OPTICAL SORTING *IN HIGH-DEFINITION*

AUTOMATION REDEFINED

OVER 40 YEARS OF EXPERIENCE IN SENSOR-BASED SORTING
MSS sensor-based sorting systems are statistically proven to provide more efficient separation than any other optical sorters on the market, period. No matter how complex your requirements, MSS systems are the answer.

CUTTING-EDGE TECHNOLOGY
MSS develops its own sensor hardware and software in-house and from the ground up, with total control over our products and technology. The scan rate of our NIR optical sorters is up to double the rate of our competitors, and we go much deeper into the NIR spectrum than other suppliers.

ULTIMATE SEPARATION EFFICIENCY
MSS optical separators feature automated internal calibration, eliminating the need for manually re-calibrating. This reduces maintenance time and increases worker safety.

OUR COMMITMENT TO SERVICE AND SUPPORT
MSS provides continuous after-sale service as well as phone and remote access support for the life of our products. We provide unrestricted access to all levels of the software for our units, and our software licenses never expire!

MSS, A DIVISION OF THE CP GROUP
MSS Inc. is a division of the CP Group, which provides complete recycling solutions from MRF engineering to installation by combining the experience of MSS, CP Manufacturing, Krause Manufacturing, and Advanced MRF.

OPTICAL SORTING APPLICATIONS

PLASTICS
Separation of plastics by any color and resin type (clear vs. light-blue PET, PE, PVC, HDPE, PP, PS, PLA, PET-G, etc.).

E-SCRAP
Sorting of shredded electronic scrap (WEEE) by material type (ABS, HIPS, PC, PMMA, PC-ABS), color (PCB) and shape (copper wires).

PAPER
Sorting of different paper grades (ONP, mixed paper, OCC, white ledger, cardboard, etc.) as well as removing non-fiber contaminants.

METALS
Recovering ferrous, non-ferrous and stainless from pre-shredded metal scrap and auto shredder residue as well as further separation of Zorba and Zurich fractions.

GLASS
Removing non-glass contaminants such as ceramics and metals as well as sorting of mixed glass by color (flint, green, amber, blue).

RDF
Separation of contaminants such as PVC or metals from mixed waste streams and generation of BTU-specific RDF fuels.

C&D, BIOMASS
Sorting of wood, plastics, fiber, drywall and metals from pre-processed C&D and biomass streams.

MSW, C&I
Extraction of specific plastic, paper and metal commodities from dirty feedstock.

CIRRUS®
HIGH-RESOLUTION SORTING SYSTEM FOR NIR, COLOR & METAL

The CIRRUS® combines high-resolution Near-Infrared, color, and metal sorting. It allows you to sort a wide variety of mixed materials, using advanced digital signal processing and software algorithms.

The exact setup is tailored to the specific sorting application. Our in flight detection over an illuminated reference provides higher signal levels for transparent items such as sorting PET by color in plastics recycling facilities or separating PMMA from shredded flat panels in an E-scrap plant. Furthermore, it allows us to positively identify and sort out black items.

APPLICATIONS
- Plastic Bottles
- Plastic Flake
- Paper + Cardboard
- Beverage Cartons
- Electronic Scrap
- Metal Scrap
- MSW/RDF/C&I
- C&D

FEATURES
- Detection options:
  - Over-the-belt
  - In flight with reflective reference
  - In flight over illuminated reference
- Single-eject or dual-eject setup
- Color touchscreen
- Remote Ethernet access
- Language selection
- Change recipes by the touch of a button

MACHINE SPECIFICATIONS
- Machine width . . . . .800 - 2,800mm
- Capacity E-scrap*. . . . . . .1.5 - 3.0 tons/hr
- Capacity paper* . . . . .2.0 - 12.0 ton/hr
- Capacity plastics* . . . . . .2.0 - 8.0 ton/hr
- Efficiency* . . . . Up to 98%
- Electricity . . . . .8 - 12kW
- Compressed air . . . . .100 psi / 7 bar

