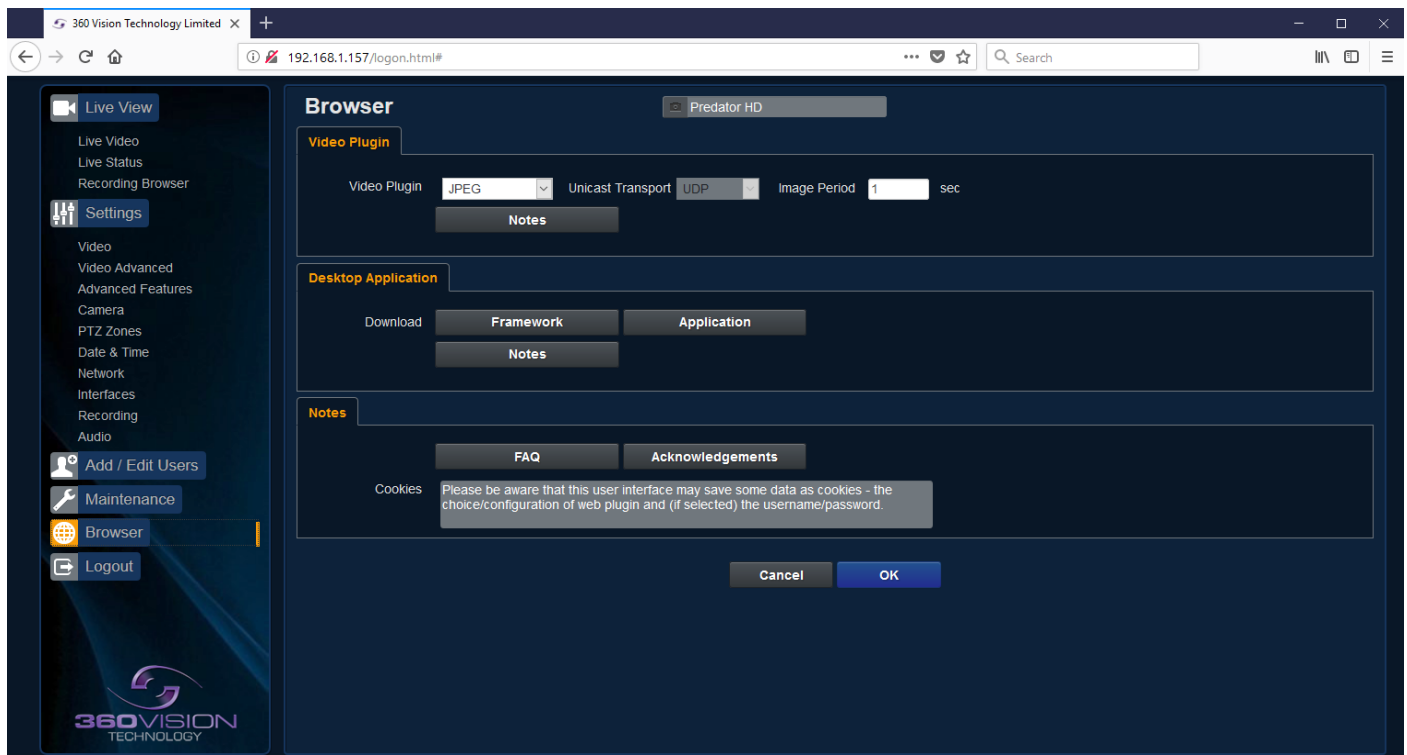- Server Upload - Download application files from FTP/HTTP server.

SSL Certificates and Keys
- Upload SSL file - Import SSL file. Supported files .key, .pem and .crt.

OK to apply the new settings into the Predator.
Cancel to abandon the changes to the maintenance settings.

11.5 Browser

Video Plug-in
- Video Plug-in - Choose video plug-in, choice of VLC, JPEG (every 5 seconds), or none.
- Unicast Transport - Choice of UDP or TCP.
- Network Latency - Adjust Video player latency/buffer.
- Download - Download video plug-in from the camera.

