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Beam-Splitters for use within Food Sorting Systems

Optical Sorting Systems are a widely utilized technology used within the food industry; most particularly used in processing harvested foods such as fruits and vegetables, most notably potatoes, and nuts. Optical sorting was designed to help improve product quality, maximize throughput and increase yields.
Within an optical sorting system there are four main components, the feed system, the optical system, the image processing software and last the separation system.
The optical system utilizes lights and sensors housed above and below the flow of the products being inspected. It works by using a combination of light and sensors to illuminate objects; and to do this Beam-Splitters are one of the optical components used. Within the camera used in the system a Beam-Splitter cube is used to divide the light source coming from a single lens, into different channels; and each channel is filtered to a specific spectral region.
Polarizing Beam-Splitter Cubes are often used within optical sorting systems; how a polarizing Beam-Splitter cube works by allowing P-polarized light to pass undeviated through the cube while S-polarized light is reflected at 90°. The quality of the cube is typically defined by the extent and accurate beam deviation of the transmitted and reflected polarized light and by the extinction ratio of the cube. Like standard non-polarizing cubes, the outside faces are usually AR coated over the operating wavelength to reduce losses due to reflection.
Knight Optical can offer you custom made Polarising Beam-Splitters Cubes to meet your requirements.
General Specifications:

Material:	N-BK7 or Equivalent; UV Grade Fused Silica
Dimension Tolerances:	+0, -0.02mm
Flatness:	<λ/4 over CA
Surface Quality:	<40/20 Scratch/Dig
Angles:	+/-1 arcmin
Coatings:	Visible and NIR Coating options available P-Polarisation Transmission >90% S-Polarisation Reflection >99%

Our Beam-Splitter Cubes are checked for quality in our state-of-the-art Metrology laboratory using equipment such as our Trioptics PrismMaster, Varian Cary and our FIBSA Interferometer allowing us to work to the highest QA standards and meet the tolerance specifications on these **precision components.**
Contact our technical sales team to discover how Knight Optical's high quality Beam-Splitter Cubes and superior service can improve your instrumentation and supply chain experience.
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- View our QA and metrology information
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