The Extended MPA-4022 system is designed to provide on-line accurate moisture and density deviation measurements combined with an alert capability upon detection of irregularities in moisture and density deviation profiles such as wet spots, air pockets, foreign objects and other defects that may occur in tobacco cases and bales.

This state-of-the-art solution is successfully operational in cigarette factories all over the world. The system configuration is comprised of Malcam's patented, field proven MPA-4022 moisture and density deviation analyzer, a hydraulic robotic arm that moves vertically while the tobacco on conveyor moves horizontally thus scanning coverage increases significantly, and two software tools; the PRB-40 for Bale profiling and SDS-40 for smart data analysis including statistical charts and graphs. The system is also equipped with new SQL database connectivity.

MAIN FEATURES

- Moisture reading, & Moisture Uniformity (Standard Deviation of the moisture)
- Density Profile
- Smart monitoring of process
- Process stability maintenance
- High performance resolution — better than 1.5% of reading
- Online defects detection (major and minor)
- “Watch-dog” alert system for product irregularities
- Smart feed-in of raw material to the process
- Control over TSNA levels (through moisture content control)
- Smart data-sharing
- Automatic statistical analysis
- High accuracy — better than 3% of reading
- High repeatability — better than 95% of reading
- Volumetric measurement of material
- Online measurement with no interruption to process
- Calibration (checking) only once a year!
- Real time results
- No physical contact with tobacco
- Not sensitive to ambient conditions, temperature or color of tobacco
- Can work under tough environmental conditions
- Automatic storage and analysis of results
The MPA-4022 patented microwave technology provides better mapping accuracy than any of the traditional measurement methods in use today. Operating under both digital and analog links, MPA-4022 enables instant availability of all analysis results and data throughout the enterprise. The system's unique capability in scanning not only the surface of the tobacco packages, but the inside volume of the material, combined with its automatic 'watch-dog' alert of irregularities and defects in the material, provide cigarette factories with advanced process control and smart storage management.

The MPA-4022 is designed with a completely open architecture, enabling the creation of totally integrated system customized to specific plant requirements, and the incorporation of any combination of accessories and services.

Connectivity to plant process control systems is facilitated via RS-232/422 or (optional) Ethernet (TCP/IP), analog industry standards, remote control and data logging, and other data links. Connectivity can also be customized, if required, to data links such as DeviceNet and Profibus (optional).

The New Winbale system is MS-SQL based system — offering most easy connectivity to customers information systems. The New Winbale also offers a fail-safe mechanism.

**MAIN BENEFITS**

- Increase product quality and value
- Enhanced storage management control
- Enhanced process control
- Optimize manufacturing efficiency
- Low cost and fast ROI

New Winbale s/w enables graphs display, data base recording, scenarios setup, testing and calibration of the MPA-4022

**SPECIFICATIONS**

- **Output Signals**
  0-10 VDC, 4-20 mA current signal; RS-232; moisture display (via DDU) and measuring indicator; alert signal (optional).

- **Input Signals**
  4-20 mA current signal; temperature sensor input -build in.

- **Scanning Speed**
  Less than 100 msec per macro slice. Can be adjusted to other speed.

- **Operating Temperature**
  -5°C to +45°C (22-108°F). Extended version: -10°C to +55°C

- **Humidity**
  20-80%, non-condensing.

- **Control s/w**
  WinBale™ Software Platform, a scenario-driven QC and engineering platform, which analyzes, records and displays data. Works on XP and Win 7.

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**ABOUT MALCAM**
MALCAM Ltd. is an ISO-9001 company that specializes in online and offline moisture and density deviation measurements systems and advanced software tools for industries that automatically process bulk and packaged material.

Established in 1994, the company holds several international patents and its systems are operational in hundreds of sites worldwide.