

# Applications

Inspection and cutting solutions

The MAS can be used in various applications, some examples are:

- End-out detection on tufting and weaving machines.
- Inspection on laundry machines.

Since 2005 the MAS is also used on automatic cutting systems to detect the following products: Walk-off mats, cycling jerseys, leather, carpets, airbags and many more.



# Our History

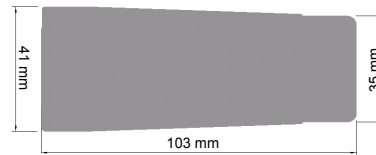
Vision automation since 1982

Ingenieursbureau Matrix began in 1978 as a micro-electronic development- and production company. Since 1985 it is located at the Business & Science park in Enschede, The Netherlands; close to the university of Twente. After years of developing and producing products for third parties, Matrix also started to develop it's own products.

In 1982 Matrix developed it's first camera and vision applications.

# Specifications

Multi Array Scanner	min	typ.	max	
Resolution (B/W):	-	0.125	-	mm/pixel
Resolution (Color):	-	0.250	-	mm/pixel
Sensitivity: fs @	-	0.22	-	lux.s (550nm)
Data size:	-	8	-	bits
Speed:	16	20	40	Mbyte/sec
Lines/scan:	1	-	42	
Scan width:	320	-	5120	mm
Maximum line rate:	-	-	2.9	KHz
Dynamic range	-	>55	-	dB
Object distance MAS:	25	960	-	mm
Object distance MAS-T:	120	120	180	mm
Operating temp (non condensing)	5	-	50	°C
Width:	426	-	5226	mm
Height	-	103	-	mm
Depth	-	41	-	mm
Weight:	-	3.5	-	kg/m
Power supply over S-LINK:	-	12	-	V (1.8A max)
Power supply external >48 sensors	5	5.5	6	V (5A max)



## Slink PCI(e) Card

Number of isolated inputs:	4	
Number of isolated outputs:	4	
Bus standard:	PCI or PCIe	
S-link interface speed:	16-40	Mbyte/sec
Onboard memory PCI:	1	Mbyte
Onboard memory PCIe:	512	Mbyte
Acquisition PCI	by PC	
Acquisition PCIe (faster)	by card	
Operating temp	5-50	°C

# MATRIX

Ingenieursbureau Matrix BV

Capitool 46

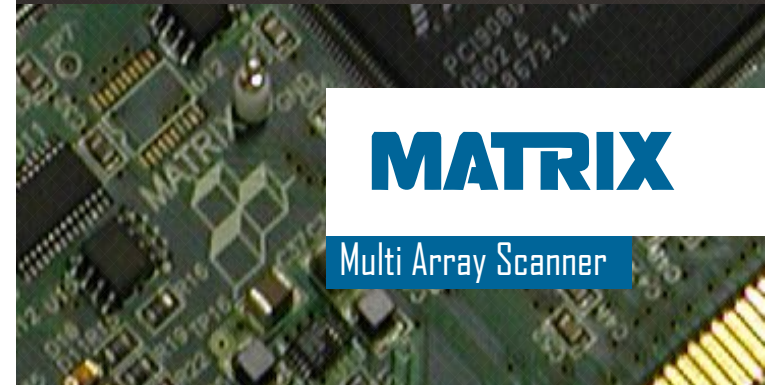
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# MATRIX

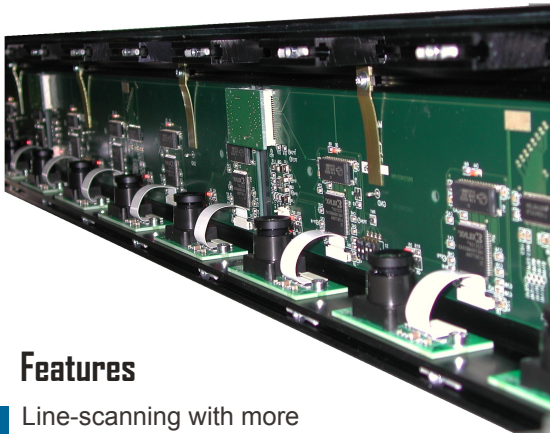
Multi Array Scanner

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# MAS

## Multi Array Scanner

The MAS (multi array scanner) is Matrix' unique scanner; it consists of multiple 2D cameras (up to 64) that are combined to get a single scan-line or image. As it is a modular system of sections of 320mm the MAS can be ordered in lengths ranging from 320 mm to more than 5 meter.



## Features

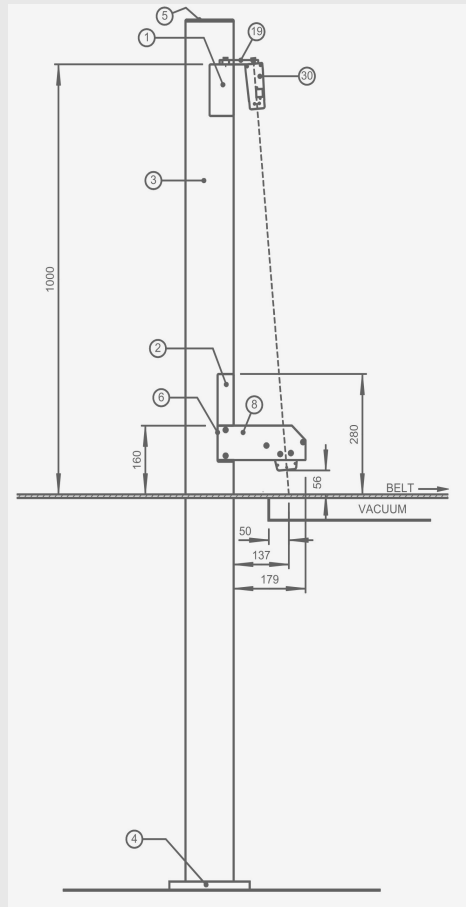
- Line-scanning with more than 40.000 pixels

- Housing made of sealed black anodised aluminium profiles and a coated glass window.

- 4 pair shielded cable scanner connection for signals and power.

- High accuracy, low noise and optimal viewing angle even for low mounting heights (as low as 195 mm).

- Scan-widths ranging from 320 mm up to 5120 mm



Scanner(30) and LED bars (8) set up above a cutter

## >40000 Pixels

The user can configure the scanner to only use 1 line per camera, this way the scanner will act as a very high-resolution line-scan camera (>40.000 pixels). It is also possible to use more than one line (up to 42).

To reduce noise it's possible to bin adjacent pixels (2x2). This unique method yields in scanner with high accuracy, low noise and optimal viewing angle even for low mounting heights (as low as 195 mm).

# SLink PCI(e) Card

## High speed camera connection

The SLink card interfaces the scanner signal to the PC. Apart from the SLink connection the card also provides 4 isolated inputs, 4 isolated outputs and an encoder input with mono, differential and SSI interface (onboard 12V power supply).

The outputs can be used to drive up to 4 separate separate LED-bars.

The card is available in PCI and PClexpress.



## High Power LED bars

To complete the range of Multi Array Scanning products Matrix also provides LED bars that consists of modular segments of LED-arrays. On request different type of LED's can be used e.g. UV. The LED-bar is available in lengths from 192 to 5952 mm.

The LED bars can be mounted under different angles to optimally utilise the reflection properties of different materials.