

UGRA

Display Analysis & Certification Tool

Report

Basics

Date: 2009-11-21 22:42:16
Report-Version: v1.3.1
Monitor-Name: \\.\DISPLAY1
Profile: C:/Windows/system32/spool/.../21.11.09-5800K-22-120cd-trc.icc
Created: 2009-11-21 22:31
Measurement device: DTP94-LCD mode (Wide Gamut S-IPS (generic))

Summary

The monitor has passed the certification according to the UGRA DACT specifications.

Calibration

White Point	yes
Gray balance	yes
Profile quality	yes

Softproofing

MultiColor, HighBody	yes
Offset/Gravure Paper Type 1/2	yes
Offset on uncoated paper	yes
Newspaper Printing	yes
sRGB	yes
AdobeRGB	yes
ECI-RGB	yes

Diagram



Whitepoint

The whitepoint should be as close as possible to the black body curve and the calibration target. The maximum allowed distance to the target whitepoint is DeltaE 2.0.

XYZ:	112.08 117.77 115.31
XYZ (normalized):	95.17 100.00 97.91
Luminance:	117.8 Cd/m2
Next Temperature:	5847 Kelvin
Assumed Target Whitepoint:	5800 Kelvin
Distance to assumed Target Whitepoint:	0.5 deltaE

Blackpoint

The blackpoint is not defined in ISO 12646. Therefore UDACT does only measure but not assess it.

Luminance:	0.2 Cd/m2
Chromaticity:	2.0 Chroma (Lab)

Gray balance

Average and maximum calculation will respect measurements with 1% minimum luminance only. The maximum allowed deviations to comply with this test are an average of DeltaC 1.0 and a range of DeltaC 2.0.

%	Kelvin	Cd/m2	L	Chroma	Gamma
0	16883	0.18	1.41	1.97	
5	9450	0.32	2.42	2.04	2.26
10	6032	0.91	6.99	1.18	2.22
15	5813	2.03	13.95	0.23	2.20
20	5813	3.59	20.23	0.36	2.21
25	5817	5.62	26.09	0.45	2.23
30	5848	8.44	32.19	0.56	2.22
35	5871	11.74	37.79	0.96	2.20
40	5884	15.84	43.43	0.83	2.19
45	5883	20.21	48.47	0.72	2.21
50	5842	25.55	53.70	0.14	2.22
55	5895	31.76	58.94	0.62	2.19
60	5860	38.53	63.93	0.26	2.20
65	5864	45.51	68.50	0.35	2.22
70	5869	53.77	73.32	0.40	2.21
75	5873	62.81	78.07	0.41	2.20
80	5874	72.66	82.75	0.39	2.17
85	5839	81.96	86.80	0.52	2.22
90	5843	93.40	91.37	0.33	2.19
95	5880	105.32	95.76	0.41	2.14
100	5847	117.77	100.00	0.00	
Average	5856			0.44	2.21
Range				1.52	
Max				0.96	

Tone values = 98.2%

Through the calibration of a display tone values can be lost. A display for the printing industry should show at least 95% of the incoming tone values.

Profile Quality

This test displays and measures RGB values and compares them with the transformation of the profile. The maximum allowed deviations to comply with this test are an average of DeltaE 3.0 and a maximum of DeltaE 6.0.

