PSI
PERCEPTION
Sensors and Instrumentation

ASLOC Imaging System

ASLOC is a range of indoor biometric imaging hardware systems.

Each model in the range includes a least one facial recognition optimised imaging system that comprises of our advanced camera technology and evenly distributed Near Infra-red (NIR) illumination.

Designed to eliminate ambient lighting effects, spectral reflection, motion blur and image distortion, ASLOC utilises its hardware to produce high speed, high quality detailed imaging, ideal for exceptionally reliable facial recognition.

The ASLOC range of products are fully approved biometric hardware within major UK Airports. They are aiding to increase efficiency at check in, baggage drop and boarding areas within UK airports. This lowers overall queues and travellers time within the airport itself.

ASLOC plays a major role in working to achieve an important milestone within UK airports and travel, creating a highly secure, biometric based, passportless environment to achieve a smooth flow from check in to boarding a flight.

ASLOC is also working alongside the PSI-D product range within medical environment reception areas easing patient check in and treatment validation.

The ASLOC hardware interacts with an AI-based SDK. The system includes a provision of host-controlled status RGB LEDs to give user feedback and can run on both Linux and Windows based hosts.

PSI offer various forms of ASLOC. The system can be specified as a single or dual imaging system and with or without an anti-glare touch screen, that can be portrait (6.5" active display) or landscape (10.2" active display).

Each Imaging system can optionally include an additional camera to produce colour images and can also include a thermal camera to help detect abnormal temperature.

ASLOC is intended for indoor use without the presence of high dust levels. It is housed in a dry powder coated aluminium tubular housing supported by a dry powder coated optional aluminium mounting base. The camera unit itself has a scratch resistant, hard coated NIR cast acrylic filter front face.

The system has four inbuilt cables to use for interfacing with the host computer and power. These cables consist of two USB2.0 cables, one to enumerate the camera with the host computer and one to activate the touch capability of the screen, a VGA connector to project the host computer onto the touch screen and a 2-core power extension cable, which is terminated with a 2.1mm DC barrel connector for powering the unit.

Installation of ASLOC

ASLOC can be positioned accurately at a set calculated distance to facilitate the capture of full-face images over a wide height range of targets. Some height adjustment of the unit is available by means of sliding the tubular enclosure inside a circular mounting base. Maximum and minimum heights are highlighted in figure 2. There are four locking grub screws at the rear of the base by which to hold the unit in situ once the desired height is set.

Three M8 tapped holes, located in the circular mounting base, allow the stand to be securely bolted down onto an appropriately selected surface. Three M8 x 60mm grub screws, three M8 spring washers, three M8 plain washers and three M8 nuts are provided to secure the unit in place. Please note three holes for the M8 grub screws to clear and a cable entry hole will be required in the mounting surface. This will allow the unit to be supported and cables to exit the bottom of the imaging unit to a host.

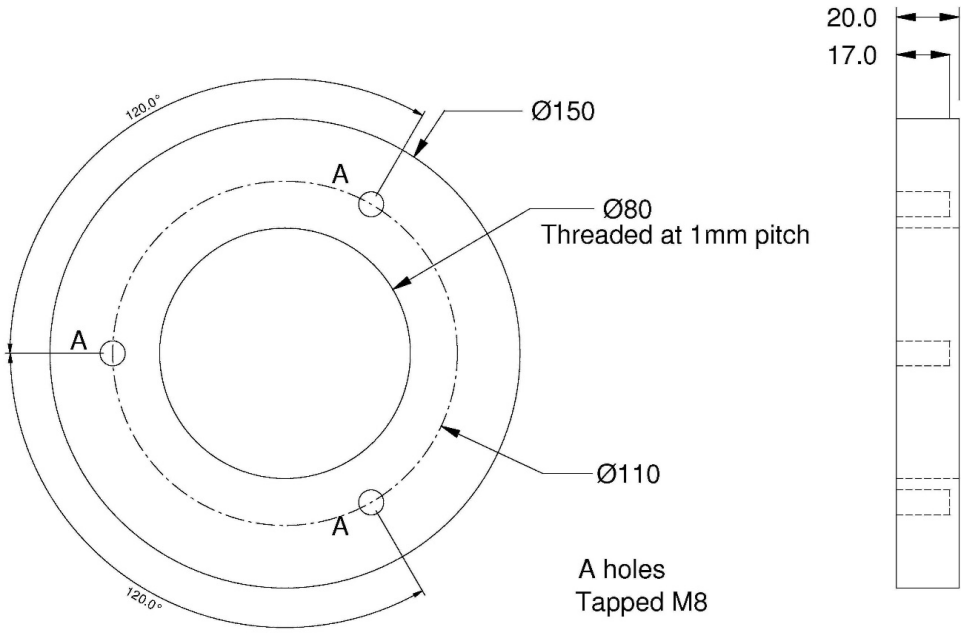


Figure 1: Image of the underneath and thickness of the pole base, highlighting grub screw locations and the central region where cables exit the device.

