

Spec*Scan

Image Analyzer Software

Spec*Scan 2000/2001 is a grayscale image analyzer for pulp, paper and paperboard. Images are obtained using a desktop scanner and analyzed for specks, dirt, residual ink, pulp shives, printed patterns and other objects that optically contrast with the paper substrate by their size and reflectivity. The software also measures their size, location, grayscales and shape and generates reports. The measurements, of both size and reflectivity, are in accordance with TAPPI T437 which states the estimated equivalent black area of a gray or colored speck is smaller than its actual area in inverse proportion to the intensity of its color contrast with its background.

Spec*Scan uses a simple statistical method to quantify differences in formation quality by analyzing the frequency distribution of the gray scale value of each pixel in the specimen sample image. This software is Windows Compatible.

Operation Modes

Scan-to-Screen Mode: View the sample and study it in detail on your computer screen. This mode provides an image zoom, dynamic grayscale adjustment and a detailed display of results, speck area histograms, grayscale statistics, speck locations and sizes, sheet summaries and category listings. All set-up parameters are displayed on a single screen.

Scan-to-Printer Mode: High-speed mode oriented to scanning the samples and printing the results. By eliminating much of the operators interaction, this mode allows production analysis at the highest possible speed. It prints the same data as in other modes.

System requirements include a standard PC and a high resolution document scanner. A continuous sheet feeder is available to rapidly test a sample roll.

Ink Jet print quality can be evaluated by attaching a low end ink jet printer. Spec*Scan then evaluates sheets by printing a specific multi-colored pattern and measuring wicking and bleed properties as a function of the ink migration.

Size	Number of Occurrences	Size (sq.mms)	Sample Sheets	Count	Total Area	Count	PPM	Area	Count	Count/PPM
>= 5.000	0	5.000-5.000	0	0	0	0	0	0	0	0
3.00-5.00	0	2.50-3.00	0	0	0	0	0	0	0	0
2.50-3.00	0	2.00-2.50	0	0	0	0	0	0	0	0
1.50-2.00	2	1.50-2.00	2	332	36	60	332	2	60	60
1.00-1.50	3	1.00-1.50	3	373	54	68	373	5	128	128
0.80-1.00	2	0.80-1.00	2	170	39	29	170	7	158	158
0.60-0.80	4	0.40-0.60	4	290	73	51	290	11	210	210
0.40-0.60	22	0.20-0.40	22	1040	399	190	1040	22	400	400
0.20-0.40	31	0.10-0.20	31	1035	463	185	1035	34	388	388
0.10-0.20	22	0.05-0.10	22	722	450	131	722	39	220	220
0.05-0.10	62	0.02-0.05	62	1301	1125	251	1301	53	971	971
0.02-0.05	120	0.01-0.02	120	2164	2224	267	2164	70	167	167
0.01-0.02	200	0.00-0.01	200	3351	5003	606	3351	91	195	195
0.00-0.01	98	0.00-0.01	98	817	1561	140	817	140	214	214
0.00-0.01	126	0.00-0.01	126	1211	2127	180	1211	180	208	208
0.00-0.01	131	0.00-0.01	131	1125	2241	206	1125	191	205	205
0.00-0.01	240	0.00-0.01	240	1522	4502	294	1522	1147	2010	2010
0.00-0.01	227	0.00-0.01	227	1738	6038	221	1738	1404	2131	2131
0.00-0.01	408	0.00-0.01	408	420	1903	7753	348	19158	1922	3477
Totals =>			1922	19122	34899	3477				

▲ Speck count, total area & PPM; and reflectivity for specks and background of each sheet in group.

SHEET#	Sample Sheets	Count	Total Area	Count	PPM	Area	Count	Count/PPM	Area	Count	Count/PPM	
Sheet Sheet1	509	4838	36951	5549	88	131	118.8	143	161	127	159.2	
Sheet Sheet2	441	4532	36359	5227	82	127	131	124	145	162	171	
Sheet Sheet3	473	4536	24248	3330	81	129	131	116.8	147	164	176	
Sheet Sheet4	464	5143	35870	3735	83	127	131	117.3	145	162	178	
Totals =>		1922	19122	34899	3477	84	127	131	117.3	145	162	177

CATEGORIES	Sample Sheets	Count	Total Area	Count	PPM	Area	Count	Count/PPM	Average
0-39 GSI	0	0	0	0	0	0	0	0	0
40-79 GSI	20	935	472	113	0	73	0	0	73
80-119 GSI	1820	13742	33059	2421	22	109	0	0	109
120-159 GSI	2204	10967	40009	1873	69	125	0	0	125
160-199 GSI	0	0	0	0	0	0	0	0	0
200-239 GSI	0	0	0	0	0	0	0	0	0
240-279 GSI	0	0	0	0	0	0	0	0	0
280-319 GSI	0	0	0	0	0	0	0	0	0
320-359 GSI	0	0	0	0	0	0	0	0	0
Total = 0.00-5.000	4051	34241	73525	4658	0	117			

▲ Specks sorted by average grayscale value (reflectance) & size for EBA Calculation.

Scanner Settings:
 Dirt Count: 600 dpi, 6" sq, 80% Auto
 Password: []

Defaults:
 Process Groups of: 2
 Grade Identification: Vendor 216
 Reel / Load Number: 14285

Resolution:
 600 Dots/Inch
 Lower Limit: []
 X Scale: 80

Printer Settings:
 Dirt Histogram
 Categories
 Sheet Summary
 Gray Histogram
 Ring Statistics
 Zone Statistics
 XY Location
 Display Sheet
 Hsk if Exceeded
 Copies: 1

Display Modes:
 Measurement: Absolute vs. min.
 Absolute vs. min.
 PPM Method
 CEN Method

Scanner Setup:
 White: 170
 Black: 40
 Threshold: 120
 Manual Threshold Setting
 Percent of Background, plus offset
 Function of StdDev of Background

Buttons: Modify This Scanner's Settings, Remove Entire Scanner's Settings, Cancel, OK

▲ One set-up screen with all image analysis & measurement parameters displayed.

Specifications subject to change without notice.

