

The producer's dread



**Does this product
contain foreign objects?**

FORCE Technology manufactures on-line production control systems for detection of dimensions', shape, area weight, density, quantity and invisible objects in products.

X-FORCE-Scan



X-FORCE-Scan is designed for on-line inspection of products moved by conveyor belt systems



X-FORCE-Scan uses high-resolution radiation transmission to measure area weight distribution of material moved by the conveyor

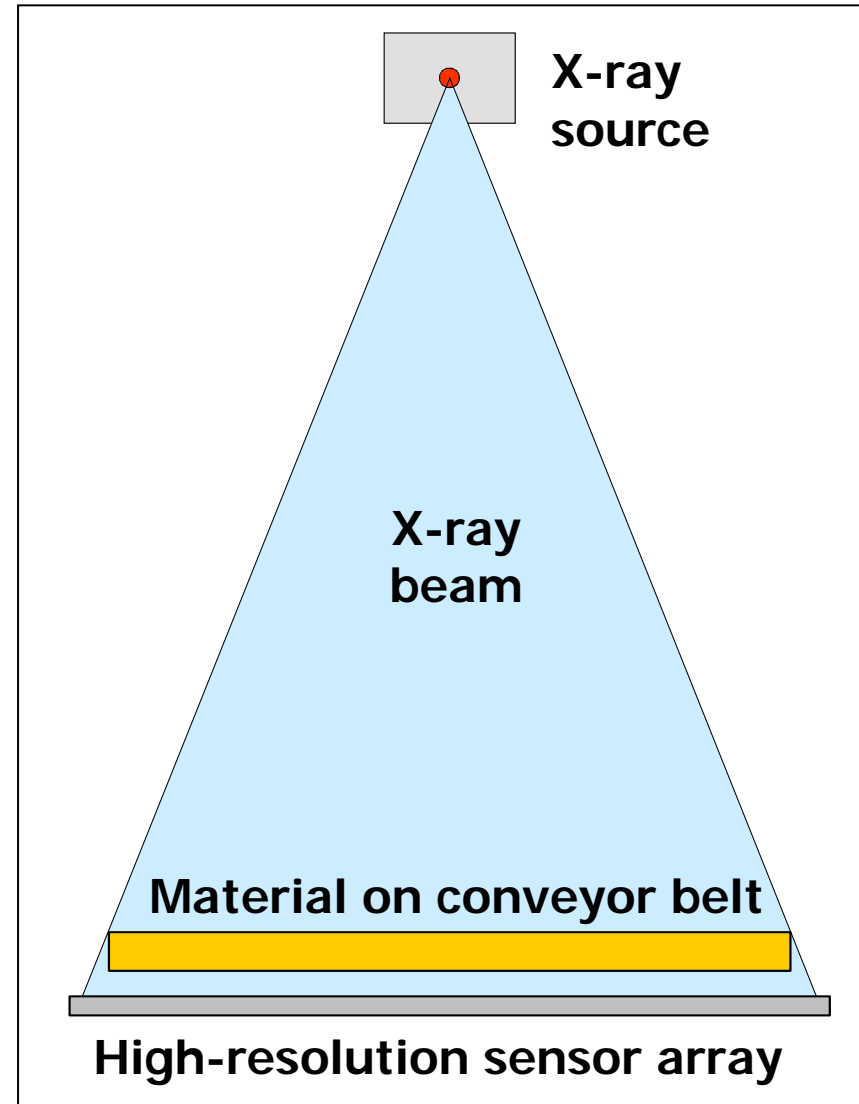


Single source set-up



The intensity of transmitted radiation is detected by a high-resolution sensor array.

The sensor signals are processed to find the area weight along the projection line from source to sensor point. These data are processed to show the area weight distribution across the conveyor belt.



