



► Mitsubishi Electric Line Scan Bar

The Mitsubishi Electric Line Scan Bar series – also known as Contact Image Sensors (CIS) – offers a cost-effective solution for the inspection of flat or nearly flat surfaces and objects. Using a proprietary tri-linear CMOS colour or monochrome sensor and integrated white LED illumination, web-like materials can be scanned in colour or b/w at resolutions of 600, 300 and 150dpi.

Mitsubishi Electric's decades of experience in CIS technology and market leadership for banknote inspection and document processing guarantees exceptional colour fidelity and reliability. The Line Scan Bar series is Mitsubishi Electric's first product targeting explicitly the machine vision market by providing line scan bars equipped with CameraLink and CoaXPress interfaces.

The Line Scan Bars combine high data rates through CameraLink or CoaXPress interfaces, high sensitivity, excellent colour rendition and high resolution with minimal effort in set-up, camera alignment or calibration. The images generated by a Line Scan Bar show virtually no distortion since the long sensor line maps the object on a one-to-one scale.

Image formation in the Line Scan Bar series is achieved via a double-row lens array, using gradient-index rod lenses, matched to a monochrome or colour tri-linear CMOS sensor. Each individual rod-lens captures an image of a very small region of the target. Thanks to a small overlap in the individual images, a clear, sharp, combined image is produced along the narrow line of the sensor. The rod lens array (SLA) used in the KD series offers an optimised working distance of 12mm.

The image quality of the Line Scan Bars is largely influenced by the mounting accuracy of the individual sensor chips on the PCB and the alignment of the rod-lens array. Only a highly integrated and



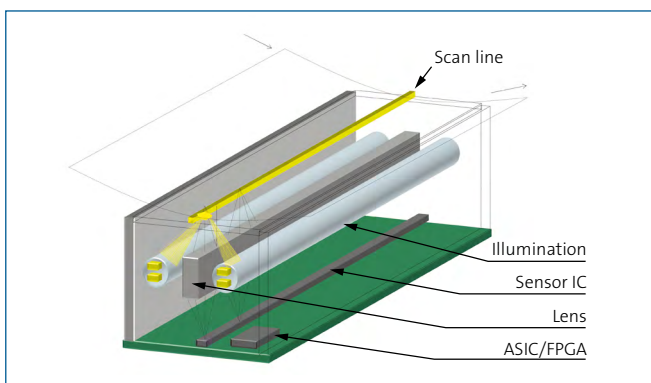
automated production line offers the required precision during manufacturing. Mitsubishi Electric has all required production facilities and quality control installations to provide this accuracy and reproducibility. Each sensor is fully tested before shipment.

Image data output is provided via standard industrial CameraLink and CoaXPress interfaces. The CXP version is GenICam compliant.

- Cost-effective and easy to use solution for compact optical colour inspection with highest scan rates
- Perfect solution for applications in all areas where flat or nearly flat objects and materials are to be tested quickly and with high resolution and best image quality (e.g. printed matter, PCBs, LCD panels)
- Integrated controllable white LED illumination
- Sensor unit without illumination available
- Non-contact full colour scan, working distance 12mm from glass surface
- Resolutions: 600dpi, 300dpi and 150dpi
- Line rates up to 90kHz (450m/min) at 300dpi resolution
- Output 8- or 10-bit

Application areas

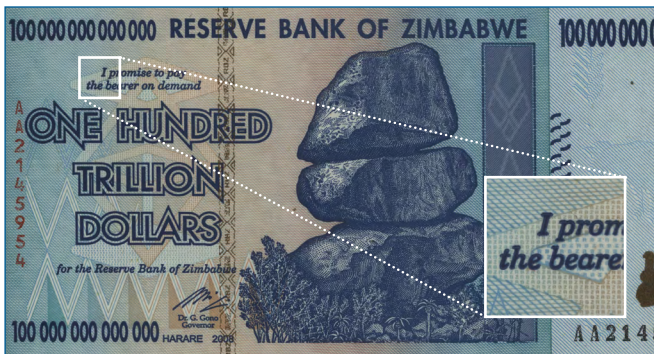
- Excellent colour rendition and fast scan speed make the Line Scan Bar series ideal for print inspection at resolutions of 600, 300 and 150dpi.
- Integrated white LED illumination allows for detailed defect inspection in textiles, foils and other web-like materials.
- Flexible lighting in combination with external illumination allows for efficient inspection of PCB, wafer and solar cells.
- Fast scan speed and flexible lighting allow inspection of glass and metal.





