

iVu Image Sensors



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more sensors, more solutions

iVu Vision sensor with on-board user interface

- Image based sensor for pass/fail inspection or barcode reading
- Graphical User Interface on a 320 x 240 pixel touch screen display
- Menus and help screens available in 9 languages
- Robust IP67 housing with optional integrated lighting (Red, Blue, Green, White or IR)

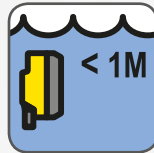
- Two discrete PNP or NPN outputs, trigger and teach input, strobe output for external light
- USB port to upload inspections, download log files, update firmware
- Free PC software emulator available to configure and troubleshoot inspections offline



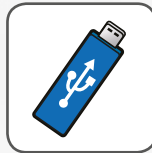
No PC required



On-board configuration



IP67



USB flash-drive



Remote 3,5" Display

- 90 mm display on a separate device
- Display can be connected and disconnected anytime without interfering with the operation of the sensor
- One display to be shared between multiple sensors
- Cable lengths up to 16 m, with or without docking bracket



Integrated 2,7" Display

- 68 mm display on the back of the sensor
- Transparent mechanical protection window
- Complete solution in one device





iVu Barcode reader

- Decodes Datamatrix and all commonly used barcode types
- Reads up to 10x linear codes and one 2D code in one single image
- Data export on RS-232 serial output
- Able to compare code read with taught reference value (for ON/OFF output)



iVu grayscale: image based pass/fail inspection sensor

- Select one of 3 algorithms
- Enable/Disable motion compensation



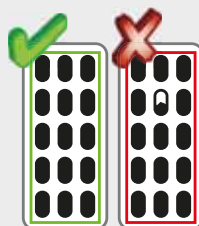
Match algorithm

- Compares the acquired image with a previously taught sample
- Specify required precision and acceptable rotation



Area algorithm

- Counts bright or dark areas in the acquired image
- Adjustable parameters for grayscale level and area size



Blemish algorithm

- Extracts sharp edges found in the acquired image
- Adjustable parameters for contrast level and edge length

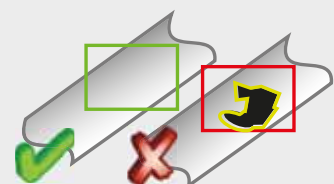




Image export



Data export



Command Channel

iVu Plus

=

iVu TG
iVu TB
iVu RG
iVu RB

+

Ethernet and RS-232 Communication

- Export BMP images via Ethernet
- Export of inspection data and statistics
- Command language to control the operation of the vision sensor from a remote device
- Free Windows sample programs (including source files) allow communication with PC and enable development of custom programs

Up to 30 inspections stored in Memory

- Select the active inspection via the touch screen GUI or the command channel
- Switch between inspections in milliseconds

Advanced sorting algorithm

- Compares each acquired image with up to 10 reference patterns
- Directly drives up to 3 switching outputs depending on the recognized pattern
- Exports the identification of each recognised pattern via data export

Application Examples



Parts sorting

The iVu PLUS is configured to recognise the part presented. If it sees a nut it switches output 1, a bolt output 2 or a washer output 3. The part is directed to the correct conveyor.



Drilled Hole Inspection

The iVu sensor is configured for an **Area** Inspection. When holes are punched, the iVu evaluates all the holes for presence and correct size. In case of missing or incorrectly sized holes, the iVu sends a fail output, and the part is rejected.