Multi source set-up



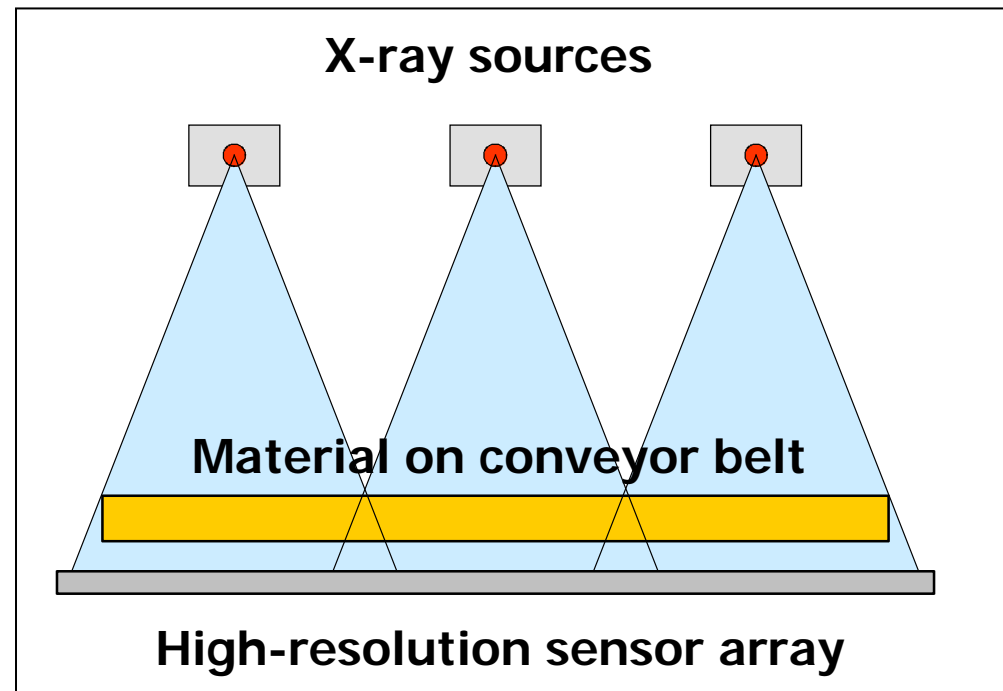
The multi source set-up of X-FORCE-Scan reduces the height of the scanner system and the size of its X-ray sources.

Belt width:
200 mm to >3000 mm

Sensor resolution:
from 0.2 mm

Conveyor speed:
0 – 1500 mm/sec.

