

## MMA™ -3020

### Online microwave moisture and density deviation measurement analyzer for rubber bales

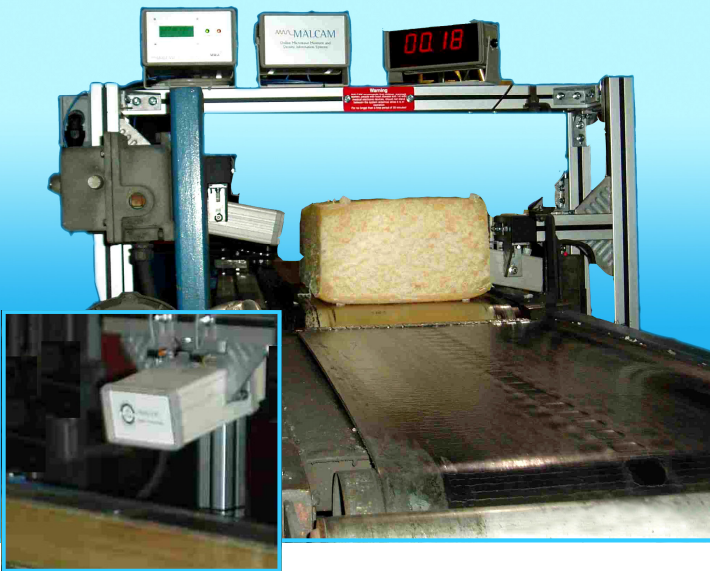
- ▶ Improves product quality
- ▶ Ensures product uniformity
- ▶ Integrates easily
- ▶ Provides full process control
- ▶ Increases yields
- ▶ Reduces waste

### Optimizes Production for Rubber and Tires Manufacturers

MMA-3020 scans through the entire volume of the rubber bale, providing highly accurate moisture and density reading.

Inconsistencies in bales uniformity such as wet spots, air pockets or foreign objects are detected and alerted in real-time.

Easy integration with existing production line and instant availability of analysis results and data throughout the enterprise.



#### Main Features

- ▶ Online, real-time results
- ▶ Highly accurate—volumetric analysis
- ▶ Real-time alert for inconsistencies in product
- ▶ Automatic analysis & storage of results
- ▶ No removal of packaging
- ▶ Not sensitive to ambient conditions
- ▶ Complies with ASTM laboratory measurement standards

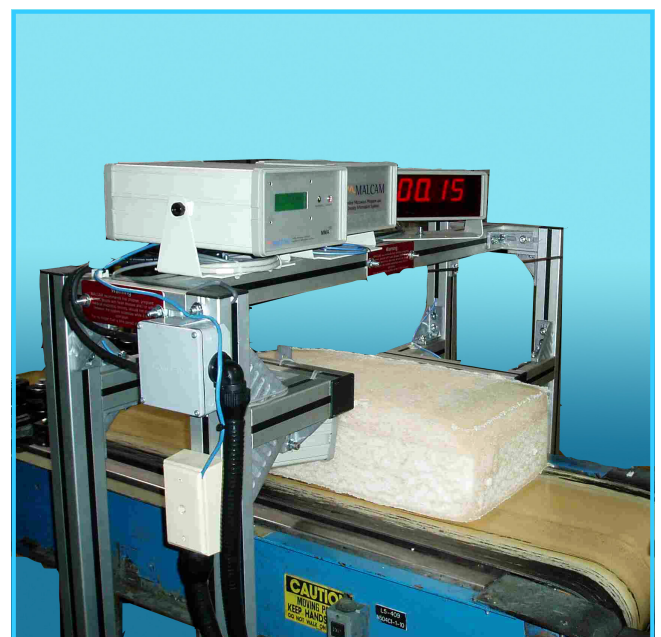
#### Overview

MMA-3020 analyzers provide plant management with better understanding and control of the process through online volumetric moisture and density measurement (scanning through the rubber bale and not only its surface).

