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中华人民共和国国家标准

GB/T 34964—2017

喷墨打印机打印速度测试方法

Test method for printing speed of ink-jet printers

2017-11-01 发布　　2018-05-01 实施

中华人民共和国国家质量监督检验检疫总局
中国国家标准化管理委员会　发布

目　　次

前　言

本标准按照 GB/T 1.1—2009 给出的规则起草。

本标准由全国信息技术标准化技术委员会(SAC/TC 28)提出并归口。

本标准起草单位:天津复印技术研究所、中国电子技术标准化研究院、爱普生(中国)有限公司、珠海天威飞马打印耗材有限公司。

本标准主要起草人:马燕、陈海、李易昂、尹欣然、张希平。

喷墨打印机打印速度测试方法

1 范围

本标准规定了喷墨打印机打印速度的测试方法。

本标准适用于 A3、A4 幅面的喷墨打印机和喷墨多功能一体机(以下简称打印机)的速度测试。

2 规范性引用文件

下列文件对于本文件的应用是必不可少的。凡是注日期的引用文件,仅注日期的版本适用于本文件。凡是不注日期的引用文件,其最新版本(包括所有的修改单)适用于本文件。

GB/T 18721—2002 印刷技术 印前数据交换 CMYK 标准彩色图像数据(CMYK/SCID)(idt ISO 12640:1997)

GB/T 24988 复印纸

3 术语和定义

下列术语和定义适用于本文件。

3.1

首套打印时间 first set out time;FSOT

从发出打印指令开始,至首套打印品(标准测试版样张)完全输出所需的时间。

注 1:单位为秒(s)。

注 2:首套打印时间等同于 ISO/IEC 24734:2014 的 FSOT。

3.2

多页打印速度 multi-pages printing speed

打印机每分钟打印不同文件格式的标准测试版的页数。

注 1:单位为页每分钟(ppm)。

注 2:多页打印速度等同于 ISO/IEC 24734:2014 的 ESAT。

3.3

首页打印时间 first print out time

从发出打印指令开始,至首页打印品(标准测试版样张)完全输出所需的时间。

注:单位为秒(s)。

3.4

连续打印速度 continuous printing speed

打印机每分钟打印标准测试版的页数。

注:单位为页每分钟(ppm)。

3.5

照片打印时间 photo printing time

打印机打印一张标准测试照片所需的时间。

注:单位为秒(s)。

3.6

末套(*N* 套)打印时间　last set out time

从发出打印指令开始,至末套(第 *N* 套)打印品(标准测试版样张)完全输出所需的时间。

注:单位为秒(s)。

4　测试条件

4.1　环境条件

测试应在打印机制造商推荐的测试环境条件下进行,如果没有规定,按以下环境条件进行:

——温度:18 ℃～25 ℃;

——相对湿度:30%～70%;

——大气压:86 kPa～106 kPa。

4.2　测试版

4.2.1　附录 A 规定的 A4 幅面办公用测试版,包括 4 页的文档文件、4 页的电子表格文件和 4 页的版式文件各 1 个,用于多页打印速度和首套打印时间的测试。

4.2.2　附录 B 规定的测试版用于单色打印机连续打印速度和首页打印时间的测试。

注:附录 B 等同于 GB/T 16685—2008 附录 B 的测试版 B。

4.2.3　附录 C 规定的测试版用于彩色打印机连续打印速度和首页打印时间的测试。

注:附录 C 的内容和附录 B 相同,从头到尾的字符彩色依次为 C、M、Y、K。

4.2.4　GB/T 18721—2002 规定的 N2 或 N5 测试版,用于照片打印时间的测试。

4.3　打印机设置

4.3.1　按照打印机使用说明书安装并设置打印机,打印机和计算机采用直连方式连接。

4.3.2　对于彩色打印机,应选择彩色模式进行测试,黑白模式的测试可根据用户需求选择。当选择黑白模式时,打印驱动设置为黑白单色打印模式。在标称测试数据时要说明打印色彩。

注:黑白单色打印模式在打印驱动中,可表示为"黑白打印""灰度打印"和"只打印黑色"等。

4.3.3　在测试"连续打印速度"和"照片打印时间"时,应选择默认模式的打印质量,其他模式的打印质量可根据用户需求进行设置,例如可设置为草稿模式、经济模式、最优模式等,在标称测试数据时要说明打印质量。

4.3.4　在测试"首套打印时间""多页打印速度"时,具有双面打印功能的打印机,不仅要进行"单面打印"测试,还有进行"双面打印"测试,在标称测试数据时要进行说明。

4.4　打印用纸

测试采用符合 GB/T 24988 规定的 70 g/m^2～80 g/m^2 的 A4 幅面复印纸。照片打印时间的测试宜采用 102 mm×152 mm 的 200 g/m^2～250 g/m^2 照片纸,若采用其他规格的打印用纸,打印用纸应符合相关标准的规定。

4.5　计时器

计时器应能精确到 0.01 s。

5　测试方法

5.1　测试前的准备

5.1.1　测试用打印机和纸张应在测试环境下至少放置 2 h。

5.1.2 按照 4.3.1 的要求安装并设置好打印机。将打印机直连到测试用计算机上。计算机上准备好相应的电子测试版及打印测试版的软件，确认打印机处于打印就绪状态。

注：在测试过程中如遇到打印机清洗打印头，此时的测试结果会出现明显异常，测试数据无效。

5.2 测试过程

5.2.1 首套打印时间

应按照如下步骤分别测试打印机打印文档文件、电子表格文件和版式文件的打印时间：

a) 打开测试文件，选择测试用打印机；打印纸张选择 A4，纸张类型选择普通纸，缩放方式选择无缩放，并按照 4.3 的内容进行相应设置；
b) 打印套数设置为 1；
c) 在打印机处于就绪状态时，按下“打印”键的同时启动计时器开始计时；
d) 当整套文件完全输出时，记录打印时间 FSOT；
e) 重复 b)～d)，记录第 2 次的打印时间 FSOT；
f) 根据 5.3 计算两次打印时间 FSOT 的一致性，如果一致性在±5%之内，结束测试，否则重复 b)～d)进行第三次测试，并计算第 3 次的打印时间 FSOT；
g) 计算两次或三次打印时间的平均值，作为该测试文件的打印时间；
h) 计算文档文件、电子表格文件和版式文件的打印速度的平均值，即为首套打印时间。按 5.4 的规则表示结果值。

5.2.2 多页打印速度

应按照如下步骤分别测试打印机打印文档文件、电子表格文件和版式文件的打印速度：

a) 打开测试文件，进入打印功能，选择测试用打印机；纸张大小选择 A4，纸张类型选择普通纸，缩放方式选择无缩放，选择“逐份打印”，并按照 4.3 的内容进行相应设置。
b) 确定打印套数。打印套数 N 的确定原则是，N 为满足 N 套打印时间减去首套打印时间不小于 30 s 的最小取值。可由 $N=N_0$（N_0 应大于或等于 2，可由相关人员依据经验进行确定）开始确定打印套数，当 $N=N_0$ 不能满足末套打印时间减去首套打印时间不小于 30 s 的要求时，按式(1)计算打印套数 N：

$$N=\mathrm{Roundup}\left[\frac{30\times(N_0-1)}{\mathrm{LSOT}_0-\mathrm{FSOT}_0}+1\right] \quad \cdots\cdots(1)$$

