SEE515 Internal* HD-TVI Camera

This HD-TVI camera has a 2.1 Mega Pixel 3.6mm fixed lens, 12x IRs with 15 metre range, IP66 rating, Panasonic CCD, Wide Dynamic Range, Digital Zoom, OSD menu with options for Privacy masking, Sens-Up & Motion and a separate (analogue connection).

The SEE515B (Black) or SEE515W (White) cameras produce exceptional quality images using the Panasonic CCD providing HD 1080P resolution. The true day/night mechanical filter provides excellent colour reproduction.

The cameras have Coaxitron Control for changing the OSD menu specifications via the DVR or remote network connection, or via the camera joystick.

* Although this camera is classified for internal use, the camera can be effectively used outdoors providing screw holes in the base of the camera are adequately sealed.

Installing the Camera

The camera is a ball camera and therefore can be set to most angles. First remove the camera dome cover by unscrewing the three Torx screws using the tool supplied. A cord is attached to the dome cover to avoid dropping it. If the camera is to be installed outdoors then before screwing the camera base to the wall, ceiling or lintel, put silicon sealant over the holes on the bottom of the base and around the cable entry point. Then secure the base with screws. Adjust camera position and angle. As this is a fixed lens there are no zoom and focus controls.

Powering the Camera

The SEE515 runs on a 12V DC regulated power supply. The camera is provided with a fly lead with a mini power red 2.1mm DC socket. It is recommended to use a power supply that is rated higher than the current consumption of the camera i.e. the current consumption is 260mA with IRs on so add approximately 50% headroom, and use a regulated power supply rated at 500mA or above. The camera is polarity sensitive so connections must be correctly made.

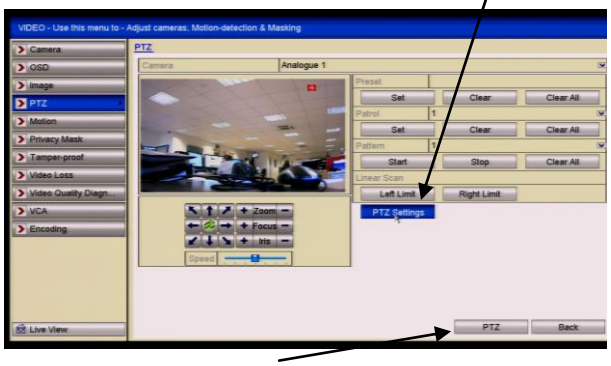
Connecting the camera to control equipment

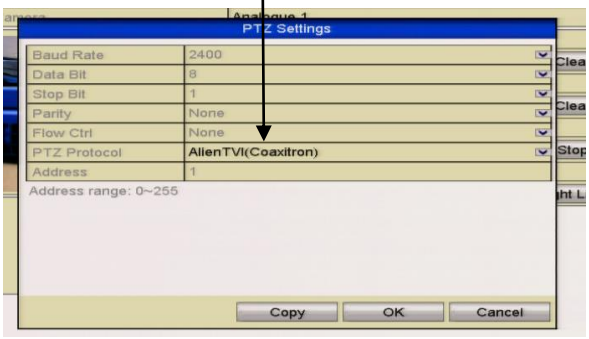
The dome camera comes with a fly lead for power, HD-TVI video out and CVBS (analogue output). Connect the camera to control equipment via a female BNC-BNC lead. The green BNC is for HD-TVI and the yellow CVBS is for analogue output. When using a co-ax type cable such as RG59 or similar, the outer braid of the co-ax provides the "0V GROUND" connection and the inner core provides the "Video" connection.

