

### Description

The FoodScanner 3D camera system captures meals at up to 30 frames per second (fps) and processes the data in real-time. The system is specifically optimized for use over moving conveyor belts, meaning operations do not need to be interrupted. It measures the volume, weight, and nutritional values of each meal with an accuracy of  $\pm 10\%$  compared to manual weighing. It combines LiDAR, Structured Light, and Time-of-Flight sensors with an AI-powered Vision-Language Model (VLM) for component validation and classification.



### Technical Specifications

Measurement Principle	3D volume measurement via LiDAR / Structured Light / Time of Flight
Measurement Accuracy	$\pm 10\%$ compared to manual weighing
Capture Rate	Up to 30 frames per second (fps)
Processing	Real-Time Processing
Conveyor Belt Integration	Optimized for operation over moving conveyor belts (no stopping required)
Data Output	Volume, Weight, Macronutrients (Fat, Carbohydrates, Protein), Consumption amount per component
Camera Setup	Mounted above conveyor belt or separation station
AI Model	Vision-Language Model (VLM) for validation and classification
Interfaces	HL7 FHIR ready, REST API, CSV, KIS integration possible
Power Supply	230 V / 50 Hz
Network	Ethernet / WLAN

Bandwidth (Min.)	100 Mbit/s (Recommendation: 1 Gbit/s for high-frequency data transfer)
Operating Time	24/7 operation
Material	Stainless steel housing, IP54 protected
Weight	approx. 3 kg

## Software Features

- AI-based object recognition and nutritional calculation
- Live tracking of food waste
- Automatic assignment to patient data via barcode
- Cloud-based data analysis (Dashboard, Reporting, Export)

## Compatibility

Compatible with KIS, HIS, menu selection, and ERP systems. Optional interfaces for dashboard and reporting modules available.

## Advantages and Benefits

- Precise, automatic nutritional documentation
- Data-driven menu optimization (hit/miss analysis) to reduce food waste and costs
- Increased patient safety and traceability
- Integration into existing kitchen and hospital processes

## Certification & Data Protection

- Medical device (in preparation, not for therapeutic use)
- GDPR ready data storage
- Access control via hospital authentication