

ISO 12647-4: Process Standard ISO 2846-3: Ink Standard

**Gravure Publication - new/updated
input to Gamut Type 2 based on PSR
Test Print Series (ECI Gravure WG)**
support: bvdM, ECI, ERA, Fogra

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German Printing and Media Industries Federation (bvdM)

ISO 12647-4:2005 (current version)



ISO 12647-4:2005

**Graphic technology - Process control for
the production of half-tone colour
separations, proofs and production prints –
Part 4: Publication gravure printing**

Edition: 1 | Stage: 90.60 | TC 130

ICS: 37.100.01

Document available as of: 2005-11-08

www.iso.org

ISO 12647-4:2005 (substrates)

Table 1 — CIELAB coordinates, gloss, roughness, and tolerances for the substrate categories.

	L^*a^d	a^*a	b^*a	Gloss ^b	Roughness ^c	Mass per area ^d
Unit	1	1	1	%	%	g/m ²
Substrate category						
S1: Coated	90 (91) ^e	0 (0)	-3 (-3)	65	0,9	80
S2: Light weight coated (LWC)	86 (88) ^e	0 (1))	2 (3)	55	1,1	51
S3: Super-calendered	86 (89) ^e	-1 (0)	3 (4)	20	1,5	52
S4: Improved newsprint	83 (84) ^e	-1 (0)	3 (4)	<10	3,5	50
Tolerances	^e	± 2	± 2	± 10	—	—

^a Measurement according to ISO 12647-1: D50 illuminant, 2° observer, 0/45 or 45/0 geometry, black backing. Values for white backing conditions are included in brackets.

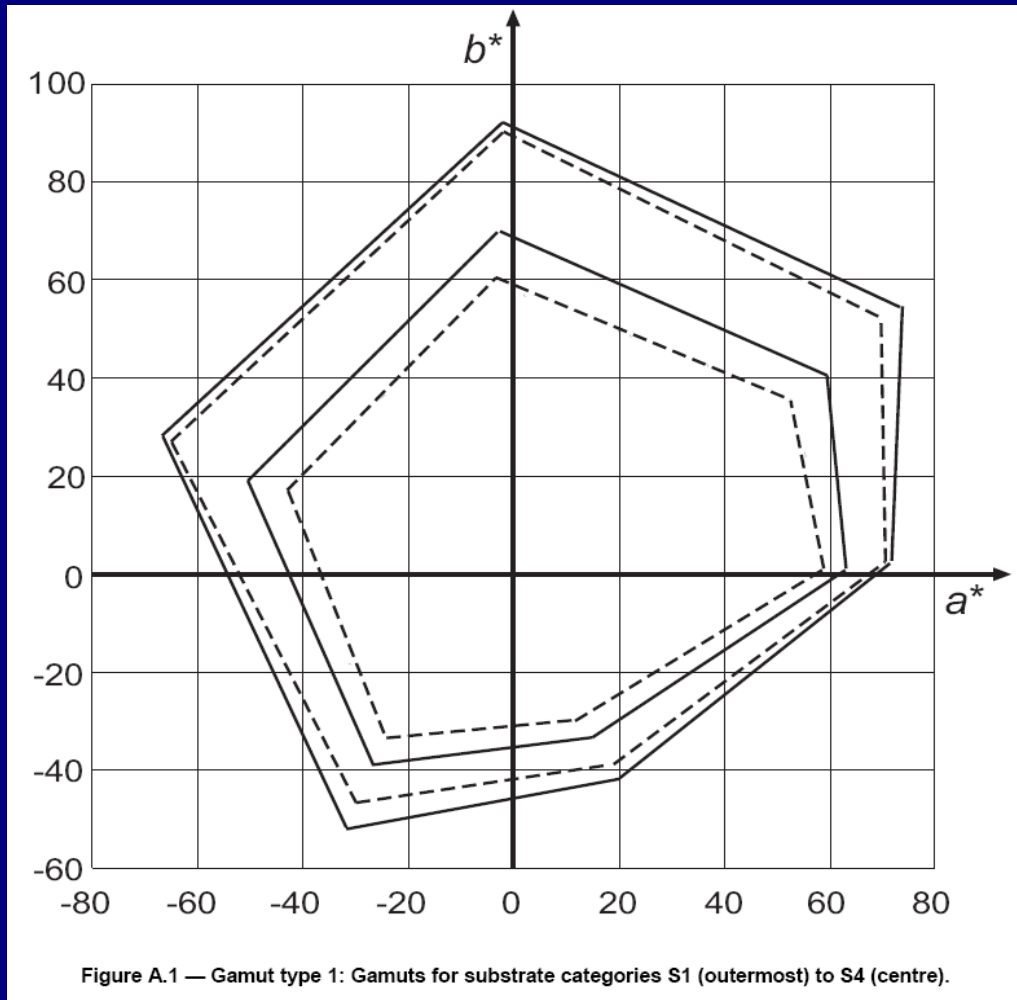
^b Measurement according to ISO 8254-1, TAPPI method, informative only.

