



What are buns?

Buns are a versatile and widely enjoyed type of baked bread product. Typically soft and slightly sweet, they come in various shapes and sizes, ranging from small round rolls to larger, flatter varieties. Buns are commonly used as a base for sandwiches, burgers, or hot dogs. They can be made with different types of flour and may include ingredients like yeast, sugar, butter, and eggs for added flavor and texture.

Application overview

+ BUNS

With SENSURE SYNAPSE, it is possible to **measure numerous product features** (a wide set is included in the system), such as shape, size, and colour, using **2D technologies** (industrial cameras) and perform a full 3D product profile using **3D technology** (laser profilometer).

Thanks to the flexibility of the solutions, it is possible to **integrate the vision systems into existing production lines and to customize rejection mechanisms** (traps, individual/multiple retractable belts, robots etc.) based on the size and shape of the products, and the speed of the line.

Vision system can be installed in **different position of the line** (dough control, inspection before/after oven, etc.).

Using **SENSURE SYNAPSE ensures reliable, repeatable, and accurate measurements**, even at high line speed, with the added benefit of all data being saved in a SQL database.

The SENSURE SYNAPSE system is flexible and can be customized to meet specific needs through the **development of additional features after a feasibility analysis**.

Upper Surface analysis

Product color	Average color (excluding or not toppings), and edge/contour defects. Values can also be provided in L*a*b and BCU.
Spots	Area calculation for white spots (i.e. blotchies, etc.), dark spots (i.e. blisters), and foreign bodies (identification is possible if the dimension and color differences of the inclusions are detectable in the camera).
Surface Area	Overall area calculation (to identify double/triple or broken products, etc.), cracks and holes detection.
Topping/Seeding conformity	Percentage of the surface coverage, distribution (i.e. seed voids, etc.), and color.
Shape/Size	Min/Max/Average diameter, Min/Max axis, roundness, perimeter.

Bottom Surface analysis

Product color	Average color (excluding or not any anomalies like spots, etc). Values can also be provided in L*a*b and BCU.
White edges	Area calculation of the under-baked edges on the outer ring.
Spots	Area calculation for white (i.e. blotchies, flour, etc.), dark spots (burnt areas, etc.), and foreign bodies (identification is possible if the dimension and color differences of the inclusions are detectable in the camera).

Three-dimensional analysis

Slope	Curvature of the top surface of the products (Measured by calculating the difference in height between the center of the product and a user-defined ring near the product's edge), flatness, and planarity.
Height	Min/Max peaks, average height, etc.
Volume	