Menu Access via DVR

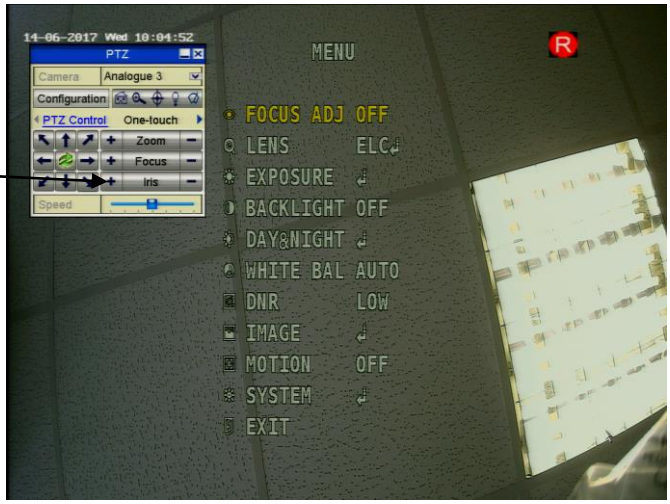
Access to the camera menu is via the menu buttons on the camera or via the Up the Co-ax connection. Access by the menu buttons is described below. To use the Up the Coax connection, this can be accessed using the PTZ menu in the MEGA TVI or MAX TVI DVRs using the AlienTVI(Coaxitron) protocol. This protocol is generally set in the PTZ Settings menu as default but if not, select using the following:

Enter the DVR **Menu**, click on **Video**, **PTZ** and **select the channel** number of the TVI camera connected to the DVR. Then click on **PTZ Settings** and select **AlienTVI(Coaxitron)** and click **OK.**





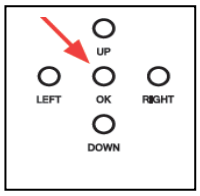
Now click on the **PTZ** button at the bottom of the screen and a full screen picture will be displayed with the PTZ control menu. Click on the **IRIS+** button to display menu



Use the directional arrows to move up and down or right to select options.

OSD Menu

The SEE515 has an on screen display menu. This can be accessed using the small joystick on the camera lead.



Press the centre button straight down (see arrow) to enter the menu and use Left, Right, Up and Down to move through and amend menu settings.

Alternatively use the TVI DVR PTZ menu as detailed in "Menu Access via DVR" above.

The following menu display is shown:

FOCUS ADJ OFF	ON	Focus adjustment display (Not relevant for fixed lens)
LENS	ELC ↵ ALC ↵	Mode - Normal Mode – Indoor
EXPOSURE ↵	BRIGHTNESS SHUTTER SENS-UP AGC RETURN	1 ~ 20 Auto / Manual- 1/25,1/50,1/100,1/240,1/500,1/1000,1/2000,1/4000, 1/8000,1/16000,1/30000, 1/60000 Off /x2/x3/x4/x5/x6/x7/x8 1 ~ 20
BACKLIGHT	OFF HLC ↵ BLC ↵ WDR ↵	 Level 1 ~ 20 / Mode – All Day / Night Only H-Pos – V-Pos – H-Size – V-Size - Return Weight – Low / Middle / High - Return
DAY&NIGHT	EXTERN / AUTO COLOUR / B&W	Anti-Sat. 1 ~ 20 Extern S/W High / Low AGC Threshold 1 ~ 20 AGC Margin 1 ~ 20 Delay – Low / Middle / High - Return
WHITE BALANCE	AUTO AUTOext PRESET (Push) MANUAL	 Kelvin – Low / Middle / High R-Gain 1 ~ 20 B-Gain 1 ~ 20 - Return

DIGITAL NOISE REDUCTION	DNR	Off / Low / Middle / High
IMAGE	SHARPNESS GAMMA COLOR GAIN MIRROR FLIP D-ZOOM ACE DEFOG SHADING PRIVACY RETURN	1 ~ 10 Default 5 0.55 / 0.6 / 0.65 /0.45 / 0.5 Default 0.5 1 ~ 20 Default 12 Off / On Off / On 1.0X ~ 8.0X Off / Low / Middle / High (Adaptive Colour & Contrast Enhancement) Off / On ↵ Mode – Auto / Manual Level - Low / Middle / High Off / On ↵ Weight – 1% ~ 100% Ret Default 100% Off / On ↵ Zone Num (0 ~ 15) / Zone Disp Off /On H-Pos / V-Pos / H-Size / V-Size / Y-Level (1 ~ 20) / CR Level (1 ~ 20) CB Level (1 ~ 20) / Return
MOTION	OFF / ON ↵	Sensitivity 0 ~ 20 Window Tone 0 ~ 6 Det H-Pos <nn> Det V-Pos <nn> Det H-Size <nn> Det V-Size <nn> Motion OSD Off / On Alarm Off / On Return <nn> value = position or size
SYSTEM	COM. ↵ IMAGE RANGE OUTPUT MODE MONITOR FRAME RATE CVBS LANGUAGE COLOR BAR RESET ON(Push) Return	Cam ID 0 ~ 255 Baud Rate 2400 / 4800 / 9600 / 57600 /115200 USER ↵ Offset 1 ~ 20 (Default = 8) / FULL / COMP 1080P(25 FPS) / 720P(25FPS) / 720P CROP (50FPS) 0 ~ 3 25 FPS / 30 FPS PAL / NTSC ENG / CHN / CHN(S) / KOR / JPN / DEU / FRA /NLD ESP / ITA Off / On Return
EXIT	Press IRIS + to exit	

