

ASLOC Handheld Biometric Camera
Model: 90-3533
User Manual





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1. PSI

Perception Sensors and Instrumentation Ltd. (PSI) are specialists in the design of sensors, instrumentation, and imaging hardware. PSI are a leading supplier of biometric imaging hardware, a designer of machine vision solutions for cutting-edge process control applications and the source of a range of highly regarded non-optical industrial instrumentation solutions. Founded in 2004 PSI has worked in expanding its facial recognition hardware, designing both illumination and camera technology to maximise the performance of its systems that focus on image acquisition for biometric applications. PSI applies this experience in a range of bespoke vision-based process control solutions. PSI has been installing and supplying proven and reliable facial recognition imaging hardware to industry for over 10 years, becoming a leading supplier to UK airports. It is estimated PSI's biometric solutions verify over 500,000 individuals every day, which equates to over 5 people per second every day.

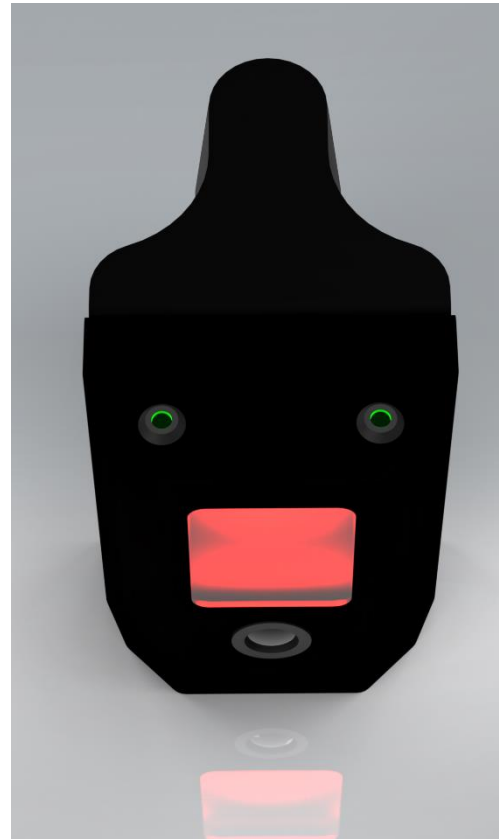
2. Handheld Camera Unit



The handheld imaging system is optimised specifically for facial recognition. It is intended for indoor use without the presence of high dust levels. Comprising of a camera and integrated Near Infra-Red (NIR) pulsed illumination, the imaging unit is housed in a hard anodised aluminium casing supported by a plastic sturdy, but lightweight holder, that can be attached to the base of a PSI manufactured ASLOC pole. The camera unit itself has a hard coated NIR cast acrylic filter front face.

The unit is designed to be a handheld facial recognition camera, that can image typically 600mm away from a target face. The advantage of the handheld unit is that it is not used at a fixed height and can be used in situations where increased accessibility is required for biometric imaging.

The device is powered and interacts via USB 3.0 with host hardware such as an onsite processing computer unit, with biometric application software installed. The camera is supplied with a 3m long, machine vision grade USB 3.0 type a to micro b screw lock cable. The unit has a NIR camera, which is designed to eliminate ambient lighting effects, spectral reflection, motion blur and image distortion. The handheld unit utilises its hardware to produce high speed, high quality detailed imaging, ideal for exceptionally reliable facial recognition. The hardware can produce an image set within a fraction of a second, mitigating ambient effects such as shadowing, lighting gradients and spectral reflections. This results in noticeably clear and detailed images independent of environmental lighting conditions, from low light night scenes to direct sunlight. The NIR flash illumination technology incorporated into the camera has been designed to be fully eye safe.



The Handheld camera is fully approved biometric hardware used within major UK Airports.

3. Operational Information

Optimum operating distance to target 600mm

Interface and power USB 3.0

(3m long USB 3.0 type A to micro b screw lock, machine vision grade, cable supplied)

Status LEDs

The handheld camera includes two red/green LEDs, embedded into the top face of the device. These are used as camera status LEDs. The LEDs can be operated in an automatic or manual mode. Automatic mode uses the hardware itself to give a default hardware LED status. Manual mode is designed for the host software to take control of the LED status light and for the software to configure them to operate the LED status lights instead. If the handheld unit is used in manual mode, please consult the host software application documentation for details. The unit is shipped from PSI in automatic mode.

In automatic mode,

- **LED status when camera idle** No LEDs illuminated.
- **LED status when camera is imaging** Both LEDs pulsing **RED**
- **LED status camera imaging finished** Both LEDs alternating **RED/GREEN**

Please note in automatic mode, LED status are purely driven by the hardware and not an indication of facial recognition or software verification. The host software display must be referred to for the verification of a facial image.

If the LED status is different to the above, it is possible the host software application has taken control and the LEDs are running in manual mode. Please consult the host software application documentation for LED status definition in this case.

