FOGRA characterisation data for offset, continuous forms and screen printing

The data provided in the accompanying characterisation tables provide colorimetric characterisation of various reference printing conditions that relate to conditions specified in the parts 2 and 5 of the ISO 12647 series of international standards.

The characterisation tables show what colour to expect on a print if an image area with given CMYK data tone values is

- output one-to-one on to film with a (carefully linearised) image setter, with the half-tone screen frequency specified, and if
- the job is printed on the print substrate stated, with standard tone values and standard solid inking as specified in the pertinent part of ISO 12647, see [2] to [8], with inks conforming to the pertinent part of ISO 2846, see [12] to [16], and if
- the colorimetry measurement is made with the following conditions: D50, 2 degree observer, 0/45 or 45/0 geometry, no polarizing filters, CIELAB, white or black backing as indicated, see [11].

Characterization tables according to ISO 12642 [10] are usually used to produce ICC profiles or to check the contract-proof worthyness of a proof with respect to a certain printing condition.

The following table gives an overview of the files available:

FOGRA	PT	g/m2	Backing	Process	Year of standard	Screen width	Profile name	ISO short form
1	1	115	black	Offset, POS	1989	60		superseded
2	2	115	black	Offset, POS	1989	60		superseded
3	3	65	black	Offset, POS	1989	60		superseded
4	4	115	black	Offset, POS	1989	60		superseded
5	1	115	black	Offset, NEG	1989	60		superseded
6	2	115	black	Offset, NEG	1989	60		superseded
7	3	65	black	Offset, NEG	1989	60		superseded
8	4	115	black	Offset, NEG	1989	60		superseded
9		_	black	Screen, gamut class 2, conv. UV or water-based air-dried ink	2001	30		SC_GC2_CO_F30
11	1,2	115	black	Offset, POS	2004	60	ISOcoatedbb	superseded
12	3	65	black	Offset, POS	2004	60	ISOwebcoatedbb	superseded
13	4	120	black	Offset, POS	2004	60	ISOuncoatedbb	superseded
14	5	120	black	Offset, POS	2004	60	ISOuncoatedyellowishbb	superseded
15	1,2	115	white	Offset, POS	2004	60	ISOcoatedsb	superseded
16	3	65	white	Offset, POS	2004	60	ISOwebcoatedsb	superseded
17	4	120	white	Offset, POS	2004	60	ISOuncoatedsb	superseded
18	5	120	white	Offset, POS	2004	60	ISOuncoatedyellowishsb	superseded
19	1,2	115	black	Offset, POS	2004	70	ISOcoated	superseded

							175bb	
20	3	65	black	Offset, POS	2004	70	ISOwebcoated175bb	superseded
21	4	120	black	Offset, POS	2004	70	ISOuncoated175bb	superseded
22	5	120	black	Offset, POS	2004	70	ISOcoated175yelloishbb	superseded
23	1,2	115	white	Offset, POS	2004	70	ISOcoated175wb	superseded
24	3	65	white	Offset, POS	2004	70	ISOwebcoated175wb	superseded
25	4	120	white	Offset, POS	2004	70	ISOuncoated175wb	superseded
26	5	120	white	Offset, POS	2004	70	ISOcoated175yelloishwb	superseded
27	1,2	115	white	Offset, POS	2004	60	ISOcoated	OFCOM_PO_P1_F60
28	3	60	white	Offset, POS	2004	60	ISOwebcoated	OFCOM_PO_P3_F60
29	4	120	white	Offset, POS	2004	60	ISOuncoated	OFCOM_PO_P4_F60
30	5	115	white	Offset, POS	2004	60	ISOuncoatedyellowish	OFCOM_PO_P5_F60
31	2	115	white	Cont. forms, POS	2004	60	ISOcofcoated	OFCOF_PO_P2_F60
32	4	80	white	Cont. forms, POS	2004	54	ISOcofuncoated	OFCOF_PO_P4_F54
33	2	115	white	Cont. forms, POS	2004	54	FOGRA33.icm	OFCOF_PO_P2_F54
34	4	120	white	Cont. forms, POS	2004	60	FOGRA34.icm	OFCOF_PO_P4_F60
35	2	115	white	Cont. forms, NEG	2004	54	FOGRA35.icm	OFCOF_NE_P2_F54
36	4	120	white	Cont. forms, NEG	2004	54	FOGRA36.icm	OFCOF_NE_P4_F54
37	12	115	white	Cont. forms, NEG	2004	60	FOGRA37.icm	OFCOF_NE_P2_F60
38	4	120	white	Cont. forms, NEG	2004	60	FOGRA38.icm	OFCOF_NE_P4_F60
S= ISO-12642 table with 928, L= DIN 16614 (ECI2002) table with 1485 patches								

