

**A Technical Report**

**prepared by**

**Committee for Graphic Arts Technologies Standards (CGATS)**

**Graphic technology —  
Color characterization data for coldset  
printing on newsprint**

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**CGATS SECRETARIAT  
NPES THE ASSOCIATION FOR SUPPLIERS OF PRINTING,  
PUBLISHING AND CONVERTING TECHNOLOGIES**

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**CGATS**



## **TECHNICAL REPORT**

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This Technical Report was developed in cooperation with the Specification for Newsprint Advertising Production (SNAP) Committee.

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## Foreword

This CGATS Technical Report was prepared by the members of CGATS Subcommittee 4, Process Control, in cooperation with the members of the SNAP (Specifications for Newsprint Advertising Production) Committee. At the time of its approval, the following were the Participating Members and Observers of CGATS Subcommittee 4.

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**Vice Chairman:** Richard Goodman

**Secretary:** Mary Abbott

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		Universal Printing Company	Henry Segalini
		X-Rite	David Albrecht
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**Chairman:** Peter Brehm, Vertis, Inc.

**Vice Chairman:** Dennis Cheeseman, US Ink

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Lawrence Steele	RGB Metrology
Gayle Paprocki	SRDS
Scott Cornish	The New York Times
Sanat Hazra	The New York Times
Monty VanEmmerik	The News-Press
Paul Cousineau	The Wall Street Journal
Dennis Cheeseman	US Ink
Peter Brehm	Vertis, Inc.
John Schultz	Vertis, Inc.

## Introduction

The most significant United States specification for printing on newsprint is the current *Specifications for Newsprint Advertising Production (SNAP)*, which addresses the larger subject of the preparation and proofing of input material, as well as reproduction by offset, letterpress and flexographic production printing. That specification, recently revised in 2006, has received wide acceptance and has provided the newspaper and insert industry with the information necessary for consistent material preparation, proofing and printing. The density range, gray balance and tone value increase (dot gain) values as well as other information are provided as numerical specifications. The SNAP specifications are based on ISO 12647-3:2005, *Graphic technology — Process control for the production of half-tone colour separations, proofs and production prints — Part 3: Coldset offset lithography on newsprint*.

This Technical Report provides public access to, and a reference source for, colorimetric characterization data describing printing on newsprint, in accordance with SNAP, using offset, letterpress or flexography. The input test data is as defined in ANSI/IT8.7/3-2005, *Graphic technology — Input data for characterization of 4-color process printing*, and all measurements are reported to be in accordance with ANSI/CGATS.5-2003, *Graphic technology — Spectral measurement and colorimetric computation for graphic arts images*. It is expected that the use of this reference data will be a requirement of many prepress proofing applications that utilize color management, for developing color proofing systems, and for assessing color matching performance.

These data are based on the measurement of press sheets produced by practical printing, and have been approved by the SNAP Committee as the best current estimate of the characterization of this class of printing. The samples used to create this data set were press sheets, produced by printing organizations seeking SNAP certification, through conformance press runs conducted by the SNAP committee during the period 2004-2005. A sample from each of 102 press tests (that met the SNAP conformance requirements), was accepted for inclusion in the data set. These data were averaged to produce the reference data set.

The colorimetric values of the C, M, Y and K primary colors and the secondary R, G, and B overprint colors of this reference data set were a reasonable color and density match for the SNAP aims. One area in which the reference data set disagreed with the published specification was in the area of tone value increase (TVI). The TVI for all four inks was lower than the current specification at input values of 25%, 50% and 75%.

Although the average of the press test results differ somewhat from the SNAP aims, the data presented in this technical report were defined by the SNAP Committee to be a sufficiently reasonable representation of SNAP printing to be used as the reference characterization data for use in prepress, proofing and final production printing.

# Graphic technology — Color characterization data for coldset printing on newsprint

## 1 Scope

This Technical Report provides color characterization data (the relationship between CMYK printing values and measured color on the printed sheet) for cold-set printing on newsprint performed in accordance with the SNAP Specifications.

## 2 References

ANSI/CGATS.5-2003 + Supplement 1, *Graphic technology — Spectral measurement and colorimetric computation for graphic arts images*

ANSI/IT8.7/3-2005, *Graphic technology — Input data for characterization of 4-color process printing*

*Specifications for Newsprint Advertising Production (SNAP)*, July 2006; Newspaper Association of America and Web Printing Association for Coldset/Non-Heatset Printing. Available from Internet <[www.naa.org](http://www.naa.org)>

ISO 12647-1:2004, *Graphic technology — Process control for the production of half-tone colour separations, proof and production prints — Part 1: Parameters and measurement methods*

ISO 12647-3:2005, *Graphic technology — Process control for the production of half-tone colour separations, proofs and production prints — Part 3: Coldset offset lithography on newsprint*

## 3 Background

The *Specifications for Newsprint Advertising Production* are designed to improve reproduction quality in newsprint production and provide guidelines for the exchange of information. They are intended for advertisers, advertising agencies, publishers, pre-press managers, material suppliers, and commercial and newspaper printers. The specifications pertain to proofing and printing for all newsprint production on webs of paper, including offset lithography, direct lithography, letterpress, and flexography for a wide variety of products (e.g. newspapers, pre-printed advertising inserts, and other printed material). They are not intended for magazine, catalog, packaging, or direct mail printing, nor are they intended for sheetfed, gravure, or heatset web offset processes. Other specifications have been developed to provide guidance for these processes.

The current SNAP colorimetric aims for paper and the one and two-color solids are taken directly from ISO 12647-3. Both this Technical Report and the SNAP specification draw upon ISO 12647-1 for parameter definitions and measurement requirements.

Although ISO 12647-1 and ISO 12647-3 provide guidance and printing aims, it is the responsibility of the individual industry segments to supplement this guidance with specific requirements for their needs. This is the role played by the SNAP committee for the U.S. newsprint print production market. In the current world of color management, representative characterization data is an important adjunct to any printing specification.

Characterization data may be prepared in a variety of ways. Using limited, controlled printing tests that are carefully adjusted to exactly match the specification aims is one approach. When this is done, the resultant small sample of data is often mathematically adjusted and smoothed to allow it to "fit" the predefined process control aims. A second approach, and the one chosen by SNAP, is to collect and average a large body of test data. Of course such test data should all be obtained from samples selected from press tests that have met the aims within the specified tolerances. The averaging of a large volume of data inherently provides the smoothing desired in a characterization data set. While this approach may not achieve data that exactly matches all of the predefined aims, it does provide a more realistic picture of the "real" printing that is being done to these aims. Both approaches have their advantages. The most important issue is a clear understanding and definition of the source and provenance of the data. That is one of the purposes of this Technical Report.

## 4 Data source

The sheets used to generate the SNAP color characterization data were printed by a range of news printers in different locations over a period of time, all using SNAP as the aim. These included certification tests that were being done to receive SNAP certification, as well as printers participating in the International Newspaper Color Quality Club certification program. Data was only included from printing tests where it was determined that the printing test had passed the SNAP Certificate requirements. The SNAP Certification test rates printing performance based on a weighted average of the following performance evaluations:

- Dot gain control
- Density control
- Color gamut
- Gray bar density variation
- Gray bar density control
- Gray bar neutrality
- Registration

Printed images of the IT8.7/3 target were measured to provide the characterization data. Measurements of the printed sheets and colorimetric computations were made in accordance with CGATS.5 (0/45 geometry, black backing, 2 degree observer, and D50 illuminant). Individual data sets representing the 102 printed samples selected were provided to CGATS by the SNAP committee. Each data set contained both colorimetric and densitometric data for each of the 928 patches of the IT8.7/3 target. The colorimetric data was CIE L\*, CIE a\*, and CIE b\*. The densitometric data was Status T red, Status T green, Status T blue; and ISO visual.

## 5 Data analysis

### 5.1 Data consolidation

All 102 sets of data were averaged to produce a consolidated data set that could be considered for use as the basis for a reference characterization data set. The colorimetric data are shown in Table 4.

### 5.2 Comparison of averaged data to aims

The SNAP aims as reported in the July 2006 SNAP publication were compared to the average data to evaluate the compliance of the average data to the SNAP aims. These comparisons are shown in Tables 1, 2 and 3. At this time the SNAP Committee has indicated that the average data, as shown in Table 4, should be used as the reference characterization data for profile building and as the printing aims for SNAP.



**Table 1 — Colorimetric aims**

Color	Aim			Tolerance	Achieved			Deviation
	L*	a*	b*	DeltaE	L*	a*	b*	DeltaE
<b>Cyan</b>	57.00	-23.00	-27.00	5	56.58	-23.40	-26.45	0.80
<b>Magenta</b>	54.00	44.00	-2.00	5	52.69	44.14	-1.09	1.60
<b>Yellow</b>	78.00	-3.00	58.00	5	76.57	-4.05	54.72	3.73
<b>Black</b>	36.00	1.00	4.00	5	36.69	1.68	4.25	1.00
<b>Blue</b>	41.00	7.00	-22.00	5	39.74	6.02	-22.44	1.65
<b>Green</b>	53.00	-34.00	17.00	5	52.84	-34.93	15.74	1.58
<b>Red</b>	52.00	41.00	25.00	5	50.91	40.74	22.38	2.85
<b>Paper</b>	82.00	0.00	3.00	5	80.07	-0.01	3.51	2.00

**Table 2 — Densitometric aims**

Parameter	Aim value	Tolerance	Achieved	Deviation
<b>Cyan</b>	0.90	+/- 0.05	0.90	0.00
<b>Magenta</b>	0.90	+/- 0.05	0.90	0.00
<b>Yellow</b>	0.85	+/- 0.05	0.82	-0.03
<b>Black</b>	1.05	+/- 0.05	1.02	-0.03

**Table 3 — Tone value increase (TVI) aims**

Parameter	Aim value %	Tolerance %	Achieved %	Deviation %
<b>Cyan 25%</b>	28	+/- 3	22.2	-5.8
<b>Magenta 25%</b>	28	+/- 3	22.8	-5.2
<b>Yellow 25%</b>	28	+/- 3	22.2	-5.8
<b>Black 25%</b>	28	+/- 3	23.0	-5.0
<b>Cyan 50%</b>	30	+/- 4	26.1	-3.9
<b>Magenta 50%</b>	30	+/- 4	26.5	-3.5
<b>Yellow 50%</b>	30	+/- 4	25.8	-4.2
<b>Black 50%</b>	30	+/- 4	26.6	-3.4
<b>Cyan 75%</b>	20	+/- 3	15.2	-4.8
<b>Magenta 75%</b>	20	+/- 3	14.8	-5.2
<b>Yellow 75%</b>	20	+/- 3	13.7	-6.3
<b>Black 75%</b>	20	+/- 3	13.9	-6.1

### 5.3 Variability of input data

Under normal circumstances, with relatively small sample sizes, the variability of the data with respect to the mean is a useful measure of the consistency of the data and is often used as a tool to identify outliers and/or extreme values in the data. In this case, with such a large population (102 samples), the presence of extreme values and outliers is less significant. Therefore, no attempt was made to identify and remove extreme values or outliers.

However, to be consistent with earlier practice, the CIE  $\Delta E_{ab}$  values between each sample and the patch average for that sample were computed. This resulted in 94,656 values (928 patches x 102 samples per patch). The distribution of these values is shown in both a histogram (Figure 1) and a cumulative probability plot (Figure 2). These are a measure of the overall variability of this data.