Menu Description

FOCUS ADJ OFF	ON	Focus adjustment display (Not relevant for fixed lens)

LENS	ELC ↵ ALC ↵	Mode – Normal Mode – Indoor

ELC **Electronic Light Compensation**
Electronic Light Compensation is used for cameras fitted with a board or manual Vari-Focal lens.
Press IRIS + button or joystick centre button

MODE	**Normal**	Normal lighting conditions
RETURN		Return to main menu

ALC **Automatic Light Compensation**
Automatic Light Compensation is used for cameras fitted with an Auto DC Iris Vari-Focal lens.
Press IRIS + button or joystick centre button

MODE	**Indoor**	Normal indoor lighting conditions
RETURN		Return to main menu

EXPOSURE ↵	BRIGHTNESS SHUTTER SENS-UP AGC RETURN	1 ~ 20 Auto / Manual- 1/25,1/50,1/100,1/240,1/500,1/1000,1/2000,1/4000, 1/8000,1/16000,1/30000, 1/60000 Off /x2/x3/x4/x5/x6/x7/x8 1 ~ 20

BRIGHTNESS **1 ~ 20** (Default = 15)
Use this setting to increase brightness by opening camera iris. Useful for improving night time viewing by using in conjunction with the Sens-Up option. However be aware to consider possible effects when there is strong sunlight in summer that may cause the picture to white out.

SHUTTER **Auto / Manual**
1/25,1/50,1/100,1/240,1/500,1/1000,1/2000,1/4000,1/8000,
1/16000,1/30000, 1/60000
Shutter speed changes allow you to freeze moving objects without ghosting but reduce the amount of available light the faster the shutter operates. At night the slower the shutter speed the more light is available.

SENSUP **Off /x2/x3/x4/x5/x6/x7/x8**
The SensUp option allows the shutter speed to be reduced allowing additional light to be captured. Increasing brightness also helps night time viewing (see BRIGHTNESS setting above).

AGC **1 ~ 20** (Default = 20)
For better performance in low light conditions the AGC (Automatic Gain Control) can be increased. This has the effect of making the picture brighter but it may also add more noise as it amplifies all aspects of the video signal.

RETURN
Return to main menu.

BACKLIGHT	OFF HLC ↵ BLC ↵ WDR ↵	 Level 1 ~ 20 / Mode – All Day / Night Only H-Pos – V-Pos – H-Size – V-Size - Return Weight – Low / Middle / High - Return

Backlight Compensation when set, can balance light levels during day and night so that light hitting objects viewed, is evenly spread across the picture. There are three options BLC, HLC and WDR that can be selected.

BLC ↵
(Backlight Compensation)
H-Pos – V-Pos – H-Size – V-Size
BLC is the standard setting for low level light differences. Select an area where BLC is required. Using the H-Pos (Horizontal Position) and V-Pos (Vertical Position) followed by H-Size (Horizontal Size) and V-Size (Vertical Size) create a box where light balancing is required.

HLC ↵
(High Level Backlight Compensation)
Level 1 ~ 20 / Mode – All Day / Night Only
HLC is high level backlight compensation that will darken a bright area e.g car headlights. This can be set for all day or night only. The lower the level the more compensation is applied. Note that using the night option may be best as daytime pictures generally give a more even spread of light apart from sunlight issues.

WDR ↵
(Wide Dynamic Range)
Weight – Low / Middle / High
WDR is used for surveillance applications where there is a large difference in foreground and background light levels. This is typical in homes and office buildings that have large areas of glass with direct sunlight outside. Without the option switched on, views by cameras looking through windows may not give good reproduction outside. Also where there are areas of shadow and bright sunlight, the WDR option helps to balance light levels.