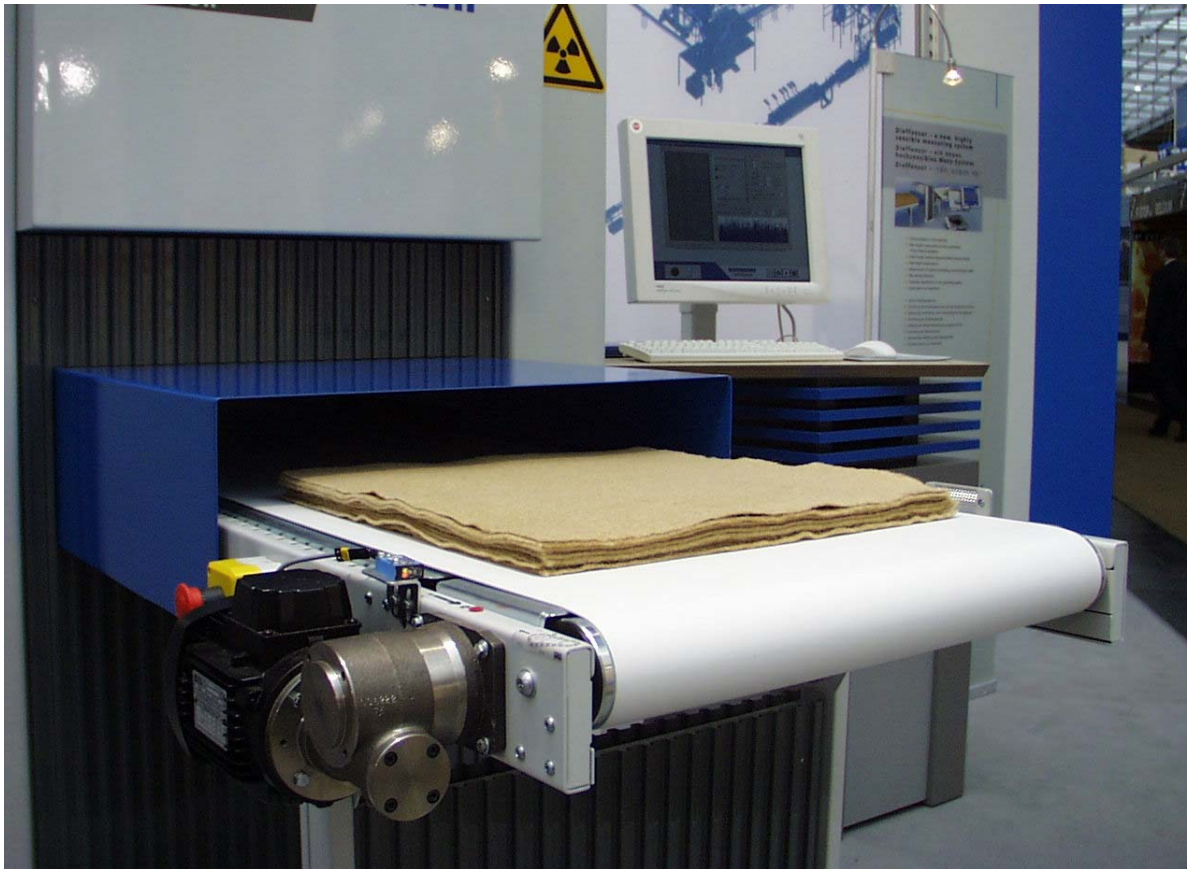
Area weight:
1 – 100 kg/m²



The instrumentation detects and identifies:

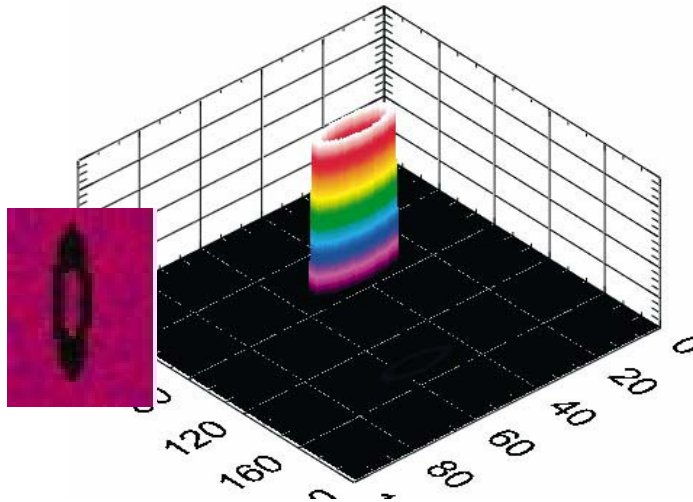
- **Dimensions and shapes of products**
 - **Area weight and foreign objects in insulation wool**
 - **Voids and density in foam products**
 - **Foreign objects in foodstuffs**
 - **Foreign objects in panel plate production**
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- **Packages missing content**
 - **Packages containing defect products**
 - **Products of non-conforming shape or size**
 - **Material distribution across the conveyor belt**
 - **Unit weight.**

Demonstration model

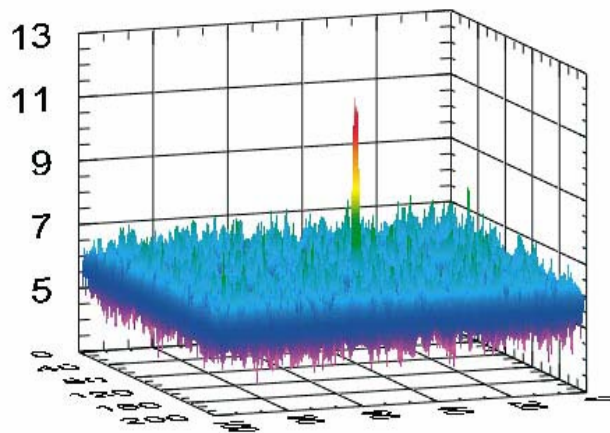


Demonstration of X-FORCE-Scan

Foreign objects in MDF panels



**Tension disc (\varnothing 6 mm)
detected on the production
line in a wood fibre mat for
an MDF panel board.
Production speed: 1 m/sec.**

