



Integrated Inspection Camera (IIC)



IIC is an integrated image capture system featuring high intensity pulsed illumination and advanced camera technology to prevent motion blur and image distortion. It is available with visible or near infrared lighting (NIR) options and provides compact image capture capabilities for industrial live visual inspection systems or long-range facial recognition.

The NIR configuration is ideal for applications operating in the same area as personnel. Since the lighting is invisible to the eye, high pulse intensities can be employed with no impact on human operators. The intensity and short duration of the pulses eliminates the effects of ambient light for many applications. Due to the unobtrusive nature of the NIR and its intensity, excellent image capture can be achieved for visual inspection or facial recognition over several metres.

The visible light variant provides controlled white light for colour analysis. The IIC is available with a wide range lenses allowing the system to be optimised for specific applications.

The system is low power, with the illumination running from 21.5V DC, 4A supply in and the camera supplied by a USB 2.0/3.0 host interface. The camera is capable of full frame capture at over 30 fps¹. The camera features a watchdog which can optionally reset the camera after a period of inactivity. The system is designed for durability and unattended 24/7 operation.

The IIC is compatible with VESA wall mounts up to 100mm x 100mm and 1/4" x 20 UNC (standard camera mount fixture connection). It is lightweight, compact and constructed with a robust dry powder coated finish.

An optional RS485 connection is available for configuration and monitoring of the illumination sub-system.

The unit is designed for optional integration with OCAS platform products, PSI biometric terminals or client specific bespoke designed solutions.

¹ USB 3.0 only
Revision 1.1 April 2021



IIC Specifications

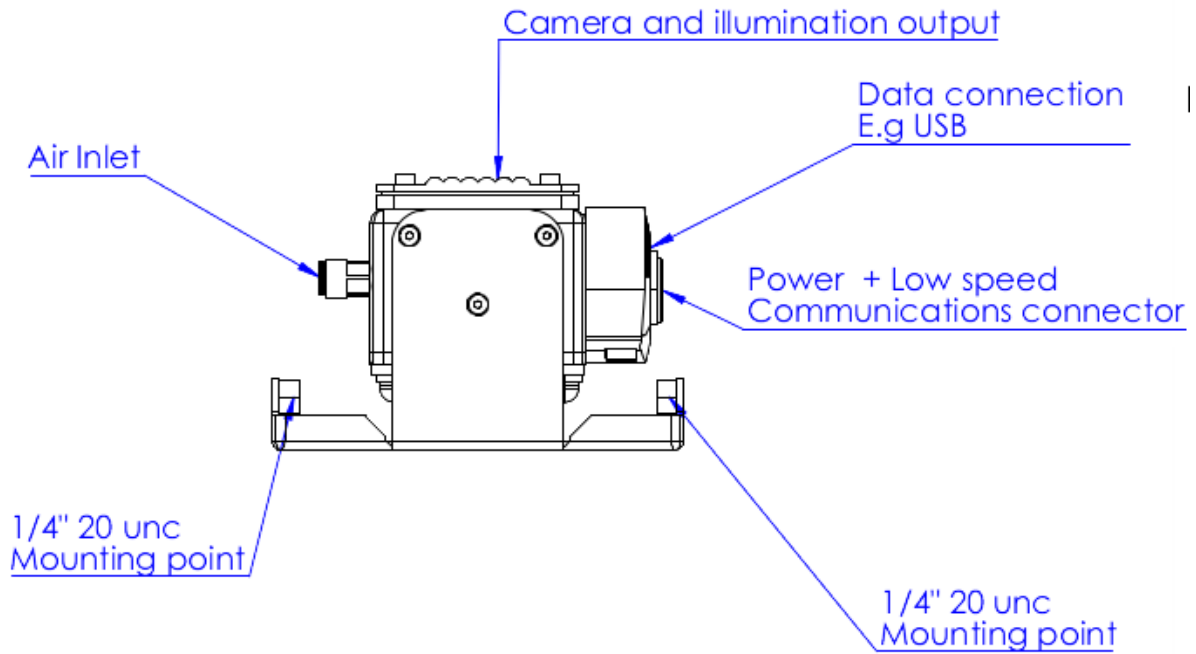
Property		Specification	Notes
Weight		1.3Kg	
Mounting Options	VESA	75 x 75 (M4 thread) 100 x 100 (M4 thread) 75 x 50 (M4 thread) 100 x 50 (M4 thread)	Rear
	Camera Mount	1 x ¼" x 20 UNC thread	Rear, Top, Bottom
Cabling	Unit to Junction Box or host (power and signal)	3m max length	Cables Included
	If connecting to OCAS or extending cabling from a junction box		
	OCAS - Junction Box (ethernet)	50m max length Cat 5e/6 RJ45 connectors	Must be Power over Ethernet (PoE) compliant
	OCAS - Junction Box (power)	50m max length 2 core 2.5mm ² CSA	
	OCAS - Junction Box (signals)	50m max length 0.2 - 0.5mm ² CSA	Twisted pair with screen
Power		21.5V DC	
Mounting Angle		55° Max 35° Min	Angle to horizontal. It is recommended that this is adjustable.