The assumed chromatic adaptation is: Bradford

RGB	Lab	deltaLab	deltaE
0 0 0	1.4 -0.1 -2.0	-1.4 0.1 2.0	2.4
0 0 128	11.4 41.3 -67.7	-0.4 1.8 -1.4	2.3
0 0 255	28.6 72.2 -115.2	0.1 -0.8 0.6	1.0
0 128 0	44.6 -80.4 46.1	0.4 -1.0 1.3	1.7
0 128 128	46.6 -55.0 -11.7	0.1 0.3 -0.5	0.6
0 170 255	64.0 -36.0 -57.0	-0.0 0.2 0.1	0.2
0 255 0	84.8 -135.2 79.4	0.2 0.2 -1.0	1.0
0 255 170	86.1 -115.1 21.6	0.1 0.7 -1.0	1.2
0 255 255	87.8 -90.6 -20.5	0.1 0.0 0.2	0.2
85 85 85	36.0 0.7 -0.7	-0.2 -0.7 0.7	1.0
128 0 0	30.1 60.4 45.1	-0.2 1.0 2.7	2.9
128 0 128	32.9 66.9 -31.6	-0.0 0.6 -0.3	0.7
128 128 0	52.5 -9.0 58.4	0.1 -0.7 0.3	0.8
128 128 128	54.1 -0.1 0.0	-0.1 0.1 -0.0	0.1
128 128 255	58.7 26.3 -65.1	-0.2 -0.1 -0.1	0.3
128 255 128	88.7 -85.8 46.1	-0.0 -0.5 -0.2	0.5
170 0 255	48.6 92.5 -81.6	0.0 -0.4 1.1	1.2
170 170 170	70.4 -0.3 0.0	-0.2 0.3 -0.0	0.4
170 255 0	90.5 -68.0 88.3	0.1 -0.7 -1.5	1.6
170 255 255	93.4 -43.3 -10.8	-0.3 0.3 -0.5	0.6
255 0 0	60.4 101.6 88.3	-0.2 0.2 -1.8	1.8
255 0 170	62.4 106.2 -8.9	-0.2 -0.1 -0.0	0.2
255 0 255	65.1 112.4 -54.0	-0.1 -0.5 1.1	1.2
255 128 128	72.5 66.8 29.9	-0.2 0.1 0.0	0.3
255 170 0	79.2 38.8 89.4	0.0 -0.1 -1.8	1.8
255 170 255	82.7 53.1 -26.4	-0.3 0.5 0.4	0.7
255 255 0	97.7 -15.9 99.4	0.1 -0.3 -2.1	2.1
255 255 170	98.9 -9.8 41.3	-0.2 0.6 -0.3	0.7
255 255 255	100.0 0.0 0.0	0.0 -0.0 -0.0	0.0
170 85 85	49.8 49.1 22.4	-0.3 0.8 -0.0	0.8
85 170 85	61.9 -64.1 34.5	-0.1 -0.2 -0.3	0.4
85 85 170	39.3 19.9 -48.5	-0.1 -0.3 -0.1	0.4
85 170 170	63.5 -46.3 -11.2	-0.2 -0.2 -0.2	0.4
170 85 170	51.8 57.3 -27.8	-0.1 0.2 0.2	0.3
170 170 85	69.0 -9.5 45.5	-0.1 0.3 0.0	0.3
Average			0.9
Maximum			2.9

Gamut-Volume

These measurements are only informative.

Gamut-Volume	
ISO	100 %
sRGB	100 %
AdobeRGB	98 %
ECI-RGB v1.0	92 %

ISO-Gamut

This test displays and measures Lab values and compares them with the reference. The maximum allowed deviations to comply with this test are an average of DeltaE 4.0 and a minimum Gamut volume of 90% for ISOcoated.

Reference	Lab	deltaLab
55.0 -37.0 -50.0	55.4 -33.3 -49.6	3.7
66.9 -24.7 -37.1	67.1 -24.2 -37.3	0.6
79.7 -12.5 -21.8	80.1 -12.6 -21.6	0.4
48.0 74.0 -3.0	48.1 73.3 -3.1	0.7
60.8 50.6 -6.7	61.3 49.8 -6.0	1.2
76.4 25.8 -6.9	76.8 25.3 -6.7	0.6
89.0 -5.0 93.0	89.1 -4.5 92.7	0.6
90.3 -4.7 62.6	90.6 -4.8 63.0	0.5
92.2 -3.5 31.1	92.3 -3.7 31.2	0.3
53.1 37.7 28.9	53.3 37.4 28.9	0.4
41.5 22.7 16.8	41.7 23.2 16.2	0.7
31.9 40.0 24.0	32.2 39.5 23.7	0.6
32.5 44.4 -1.8	32.8 43.8 -1.2	0.9
51.3 1.3 44.5	51.2 1.2 44.7	0.2
34.6 -36.4 13.9	34.8 -35.8 14.2	0.8
36.0 -26.2 -20.9	36.2 -24.8 -21.0	1.4
20.9 9.6 -23.6	21.6 10.6 -23.5	1.3
89.0 0.0 -1.8	89.2 0.3 -1.9	0.3
82.8 0.0 -1.7	83.1 -0.7 -1.6	0.8
69.3 0.0 -1.4	69.5 -0.7 -1.1	0.8
54.1 0.0 -1.0	54.1 0.2 -1.0	0.2
36.6 -0.0 -0.5	36.9 0.5 -1.1	0.8
16.0 0.0 0.0	16.8 0.6 0.4	1.1
24.0 22.0 -46.0	24.3 21.9 -45.6	0.5
40.9 17.9 -36.6	41.1 19.0 -37.2	1.3
63.7 10.3 -23.8	63.9 10.7 -24.0	0.5
47.0 68.0 48.0	47.2 67.5 48.4	0.6
58.5 47.1 37.9	58.6 46.4 37.5	0.8
74.2 22.9 21.4	74.5 22.0 20.9	1.1
50.0 -65.0 27.0	49.9 -64.0 27.1	1.0
62.1 -39.8 21.0	62.3 -39.3 21.2	0.6
77.0 -19.1 11.0	77.2 -18.6 11.1	0.5
71.2 18.8 17.3	71.3 18.5 16.8	0.6
71.2 22.2 73.1	71.3 21.3 74.1	1.3
47.7 71.2 16.2	47.8 70.3 16.1	0.9
38.0 55.4 -20.9	38.3 54.3 -20.8	1.1
73.7 -22.8 67.6	73.8 -23.0 68.8	1.3
52.3 -52.3 -20.2	52.3 -51.7 -20.5	0.7
43.3 -17.0 -48.6	43.3 -16.1 -48.8	0.9
95.0 0.0 -2.0	95.1 -0.1 -1.7	0.3
88.5 -0.4 -3.1	88.7 -0.6 -3.2	0.3
82.0 -0.9 -4.1	82.3 -1.0 -3.9	0.4
67.7 -2.0 -4.4	67.8 -1.8 -4.5	0.2
52.2 -2.5 -3.5	52.4 -1.9 -3.2	0.6
37.5 -3.9 -3.1	37.6 -2.5 -3.5	1.4
26.3 -6.8 -3.4	26.8 -6.9 -2.8	0.8
Average		0.8
Gamut-Volume		100 %