CAUTION: The ASLOC imaging unit must be securely bolted to a stable surface prior to operation. The ASLOC imaging unit has been specifically designed to operate as an in situ bolted down instrument. Its height and small diameter make the instrument inherently unstable until securely bolted down. The unit must therefore not be left in a position where it is subject to being knocked over prior to being secured down. Please do not allowed to system to fall.

We can also optionally provide wall mount brackets as an alternative to the base.

For children and wheelchair users an additional lower unit is recommended, where the camera lens can cover a lower height range. In all instances, a clear floor area allowing the subject to be positioned approximately 500mm from the imaging system must be provided.

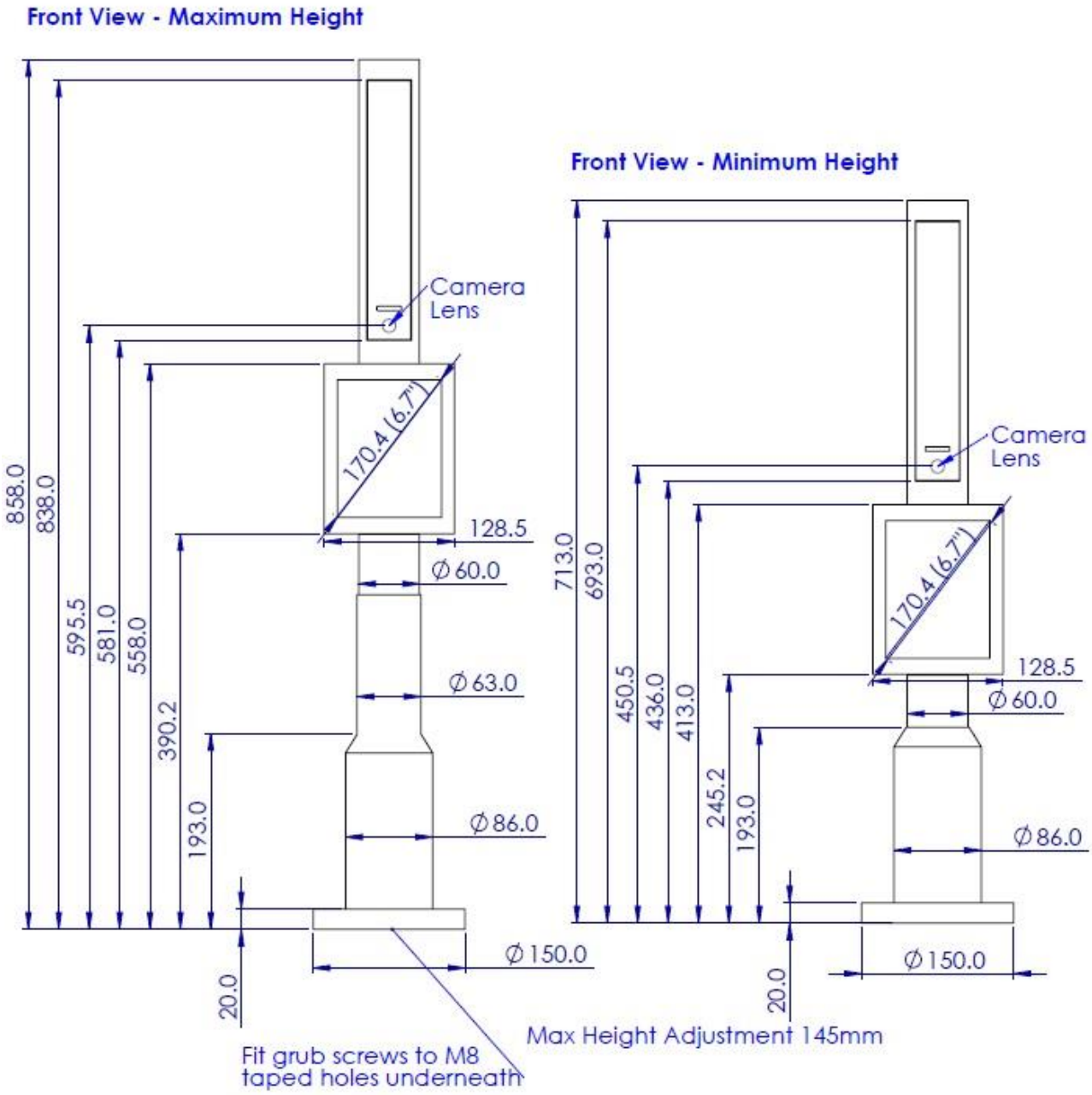


Figure 2: Dimensional drawing of the ASLOC 710 Portrait with base at minimum and maximum height of install showing camera position.