^c Measurement according to ISO 8791-4 [5], Parker Print-surf, clamping pressure 980 kPa, soft backing, informative only.

^d Informative only.

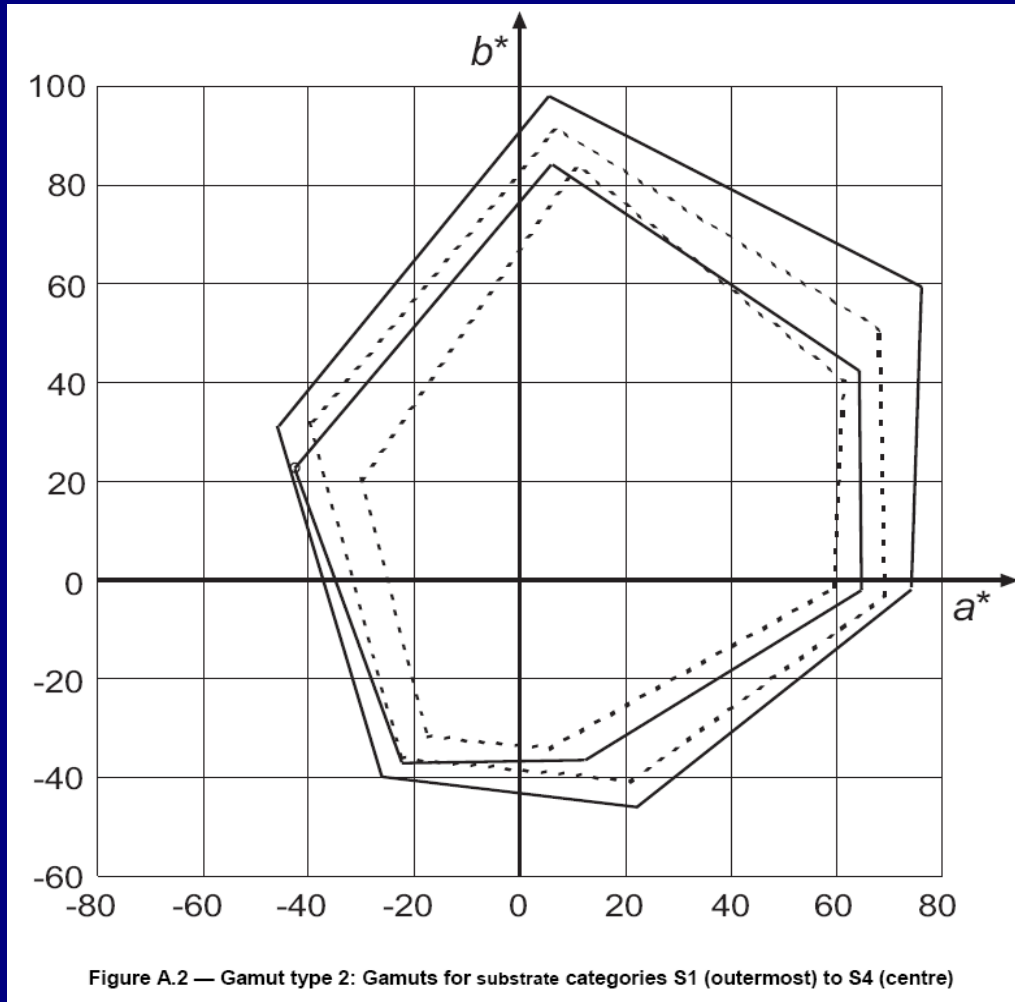
^e The informative L^* value given represents a minimum value.