Return
Return to main menu

DAY&NIGHT	EXTERN / AUTO COLOUR / B&W	Anti-Sat. 1 ~ 20 Extern S/W High / Low AGC Threshold 1 ~ 20 AGC Margin 1 ~ 20 Delay – Low / Middle / High - Return

Day & Night menu controls light settings and predominantly provides options for using the cameras Infra Red facilities. There are four sub-options namely External, Auto, Colour and Black & White.

EXTERNAL
This option does not use the internal CDS sensor to measure the available light. With cameras using their own IR light source, it is often better to use the external option. Anti-Saturation helps to limit picture saturation and External S/W (switch) can be set to High or Low limit. High switches to B/W and Low to Colour which is opposite to the Auto, colour and B/W options. AGC threshold and margin control video gain and Delay allows the switching from D/N or N/D to be delayed in a Low, Middle or High time period.

AUTO
The standard Auto function uses the internal CDS to measure available light. This uses AGC (Automatic Gain Control) and Anti Saturation to measure picture quality before switching which is used in conjunction with a Delay time that Delay allows the switching from D/N or N/D to be delayed in a Low, Middle or High time period.

COLOUR
This option will remain in colour mode day and night. This uses AGC (Automatic Gain Control) and Anti Saturation.

B&W
When this option is selected the camera will remain in black and white mode, day and night. This uses AGC (Automatic Gain Control) and Anti Saturation.

Return
Return to main menu.

WHITE BALANCE	AUTO AUTOext PRESET (Push) MANUAL ↵	Press IRIS+ or joystick centre button down Kelvin – Low / Middle / High R-Gain 1 ~ 20 (default 10) B-Gain 1 ~ 20 (default 10)

This feature automatically adjusts the colour settings in the camera to match the type of light available, so that white and other colours appear as natural as possible.

AUTO
This option automatically sets white balance.

AUTOext
This option is generally used to set white balance when camera is used externally.

PRESET(Push) Press IRIS+ or joystick centre button down
This option allows you to set white balance using current light levels. Settings will only change when you press IRIS+ or joystick centre button down.

MANUAL ↵
Use this option to manually balance light levels. Note that the manual option is used for a static light environment and generally suitable for cameras installed indoors using constant artificial light.

Kelvin - Low / Middle / High
Sets colour temperature to low / middle / high
R-Gain 1 ~ 20
Set Red gain
B-Gain 1 ~ 20
Set Blue gain

RETURN
Return to main menu

DIGITAL NOISE REDUCTION	DNR	Off / Low / Middle / High

DNR **Off / Low / Middle / High**
Digital Noise Reduction is generally applied when the Sens-Up feature is used to improve night time views in low light conditions. Using the Sens-Up option slows the shutter speed but this increases noise and causes grainy picture effects. DNR helps to minimise this effect. The options low, medium and high, apply different levels of noise reduction and therefore have to be tested to gain the best result as light levels will be different at every site and location.

IMAGE ↵	SHARPNESS	1 ~ 10 (Default 5)
	GAMMA	0.55 / 0.6 / 0.65 /0.45 / 0.5 (Default 0.55)
	COLOR GAIN	1 ~ 20 (Default 12)
	MIRROR	Off / On
	FLIP	Off / On
	D-ZOOM	1.0X ~ 8.0X (Default 1.0X)
	ACE	Off / Low / Middle / High (Adaptive Colour & Contrast Enhancement)
	DEFOG	Off / On ↵ Mode – Auto / Manual Level - Low / Middle / High
	SHADING	Off / On ↵ Weight – 1% ~ 100% Default 100%
	PRIVACY	Off / On ↵ Zone Num (0 ~ 15) / Zone Disp Off /On H-Pos / V-Pos / H-Size / V-Size / Y-Level (1 ~ 20) / CR Level (1 ~ 20) CB Level (1 ~ 20) / Return
	RETURN	

IMAGE ↵

The Image menu covers a variety of options including colour, sharpness, mirror, defog, shading and privacy masking facilities.

Sharpness 1~ 10 (Default)

The sharpness control is done by digital correction and the best way to set this option is to set level to maximum of 10, then flick back to 1, to see the difference. Then adjust to display sharpest picture without displaying too heavy black lines around subjects.

Gamma 0.55 / 0.6 / 0.65 /0.45 / 0.5 (Default 0.55)

Gamma correction controls and adjusts the overall brightness of an image. Try the various options to give best quality brightness.