Desktop Application
- Framework - Download framework to run desktop application.
- Application - Download software for the standalone application.
- Notes - Notes on how to install the desktop application.

OK to apply the new settings into the Predator.
Cancel to abandon the changes to the browser settings.

12 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 Predator Hybrid 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 Predator Hybrid 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 Predator Hybrid is reconnected to the main network.

Procedure for 'Network Settings Recovery'

If necessary disconnect the Predator Hybrid from the main network.

Turn power to the Predator Hybrid OFF for 3 seconds.
Turn power to the Predator Hybrid ON for 4 seconds.
Repeat the above five times.

On the final power ON, leave the power switched on for at least 5 minutes to allow the Predator Hybrid to initialise. *(See section Locating the Predator Hybrid on your network - page 20).*

13 Special Presets

Illumination (When it is dark)	Seek 64 (On)	IR (Mono/Colour not changed)	Seek 66 (Off)
	Seek 65 (On)	White Lights (Mono/Colour not changed, no timer)	Seek 66 (Off)
Night Sensor (When it is dark)	Seek 67 (Mono)		Seek 68 (Colour)
Night Focus Range (When it is dark)	Seek 69 (Ambient)		Seek 70 (IR)
Wiper	Seek 81	Double Wipe	Seek 86 (Stop)
	Seek 82	Permanent Intermittent Wipe	
	Seek 83	Permanent Fast Wipe	
	Seek 84	Timed Intermittent Wipe	
	Seek 85	Timed Fast Wipe	
De-Fog	Seek 87 (On)		Seek 88 (Off)
Washer	Seek 89 (On)	Define Preset 359 (Defines Washer Position)	Seek 90 (Off)
White Lights (When it is dark)	Seek 100 (On)	White Lights (Change to colour, timer used)	Seek 101 (Off)
Power on Park	Define/Seek 150	Program/Recall Power on Park preset position	
White Light Exclusion	Define 151	Set left Side	See page 17 or 31
	Define 152	Set Right Side	
IR Exclusion	Define 153	Set left Side	
	Define 154	Set Right Side	
Home	Define 360	Defines Home Position	

14 Important - Care of Painted Surfaces

The powder coating applied to the Predator Hybrid 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 Predator Hybrid is dropped, scrapped etc.), repairs MUST be carried out immediately.

When the Predator Hybrid 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 Predator Hybrid e.g. fit anti-bird spikes.

15 Storage and Handling

Predators should be handled with care and must not be dropped. When Predators are inside the transit packaging which is used for despatch from the factory, they should not be stacked to a height of more than two Predators.
When Predators 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. Predators 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 Predator should be clean and dry. (If necessary it should be cleaned and dried taking care that the glass is not scratched).

16 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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17 PSU Enclosure

Material	PC/ABS
Dimensions (PREDHYB-PSU-SM)	255 x 180 x 100mm

18 1080p Stream Resolutions & RTSP Links

H.264 *(rtsp://ipaddress/h264main)*	Resolution
	720p (1280 x 720)
	D1 (720 x 576)
	SXVGA (1280 x 960)
	1080p (1920 x 1080)

MPEG4 *(rtsp://ipaddress/mpeg4main)*	Resolution
	720p (1280 x 720)
	D1 (720 x 576)
	SXVGA (1280 x 960)
	1080p (1920 x 1080)

MJPEG *(rtsp://ipaddress/mjpeg)*	Resolution
	1080p (1920 x 1080)

H.264 *(rtsp://ipaddress/h264main)* & MJPEG *(rtsp://ipaddress/mjpeg)*	Resolution	
	720p (1280 x 720)	VGA (640 x 480)
	D1 (720 x 576)	D1 (720 x 576)
	720p (1280 x 720)	720p (1280 x 720)
	1080p (1920 x 1080)	QVGA (432 x 240)
	1080p (1920 x 1080)	D1 (720 x 576)