式中：

N ——打印套数；

Roundup ——向上取整函数；

FSOT_0 ——打印 N_0 套时，完成第 1 套打印品所需的打印时间，单位为秒(s)；

LSOT_0 ——完成 N_0 套打印品所需的打印时间，单位为秒(s)。

c) 设置打印套数为 N。
d) 在打印机处于就绪状态时，按下“打印”键的同时启动计时器开始计时。
e) 当首套文件完全输出时，记录首套打印时间 FSOT_N。
f) 继续计时，当第 N 套文件完全输出时，结束计时，记录打印末套(N 套)文件的时间 LSOT_N。
g) 按照式(2)计算打印速度 p：

$$p=\frac{240\times(N-1)}{\mathrm{LSOT}_N-\mathrm{FSOT}_N} \quad \cdots\cdots(2)$$

式中：

p ——打印速度，单位为页每分钟(ppm)；

$FSOT_N$ ——打印 N 套时的首套打印时间，单位为秒(s)；

$LSOT_N$ ——打印 N 套时的末套打印时间，单位为秒(s)。

h) 重复 c)～g)，计算出第 2 次的打印速度 p。

i) 根据 5.3 计算两次打印速度的一致性，如果一致性在±5%之内，结束测试，否则重复 c)～g)进行第三次测试，并计算第 3 次的打印速度 p。

j) 计算两次或三次的打印速度的平均值，作为该测试文件的打印速度。

k) 计算文档、电子表格文件和版式文件的打印速度的平均值，即为多页打印速度。按 5.4 的规则表示结果值。

5.2.3 首页打印时间

应按照如下步骤测试打印机的首页打印时间：

a) 打开测试文件，选择测试用打印机；打印纸张选择 A4，纸张类型选择普通纸，缩放方式选择无缩放，并按照 4.3 的内容进行相应设置；

b) 打印数量设置为 1；

c) 在打印机处于就绪状态时，按下“打印”键的同时启动计时器开始计时；

d) 当文件完全输出时(1 页)，记录首页打印时间；

e) 重复 b)～d)，记录第 2 次的首页打印时间；

f) 根据 5.3 计算两次首页打印时间的一致性，如果一致性在±5%之内，结束测试，否则重复 b)～d)进行第三次测试，并计算第 3 次的首页打印时间；

g) 计算两次或三次首页打印时间的平均值作为首页打印时间。按 5.4 的规则表示结果值。

5.2.4 连续打印速度

应按照如下步骤测试打印机的连续打印速度：

a) 打开测试版文件，进入打印功能，选择测试用打印机；纸张大小选择 A4，纸张类型选择普通纸，缩放方式选择无缩放，并按照 4.3 的内容进行相应设置。

b) 确定打印数量 N。N 的取值可参照 5.2.2 的 b)，N 张打印时间减去第 1 张打印时间应不小于并尽可能的接近 60 s，如需用式(1)计算确定 N，应将式(1)中的 30 用 60 代替。

c) 设置打印数量 N，在打印机处于就绪状态时，按下“打印”键打印。

d) 当第 1 页测试样张完全输出时，启动计时器开始计时。

e) 当第 N 页测试样张完全输出时，停止计时。记录从第 1 页样张完全输出到第 N 页样张完全输出的时间为 t，打印速度按式(3)计算：

$$lp = \frac{N-1}{t} \times 60 \qquad \cdots\cdots(3)$$

式中：

lp ——打印速度，单位为页每分钟(ppm)；

N ——打印页数，单位为页(p)；

t ——打印 $N-1$ 页的时间，单位为秒(s)。

f) 重复 c)～e)，计算出第 2 次的打印速度。

g) 根据 5.3 计算两次打印速度的一致性，如果一致性在±5%之内，结束测试，否则重复 c)～e)进行第三次测试，并计算第 3 次的打印速度 lp。

h) 计算两次或三次打印速度的平均值作为连续打印速度。按 5.4 的规则表示结果值。

5.2.5 照片打印时间

应按照如下步骤测试打印机的照片打印时间：

a) 打开照片测试文件，选择测试用打印机，打印纸张类型选择相关的照片纸，纸张尺寸选择102 mm×152 mm。选择“适合边距打印”或“裁剪到大小合适”设置，打印边距设置为无边距(若打印边距无法设置为无边距，则设置为有边距；在标称测试数据时要说明打印边距、纸张大小及纸张类型等信息)；

b) 确定打印数量 N。N 的取值可参照 5.2.2 的 b)，N 张打印时间减去第 1 张打印时间应不小于并尽可能的接近 60 s，如需用式(1)计算确定 N，将式(1)中的 30 用 60 代替；

c) 设置打印数量 N，在打印机处于就绪状态时，按下“打印”键打印；

d) 当第 1 页照片完全输出，启动计时器开始计时；

e) 当第 N 页照片完全输出时，停止计时。记录从第 1 页照片完全输出到第 N 页照片完全输出的时间 t，用 $t/(N-1)$ 计算每张照片的打印时间；

f) 重复 c)～e)，计算第 2 次的每张照片打印时间；

g) 根据 5.3 计算两次照片打印时间的一致性，如果一致性在±5%之内，结束测试，否则重复 c)～e)进行第三次测试，并得到第 3 次的每张照片打印时间；

h) 计算两次或三次每张照片打印时间的平均值作为照片打印时间。按 5.4 的规则表示结果值。

5.3 数据的一致性判定

两次测试数据的一致性 c 按式(4)计算：

$$c=\left(\frac{2\times \mathrm{data1}}{\mathrm{data1}+\mathrm{data2}}-1\right)\times 100\% \qquad \cdots\cdots(4)$$

式中：

c ——测试数据的一致性；

data1 ——第 1 次测试结果；

data2 ——第 2 次测试结果。

5.4 结果的表示

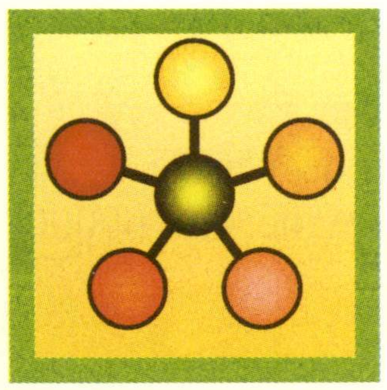
打印时间和打印速度的结果表示应符合表 1 中的修约规则。

表 1 测试结果的修约规则

计算结果值	首页打印时间/s 首套打印时间/s 照片打印时间/s	连续打印速度/ppm 多页打印速度/ppm	表示形式
<10	向上舍入到一位小数	向下舍入到一位小数	用两位有效数字(×.×)表示
10～100 (<100)	照片打印时间：向上取整 首页、首套打印时间：向上舍入到一位小数	向下取整	用两位有效数字表示(××)
		向下舍入到一位小数	用三位有效数字表示(××.×)
≥100	向上取整	向下取整	用三位有效数字表示(×××)
注：计算结果在 10～100(<100)的打印速度的表示方法可任选一种。			