Please note the touch screen size is 6.7” diagonal (136mm (H) x 102mm (W) (5.4” x 4.0”)), however the active display size is slightly smaller at 6.5” diagonal (132.48mm (H) x 99.36mm (W)).

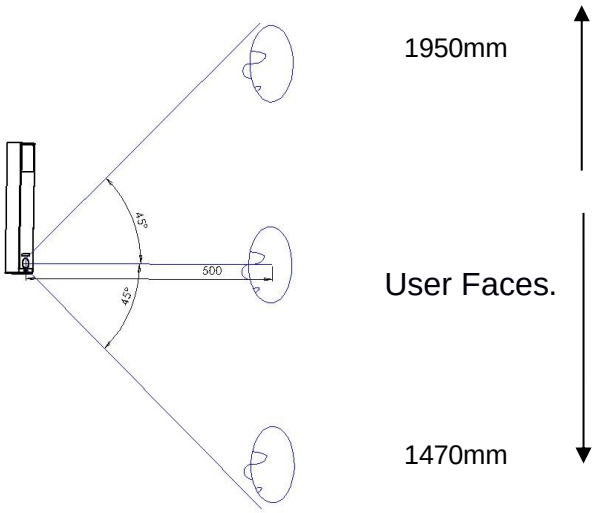


Figure 3: Recommended height of camera from ground level of the room. Showing head positions within camera range at 500mm from the terminal. Please note to achieve height the unit would be mounted onto a platform surface.

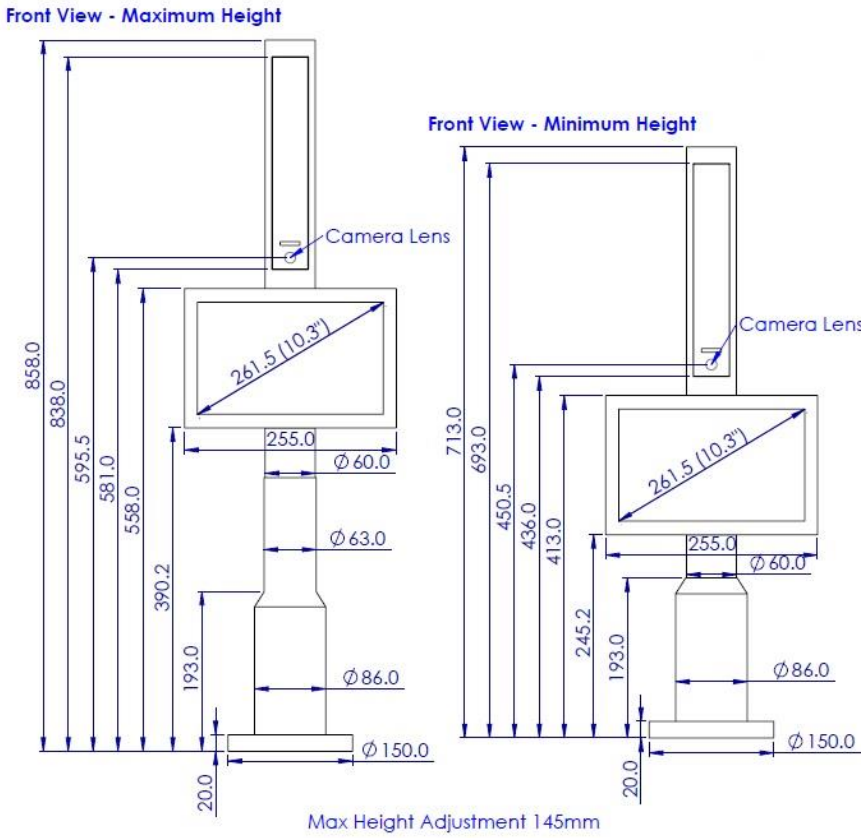


Figure 4: Dimensional drawing of the ASLOC 710 Landscape with base at minimum and maximum height of install showing camera position.

Please note the landscape touch screen size is 10.3” diagonal (128mm (H) x 228mm (W) (5.4” x 9.0”)), however the active display size is slightly smaller at 10.2” diagonal (132.48mm (H) x 222mm (W)).

The ASLOC system is provided with a USB2.0, VGA and 2.1mm DC barrel power extension cable, along with the power supply unit. These cables can be run to a suitable location however please note that the USB2 cable is a maximum length of 3 metres. The maximum cable length is always a function of the cable quality. The power supply provided should use cable rated at a minimum of 2.5A and should be mounted in accordance with local regulation.

Connect the USB cables and VGA cable to the host and apply power via the 12V power supply provided. The status LEDs will illuminate with a yellow central light. This indicates power is applied but the camera has not enumerated with the host. When enumeration is complete the yellow light will turn green and the system is ready for operation.

