



*When you have a question about inspection, think VisTec Engineering*



## On-line Surface Inspection Systems for Web Products





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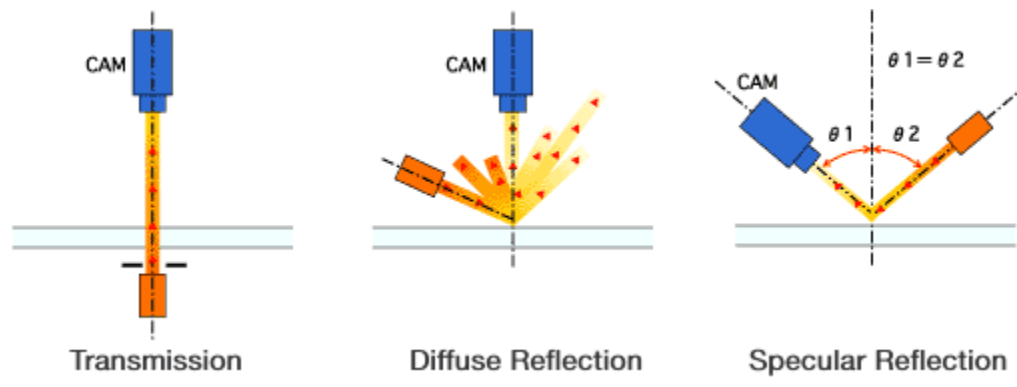
## On-line Surface Inspection Systems for Web Products

Web products refer to materials that are produced in the form of long continuous sheets and packaged as rolls or blocks like metal sheet, paper, plastic films, textiles and non-wovens. The overall quality of web materials is critically influenced by the quality of web surface and presence of surface defects. The surface defects mainly result from imperfections in raw materials and manufacturing processes. They impair the quality of web materials and, in extreme cases, can make the material functionally deficient and even unusable. Certain critical defects like web breaks may even cause severe production disruptions.

The purpose of the inspection system is a tool to “Improve Quality and Productivity”.

The implementation of the Inspection System enables you to differentiate yourself from your competitors and increases your ability to improve quality and productivity by reducing waste which improves yield and prevents faulty material reaching your customers. Typical defects that occur in the production process are bubbles, stains, wrinkles, pin holes, tears, scratches, streaks and color variation. Thus, on-line surface quality inspection is essential to assure the quality of web materials.

An online web surface inspection system inspects the web material surface and detects and classifies any surface defects. The system offers advantages such as minimizing rejections and scrap, avoiding unnecessary customer complaints, optimizing production processes and tracking changes in surface quality. A continuously running web or sheet is scanned with a CCD camera or laser to detect contamination. Depending on characterizes of the defect the system can be configured in any or combination of transmission, diffuse or specular reflection.



- **Transmission**

The light level change which is transmitted through an inspected material.

It is intended to detect light-intercepting problems, such as foreign matter and light-transmitting defects, such as holes.



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- Diffuse Reflection

The light level change which is reflected from an inspected material.

This lighting is used to find those defects which have a contrast change on the surface, such as stains or wrinkles.

- Specular Reflection

The light level change which is reflected at an angle from the material surface.

This lighting is used to find uneven flaws, such as dents or bubbles.

Web inspection systems are installed on paper, film, coating, non-woven, textile, extrusion, metals and other continuous web applications. Costs of inspection systems vary dramatically based upon customer defect criteria. Because of the wide range of customer defect types, web inspection system capabilities and subsequent system costs, VisTec Engineering recommends to develop organized defect sample sets for preliminary discussion and subsequent analysis. Try to sort defect types in order of importance – separate defects into “must haves” and “would like” categories. Be aware that system costs are driven by a combination of web width, defect size, defect contrast, line speed, operating environment, single or dual side web inspection, number of different types of defects, marking systems and interfaces. Also, try to ascertain what budget makes sense for your defect “must haves”.

VisTec Engineering offers CCD camera or Laser inspection system. Both systems contain features of:

- Windows 10-64 bit OS
- Flat Field
- Base Line Threshold
- Product Codes
- Repeat Defect Analyzer
- Density Defects
- Minimum Area Defect
- Area Defect
- Training Classifier
- Dead Zones
- Data Link
- Remote Service
- Gray Scale Image
- 3D Image
- Defect Marking
- Dual Side Inspection



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VisTec has installed or maintained equipment for its client base in various locations around the world.

- + DuPont – PVB Film - USA
- + Solutia - Indian Orchid – PVB Film - USA
- + Solutia – Sao Jose dos Campos – Brazil – PVB Film
- + Noltex – PE Film (resin grading) - USA
- + Agfa – PET Film- Belgium
- + Taiwan Float Glass – Taiwan
- + Nan Ya Plastics – Taiwan
- + Changjiang Float Glass – China
- + Grace Electron Corp - China
- + American Litho Plate - USA
- + Anocoil – Lithoplate - USA
- + Alloy Polymers – PE Film -USA
- + Ablestik - USA
- + Southern Litho - USA
- + Intelicoat Technologies – Graphic Arts Film - USA
- + Konica – Photo Paper \_ USA
- + Schweitzer – Brazil
- + Oak Mitsui – copper foil -USA