

Names and colorimetric characteristics of colour difference data sets

Group	Name	Short name and number of pairs	Mean of colour difference ΔE^*_{ab}	Background Tristimulus value and lightness		Background Illuminance and luminance	
				Y	L*	E [lux]	L [cd/m ²]
SCD	WITT	WI_S0418	1,38	24,9	57,0	1300	103
	RIT-DUPONT	RD_S0312	1,40	10,8	39,4	2000	69
	LEEDS	LE_S0307	1,60	18,0	49,5	1005	57
	BFDP	BF_S2776	3,00	19,9	51,8	1570	99
	BIGC-S-SG	SS_S0446	3,04	18,6	50,3	958	56
TCD	WANG-M	WA_T0100	0,55	40,7	70,0	1100	142
	BIGC-T1-SG	1S_T0890	1,10	18,6	50,3	958	56
	BIGC-T2-M	2M_T0399	0,70	18,6	50,3	1036	61
	BIGC-T2-SG	2S_T0446	1,10	18,6	50,3	1036	61
	BIGC-T2-G	2G_T0379	0,80	18,6	50,3	1036	61
VTCD	RICHTER	RI_V0330	0,90	17,0	48,2	1108	60
	KITTELMANN	KI_V0392	0,41	18,4	50,0	1022	60
	AVRAMOPOULOS	AV_V0106	0,75	17,0	48,2	1108	60

Remarks:

Group SCD = Small Colour Differences

Group TCD = Threshold Colour Differences

Group VTCD = Visual Threshold Colour Differences

Groups SCD and TCD use the CIE 10 degree observer

Group VTCD uses the CIE 2 degree observer

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XE210-3N

Visual and other characteristics of colour difference data sets

Short Name, number of pairs	Number of observers and replications	light source and/or background chromaticity near	Material properties	Scaling and comparison method
WI_S0418 RD_S0312 LE_S0307 BF_S2776 SS_S0446	10-14 50 12-15 Mean>20 9 x 27	D65 CCT 6100 K D65 D65 D65	Gloss Paint Gloss Paint Matt Paint (textile) Print	Own grey scale Anchor pair grey scale ³⁾ Grey scale Own grey scale
WA_T0100 1S_T0890 2M_T0399 2S_T0446 2G_T0379	21 x 26 16 x 3 23 x 3 23 x 3 23 x 3	D65 D65 D65 D65 D65	Gloss Paint Gloss Paint Gloss Paint Gloss Paint Gloss Paint	fixed Yes/No ⁴⁾ fixed Yes/No ⁴⁾ fixed Pass/Fail ⁴⁾ fixed Pass/Fail ⁴⁾ fixed Pass/Fail ⁴⁾
RI_V0330 KI_V0392 AV_V0106	7 x 3 31 4 x 3	D65 (258 pairs) ¹⁾ D65 CCT 4000 K ²⁾	light colours photo paper light colours	slider Yes/No ⁵⁾ slider Yes/No ⁵⁾ slider Yes/No ⁵⁾

Remarks:

¹⁾ 72 pairs are seen in a surround with a correlated colour temperature near the CCT 4000K.

²⁾ large range 0,1<Y<200; all pairs are seen in surround chromaticity near the CCT 4000K.

³⁾ grey scale and anchor pair.

⁴⁾ Pass/Fail decision of colour difference.

⁵⁾ Yes/No detection of colour difference at visual threshold.

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XE210-7N

TUB-test chart XE21; Colour difference experiments

Properties and download of the colour difference data sets SCD, TCD, and VTCD

Name of data set, data file folder in internet, reference for the data set

Short Name, number of pairs	data file folder in internet: ABCD ^{1) 2)}	line range of CIE XYZ data of pairs in internet file: ABCD0-7R.PS ³⁾	Publication reference for the data set Author(s) and publication year
WI_S0418 RD_S0312 LE_S0307 BF_S2776 SS_S0446	YE94 YE95 YE96 YE97 YE98	0268 to 0700 0268 to 0592 0268 to 0587 0268 to 3105 0238 to 0663	WITT, K. (1999) BERNS, R. S. et al. (1991) KIM, D. H. et al. (1997) LUO, M. R. et al. (1986) HUANG, M. et al. (2012b)
WA_T0100 1S_T0890 2M_T0399 2S_T0446 2G_T0379	YE71 YE72 YE73 YE74 YE75	0238 to 0345 0238 to 1135 0238 to 0644 0238 to 0691 0238 to 0624	WANG, H. et al. (2012) HUANG, M. et al. (2012a) HUANG, M. et al. (2010) HUANG, M. et al. (2010) HUANG, M. et al. (2010)
RI_V0330 KI_V0392 AV_V0106	YE91 YE92 YE93	0268 to 0610 0268 to 0673 0268 to 0408	RICHTER, K. (1985) KITTELMANN, P. (2010) AVRAMOPOULOS, D. (1987)

Remarks: ABCD may be used for example for YE94

¹⁾ Two servers allow the download of the data sets with the CIE XYZ and DV data:

<http://130.149.60.45/~farbmetrik/> and/or

<http://farbe.li.tu-berlin.de/>

²⁾ Data files are given in the formats: .TXT (text), .PS/.EPS (PostScript), and .PDF

³⁾ See the files for download for example in: <http://farbe.li.tu-berlin.de/YE94/>

Use for download for example: <http://farbe.li.tu-berlin.de/YE94/YE940-7T.TXT>

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XE211-3N

Content of a file with the example SCD data set: WI_S0418

see for example the following folder for WI_S0418 with many files for the download:

<http://farbe.li.tu-berlin.de/YE94/>

see the following file with the PostScript programming text

<http://farbe.li.tu-berlin.de/YE94/YE940-7R.TXT>

one can study the output of the corresponding PDF file

<http://farbe.li.tu-berlin.de/YE94/YE940-7R.PDF>

the ASCII text output of the preceding PDF file is in the file:

<http://farbe.li.tu-berlin.de/YE94/YE940-7T.TXT>

This output includes the following text and numerical data:

1000*CIEXYZ & 1000*DV data for all colours (a) of all colour difference data pairs
The XYZn data are for the experimental reference white of the 2 or 10 degree observer
The reference white is for example Xn =95,01, Yn =100,00, Zn =108,85 for D65

Xn	Yn	Zn	X0	Y0	Z0	X1	Y1	Z1	DV
0094810	0100000	0107330	0062894	0069530	0030219	0062792	0069510	0029574	0000573
0094810	0100000	0107330	0062894	0069530	0030219	0062921	0069620	0028877	0000866

If the decimal comma for the CIEXYZ and DV data is considered, then for example
X0=62,894 and DV=0,573

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input: w/rgb/cmyk -> w/rgb/cmyk-