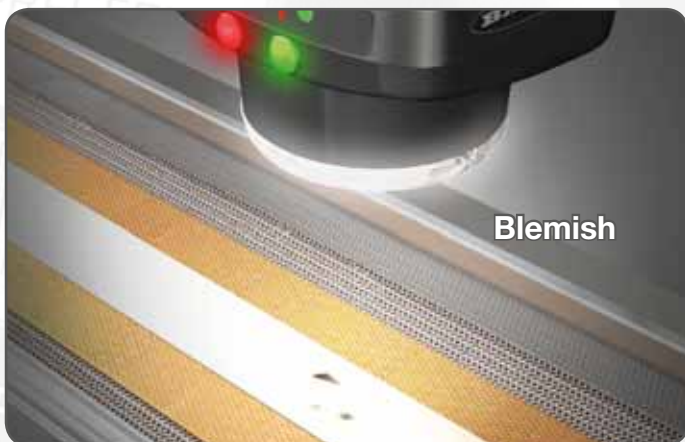
Date/Lot Code Inspection

To verify that each package has a date/lot code printed on it, the iVu sensor is configured for a **Match** Inspection. When the iVu detects a package without the date/lot code, it sends a fail output, and the part is rejected.



Part Flaw Detection

To verify the connectors of electronic components, the iVu sensor is configured for a **Match** Inspection. If the iVu detects a part with a bent or missing connector, or if the part is the wrong side up, it sends a fail output, and the part is rejected.



Adhesive plaster

In the production of adhesive plasters, the iVu is configured as a **blemish** type sensor, inspecting at high speed a strip of white woven material. When detects a stain, the packing line is stopped.



Intelligent Mail Bar Code Reading

Many mailing and catalogue houses use the **Intelligent Mail Bar (IMB) code** on their mailers to combine separate job runs, or to presort mail. iVu BCR provides instant feedback to staff monitoring the process.



iVu – iVu PLUS



iVu TG ⁽¹⁾

Inspection sensors with integrated touch screen

Integrated Light	4,3 mm Lens	Other Lens ⁽²⁾
No light	IVUTGPX04	IVUTGPX.. ⁽⁴⁾
IR ringlight	IVUTGPI04	IVUTGPI..
Red ringlight	IVUTGPR04	IVUTGPR..
Blue ringlight	IVUTGPB04	IVUTGPB..
Green ringlight	IVUTGPG04	IVUTGPG..
White ringlight	IVUTGPW04	IVUTGPW..

iVu TB ⁽¹⁾

Barcode reader with integrated touch screen

Integrated Light	4,3 mm Lens	Other Lens ⁽²⁾
No light	IVUTBPX04	IVUTBPX.. ⁽⁴⁾
IR ringlight	IVUTBPI04	IVUTBPI..
Red ringlight	IVUTBPR04	IVUTBPR..
Blue ringlight	IVUTBPB04	IVUTBPB..
Green ringlight	IVUTBPG04	IVUTBPG..
White ringlight	IVUTBPW04	IVUTBPW..

iVu PLUS TG ⁽³⁾

Inspection sensors with integrated touch screen

Integrated Light	4,3 mm Lens	Other Lens ⁽²⁾
No light	IVUPTGX04	IVUPTGX.. ⁽⁴⁾
IR ringlight	IVUPTGI04	IVUPTGI..
Red ringlight	IVUPTGR04	IVUPTGR..
Blue ringlight	IVUPTGB04	IVUPTGB..
Green ringlight	IVUPTGG04	IVUPTGG..
White ringlight	IVUPTGW04	IVUPTGW..

iVu PLUS TB ⁽³⁾

Barcode reader with integrated touch screen

Integrated Light	4,3 mm Lens	Other Lens ⁽²⁾
No light	IVUPTBX04	IVUPTBX.. ⁽⁴⁾
IR ringlight	IVUPTBI04	IVUPTBI..
Red ringlight	IVUPTBR04	IVUPTBR..
Blue ringlight	IVUPTBB04	IVUPTBB..
Green ringlight	IVUPTBG04	IVUPTBG..
White ringlight	IVUPTBW04	IVUPTBW..

iVu RG ⁽¹⁾

Inspection sensors without integrated display

Integrated Light	4,3 mm Lens	Other Lens ⁽²⁾
No light	IVURGPX04	IVURGPX.. ⁽⁴⁾
IR ringlight	IVURGPI04	IVURGPI..
Red ringlight	IVURGPR04	IVURGPR..
Blue ringlight	IVURGPB04	IVURGPB..
Green ringlight	IVURGPG04	IVURGPG..
White ringlight	IVURGPW04	IVURGPW..