附　录　A
（规范性附录）
多页打印速度和首套打印时间测试版

首套打印时间和多页打印速度测试版包括 A4 幅面的文档文件(4 页)、电子表格文件(4 页)和版式文件(4 页)各 1 份。文档文件的内容如图 A.1、图 A.2、图 A.3 和图 A.4 所示，电子表格文件的内容如图 A.5、图 A.6、图 A.7 和图 A.8 所示，版式文件的内容如图 A.9、图 A.10、图 A.11 和图 A.12 所示。



Page Number One
999 Standards Way
Cooperativeville, UN 00000

Mr. K.D. Sang
333 Good Fortune Avenue
Exploration Point, UN 11111

Dear Mr. Sang,

International Standards and their development process support:

- facilitation of global trade,
- improvement of quality, safety security, environmental and consumer protection, as well as the rational use of natural resources,
- global dissemination of technologies and good practices,

all if which contribute to economic and social progress.

Through the network and collaboration of national member bodies, international liaisons, industry consortia, and dedicated experts, the international standards bodies constitute a leading platform for the production of global, market relevant international standards.

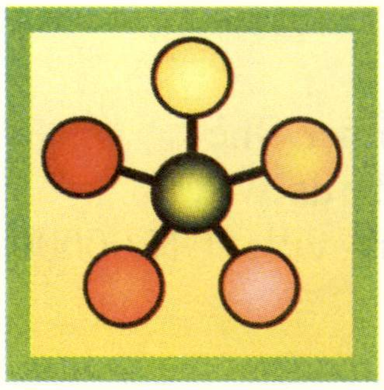
The consensus-building mechanisms employed in the development of these international standards are recognized and relied upon by industry, public authorities, consumers, and other stakeholders, thus helping to accomplish the aim of "one standard, one test, and one conformity assessment procedure accepted everywhere."

In this way, international standards organizations and their standards products contribute to a more efficient and sustainable world economy.

Sincerely,

Jane Smith

图 A.1　文档文件第 1 页



Page Number Two
999 Standards Way
Cooperativeville, UN 00000

Mr. K.D. Sang
333 Good Fortune Avenue
Exploration Point, UN 11111

Dear Mr. Sang,

Thank you for your interest in our programs and services. Here is the information you requested on the topic of:

- Global dissemination of technologies and good practices.

We are offering the following training this year. Perhaps one of these locations will be convenient for you.

DATE	LOCATION
March 5-7	Hong Kong
April 12-15	Tokyo
May 23-25	Berlin
June 1-3	Seattle
July 9-10	New York
August 18-19	London
September 28-30	Rio de Janeiro
October 15-17	Cape Town

Please let me know which of these sessions is convenient and how many of your team will be attending.

Sincerely,

Jane Smith

图 A.2　文档文件第 2 页

Page Number Three
333 Good Fortune Avenue
Exploration Point, UN 11111

Ms. Jane Smith
999 Standards Way
Cooperativeville, UN 00000

Dear Ms. Smith,

Please accept my appreciation of your hard work in the area of international standards. It is apparent to me that such work is of significant long term value in the areas of

- global trade,
- product quality, product safety,
- and especially environmental and consumer protection.

I am particularly interested in learning more about ways in which standards can help me learn more about technologies and good practices from around the world that may be helpful in my business.

Does your organization provide training in this matter?

Sincerely,

K.D. Sang

图 A.3　文档文件第 3 页

Page Number Four
333 Good Fortune Avenue
Exploration Point, UN 11111

Ms. Jane Smith
999 Standards Way
Cooperativeville, UN 00000

Dear Ms. Smith,

I much appreciate the range of location and timing options that you are able to provide.

For the purpose of this training I belief the location in Cape Town in October will work out well given that I already have other business travel in the region around that time.

For this initial inquiry I will not involve the rest of my team. That may be an option at a later time.

Please provide the details for accommodations, flights, training costs, etc., for this Cape Town session.

I am looking forward to meeting you with pleasure.

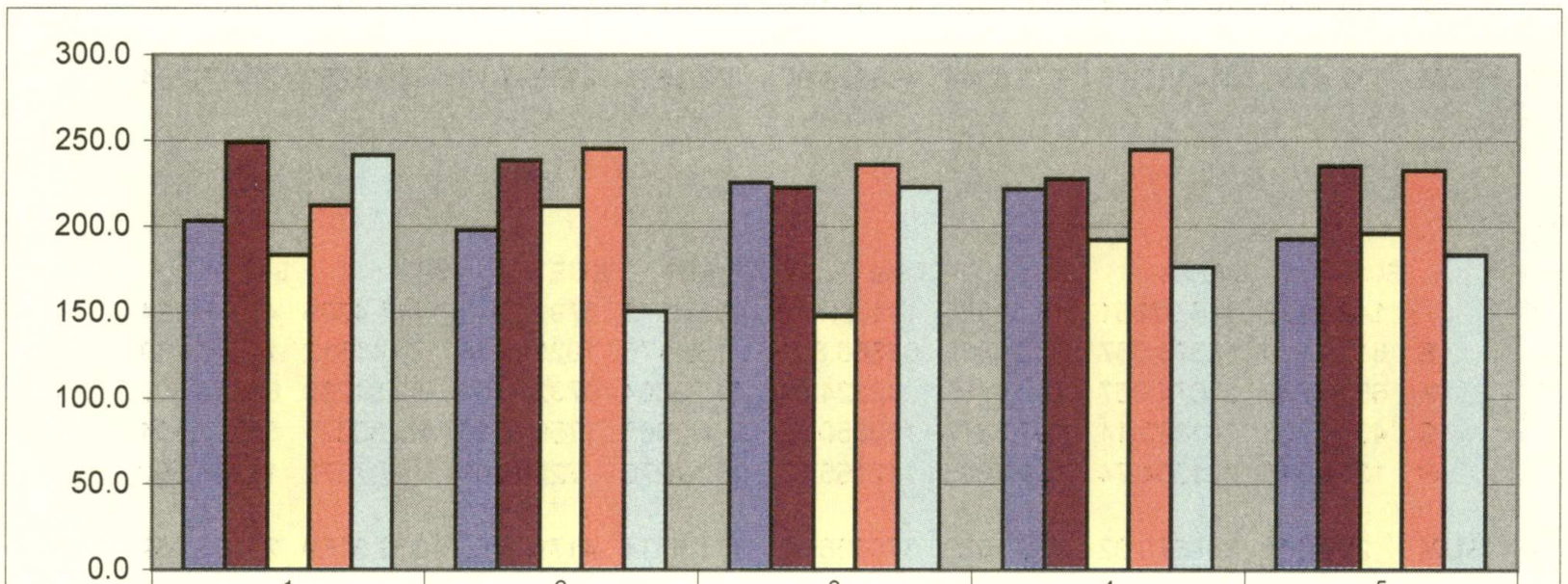
Sincerely,

K.D. Sang

图 A.4　文档文件第 4 页

Summary Sheet Version 3.2
Intermediate Results
Final Report finished by time of final reporting.

