

ZENROBOTICS[®]
A TEREX BRAND



ZenVision[™]

Operational Intelligence
Through Integrated
Digital Material Insights

terex.com/zenrobotics

Overview

ZenVision – a standalone vision system that transforms raw material streams into actionable insights.

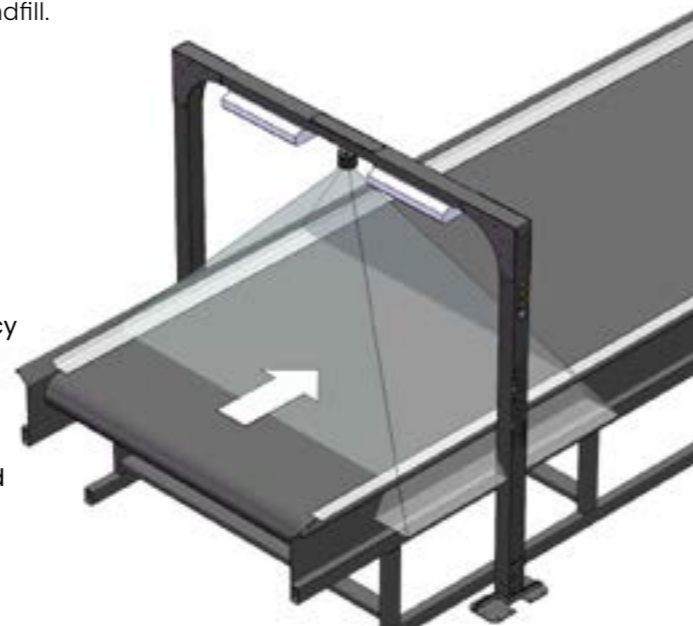


By analysing material flow in real time, it uncovers hidden value, eliminates process blind spots, and gives operators a deeper understanding of what's really moving through their line.

Installed at key points in the process, ZenVision provides instant visibility into waste composition and changing material trends. With this data, operators can protect equipment, validate output quality, optimise system performance, and capture revenue that would otherwise be lost to landfill.

Key Features

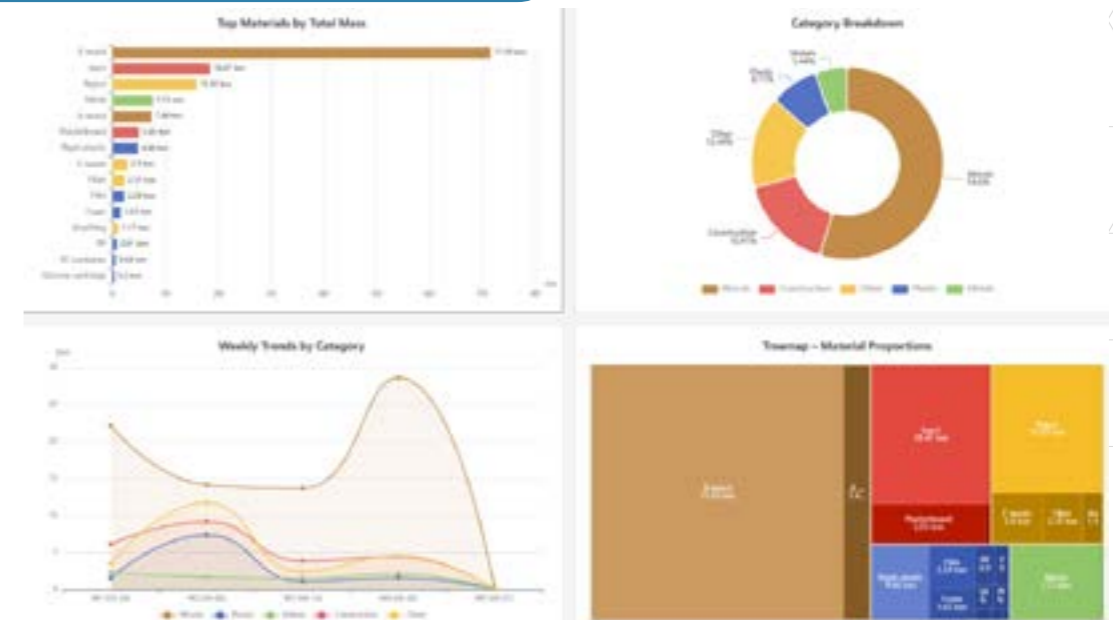
- ✓ **Future-ready Intelligence:** Deep-learning vision that evolves with the waste market and detects various types of waste better than human eyes ever could. It is built on a field-tested library of 500+ recognized materials, providing immediate, high-accuracy categorization from day one.
- ✓ **Safety & Quality Control:** Real-time detection of harmful objects triggers alarms or automated ejections, preventing equipment damage and downtime. Ensuring your final product meets the highest market standards.
- ✓ **Reliability:** Engineered for continuous, 24/7 autonomous operation in harsh waste-sorting environments.