Color Gain 1 ~ 20 (Default 12)

This option changes the colour gain. Try to match the colours displayed as close as possible on the monitor with the colours viewed by eye.

Mirror Off / On

This option changes a left handed view to a right handed view if switched on.

Flip Off / On

This option turns a view upside down. This option is generally used with the Mirror function.

D-Zoom 1.0X ~ 8.0X (Default 1.0X)

The digital zoom function allows you to enlarge the view by expanding the pixel size. You will notice that as picture size increases the sharpness of the picture deteriorates so you will only be able to use the function up to a certain point of magnitude.

ACE Off / Low / Middle / High

Adaptive Colour & Contrast Enhancement (ACE) is an automated option for adjusting colour and contrast as light levels changes through the day. Low, middle or high options are available.

DEFOG **Off / On**↵

Mode – Auto - Level - Low / Middle / High
Manual - Level - Low / Middle / High

The defog option can be used to improve the captured image in poor weather conditions such as smog, fog or smoke. Three levels of optimisation can be applied, low, middle or high. This option is useful to stabilise rapid fluctuating light levels.

SHADING **Off / On** ↵

Weight 1% ~ 100% (Default 100%)

The shading option is used to provide overall shading with 100% providing no shading and 0% providing full shading.

PRIVACY **Off / On** ↵

Zone Num (0 ~ 15) This function allows the creation of up to 15 coloured areas to be created to provide privacy masking.

Zone Disp Off /On The Zone Display allows you to switch on and off the zone number.

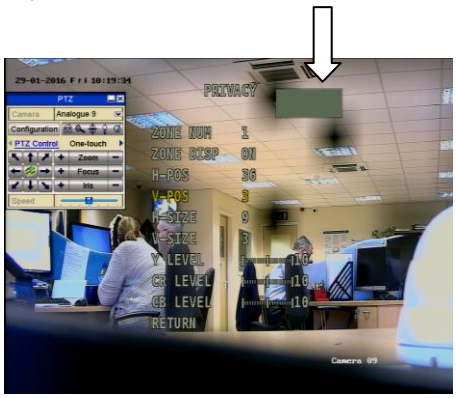
H-Pos / V-Pos / H-Size / V-Size

Each area can be positioned using the H-Pos (horizontal position), VPos (vertical position) and sized using the H-Size (horizontal size) and V-Size (vertical size) options. The Zone Display allows you to switch on and off the zone number.

Y-Level (1 ~ 20)
CR Level (1 ~ 20)
CB Level (1 ~ 20)

The Y-Level is the colour hue for privacy masking and the CR Level (Chrominance Red) and CB Level (Chrominance Blue) are used to create the required colour.

The pictures below show an area that has been masked, before and after.

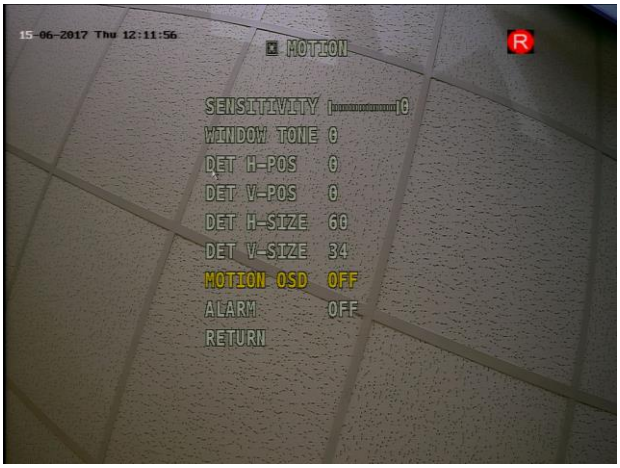


RETURN
Return to main menu

MOTION	OFF / ON ↵	Sensitivity 0 ~ 20 Window Tone 0 ~ 6 Det H-Pos <nn> Det V-Pos <nn> Det H-Size <nn> Det V-Size <nn> Motion OSD Off / On Alarm Off / On Return <nn> value = position or size

MOTION Off / On↵

The motion option when switched on allows you to create up to three areas in the picture and as motion is detected in these areas, the areas will be displayed with red moving boxes.



Sensitivity 0 ~ 20
Sets the sensitivity of the motion detection.