Installation properties

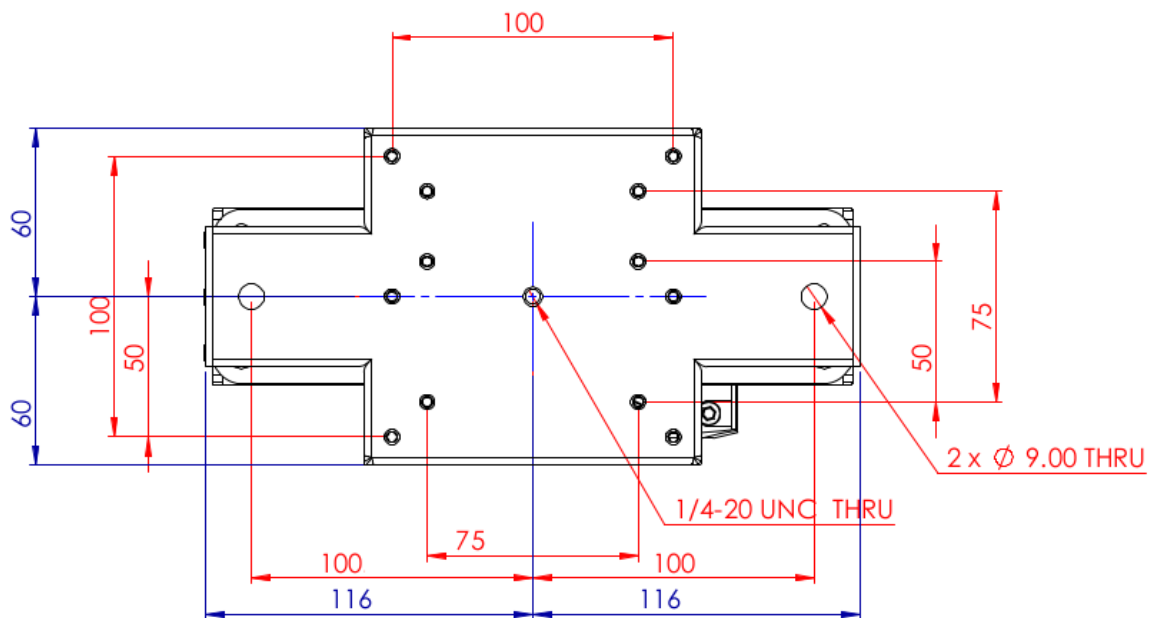
Machine Vision Integrated Inspection Camera Application Note



Physical Dimensions (+/- 1mm)



Connection and Mounting Points
Top View



Rear View Showing Mounting Points



Case Study

An analysis system was created to determine packaging conformance. The client required a system to ensure all boxes of a specific type were sealed with a packing strap correctly covered by a packing label to meet export requirements.

Boxes pass the inspection point at high speed. The system is required to automatically divert incorrectly packaged items for rectification without impacting throughput.



Image 1: Detection of correct packaging

In image 1 the system has detected the box, verified the type, confirmed the packing label is present and correctly covers the packing strap.