ISO 12647-4:2005 (Gamut type 1)



**Gamut type 1
remains
unchanged**

ISO 12647-4:2005 (Gamut type 2)



**Gamut type 2
to be updated**

**PSR V2 input,
new proposal**

Revision of standard gravure printing conditions (PSR) Input ISO 12647-4

- Test print series in late 2007 and 2008 using LWC plus, LWC standard and SC paper (MF unchanged)
 - Testing, adaptation, proof evaluation, creation of final characterization data and ICC profiles within ECI GWG
 - Print production tests with beta version of new PSR ICC Profiles by european gravure printers from 2009-02 on
- Communication of results by June 2009 (meeting of european gravure printers and print buyers in Cologne)
Printers and customers can use PSRv2 now.
- Input into Revision ISO 12647-4, ISO 2846-3 (2009 ff)

New Input (PSR v2) for gamut type 2

Solid Colours SB/WB, D50/2° ** values only informative

	PSR LWC-Plus_V2			PSR LWC-STD_V2			PSR SC-STD_V2		
	L*	a*	b*	L*	a*	b*	L*	a*	b*
Black (K)	15.6	0.9	0.9	17.9	0.8	1.3	17.9	0.9	1.4
Cyan (C)	47.7	-24.9	-46.3	47.7	-27.4	-40.6	46.5	-26.4	-39.7
Magenta (M)	46.8	71.9	-7.2	45.9	67.6	-3.6	45.8	65.2	-4.1
Yellow (Y)	82.8	8.3	93.2	81.6	8.0	92.3	80.7	7.3	89.8
Red (M+Y)**	44.4	69.3	51.9	43.4	66.2	49.4	43.5	63.5	46.5
Green (C+Y)**	40.8	-46.9	30.7	40.4	-45.7	30.9	39.8	-43.6	27.7
Blue (C+M)**	18.2	19.8	-47.0	18.4	15.9	-42.3	19.6	13.4	-40.6
C+M+Y**	13.6	-1.7	1.9	14.5	-0.7	2.7	15.1	-3.3	1.7
Paper	91.7	1.3	-3.6	90.1	-0.4	4.3	88.5	-0.9	5.3

PSR v2: Updated PSR standard

Printing condition (PT)	Profile description	Profile file name	Characterization data
<i>new</i> Publication gravure LWC-Plus (improved light weight Coated)	PSR LWC-PLUS_V2	PSR_LWC_PLUS_V2.icc	PSR_LWC-PLUS_V2-2.txt
<i>new</i> Publication gravure LWC-Standard (light weight coated)	PSR LWC-STD_V2	PSR_LWC_STD_V2.icc	PSR_LWC-STD_V2-2.txt
<i>new</i> Publication gravure SC-Standard (super calandered)	PSR SC-STD_V2	PSR_SC_STD_V2.icc	PSR_SC-STD_V2-2.txt
Publication gravure MF-Standard (machine finished)	PSR MF	PSRgravureMF.icc	PSRgravureMF_ECI 2002.txt

New/updated input to gamut type 2 of ISO 12647-4 and to ISO 2846-3

- Revision of ISO 12647-4 gravure publication Gamut 2 (rather than amendment) new CIELAB patches (values) ...
- Structure according to ISO 12647-1/2/3 (revised) Comprehensive Project „Revision ISO 12647“
- Revision/update of ISO 2846-3 gravure publication ink, Gamut 2 (see WG 4 requirements and US comment on ISO 12647-4)
- Gravure ink test print series and measurements provided by Flint Group and collected by Fogra
- Additional gravure ink values required