Window Tone 0 ~ 6
Sets the background tone to enable the motion detect area to be more or less prominent.

Det H-Pos / V-Pos / H-Size / V-Size
Each area can be positioned using the H-Pos (horizontal position), VPos (vertical position) and sized using the H-Size (horizontal size) and V-Size (vertical size) options.

Motion OSD Off / On

Alarm Off / On
Switch off motion alarm

Return Return to main menu

SYSTEM	COM. ↵	Cam ID 0 ~ 255 Baud Rate 2400 / 4800 / 9600 / 57600 /115200
	IMAGE RANGE	USER ↵ Offset 1 ~ 20 (Default = 8) / FULL / COMP
	OUTPUT MODE	1080P(25 FPS) / 720P(25FPS) / 720P CROP (50FPS)
	MONITOR	0 ~ 3 Monitor Type (Default = 0)
	FRAME RATE	25 FPS / 30 FPS
	CVBS	PAL / NTSC
	LANGUAGE	ENG / CHN / CHN(S) / KOR / JPN / DEU / FRA / NLD ESP / ITA
	COLOR BAR	Off / On Return
	RESET ON(Push) Return	

The SYSTEM menu provides a number of general facilities. These include setting a camera identification number and baud rate for RS485 connection, resolution mode, frame rate and colour standard, language, test colour bar and camera reset option.

COM. ↵ **Cam ID 0 ~ 255**
Set ID number in camera between 0 and 255
Baud Rate 2400 / 4800 / 9600 / 57600 /115200

IMAGE RANGE **User ↵**
Offset 1 ~ 20 (Default = 8)
Full
Comp

OUTPUT MODE **1080P(25 FPS) / 720P(25FPS) / 720P CROP (50FPS)**
Sets the camera output mode. 1080P is default.

MONITOR **0 ~ 3 (Default = 0)**

FRAME RATE **25 FPS / NTSC**
25 Frames per second PAL UK / 30 Frames per second NTSC USA

CVBS **PAL / NTSC**
PAL UK / NTSC USA

LANGUAGE **ENG / CHN / CHN(S) / KOR / JPN / DEU / FRA /**
English / Chinese / Chinese Formal / Korean / Japanese / German / French /
NLD / ESP / ITA
Dutch / Spanish / Italian

COLOR BAR **Off / On**
Useful for confirming CCD performance.

RESET ON(Push)↵ Press IRIS+ or joystick centre button down - Return

EXIT Press IRIS + to exit

USING THE CAMERA MENU

Whilst there are no recommended camera settings as installation sites do vary considerably, invariably most problems occur with light levels particularly at night. Making changes to the menus can improve results. If making changes, it is a better option to test each change separately, so that if results are worse reverse the change, but leave it set, if the results are better.

The following changes can be tried for general improvements, but note that they will not apply to every installation.

Poor Night time pictures: Exposure Menu - Brightness 15
Sens-Up x4
AGC 12

Day time pictures colour poor: Image Menu - Gamma Try each setting and leave on best
ACE ON
Defog ON

SEE515 Camera Specifications

Sensor	Panasonic 34227 CMOS	IP Rating	IP66
Lens Size	3.6mm Fixed	Mega Pixel	2.1 Mega Pixel
Resolution	1920 x 1080P	IRs	12 LEDs 15 metre range
Day/Night	Mechanical True Day/Night	Input Voltage	12v DC ± 15%
Video Outputs	2 BNCs - 1 x HD-TVI & 1 x CVBS	Power/Current	135mA IRs off 260mA IRs on
Min.Illumination	0.01 Lux Colour 0.001 Lux B/W	Power Plug	2.1 mini jack plug
S/N Ratio	More than 50dB	Menu Access	Coaxitron / Joystick Control
Sens-UP	0 ~ 32x	White Balance	Auto
WDR	120dB	Dimensions	60mm x 95mm
Digital Zoom	16x Digital Zoom	Build/Colour	Metal - Black or White
Motion Detect	Available	Privacy Masking	Available
AGC	Automatic/Selectable	Noise Reduction	3DNR
White Balance	Auto and manual options	BLC	Backlight Compensation/HLC/WDR

WEE/CG0783SS

This symbol on the products and/or accompanying documents means that used electronic equipment must not be mixed with general household waste. For treatment, recovery and recycling please return this unit to your trade supplier or local designated collection point as defined by your local council.