GRAFiTECO a/s

Online barcode verification system

Outstanding decoding capability 1D, 2D, postal and stacked barcodes

Online quality control and line clearing

Match the master code with each barcode and secure a uniformed production

Online support and setup

Improving Quality: Online Barcode Verification

Our clients were interested in the total quality of their end product so, they asked Grafiteco to implement an online monitoring solution to control the quality of their barcodes so that, in the unlikely event of a problem, this would be immediately drawn to the Line Manager's attention.

Production Manager comments:

"Grafiteco's online monitoring quality control solution has given us confidence in the product we send out – we can tell our customers that when the product is at the checkout our barcodes will be readable".

The DataMatrix™ CCD reader and related diagnostic software tools enable real-time monitoring of code printing quality according to AIM standards for all symbologies decoded, not to mention position and orientation, exposure quality and decoding time. The DataMatrix 's ™ state of the art decoding libraries are extremely effective on damaged and low-quality barcode applications.
What is more the reader's flexibility allows a smooth transition from standard barcode reading to 2D barcode symbologies.

Grafiteco can also supply offline monitoring equipment – but the advantages of online monitoring speak for themselves.
Smoothly and without impacting on the production process online monitoring equipment ensures quality control under the production process.
Online barcode monitoring eliminates unnecessary downtime.

DataMatrix™ CCD

CEN/ANSI evaluation

The datamatrix related diagnostic software comes equipped with the CEN/ANSI evaluations.
CEN/ANSI evaluations are the industrys standard evaluation method.
CEN/ANSI uses 7 different parameters to measure the barcode quality and evaluates the barcodes in a scale from A-F codes.

Working environment

The Datamatrix scanner is developed to work in every environment from highly humid environments to the dusty environments in the egg carton industry. Grafiteco's speciel developed protection box gives the scanner has the optimal lighting and protection.

Image transfer

The scanner can generate a new image every 10 sec.
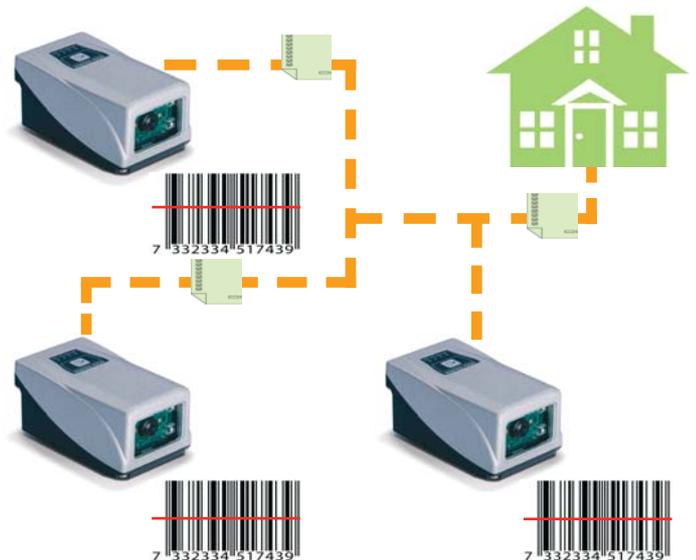Each images can be send directly to the quality manager or be stored for use in the quality report.

Multiple images generating

Grafiteco has made quality reports and problem finding more precise then ever.
The verifying system can generate an image when it sees faults of any kind for later use in the quality report.
These images can be used for analyzing the production by the quality manager and gives the opportunity to visual see each fault in the production.

Quality settings

Each scanner can be set to check for a different quality.
Scanners can be set to only approve C quality or above, but each scanner can be customized to each customers quality demands.

Ethernet function

Multiple locations and production lines

The DataMatrix online barcode verification can work both online an offline, but online enables verification across productions plants and production lines.
This gives the quality managers the opportunity to control the quality from different production plants from one place.
The scanner can send both images and data through ethernet for use in the quality report to any place in the world.

Automatic reporting

The system can generate automatic verification and job rapports and send it to the quality manager online or print them out at the production line.
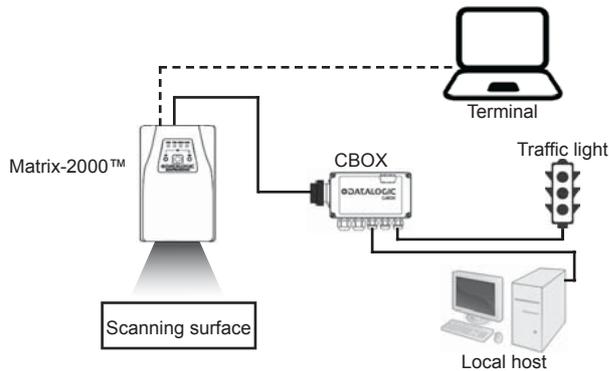
Report logging