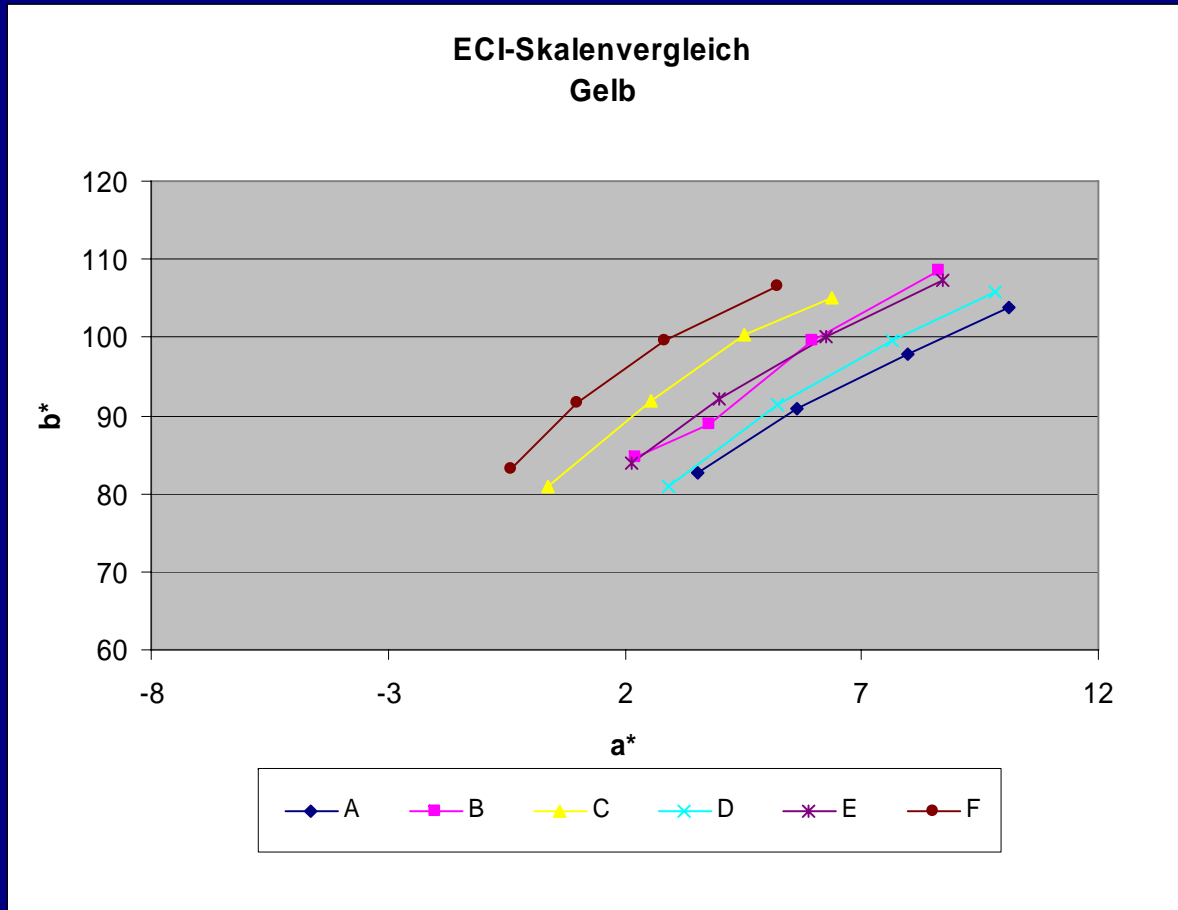
→ New versions of ISO 12647-4 and ISO 2846-3

Neue Ideen - für ISO 12647-4 (Vorschläge)

- Zusätzlich zu den vorhandenen Vollton-Eckfarben (CIELAB-Werte von C/M/Y, R/G/B...): weitere Farbfelder aus dem „Ugra/Fogra Medienkeil V3 Proof“
- Auswahl von 15 zusätzlichen Feldern als Referenz (CIELAB-Werte)
- Bessere Repräsentation des Farbraumes der jeweiligen Druckbedingung
- Keine komplette Aufnahme der Charakterisierungsdaten in die Norm (zu umfangreich)

→ Erweiterte CIELAB-Werte (Tabellen)

Neuer Input für ISO 2846-3 (Druckfarben)