► Technical Data

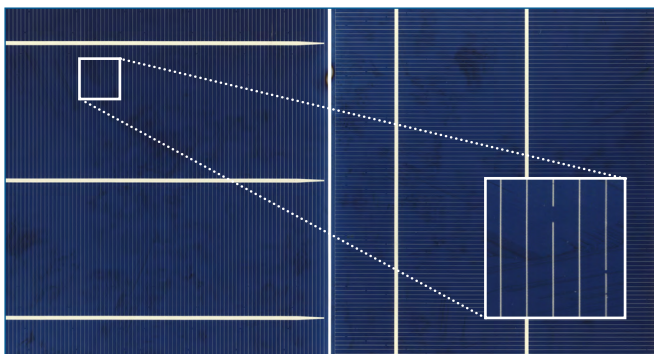
SPECIFICATIONS	309AX	617AX	926AX	309MX	617MX	926MX	367CX	587CX	807CX
COLOUR / MONO	RGB colour			mono			RGB colour		
SCAN WIDTH	309mm	617mm	926mm	309mm	617mm	926mm	367mm	587mm	807mm
INTERFACE	Camera Link Medium (1x, 2x, 3x)						CoaXPress CXP-6 (1x, 2x)		
RESOLUTION	600dpi, 300dpi, 150dpi								
PIXEL COUNT	7296	14592	21888	7296	14592	21888	8640	13824	19008
LINE FREQUENCY	up to 22kHz			up to 44kHz			55kHz @ 600dpi, 91kHz @ 300dpi		



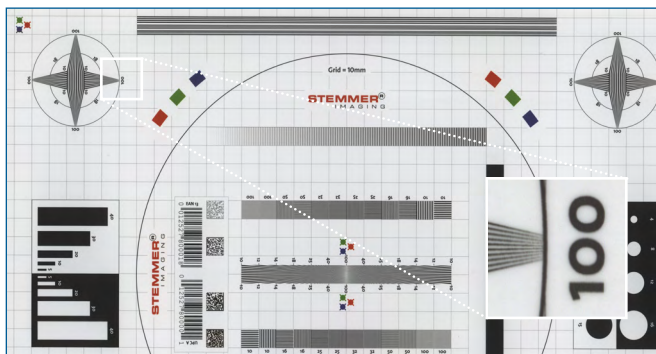
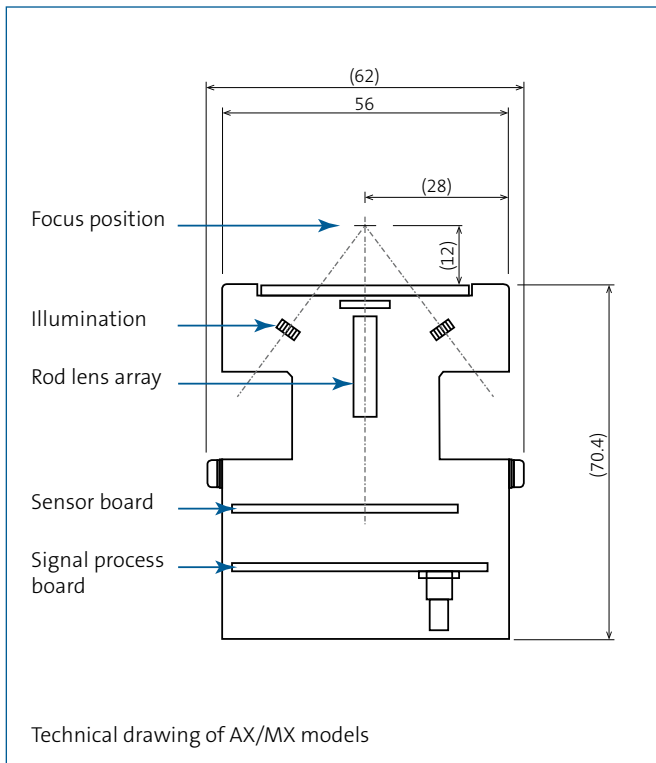
Banknote



Hologram labels



Solar cells



Print inspection

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