UPGRADES
- All-metal detector
- Split configuration
- Statistics and quality control reports
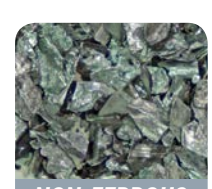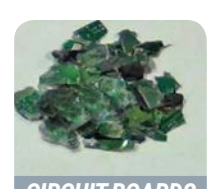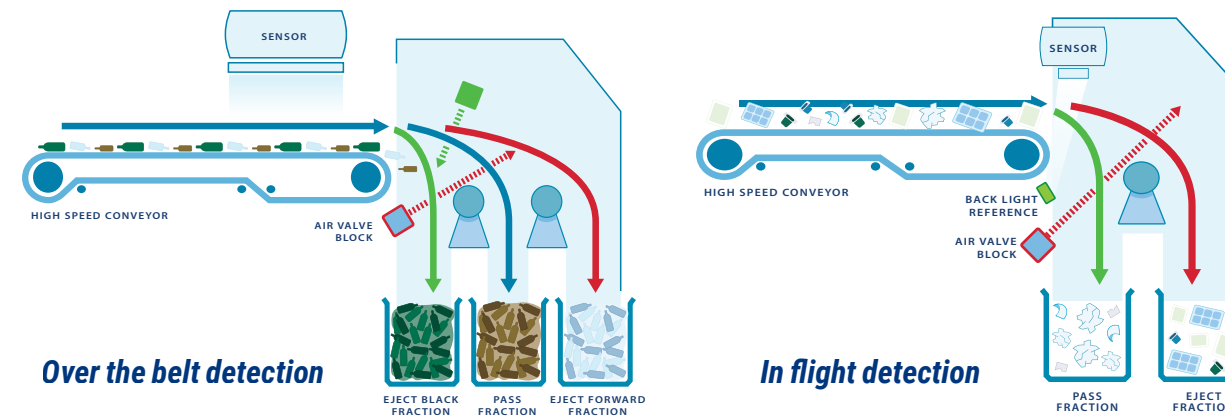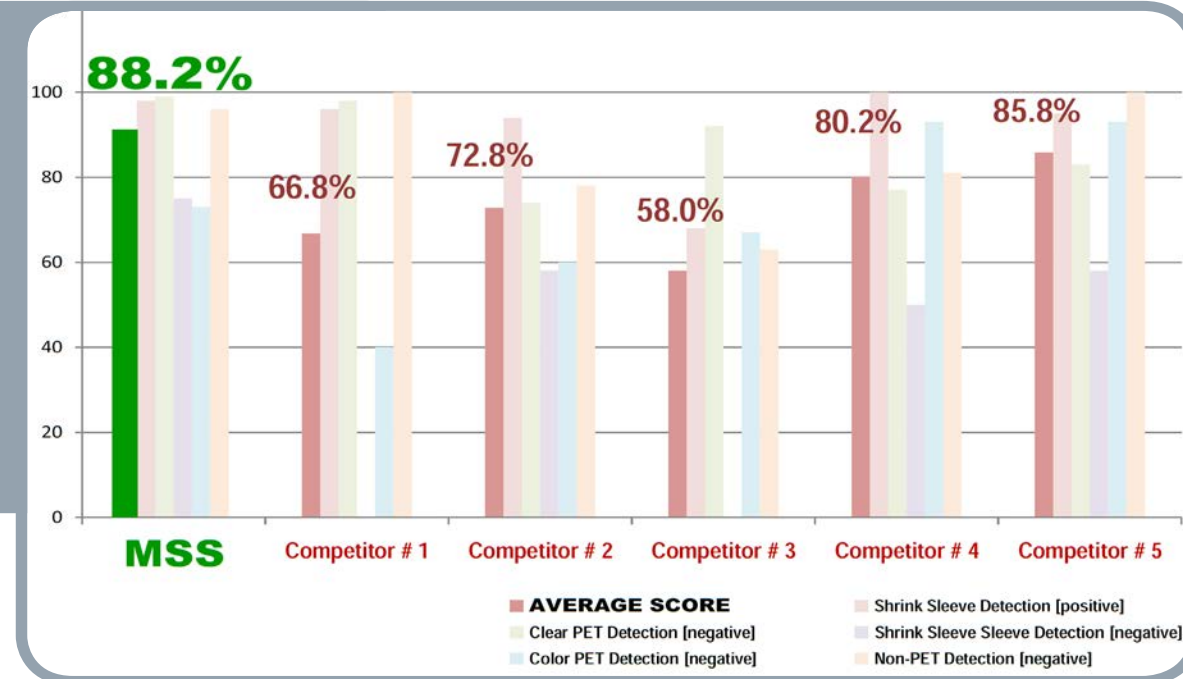- High-speed paper handling system (6m/sec or 1,200fpm)

* Actual throughput and performance depends on a number of factors including, but not limited to, input material composition, particle size, bulk density and % of targeted materials

In a recent independent 2016 study for new sleeved PET bottles, the MSS CIRRUS® topped six other optical sorting manufacturers with the highest average test score of 88.2%. The study focused on the identification of PET bottles of various colors (substrate) behind partially or fully sleeved labels of various colors.