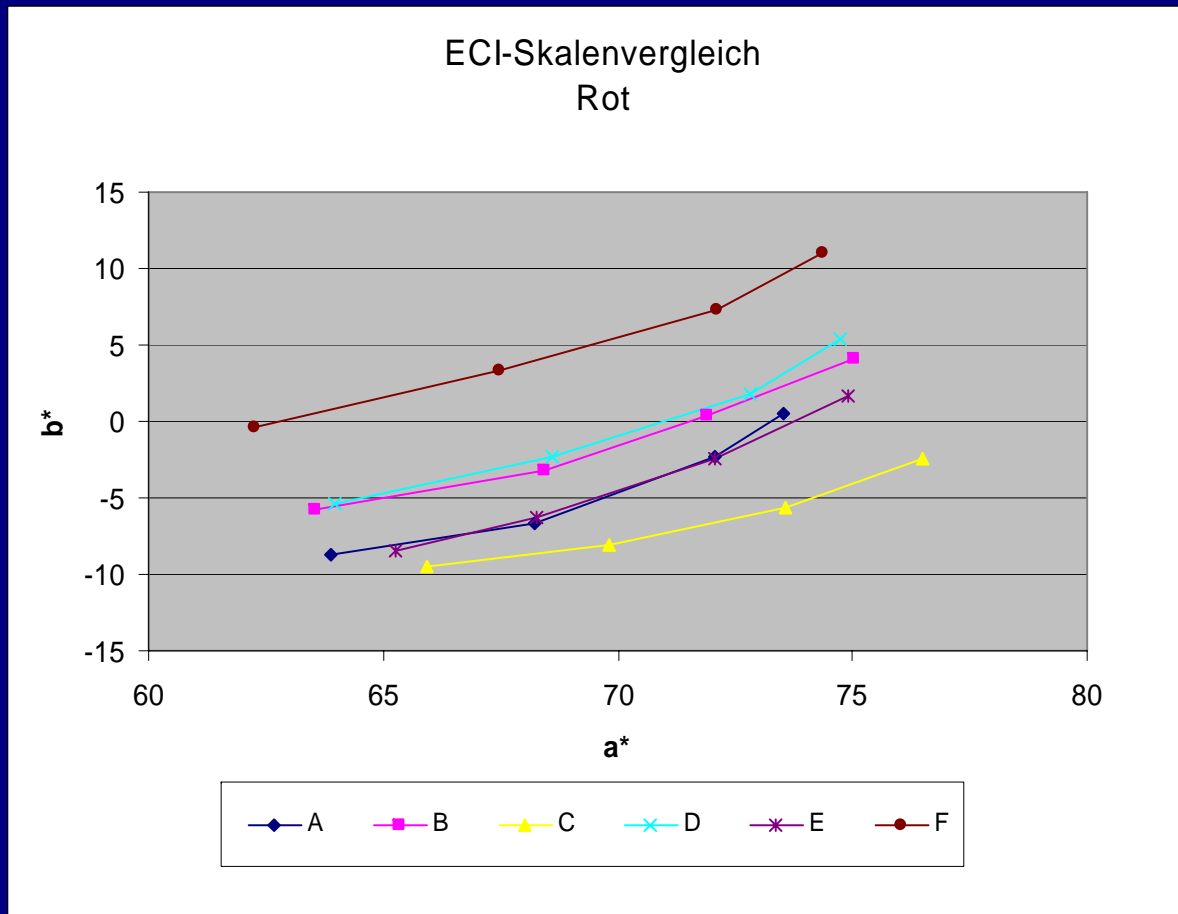


Yellow - Gelb

Primärfarben
6 europäischer
Tiefdruckereien
(a*b* Werte)

„Verlauf“ in vier
Verschnittstufen

Neuer Input für ISO 2846-3 (Druckfarben)