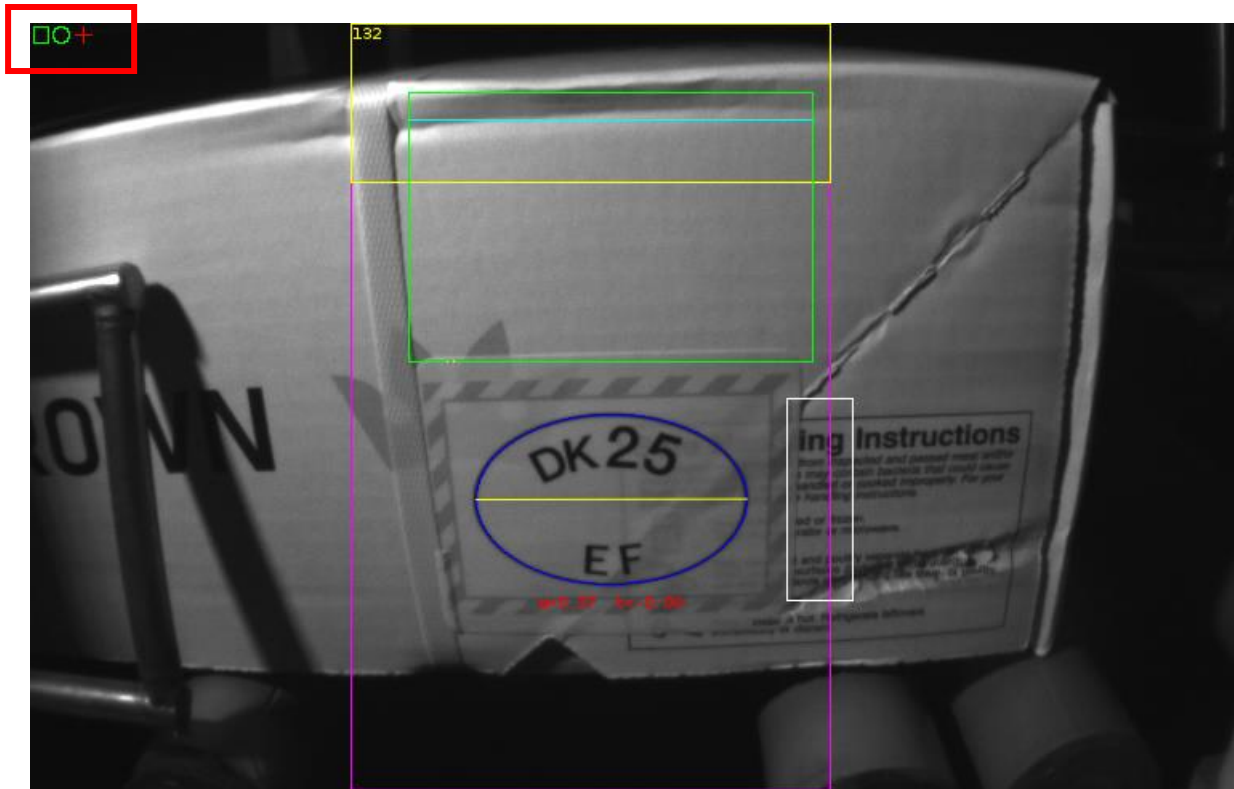


Image 2: Detection of incorrect packaging

In Image 2 the system has once again detected the box, verified the type and confirmed the packing label is present. However, the system has detected that no packing strap is present under the label. This box is identified as non-conformant and redirected for remedial action.

The quality checks can be seen graphically within the red boxes on both image 1 and 2. A green icon highlights a pass and a red icon highlights a failure. The system emits a pass/fail signal over MODBUS which triggers redirection of incorrectly packaged boxes.

The application did not require a full OCAS and could therefore be implemented using the Integrated Inspection Camera.

Machine Vision Integrated Inspection Camera Application Note



Contact Us

For further information on our machine vision industrial 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

This document is a strictly confidential communication to and solely for the use of the recipient. No part of this documentation or the products described in it may be reproduced, transmitted, transcribed, stored in a retrieval system or translated into any language in any form or by any means (except documentation kept by the purchaser for backup purposes) without the express written permission of Perception Sensors and Instrumentation Ltd. Specifications and information contained in this document are furnished for informational use only and can be subject to change at any time.

Copyright © Perception Sensors and Instrumentation Ltd & Emergent Design Ltd.