Automated Inspection & Intelligent Material Handling for Rice Cakes

MONTROSE TECHNOLOGIES INC.

www.montrose-tech.com

Montrose inspection and handling systems provide a complete inspection, rejection, and handling solution created just for rice cake manufacturing lines. Receive comprehensive statistical analysis of variability while removing human involvement from inspection, rejection, and laning.

A high speed, turnkey system that allows you to:

1. Assure quality on a 100% monitoring basis.
2. Remove individual defective and non-conforming product from the line.
3. Monitor process statistics to pinpoint causes of waste.
4. Equally feed in-spec rice cakes into each of the packaging lanes.
5. Automatically buffer in the case of bottlenecks.
6. Rapidly recognize a positive ROI by improving quality, reducing waste, and automating production - in previously labor-intensive areas

Solution Components	SnapQC	FocalPoint	MT Series	AutoLaner
3D & True Color Inspection	☑	☑	☑	
Bottom Color Inspection	☑		☑	
Automated Rejection			☑	
Laning and Entrance to Packaging				☑
In-line Accumulation/ Buffering			☑	☑
Weight	☑			
Statistical Analysis and Reporting	☑	☑	☑	
NEMA 4X		☑	☑	☑

MT-50 In-line Inspection Systems for Rice Cakes

Isolate and Eliminate Sources of Waste

Automated inspection provides real-time and historical information on fault, and out-of-spec conditions, allowing you to isolate the issues causing the most waste by shift, product, line, and plant. The measurement results will also make it easier to reach consistent quality when developing new products or when formulation changes are made.

Analysis Type	Example Faults	Impact on Customer or Plant	Rejection Capability	Statistical Analysis
Geometrical Analysis	Broken Edge Defect	Product rejection	0-100% fully under plant control	Worst Fault Pareto
	Ovality Thin	Customer complaints		Reporting
	Voids Holes	Handling problems (jamming at packaging)		Dashboard
Color Analysis (Top and Bottom)	Scorched Too dark	Consumer Complaints	0-100% fully under plant control	Worst Fault Pareto
	Visible Debris Too much/little topping	Product rejection		Reporting
	Too little topping			Dashboard

Measure, Analyze, Reject

The MT Series inspection system is most often installed just before packaging where the system acts as the 'gate-keeper'. A vision system and AutoLaner combination assures smooth flow of quality rice cakes into the packaging equipment, with the removal of oversized and double stacked product, belt speed changes, diversion, and/or lane balancing.

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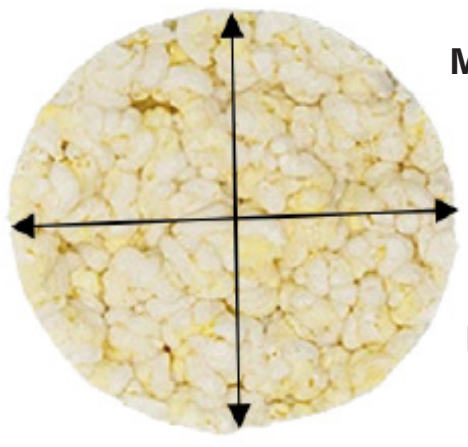
Height Analysis

Profile height calculations are based on hundreds of individual height values gathered on every product, which leads to a measurement accuracy of ±0.5mm. **Mean Height** and **Void Area** (depressed area) are other common measurements applied to rice cakes.

2D Analysis



Two dimensional calculations are based on an accurately defined perimeter, which is imaged by both overhead cameras. 2-D measurement accuracy is ±0.5mm. **Mean Diameter, Ovality, Surface Area**, and **Volume** are other common measurements applied to rice cakes.

Color Analysis

Top and Bottom Average Color (for any cake flavor)

True color calculations, on both the top and bottom surface of the product, are measured in various units such as L*a*b*. and BCU.

Fault Analysis

Broken

Burnt

Charred/ Carbon

Only common examples have been pictured. There are many standard measurements that can be used, individually or combined within formulae, to qualify your product. **All visible product characteristics and faults can be quantified.**

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