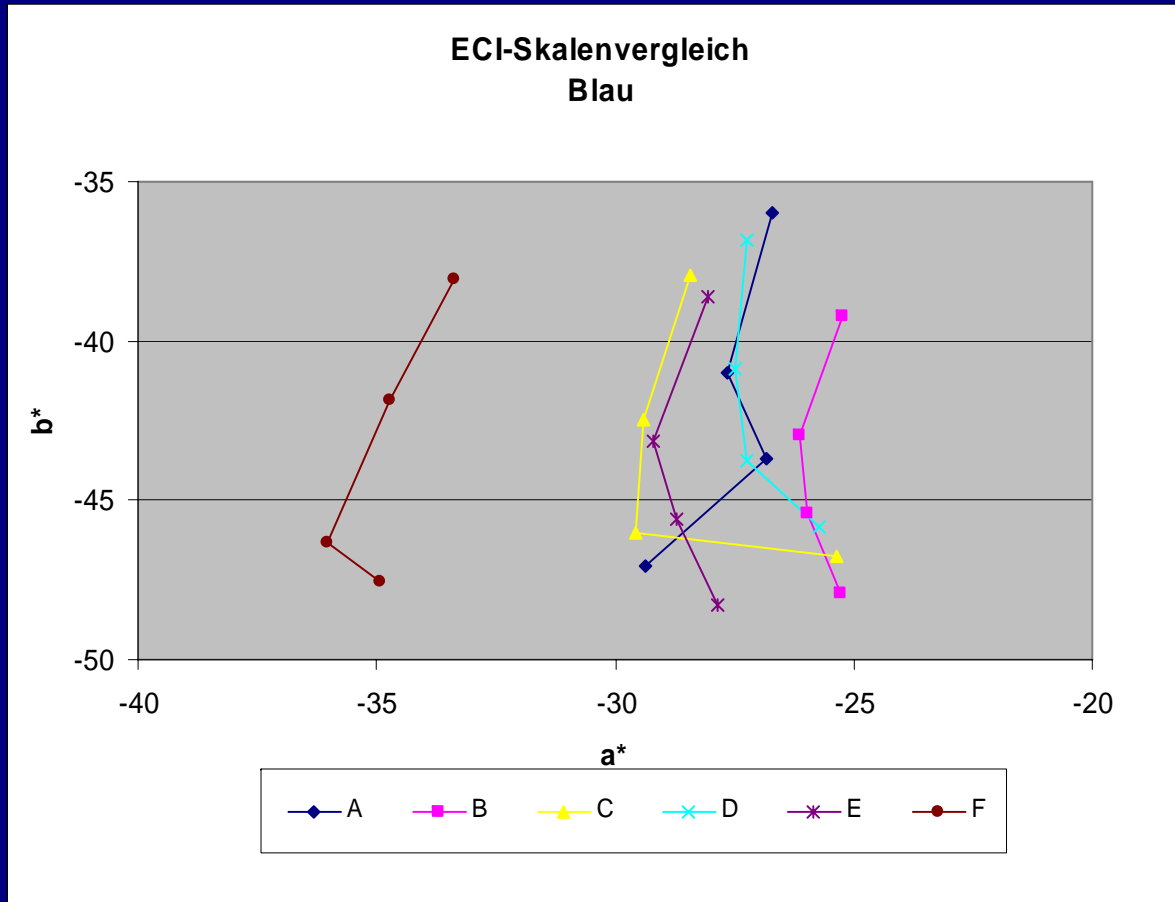


Red - Rot

Primärfarben
6 europäischer
Tiefdruckereien
(a*b* Werte)

„Verlauf“ in vier
Verschnittstufen

Neuer Input für ISO 2846-3 (Druckfarbe)

