

Optimized SWIR Lens for Recycled Plastics Sorting

Resolve Optics

reports how material inspection instrument manufacturers are recognising the benefit of integrating optimized SWIR (Short Wavelength Infrared) lenses to enable efficient recovery of recyclable plastics from waste streams.



The ability of SWIR spectroscopy t

o identify and distinguish various types of plastics including low- and high-density polyethylene, polypropylene, PTFE, polystyrene and PVC found in automotive, electronic and household product waste is well known. However not all SWIR lenses offer the performance to match the higher resolution Indium Gallium Arsenide (InGaAs) detectors used for this application.

Rob Watkinson,

Sales Manager of Resolve Optics commented 'A large proportion of off-the-shelf SWIR lenses are in fact visible optics with an AR coating designed for the SWIR waveband. These lenses do not account for the way the glass transmits in the SWIR region and as such the final image quality can often be compromised. This problem is particularly apparent with higher resolution SWIR sensors'.

He added

"While using off-the-shelf SWIR lenses in your sorting instrument design may appeal due to lower cost it often comes with accepting compromises such as poorer performance, lower resolution and a bulkier less attractive product design. All of which ultimately lead to a less effective and less appealing recycled plastics sorter. Consequently, demand for instrument optimized version of our Model 363 SWIR lens that exactly meet the needs of plastics recycling applications are rising dramatically".

Resolve Optics 16mm focal length Model 363

lens uses carefully selected glass types and AR coatings to ensure maximum transmission, colour correction and best image quality throughout the SWIR waveband. Operating at f/1.6, with less than 2 per cent geometric distortion, the Model 363 lens produces a clear crisp 12.8mm diameter image.

Resolve Optics

has been supplying lenses and optical systems for inspection and sorting applications for over 20 years. For further information visit www.resolveoptics.com/363-000-16mm-f1-2-swir-lens/ or to discuss your recycled plastics sorting application please contact Resolve Optics Ltd. on +44-1494-777100 / sales@resolveoptics.com

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