

# 21st Century Recycling: Optical Sorters Optimize and Increase Recycling

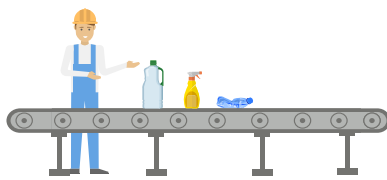
Modern technologies have introduced never-before-seen recycling innovations and revolutionized waste management solutions. Recyclers, or reprocessors, which sort and manage recyclable items, help ensure usable materials don't needlessly end up in landfills. Optical or digital sorters—which combine cameras, sensors, robotics and even artificial intelligence to sort solid objects and plastic films—allow recyclers to optimize the recovery of valuable plastics and other materials from mixed-waste streams during the recycling process, supporting a more circular economy.

## Giving waste a second life as valuable new products

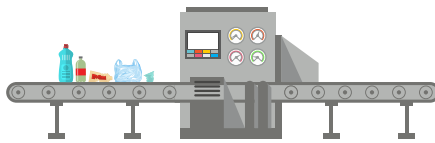
Traditional Sorting | 40 pounds per hour



Materials arrive to recyclers in mixed bins, which can contain both usable and unusable materials.



Optical Sorting | 3,300 pounds per hour

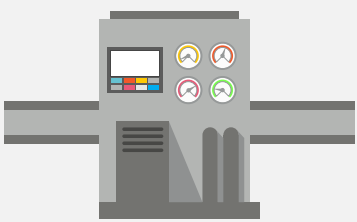


Mixed materials are loaded on to conveyor belts to **remove contaminants and sort products** by type so that they can be shredded, washed and then pelletized.



**Usable materials are identified and recovered** for the circular economy.

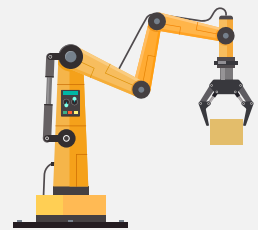
## Recycling systems work smarter, not harder with optical sorters



Many recyclers rely on **optical sorting technologies like cameras, sensors, and algorithms** to sort usable and unusable materials, as they provide greater **sorting precision and capacity** and can **improve material recovery rates**.



Once the optical sorter identifies a desired item, the system triggers a **jet of compressed air that separates the targeted material**, like lightweight plastic film, from other items on the conveyor belt.



Optical sorting technology can also be **integrated into robotic arms capable of sorting 70 items per minute**.

## Progress by the numbers



**+650% more material processed per hour** compared to traditional sorting.



**90-95% success rate** in recovering usable plastics from mixed containers.



**Only 6 months** required to achieve a **full return on a company's investment** in the technology.

In addition to maximizing sorting accuracy, optical sorters dramatically increase the amount of material that recyclers can process, which is **critical to making the transition to a circular economy more efficient**. By increasing capacity and decreasing labor costs, optical sorters allow recyclers to recoup their investments in as little as six months.