Operation of ASLOC

Once mounted and enumeration is complete the hardware is operational and can reliably undertake facial recognition as directed by the host computer. The screen has adjustment buttons at the rear of the unit to auto adjust the sizing of the screen and set a desired brightness.

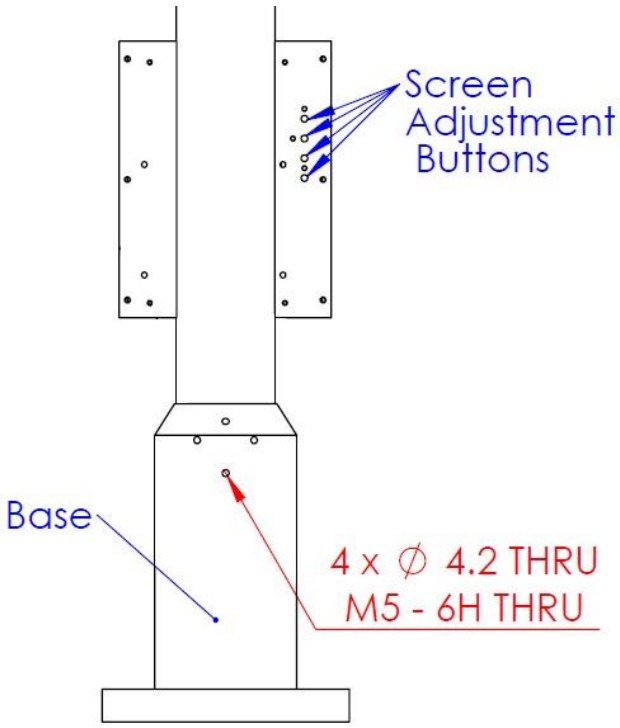
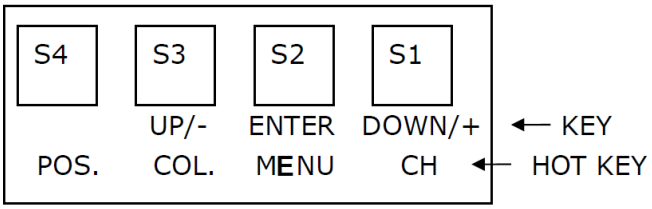


Figure 5: Rear of the ASLOC Portrait unit with base highlighting screen adjustment buttons and the height adjustment location.

Operation of the screen and its adjustment buttons

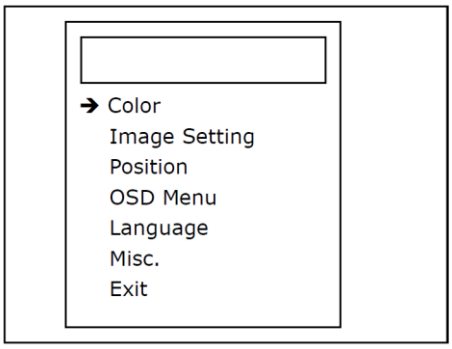
Located at the rear of the screen are 4 function buttons that control the display. These functions are:



- **"POS"** key (S4): **Auto Position calibrated key**, when pressed this key will force the display perform the position calibrated routine. This key is only valid at the VGA input signal condition.
- **"COL"** key (S3): **Auto Colour calibrated key**, when pressed this key will force the display perform the Colour calibrated routine. This key only valid at the VGA input signal condition.
- **"MENU"** key (S2): This key will bring up a menu of settings for the display, there are only three valid buttons once entering the menu, S1, S2 and S3.
- **"CH"** key (S1): There are two input signal channels available on this Board. When both input signals are applied, pressing this key can change the input channel from one into the other. ASLOC Poles have only one of the two input signals applied; therefore, board will auto select the channel that has signal feed, thus, this Key (S1) does not have function as a Hot Key.

Display MENU

When pressing S2 under normal display conditions, the screen settings menu will become active (as shown below)

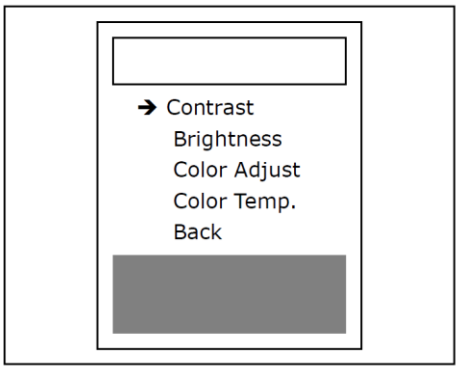


At this point only three Keys S1, S2, S3 are valid. The functions are as follows:

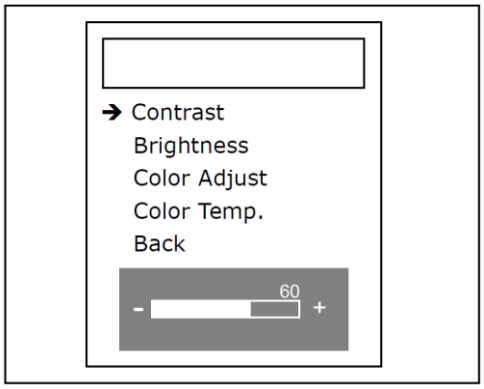
- Pressing the **Menu** (S2) key will change the key into an **"ENTER"** key, it will also bring up the first layer menu screen.