	EU	NA/SA	LA	Asia	AF/AU	EUE	NW	SW	ME	SE	MW	IST
First	99.0	17.6	51.9	112.2	142.9	10.4	199.1	6.6	173.0	178.0	153.4	124.5
Second	153.2	147.8	126.6	143.6	121.4	138.4	50.9	188.6	139.0	45.5	32.3	133.4
	Y	M	T	Z	O	I	R	Q	L	C	P	G
Third	32.5	57.3	175.7	91.4	84.0	56.6	163.1	67.5	85.4	53.5	185.5	29.0
Fourth	46.7	93.7	24.2	172.2	47.9	132.6	26.7	128.9	163.1	103.9	162.3	55.6
Estimate:	203.2	197.8	225.7	222.2	192.9	188.4	249.1	238.6	223.0	228.0	235.5	183.4



	1	2	3	4	5
GH	203.2	197.8	225.7	222.2	192.9
TU	249.1	238.6	223.0	228.0	235.5
ST	183.4	212.2	148.0	192.3	196.1
NO	212.5	245.3	235.9	244.8	232.7
AB	241.6	151.0	223.1	176.5	183.4

	EU	NA/SA	LA	Asia	AF/AU	EUE	NW	SW	ME	SE	MW	IST
Ein	158.5	98.0	84.8	146.1	186.0	114.9	20.9	168.6	155.8	174.7	191.6	35.0
	P	G	T	O	Z	I	R	Q	L	C	Y	M
Zwei	88.1	12.1	69.5	119.6	99.2	162.5	90.6	106.2	194.8	79.6	160.5	31.0
Drie	79.7	6.0	93.8	13.6	178.5	33.5	195.3	32.6	75.6	136.3	43.2	15.2
	I	R	O	T	Z	P	G	C	L	Q	M	Y
Funf	162.2	67.9	142.3	117.5	31.1	73.1	156.0	38.8	47.4	182.7	25.9	74.6
Vier	34.5	79.3	44.4	144.7	64.5	132.4	85.5	185.9	117.7	117.7	22.1	101.0
Estimate:	212.2	148.0	192.3	196.1	236.0	212.5	245.3	235.9	244.8	232.7	241.6	151.0

	EU	NA/SA	LA	Asia	AF/AU	EUE	NW	SW	ME	SE	MW	IST
	56.3	196.4	194.7	590.1	287.5	189.4	5.0	186.1	360.9	254.0	528.6	396.0
Total	415.4	345.8	418.0	418.3	428.8	400.9	494.4	474.5	467.8	460.7	477.1	334.4

Last Update: April 2006
# of Regions: 11.0

图 A.5　电子表格文件第 1 页

Next Actions Version 3.2
Reported by quarterly reporting.
Final Report finished by time of final reporting.

	EU	NA/SA	LA	Asia	AF/AU	EUE	NW	SW
	424.3743	563.98315	401.129	492.50801	11.19227	84.772662	555.649	438.34586
A	190.9526	18631.176	116.5339	8591.0855	98.10309	120701.3	MISSING	19608.34
B	101.8873	71532.948	MISSING	124007.57	MISSING	67172.996	84.56548	50251.747
C	180.2671	118108.92	14.98779	193151.27	11.27918	19852.249	MISSING	137807.65
D	139.3896	105857.01	145.1031	171174.94	MISSING	30164.606	81.11001	67105.501
SUM	612.4966	314130.05	276.6248	496924.87	109.3823	237891.15	165.6755	274773.24

	EU	NA/SA	LA	Asia	AF/AU	EUE	NW	SW
	142.9192	116.93851	18.12529	111.34752	453.4572	379.92913	417.4005	452.94124
E	61.07649	13398.067	73.25868	64566.801	156.175	102595.76	79.41512	147484.59
F	63.83739	32074.067	29.70185	32524.01	74.23604	67321.102	89.84289	66453.307
G	43.19256	141993.14	197.3873	130850.32	8.552665	175947.96	56.30075	55217.104
H	131.4316	201204.74	159.7605	142155.53	132.7276	72093.69	127.7572	12398.592
SUM	299.538	388670.02	460.1083	370096.66	371.6914	417958.52	353.3159	281553.59

	EU	NA/SA	LA	Asia	AF/AU	EUE	NW	SW
	43.92654	243.04201	72.855	461.68412	142.7361	167.17851	118.5119	92.389645
I	39.63489	185328.42	99.84612	130153.57	91.79929	186717.08	41.58004	
J	197.0853	125938.55	184.1545	MISSING	103.882	79217.282	85.81268	167343.41
K	162.1129	MISSING	104.0659	91467.195	49.63895	64751.543	151.2103	34111.968
	443.0125	66.785365	63.74506	358.08241	251.6232	127.13942	113.7752	317.92277
L	34.9803	1643940.1	126.7982	1409789.8	195.4407	479890.58	61.18226	776102.44
M	MISSING	1542605.3	MISSING	2696844.5	MISSING	2689468.6	MISSING	775739.32
SUM	433.8134	3497812.4	514.8647	4328255.1	440.761	3500045.1	339.7853	1753297.1

	EU	NA/SA	LA	Asia	AF/AU	EUE	NW	SW
	427.0688	514.82959	29.02763	476.31445	472.6003	275.30569	143.3599	169.70087
Total	1345.848	4200612.5	1251.598	5195276.6	921.8346	4155894.7	858.7767	2309624