iVu RB ⁽¹⁾

Barcode reader without integrated display

Integrated Light	4,3 mm Lens	Other Lens ⁽²⁾
No light	IVURBPX04	IVURBPX.. ⁽⁴⁾
IR ringlight	IVURBPI04	IVURBPI..
Red ringlight	IVURBPR04	IVURBPR..
Blue ringlight	IVURBPB04	IVURBPB..
Green ringlight	IVURBPG04	IVURBPG..
White ringlight	IVURBPW04	IVURBPW..

iVu PLUS RG ⁽³⁾

Inspection sensors without integrated display

Integrated Light	4,3 mm Lens	Other Lens ⁽²⁾
No light	IVUPRGX04	IVUPRGX.. ⁽⁴⁾
IR ringlight	IVUPRGI04	IVUPRGI..
Red ringlight	IVUPRGR04	IVUPRGR..
Blue ringlight	IVUPRGB04	IVUPRGB..
Green ringlight	IVUPRGG04	IVUPRGG..
White ringlight	IVUPRGW04	IVUPRGW..

iVu PLUS RB ⁽³⁾

Barcode reader without integrated display

Integrated Light	4,3 mm Lens	Other Lens ⁽²⁾
No light	IVUPRBX04	IVUPRBX.. ⁽⁴⁾
IR ringlight	IVUPRBI04	IVUPRBI..
Red ringlight	IVUPRBR04	IVUPRBR..
Blue ringlight	IVUPRBB04	IVUPRBB..
Green ringlight	IVUPRBG04	IVUPRBG..
White ringlight	IVUPRBW04	IVUPRBW..

⁽¹⁾ Only PNP versions are listed, NPN versions are available; replace P in model number by N (e.g. IVUTGNX04).

⁽²⁾ Available lenses are: 06 mm, 08 mm, 12 mm, 16 mm and 25 mm.

⁽³⁾ iVu PLUS sensor can be configured for PNP or NPN operation.

⁽⁴⁾ For models with C-Mount lens, replace the focal length by "C" (e.g. IVUTGPXC) – only available for models without ringlight.




iVu and iVu PLUS with C-Mount Lens

- Provides greater working distance towards inspection area
- Better light sensitivity to help reduce blur in high-speed applications
- More focal length and aperture (iris) options with C-Mount lenses for unique application needs

Accessories





Power & I/O Cordsets				
Length	Connector	For iVu TG (8-pin)	For iVu RG, TB & RB	For all iVu PLUS
2 m	Straight	MQDC2S-806	IVUC-1206	MQDC2S-1206
5 m		MQDC2S-815	IVUC-1215	MQDC2S-1215
9 m		MQDC2S-830	IVUC-1230	MQDC2S-1230
15 m		MQDC2S-850	IVUC-1250	MQDC2S-1250
2 m	Right-Angle	MQDC2S-806RA	IVUC-1206RA	/
5 m		MQDC2S-815RA	IVUC-1215RA	/
9 m		MQDC2S-830RA	IVUC-1230RA	/
15 m		MQDC2S-850RA	IVUC-1250RA	/

USB Cables			
Length	Connector	For iVu TG & TB (8 pin M12 to USB)	For iVu RG, iVu RB and all iVu PLUS (4 pin M8 to USB)
15 cm	Straight	MQDEC-8005-USB	PSG-4M-4005-USB
30 cm		MQDEC-801-USB	PSG-4M-401-USB
90 cm		MQDEC-803-USB	PSG-4M-403-USB
3 m		MQDEC-810-USB	PSG-4M-410-USB
15 cm	Right-Angle	MQDEC-8005RA-USB	/
30 cm		MQDEC-801RA-USB	/
90 cm		MQDEC-803RA-USB	/
3 m		MQDEC-810RA-USB	/