- **S1 (DOWN/+)** key and **S3 (UP/-)** key are used to scroll to the function needed in the menu with S2 being the enter function. After pressing enter the display will show sub menus. Scrolling down and selecting **"EXIT"** on the menu, will bring the menu up one layer.

- Press the **Menu/Enter (S2)** key while at the "**Color"** Bar and you will enter the second layer to adjust **the picture quality** of the display.

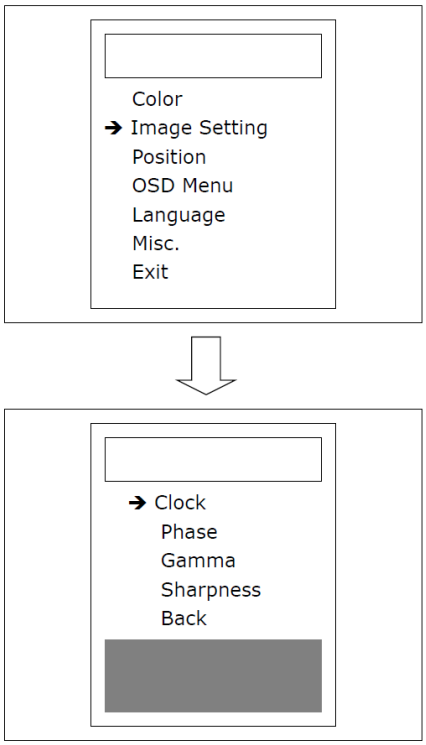


- By pressing the **S1 (DOWN/+)** key or **S3 (UP/-)** key, select the function bar needed. Press the **S2 (ENTER)** key to enter (select) that function and enter the 3rd layer, which will populate the shaded block below the options.

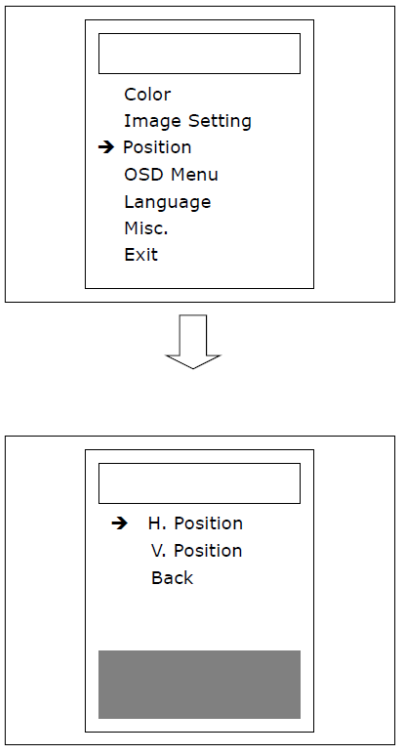


- By pressing the **S1 (DOWN/+)** key or **S3 (UP/-)** key, increase or decrease the selected Value (e.g. contrast in the example above). Press the **S2 (ENTER)** key or select the **"BACK"** Bar can move **layer 3** into **Layer 2**.

- Press the **Menu/Enter (S2)** key while at the Layer 1, **Image Setting** Bar, will enter the second layer to adjust **the picture Setting**.

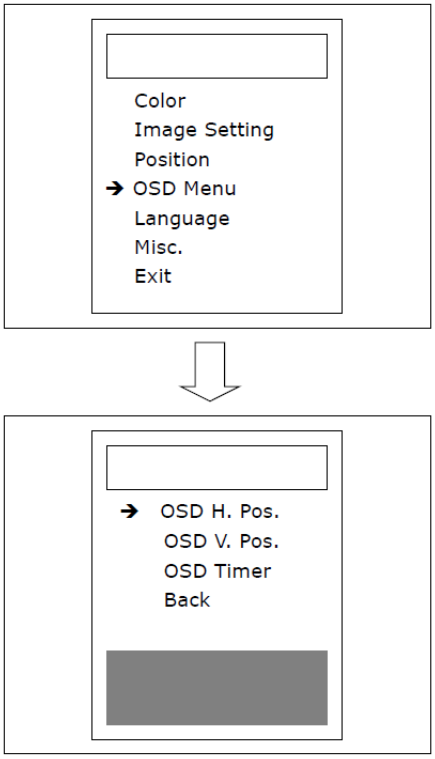


- By pressing the **S1 (DOWN/+)** key or **S3 (UP/-)** key, select the function bar needed. Press the **S2 (ENTER)** key to enter (select) that function and move into the 3rd layer to adjust settings.
- Press the **Menu/Enter (S2)** key while at the Layer 1, **Position** Bar and this will enter the second layer to adjust **the Display's position**.