The verification system can log reports after each job to the production manager.
The system generates a job report with information about readings and results.
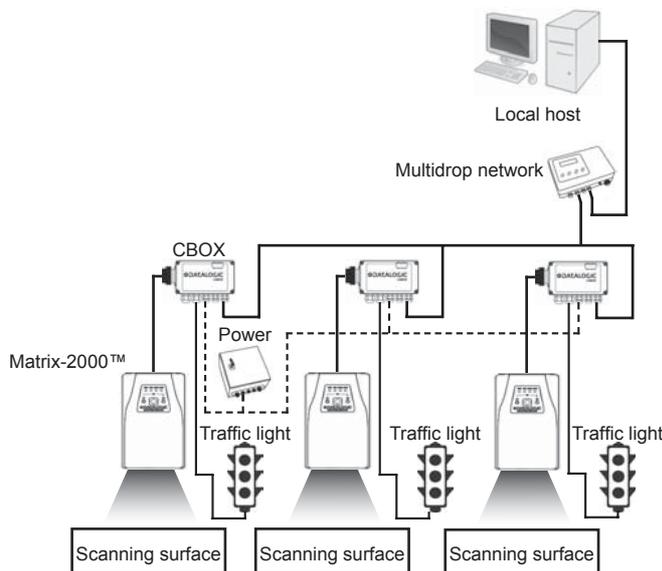The reports can be sent to the production manager online by ethernet.

Setup

The setup comes in two versions a stand alone and multiple setup version.

Stand alone

Multiple setup

Grafiteco's barcode solution is flexible in its setup and can be customized to work in any industry.

The system can manage up to hundreds of scanners from one local host/server.

This secures a flawless production across production lines and production plants.

This eases the quality mangers job by easily creating quality and job reports that can be presented to management and the customer.

Calibration and Installation

The process of installing and calibrating the scanners is simple. Grafiteco can install and calibrate multiple scanners through VPN or ethernet.

Quality mangers can rollout out new updates and calibrations on to multiple scanners with one click or let Grafiteco handle it through Ethernet.This simplifies the procedures when replacing scanner or recalibrating.

Support and Service

DataMatrix scanner ethernet function enables Grafiteco to supply fast support and service online and thereby minimize downtime.
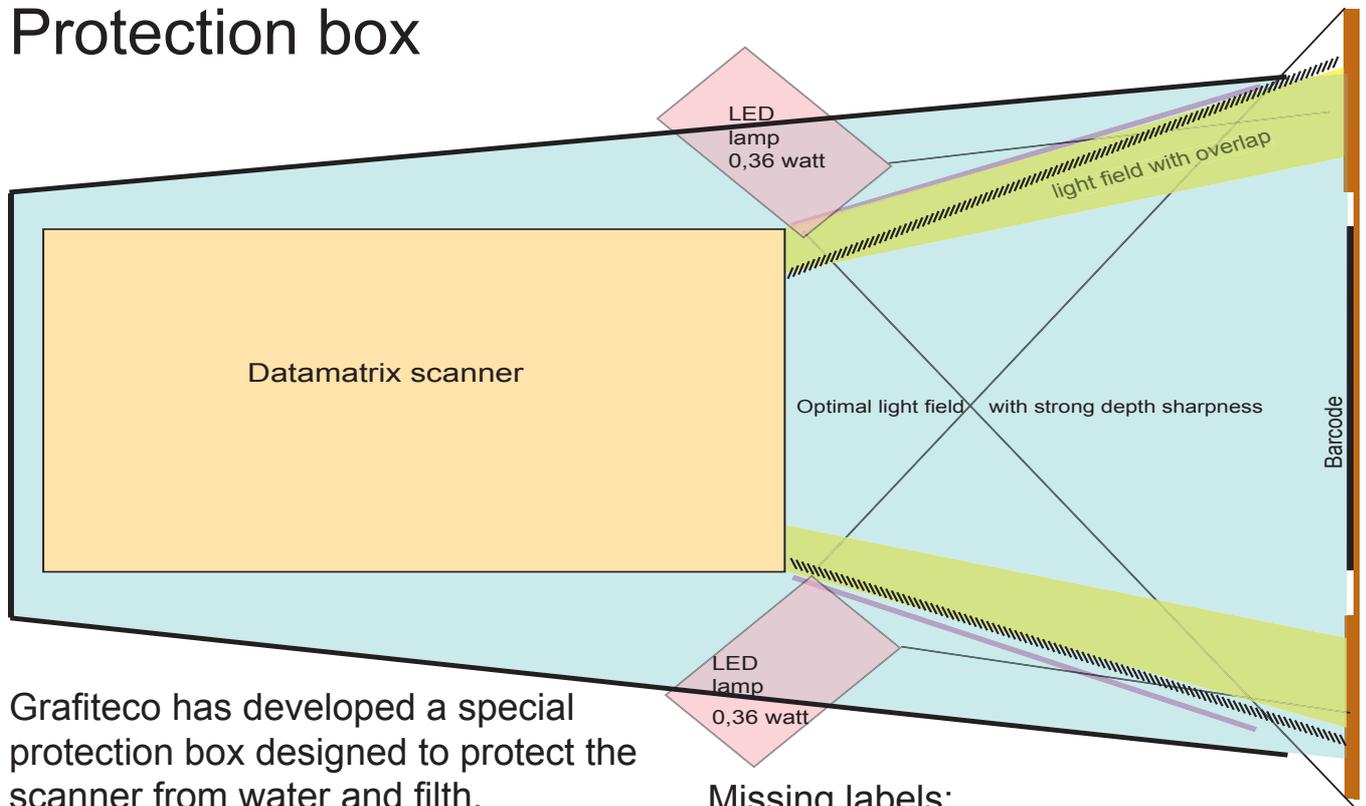
This enables Grafiteco to offer top of the line service and support within 48 hours, if the scanner is connected with ethernet.