Last Update: April 2006
# of Regions: 5

图 A.6　电子表格文件第 2 页

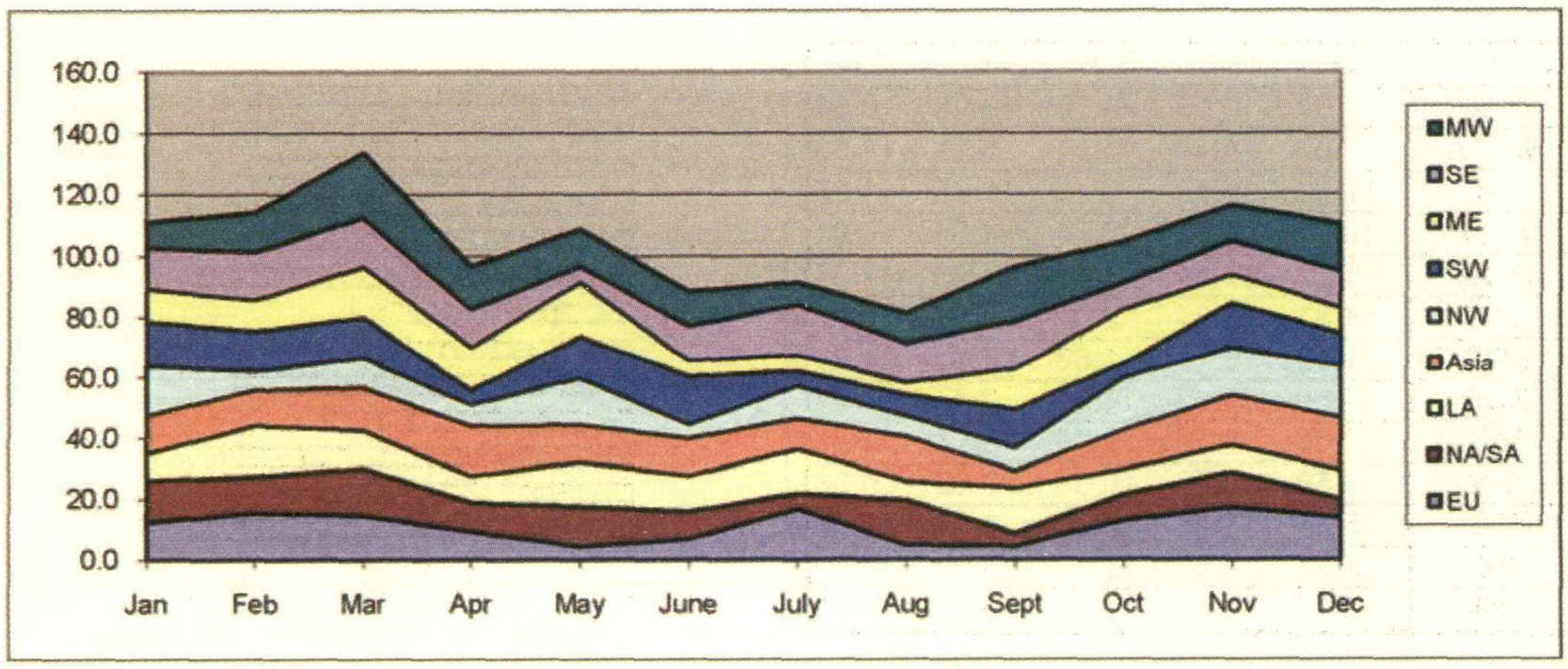
Tracking Sheet Version 3.3
Aggregated results reported by month.

Year 01	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
WEU	14.4	15.2	14.8	5.7	11.4	11.1	9.3	17.4	15.8	9.2	11.7	16.2
NA/SA	6.6	12.3	9.1	8.9	11.4	17.9	4.2	17.4	17.5	17.8	8.8	15.1
LA	5.8	16.8	5.2	7.7	4.5	7.7	6.1	14.0	13.3	10.1	10.6	16.5
Asia	14.5	12.4	9.1	11.0	8.2	12.4	13.1	12.1	7.2	17.9	14.1	12.6
NW	10.2	9.3	15.0	12.6	17.8	17.2	12.2	11.3	15.5	10.0	5.8	12.8
SW	14.1	4.7	5.2	16.8	18.0	7.6	7.0	6.5	16.3	7.2	7.1	5.6
ME	5.6	6.9	14.7	9.7	15.7	12.5	14.4	7.9	13.3	16.4	14.3	5.6
SE	11.7	8.4	8.3	5.8	9.4	14.1	5.4	16.5	7.4	13.3	12.6	11.0
MW	9.5	10.6	15.1	13.2	6.2	15.2	16.7	7.1	7.2	17.2	7.7	5.1

Total:	104	126	111	108	120	139	106	130	131	142	122	131
Average:	9.5	11.5	10.1	9.9	11.0	12.7	9.6	11.8	11.9	12.9	11.1	11.9
Minimum:	14.4	15.2	14.8	5.7	11.4	11.1	9.3	17.4	15.8	9.2	11.7	16.2
Maximum:	14.5	16.8	15.1	16.8	18.0	17.9	16.7	17.4	17.5	17.9	17.9	16.5

Year 02	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
EU	12.4	15.5	14.6	9.3	4.4	6.8	16.7	4.8	4.4	12.9	17.1	13.8
NA/SA	13.8	11.9	15.5	9.7	13.1	9.1	5.1	14.8	4.3	8.6	11.6	6.0
LA	8.8	16.7	12.5	8.5	14.5	11.6	14.5	6.0	14.9	8.0	8.9	9.4
Asia	12.5	11.9	14.2	16.5	12.4	12.4	10.1	14.8	5.5	13.1	16.4	17.5
NW	16.7	6.4	9.9	7.1	15.6	4.6	10.8	6.9	7.7	17.3	16.1	17.2
SW	14.7	13.1	13.3	4.7	13.8	16.1	5.0	6.9	12.6	4.8	14.3	10.6
ME	10.7	10.2	16.5	14.5	17.7	5.1	5.3	4.2	13.5	17.7	9.3	8.5
SE	13.3	15.6	16.0	12.4	5.1	11.5	16.5	13.2	15.7	8.8	10.8	11.8
MW	8.4	12.9	21.2	14.1	12.2	11.3	7.4	9.9	17.9	13.4	11.8	15.5

Total:	132	133	234	118	123	115	118	100	131	125	135	130
Average:	12.0	12.1	21.3	10.7	11.2	10.5	10.8	9.1	11.9	11.4	12.3	11.8
Minimum:	12.4	15.5	14.6	9.3	4.4	6.8	16.7	4.8	4.4	12.9	17.1	13.8
Maximum:	16.7	16.7	21.2	16.5	17.7	16.1	16.7	14.8	17.9	17.7	17.1	17.5