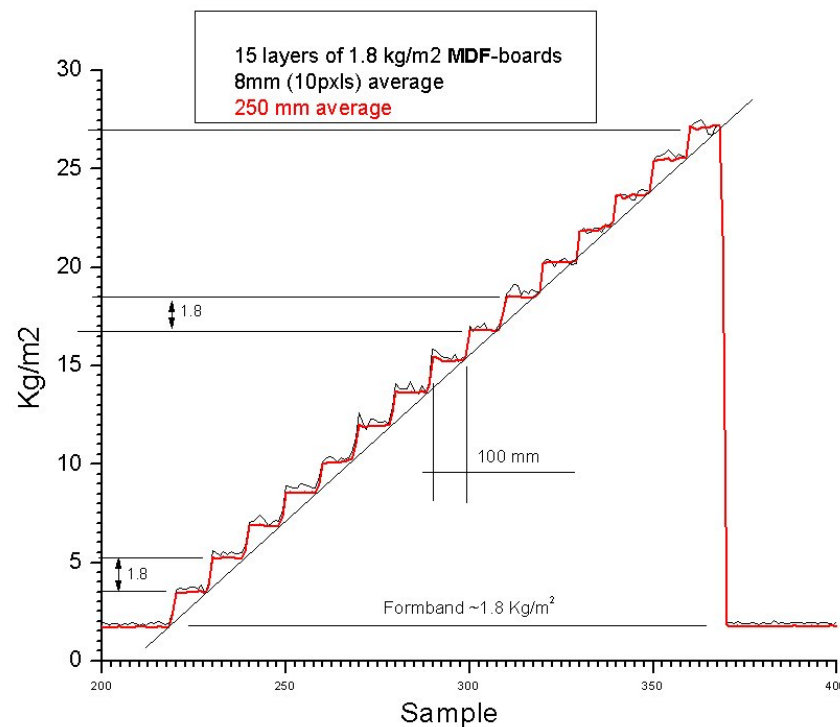


**< 2 mm stone identified in a
wood fibre mat for a 5.5 mm
MDF panel board.
Production speed: 0.7 m/sec.**

Area weight of MDF boards



Overlaid 2-mm thick
MDF-panel boards
with area weight 1.8 kg/m^2 .
Overlay interval is 100 mm
15 boards overlaid.



X-FORCE-Scan result
demonstrating linearity.
Measured with a belt speed
of 0.2 m/sec .

Chewing gum production



Production rate: 1000 chewing gum tablets per sec.



X-FORCE-Scan provides:

- LxWxH of tablet sheets
- LxWxH of the single tablet
- Area weight of sheets
- Weight of the single tablet
- Feed back signals
- Integrated production values
- Production quality data.

X-FORCE-Scan identifies:

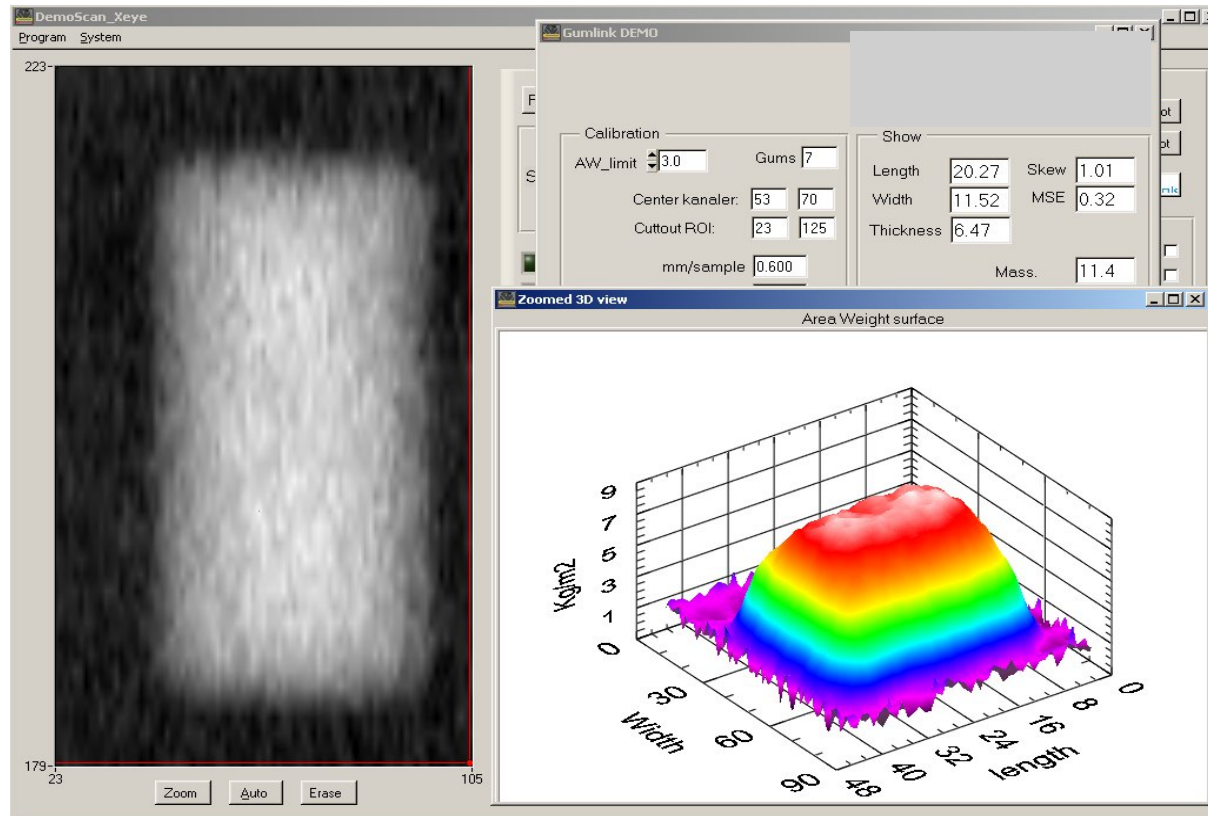
- Foreign objects in tablets
- Tablets of non-conforming shape
- Tablets of non-conforming weight.