Sorting

Grafiteco innovative quality control system can be integrated with sorting systems.

The system can in its setup be set to sort out barcodes that's not readable or on the verge to not readable for further inspection or maculation. This secures a 100 % flawless production every time and optimal customer satisfaction.

Protection box

LED lamp 0,36 watt

light field with overlap

Optimal light field with strong depth sharpness
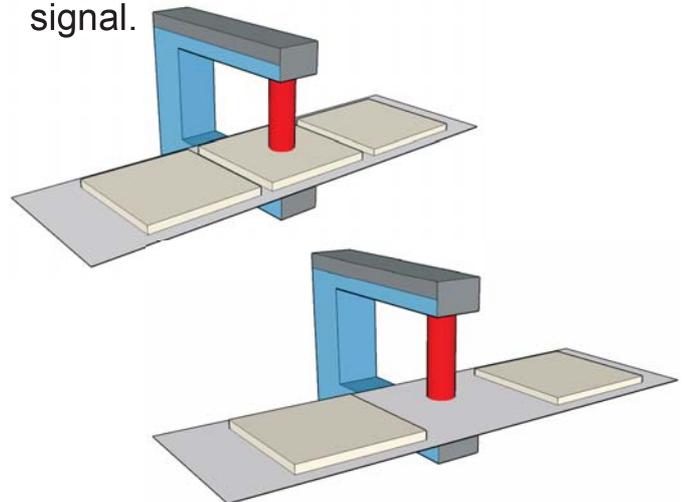
Barcode

LED lamp 0,36 watt

Grafiteco has developed a special protection box designed to protect the scanner from water and filth.
The protection box also act as a way to give the scanner the optimal reading conditions by optimizing the lighting.
The protections box is also equipped with brushes at the end to secure the scanning object and the scanner.
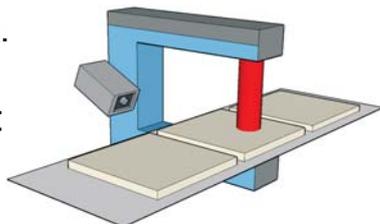
Labels

Besides being able to read barcodes Grafiteco has after customer request developed the verifying system to be able work with labels.
The DataMatrix scanner is able to scan and sort wrong labels, missing labels, misplaced labels and see bad printed labels.

Wrong labels:
The scanner reads the barcode on the label to see if it match the master code loaded in to the system and can visual signal if it's the wrong label.
Wrong labels will get a red signal and can be sorted out.

Missing labels:
If the scanner can't see the label or the label is missing it is automatically sorted out.
Missing labels will get a long red signal.

Misplaced labels:
If the label is misplaced it's sorted out and a pictures is displayed to the line manger for his evaluation.

Bad printed labels:
If the scanner sees bad printed labels a red signal is given and a image generated for later use in quality report to the production manager and line manager.

Documentation

Grafiteco has done live production test on egg cartons to document the systems reading quality against the acknowledged Rea Scan check 3. The test was done on a brown and white egg carton.

