

**New gravure characterization data
and profiles (bvdm/ECI/ERA/Fogra)
according to ISO 12647-4**

**“Gravure 2009 – PSR V2”
Introduction to PSR V2**

George Battrick, ERA

Intergraf Printing Standard Network, Milan, 23 November 2009

European Rotogravure Association

- Leading international organisation of the gravure industry
- 110 member companies from Europe and overseas
- Publication, packaging and decorative gravure printers and cylinder engravers
- Associated industries: paper, ink, press, pre-press, post-press, cylinder suppliers, software houses
- Affiliate members: print buyers and brand owners

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Standardisation in gravure printing

- Publication gravure – PSR
(Process Standard Rotogravure)
of the European Color Initiative (ECI)
- Packaging gravure – PaC.Space
(Packaging Colour Space)

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What is 'ECI'?

'ECI' stands for 'European Color Initiative'.

The ECI was founded in 1996 (www.eci.org) and is a non-commercial expert group with the goal of medium-independent processing of colour data.

It has participants from agencies, publishers, repro houses, printers and research associations

Within the ECI, there are several working groups with different themes, e.g. PDF standards, digital photography, colour standards, printing, etc.



Development of the European gravure standard PSR – Process Standard Rotogravure

- The Gravure Working Group was founded in the year 2000. The main goal of this working group is the creation of a “Process Standard Rotogravure” for various paper classes, and the preparation of high-quality colour profiles.
- Between 2001 and 2005, gravure standards for several paper qualities were developed.



Paper type:	existing PSR 'V1'	25 June 2009 current: "PSR-V2"
LWC papers (LWC Standard)	LWC since July 2001	LWC-STD
SC papers (SC Standard)	SC since July 2002	SC-STD
LWCPlus papers (formerly called HWC)	HWC since end of 2005	LWC-Plus
MF papers (Machine Finished or News Plus)	MF since Oct 2003	V1 still valid

➤ The Process Standard Rotogravure (PSR 'V1') is documented in ISO 12647- 4

The PSR (Process Standard Rotogravure): advantages of standardisation

- The introduction of a gravure standard into the European market has led to a great increase in quality.
- Printed products from different printers have been brought much more into line with each other.
- The complexity for prepress services and customers is significantly reduced.




➤ But there has been a lot of development, in both technology and quality, since the introduction of the first standards in 2001

Criticisms of the first version: (PSR_ECI_V1):

- The colour gamuts of the different paper types differ widely from each other.
- The grey balance in the Proof has a colour nuance (greenish - reddish - ...) which varies along the whole grey scale.
- Highlight values below 3 % are clipped, which can be a problem where the tone runs out to paper white, and is no longer technically necessary.
- It is a colour standard which was based on a now obsolete proofer, and has changed with every new generation of proofers.
- The same standard looks very different on different proof systems.
- There are major differences between the ICC and the proprietary proof profiles.

➤ The 'go-ahead' for further development of the standard was given in April 2007 at a workshop held with printers and customers in Nuremberg.

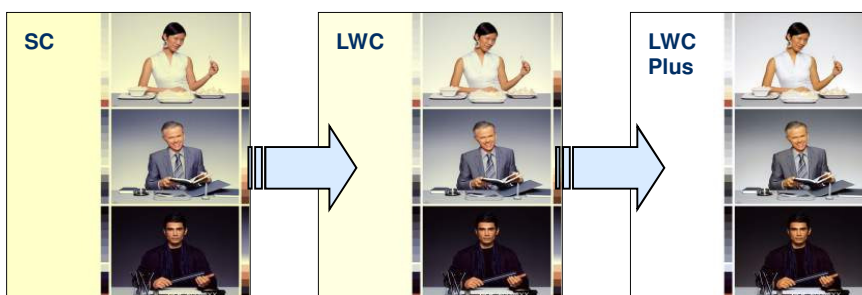
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Working Group Gravure 

Advantages and improvements of the new standard PSR V2


Colour reproduction on the different paper types:

Print results on the different paper types (SC, LWC und LWC_Plus) are significantly closer to each other



➤ This simplifies the conversion between paper types. Images look much closer to each other in colour than in the old standard.

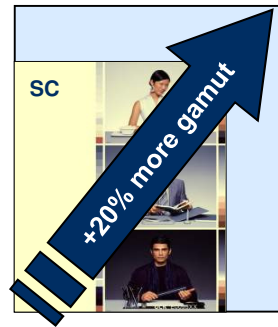
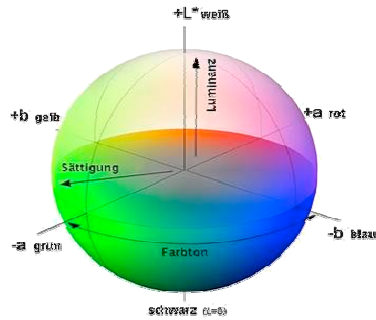
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Advantages and improvements of the new standard PSR V2

Print – SC Standard has a 20% larger colour gamut

The new PSR_SC standard has a colour gamut around 20% larger than that of the old standard. The saturation nearly reaches that of the LWC standard



➤ The new SC standard has significantly more contrast and a larger colour gamut – nearly as large as that of the LWC standard

Advantages and improvements of the new standard PSR V2

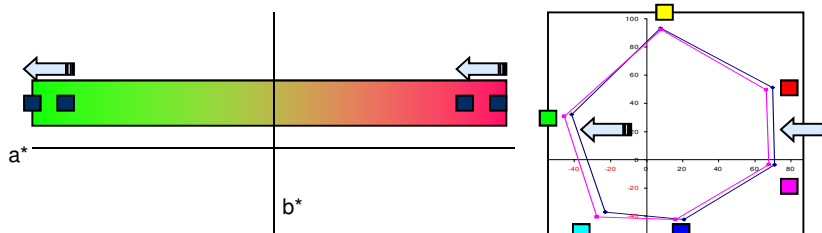
Print – improved grey balance

- More homogeneous gradation of intensity, and less coloured than V1



Print – colour gamut rather closer to offset in green and red

- The colour gamut is moved by a Δa^* of -4 on the a^* axis towards green, and so approaches the offset gamut more closely in this region.