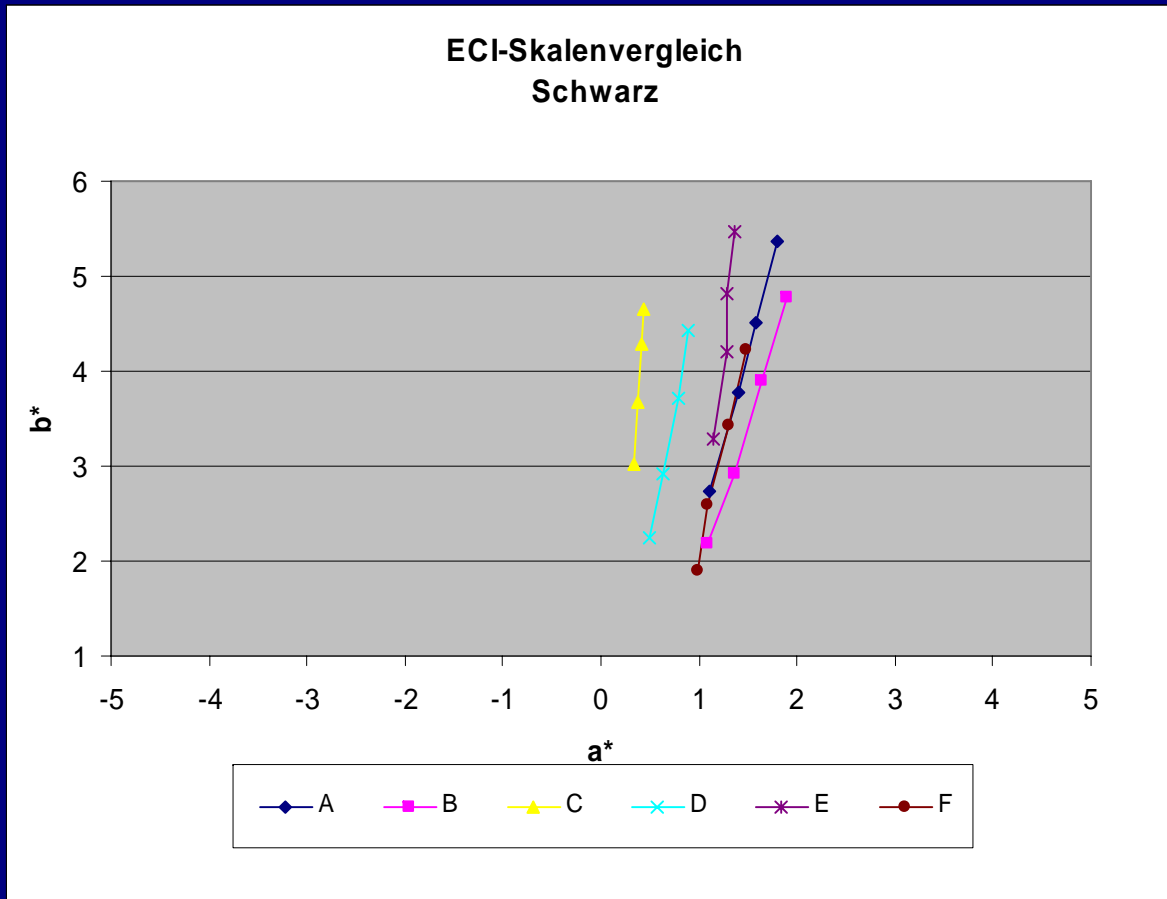


Blue - Blau

Primärfarben
6 europäischer
Tiefdruckereien
(a*b* Werte)

„Verlauf“ in vier
Verschnittstufen

Neuer Input für ISO 2846-3 (Druckfarbe)



Black - Schwarz

Primärfarben
6 europäischer
Tiefdruckereien
(a*b* Werte)