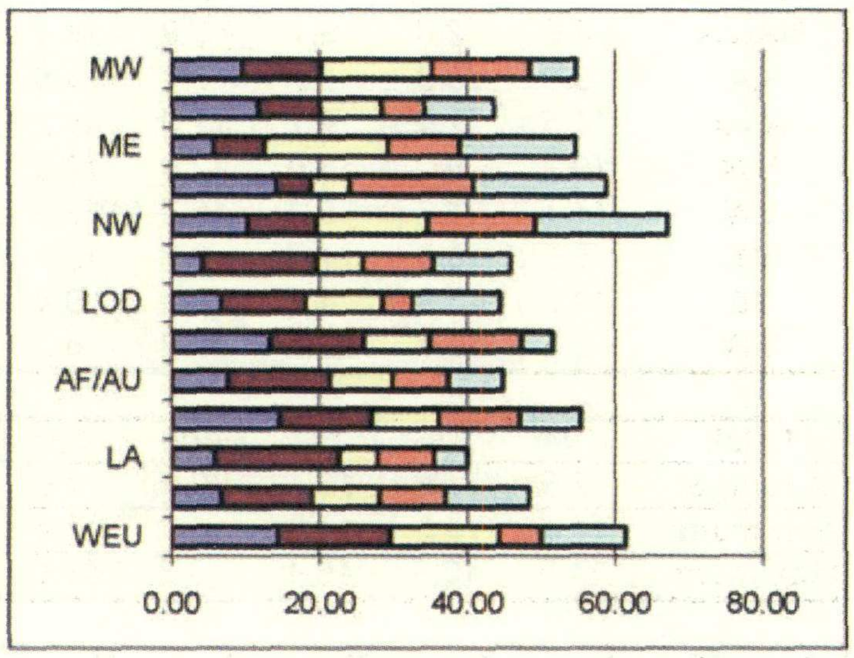


Last Update: April 2006

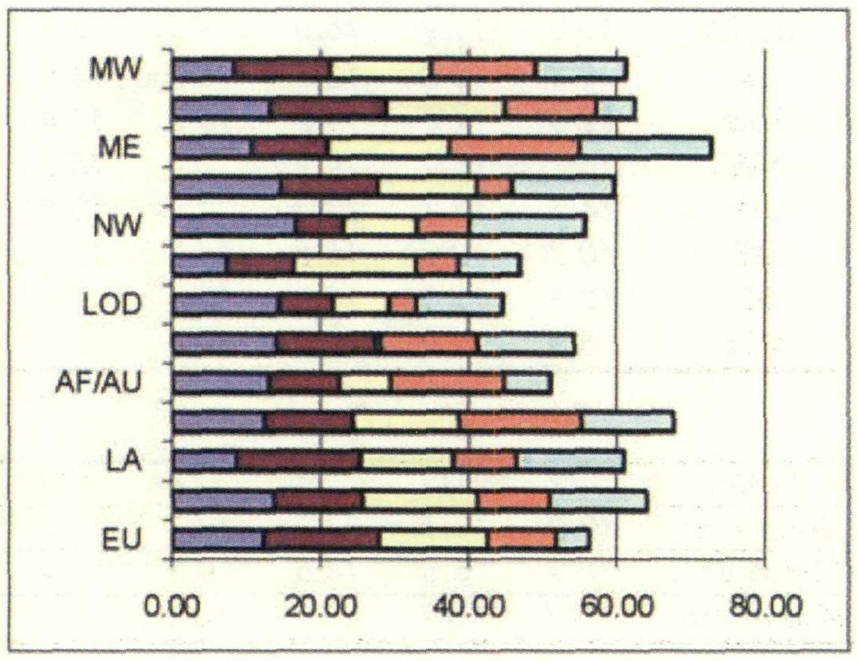
图 A.7　电子表格文件第 3 页

Data Sheet Version 3.3
Final data reported by month.

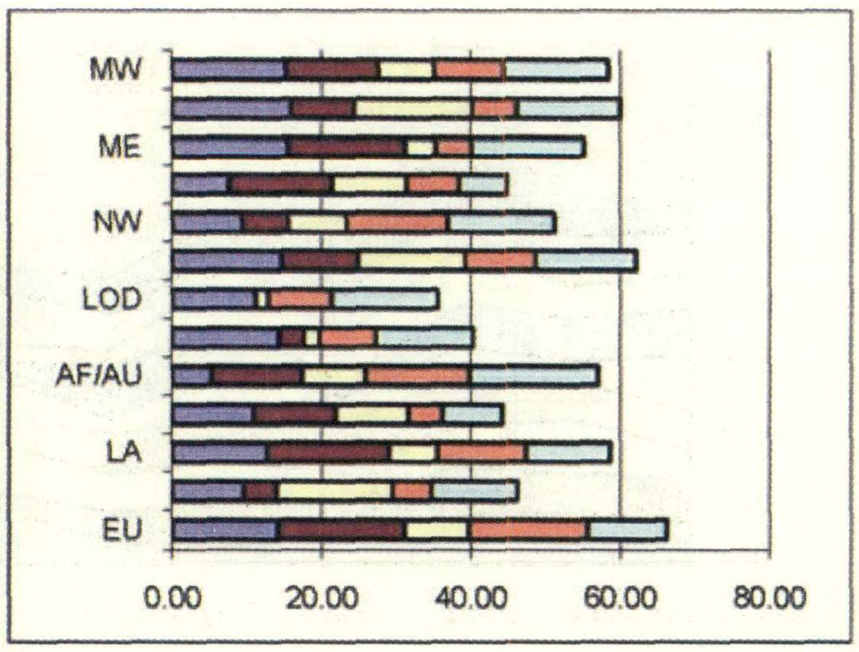
Year 01	Jan	Feb	Mar	Apr	May
WEU	14.37	15.19	14.79	5.68	11.41
NA/SA	6.64	12.28	9.13	8.94	11.35
LA	5.81	16.79	5.23	7.66	4.51
Asia	14.54	12.44	9.13	10.99	8.22
AF/AU	7.59	13.83	8.46	7.55	7.40
JIE	13.21	12.72	8.92	12.44	4.28
LOD	6.69	11.44	10.37	4.07	11.90
EUE	4.06	15.51	6.25	9.52	10.49
NW	10.24	9.32	15.05	14.60	17.84
SW	14.09	4.71	5.23	16.78	17.95
ME	5.63	6.91	16.74	9.71	15.69
SE	11.71	8.40	8.26	5.83	9.41
MW	9.53	10.63	15.11	13.20	6.22



Year 02	Jan	Feb	Mar	Apr	May
EU	12.38	15.51	14.63	9.29	4.40
NA/SA	13.76	11.93	15.47	9.66	13.13
LA	8.76	16.67	12.47	8.52	14.51
Asia	12.50	11.91	14.25	16.54	12.38
AF/AU	13.10	9.42	6.94	15.30	6.27
JIE	14.13	13.33	0.68	13.07	13.04
LOD	14.40	7.32	7.53	3.69	11.64
EUE	7.44	8.99	16.51	5.71	8.28
NW	16.69	6.39	9.95	7.07	15.57
SW	14.70	13.11	13.35	4.71	13.80
ME	10.70	10.25	16.47	17.55	17.70
SE	13.30	15.62	16.02	12.36	5.15
MW	8.38	12.92	13.65	14.07	12.15



Year 03	Jan	Feb	Mar	Apr	May
EU	14.07	17.00	8.56	15.98	10.56
NA/SA	9.52	4.48	15.51	5.21	11.53
LA	12.63	16.42	6.40	11.85	11.28
Asia	10.87	11.01	9.74	4.53	8.01
AF/AU	5.22	12.14	8.46	13.93	17.23
JIE	14.31	3.34	2.07	7.59	12.97
LOD	11.09	0.10	1.63	8.51	14.21
EUE	14.60	10.32	14.31	9.44	13.44
NW	9.39	6.16	7.76	13.54	14.28
SW	7.59	13.80	10.03	7.02	6.38
ME	15.49	15.68	4.07	4.83	15.05
SE	15.87	8.52	15.79	6.00	13.79
MW	15.19	12.43	7.48	9.27	14.01



Last Update: April 2006
# of Regions: 5

图 A.8　电子表格文件第 4 页

Color Tutorial Topics

What is encoded 'in' image code values?
...Image state explained

When to encode for print?
...Early binding vs. late binding workflows

Why doesn't "perfect" math always yield a usable profile or desirable imaging result?
...Color processing computational quality

How are white point, black point, and gamut extent rendered or re-rendered?
...Essentials of color management

Color preference vs. color matching?
...Building rendering intent transforms

Re-rendering to another output?
...Device to device profile construction for interoperability

Understand how to take and preserve great photos!

