

Print and Materials Analysis Lab (PMAL) Services and Equipment

Services

Comprehensive Evaluations

- Evaluations of paper, ink, toner, fountain solution, plate, blanket, and other media
- Comparative print performance analysis
- Product audits
- Defect analysis
- Competitive benchmarking
- Product/grade development
- Customized corporate-sponsored studies and development activities
- Press simulation

Print Performance and Evaluation Criteria

Printability

- Dot analysis: gain, shape, roundness, spacing, placement
- Contrast resolution index
- Color gamut
- Gray scale densities
- Print gloss, delta gloss
- Print non-uniformity
- Print mottle
- Back trap mottle
- Banding (inkjet)
- Banded multiscreen anilox or single screen anilox (flexographic)
- Cell skip (gravure)
- Color-to-color bleed: black line over yellow background (inkjet)
- Feathering (inkjet)
- Folder crack test (web)
- Hexacrome, Hi-Fi (sheetfed)
- Ink trapping
- Modulation transfer function

Runnability

- Contaminant test: slitter dust, milking, linting, picking (web, sheetfed)
- Wet pick vs. dry pick
- Back trap dry pick (sheetfed, web)
- Blister resistance, fiber rise (web)
- Chill marking (web)
- Ink and water balance window (web, sheetfed)
- Ink mileage (web)

Paper Characterization

- Abrasion
- Caliper
- CIE whiteness; CIE color/shade
- Contact angle
- Formation, K&N oil absorption
- Grammage
- ISO brightness
- Moisture
- Opacity, scattering coefficient
- Roughness
- Sheet dimensional stability: fan-in, fan-out
- Sheet formation
- Sheet mottle: uniformity
- Sheffield or Parker print surface roughness
- Water absorption

Services (cont.)

Ink Characterization

- Color
- Grind
- Hue
- % Solids
- Set time
- Strength
- Tack
- Viscosity
- Water pick-up

Other Materials Analysis Options

- Absorption curves
- Debris analysis
- Electrophotographic print analysis
- Liquid absorption function
- Microsurface roughness
- Spectrophotometric curves

Equipment

Image Pro Plus Image Analyzer

- Image quality analysis
- Sheet dimensional stability (fan-in, fan-out)
- Sheet formation
- Print mottle
- Print roughness
- Print dot analysis
- Modulation transfer function
- Liquid absorption function
- Contact angle
- Debris analysis
- Surface roughness
- Micro surface roughness

KDY Image Analyzer

- Dot placement
- EP print analysis
- Inkjet print analysis
- Image analysis

Verity IA Image Analyzer

- Mottle
- Formation
- Size and shape
- Calendar blacking

Datacolor SF600 Plus Colorimeter

- CIE whiteness
- CIE color responses
- Spectrophotometric curves
- Absorption curves
- ISO/TAPPI brightness
- % OBA contents
- Ink color, strength and shade

Datacolor Elrepho 2000

Hunter Glossmeter (20,60,75)

Technidyne S-4 Brightness Tester

Technidyne Technibrite Micro TB – 1C

- Brightness
- L*a*b*
- L*C*h*
- ISO opacity
- Hunter whiteness
- ASTM Yel
- ASTM/CIE/Wh/Tint
- Scat/absorp

Betaflex 334 Flexo System Analyzer

IGT F1 Flexography Printability Tester

IGT AIC2-5 & High Speed Inking Unit

- Press simulation
- Backtrap mottle
- Wet pick, dry pick
- Ink trapping

Elmendorf Tearing Tester

MIT Folding Endurance Tester

Scott Internal Bond Tester

Taber V-5 Stiffness Tester

Sutherland Rub Tester

Taber Abrasion Tester

Sheffield Smoothness / Porosity Tester

Parker Print Surf Roughness / Porosity Tester

TMI Micrometer

Larray Falling Rod Viscometer

Brookfield Low Shear Viscometer

Thwing Albert Inkometer

Duke water pickup Tester

Mettler AG204 analytical scale

Asher, Thermolyne 1500 Furnace

Moisture analyzer, gravimetric method

Fisher Auto Tensiomat

Apparent Surface Tension Meter

Motorized Little Joe Proof Press

X-Rite® Auto-Tracking Spectrophotometer System

GretagMacbeth Spectrolino/SpectroScan Spectrophotometer

GretagMacbeth SpectroEye

X-Rite® 528 & 938 SpectroDensitometer

iCColor

iOne