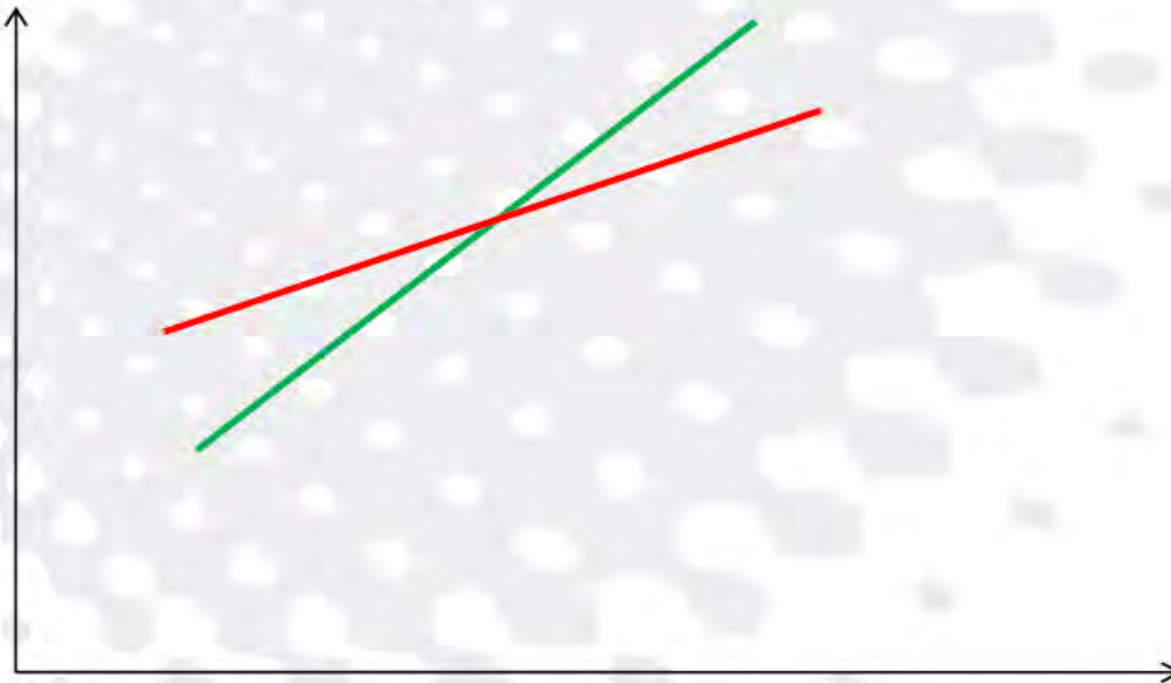
„Verlauf“ in vier
Verschnittstufen

Neue Ideen - für ISO 2846-3 (Vorschläge)

- „Verlauf“ der Druckfarben über Verschnittstufen
- Siehe Primärfarben europäischer Tiefdrucker,
(4) verschiedene Verschnittstufen, CIELAB-Werte
- Farborte bei gleicher Druckdichte (nach ISO 3664)
- Vorschlag: „Verlauf“ über die Verschnittstufen,
mindestens drei CIELAB-Werte sind anzugeben
- Ein einzelner Wert (bisherige Norm) reicht nicht aus
(Pigmentierung, Intensität, Erreichen des Sollfarbortes)
- Angaben zu Transparenz ergänzen

→ Erweiterte CIELAB-Werte (Tabellen), Transparenz

Is specification using a single point in colour space OK?



Conclusion

- Three different $L^*a^*b^*$ coordinates (and probably three different tolerances) for each primary necessary
- Transparency specification necessary in addition
- Other liquid ink sets are also affected (ISO 2846-3/4/5)

Recommendation of reference printing conditions for papers by paper manufacturers (e.g. StoraEnso)

www.storaenso.com/products/publication-papers/order-brochures/Pages/pres



Stora Press selection 2009
HSWO, Gravure

CharData
Profiles (ECI)

CIELAB
values
paper

Application of PSR ... appreciated by printers, customers

Info: Update 2009 Offset ISO 12647-2

Standard printing conditions Offset 2007-2008-2009

bvdM/ECI/Fogra Projects – Fogra CharData - ECI Profiles

No.	Profile (ECI)	PT	Screen	TVI %**	TAC %	Kmax	GCR	CharData
1	ISO Coated v2 300	1/2	AM	13 16	300	95	K9/10	FOGRA39
2	ISO Coated v2	1/2	AM	13 16	330	95	K9/10	FOGRA39
3	PSO LWC Improved *	3	AM	16 19	300	98	K10/10	FOGRA45
3 a	PSO LWC Standard *	3	AM	16 19	300	98	K10/10	FOGRA46
4	PSO Uncoated ISO12647 *	4	AM	19 22	300	98	50	FOGRA47
5	SC paper	SC	AM	16 19	270	100	K9/5	FOGRA40
6	PSO MFC paper	MFC	AM	16 19	280	98	50	FOGRA41
7	PSO SNP paper	SNP	AM	19 22	260	98	K9/10	FOGRA42
8	PSO Coated NP 300 ISO..	1/2	NP/FM	28 28	300	98	50	FOGRA43
9	PSO Coated NP 330 ISO..	1/2	NP/FM	28 28	330	98	50	FOGRA43
10	PSO uncoated NP ISO..	4	NP/FM	28 28	300	98	50	FOGRA44

* = new profiles 2009

NP = non-periodic screening (FM) | SC = super calandered, MFC = machine finished coated, SNP = standard newsprint paper (heatset) | ** TVI% for CMY, TVI% for K (non-periodic screening: KCMY same values)
TAC = total area coverage/ tone value sum

bvdm.

**Print Media
Production Forum
bvdm/ECI**

**Stuttgart
1.-2. Oktober 2009**
www.pmpf.de

**Print Media
Production Forum**



**1. und 2. Oktober 2009
Haus der Wirtschaft,
Stuttgart**

**mit Praxis-Workshops
am 30. September**