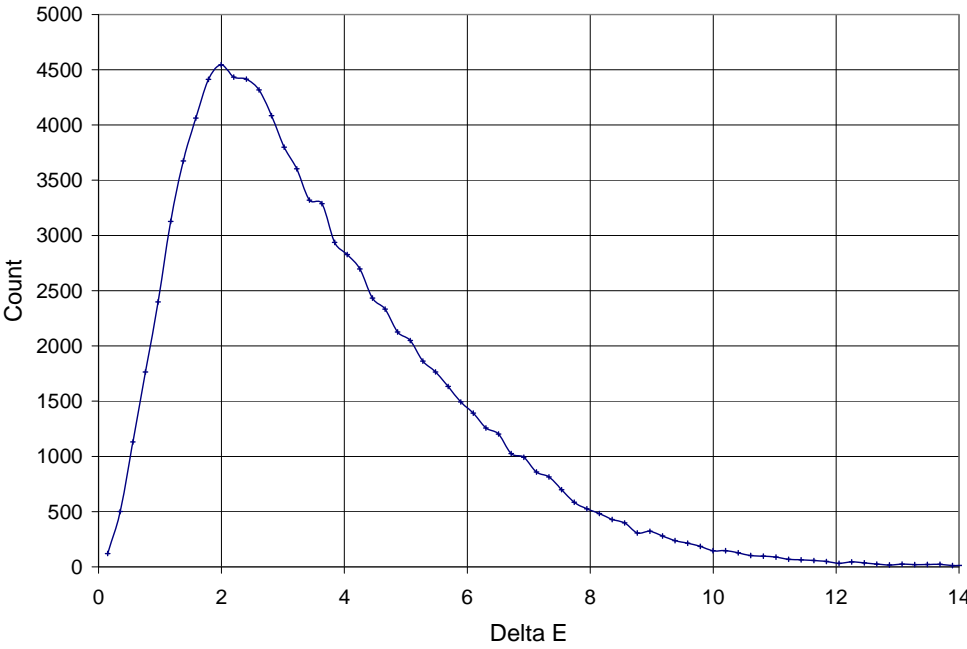


Figure 1 — Uncertainty of input data – histogram

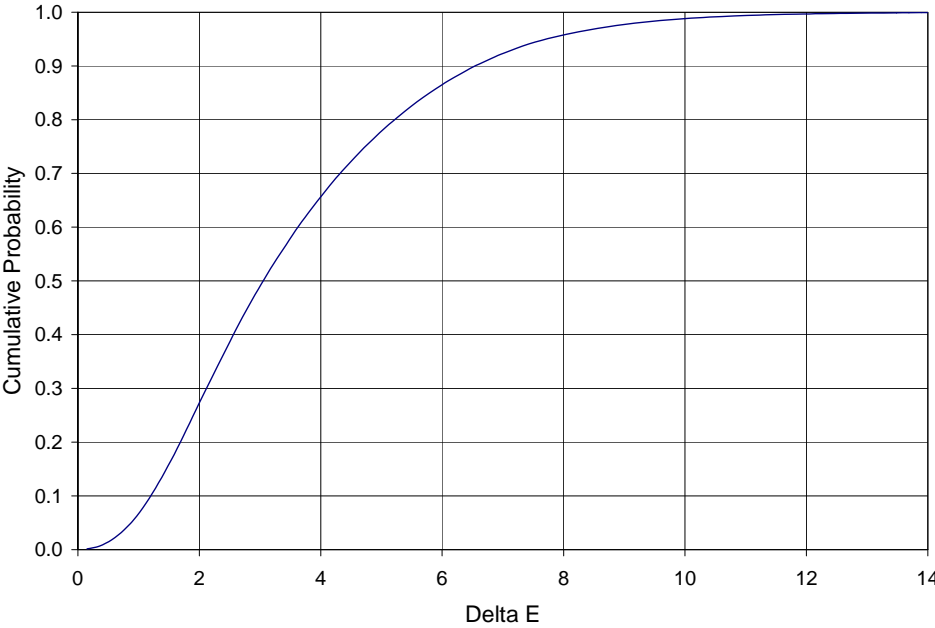


Figure 2 — Uncertainty of input data - cumulative probability

## 6 Characterization data

Table 4 shows the average CIEXYZ and CIELAB data listed by IT8.7/3 ID number. These data represent the characterization data for SNAP printing. The CIEXYZ data is derived from the average CIELAB data and, therefore, will match exactly. The file "TR002 Char Data.csv" that accompanies this technical report contains the data of Table 4 in electronic form.

All applications that use this characterization data, and profiles constructed from these data, should identify CGATS/SNAP TR 002-2015 as the characterization data source. This will also enable end users to validate the intended output for the color separations being prepared or exchanged.

## 7 Restrictions on use

Any use of the color characterization data contained in this document, or associated data files, should be clearly identified as coming from CGATS/SNAP TR 002-2015.

Any color management profiles, or other derivative work, based on these data may be distributed by the organization creating such derivative data (including freely distributed, sold, licensed, etc.) with no further restrictions from CGATS. However, any such use must identify this Technical Report as the source of the characterization data.

Table 4 — Colorimetric characterization data

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
1	100	0	0	0	18.71	24.50	35.94	56.58	-23.40	-26.45
2	0	100	0	0	30.38	20.76	17.61	52.69	44.14	-1.09
3	0	0	100	0	47.52	50.81	11.90	76.57	-4.05	54.72
4	100	100	0	0	11.52	11.10	17.18	39.74	6.02	-22.44
5	100	0	100	0	13.84	20.90	11.26	52.84	-34.93	15.74
6	0	100	100	0	27.51	19.19	8.29	50.91	40.74	22.38
7	100	100	100	0	10.03	10.49	8.78	38.70	-0.67	-0.46
8	70	70	0	0	15.45	14.62	20.28	45.10	8.19	-19.92
9	70	0	70	0	18.49	25.68	14.73	57.73	-29.49	14.53
10	0	70	70	0	30.52	23.05	10.82	55.12	34.21	21.02
11	40	40	0	0	23.39	22.71	26.64	54.77	6.78	-15.17
12	0	40	40	0	36.72	31.43	17.16	62.87	22.47	17.50
13	40	40	40	0	21.43	21.67	16.62	53.67	2.54	2.88
14	40	0	40	0	27.62	34.29	21.73	65.19	-20.33	11.78
15	20	20	0	0	33.90	33.98	33.67	64.95	3.97	-8.77
16	20	0	20	0	37.91	43.31	29.90	71.77	-12.02	8.74
17	0	20	20	0	43.45	40.85	25.63	70.07	12.33	12.95
18	100	0	0	100	6.85	7.61	7.05	33.15	-4.76	-3.33
19	0	100	0	100	8.60	7.50	5.81	32.93	12.55	1.77
20	0	0	100	100	10.19	10.63	5.37	38.95	-0.41	14.30
21	100	100	0	100	6.49	6.43	6.31	30.48	3.00	-4.77
22	100	0	100	100	7.00	8.29	5.70	34.58	-9.47	5.13
23	0	100	100	100	9.29	8.09	5.08	34.17	13.00	7.55
24	100	100	100	100	6.40	6.59	5.38	30.86	0.49	0.29
25	0	0	0	100	9.24	9.37	6.70	36.69	1.68	4.25
26	0	0	0	0	54.77	56.80	43.96	80.07	-0.01	3.51
27	90	0	0	0	19.55	25.38	36.17	57.44	-22.85	-25.30
28	80	0	0	0	20.93	26.78	36.59	58.77	-21.78	-23.60
29	70	0	0	0	22.72	28.62	37.51	60.44	-20.67	-21.99
30	60	0	0	0	25.09	30.98	38.33	62.49	-19.09	-19.57
31	50	0	0	0	28.21	34.00	39.22	64.96	-17.06	-16.49
32	40	0	0	0	32.08	37.61	40.23	67.73	-14.44	-13.05
33	30	0	0	0	36.40	41.49	41.13	70.52	-11.55	-9.41
34	25	0	0	0	38.71	43.51	41.61	71.90	-10.03	-7.63
35	20	0	0	0	40.79	45.32	41.92	73.10	-8.72	-5.96
36	15	0	0	0	43.34	47.51	42.20	74.52	-7.15	-3.87
37	10	0	0	0	46.59	50.27	42.88	76.23	-5.19	-1.76
38	7	0	0	0	48.67	52.02	43.38	77.30	-4.02	-0.56
39	3	0	0	0	51.82	54.58	43.76	78.80	-2.09	1.57
40	0	90	0	0	30.97	21.52	18.41	53.51	42.81	-1.46
41	0	80	0	0	32.20	23.10	19.94	55.17	40.11	-1.85
42	0	70	0	0	33.46	24.69	21.36	56.77	37.68	-1.99
43	0	60	0	0	35.03	26.81	23.28	58.80	34.36	-2.22
44	0	50	0	0	37.00	29.59	25.67	61.30	30.16	-2.24
45	0	40	0	0	39.61	33.26	28.66	64.37	25.27	-2.01
46	0	30	0	0	42.44	37.52	31.80	67.67	19.71	-1.29
47	0	25	0	0	44.01	39.88	33.49	69.38	16.96	-0.87

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
48	0	20	0	0	45.76	42.48	35.26	71.20	14.13	-0.29
49	0	15	0	0	47.45	45.18	37.11	73.01	11.08	0.25
50	0	10	0	0	49.39	48.24	39.03	74.98	7.92	1.03
51	0	7	0	0	50.48	50.02	40.10	76.08	6.08	1.52
52	0	3	0	0	52.52	53.31	42.08	78.06	2.93	2.38
53	0	0	90	0	47.19	50.45	12.85	76.34	-4.00	51.62
54	0	0	80	0	47.47	50.69	14.04	76.49	-3.88	48.64
55	0	0	70	0	48.25	51.52	15.47	76.99	-3.88	45.87
56	0	0	60	0	48.66	51.93	17.23	77.24	-3.81	42.11
57	0	0	50	0	49.25	52.50	19.54	77.58	-3.68	37.61
58	0	0	40	0	49.95	53.12	22.63	77.95	-3.37	32.03
59	0	0	30	0	50.79	53.81	26.53	78.35	-2.89	25.66
60	0	0	25	0	51.26	54.19	28.60	78.57	-2.60	22.57
61	0	0	20	0	51.92	54.72	31.23	78.88	-2.19	18.93
62	0	0	15	0	52.33	55.00	33.76	79.04	-1.80	15.39
63	0	0	10	0	52.92	55.43	36.36	79.29	-1.36	12.10
64	0	0	7	0	53.41	55.84	38.22	79.53	-1.11	9.96
65	0	0	3	0	53.78	56.03	40.78	79.63	-0.63	6.76
66	0	0	0	90	11.00	11.18	8.00	39.88	1.65	4.49
67	0	0	0	80	12.68	12.92	9.33	42.64	1.52	4.39
68	0	0	0	70	14.37	14.67	10.69	45.18	1.38	4.27
69	0	0	0	60	16.68	17.07	12.55	48.35	1.25	4.21
70	0	0	0	50	20.04	20.56	15.23	52.46	1.08	4.16
71	0	0	0	40	24.45	25.15	18.81	57.22	0.89	4.06
72	0	0	0	30	30.08	31.01	23.43	62.52	0.68	3.93
73	0	0	0	25	32.99	34.04	25.82	65.00	0.58	3.87
74	0	0	0	20	36.53	37.73	28.69	67.82	0.49	3.89
75	0	0	0	15	40.09	41.45	31.66	70.49	0.39	3.79
76	0	0	0	10	44.01	45.54	34.87	73.25	0.28	3.79
77	0	0	0	7	46.39	48.03	36.85	74.84	0.24	3.76
78	0	0	0	3	50.30	52.11	40.10	77.35	0.14	3.70
79	40	100	0	0	18.35	14.75	17.33	45.29	23.43	-13.20
80	40	100	40	0	16.96	14.13	12.26	44.42	19.68	-1.75
81	0	100	40	0	28.65	19.87	12.03	51.69	41.91	11.45
82	40	100	100	0	16.09	13.71	8.71	43.82	17.41	8.64
83	0	40	100	0	34.65	30.08	9.96	61.72	20.48	35.16
84	40	40	100	0	19.78	20.55	10.00	52.46	-0.18	19.07
85	70	70	70	0	12.95	13.15	10.52	42.99	1.81	1.04
86	40	0	100	0	24.76	31.58	11.63	62.99	-22.67	32.10
87	100	40	100	0	11.22	14.09	10.11	44.36	-16.04	4.72
88	100	0	40	0	15.55	22.33	19.84	54.38	-31.19	-3.03
89	100	40	40	0	12.72	15.21	15.63	45.93	-12.39	-8.09
90	100	40	0	0	14.67	16.27	24.68	47.32	-6.02	-24.56
91	100	100	40	0	10.78	10.80	12.14	39.25	2.74	-10.31
92	70	100	20	0	13.51	12.29	14.45	41.67	11.12	-12.47
93	20	70	20	0	23.86	19.50	16.56	51.27	23.95	-1.11
94	20	70	40	0	23.25	19.24	13.71	50.96	22.57	5.50
95	20	100	70	0	20.80	16.09	9.83	47.09	27.94	10.38

