

# MITSUBISHI ELECTRIC LINE SCAN BAR

Highest image quality with minimum effort



③ Highly compact design

③ Easy integration

③ High resolution

③ Lowest service efforts

③ Full speed scanning

# Perfect resolution, made simple



Very compact design ideal for integration in machines

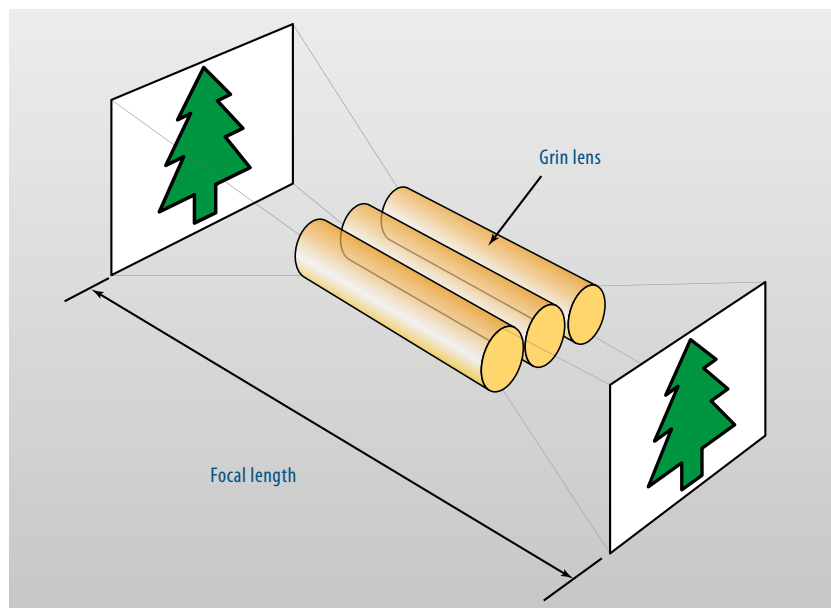
## The easiest way to acquire perfect images

In the growing market of Surface Vision and Machine Vision solutions, image quality, highest resolution and ease of integration are becoming more and more important success factors.

For several decades, Mitsubishi Electric has been the worldwide leading supplier of CMOS chip-based Contact Image Sensors (CIS) for professional image capture. These sensors, marketed under the name Mitsubishi Electric Line Scan Bar, feature not only highest image quality, resolution and line rate, but also a very compact design ideal for integration in machines or mechanical devices. The Line Scan Bar is therefore a real alternative to well-known line scan cameras, but it also offers a whole series of additional benefits.

## Know-how

The image is captured line-by-line, and this data is then composited into a complete image by a frame grabber card. An essential part of the Line Scan Bar is the 'Grin lens' – a gradient-index lens, allowing distortion-free 1:1 representation of the object on the sensor surface, thereby crucially contributing to the high image recording quality.



Distortion-free 1:1 representation of the object for high image recording quality

## True-colour images

The sensor is a trilinear sensor, i.e. it has a separate sensitive area for red, green and blue light. For simple applications, the sensor is also available in a monochrome version that only detects gray values.

## Integrated LED illumination

A highly intensive and homogeneous LED illumination is integrated directly in the frame of the sensor housing. The illumination is therefore always optimally aligned to the sensor. Cumbersome calibration and alignment of external light sources is unnecessary. Our sensors are also optionally available without integrated LED illumination.

## Sensor ICs

The Mitsubishi Electric Line Scan Bar uses CMOS high-end chips for high-speed image acquisition, a defined pixel size of 0.042 mm and real trilinear CMOS chips with RGB filters.

## Compact design

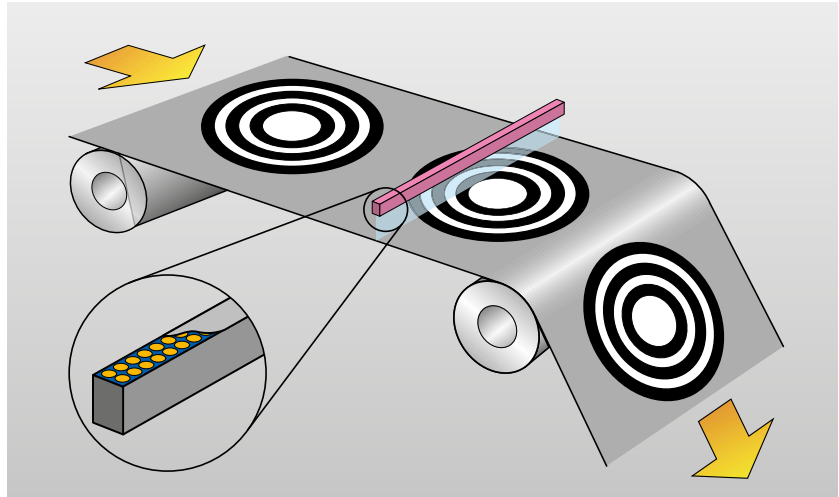
Due to its very compact design, the sensor only requires a fraction of the space that a system still based on line scan cameras would need. This allows system integrators and machine manufacturers more installation options when integrating the sensors in machines or systems and important cost savings.

## Easy mounting and installation

The Line Scan Bar is mounted to the side of the machine wall by just four screws at a working distance of 12 mm from the protective glass surface. Then the power cable and the data cable are simply plugged in, and assembly is completed. Time-consuming calibration, alignment or other settings are no longer necessary.

## Low service efforts

Thanks to its easy installation, any replacement of the Line Scan Bar that is required can be done by the in-house technicians. There are no costs for deployment of service staff. Here also, there is an enormous savings potential for the end-user and the system integrator or machine manufacturer.