A separate technical development document for software engineers is available upon request. We can be contacted via our website, using the following link <https://www.perception-si.com/contact-us>

4. Cleaning and Maintenance

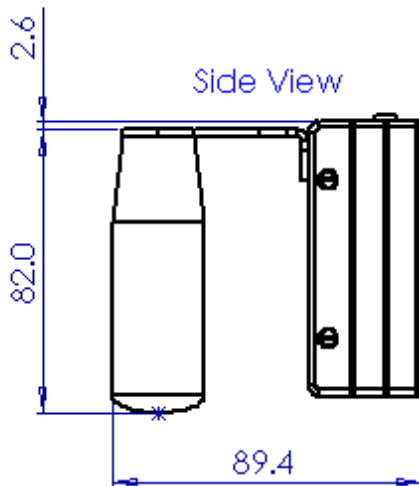
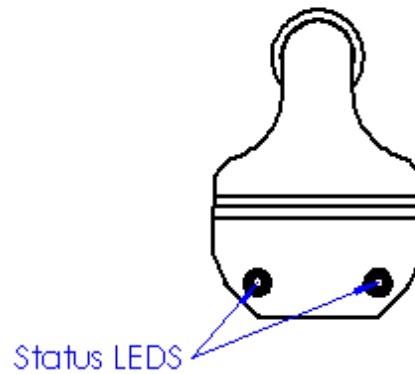
The handheld Imaging system is predominantly maintenance free. The outer casing and front screen can be cleaned, it is recommended that the front camera is kept clean of dust particles. The outer casing and illumination window can be cleaned with a soft anti-static microfibre cloth. The illumination window 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 device, it is recommended to avoid any containing acetic acid (vinegars).

5. Error Condition Handling

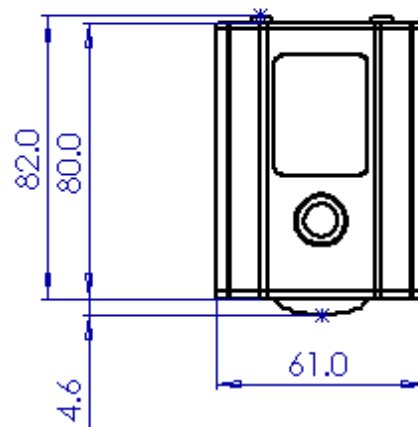
The hardware has a programmable watchdog function, which will verify successful communication with the host. Data is bulk transferred from the camera over USB2/USB 3.0 to the host. The watchdog can detect inactivity over a set timeout period between the hardware and host and undertake a reset of both camera and host USB to reinitiate enumeration. 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.

6. Specifications and Dimensions

Top View



Front View

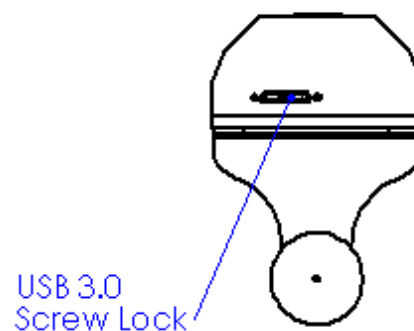


The handheld camera's casing is uniformly finished and black hard anodised to give a smooth, tough and electrically insulated finish.

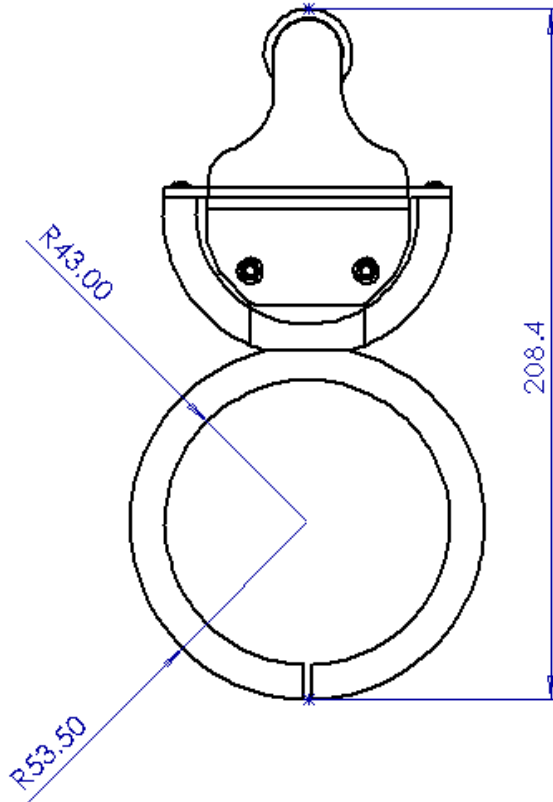
The NIR cast acrylic flash window is hard coated to prevent scratching.

The handle bracket is manufactured using brushed stainless steel, with a rubber handle, resulting in a comfortable, easy to grip and secure handle.

