

# CONSOLIDATED PAPERS, INC.

RESEARCH & DEVELOPMENT DIVISION

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ATTENTION: Bruce Dobbie

COMPANY: RKB Opto-Electronics

FROM: Suresh Cherukuri

TELEPHONE No.:

FACSIMILE No.:

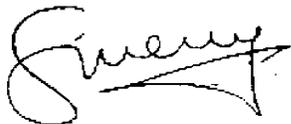
MESSAGE:

**Re: Evaluation Report**

Dear Bruce,

Attached is the evaluation report on the web inspection system. Please give me a call if you any questions on this report.

Sincerely,



Suresh Cherakuri

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## Trial Report

**Purpose:** To evaluate the scratch detection capabilities of the RKB Web Inspection System

### **Experimental Plan:**

RKB built a custom frame that sits on the pilot coater frame. The 'O' frame is designed to transmit fluorescent light from the top through the sheet. Five cameras were mounted below the sheet (coated side) with a viewing field of approximately two inches each.

Prime coated base for 110# Reflections and 120# CN cover, and second pass Reflections grade coating color were obtained from WR division. Coater speed was maintained at 2200 ft/min for 110# and 1200 ft/min for 120# CN Cover. Scratches of varying sizes were made using sharpened safety pins and feeler gauges. The samples were then recovered by slabbing the roll and the width of the scratches was measured accurately, using a 63X optical microscope.

### **Discussion:**

Trials 1 and 2: Two scratches, 0.006" and 0.009" in width, were made on 110# RFT and were easily detected.

Trials 3 and 4: Unable to create fine scratches of 0.002" size.

Trial 5: Three scratches, 0.004", 0.0025" and 0.007", were created on 110# RFT next to each other and all three were detected in three different viewing fields indicating the cameras are aligned properly in both MD and CD direction.

Trial 6: As a duplicate trial, 0.004" and 0.0025" scratches were made on 110# RFT and were detected again.

Trial 7: The last trial was run on 120# CN cover, One scratch of 0.0025" width was created and detected. Light intensity was not changed between trial 6 and trial 7.

The samples produced in trial 5, and 6, along with the photographs of the system setup are being routed separately.

**Conclusion:** RKB<sub>(R)</sub> Opto-Electronics successfully demonstrated the ability of their web inspection system to detect scratches of small dimensions.