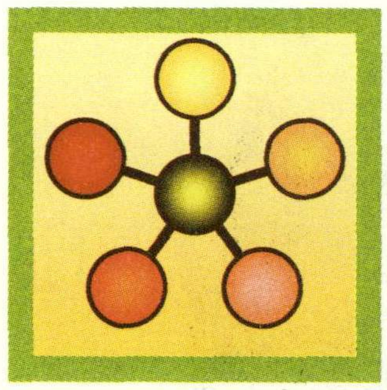
Give and take:

"From the trenches" expert user Q&A:
Color managed use case examples from creative and prepress workflows
Audience recommendations on future directions for color management

Wine & Cheese Networking Event:
Products and Applications — Industry Color Management Demonstrations

See You There!!!

图 A.9　版式文件第 1 页



Ms. Jane Smith
999 Standards Way
Cooperativeville, UN 00000

Mr. K.D. Sang
333 Good Fortune Avenue
Exploration Point, UN 11111

Dear Mr. Sang,

International Standards and their development process support:

- facilitation of global trade,
- improvement of quality, safety security, environmental and consumer protection, as well as the rational use of natural resources,
- global dissemination of technologies and good practices,

all if which contribute to economic and social progress.

Through the network and collaboration of national member bodies, international liaisons, industry consortia, and dedicated experts, the international standards bodies constitute a leading platform for the production of global, market relevant international standards.

The consensus-building mechanisms employed in the development of these international standards are recognized and relied upon by industry, public authorities, consumers, and other stakeholders, thus helping to accomplish the aim of "one standard, one test, and one conformity assessment procedure accepted everywhere."

In this way, international standards organizations and their standards products contribute to a more efficient and sustainable world economy.

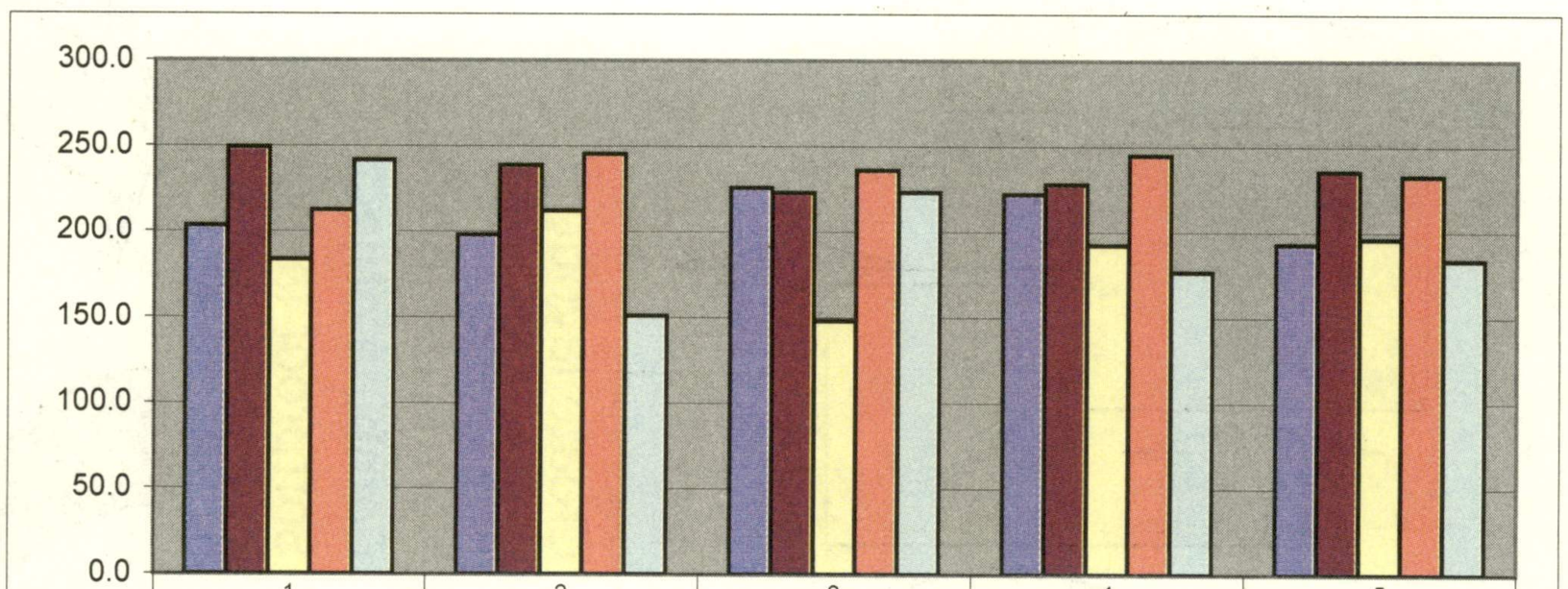
Sincerely,

Jane Smith

图 A.10　版式文件第 2 页

Summary Sheet Version 3.2
Intermediate Results
Final Report finished by time of final reporting.

	EU	NA/SA	LA	Asia	AF/AU	EUE	NW	SW	ME	SE	MW	IST
First	99.0	17.6	51.9	112.2	142.9	10.4	199.1	6.6	173.0	178.0	153.4	124.5
Second	153.2	147.8	126.6	143.6	121.4	138.4	50.9	188.6	139.0	45.5	32.3	133.4
	Y	M	T	Z	O	I	R	Q	L	C	P	G
Third	32.5	57.3	175.7	91.4	84.0	56.6	163.1	67.5	85.4	53.5	185.5	29.0
Fourth	46.7	93.7	24.2	172.2	47.9	132.6	26.7	128.9	163.1	103.9	162.3	55.6
Estimate:	203.2	197.8	225.7	222.2	192.9	188.4	249.1	238.6	223.0	228.0	235.5	183.4



	1	2	3	4	5
GH	203.2	197.8	225.7	222.2	192.9
TU	249.1	238.6	223.0	228.0	235.5
ST	183.4	212.2	148.0	192.3	196.1
NO	212.5	245.3	235.9	244.8	232.7
AB	241.6	151.0	223.1	176.5	183.4

	EU	NA/SA	LA	Asia	AF/AU	EUE	NW	SW	ME	SE	MW	IST
Ein	158.5	98.0	84.8	146.1	186.0	114.9	20.9	168.6	155.8	174.7	191.6	35.0
	P	G	T	O	Z	I	R	Q	L	C	Y	M
Zwei	88.1	12.1	69.5	119.6	99.2	162.5	90.6	106.2	194.8	79.6	160.5	31.0
Drie	79.7	6.0	93.8	13.6	178.5	33.5	195.3	32.6	75.6	136.3	43.2	15.2
	I	R	O	T	Z	P	G	C	L	Q	M	Y
Funf	162.2	67.9	142.3	117.5	31.1	73.1	156.0	38.8	47.4	182.7	25.9	74.6
Vier	34.5	79.3	44.4	144.7	64.5	132.4	85.5	185.9	117.7	117.7	22.1	101.0
Estimate:	212.2	148.0	192.3	196.1	236.0	212.5	245.3	235.9	244.8	232.7	241.6	151.0

	EU	NA/SA	LA	Asia	AF/AU	EUE	NW	SW	ME	SE	MW	IST
	56.3	196.4	194.7	590.1	287.5	189.4	5.0	186.1	360.9	254.0	528.6	396.0
Total	415.4	345.8	418.0	418.3	428.8	400.9	494.4	474.5	467.8	460.7	477.1	334.4

