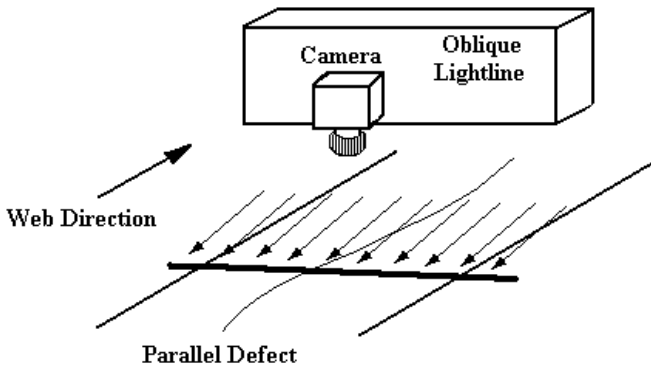


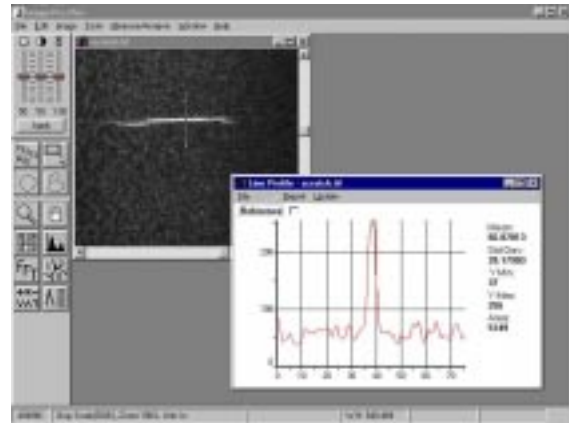
**APPLICATION NOTE: 213**

**A**pplication: Line Scan Inspection of Surface Defects in Steel

**P**roblem: Scratches aligned parallel to the direction of web travel



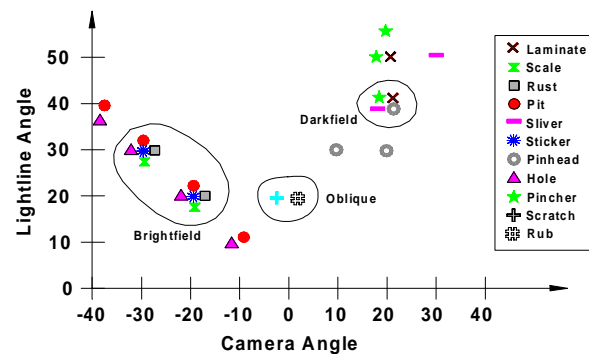
Schematic - **Oblique Lightline**™  
US Pat. No. 5,661,838



High Contrast Defect Detection

**S**olution:

Surface defects that are aligned parallel to the direction of travel present real problems for machine vision inspection systems. These parallel defects tend to disappear under lighting modes established for the detection of pinheads, laminations, slivers, stickers and various other standardized defects. The patented **Oblique**™ lighting system provides a unique “cross-web” or “side-lighting” component that provides extremely high dark field contrast ratios for these parallel types of defects, especially the scratch and rub type defects in the steel application depicted. This technique also provides powerful solutions for many web applications with similar defect problems including metals, plastics, coated paper, glass and composites. As can be seen from the graph to the right, the **Oblique**™ Lighting system operates independently from other lighting modes. In order to detect all classes of defects, inspection systems must incorporate lighting modes that provide separate brightfield, darkfield and **Oblique**™ lighting modes.



*Attempts to mix modes results in the loss of detection capability for certain classes of defects.*