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
96	20	70	70	0	22.53	18.83	10.67	50.49	21.38	13.51
97	20	70	100	0	22.08	18.52	9.07	50.13	20.87	18.21
98	20	20	70	0	29.08	30.46	13.21	62.05	-1.11	25.97
99	70	20	100	0	15.29	19.47	10.79	51.23	-19.15	14.41
100	70	20	70	0	15.88	19.98	13.15	51.81	-18.22	8.48
101	100	20	70	0	12.92	17.36	13.07	48.71	-23.07	3.36
102	70	20	20	0	18.35	21.82	22.89	53.84	-13.44	-10.03
103	100	70	20	0	12.01	12.49	15.94	41.98	-0.25	-15.64
104	70	70	20	0	14.42	13.96	16.02	44.18	6.01	-12.05
105	70	100	70	0	12.61	11.91	10.29	41.07	7.77	-1.52
106	40	70	40	0	18.29	16.43	13.63	47.53	13.44	-0.21
107	20	40	20	0	27.90	25.98	20.90	58.01	11.68	1.07
108	70	100	100	0	12.06	11.66	8.92	40.67	5.74	2.43
109	20	40	40	0	27.01	25.44	16.49	57.50	10.36	9.79
110	70	70	100	0	13.00	13.37	9.30	43.32	0.70	5.66
111	40	40	70	0	19.95	20.49	11.88	52.39	0.94	13.10
112	20	20	40	0	30.18	31.33	18.88	62.78	-0.10	13.51
113	20	20	20	0	31.64	32.38	24.63	63.66	1.50	3.69
114	100	70	100	0	10.37	11.59	9.51	40.55	-6.02	0.17
115	70	40	70	0	14.76	16.87	12.21	48.09	-8.77	4.72
116	40	20	40	0	24.07	26.75	18.66	58.75	-7.35	7.03
117	100	70	70	0	10.99	12.02	10.72	41.25	-4.33	-2.58
118	40	40	20	0	22.37	22.27	20.61	54.31	4.16	-4.72
119	100	100	70	0	10.16	10.59	10.13	38.88	-0.43	-4.78
120	40	20	20	0	24.74	27.17	23.75	59.13	-6.11	-2.52
121	70	40	40	0	15.52	17.46	15.77	48.83	-7.48	-3.41
122	100	85	85	100	6.56	6.83	5.51	31.42	-0.28	0.60
123	100	85	85	80	6.85	7.15	5.80	32.14	-0.37	0.48
124	100	85	85	60	7.18	7.51	6.19	32.93	-0.52	0.03
125	80	65	65	100	6.71	6.96	5.63	31.72	-0.06	0.56
126	80	65	65	80	7.11	7.40	6.02	32.69	-0.20	0.38
127	80	65	65	60	7.78	8.12	6.68	34.22	-0.46	0.09
128	80	65	65	40	8.93	9.35	7.78	36.66	-0.77	-0.23
129	60	45	45	100	7.32	7.56	5.89	33.04	0.37	1.57
130	60	45	45	80	7.94	8.22	6.43	34.43	0.20	1.52
131	60	45	45	60	9.15	9.52	7.59	36.97	-0.22	1.03
132	60	45	45	40	10.80	11.40	9.28	40.25	-1.40	0.45
133	60	45	45	20	13.13	13.99	11.55	44.22	-2.33	-0.03
134	40	27	27	100	8.11	8.37	6.37	34.74	0.43	2.33
135	40	27	27	80	9.20	9.52	7.29	36.96	0.20	2.25
136	40	27	27	60	11.00	11.43	8.85	40.30	-0.21	2.04
137	40	27	27	40	13.55	14.17	11.20	44.47	-0.74	1.50
138	40	27	27	20	17.21	18.23	14.96	49.77	-1.97	0.20
139	40	27	27	10	19.68	20.92	17.34	52.86	-2.39	-0.19
140	20	12	12	100	8.58	8.77	6.51	35.55	1.05	3.09
141	20	12	12	80	10.17	10.44	7.81	38.62	0.81	3.04
142	20	12	12	60	13.04	13.46	10.20	43.44	0.44	2.87
143	20	12	12	40	17.62	18.30	14.10	49.86	-0.15	2.56

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
144	20	12	12	20	24.74	25.87	20.47	57.92	-0.88	1.77
145	20	12	12	10	28.71	30.19	24.16	61.82	-1.57	1.37
146	10	6	6	100	9.27	9.45	6.88	36.84	1.31	3.73
147	10	6	6	80	11.43	11.70	8.61	40.74	1.05	3.68
148	10	6	6	60	15.09	15.53	11.61	46.36	0.66	3.50
149	10	6	6	40	20.93	21.66	16.49	53.67	0.18	3.19
150	10	6	6	20	29.32	30.53	23.72	62.11	-0.44	2.67
151	10	6	6	10	34.47	36.02	28.39	66.54	-0.89	2.17
152	100	85	85	0	10.00	10.72	9.68	39.10	-2.54	-2.91
153	80	65	65	0	12.13	12.92	11.35	42.64	-2.25	-2.13
154	60	45	45	0	16.33	17.40	14.79	48.75	-2.46	-1.12
155	40	27	27	0	23.61	25.10	20.76	57.17	-2.56	-0.11
156	20	12	12	0	34.68	36.56	29.44	66.94	-1.93	1.16
157	10	6	6	0	42.65	44.68	35.52	72.68	-1.27	1.89
158	5	3	3	0	47.10	49.26	38.79	75.61	-1.11	2.45
159	100	0	0	20	14.20	17.97	23.43	49.46	-18.14	-18.58
160	0	100	0	20	21.39	15.59	13.24	46.44	33.57	-1.04
161	0	0	100	20	31.09	33.14	9.60	64.27	-3.15	40.77
162	100	100	0	20	10.00	9.69	13.19	37.28	5.27	-16.67
163	100	0	100	20	11.55	16.20	9.29	47.23	-26.11	12.45
164	0	100	100	20	19.36	14.40	7.25	44.80	30.72	15.90
165	40	40	0	20	17.15	16.78	18.26	47.99	5.36	-10.66
166	40	0	40	20	20.20	24.18	15.74	56.27	-14.55	9.49
167	0	40	40	20	25.22	22.30	12.86	54.34	16.55	13.65
168	100	100	0	40	8.54	8.34	10.16	34.68	4.43	-12.13
169	100	0	100	40	9.90	13.01	7.95	42.77	-19.23	9.66
170	0	100	100	40	14.95	11.84	6.53	40.96	23.10	12.36
171	40	40	0	40	13.59	13.40	13.54	43.36	4.32	-7.14
172	40	0	40	40	15.51	18.07	11.85	49.58	-10.72	8.34
173	0	40	40	40	18.70	16.99	10.08	48.24	12.50	11.53
174	100	0	0	70	8.55	9.91	10.12	37.68	-8.38	-6.83
175	0	100	0	70	11.24	9.29	7.45	36.53	17.79	0.83
176	0	0	100	70	13.83	14.53	6.25	44.98	-1.16	20.54
177	100	100	0	70	7.00	6.94	7.58	31.68	3.08	-8.02
178	100	0	100	70	7.79	9.65	6.47	37.21	-13.21	6.12
179	0	100	100	70	10.96	9.19	5.50	36.34	16.59	9.13
180	40	40	0	70	9.58	9.47	8.62	36.88	3.67	-3.04
181	40	0	40	70	10.58	11.80	7.97	40.90	-5.86	6.35
182	0	40	40	70	12.01	11.21	7.08	39.93	8.62	8.21
183	0	0	0	0	54.94	56.96	44.02	80.16	0.05	3.58
184	0	10	0	0	49.52	48.31	39.01	75.02	8.07	1.14
185	0	20	0	0	45.62	42.31	35.14	71.09	14.25	-0.32
186	0	40	0	0	39.44	33.10	28.44	64.25	25.26	-1.86
187	0	70	0	0	33.27	24.50	21.13	56.59	37.82	-1.85
188	0	100	0	0	30.21	20.55	17.31	52.45	44.53	-0.81
189	10	0	0	0	46.41	50.08	42.85	76.12	-5.22	-1.93
190	10	10	0	0	41.85	42.61	38.04	71.29	2.32	-3.99
191	10	20	0	0	38.57	37.37	34.25	67.55	8.26	-5.13

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
192	10	40	0	0	33.30	29.25	27.83	61.01	18.87	-6.45
193	10	70	0	0	28.09	21.68	20.79	53.69	31.05	-6.16
194	10	100	0	0	25.54	18.25	17.18	49.80	37.51	-5.08
195	20	0	0	0	40.64	45.16	41.80	73.00	-8.71	-5.99
196	20	10	0	0	36.78	38.59	37.24	68.45	-1.39	-7.79
197	20	20	0	0	33.82	33.81	33.45	64.81	4.30	-8.68
198	20	40	0	0	29.27	26.57	27.24	58.57	14.61	-9.65
199	20	70	0	0	24.76	19.80	20.54	51.61	26.40	-9.25
200	20	100	0	0	22.58	16.75	17.10	47.95	32.55	-8.09
201	40	0	0	0	31.85	37.34	40.01	67.53	-14.44	-13.10
202	40	10	0	0	29.02	32.24	35.70	63.54	-7.76	-14.14
203	40	20	0	0	26.82	28.44	32.26	60.28	-2.42	-14.72
204	40	40	0	0	23.40	22.66	26.59	54.72	7.04	-15.19
205	40	70	0	0	19.88	17.07	20.31	48.35	17.98	-14.38
206	40	100	0	0	18.22	14.61	17.19	45.09	23.59	-13.23
207	70	0	0	0	23.47	29.38	37.56	61.12	-20.23	-20.88
208	70	10	0	0	21.59	25.71	33.78	57.76	-14.30	-21.32
209	70	20	0	0	20.07	22.87	30.60	54.94	-9.47	-21.38
210	70	40	0	0	17.70	18.59	25.56	50.21	-1.19	-21.17
211	70	70	0	0	15.31	14.45	20.06	44.88	8.34	-19.87
212	70	100	0	0	14.05	12.47	17.20	41.95	13.32	-18.68
213	100	0	0	0	19.31	25.18	36.10	57.25	-23.22	-25.52
214	100	10	0	0	17.89	22.25	32.51	54.29	-17.81	-25.42
215	100	20	0	0	16.72	19.99	29.66	51.82	-13.52	-25.27
216	100	40	0	0	14.91	16.52	25.00	47.64	-5.95	-24.60
217	100	70	0	0	12.91	12.98	19.80	42.74	2.62	-23.00
218	100	100	0	0	11.93	11.34	17.17	40.16	7.11	-21.69
219	0	0	10	0	53.20	55.70	36.36	79.45	-1.30	12.37
220	0	10	10	0	48.03	47.27	32.61	74.36	6.86	9.03
221	0	20	10	0	44.38	41.51	29.59	70.53	13.06	7.11
222	0	40	10	0	38.51	32.51	24.35	63.76	24.41	4.38
223	0	70	10	0	32.59	24.09	18.54	56.18	37.16	2.88
224	0	100	10	0	29.63	20.19	15.40	52.05	44.10	3.02
225	10	0	10	0	44.82	49.01	35.51	75.46	-6.91	6.70
226	10	10	10	0	40.49	41.71	31.82	70.67	0.82	3.87
227	10	20	10	0	37.45	36.69	28.92	67.05	6.85	2.18
228	10	40	10	0	32.48	28.77	23.90	60.58	17.82	-0.29
229	10	70	10	0	27.48	21.34	18.28	53.32	30.28	-1.50
230	10	100	10	0	25.06	17.99	15.37	49.48	36.84	-1.32
231	20	0	10	0	39.21	44.26	34.61	72.40	-10.60	2.72
232	20	10	10	0	35.46	37.76	31.05	67.84	-3.16	0.17
233	20	20	10	0	32.82	33.24	28.24	64.36	2.73	-1.34
234	20	40	10	0	28.58	26.22	23.44	58.25	13.37	-3.45
235	20	70	10	0	24.26	19.55	18.09	51.33	25.45	-4.51
236	20	100	10	0	22.18	16.57	15.36	47.72	31.75	-4.35
237	40	0	10	0	30.58	36.62	33.14	66.99	-16.74	-4.47
238	40	10	10	0	27.90	31.60	29.90	63.01	-9.84	-6.37
239	40	20	10	0	25.97	28.04	27.31	59.92	-4.35	-7.44



Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
240	40	40	10	0	22.76	22.37	22.87	54.41	5.47	-8.99
241	40	70	10	0	19.44	16.91	17.98	48.15	16.69	-9.75
242	40	100	10	0	17.82	14.44	15.47	44.86	22.49	-9.53
243	70	0	10	0	22.41	28.84	31.32	60.64	-22.91	-12.67
244	70	10	10	0	20.64	25.21	28.40	57.28	-16.74	-13.82
245	70	20	10	0	19.30	22.56	26.02	54.61	-11.86	-14.38
246	70	40	10	0	17.18	18.39	22.16	49.97	-3.03	-15.29
247	70	70	10	0	14.78	14.17	17.68	44.48	6.90	-15.41
248	70	100	10	0	13.68	12.30	15.47	41.68	12.15	-15.00
249	100	0	10	0	18.34	24.72	30.14	56.80	-26.26	-17.44
250	100	10	10	0	17.02	21.86	27.51	53.88	-20.69	-18.20
251	100	20	10	0	16.01	19.70	25.32	51.49	-16.10	-18.53
252	100	40	10	0	14.35	16.29	21.70	47.35	-8.09	-18.91
253	100	70	10	0	12.48	12.81	17.63	42.47	0.89	-18.74
254	100	100	10	0	11.59	11.21	15.52	39.94	5.61	-18.15
255	0	0	20	0	52.06	54.85	31.16	78.95	-2.15	19.15
256	0	10	20	0	47.05	46.53	28.14	73.89	6.18	15.25
257	0	20	20	0	43.39	40.75	25.54	70.00	12.46	13.00
258	0	40	20	0	37.74	32.01	21.33	63.35	23.73	9.41
259	0	70	20	0	32.04	23.79	16.57	55.88	36.51	6.82
260	0	100	20	0	29.30	20.04	14.03	51.89	43.55	6.25
261	10	0	20	0	43.66	48.17	30.35	74.93	-8.01	13.48
262	10	10	20	0	39.59	41.09	27.42	70.24	-0.08	10.16
263	10	20	20	0	36.55	36.04	25.00	66.55	6.03	8.01
264	10	40	20	0	31.90	28.48	21.05	60.32	16.85	4.74
265	10	70	20	0	27.06	21.16	16.42	53.12	29.40	2.41
266	10	100	20	0	24.72	17.83	14.01	49.29	36.19	1.83
267	20	0	20	0	38.03	43.38	29.56	71.81	-11.85	9.37
268	20	10	20	0	34.53	37.10	26.68	67.35	-4.20	6.43
269	20	20	20	0	31.99	32.70	24.48	63.91	1.69	4.40
270	20	40	20	0	27.82	25.75	20.55	57.80	12.30	1.42
271	20	70	20	0	23.73	19.27	16.20	51.00	24.53	-0.70
272	20	100	20	0	21.71	16.31	13.89	47.38	31.01	-1.17
273	40	0	20	0	29.54	35.86	28.34	66.42	-18.16	2.04
274	40	10	20	0	27.01	30.97	25.79	62.48	-11.13	-0.41
275	40	20	20	0	25.08	27.41	23.62	59.35	-5.64	-1.89
276	40	40	20	0	22.12	22.02	20.22	54.05	4.18	-4.39
277	40	70	20	0	18.94	16.66	16.15	47.83	15.50	-6.08
278	40	100	20	0	17.38	14.20	14.02	44.52	21.60	-6.42
279	70	0	20	0	21.44	28.13	26.86	60.00	-24.68	-6.53
280	70	10	20	0	19.82	24.64	24.55	56.72	-18.34	-8.13
281	70	20	20	0	18.52	22.01	22.63	54.04	-13.39	-9.18
282	70	40	20	0	16.51	18.00	19.55	49.50	-4.67	-10.84
283	70	70	20	0	14.37	14.01	16.05	44.25	5.42	-12.01
284	70	100	20	0	13.28	12.09	14.07	41.36	11.01	-12.01
285	100	0	20	0	17.44	24.05	25.92	56.14	-28.19	-11.58
286	100	10	20	0	16.25	21.31	23.80	53.28	-22.45	-12.69
287	100	20	20	0	15.29	19.21	22.05	50.93	-17.86	-13.42

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
288	100	40	20	0	13.70	15.86	19.14	46.79	-9.76	-14.63
289	100	70	20	0	12.09	12.62	15.94	42.19	-0.55	-15.27
290	100	100	20	0	11.26	11.05	14.16	39.66	4.45	-15.17
291	0	0	40	0	50.11	53.29	23.32	78.05	-3.38	30.90
292	0	10	40	0	45.37	45.30	21.33	73.09	4.89	26.20
293	0	20	40	0	41.84	39.63	19.60	69.21	11.25	23.04
294	0	40	40	0	36.56	31.27	16.88	62.74	22.51	17.91
295	0	70	40	0	31.26	23.40	13.70	55.48	35.39	13.32
296	0	100	40	0	28.70	19.82	12.02	51.63	42.35	11.38
297	10	0	40	0	41.79	46.66	22.95	73.97	-9.41	24.58
298	10	10	40	0	37.81	39.75	20.94	69.29	-1.64	20.43
299	10	20	40	0	35.18	35.11	19.44	65.83	4.55	17.57
300	10	40	40	0	30.80	27.80	16.82	59.70	15.49	12.82
301	10	70	40	0	26.46	20.89	13.77	52.83	28.23	8.56
302	10	100	40	0	24.27	17.67	12.09	49.09	35.11	6.79
303	20	0	40	0	36.17	41.88	22.55	70.79	-13.49	19.84
304	20	10	40	0	32.99	35.98	20.69	66.51	-5.91	16.14
305	20	20	40	0	30.69	31.80	19.21	63.18	0.10	13.50
306	20	40	40	0	26.94	25.28	16.67	57.35	10.69	9.11
307	20	70	40	0	23.21	19.08	13.73	50.78	23.16	5.14
308	20	100	40	0	21.40	16.25	12.17	47.31	29.87	3.50
309	40	0	40	0	27.91	34.57	21.78	65.41	-20.16	12.07
310	40	10	40	0	25.66	29.99	20.13	61.65	-13.07	8.92
311	40	20	40	0	23.93	26.63	18.69	58.63	-7.46	6.75
312	40	40	40	0	21.17	21.40	16.36	53.39	2.56	3.01
313	40	70	40	0	18.37	16.35	13.64	47.43	14.31	-0.40
314	40	100	40	0	17.03	14.05	12.21	44.31	20.55	-1.78
315	70	0	40	0	20.09	27.10	20.83	59.07	-27.13	3.03
316	70	10	40	0	18.60	23.75	19.28	55.84	-20.77	0.69
317	70	20	40	0	17.52	21.34	18.07	53.32	-15.61	-1.02
318	70	40	40	0	15.80	17.60	16.12	49.01	-6.58	-3.96
319	70	70	40	0	13.90	13.76	13.67	43.88	4.04	-6.59
320	70	100	40	0	12.92	11.93	12.28	41.10	9.72	-7.55
321	100	0	40	0	16.24	23.15	20.18	55.22	-30.89	-2.28
322	100	10	40	0	15.22	20.61	18.83	52.52	-25.10	-4.08
323	100	20	40	0	14.42	18.69	17.73	50.32	-20.43	-5.45
324	100	40	40	0	13.12	15.60	15.87	46.45	-11.97	-7.77
325	100	70	40	0	11.65	12.44	13.63	41.91	-2.41	-9.87
326	100	100	40	0	10.94	10.95	12.39	39.50	2.87	-10.61
327	0	0	70	0	48.33	51.66	15.84	77.08	-4.03	45.11
328	0	10	70	0	43.76	43.97	14.73	72.21	4.03	39.46
329	0	20	70	0	40.55	38.70	13.89	68.54	10.22	35.31
330	0	40	70	0	35.45	30.54	12.43	62.12	21.46	28.29
331	0	70	70	0	30.44	22.93	10.68	55.00	34.42	21.27
332	0	100	70	0	27.97	19.43	9.70	51.18	41.41	17.86
333	10	0	70	0	40.13	45.18	15.82	73.01	-10.36	38.15
334	10	10	70	0	36.45	38.64	14.70	68.49	-2.67	33.15
335	10	20	70	0	33.86	34.14	13.90	65.07	3.31	29.32

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
336	10	40	70	0	29.75	27.07	12.44	59.04	14.41	22.93
337	10	70	70	0	25.68	20.45	10.78	52.34	27.13	16.36
338	10	100	70	0	23.62	17.34	9.77	48.68	34.03	13.32
339	20	0	70	0	34.65	40.54	15.66	69.85	-14.59	33.08
340	20	10	70	0	31.59	34.84	14.62	65.62	-7.13	28.41
341	20	20	70	0	29.46	30.91	13.83	62.43	-1.30	24.95
342	20	40	70	0	26.01	24.68	12.45	56.76	9.47	18.98
343	20	70	70	0	22.48	18.68	10.85	50.31	21.88	12.63
344	20	100	70	0	20.77	15.94	9.91	46.89	28.63	9.76
345	40	0	70	0	26.47	33.32	15.24	64.42	-21.66	24.76
346	40	10	70	0	24.41	29.01	14.33	60.79	-14.69	20.81
347	40	20	70	0	22.85	25.84	13.62	57.89	-9.08	17.70
348	40	40	70	0	20.33	20.88	12.38	52.82	0.96	12.39
349	40	70	70	0	17.72	16.00	10.85	46.98	12.83	6.88
350	40	100	70	0	16.43	13.75	9.96	43.87	19.17	4.38
351	70	0	70	0	18.91	26.12	14.97	58.15	-29.11	14.64
352	70	10	70	0	17.58	23.00	14.13	55.07	-22.83	11.48
353	70	20	70	0	16.58	20.69	13.47	52.61	-17.69	9.01
354	70	40	70	0	15.00	17.09	12.38	48.37	-8.58	4.73
355	70	70	70	0	13.21	13.36	10.96	43.30	2.20	0.21
356	70	100	70	0	12.37	11.66	10.13	40.67	7.93	-1.67
357	100	0	70	0	15.17	22.30	14.65	54.34	-33.30	8.87
358	100	10	70	0	14.24	19.91	13.88	51.74	-27.69	6.39
359	100	20	70	0	13.56	18.11	13.33	49.63	-22.90	4.25
360	100	40	70	0	12.39	15.18	12.27	45.88	-14.39	0.73
361	100	70	70	0	11.08	12.14	11.00	41.44	-4.53	-3.13
362	100	100	70	0	10.43	10.73	10.30	39.12	0.64	-4.92
363	0	0	100	0	47.34	50.66	12.07	76.47	-4.15	54.05
364	0	10	100	0	42.82	43.05	11.39	71.59	3.91	47.66
365	0	20	100	0	39.67	37.89	10.87	67.94	10.07	42.96
366	0	40	100	0	34.70	29.94	10.00	61.60	21.18	34.81
367	0	70	100	0	29.85	22.53	8.97	54.58	34.00	26.24
368	0	100	100	0	27.56	19.20	8.46	50.92	40.88	21.79
369	10	0	100	0	39.02	44.08	12.05	72.29	-10.72	46.90
370	10	10	100	0	35.54	37.77	11.41	67.85	-2.93	41.14
371	10	20	100	0	33.13	33.47	11.00	64.54	3.05	36.70
372	10	40	100	0	29.12	26.61	10.11	58.61	13.88	29.31
373	10	70	100	0	25.17	20.14	9.12	52.00	26.44	21.25
374	10	100	100	0	23.20	17.10	8.57	48.39	33.44	17.02
375	20	0	100	0	33.66	39.55	12.10	69.15	-14.98	41.36
376	20	10	100	0	30.79	34.10	11.46	65.04	-7.57	36.14
377	20	20	100	0	28.72	30.24	11.01	61.86	-1.68	32.05
378	20	40	100	0	25.30	24.11	10.14	56.20	8.88	25.04
379	20	70	100	0	21.92	18.33	9.18	49.89	21.13	17.40
380	20	100	100	0	20.34	15.68	8.68	46.55	28.02	13.44
381	40	0	100	0	25.65	32.50	11.99	63.76	-22.21	32.38
382	40	10	100	0	23.63	28.28	11.40	60.14	-15.30	27.87
383	40	20	100	0	22.13	25.22	10.98	57.29	-9.75	24.25