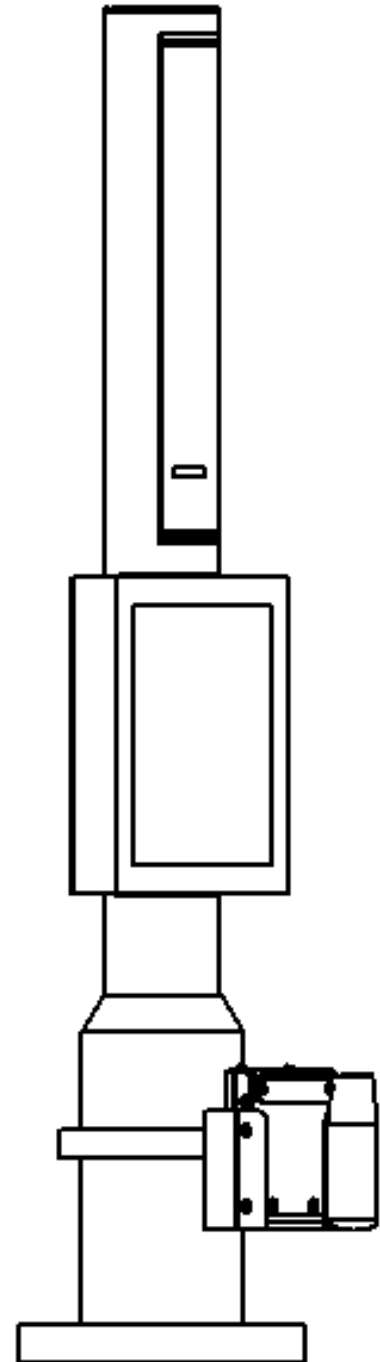
Bottom View



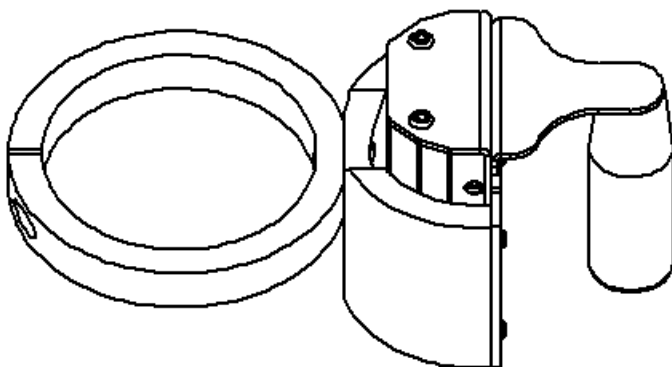
Handheld with holder - top view



Handheld holder attached to an example ASLOC pole with base.



Handheld with holder



Specifications

Near Infrared Camera

Resolution	1280 x 960
Pixels	1.2 Mega Pixels
Maximum Frame Rate	40fps
Technology	High Dynamic Range (HDR)
Spectral Response	NIR with 850nm centre wavelength
Interface	USB 3.0
Output	12-bit
Illumination	Near Infra-Red (NIR)
Maximum Current	500mA
Input Voltage	5V DC (USB powered)
Maximum Power	2.5W
Mean Time Before Failure of ASLOC (MTBF)	>100,000 Hours.

Approvals

CE compliant
UKCA Compliant
RoHS compliant
WEEE compliant
EMC Tested
Eye Safe
Exempt from Low Voltage directive
(Under 50V)

7. Copyright Information

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8. Limitation of Liability

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9. Declaration Statement and Safety Notices



Perception Sensors and Instrumentation Limited hereby declares that the device is in compliance with the essential requirements and other relevant provisions of electromagnetic compatibility directive 2014/30/EU and UK 2016 No 1091 - Electromagnetic Compatibility Regulations 2016, meeting performance criteria set by EN 55032:2015 (Electromagnetic compatibility of multimedia equipment – emission requirements), EN55035:2017 (Electromagnetic compatibility of multimedia equipment – immunity requirements) and EN61000-6-1:2019 (Electromagnetic compatibility: Generic Standards – Immunity standard for residential commercial and light industrial environments). The Imaging unit fulfils the requirements of BS EN 62471:2008, Photobiological safety of lamps and lamp systems, with a lamp classification of exempt to IEC 62471:2006, meeting the requirements of Directive 2006/25/EU, Artificial Optical Radiation. The device itself is a USB 3.0 5V DC powered unit and exempt from the Low Voltage Directive 2014/35/EU and UK 2016 No 1101 - Electrical Equipment (Safety) Regulations 2016. The device follows the Restriction of Hazardous Substances in Electrical and Electronic Equipment directive 2011/65/EU (Amended by 2015/863, phthalates compliant) and UK 2012 No 3032 - The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 Amended by 2015 No. 863 (phthalates compliant).

Safety notices:

CAUTION

Do not use this product near water.



Indoor Use Only



RECYCLING This product bears the selective sorting symbol for Waste Electrical and Electronic Equipment (WEEE). This means that this product must be handled pursuant to European directive 2012/19/EU and UK 2013 No 3113 - The Waste Electrical and Electronic Equipment Regulations 2013, to be recycled or dismantled to minimise its impact on the environment. The user has the choice to give this product to a competent recycling organisation or to the supplier when they buy replacement electrical or electronic equipment. Perception Sensors and Instrumentation Ltd. is a business to business (B2B) Producer under UK registration number WEE/FB4237XX.