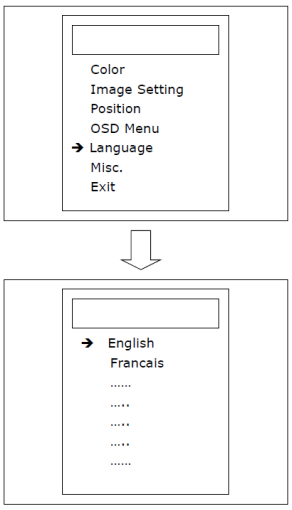
- By pressing the **S1 (DOWN/+)** key or **S3 (UP/-)** key, select the function bar needed. Press the **S2 (ENTER)** key to enter (select) that function and move into the 3rd layer to adjust the setting.

- Press the **Menu/Enter (S2)** key while at the Layer 1, to highlight the **OSD Menu** Bar. This will enter the second layer to adjust **the OSD ICON's position and Timer**.



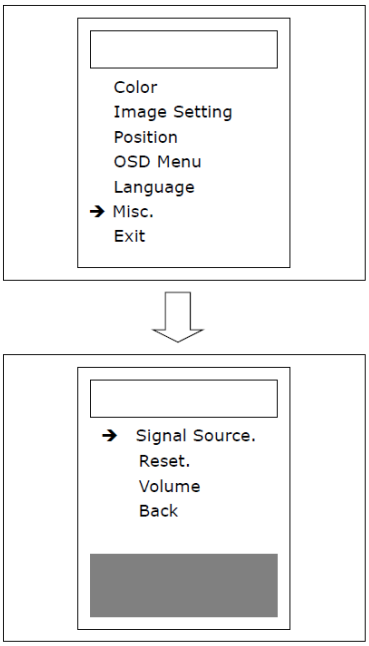
- By pressing the **S1 (DOWN/+)** key or **S3 (UP/-)** key, select the function bar needed. Press the **S2 (ENTER)** key to enter (select) that function and move into the 3rd layer. The same method applies to the rest item of the **OSD ICON Position.**

- Press the **Menu/Enter (S2)** key while at the Layer 1 on the **Language** Bar. This will enter the second layer to select the **Language**. There are 7 languages can be selected.



- By pressing the **S1 (DOWN/+)** key or **S3 (UP/-)** key, select the Language bar needed. Press the **S2 (ENTER)** key to enter (select) that language. The menu will move back to the layer 1 automatically in the selected language.

- Press the **Menu/Enter (S2)** key while at the Layer 1, **Misc.** Bar. This will enter the second layer to select some Board Functions.



- By pressing the **S1 (DOWN/+)** key or **S3 (UP/-)** key, select the function bar needed. Press the **S2 (ENTER)** key to enter (select) that function and move into the 3rd layer.

Note:
"**Signal Source**"
To select one from the two input signals VGA and DVI.
The display still has an auto search function. Should there be no signal at the selected channel, the source of signal will automatically change back to the channel that has signal. On the ASLOC poles only VGA input signal is used as standard.

"RESET"
By select this bar, the board will reset all the setting data from OSD menu. Into factory pre-set value.
"Volume"
A reserved bar to make adjustment of the audio volume, no function at the current application.

- When settings are changed, those changes are stored only when user leaves the menu through proper path using BACK or EXIT functions to leave the layer menu. Should the user leave the menu without any motion after the pre-set time out, the menu will be closed without memorising changed settings.

Cleaning and Maintenance

The ASLOC Imaging system is predominantly maintenance free. The outer casing and front screen can be cleaned, it is recommended that the front camera unit is kept clean of dust particles, especially within the areas of where the camera lens and LED illumination are located, as seen in shaded blue areas of figure 6 below.

The outer casing and screen can be cleaned with a soft anti-static microfibre cloth. The camera unit has a hardened coating applied to prevent major scratches forming, however it is recommended not to use any abrasive pads or products when cleaning the device. It is important to keep the camera lens location free of scratches, obstructions or marks. If using cleaning products on the ASLOC, it is recommended to avoid any containing acetic acid (vinegars).

It is not recommended to operate the touchscreen with any sharp objects, doing so would scratch and potentially break the touchscreen. The screen is a resistive touchscreen and can be operated by people wearing gloves. Please do not spray any cleaning products directly onto the touchscreen. To clean the touchscreen we recommend gently applying a soft cloth to remove loose contaminants/dust. Please ensure no to little pressure is applied directly to the touchscreen, otherwise the screen could become scratched. To disinfect the touchscreen we recommend very gently applying an alcohol-based disinfecting wipe to the screen (the wipe can be dampened with alcohol-based solution, but not soaked). We recommend drying the touchscreen directly afterwards with a clean anti-static microfibre cloth.