MPEG4 *(rtsp://ipaddress/mpeg4main)* & MJPEG *(rtsp://ipaddress/mjpeg)*	Resolution	
	720p (1280 x 720)	VGA (640 x 480)
	D1 (720 x 576)	D1 (720 x 576)
	720p (1280 x 720)	720p (1280 x 720)
	1080p (1920 x 1080)	QVGA (432 x 240)
	1080p (1920 x 1080)	D1 (720 x 576)

Dual H.264 *(rtsp://ipaddress/h264main)* *(rtsp://ipaddress/h264sub)*	Resolution	
	720p (1280 x 720)	QVGA (432 x 240)
	D1 (720 x 576)	D1 (720 x 576)
	D1 (720 x 576)	QVGA (432 x 240)
	1080p (1920 x 1080)	QVGA (432 x 240)
	1080p (1920 x 1080)	D1 (720 x 576)

Dual MPEG4 *(rtsp://ipaddress/mpeg4main)* *(rtsp://ipaddress/mpeg4sub)*	Resolution	
	720p (1280 x 720)	QVGA (432 x 240)
	D1 (720 x 576)	D1 (720 x 576)
	D1 (720 x 576)	QVGA (432 x 240)
	1080p (1920 x 1080)	QVGA (432 x 240)
	1080p (1920 x 1080)	D1 (720 x 576)

	Resolution	
H.264 *(rtsp://ipaddress/h264main)* & MPEG4 *(rtsp://ipaddress/mpeg4sub)*	D1 (720 x 576)	D1 (720 x 576)
	1080p (1920 x 1080)	D1 (720 x 576)

19 720p Stream Resolutions & RTSP Links

	Resolution
H.264 *(rtsp://ipaddress/h264main)*	720p (1280 x 720)
	D1 (720 x 576)

	Resolution
MPEG4 *(rtsp://ipaddress/mpeg4main)*	720p (1280 x 720)
	D1 (720 x 576)

	Resolution
MJPEG *(rtsp://ipaddress/mjpeg)*	720p (1280 x 720)

	Resolution	
H.264 *(rtsp://ipaddress/h264main)* & MJPEG *(rtsp://ipaddress/mjpeg)*	720p (1280 x 720)	VGA (640 x 480)
	D1 (720 x 576)	D1 (720 x 576)
	720p (1280 x 720)	720p (1280 x 720)
	720p (1280 x 720)	D1 (720 x 576)

	Resolution	
MPEG4 *(rtsp://ipaddress/mpeg4main)* & MJPEG *(rtsp://ipaddress/mjpeg)*	720p (1280 x 720)	VGA (640 x 480)
	D1 (720 x 576)	D1 (720 x 576)
	720p (1280 x 720)	720p (1280 x 720)
	720p (1280 x 720)	D1 (720 x 576)

	Resolution	
Dual H.264 *(rtsp://ipaddress/h264main)* *(rtsp://ipaddress/h264sub)*	720p (1280 x 720)	QVGA (432 x 240)
	D1 (720 x 576)	D1 (720 x 576)
	D1 (720 x 576)	QVGA (432 x 240)
	720p (1280 x 720)	D1 (720 x 576)

	Resolution	
Dual MPEG4 *(rtsp://ipaddress/mpeg4main)* *(rtsp://ipaddress/mpeg4sub)*	720p (1280 x 720)	QVGA (432 x 240)
	D1 (720 x 576)	D1 (720 x 576)
	D1 (720 x 576)	QVGA (432 x 240)
	720p (1280 x 720)	D1 (720 x 576)

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

20 White Balance and Fast Shutter options

White Balance Options
Auto
Outdoor
Indoor
Auto Tracing
Indoor A, B & C
Sodium
Sodium Auto A & B

Fast Shutter Options
1/1000
1/1250
1/1750
1/2500
1/6000
1/10000