Malcam's smart analyzers and related software tools can provide real-time alert upon detection of rubber bale's inconsistencies. Enabling the highest level of end-product uniformity and quality.

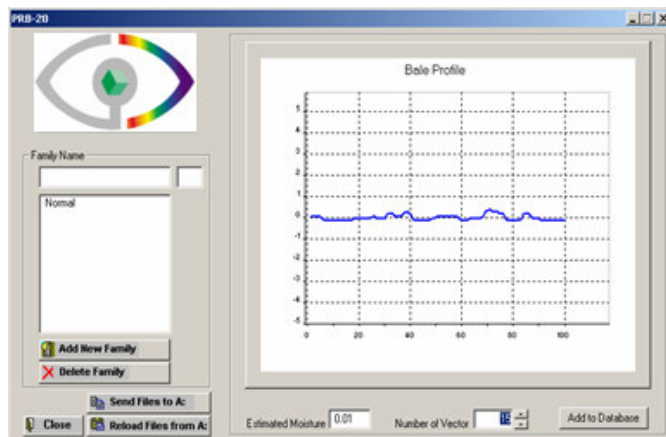
The MMA-3020 is designed with a completely open architecture, enabling the creation of totally integrated systems customized to specific plant requirements, and the incorporation of any combination of accessories and services.

Plant managers and engineers are provided with valuable data, statistics and analyses on the entire manufacturing process, enabling smart online interpretation of process conditions and real-time decision making to improve process efficiency, reduce waste and increase quality.

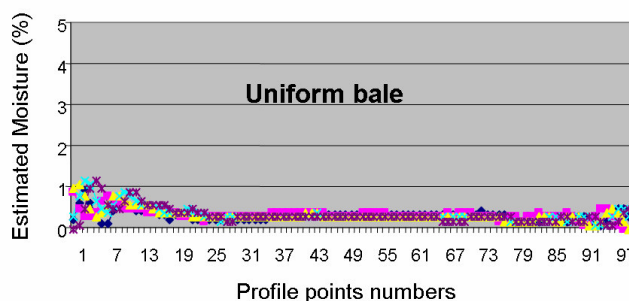
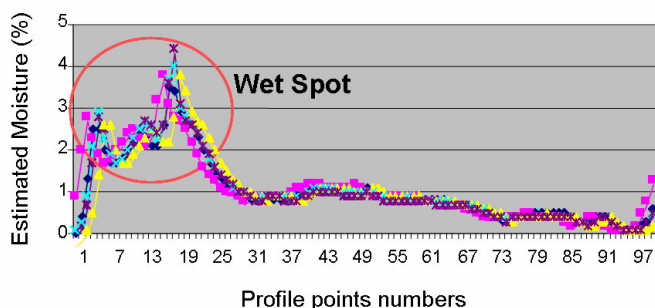


## PRB-20—Bale Profiler

- Automatic pattern recognition bale profiler system.
- Real time, automatic detection of non-uniform areas inside scanned bales.
- Location indication of the problem in the scanned bale.
- Minimal intervention in the production line.



Bale Profile Display Screen



Online Profile Analysis of Rubber Bales

## MMA-3020 Operations

- Microwave signals are transmitted through the rubber bales and collected on the other side.
- Data is compared to calibration values of the corresponding microwave signal parameters.
- Automatic pattern recognition statistical analysis is applied to the MMA System's results.
- Accurate relevant patterns characterizing the analyzed rubber bales are presented statistically.
- Information which is directly applicable for online QC/QA feedback control is generated.

## Other Optional Components

- Barcode reader, enabling the WinBale workstation to read information directly from bale labels.
- Barcode printer, prints out any type of information generated or collected by the Malcam system and the barcode reader.
- Temperature sensor, providing the estimated average temperature of the measured material.
- SDS-20 smart database sharing system, providing easy, user-friendly access and management of collected data from various platforms.

### HEADQUARTERS

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