Please **do not** spray or apply liquid cleaning products (including alcohol-based cleaning liquid) directly onto the touchscreen. Doing this will allow liquid to soak into the resistive screen causing a conductive path between the resistive touchscreen configuration and can cause the screen to fail. A small amount (one spray) of alcohol-based disinfecting touchscreen safe cleaner can be applied to a soft, dry anti-static microfibre cloth. The cloth can then be used to gently clean the screen. Please dry the screen with a dry, clean and anti-static microfibre cloth immediately afterwards.

Please note that any area on the front of the camera unit between the LED illumination and camera lens (between the blue shaded areas on figure 4) is a free area that does not affect the functionality of the system.

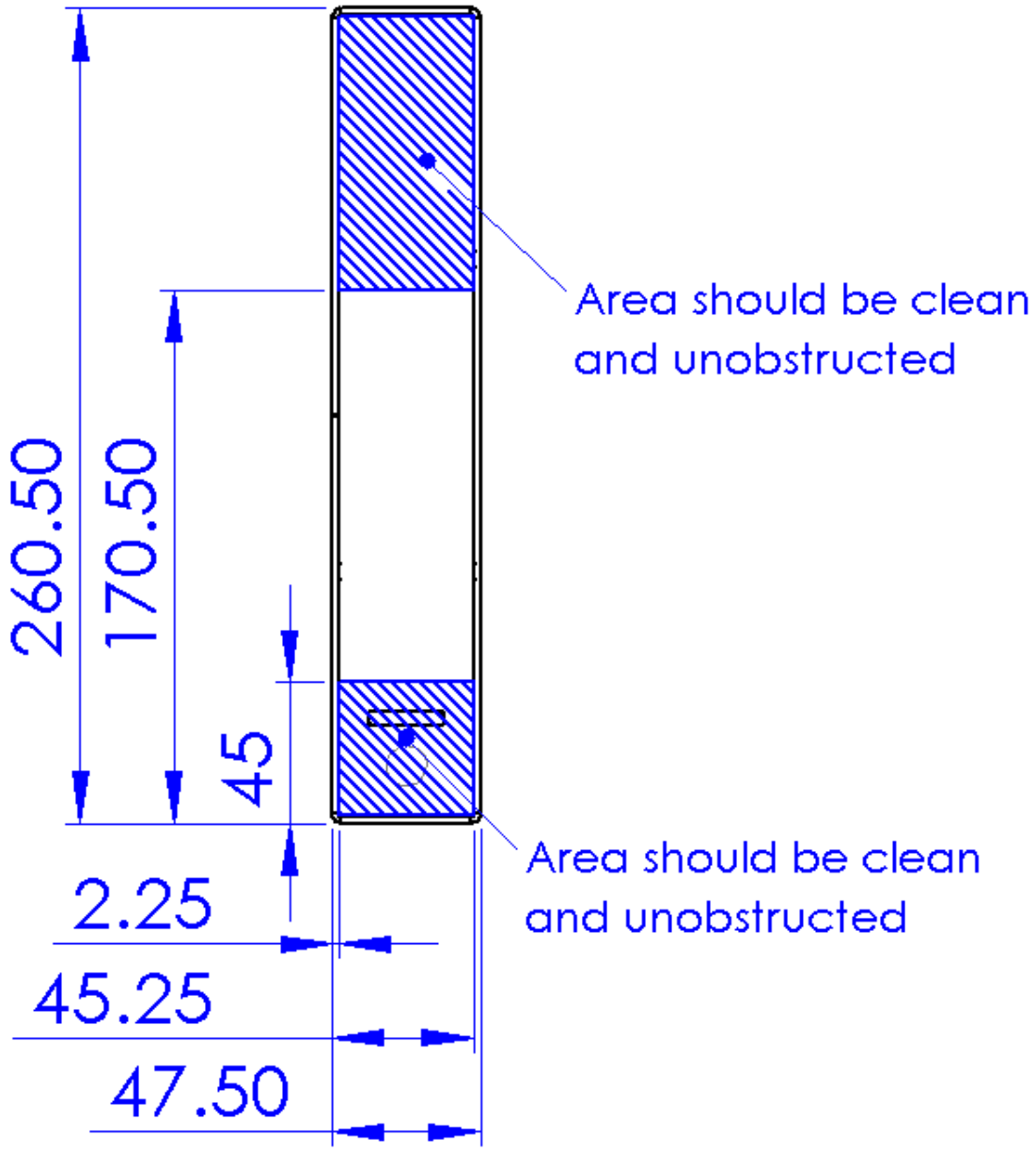


Figure 6: Cleaning and free areas on ASLOC Camera unit

Error Condition Handling

The hardware has a programmable watchdog function, which will verify successful communication with the host. Data is bulk transferred from the camera over USB2 to the host. The watchdog can detect inactivity over a set timeout period between the hardware and host and undertake a reset of both camera and host USB to reinitiate enumeration. In this case, a change in colours will be seen on the status central LED from green to yellow, then back to green once enumeration has been reinitiated. The resets work as a full power down and restart of the system. The system also has a primary watchdog built in to restart the camera, if it detects any processing problems. Any other error conditioning would be defined and run through the host software.

