Tortillas

Vision inspection systems are designed to provide critical measurements faster and with better repeatability than manual measurements, while providing the ability to measure and quantify product attributes that are difficult or impossible to calculate manually (e.g. surface area, volume, etc).

Deploying a KPM Vision Inspection System eliminates the need for data entry and manual charting and ensures more reliable and repeatable QA measurements. You will also benefit from faster and easier product sampling, automatic rejection of defective or out-of-spec products, more data for less effort, and automated reporting.

Color Analysis

- Avg Color of Top
- Avg Color of Bottom (toast/dark marks ignored)

Anomoly Detection

- Holes, Folds, Tears, Bites, Tails
- Irregular Edges, Foreign Objects
- Dark Spots & Burn Marks

ROUNDNESS

Max Diameter
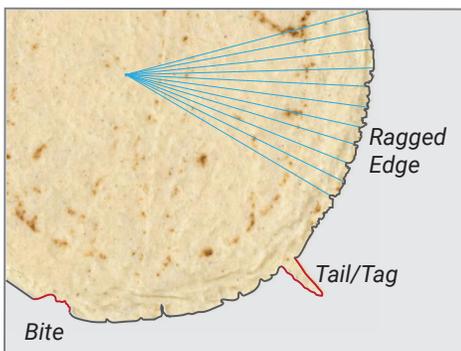
Min Diameter

Burn Mark
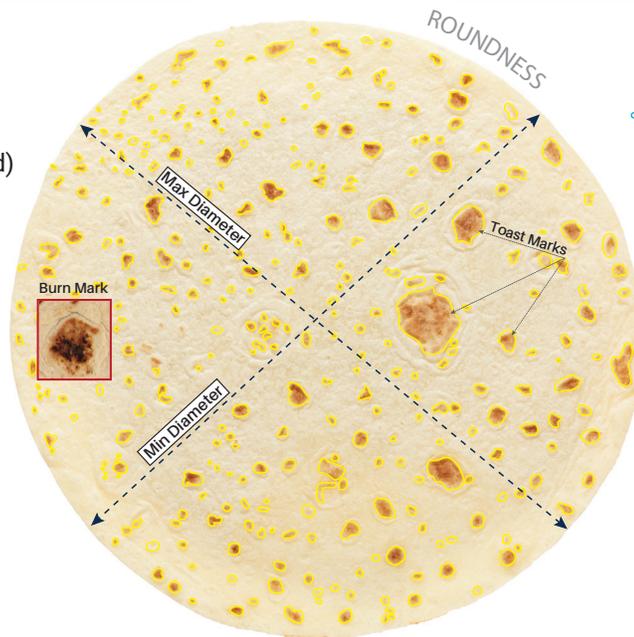
Toast Marks

Toast Marks

- Color Analysis
- Total Number
- Area/Coverage

2D Geometry

- Min, Max, Avg Diameter
- Roundness/Shape Verification
- Area Measurements

Ragged Edge

Tail/Tag

Bite

Contour Defects

- Edge Roughness
- Blowout Detection
- Bites, Tails, Folds
- Curling

*Easy detection of holes and transparent areas*

Virtually any food product can be measured using KPM Vision Inspection imaging technology, either directly during the production process (Over-Line/In-Line) or using a Benchtop Inspection System (Off-Line).

Below are some of the measurements available, particularly related to tortilla bread.

OVERHEAD 2D ANALYSIS

Min/Max Diameter	The minimum and maximum diameters of the object as measured through the center of the object.
Average Diameter	The average of 180 diameters of the object as measured every one degree through the center of the object.
Shape	Roundness/Ovality. The comparison measurement of the product to a proper circle.
Toast Marks	Identified based on user-defined color specifications. Determine total number, % of area affected (distribution), voids, largest or smallest toast mark, and color information.
Hole Analysis	Identification of holes, the area of each hole and the location of the holes.
Surface Area	The overall area of the object. Used to find doubles and small products.
Folds/Straight Segments	The length and locations of straight segments/folds anywhere on the perimeter of the product.
Edge Roughness	The maximum standard deviation of contiguous radii around the circumference of the object.
Contour Defects	Detection of shape deviations, mainly in the form of tears, bites and tails.
Product Color	The average color of the product with all marks ignored for the calculation.

*(*bottom analysis is optional)*
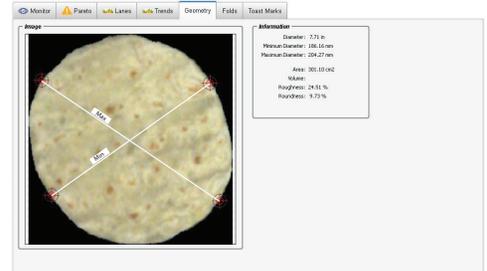
Actual geometry data extracted from live tortilla production run, displayed on the included HMI monitor at the line

Example of unwanted fold found during a production run

Toast marks identified by user-defined color specifications

KPM Analytics
8 Technology Drive | Westborough, MA 01581 USA
Phone: +1 774.399.0500
www.kpmanalytics.com | sales@kpmanalytics.com