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
384	40	40	100	0	19.73	20.43	10.21	52.32	0.16	18.14
385	40	70	100	0	17.23	15.70	9.27	46.58	11.85	11.39
386	40	100	100	0	16.08	13.55	8.78	43.58	18.40	7.97
387	70	0	100	0	18.16	25.40	11.98	57.47	-30.05	21.55
388	70	10	100	0	16.95	22.45	11.43	54.50	-23.77	18.06
389	70	20	100	0	15.94	20.14	10.99	52.00	-18.70	15.11
390	70	40	100	0	14.46	16.68	10.30	47.86	-9.58	10.14
391	70	70	100	0	12.88	13.17	9.43	43.02	1.24	4.71
392	70	100	100	0	12.13	11.54	8.96	40.48	7.08	1.95
393	100	0	100	0	14.44	21.59	11.87	53.59	-34.42	15.20
394	100	10	100	0	13.62	19.35	11.38	51.09	-28.80	12.34
395	100	20	100	0	12.96	17.60	11.00	49.01	-24.06	9.91
396	100	40	100	0	11.86	14.78	10.34	45.33	-15.68	5.67
397	100	70	100	0	10.74	11.97	9.59	41.17	-5.86	0.98
398	100	100	100	0	10.17	10.58	9.08	38.86	-0.20	-1.24
399	0	0	0	20	37.13	38.38	29.29	68.30	0.40	3.74
400	0	10	0	20	33.72	33.18	26.24	64.31	6.11	1.95
401	0	20	0	20	31.33	29.55	23.93	61.26	10.71	0.83
402	0	40	0	20	27.44	23.81	19.95	55.90	18.99	-0.64
403	0	70	0	20	23.49	18.22	15.53	49.76	28.81	-1.22
404	0	100	0	20	21.49	15.58	13.15	46.42	34.10	-0.83
405	10	0	0	20	32.21	34.38	28.42	65.27	-3.37	-0.08
406	10	10	0	20	29.47	30.00	25.66	61.65	2.11	-1.62
407	10	20	0	20	27.42	26.77	23.45	58.76	6.54	-2.59
408	10	40	0	20	24.12	21.71	19.72	53.72	14.54	-3.91
409	10	70	0	20	20.77	16.77	15.53	47.97	23.97	-4.30
410	10	100	0	20	19.08	14.42	13.28	44.82	29.19	-3.92
411	20	0	0	20	28.55	31.25	27.59	62.72	-6.05	-3.08
412	20	10	0	20	26.18	27.35	24.99	59.29	-0.79	-4.49
413	20	20	0	20	24.46	24.55	22.92	56.64	3.43	-5.25
414	20	40	0	20	21.66	20.10	19.46	51.95	11.05	-6.41
415	20	70	0	20	18.77	15.68	15.48	46.55	20.15	-6.65
416	20	100	0	20	17.30	13.55	13.33	43.58	25.22	-6.21
417	40	0	0	20	23.04	26.41	26.29	58.43	-10.55	-8.28
418	40	10	0	20	21.26	23.31	23.92	55.39	-5.67	-9.27
419	40	20	0	20	19.94	21.02	22.05	52.98	-1.66	-9.89
420	40	40	0	20	17.83	17.45	18.90	48.82	5.44	-10.61
421	40	70	0	20	15.58	13.81	15.25	43.96	13.92	-10.54
422	40	100	0	20	14.43	12.04	13.27	41.28	18.56	-9.99
423	70	0	0	20	17.46	21.22	24.64	53.19	-15.36	-14.37
424	70	10	0	20	16.33	19.03	22.62	50.72	-10.97	-14.90
425	70	20	0	20	15.41	17.33	20.98	48.67	-7.39	-15.20
426	70	40	0	20	14.01	14.68	18.20	45.20	-0.93	-15.34
427	70	70	0	20	12.37	11.86	14.94	40.99	6.54	-14.87
428	70	100	0	20	11.59	10.53	13.22	38.78	10.63	-14.17
429	100	0	0	20	14.19	17.95	23.37	49.44	-18.07	-18.50
430	100	10	0	20	13.36	16.23	21.46	47.28	-13.99	-18.56
431	100	20	0	20	12.70	14.90	19.99	45.49	-10.63	-18.65

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
432	100	40	0	20	11.52	12.64	17.30	42.22	-4.71	-18.44
433	100	70	0	20	10.32	10.41	14.33	38.58	2.15	-17.48
434	100	100	0	20	9.75	9.41	12.87	36.75	5.55	-16.69
435	0	0	10	20	35.96	37.48	24.92	67.64	-0.59	10.02
436	0	10	10	20	32.74	32.47	22.56	63.73	5.17	7.65
437	0	20	10	20	30.51	29.01	20.75	60.79	9.73	6.17
438	0	40	10	20	26.85	23.45	17.58	55.54	18.15	3.89
439	0	70	10	20	23.05	17.99	13.99	49.48	28.08	2.22
440	0	100	10	20	21.14	15.41	12.05	46.20	33.42	1.92
441	10	0	10	20	31.21	33.66	24.33	64.69	-4.51	6.02
442	10	10	10	20	28.56	29.35	22.12	61.09	1.00	3.97
443	10	20	10	20	26.72	26.35	20.43	58.37	5.42	2.63
444	10	40	10	20	23.58	21.39	17.39	53.37	13.67	0.58
445	10	70	10	20	20.37	16.57	13.99	47.71	23.19	-0.86
446	10	100	10	20	18.69	14.22	12.10	44.54	28.41	-1.08
447	20	0	10	20	27.64	30.61	23.68	62.18	-7.29	2.87
448	20	10	10	20	25.44	26.89	21.65	58.87	-2.03	1.06
449	20	20	10	20	23.86	24.22	20.03	56.30	2.27	-0.10
450	20	40	10	20	21.21	19.86	17.21	51.68	10.11	-1.93
451	20	70	10	20	18.44	15.53	13.99	46.36	19.30	-3.19
452	20	100	10	20	17.01	13.42	12.22	43.39	24.43	-3.42
453	40	0	10	20	22.29	25.94	22.68	57.98	-12.02	-2.48
454	40	10	10	20	20.64	22.96	20.83	55.03	-7.08	-3.94
455	40	20	10	20	19.46	20.82	19.37	52.75	-3.03	-4.83
456	40	40	10	20	17.42	17.25	16.77	48.58	4.31	-6.24
457	40	70	10	20	15.24	13.64	13.79	43.71	12.95	-7.20
458	40	100	10	20	14.21	11.96	12.22	41.15	17.74	-7.27
459	70	0	10	20	16.89	20.92	21.39	52.86	-17.06	-8.81
460	70	10	10	20	15.77	18.72	19.76	50.36	-12.61	-9.77
461	70	20	10	20	15.03	17.19	18.50	48.49	-8.90	-10.30
462	70	40	10	20	13.64	14.52	16.23	44.97	-2.26	-11.20
463	70	70	10	20	12.14	11.80	13.64	40.90	5.37	-11.67
464	70	100	10	20	11.37	10.46	12.20	38.65	9.64	-11.51
465	100	0	10	20	13.65	17.66	20.27	49.08	-19.97	-13.03
466	100	10	10	20	12.89	16.01	18.83	46.99	-15.83	-13.61
467	100	20	10	20	12.31	14.74	17.65	45.28	-12.33	-13.96
468	100	40	10	20	11.21	12.53	15.50	42.05	-6.17	-14.45
469	100	70	10	20	10.08	10.34	13.11	38.44	0.88	-14.46
470	100	100	10	20	9.52	9.30	11.87	36.56	4.52	-14.16
471	0	0	20	20	34.95	36.63	21.76	67.00	-1.23	14.85
472	0	10	20	20	31.99	31.88	19.89	63.24	4.58	12.15
473	0	20	20	20	29.85	28.50	18.37	60.34	9.18	10.41
474	0	40	20	20	26.36	23.13	15.77	55.21	17.56	7.57
475	0	70	20	20	22.69	17.81	12.76	49.26	27.39	5.18
476	0	100	20	20	20.76	15.19	11.06	45.89	32.89	4.35
477	10	0	20	20	30.43	33.05	21.31	64.21	-5.31	10.92
478	10	10	20	20	27.87	28.83	19.49	60.63	0.28	8.51
479	10	20	20	20	26.12	25.90	18.09	57.94	4.79	6.89

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
480	10	40	20	20	23.14	21.15	15.65	53.11	12.84	4.25
481	10	70	20	20	19.99	16.37	12.78	47.46	22.40	2.00
482	10	100	20	20	18.43	14.10	11.19	44.37	27.80	1.33
483	20	0	20	20	26.92	30.05	20.73	61.70	-8.13	7.76
484	20	10	20	20	24.84	26.44	19.11	58.46	-2.80	5.55
485	20	20	20	20	23.32	23.84	17.81	55.93	1.48	4.05
486	20	40	20	20	20.77	19.59	15.48	51.37	9.34	1.68
487	20	70	20	20	18.08	15.34	12.77	46.09	18.55	-0.32
488	20	100	20	20	16.74	13.29	11.30	43.20	23.73	-1.01
489	40	0	20	20	21.68	25.49	19.96	57.55	-12.98	2.19
490	40	10	20	20	20.09	22.56	18.41	54.61	-7.93	0.46
491	40	20	20	20	18.93	20.44	17.22	52.33	-3.93	-0.81
492	40	40	20	20	17.03	17.02	15.11	48.28	3.48	-2.75
493	40	70	20	20	15.00	13.55	12.67	43.58	12.07	-4.36
494	40	100	20	20	13.92	11.82	11.28	40.93	16.94	-4.87
495	70	0	20	20	16.35	20.53	18.87	52.43	-18.21	-4.33
496	70	10	20	20	15.37	18.47	17.62	50.07	-13.68	-5.63
497	70	20	20	20	14.58	16.89	16.52	48.12	-10.04	-6.45
498	70	40	20	20	13.28	14.31	14.68	44.68	-3.34	-7.86
499	70	70	20	20	11.86	11.64	12.50	40.64	4.48	-8.94
500	70	100	20	20	11.16	10.36	11.31	38.48	8.87	-9.18
501	100	0	20	20	13.20	17.39	18.00	48.74	-21.35	-8.76
502	100	10	20	20	12.45	15.72	16.77	46.61	-17.11	-9.65
503	100	20	20	20	11.85	14.43	15.80	44.85	-13.70	-10.35
504	100	40	20	20	10.94	12.42	14.14	41.88	-7.44	-11.30
505	100	70	20	20	9.88	10.27	12.13	38.32	-0.15	-11.88
506	100	100	20	20	9.37	9.26	11.08	36.48	3.66	-11.95
507	0	0	40	20	33.36	35.27	16.74	65.96	-2.24	23.79
508	0	10	40	20	30.56	30.69	15.50	62.24	3.67	20.36
509	0	20	40	20	28.47	27.35	14.45	59.29	8.41	17.94
510	0	40	40	20	25.14	22.13	12.67	54.16	17.02	13.88
511	0	70	40	20	21.75	17.05	10.58	48.32	27.14	10.05
512	0	100	40	20	20.21	14.80	9.53	45.36	32.52	8.40
513	10	0	40	20	28.62	31.46	16.43	62.89	-6.54	19.23
514	10	10	40	20	26.37	27.57	15.27	59.50	-0.86	16.19
515	10	20	40	20	24.65	24.66	14.27	56.75	3.76	13.99
516	10	40	40	20	21.95	20.15	12.65	52.01	12.13	10.23
517	10	70	40	20	19.19	15.73	10.68	46.61	22.02	6.78
518	10	100	40	20	17.80	13.64	9.61	43.71	27.31	5.29
519	20	0	40	20	25.41	28.77	16.22	60.58	-9.53	15.75
520	20	10	40	20	23.44	25.27	15.07	57.34	-4.05	12.97
521	20	20	40	20	22.02	22.73	14.13	54.80	0.46	11.00
522	20	40	40	20	19.77	18.77	12.62	50.41	8.56	7.56
523	20	70	40	20	17.35	14.73	10.74	45.26	18.19	4.27
524	20	100	40	20	16.11	12.81	9.69	42.48	23.32	2.90
525	40	0	40	20	20.43	24.46	15.74	56.55	-14.61	9.96
526	40	10	40	20	18.97	21.65	14.67	53.66	-9.45	7.64
527	40	20	40	20	17.99	19.71	13.88	51.51	-5.25	6.00