Bar chart of average scores: MSS 88.2%, Competitor # 1 66.8%, Competitor # 2 72.8%, Competitor # 3 58.0%, Competitor # 4 80.2%, Competitor # 5 85.8%

Legend:
- AVERAGE SCORE
- Clear PET Detection [negative]
- Color PET Detection [negative]
- Shrink Sleeve Detection [positive]
- Shrink Sleeve Sleeve Detection [negative]
- Non-PET Detection [negative]

Over the belt detection

HIGH SPEED CONVEYOR — SENSOR — AIR VALVE BLOCK — EJECT BLACK FRACTION / PASS FRACTION / EJECT FORWARD FRACTION

In flight detection

HIGH SPEED CONVEYOR — SENSOR — BACK LIGHT REFERENCE — AIR VALVE BLOCK — PASS FRACTION / EJECT FRACTION

PET

HDPE

MIXED PLASTICS

PLEXIGLASS

CIRCUIT BOARDS

NON-FERROUS

L-VIS®   HIGH-RESOLUTION COLOR SORTING SYSTEM FOR SMALL PARTICLES

The L-VIS® is our latest high-resolution color camera sorting system. It provides accurate color and shape separation of small particles.

The exact sensor setup (detection in mid-air over a reflective or an illuminated back reference) and mechanical configuration (slide vs. conveyor) are tailored to the specific processing application.

FEATURES

- Detection options:
  - Over-the-belt
  - In flight with reflective reference
  - In flight over illuminated reference
- Single-eject setup
- Color touchscreen
- Remote Ethernet access
- Language selection
- Change recipes by the touch of a button

MACHINE SPECIFICATIONS

- Machine width . . . . .800 - 1600mm
- Capacity E-scrap* . . . . . . 0.5 - 3.0 tons/hr
- Capacity metal scrap*. . . . 2.5 - 8.0 tons/hr
- Capacity plastic flake* . . . 1.0 - 2.5 tons/hr
- Efficiency* . . . . Up to 98%
- Electricity . . . . .5 - 8kW
- Compressed air . . . . 100 psi / 7 bar

UPGRADES

- All-metal detector
- Split configuration
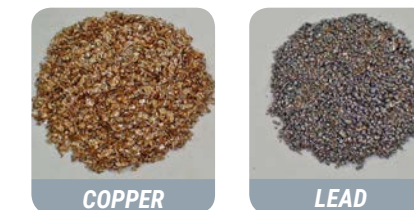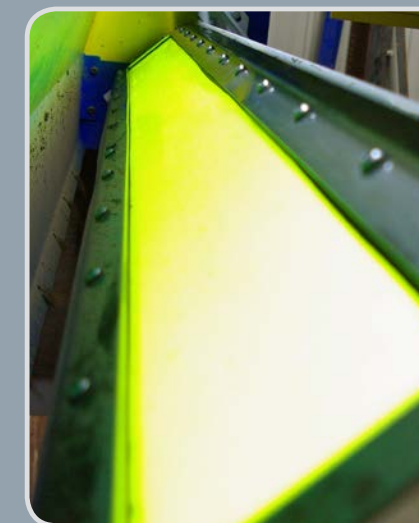- Statistics and quality control reports

APPLICATIONS

- Electronic Scrap
- Plastic Flake + Pellets
- Metal Scrap
- Glass
- Other Small Particle Applications

BACK LIGHT REFERENCE

The L-VIS® features an adjustable color back light reference (shown right) to optimize sorting performance for various applications. This is a break-through innovation, taking optical sorting to the next level of accuracy and capability.

COPPER

LEAD

CLEAR FLAKE

COLOR FLAKE

WIRES

CLEAN PLASTIC

WIRES

CLEAN PLASTIC

ALADDIN™   OPTICAL SORTING OF PLASTICS BY RESIN TYPE AND COLOR

The Aladdin™ sorts plastic bottles in MRFs and recycling facilities by plastic resin and color. It generates up to three outputs from one input.

By performing the identification in flight, the Aladdin™ can separate opaque from transparent objects and provides double signal intensity for transparent objects (light-blue PET, PVC/PET).

FEATURES

- In flight detection for over **15 years**
- Single-eject or dual-eject setup
- Color touchscreen
- Remote Ethernet access
- Language selection
- Change recipes by the touch of a button

MACHINE SPECIFICATIONS

- Machine width 1600, 2000mm
- Capacity plastic bottles* . . 4.0 - 6.0 tons/hr
- Efficiency* . . . . Up to 98%
- Electricity . . . . 8 - 10kW
- Compressed air . . . . 100 psi / 7 bar

UPGRADES

- All-metal detector
- Split configuration
- Statistics and quality control reports

APPLICATIONS
- Material Recovery Facilities
- Plastic Recycling

SAPPHIRE™   HIGHLY FLEXIBLE NIR SENSOR SORTING SYSTEM

The Sapphire™ is a sophisticated NIR sensor sorting system that is capable of identifying polymer resins as well as other materials (drink cartons, paper, etc.).

This advanced optical sorter provides MRFs and recyclers an affordable solution for optical separation of packaging materials.