Measurement Data

This table lists all RGB measurements. The XYZ values represent the values from the measurement device.

RGB	XYZ	RGB	XYZ
255 255 255	112.08 117.77 115.31	85 85 170	16.35 13.02 43.08
0 0 0	0.17 0.18 0.33	85 170 170	23.85 38.24 46.93
12 12 12	0.31 0.32 0.46	170 85 170	38.63 23.38 43.81
25 25 25	0.89 0.91 0.96	170 170 85	39.86 46.09 14.70
38 38 38	1.94 2.03 1.99	0 146 216	20.18 28.14 74.43
51 51 51	3.40 3.59 3.46	104 173 227	34.92 43.96 85.14
63 63 63	5.33 5.62 5.43	169 203 236	59.06 67.37 94.74
76 76 76	7.98 8.44 8.17	183 52 122	38.09 19.53 21.34
89 89 89	11.28 11.74 11.74	196 114 159	50.20 34.53 39.08
102 102 102	15.17 15.84 15.80	214 173 201	69.02 60.13 66.85
114 114 114	19.33 20.21 20.10	240 224 0	78.61 86.89 9.60
127 127 127	24.29 25.55 24.94	240 228 105	82.41 90.89 25.13
140 140 140	30.29 31.76 31.51	239 233 172	87.93 95.56 54.10
153 153 153	36.59 38.53 37.67	170 103 82	33.47 24.80 10.74
165 165 165	43.20 45.51 44.48	124 86 74	17.79 14.37 8.34
178 178 178	51.01 53.77 52.56	115 52 46	13.29 8.27 3.03
191 191 191	59.59 62.81 61.45	116 50 82	14.61 8.63 8.98
204 204 204	68.96 72.66 71.13	133 120 48	21.56 22.76 5.14
216 216 216	78.24 81.96 80.59	50 93 60	5.43 9.90 5.63
229 229 229	89.05 93.40 91.70	41 95 116	7.51 10.86 19.68
242 242 242	100.24 105.32 103.77	52 50 86	4.79 4.06 9.96
0 0 128	4.24 1.72 22.01	222 223 226	83.74 87.78 88.60
0 0 255	19.43 7.51 102.71	204 205 208	69.70 73.54 74.07
0 128 0	5.04 16.84 2.72	167 168 170	44.72 47.23 47.27
0 128 128	9.22 18.71 24.58	128 128 130	24.85 26.05 26.12
0 170 255	28.76 39.56 107.02	87 87 88	10.71 11.17 11.33
0 255 0	22.83 77.56 11.43	44 44 44	2.57 2.67 2.56
0 255 170	30.70 80.92 52.59	54 51 126	7.23 5.09 22.12
0 255 255	42.32 85.41 114.07	97 89 155	17.36 14.23 36.15
85 85 85	10.21 10.63 10.65	153 148 195	40.77 38.62 61.13
128 0 0	15.24 7.15 0.53	182 57 44	34.44 18.53 3.25
128 0 128	19.45 8.75 22.56	195 110 80	43.84 30.85 10.91
128 128 0	20.42 24.08 2.95	213 168 144	62.04 55.58 35.54
128 128 128	24.73 26.00 25.43	52 138 71	9.35 21.66 9.19
128 128 255	40.07 32.05 105.46	112 164 111	23.49 36.27 21.11
128 255 128	42.81 86.76 34.46	171 197 167	50.15 61.09 48.09
170 0 255	48.04 20.74 104.34	199 162 143	54.60 49.91 34.44
170 170 170	46.12 48.60 47.53	212 160 35	54.92 49.63 6.29
170 255 0	51.77 91.00 11.87	183 55 92	36.42 19.17 12.02
170 255 255	71.39 99.48 114.33	134 53 124	21.63 11.98 21.68
255 0 0	70.07 32.53 1.31	173 189 47	42.07 54.41 8.91
255 0 170	78.01 35.52 43.44	24 142 156	13.42 24.37 38.08
255 0 255	89.52 39.88 105.43	30 110 181	13.46 16.17 49.87
255 128 128	79.47 51.43 26.73	239 240 244	98.43 103.44 103.99
255 170 0	79.14 64.16 5.87	219 222 227	82.26 86.67 89.47
255 170 255	99.01 72.42 109.85	200 203 210	67.80 71.62 75.04
255 255 0	92.69 109.99 12.44	159 164 171	41.78 44.46 47.64
255 255 170	100.82 113.93 55.18	120 125 129	22.60 24.18 25.64
170 85 85	32.44 21.10 10.91	84 90 93	10.72 11.61 12.69
85 170 85	17.57 35.73 14.11	57 67 69	5.06 5.95 6.50