CIS scanning technology

## Wide range of applications

### Surface Inspection

- Paper
- Foil
- Textiles
- Metal

### Quality monitoring

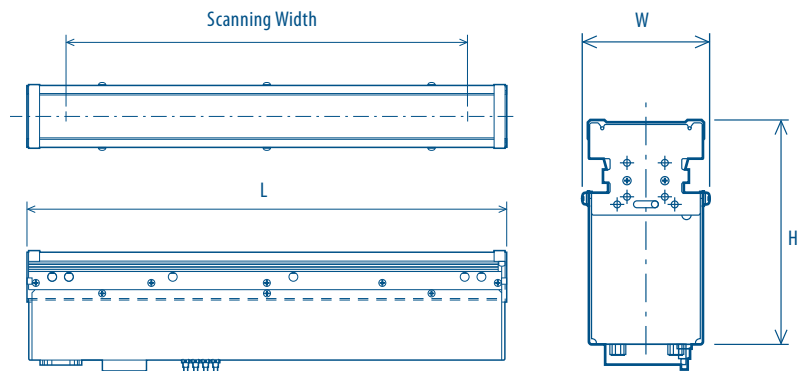
- Circuit boards
- Wafers
- Solar panels
- Flat panel

### Print inspection

- Paper
- Foil
- Textile

### Optical security features

- Holograms
- Foil elements
- Bank notes and IDs



Mitsubishi Electric Line Scan Bar

# Mitsubishi Electric Line Scan Bar

## Specifications

### Standard Speed

MITSUBISHI LINE SCAN BAR AX (COLOR)							
TYPE	SCANNING WIDTH	TOTAL LENGTH (L)	HEIGHT (H)	WIDTH (W)	PIXEL	RESOLUTION DPI	LINE FREQUENCY
Incl. LED Light Source							
KD6R309AX	309 mm	376.1 mm	70.4 mm	62.2 mm	7,296	600/300/150 (switchable)	22kHz
KD6R617AX	617 mm	687.1 mm			14,592		
KD6R926AX	926 mm	996.1 mm			21,888		
Without Light Source							
KD6R309AX-NL	309 mm	376.1 mm	66.9 mm	62.2 mm	7,296	600/300/150 (switchable)	
KD6R617AX-NL	617 mm	687.1 mm			14,592		
KD6R926AX-NL	926 mm	996.1 mm			21,888		

AX Series with CameraLink™ interface

MITSUBISHI LINE SCAN BAR MX (MONOCHROME)								
TYPE	SCANNING WIDTH	TOTAL LENGTH (L)	HEIGHT (H)	WIDTH (W)	PIXEL	RESOLUTION DPI	LINE FREQUENCY	
Incl. LED Light Source								
KD6R309MX	309 mm	376.1 mm	98.3 mm	62.2 mm	7,296	600/300/150 (switchable)	43kHz	
KD6R617MX	617 mm	687.1 mm			14,592			
KD6R926MX	926 mm	996.1 mm			21,888			
Without Light Source								
KD6R309MX-NL	309 mm	376.1 mm	94.8 mm	62.2 mm	7,296	600/300/150 (switchable)		
KD6R617MX-NL	617 mm	687.1 mm			14,592			
KD6R926MX-NL	926 mm	996.1 mm			21,888			

MX Series with CameraLink™ interface

### High Speed

MITSUBISHI LINE SCAN BAR CX (COLOR/MONO SWITCHABLE)							
TYPE	SCANNING WIDTH	TOTAL LENGTH (L)	HEIGHT (H)	WIDTH (W)	PIXEL	RESOLUTION DPI	LINE FREQUENCY
KD6R367CX	367 mm	434 mm	109.3 mm	62.2 mm	8.640	600/300/200/150 (switchable)	55kHz@600 dpi
KD6R587CX	587 mm	654 mm			13.824		91.8 kHz@300 dpi
KD6R807CX	807 mm	874 mm			19.008		10 kHz@ 200 dpi 110 kHz@150 dpi

CX Series with CoaXPress Interface

MITSUBISHI LINE SCAN BAR CXL-NL (COLOR, NO ILLUMINATION)							
TYPE	SCANNING WIDTH	TOTAL LENGTH (L)	HEIGHT (H)	WIDTH (W)	PIXEL	RESOLUTION DPI	LINE FREQUENCY
KD6R1064CXL-NL	1064 mm	1131.1 mm	119.3 mm	59 mm	25,056	600/300/200/150 (switchable)	55 kHz@600dpi 96.2 kHz@300dpi 30.6 kHz@200dpi 159.1 kHz@150dpi
KD6R1247CXL-NL	1247 mm	1314.1 mm			29,376		47 kHz@600dpi 94.3 kHz@300dpi
KD6R1688CXL-NL	1688 mm	1755.1 mm			39,744		130.6 kHz@200dpi 159.1 kHz@150dpi

CX Series with CoaXPress Interface  
Working Distance 27 mm

MITSUBISHI LINE SCAN BAR DX (COLOR/MONO SWITCHABLE, NO ILLUMINATION)							
TYPE	SCANNING WIDTH	TOTAL LENGTH (L)	HEIGHT (H)	WIDTH (W)	PIXEL	RESOLUTION DPI	LINE FREQUENCY
KD6R1064DXL-NL	1064 mm	1131 mm	59 mm	119 mm	25,056	600/300/200/150 (switchable)	55 kHz@600dpi
KD6R1247DXL-NL	1247 mm	1314 mm			29,376		93.4 kHz@300dpi
KD6R1688DXL-NL	1688 mm	1755 mm			39,744		127.2 kHz@200dpi 155 kHz@150dpi

DXL Series with Camera Link Interface  
Working Distance 27 mm