Remote Display	Docking bracket	Swivel mount bracket
		
RDM35	SMBRDM35	SMBKS*


*Requires SMBRDM35

Remote Display Cordsets (including SMBRDM35 bracket)		
Length	Straight	Right-Angle
1 m	IVURDM-QDK-803	IVURDM-QDK-803RA
2 m	IVURDM-QDK-806	IVURDM-QDK-806RA
5 m	IVURDM-QDK-815	IVURDM-QDK-815RA
9 m	IVURDM-QDK-830	IVURDM-QDK-830RA
15 m	IVURDM-QDK-850	IVURDM-QDK-850RA

Brackets			
Left angle	Right angle	Base mount	U-shape
			
SMBIVURAL	SMBIVURAR	SMBIVUB	SMBIVUU

Ethernet cables for iVu PLUS (4-pin M8 to RJ45)	
2 m	IVUC-E-406
5 m	IVUC-E-415
9 m	IVUC-E-430
16 m	IVUC-E-450
23 m	IVUC-E-475

Replacement lenses		
	4,3 mm	LMF04
	6,0 mm	LMF06
	8,0 mm	LMF08
	12,0 mm	LMF12
	16,0 mm	LMF16
	25,0 mm	LMF25

Filter kits		
	Red	FLTMR
	Blue	FLTMB
	Green	FLTMG
	IR*	FLTMI*

*FLTMI filter is preinstalled on all iVu sensors with IR ringlight.

Replacement covers	
IVUW	Front cover plastic
IVUW-G	Front cover Glass
IVUBC	Touch screen cover

USB drive 2 GB	Stylus	
		
IVUUSBFD2	STYLUS-1	Single
	STYLUS-10	10-pack

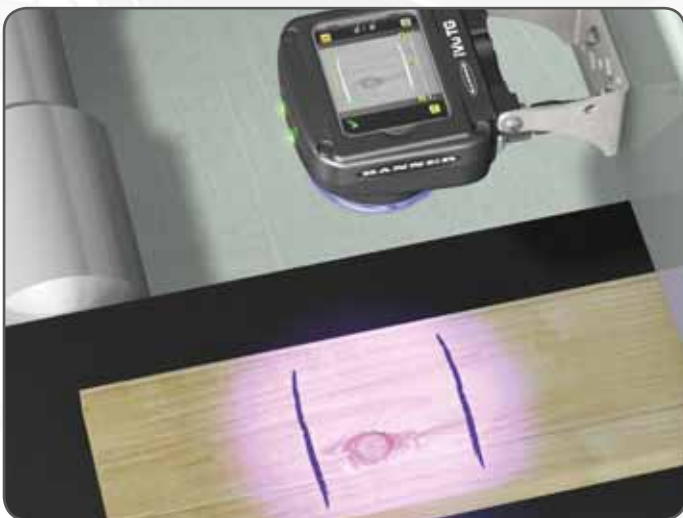
All iVu models now available with UV Ringlight



- Enhances low contrast in UV fluorescent and non-fluorescent applications
- UV illumination available in all iVu models with features including MATCH, AREA, SORT, BLEMISH, BCR, Ethernet and others
- Tested to IEC 62471 Standard for eye safety

UV Ringlight with 4,3 mm Lens ⁽¹⁾		
For use with iVu & iVu PLUS		
Model	365 nm UV	395 nm UV
iVu TG	IVUTGP604	IVUTGP904
iVu RG	IVURGP604	IVURGP904
iVu TB	IVUTBP604	IVUTBP904
iVu RB	IVURBP604	IVURBP904
iVu PLUS TG	IVUPTG604	IVUPTG904
iVu PLUS RG	IVUPRG604	IVUPRG904
iVu PLUS TB	IVUPTB604	IVUPTB904
iVu PLUS RB	IVUPRB604	IVUPRB904

For iVu models, only PNP versions are listed, NPN versions available. iVu PLUS sensor can be configured for PNP or NPN operation.
⁽¹⁾ Other available lenses are: 06 mm, 08 mm, 12 mm, 16 mm and 25 mm.



Sensing fluorescent markings for wood defects on timber material even at long sensing distances.



Verifying print in a low contrast application where the print colour is similar to the background colour.

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