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
528	40	40	40	20	16.24	16.42	12.47	47.52	2.34	2.99
529	40	70	40	20	14.40	13.09	10.73	42.90	11.40	0.22
530	40	100	40	20	13.47	11.51	9.78	40.43	16.18	-0.96
531	70	0	40	20	15.45	19.84	15.10	51.65	-20.04	3.09
532	70	10	40	20	14.58	17.90	14.22	49.37	-15.41	1.41
533	70	20	40	20	13.85	16.34	13.46	47.42	-11.53	0.07
534	70	40	40	20	12.71	13.92	12.23	44.12	-4.68	-2.19
535	70	70	40	20	11.42	11.35	10.69	40.16	3.50	-4.38
536	70	100	40	20	10.76	10.10	9.81	38.02	7.91	-5.21
537	100	0	40	20	12.75	17.17	14.54	48.47	-23.17	-0.97
538	100	10	40	20	12.12	15.64	13.80	46.49	-18.91	-2.43
539	100	20	40	20	11.55	14.35	13.05	44.73	-15.31	-3.45
540	100	40	40	20	10.73	12.42	12.01	41.88	-8.99	-5.41
541	100	70	40	20	9.82	10.38	10.66	38.51	-1.50	-7.12
542	100	100	40	20	9.27	9.31	9.83	36.57	2.48	-7.77
543	0	0	70	20	31.80	33.83	12.03	64.83	-2.94	34.10
544	0	10	70	20	29.20	29.52	11.28	61.24	2.82	30.14
545	0	20	70	20	27.30	26.43	10.75	58.44	7.45	26.98
546	0	40	70	20	24.31	21.56	9.78	53.56	16.05	21.68
547	0	70	70	20	21.16	16.72	8.62	47.91	26.11	16.00
548	0	100	70	20	19.71	14.56	8.00	45.03	31.50	13.33
549	10	0	70	20	27.34	30.31	11.95	61.92	-7.37	29.31
550	10	10	70	20	25.25	26.63	11.26	58.63	-1.82	25.71
551	10	20	70	20	23.65	23.90	10.72	55.99	2.68	22.83
552	10	40	70	20	21.21	19.66	9.83	51.45	11.12	17.87
553	10	70	70	20	18.67	15.45	8.75	46.25	20.94	12.65
554	10	100	70	20	17.38	13.44	8.10	43.41	26.32	10.18
555	20	0	70	20	24.21	27.68	11.85	59.60	-10.43	25.61
556	20	10	70	20	22.50	24.50	11.23	56.59	-5.08	22.29
557	20	20	70	20	21.24	22.19	10.77	54.22	-0.73	19.63
558	20	40	70	20	19.10	18.33	9.86	49.89	7.43	15.09
559	20	70	70	20	16.85	14.47	8.81	44.90	17.03	10.13
560	20	100	70	20	15.70	12.62	8.17	42.19	22.19	7.82
561	40	0	70	20	19.46	23.61	11.71	55.69	-15.74	19.28
562	40	10	70	20	18.18	21.05	11.08	53.00	-10.72	16.55
563	40	20	70	20	17.24	19.16	10.66	50.87	-6.59	14.21
564	40	40	70	20	15.66	16.06	9.85	47.06	1.02	10.26
565	40	70	70	20	13.92	12.82	8.85	42.49	10.16	5.84
566	40	100	70	20	13.08	11.32	8.28	40.12	14.99	3.82
567	70	0	70	20	14.73	19.29	11.44	51.02	-21.57	12.05
568	70	10	70	20	13.87	17.37	10.92	48.73	-17.02	9.67
569	70	20	70	20	13.24	15.94	10.50	46.90	-13.17	7.85
570	70	40	70	20	12.21	13.64	9.80	43.71	-6.26	4.63
571	70	70	70	20	11.02	11.15	8.89	39.83	2.02	1.08
572	70	100	70	20	10.44	9.98	8.40	37.80	6.41	-0.61
573	100	0	70	20	12.08	16.67	11.17	47.85	-25.00	7.39
574	100	10	70	20	11.50	15.22	10.73	45.93	-20.84	5.46
575	100	20	70	20	11.06	14.08	10.35	44.35	-17.22	3.93

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
576	100	40	70	20	10.29	12.20	9.73	41.54	-10.83	1.13
577	100	70	70	20	9.38	10.14	8.87	38.09	-3.17	-1.83
578	100	100	70	20	8.96	9.19	8.38	36.34	0.87	-3.08
579	0	0	100	20	30.90	32.94	9.51	64.12	-3.16	40.80
580	0	10	100	20	28.46	28.84	9.10	60.64	2.55	36.22
581	0	20	100	20	26.68	25.89	8.79	57.93	7.13	32.66
582	0	40	100	20	23.75	21.14	8.20	53.10	15.57	26.51
583	0	70	100	20	20.84	16.55	7.54	47.68	25.55	19.72
584	0	100	100	20	19.37	14.35	7.15	44.73	31.07	16.20
585	10	0	100	20	26.56	29.55	9.54	61.26	-7.73	35.80
586	10	10	100	20	24.67	26.10	9.20	58.13	-2.13	31.57
587	10	20	100	20	23.24	23.56	8.89	55.64	2.33	28.35
588	10	40	100	20	20.74	19.31	8.32	51.04	10.62	22.51
589	10	70	100	20	18.28	15.21	7.62	45.92	20.34	16.34
590	10	100	100	20	17.09	13.28	7.27	43.18	25.76	13.06
591	20	0	100	20	23.58	27.08	9.59	59.05	-10.83	31.79
592	20	10	100	20	21.95	24.02	9.24	56.11	-5.52	27.92
593	20	20	100	20	20.72	21.74	8.92	53.75	-1.14	24.97
594	20	40	100	20	18.61	17.95	8.37	49.44	6.87	19.56
595	20	70	100	20	16.48	14.24	7.71	44.57	16.39	13.69
596	20	100	100	20	15.45	12.49	7.36	41.99	21.65	10.63
597	40	0	100	20	18.86	23.04	9.52	55.11	-16.31	25.26
598	40	10	100	20	17.71	20.66	9.23	52.57	-11.34	21.86
599	40	20	100	20	16.75	18.76	8.92	50.40	-7.23	19.22
600	40	40	100	20	15.24	15.76	8.44	46.66	0.26	14.51
601	40	70	100	20	13.61	12.66	7.78	42.25	9.25	9.38
602	40	100	100	20	12.83	11.19	7.46	39.89	14.35	6.62
603	70	0	100	20	14.21	18.80	9.47	50.46	-22.34	17.39
604	70	10	100	20	13.46	17.03	9.16	48.30	-17.76	14.73
605	70	20	100	20	12.89	15.70	8.95	46.57	-14.05	12.52
606	70	40	100	20	11.90	13.45	8.52	43.43	-7.20	8.63
607	70	70	100	20	10.80	11.06	7.94	39.68	1.04	4.36
608	70	100	100	20	10.28	9.91	7.63	37.69	5.66	2.13
609	100	0	100	20	11.63	16.27	9.35	47.33	-25.94	12.42
610	100	10	100	20	11.15	14.95	9.13	45.57	-21.82	10.13
611	100	20	100	20	10.67	13.79	8.88	43.93	-18.24	8.20
612	100	40	100	20	9.93	11.94	8.43	41.13	-11.83	5.02
613	100	70	100	20	9.18	10.05	7.94	37.93	-4.18	1.34
614	100	100	100	20	8.77	9.09	7.63	36.16	0.09	-0.51
615	0	0	0	40	26.06	26.82	20.10	58.81	0.82	4.07
616	0	20	0	40	22.46	21.31	16.82	53.29	8.99	1.75
617	0	40	0	40	20.25	17.90	14.57	49.38	15.40	0.51
618	0	70	0	40	17.80	14.41	11.95	44.81	22.59	-0.19
619	0	100	0	40	16.48	12.61	10.45	42.17	26.74	-0.12
620	20	0	0	40	20.61	22.28	18.88	54.32	-4.14	-1.09
621	20	20	0	40	18.17	18.17	16.19	49.70	3.47	-2.94
622	20	40	0	40	16.46	15.40	14.15	46.18	9.39	-3.92
623	20	70	0	40	14.70	12.64	11.86	42.22	16.17	-4.39



Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
624	20	100	0	40	13.73	11.20	10.51	39.92	20.03	-4.19
625	40	0	0	40	17.05	19.19	18.09	50.91	-7.77	-5.24
626	40	20	0	40	15.26	15.95	15.74	46.90	-0.70	-6.66
627	40	40	0	40	14.02	13.76	13.95	43.88	4.81	-7.34
628	40	70	0	40	12.62	11.44	11.82	40.32	11.12	-7.53
629	40	100	0	40	11.86	10.25	10.60	38.28	14.67	-7.32
630	70	0	0	40	13.35	15.82	17.11	46.73	-11.73	-10.23
631	70	20	0	40	12.15	13.43	15.08	43.40	-5.37	-11.09
632	70	40	0	40	11.34	11.83	13.56	40.95	-0.46	-11.35
633	70	70	0	40	10.40	10.12	11.78	38.05	5.02	-11.32
634	70	100	0	40	9.83	9.16	10.66	36.30	8.16	-10.93
635	100	0	0	40	11.39	13.94	16.52	44.15	-13.95	-13.30
636	100	20	0	40	10.50	12.04	14.67	41.28	-8.11	-13.71
637	100	40	0	40	9.89	10.75	13.34	39.16	-3.68	-13.84
638	100	70	0	40	9.14	9.31	11.66	36.57	1.34	-13.53
639	100	100	0	40	8.69	8.52	10.66	35.05	4.15	-13.09
640	0	0	20	40	24.73	25.77	15.65	57.82	-0.49	12.37
641	0	20	20	40	21.46	20.58	13.44	52.48	7.81	8.86
642	0	40	20	40	19.42	17.39	11.97	48.75	13.98	6.54
643	0	70	20	40	17.21	14.10	10.18	44.37	21.28	4.53
644	0	100	20	40	16.18	12.53	9.23	42.04	25.59	3.72
645	20	0	20	40	19.64	21.60	14.95	53.60	-5.85	6.83
646	20	20	20	40	17.32	17.59	13.06	48.99	1.97	3.87
647	20	40	20	40	15.89	15.10	11.77	45.76	7.91	2.00
648	20	70	20	40	14.29	12.46	10.18	41.94	14.84	0.34
649	20	100	20	40	13.54	11.21	9.36	39.93	18.83	-0.39
650	40	0	20	40	16.24	18.69	14.47	50.32	-9.73	2.40
651	40	20	20	40	14.52	15.47	12.79	46.28	-2.40	-0.05
652	40	40	20	40	13.58	13.55	11.67	43.58	3.33	-1.48
653	40	70	20	40	12.34	11.37	10.25	40.20	9.74	-2.90
654	40	100	20	40	11.67	10.23	9.41	38.25	13.47	-3.44
655	70	0	20	40	12.72	15.51	13.89	46.32	-14.06	-2.98
656	70	20	20	40	11.58	13.12	12.42	42.95	-7.37	-4.76
657	70	40	20	40	10.99	11.71	11.47	40.76	-2.22	-5.73
658	70	70	20	40	10.14	10.04	10.21	37.91	3.61	-6.72
659	70	100	20	40	9.64	9.14	9.46	36.26	6.84	-7.06
660	100	0	20	40	10.82	13.69	13.50	43.78	-16.46	-6.31
661	100	20	20	40	10.00	11.79	12.19	40.89	-10.29	-7.64
662	100	40	20	40	9.59	10.68	11.35	39.04	-5.56	-8.33
663	100	70	20	40	8.88	9.25	10.17	36.45	-0.25	-9.08
664	100	100	20	40	8.51	8.51	9.49	35.02	2.71	-9.29
665	0	0	40	40	23.73	24.94	12.55	57.01	-1.36	19.12
666	0	20	40	40	21.00	20.32	11.25	52.19	6.90	14.63
667	0	40	40	40	19.18	17.27	10.23	48.60	13.43	11.65
668	0	70	40	40	17.15	14.10	8.98	44.38	20.93	8.64
669	0	100	40	40	16.03	12.46	8.22	41.93	25.24	7.17
670	20	0	40	40	18.98	21.11	12.21	53.07	-6.86	13.29
671	20	20	40	40	17.05	17.51	11.06	48.90	0.89	9.54