The data of FOGRA1 to FOGRA8 are superseded because of the revision of the standard [4]. They were not deleted in order to provide them as a reference for older image data files.
The data FOGRA9 relates to screen printing according to ISO 12647-5 with gamut class 2, which incidentally is practically identical with Offset on gloss coated art paper.
Tables FOGRA11 to FOGRA14 and FOGRA19 to FOGRA22 pertain to offset printing according to ISO/DIS 12647-2:2004, as measured on a black backing. FOGRA15 bis FOGRA18 pertain to 60/cm screen (150 lpi), FOGRA23 to FOGRA26 to a 70/cm screen, both measured on a white backing. This backing should be matt, opaque, non-fluorescent with C*<3 and L* >92.
The tables FOGRA27 to FOGRA32 were generated in the course of the production of the **Altona Test Suite Application Kit** [9]. They excel over FOGRA11 to FOGRA26 because of their ideal tone values for CMYK, hence better grey balance, and more realistic secondaries. They were corrected on the computer.

The data of FOGRA31 to FOGRA38 pertain to four-colour continuous forms printing according to ISO/DIS 12647-2:2004 on narrow-width web-type presses. Paper types 2 and 4, positive and negative acting plates and screen frequencies 54/cm and 60/cm are used. The print characteristic curves for this type of printing are slightly higher in the shadows as compared to those for offset commercial/speciality printing; the solids are the same.

Characterisation data and profiles for publication gravure may be obtained from (as well as profiles for offset printing) ECI, www.eci.org. Data and profiles for newsprinting are provided by IFRA at www.ifra.de.

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[3] ISO 12647-2:1996 Graphic technology - Process control for the manufacture of half-tone colour separations, proof and production prints, Part 2: Offset processes
ISO Geneva, Switzerland

[4] ISO/DIS 12647-2:2004 Graphic technology - Process control for the production of half-tone colour separations, proof and production prints, Part 2: Offset processes
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[13] ISO 2846-2
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[14] ISO 2846-3
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ISO Geneva, Switzerland

[15] ISO 2846-4
Graphic technology - Colour and transparency of printing ink sets - Part 4: Screen printing
ISO Geneva, Switzerland

[16] ISO 2846-5
Graphic technology - Colour and transparency of printing ink sets - Part 5: Flexo printing
ISO Geneva, Switzerland

Addresses and URLs

BVDM: Bundesverband Druck und Medien e.V., P.O.Box 18 69, 65008 Wiesbaden, Germany, Fax +49-611-803-194, ppf@bvdm-online.de
ECI, European Color Initiative, source of the ECI Guidelines for colour managed workflows, www.eci.org
FOGRA: FOGRA Forschungsgesellschaft Druck, P.O. Box 80 04 69, 81604 Munich, Germany, Tel. +49-89-4 31 820, Fax +49-89-4 31 68 96, www.fogra.org
ISO International Organisation for Standardization, 3 rue de la Varembé, Case postale 131, CH-1211 Genève, Switzerland, www.iso.ch
ISO standards may be obtained from ISO Geneva, www.iso.ch, or from national standards institutions, in Germany from Beuth-Verlag, 10772 Berlin, www.beuth.de