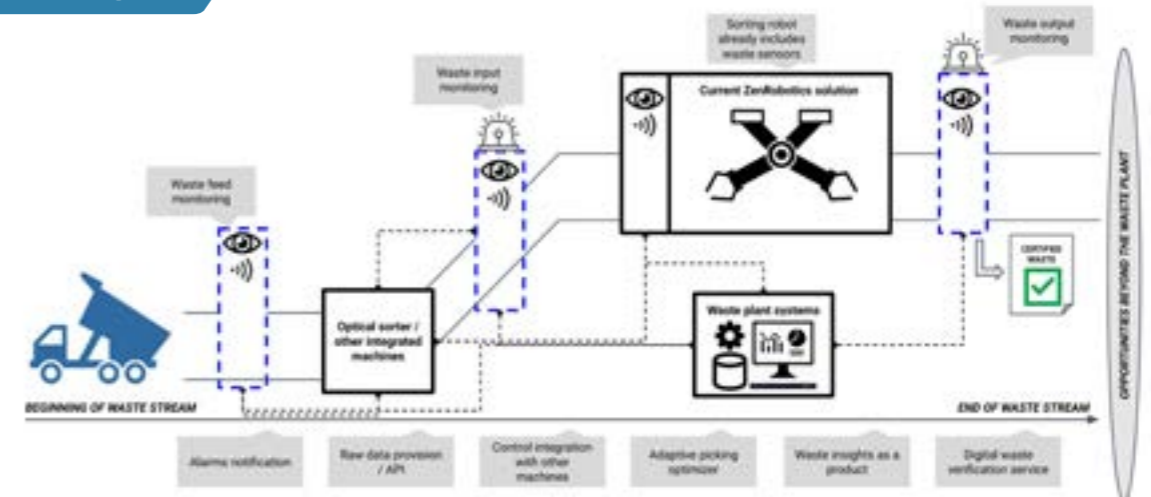
Intelligence That Pays

Installed at key points in the process, ZenVision provides instant visibility into waste composition and changing material trends. With this data, operators can protect equipment, validate output quality, optimise system performance, and capture revenue that would otherwise be lost to landfill.

Online Reports and Visualization



The Concept



Solution Features & Benefits

Data Export

Instantly generate daily or monthly reports, or export raw data to your own tools to prove your plant's efficiency.

Smart Alerts & Integration

Can signal your machines to adjust belt-speeds, trigger alarms or ping your device with an "Early Warning" alert when something needs your attention.

Belt Visualizer

Instant Forensic Audit: Replay, zoom, and inspect any "pick" or object from the last 1 week to verify purity or investigate downtime.

Problems Solved With Zen Vision

1

Problem

The "Black Box" (Unknown Composition of waste material)

Facility operators lack real-time data on the actual composition of the waste moving through their belts. What they can't measure, they can't optimize.

Solution

ZenVision works like a digital monitor, providing a scoreboard with live charts for immediate insight into current stream composition (e.g. Currently, your belt is 70% Wood, 20% Stone, 10% Metal).

2

Problem

Flow Changes & Slow Reaction time

Unexpected flow disruptions, like surge piles or empty belts, often go unnoticed for hours or days, leading to massive efficiency losses and wasted energy.

Solution

ZenVision provides "Early Reaction" flow alerts. Instant notifications flag flow anomalies (like huge piles or empty belts) the moment they occur, so you can check the belt via the high-res playback to verify the cause and get the line back to peak performance in minutes.

3

Problem

Dangerous Objects & Equipment Damage

Harmful or non-target objects (like batteries or heavy metal scraps) often enter the stream undetected, causing expensive downtime and physical damage to machinery.

Solution

Immediate digital signaling to plant control systems (PLC) & ejection mechanisms the moment a dangerous object is detected, stopping damage before it happens.

4

Problem

Impurity Penalties & Rejected Loads

High impurity rates in sorted output lead to financial "purity penalties" or rejected bales from buyers, while manual sampling is inconsistent and slow.

Solution

The system uses a high-resolution image sensor and state-of-the-art Artificial Intelligence models for precise object identification & categorization. ZenVision is automatically auditing 100% of your production, 100% of the time, categorizing every single gram for an automated data stream of output composition.

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