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
672	20	40	40	40	15.67	15.03	10.15	45.68	7.01	6.88
673	20	70	40	40	14.13	12.42	8.98	41.88	14.13	4.30
674	20	100	40	40	13.35	11.11	8.33	39.77	18.25	3.04
675	40	0	40	40	15.73	18.35	11.96	49.92	-10.92	8.61
676	40	20	40	40	14.28	15.43	10.91	46.21	-3.63	5.37
677	40	40	40	40	13.24	13.40	10.07	43.36	2.11	3.14
678	40	70	40	40	12.03	11.20	8.99	39.92	8.80	0.88
679	40	100	40	40	11.43	10.11	8.39	38.05	12.66	-0.17
680	70	0	40	40	12.35	15.33	11.57	46.08	-15.51	3.13
681	70	20	40	40	11.39	13.14	10.70	42.97	-8.88	0.44
682	70	40	40	40	10.71	11.63	9.99	40.62	-3.72	-1.33
683	70	70	40	40	9.91	9.97	9.07	37.79	2.31	-3.06
684	70	100	40	40	9.42	9.06	8.51	36.11	5.69	-3.94
685	100	0	40	40	10.52	13.60	11.34	43.65	-18.15	-0.38
686	100	20	40	40	9.82	11.85	10.55	40.97	-12.09	-2.54
687	100	40	40	40	9.32	10.62	9.94	38.94	-7.34	-4.05
688	100	70	40	40	8.70	9.25	9.13	36.46	-1.91	-5.57
689	100	100	40	40	8.32	8.48	8.58	34.96	1.29	-6.19
690	0	0	70	40	23.01	24.35	9.65	56.44	-2.11	27.08
691	0	20	70	40	20.31	19.79	8.88	51.60	6.11	21.43
692	0	40	70	40	18.63	16.94	8.40	48.19	12.36	17.27
693	0	70	70	40	16.71	13.88	7.65	44.06	19.87	13.04
694	0	100	70	40	15.78	12.39	7.24	41.82	24.25	10.81
695	20	0	70	40	18.35	20.64	9.52	52.56	-7.90	20.83
696	20	20	70	40	16.41	17.03	8.82	48.30	-0.07	15.96
697	20	40	70	40	15.31	14.84	8.43	45.42	5.99	12.42
698	20	70	70	40	13.85	12.31	7.74	41.71	13.12	8.64
699	20	100	70	40	13.16	11.08	7.35	39.72	17.27	6.74
700	40	0	70	40	15.19	17.98	9.46	49.47	-12.18	15.73
701	40	20	70	40	13.73	15.04	8.80	45.69	-4.77	11.51
702	40	40	70	40	12.91	13.23	8.42	43.11	1.01	8.47
703	40	70	70	40	11.81	11.13	7.78	39.80	7.81	5.16
704	40	100	70	40	11.27	10.09	7.42	38.00	11.66	3.52
705	70	0	70	40	11.85	14.99	9.32	45.63	-17.06	9.59
706	70	20	70	40	10.96	12.88	8.79	42.58	-10.26	6.20
707	70	40	70	40	10.44	11.51	8.44	40.43	-4.88	3.77
708	70	70	70	40	9.69	9.89	7.90	37.65	1.17	1.01
709	70	100	70	40	9.34	9.10	7.57	36.18	4.70	-0.23
710	100	0	70	40	10.06	13.31	9.22	43.22	-19.88	5.78
711	100	20	70	40	9.41	11.60	8.74	40.58	-13.71	2.92
712	100	40	70	40	9.03	10.49	8.44	38.70	-8.69	0.78
713	100	70	70	40	8.47	9.16	7.95	36.30	-3.15	-1.50
714	100	100	70	40	8.21	8.50	7.65	35.01	0.06	-2.57
715	0	0	100	40	22.40	23.78	8.03	55.87	-2.40	31.93
716	0	20	100	40	20.08	19.69	7.64	51.48	5.52	25.88
717	0	40	100	40	18.47	16.88	7.31	48.11	11.88	21.37
718	0	70	100	40	16.67	13.91	6.85	44.10	19.46	16.38
719	0	100	100	40	15.67	12.33	6.56	41.73	24.03	13.56

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
720	20	0	100	40	17.97	20.30	8.06	52.17	-8.22	25.43
721	20	20	100	40	16.25	16.97	7.68	48.22	-0.64	20.10
722	20	40	100	40	15.08	14.71	7.35	45.24	5.41	16.25
723	20	70	100	40	13.76	12.30	6.94	41.68	12.64	11.83
724	20	100	100	40	12.96	10.94	6.64	39.48	16.94	9.31
725	40	0	100	40	14.84	17.68	8.06	49.10	-12.63	20.14
726	40	20	100	40	13.66	15.09	7.76	45.75	-5.52	15.54
727	40	40	100	40	12.77	13.21	7.46	43.07	0.22	12.08
728	40	70	100	40	11.70	11.12	7.03	39.78	7.10	8.18
729	40	100	100	40	11.08	9.99	6.76	37.82	11.14	5.92
730	70	0	100	40	11.62	14.83	8.04	45.40	-17.64	13.83
731	70	20	100	40	10.83	12.84	7.74	42.53	-11.05	10.05
732	70	40	100	40	10.19	11.38	7.48	40.21	-5.89	7.08
733	70	70	100	40	9.51	9.83	7.15	37.53	0.25	3.80
734	70	100	100	40	9.06	8.92	6.86	35.82	3.94	2.06
735	100	0	100	40	9.87	13.19	8.04	43.05	-20.65	9.76
736	100	20	100	40	9.29	11.61	7.78	40.58	-14.65	6.51
737	100	40	100	40	8.84	10.42	7.55	38.58	-9.80	3.99
738	100	70	100	40	8.27	9.07	7.18	36.11	-4.09	1.23
739	100	100	100	40	7.97	8.35	6.98	34.70	-0.78	-0.37
740	0	0	0	60	17.76	18.19	13.37	49.72	1.19	4.27
741	0	20	0	60	15.81	15.12	11.62	45.80	7.29	2.50
742	0	40	0	60	14.63	13.23	10.44	43.10	11.93	1.50
743	0	70	0	60	13.36	11.25	9.07	40.00	17.34	0.74
744	0	100	0	60	12.81	10.33	8.38	38.43	20.52	0.54
745	20	0	0	60	14.80	15.79	12.89	46.70	-2.52	0.38
746	20	20	0	60	13.33	13.31	11.33	43.22	3.27	-1.08
747	20	40	0	60	12.53	11.86	10.35	40.99	7.63	-1.86
748	20	70	0	60	11.58	10.24	9.12	38.28	12.75	-2.40
749	20	100	0	60	11.14	9.46	8.46	36.85	15.70	-2.48
750	40	0	0	60	12.70	14.01	12.52	44.25	-5.30	-2.79
751	40	20	0	60	11.63	12.06	11.18	41.30	0.08	-3.92
752	40	40	0	60	11.04	10.87	10.30	39.35	4.22	-4.51
753	40	70	0	60	10.26	9.48	9.14	36.89	8.94	-4.85
754	40	100	0	60	9.96	8.86	8.59	35.72	11.64	-4.92
755	70	0	0	60	10.46	12.03	12.08	41.27	-8.41	-6.66
756	70	20	0	60	9.73	10.57	10.94	38.85	-3.63	-7.43
757	70	40	0	60	9.34	9.68	10.17	37.26	0.08	-7.69
758	70	70	0	60	8.79	8.60	9.19	35.21	4.26	-7.92
759	70	100	0	60	8.55	8.09	8.65	34.17	6.69	-7.82
760	100	0	0	60	9.20	10.88	11.79	39.37	-10.17	-9.09
761	100	20	0	60	8.67	9.72	10.80	37.33	-5.88	-9.61
762	100	40	0	60	8.38	8.99	10.10	35.97	-2.55	-9.70
763	100	70	0	60	7.92	8.07	9.17	34.13	1.26	-9.73
764	100	100	0	60	7.76	7.68	8.77	33.31	3.37	-9.72
765	0	0	20	60	17.19	17.81	11.00	49.27	0.09	10.37
766	0	20	20	60	15.70	15.19	9.99	45.89	6.23	7.77
767	0	40	20	60	14.64	13.36	9.19	43.30	11.09	6.02

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
768	0	70	20	60	13.41	11.38	8.18	40.22	16.76	4.38
769	0	100	20	60	12.68	10.28	7.54	38.33	20.08	3.60
770	20	0	20	60	14.41	15.60	10.76	46.44	-3.83	6.24
771	20	20	20	60	13.29	13.48	9.89	43.48	1.93	3.96
772	20	40	20	60	12.45	11.94	9.13	41.12	6.49	2.47
773	20	70	20	60	11.54	10.33	8.24	38.43	11.80	1.08
774	20	100	20	60	10.98	9.40	7.64	36.75	14.97	0.46
775	40	0	20	60	12.36	13.88	10.54	44.07	-6.78	2.83
776	40	20	20	60	11.52	12.16	9.77	41.47	-1.44	0.86
777	40	40	20	60	10.93	10.95	9.14	39.50	2.79	-0.36
778	40	70	20	60	10.17	9.54	8.29	37.00	7.79	-1.60
779	40	100	20	60	9.78	8.80	7.79	35.60	10.75	-2.09
780	70	0	20	60	10.22	12.02	10.32	41.25	-10.12	-1.29
781	70	20	20	60	9.64	10.71	9.64	39.09	-5.38	-2.78
782	70	40	20	60	9.23	9.78	9.11	37.44	-1.59	-3.81
783	70	70	20	60	8.67	8.65	8.33	35.30	2.89	-4.68
784	70	100	20	60	8.33	8.01	7.84	34.01	5.47	-5.05
785	100	0	20	60	9.04	10.95	10.15	39.49	-12.04	-3.79
786	100	20	20	60	8.57	9.84	9.53	37.55	-7.64	-5.07
787	100	40	20	60	8.25	9.05	9.05	36.08	-4.21	-5.94
788	100	70	20	60	7.81	8.12	8.37	34.23	-0.14	-6.67
789	100	100	20	60	7.54	7.59	7.93	33.11	2.15	-6.94
790	0	0	40	60	16.97	17.70	9.45	49.13	-0.58	15.17
791	0	20	40	60	15.35	14.95	8.66	45.57	5.64	11.80
792	0	40	40	60	14.36	13.21	8.14	43.07	10.40	9.42
793	0	70	40	60	13.27	11.34	7.43	40.14	16.13	7.14
794	0	100	40	60	12.75	10.40	7.06	38.55	19.59	5.95
795	20	0	40	60	14.12	15.44	9.28	46.23	-4.72	10.75
796	20	20	40	60	12.95	13.25	8.57	43.13	1.15	7.93
797	20	40	40	60	12.27	11.87	8.14	41.01	5.78	5.88
798	20	70	40	60	11.43	10.30	7.51	38.38	11.25	3.80
799	20	100	40	60	11.02	9.51	7.14	36.95	14.44	2.84
800	40	0	40	60	12.15	13.82	9.19	43.98	-7.88	7.19
801	40	20	40	60	11.24	11.99	8.54	41.20	-2.35	4.74
802	40	40	40	60	10.77	10.90	8.17	39.41	2.00	3.00
803	40	70	40	60	10.07	9.53	7.56	36.98	7.10	1.21
804	40	100	40	60	9.73	8.83	7.21	35.66	10.10	0.33
805	70	0	40	60	10.00	11.97	9.06	41.16	-11.49	2.80
806	70	20	40	60	9.38	10.57	8.50	38.85	-6.44	0.83
807	70	40	40	60	9.07	9.72	8.16	37.34	-2.47	-0.54
808	70	70	40	60	8.62	8.69	7.66	35.37	2.10	-1.99
809	70	100	40	60	8.33	8.10	7.32	34.19	4.74	-2.67
810	100	0	40	60	8.80	10.86	8.94	39.35	-13.50	0.09
811	100	20	40	60	8.34	9.73	8.46	37.36	-8.86	-1.60
812	100	40	40	60	8.10	9.01	8.14	36.01	-5.19	-2.74
813	100	70	40	60	7.72	8.12	7.65	34.22	-1.00	-3.94
814	100	100	40	60	7.51	7.64	7.37	33.23	1.34	-4.53
815	0	0	70	60	16.56	17.42	7.74	48.78	-1.29	20.84