FEATURES

- Single-eject or dual-eject setup
- Color touchscreen
- Remote Ethernet access
- Language selection
- Change recipes by the touch of a button

MACHINE SPECIFICATIONS

- Machine width . . . . .800 - 2000mm
- Capacity plastic bottles* . . 1.5 - 6.0 tons/hr
- Efficiency* . . . . Up to 98%
- Electricity . . . . 8 - 10kW
- Compressed air . . . . 100 psi / 7 bar

UPGRADES

- All-metal detector
- Split configuration
- Statistics and quality control reports

APPLICATIONS
- Material Recovery Facilities
- Plastic Recycling

COLORSORT™

OPTICAL SORTING FOR COLORS, CERAMICS & METALS

The Glass ColorSort™ separates opaque contaminants such as ceramics, stones and porcelain (CSP) from the mixed glass and sorts it by color such as flint, green, and amber.

Sophisticated software algorithms correct for the effects of dirt and other contamination. Automatic velocity detectors compensate for any moisture effects in the infeed material.

FEATURES

- Single-eject and dual-eject configurations
- Color touchscreen
- Remote Ethernet access
- Language selection
- Change recipes by the touch of a button

MACHINE SPECIFICATIONS

- Machine width 1000, 1500mm
- Capacity ceramics* . . . 15.0 - 22.5 tons/hr
- Capacity colors* . . . . 5.0 - 7.5 tons/hr
- Efficiency* . . . . Up to 98%
- Electricity . . . . 2 - 3kW
- Compressed air . . . . 100 psi / 7 bar

UPGRADES

- All-metal detector
- Split configuration
- Statistics and quality control reports

METALS

COLORS

CERAMICS

APPLICATIONS

- Glass Color Sorting
- Ceramics/Opaques Sorting

METALSORT™ II

SENSOR-BASED SORTING OF FERROUS, NON-FERROUS AND STAINLESS STEEL

The MetalSort™ II is an induction-based true all-metal sensor that sorts ferrous, non-ferrous, and stainless steel. Particles down to 1mm in size can be separated.

Our proprietary "mapline" algorithm provides a noticeably cleaner eject fraction while maintaining or even improving the recovery rate. For example, the MetalSort™ II provides for a much faster return on investment by extracting a significantly higher percentage of Zurik from your ASR.

We build the MetalSort™ II as a stand-alone unit or as an upgrade to any of MSS's optical sorters. It can be configured in a conveyor or slide setup. The sensor resolution is tailored to the specific processing application.

FEATURES

- Color touchscreen
- Remote Ethernet access
- Language selection
- Recipe selection

MACHINE SPECIFICATIONS

- Machine width . . . . 800 - 2,800mm
- Capacity E-scrap* . . . . . . 0.5 - 3.0 tons/hr
- Capacity metal scrap* . . . . 2.5 - 8.0 tons/hr
- Capacity plastic flake* . . . 1.0 - 2.5 tons/hr
- Capacity glass cullet* . . . . .10 - 30 tons/hr
- Efficiency* . . . . Up to 98%
- Electricity . . . . 5 - 8kW
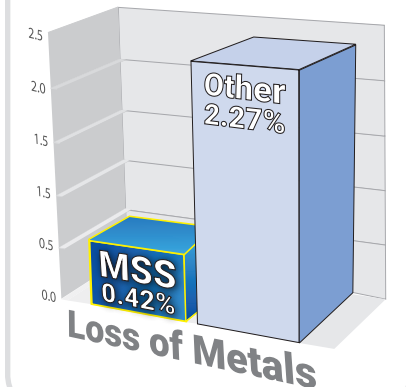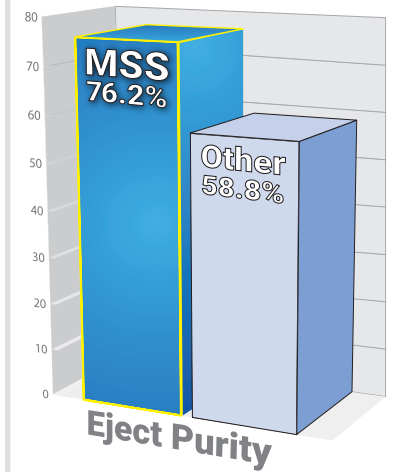- Compressed air . . . . 100 psi / 7 bar

UPGRADES

- Split configuration
- Statistics and quality control reports

APPLICATIONS

- Upgrade to MSS's Optical Sorters
- Plastic Bottles + Flakes
- Electronic Scrap
- Metal Scrap/ASR
- Glass

Mapline Algorithm Advantage

Eject Purity
- MSS 76.2%
- Other 58.8%

Loss of Metals
- MSS 0.42%
- Other 2.27%

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