X-FORCE-Scan rejects non-conforming products.

Chewing gum inspection 1



Screen picture of normal chewing gum tablet

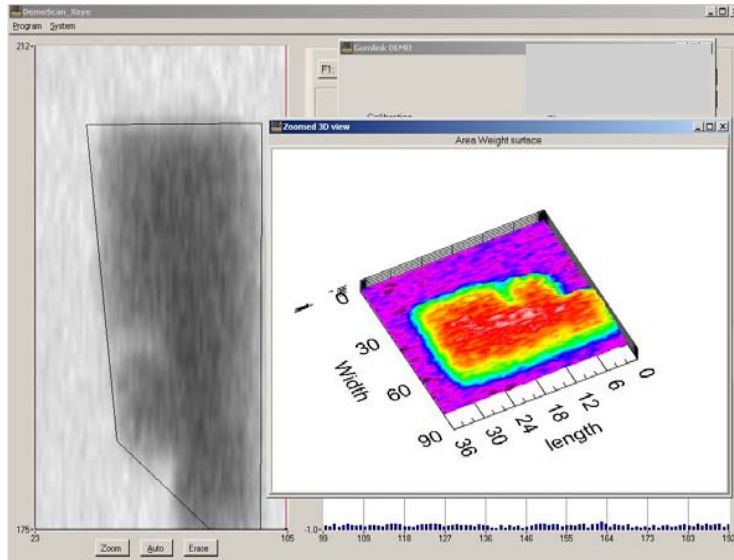


Dimensions

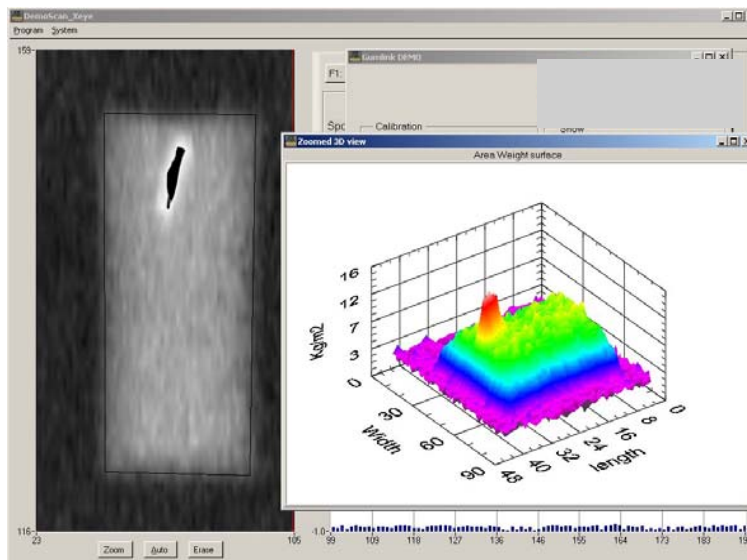
3-D plot

Top view

Chewing gum inspection 2



Non-conforming shape and mass in the chewing gum tablet



Aluminium, 1x1x4 mm, detected inside a chewing gum tablet

Scanner advantages



- **Provides complete picture of the weight distribution**
 - **Production control data saved automatically**
 - **Detects invisible defects**
 - **Rejects non-conforming products automatically**
 - **Detects objects of deviating density**
 - **Protects subsequent production installations against damages from foreign objects on the conveyor.**
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- **Replaces metal detectors**
 - **Short payback time of the scanner**
 - **Customers experience nothing by quality products.**

Further information



Contact

Stig Ole Vilsen

Sales Engineer

FORCE Technology,
Denmark

Phone: +45 43 26 70 00

Direct: +45 43 26 73 93

Fax: +45 43 26 70 11

e-mail: sv@force.dk

WWW: www.force.dk