Advantages and improvements of the new standard PSR V2

Summary

- Print results on different paper types (SC, LWC and LWC_Plus) are significantly closer to each other.
- Ca 20% greater SC gamut than in the old standard. Colour saturation almost reaches the LWC standard.
- Improved grey balance.
- Gamut moved in the “green” direction and thereby brought closer to offset.
- Closer match of sharpness between proof und print.
- ICC-Proofs and proofing systems from different suppliers match each other better, and also better match the GMG “.mx4” proofer adaptations.
- More harmonic proof profiles.
- New procedures for proofer certification, through setting new tolerances and bringing in Fogra.
- Very good separation results.
- Significantly higher patterning and contrast range than in the old standard.

➤ **The goals aimed for have been achieved!**

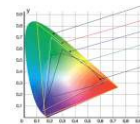
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Availability of the new profiles



The ICC profiles can be downloaded from the ECI server.

Paper class	Made with “Profile Tool” *
LWC Plus	PSR_LWC_PLUS_V2_PT.icc
LWC Standard	PSR_LWC_STD_V2_PT.icc
SC Standard	PSR_SC_STD_V2_PT.icc
SC Plus	<i>in preparation (expected by end of year)</i>

* Profile Tool, Heidelberg

➤ ICC profiles are available under www.eci.org
Recommendation: please use only original profiles

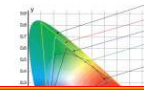
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Special features



Important change:

The profile identification "HWC" in the V1 profiles has been replaced with the correct paper identification "LWC PLUS"

Paper class	Made with "Profile Tool" *
LWC Plus	PSR_LWC_PLUS_V2_PT.icc
LWC Standard	PSR_LWC_STD_V2_PT.icc
SC Standard	PSR_SC_STD_V2_PT.icc
SC Plus	<i>in preparation</i>

* Profile Tool, Heidelberg

SC-Plus is in preparation
–
to be published ca. end of
the year

➤ ICC profiles are available under www.eci.org
Recommendation: please use only original profiles

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Good resonance among users

- Part of the IKEA 2010 main catalogue production (printed July-August 2009) was done using PSR V2 (not all plants were ready)
- La Redoute, Klingel, Littlewoods, Glamour, Spiegel ... changed in September.

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Goal now is to update ISO 12647-4

- Includes two colour gamuts
- One is an average of USA, Japan and Swiss practice (close to offset litho colour gamut)
- One is PSR V1 representing European practice
- ISO / TC 130 / WG 3 has agreed that the standard will be updated...
- ...but has not yet decided what will be included

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PaC.Space



Color Standard for Packaging Gravure Printing

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Why PaC.Space?

- Two situations in packaging premedia
 - **In-house repro**
 - Repro and printing forms come from one source
 - No conversion or adaptation to other processes needed
 - **Supplied repro**
 - Problems (may) start here...
 - Most data has to be reworked
 - Losing time
 - Generating costs

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Conclusion – We need PaC.Space!

PaC.Space

- Is a color standard for packaging CMYK gravure printing on coated substrates and foils
- Provides a defined interface from supplied data to the process specific and printer specific needs
- Developed by an ERA Working Group, project leaders were Janoschka (Lothar Roth) and GMG (David Radtke)

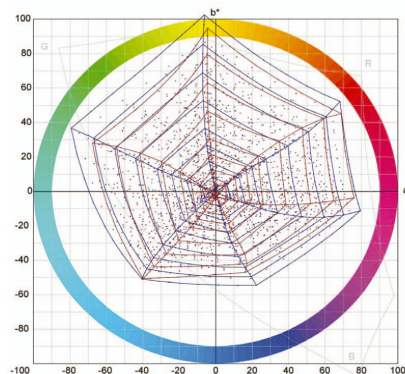
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PaC.Space Gamut

- Why not use the existing ISOCoated Gamut?

- Rotogravure packaging needs a bigger gamut than existing ISOCoated v2
- PaC.Space encompasses all typical packaging CMYK gravure color spaces



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PaC.Space – support data and profiles

- **PaC.Space tutorial**
 - Explains the workflow using PaC.Space
 - Contains a tutorial how to set up PhotoShop including softproof
 - Explains advantages of using device link profiles for conversion
 - German / English version
- **PaC.Space Adobe PhotoShop settings**
- **PaC.Space characterisation data**
- **PaC.Space ICC profile**
- **GMG profiles**
 - GMG ColorServer, GMG ColorProof, GMG ProofControl

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PaC.Space – Where Can I Get it?

- Current sources for profiles and information
 - www.cm-pacspace.net (Janoschka)
 - www.era.eu.org (ERA)
 - www.gmgcolor.com (GMG)
- When established, we plan to bring it to ISO / TC 130

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