Uniformity

The uniformity test shows the luminance (in %) and the color deviation (in Delta C*) from the centre to the 8 measuring points around it. The maximum deviation for the luminance may be 10%. The average value and the chroma deviations are only informative. This test is not taken in consideration for the UDACT certification.

Results of the white measurements:

Absolute Luminance	119.03 Cd/m2	125.15 Cd/m2	131.51 Cd/m2
Luminance to Centre	101 %	107 %	112 %
Lab-Chroma to Centre	1.42	1.38	2.26
Absolute Luminance	112.70 Cd/m2	117.51 Cd/m2	125.89 Cd/m2
Luminance to Centre	96 %	100 %	107 %
Lab-Chroma to Centre	1.32	0.00	0.52
Absolute Luminance	107.28 Cd/m2	112.57 Cd/m2	121.76 Cd/m2
Luminance to Centre	91 %	96 %	104 %
Lab-Chroma to Centre	2.22	1.86	0.75

Results of the gray measurements:

Absolute Luminance	26.03 Cd/m2	27.58 Cd/m2	28.37 Cd/m2
Luminance to Centre	101 %	107 %	110 %
Lab-Chroma to Centre	0.90	0.60	1.08
Absolute Luminance	24.82 Cd/m2	25.85 Cd/m2	27.21 Cd/m2
Luminance to Centre	96 %	100 %	105 %
Lab-Chroma to Centre	1.00	0.15	0.29
Absolute Luminance	23.31 Cd/m2	24.40 Cd/m2	26.32 Cd/m2
Luminance to Centre	90 %	94 %	102 %
Lab-Chroma to Centre	1.49	1.07	0.71

Results of the dark measurements:

Absolute Luminance	5.63 Cd/m2	5.95 Cd/m2	6.09 Cd/m2
Luminance to Centre	101 %	107 %	109 %
Lab-Chroma to Centre	0.48	0.32	0.28
Absolute Luminance	5.39 Cd/m2	5.57 Cd/m2	5.87 Cd/m2
Luminance to Centre	97 %	100 %	105 %
Lab-Chroma to Centre	1.06	0.55	0.75
Absolute Luminance	5.04 Cd/m2	5.28 Cd/m2	5.68 Cd/m2
Luminance to Centre	90 %	95 %	102 %
Lab-Chroma to Centre	1.23	0.96	0.86

Summary:

	Average	Max
Luminance Deviation	5%	12%
Chroma Deviation	1	2