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
816	0	20	70	60	15.32	15.05	7.37	45.70	4.84	16.96
817	0	40	70	60	14.35	13.30	7.03	43.21	9.77	14.06
818	0	70	70	60	13.26	11.40	6.58	40.24	15.66	10.90
819	0	100	70	60	12.63	10.34	6.27	38.45	19.24	9.15
820	20	0	70	60	13.90	15.36	7.71	46.13	-5.60	16.38
821	20	20	70	60	12.97	13.43	7.39	43.40	0.17	12.95
822	20	40	70	60	12.23	11.97	7.08	41.17	4.81	10.37
823	20	70	70	60	11.38	10.37	6.65	38.50	10.37	7.57
824	20	100	70	60	10.88	9.46	6.36	36.86	13.77	6.02
825	40	0	70	60	11.99	13.83	7.71	43.98	-9.00	12.68
826	40	20	70	60	11.25	12.18	7.40	41.51	-3.52	9.65
827	40	40	70	60	10.70	10.97	7.13	39.53	0.89	7.32
828	40	70	70	60	9.99	9.57	6.70	37.07	6.09	4.90
829	40	100	70	60	9.64	8.86	6.48	35.71	9.19	3.51
830	70	0	70	60	9.88	12.03	7.69	41.26	-12.81	8.06
831	70	20	70	60	9.37	10.74	7.42	39.15	-7.82	5.48
832	70	40	70	60	9.00	9.82	7.21	37.53	-3.88	3.55
833	70	70	70	60	8.47	8.69	6.82	35.38	0.78	1.46
834	70	100	70	60	8.16	8.05	6.57	34.08	3.67	0.29
835	100	0	70	60	8.75	11.02	7.71	39.61	-15.05	5.14
836	100	20	70	60	8.32	9.92	7.43	37.71	-10.54	2.94
837	100	40	70	60	8.03	9.13	7.23	36.24	-6.83	1.22
838	100	70	70	60	7.61	8.17	6.88	34.34	-2.54	-0.57
839	100	100	70	60	7.39	7.65	6.68	33.25	0.07	-1.60
840	0	0	100	60	16.46	17.37	6.84	48.72	-1.60	24.37
841	0	20	100	60	15.06	14.84	6.56	45.41	4.57	19.89
842	0	40	100	60	14.16	13.18	6.40	43.03	9.38	16.49
843	0	70	100	60	13.15	11.36	6.12	40.18	15.24	12.83
844	0	100	100	60	12.63	10.40	5.97	38.56	18.78	10.74
845	20	0	100	60	13.81	15.35	6.87	46.10	-6.11	19.76
846	20	20	100	60	12.75	13.26	6.61	43.16	-0.23	15.79
847	20	40	100	60	12.10	11.90	6.47	41.05	4.41	12.76
848	20	70	100	60	11.33	10.38	6.21	38.51	9.96	9.54
849	20	100	100	60	10.93	9.56	6.07	37.05	13.36	7.65
850	40	0	100	60	11.88	13.79	6.91	43.93	-9.54	15.84
851	40	20	100	60	11.04	12.02	6.66	41.25	-3.99	12.27
852	40	40	100	60	10.62	10.96	6.55	39.51	0.42	9.77
853	40	70	100	60	9.97	9.61	6.28	37.12	5.68	6.84
854	40	100	100	60	9.65	8.92	6.15	35.82	8.80	5.17
855	70	0	100	60	9.77	12.01	6.98	41.24	-13.65	10.88
856	70	20	100	60	9.19	10.64	6.75	38.96	-8.49	7.96
857	70	40	100	60	8.91	9.78	6.64	37.45	-4.36	5.83
858	70	70	100	60	8.44	8.70	6.39	35.40	0.48	3.38
859	70	100	100	60	8.23	8.17	6.28	34.33	3.24	2.03
860	100	0	100	60	8.61	11.00	7.04	39.58	-16.08	7.77
861	100	20	100	60	8.18	9.86	6.83	37.59	-11.28	5.25
862	100	40	100	60	7.97	9.14	6.72	36.26	-7.47	3.41
863	100	70	100	60	7.57	8.19	6.47	34.37	-3.00	1.25

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
864	100	100	100	60	7.40	7.73	6.37	33.42	-0.53	0.05
865	0	0	0	80	12.70	12.93	9.33	42.66	1.53	4.42
866	0	40	0	80	11.22	10.33	7.92	38.43	9.50	2.26
867	0	70	0	80	10.65	9.26	7.26	36.49	13.70	1.54
868	0	100	0	80	10.24	8.61	6.79	35.23	15.99	1.35
869	40	0	0	80	9.88	10.70	9.10	39.07	-3.38	-0.96
870	40	40	0	80	9.03	8.93	8.01	35.85	3.54	-2.52
871	40	70	0	80	8.65	8.13	7.43	34.25	7.20	-3.00
872	40	100	0	80	8.32	7.60	6.97	33.14	9.18	-3.04
873	70	0	0	80	8.60	9.64	9.03	37.18	-5.87	-3.97
874	70	40	0	80	7.96	8.22	8.08	34.44	0.29	-5.21
875	70	70	0	80	7.66	7.55	7.56	33.03	3.58	-5.61
876	70	100	0	80	7.43	7.13	7.14	32.11	5.39	-5.51
877	100	0	0	80	7.87	9.01	8.98	36.01	-7.29	-5.81
878	100	40	0	80	7.34	7.79	8.12	33.55	-1.69	-6.90
879	100	70	0	80	7.09	7.21	7.62	32.28	1.31	-7.16
880	100	100	0	80	6.87	6.82	7.21	31.39	2.96	-7.03
881	0	0	40	80	12.68	13.13	7.44	42.96	0.10	11.98
882	0	40	40	80	11.34	10.57	6.70	38.85	8.52	7.97
883	0	70	40	80	10.77	9.44	6.30	36.82	13.10	6.24
884	0	100	40	80	10.35	8.76	6.00	35.51	15.60	5.35
885	40	0	40	80	9.87	10.97	7.46	39.54	-5.47	5.99
886	40	40	40	80	9.01	9.11	6.83	36.19	1.92	2.83
887	40	70	40	80	8.63	8.25	6.47	34.49	5.99	1.45
888	40	100	40	80	8.36	7.73	6.19	33.42	8.25	0.85
889	70	0	40	80	8.54	9.90	7.49	37.66	-8.44	2.64
890	70	40	40	80	7.93	8.42	6.97	34.84	-1.74	-0.09
891	70	70	40	80	7.58	7.65	6.58	33.25	1.93	-1.20
892	70	100	40	80	7.35	7.20	6.32	32.27	3.98	-1.69
893	100	0	40	80	7.76	9.24	7.51	36.45	-10.16	0.47
894	100	40	40	80	7.22	7.91	6.96	33.80	-3.95	-1.84
895	100	70	40	80	6.98	7.30	6.67	32.49	-0.59	-2.87
896	100	100	40	80	6.79	6.91	6.42	31.60	1.27	-3.31
897	0	0	70	80	12.80	13.36	6.60	43.30	-0.56	16.10
898	0	40	70	80	11.50	10.80	6.11	39.25	7.95	11.25
899	0	70	70	80	10.93	9.63	5.85	37.18	12.75	8.93
900	0	100	70	80	10.48	8.89	5.61	35.78	15.41	7.64
901	40	0	70	80	9.93	11.19	6.67	39.90	-6.56	9.90
902	40	40	70	80	9.09	9.30	6.26	36.56	1.01	5.95
903	40	70	70	80	8.72	8.43	6.03	34.87	5.22	4.10
904	40	100	70	80	8.40	7.85	5.80	33.66	7.62	3.09
905	70	0	70	80	8.54	10.06	6.72	37.95	-9.71	6.33
906	70	40	70	80	7.90	8.51	6.33	35.02	-2.81	2.99
907	70	70	70	80	7.58	7.75	6.10	33.46	0.96	1.34
908	70	100	70	80	7.36	7.30	5.91	32.49	3.15	0.56
909	100	0	70	80	7.76	9.43	6.78	36.81	-11.72	4.10
910	100	40	70	80	7.23	8.07	6.42	34.12	-5.15	1.03
911	100	70	70	80	6.96	7.39	6.18	32.69	-1.66	-0.38

Table 4 (continued)

ID#	C	M	Y	K	X	Y	Z	L*	a*	b*
912	100	100	70	80	6.73	6.95	5.96	31.68	0.39	-1.08
913	0	0	100	80	12.96	13.59	6.11	43.63	-0.91	18.86
914	0	40	100	80	11.60	10.94	5.76	39.48	7.71	13.29
915	0	70	100	80	11.03	9.75	5.57	37.40	12.56	10.64
916	0	100	100	80	10.59	9.00	5.39	35.99	15.36	9.08
917	40	0	100	80	9.99	11.34	6.20	40.15	-7.20	12.43
918	40	40	100	80	9.18	9.45	5.94	36.83	0.60	7.91
919	40	70	100	80	8.75	8.49	5.73	34.98	4.96	5.70
920	40	100	100	80	8.42	7.89	5.55	33.75	7.41	4.45
921	70	0	100	80	8.53	10.15	6.25	38.11	-10.48	8.66
922	70	40	100	80	7.91	8.60	6.00	35.20	-3.40	4.81
923	70	70	100	80	7.59	7.82	5.82	33.60	0.52	2.88
924	70	100	100	80	7.36	7.34	5.66	32.57	2.78	1.86
925	100	0	100	80	7.76	9.54	6.34	37.00	-12.59	6.34
926	100	40	100	80	7.19	8.11	6.06	34.20	-5.95	2.82
927	100	70	100	80	6.95	7.46	5.90	32.83	-2.33	1.15
928	100	100	100	80	6.76	7.03	5.75	31.88	-0.20	0.26

## Bibliography

1. ANSI/CGATS.4, *Graphic technology —Graphic arts reflection densitometry measurements — Terms, equations, image elements and procedures*
2. ISO 3664, *Viewing conditions for graphic technology and photography*
3. ISO 12640-1, *Graphic technology — Prepress digital data exchange — Standard colour image data (SCID)*. (This standard includes a set of image files in digital form.)