White carton

Brown carton

White carton barcode

Test No. 1	Over All grade	Symbol Grade	Symbol	Modulation Grade	Modulation	Edge contrast Grade	Edge contrast
REA scan check results	B	A	72	B	66	A	48
Grafiteco online DataMatrix scanner	B - C	B	48 - 66	A	76 - 92	A	34 - 60
Average	BC	B	57	A	84	A	47
Assessment	Acceptable	Acceptable	OK	OK	Acceptable	Fine	Fine

Brown carton barcode

Test No. 1	Over All grade	Symbol Grade	Symbol	Modulation Grade	Modulation	Edge contrast Grade	Edge contrast
REA scan check results	D	D	35	D	42	A	15
Grafiteco online DataMatrix scanner	D -F	D	17-34	A-B	64-90	A	14-28
Average		D	26	B	77	A	21
Assessment	OK	OK	OK	OK	Acceptable	Fine	Fine

Results

We did 3755 readings in these test.
We found:
51 "F" quality.
5 was "D" quality.
6 was not readable and the rest was from A - C quality(3693 pcs).

Percentage of error (51/ 3693) *100 = <u>1,38 %</u>

Visual verification

The visual verification running at Hartmann Denmark

Grafiteco uses a traffic light to visual indicate the barcode quality and evaluation to the lien operator at each production line.

The system enables one productions manager to easily and quickly monitor a large production plant without the necessity to stand at each production line.

Green light indicates:
Reading and the barcode is perfect compared to the master code.

Yellow light indicates:
Reading and the barcode isn't perfect, but OK.
The print isn't waste and the will not be sortet out.
The yellow light has a longer signal time and can work with the green light to signal that the barcode is between perfect and OK.

Red light indicates:
Reading and the barcode is below the quality setting and contain errors.
The light has a strong long signal to clearly signal error.
The red light can work with the yellow light to signal that a barcode is between OK and error.

Industries

The DataMatrix™ CCD scanner is used in a variety of industries.
It's used to everything from sorting to quality checking.
The DataMatrix scanner running in the following industries:

• The automotive industry

• The electronic industry

• The medical & pharmaceutical industry

• The postal & distribution industry

• The food & beverage industry

400 Series

Datalogic Matrix-400

For extreme wet environments Grafiteco can use Datalogic 400 seris.
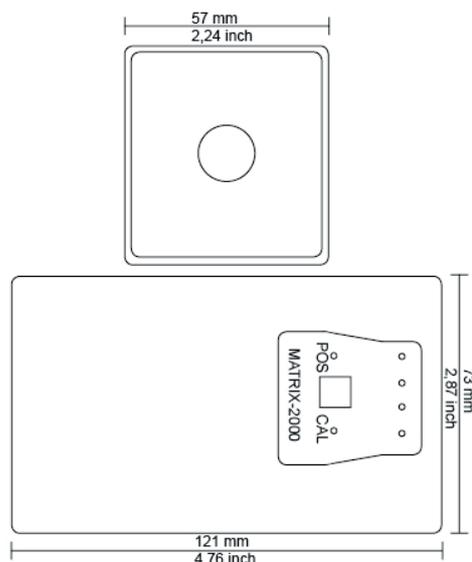The scanners in the 400 series is IP67 certified to work one hour in one meters debt.
This solution is ideal for companies in the food and beverage industry where cleaning requirements creates highly humid environments in the cleaning process and the scanners get splashed with water in the cleaning process.

Specifications:
Features:

· Up to 60 frames/s (3600/min)
· Multicode reading in singel frame.
· Over 6.0 m/s object speed
· 1D & 2D, stacked, postal code reading
· Autolearning function
· Code quality control(AIM)
· Ethernet confi guration/data collection
· Image tranfer capability via Ethernet
· Integrated LED lighting system
· Direct or 900 reading window

Power supply	10 to 30 v dc
Power consumption	8 w max, 5 w typ
Dimensions	121x73x57 mm(4,76x2,87x2,24 in)
Weight	380 g (13,40 oz)
Case material	Magnesium alloy

Dimensions

57 mm
2,24 inch

POS CAL
MATRIX-2000

73 mm
2,87 inch

121 mm
4,76 inch

Package		Price
Stand alone		
- Datalogic Matrix 2000		
- CBOX		
- Traffic light		
- Photo cell		
- Protection box		
- Power supply	€	6.000,-
Item Number: Barcode 50. 08 – 0001		
Multiple setup		
- 2x Datalogic Matrix 2000		
- 2x CBOX's		
- 2x Traffic lights		
- 2x Photo cells		
- 2x Protection boxes		
- Multidrop network box		
- 2x Power supplies	€	12.000,-
Item Number: Barcode 50. 08 – 0002		
Customized setup		
- For more customized setup contact Grafiteco for a price		

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We reserve the right to make modifi cations and improvements.