Last Update: April 2006
# of Regions: 11.0

图 A.11　版式文件第 3 页

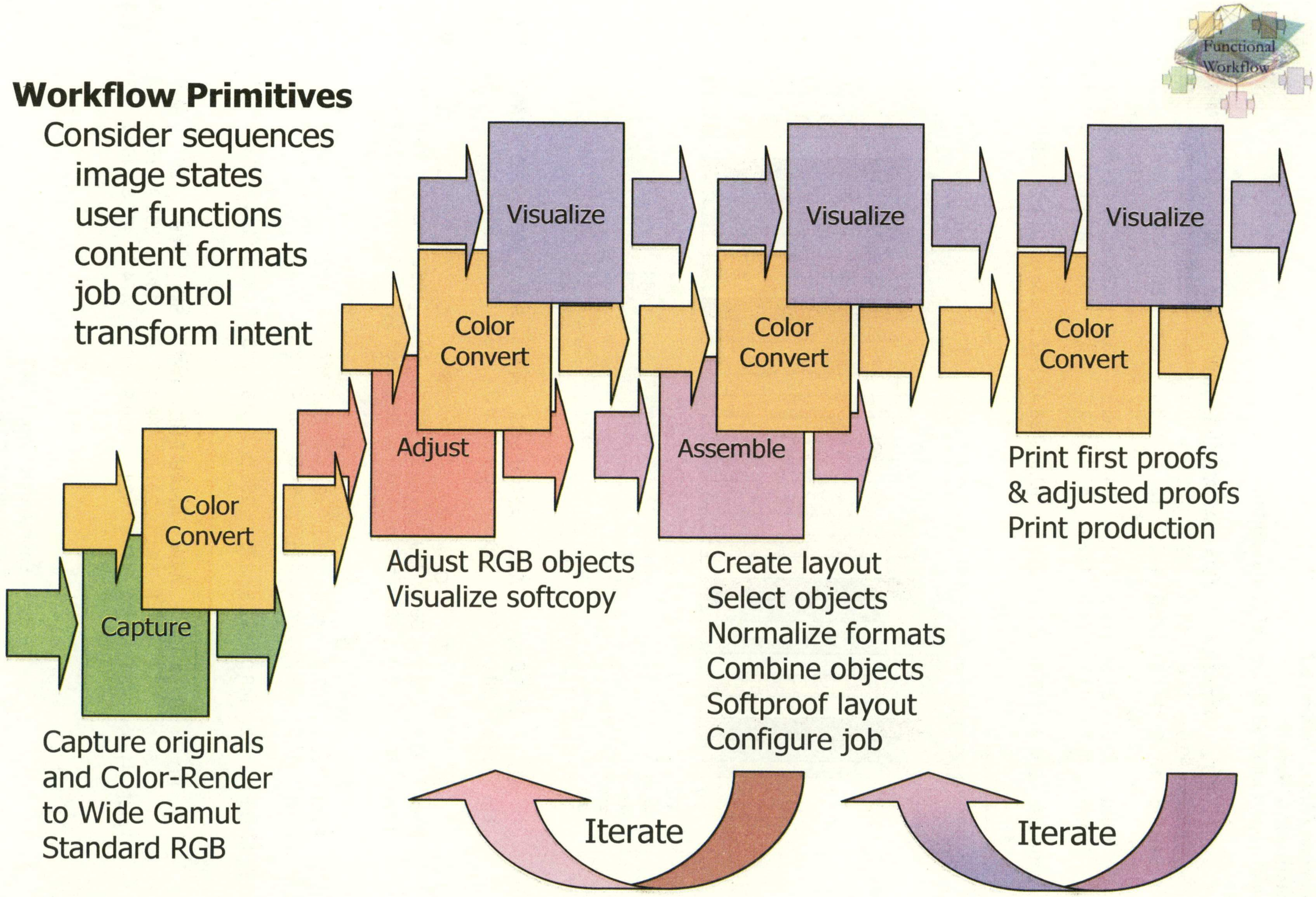


图 A.12 版式文件第 4 页

附 录 B
（规范性附录）
首页打印时间和连续打印速度单色测试版

EXPRESSMAIL
October 17,1990
Northern Lights Color Works,Inc.
Dr.Harold M.Smith
8934A North Main Street W105 97H
North Rutherford,New Jersey 78916-9596
Re:X3/SD-10,October,1989
Accredited Standards Committee;X3-Information Processing Systems
Dear Dr.Smith:
Following our recent discussion,I want to provide you this additional information on X3 Standing Documents.
There is a series of documents.They were developed by X3 and the X3 Secretariat.
The series provides an information data base on Accredited Standards Committee X3-Information Processing Systems.The documents are updated periodically,each on an individual basis.
This series is designed to serve several needs:
first,they describe X3,and explain its program;second,they teach members of X3 committees the operational procedures of X3;and third,they insure systematic administration according to procedural requirements of the American National Standards Institute and the X3 Secretariat.
We have found that this set of documents serves well as guidance to the Secretariat staff,as well as to the several working subgroups,members and officers.
You had asked for a partial listing of the Standing Documents.I am pleased to provide them as follows:
X3/SD-0 Informational Brochure-January 1989
X3/SD-1 Master Plan-January 1988
X3/SD-1B Master Plan(Operational)-April 1989
X3/SD-2 Organization and Procedures-July 1987
X3/SD-3 Project Proposal Guide-May 1987
X3/SD-4 Projects Manual-August 1988
X3/SD-5 Standards Criteria-September 1984
Perhaps a few more words of explanation about the last document would be helpful to you.
X3 subgroups produce a required annual report to X3 using the format described in this report.They do so according to the schedule defined in X3/SD-6,Membership and Officers.
I hope that this additional information is helpful to you.Should you wish to obtain copies of the listed documents,I will be pleased to provide them to you.
With warm personal regards,
Jonathan
ABC Institute NEDET Washington,D.C.34921-2654

附 录 C
（规范性附录）
首页打印时间和连续打印速度彩色测试版

EXPRESS MAIL
October 17, 1990
Northern Lights Color Works, Inc.
Dr. Harold M. Smith
8934A North Main Street W105 97H
North Rutherford, New Jersey 78916-9596
Re: X3/SD-10, October, 1989
Accredited Standards Committee; X3 - Information Processing Systems
Dear Dr. Smith:
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X3 subgroups produce a required annual report to X3 using the format described in this report.
They do so according to the schedule defined in X3/SD-6, Membership and Officers.
I hope that this additional information is helpful to you. Should you wish to obtain copies of the listed documents, I will be pleased to provide them to you.
With warm personal regards,
Jonathan
ABC Institute NEDET Washington, D. C. 34921-2654

参 考 文 献

[1] ISO/IEC 11160-2:2013 Information technology—Office equipment—Minimum information to be included in specification sheets—Printers—Part 2:Class 3 and Class 4 printers

[2] ISO/IEC 24734:2014 Information technology—Office equipment—Method for measuring digital printing productivity

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