Specification

Camera

Resolution	Wide Video Graphics Array (WVGA) 752 x 480
Camera Features	High Speed Shutter *Programmable watchdog for automatic renumeration (recommended minimum 60 seconds extendible to 999.999 seconds or off)*
Status LEDs	5xRGB programmable over USB
Ambient temperature range	0°C to 60°C
Data transfer	USB2 High Speed Bulk transfer via WinUSB/Libusb

LED Illumination

Wavelength	Near Infrared (NIR)
Supply voltage	12V DC (Powered from certified power supply 90-264V AC 47/63Hz)
Supply current idle mode	40mA typical.
Supply current short-term peak	2.5A for 7mS.
Power consumption idle	0.5W
Power consumption operating	0.8W typical.
Maximum power consumption	4.2W (fuse limited)
Ambient temperature range	0°C to 60°C
Over temperature trip	80°C (75°C reset)
Power inlet	2.1mm DC connector

Power supply

Ideal Power PSU part no.	25HK-AB-120A250-CP6 PSU,12V 2.5A
Input voltage	90-265 VAC 50Hz
Output	12V DC @ 2.5A
Type	Switch mode regulated.
Insulation resistance	>50M ohm with 500VDC applied.
Withstand voltage	3.0KV for 2 seconds.
Approval	EN 62368-1:2014+A11, BS EN 62368-1:2014+A11, UL 62368-1 & CSA C222.2 No. 62368-1-14 Audio/Video Information and communication Technology Equipment – Part 1: Safety Requirements AS/NZ 62368.1:2018, GB4943.1-2001, CNS14336-1 (99) and J62368-1(H30)
Protection	Short circuit and overload with auto recovery

Landscape Screen

Visible area	222x132.48mm
Native resolution	800 (W) x 480 (H)
Auto rescale	Inbuilt automatic rescale for non-native image size
Display technology	LCD with LED backlight
Touchscreen	4-wire touch screen with USB interface
Interface	VGA

Portrait Screen

Visible area	132.48 (W) x 99.36 (H) mm
Native resolution	800x600
Auto rescale	Inbuilt auto rescale for non-native image size
Display technology	With LED backlight
Touchscreen	5-wire touch screen with USB interface
Interface	VGA

Enclosure

Material	Dry powder coated aluminium
Main body diameter	61.5mm
Stand body diameter	86mm
Circular mounting flange	150mm diameter
Enclosure height	713mm (With Base) 710mm (Without Base)
Flange mounting holes	3x8mm blind threaded holes on 110mm circle *(see diagram)*
Cable entry	1 cable entry hole to be provided by the client (entry through centre section of stand)
Mean Time Before Failure (MTBF)	Significantly over 100,000 Hours
Approvals	CE and UKCA compliant with low voltage directive certified PSU RoHS phthalates compliant (amended 2015/863) EMC compliant (*EN 55032:2015, EN55035:2017, EN61000-6-1:2019)*

Contact Us

For further information on our products and solutions please feel free to contact us. This can be done through our website at https://www.perception-si.com/contact-us
Alternative you can call us on +44 (0) 1302 729126.

Copyright and Confidentiality Statement

Under United Kingdom Legislation Perceptions Sensors and Instrumentation Ltd. (PSI) is defined as a WEEE Business to Business (B2B) producer, selling its own branded hardware solutions to businesses within the United Kingdom. The company WEEE producer Registration Number is WEE/FB4237XX.

PSI works in partnership with the WeeeCare compliance scheme to ensure legal responsibilities as defined within the WEEE Regulations are satisfied. WeeeCare is part of the WasteCare Group and aim to ensure the best available techniques are used for recycling and recovery of waste electrical and electronic equipment. PSI complies and are committed to meeting the requirements of the WEEE directive 2012/19/EU, which recasts the previous directive 2002/96/EC. The WEEE directive requires that manufacturers of electrical and electronic equipment, who sell into EU countries, label their equipment to notify customers that the item needs to be recycled and ensure that their products are appropriately disposed of or recycled at the end of their lifespan.

Safety notices:

Indoor Use Only

CAUTION Do not use this product near water.

Please use the 12V DC power supply unit provided with the product. The supply is a safety critical component of the product, replacement power supplies can be ordered through Perception Sensors and Instrumentation Limited.