

# APPLICATION NOTE AN001

## Envelope Manufacturing

## PAPER

**INDUSTRY:** Paper

**APPLICATION:** Envelope Manufacturing

### The Challenge

A major envelope manufacturer needs to verify the presence of seam gum on bright white envelope wings to assure product quality, reduce scrap and associated costs.

Recent trends in the paper industry have resulted in increased brightness of commercial white paper to 92 bright. Optical brighteners added to white paper causes the paper to fluoresce. Traditional gum verification systems that rely on UV additives in the gum to detect its presence cannot reliably differentiate between the background (92 bright paper) and the gum due to the strong emission of the paper.

### The Solution

EMX Industries, Inc. has developed the UVX300G-FGC specifically for this purpose. By using gum with existing tracers, the sensor can easily differentiate between the gum and the bright white envelope. The sensor's fast, 100uS response, makes it a perfect choice for high-speed envelope manufacturing processes. The 2mm spot size is ideal for the detection of the small gum bead on side seams. The sensor provides a discrete output signal indicating the presence of the gum.



**92 bright paper reads 31**

The photo on the right shows the same sensor setup, with spot focused on a 2mm wide gum line. The gum line reads 99 or full scale. The threshold level was set to 70. The indicator above the display shows the status of the discrete output, on, indicating gum presence.

In addition, an analog output may be used for monitoring purposes.

The photo on the left shows the sensor set at 30mm from a 92 bright paper envelope. The 2-digit display shows a relative intensity signal level from 0 through 99. The 92 bright paper reads 31. The indicator above the display shows the status of the discrete output, currently off.



**Seam gum reads 99**

### Equipment Required

[UVX-300G-FGC](#)  
UVX-300L50

Luminescence sensor  
50mm focal lens