

UGRA

Display Analysis & Certification Tool

Report

Basics

Date: 2009-2-26 0:41:53
Report-Version: v1.3.1
Monitor-Name: \\.\DISPLAY1
EDID-Name:
EDID-Serial:
Profile: C:/WINDOWS/System32/spool/.../26.02.09-5800K-18-120cd-trc.icc
Created: 2009-2-26 0:37
Measurement device: eye-one display 2

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:	107.64 113.57 110.70
XYZ (normalized):	94.78 100.00 97.48
Luminance:	113.6 Cd/m2
Next Temperature:	5864 Kelvin
Assumed Target Whitepoint:	5900 Kelvin
Distance to assumed Target Whitepoint:	1.5 deltaE

Blackpoint

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

Luminance:	0.1 Cd/m2
Chromaticity:	0.4 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	6962	0.13	1.01	0.41	
5	6274	0.55	4.38	0.86	1.87
10	5489	1.75	12.85	1.00	1.85
15	5818	3.70	21.03	0.38	1.82
20	5672	6.37	28.40	0.83	1.81
25	5848	9.19	34.18	0.07	1.82
30	5860	12.73	39.93	0.86	1.82
35	5761	16.95	45.53	1.13	1.81
40	5865	21.48	50.59	0.90	1.81
45	5831	26.50	55.41	1.30	1.82
50	5792	32.31	60.29	1.11	1.81
55	5773	38.81	65.10	0.68	1.80
60	5797	45.02	69.22	1.73	1.80
65	5833	51.75	73.26	0.62	1.82
70	5789	59.36	77.44	0.95	1.82
75	5750	67.62	81.59	1.51	1.79
80	5851	76.03	85.48	0.52	1.79
85	5824	85.14	89.38	0.37	1.78
90	5824	93.72	92.81	0.39	1.83
95	5793	103.62	96.51	1.02	1.76
100	5864	113.57	100.00	0.00	
Average	5791			0.81	1.81
Range				1.97	
Max				1.73	

Tone values = 98.0%

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: CAT02

RGB	Lab	deltaLab	deltaE
0 0 0	1.0 -0.4 -0.1	-1.0 0.4 0.1	1.1
0 0 128	16.0 35.1 -72.8	0.3 -1.3 0.2	1.3
0 0 255	33.1 49.7 -109.4	-0.3 1.5 -0.3	1.5
0 128 0	48.4 -86.6 56.1	0.5 0.9 0.7	1.2
0 128 128	50.8 -58.3 -16.6	0.6 -0.4 1.3	1.5
0 170 255	66.7 -47.6 -53.9	0.2 0.9 0.5	1.1
0 255 0	81.8 -130.6 86.9	0.3 1.0 -0.9	1.4
0 255 170	83.6 -108.2 12.6	0.4 0.7 -0.1	0.8
0 255 255	85.7 -89.7 -23.6	0.3 0.8 0.5	1.0
85 85 85	43.8 1.2 -0.8	0.2 -1.2 0.8	1.5
128 0 0	36.8 60.8 53.6	-0.3 0.0 1.9	2.0
128 0 128	40.5 65.1 -31.4	-0.2 -1.1 -0.5	1.3
128 128 0	58.7 -8.0 69.5	0.0 -0.2 0.5	0.6
128 128 128	60.6 1.0 -0.3	0.0 -1.0 0.3	1.1
128 128 255	65.3 15.9 -55.7	-0.2 0.0 -0.2	0.2
128 255 128	87.7 -69.1 39.0	0.2 -0.7 0.5	0.9
170 0 255	55.2 79.5 -71.6	-0.3 0.1 -0.5	0.5
170 170 170	74.9 0.0 0.5	0.0 -0.0 -0.5	0.5
170 255 0	89.6 -54.6 97.2	0.2 -0.2 -0.8	0.9
170 255 255	93.1 -35.0 -11.2	0.1 -0.1 0.0	0.1
255 0 0	63.5 92.2 87.7	-0.0 -0.3 -1.6	1.6
255 0 170	66.1 94.9 -10.8	0.1 -0.6 -1.2	1.4
255 0 255	69.2 96.6 -47.9	-0.0 0.2 -0.4	0.4
255 128 128	77.1 53.9 26.7	0.0 -0.0 -0.2	0.2
255 170 0	82.6 29.4 97.2	-0.1 0.8 -1.5	1.7
255 170 255	86.5 39.9 -20.6	-0.1 0.9 -0.5	1.0
255 255 0	96.9 -12.5 107.7	0.1 0.2 -1.8	1.8
255 255 170	98.3 -6.0 36.6	0.2 -0.2 -0.8	0.8
255 255 255	100.0 0.0 0.0	0.0 -0.0 0.0	0.0
170 85 85	56.9 43.3 20.4	0.0 -0.9 0.5	1.1
85 170 85	65.4 -55.1 30.6	0.1 0.1 0.6	0.6
85 85 170	47.2 13.6 -43.7	0.3 -1.1 -0.3	1.1
85 170 170	67.2 -41.9 -11.9	0.2 0.2 -0.4	0.5
170 85 170	59.2 48.2 -23.7	0.1 -0.8 -0.5	0.9
170 170 85	73.3 -6.5 43.0	-0.0 -0.3 0.4	0.5
Average			1.0
Maximum			2.0

Gamut-Volume

These measurements are only informative.

Gamut-Volume	
ISO	100 %
sRGB	97 %
AdobeRGB	97 %
ECI-RGB v1.0	95 %

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	54.3 -35.6 -51.4	2.0
66.9 -24.7 -37.1	66.5 -23.9 -37.8	1.1
79.7 -12.5 -21.8	79.5 -10.9 -22.0	1.6
48.0 74.0 -3.0	48.1 74.6 -2.2	1.0
60.8 50.6 -6.7	61.0 51.9 -5.6	1.7
76.4 25.8 -6.9	76.3 27.0 -6.9	1.2
89.0 -5.0 93.0	89.4 -4.2 94.1	1.4
90.3 -4.7 62.6	90.4 -3.8 63.0	1.0
92.2 -3.5 31.1	92.4 -2.6 32.5	1.6
53.1 37.7 28.9	53.2 38.7 29.2	1.0
41.5 22.7 16.8	42.0 22.8 18.2	1.5
31.9 40.0 24.0	32.1 40.3 24.6	0.7
32.5 44.5 -1.8	32.6 44.8 -1.5	0.5
51.3 1.3 44.5	51.2 1.6 44.0	0.5
34.6 -36.4 13.9	34.2 -35.6 13.9	1.0
36.0 -26.2 -20.9	35.4 -25.7 -21.3	0.9
20.9 9.6 -23.6	20.6 10.7 -23.8	1.2
89.0 0.0 -1.9	89.1 -0.1 -1.0	0.9
82.8 0.0 -1.7	82.7 0.9 -1.5	1.0
69.3 0.0 -1.4	69.0 1.1 -1.4	1.1
54.1 0.0 -1.0	54.0 1.5 -1.1	1.5
36.6 0.0 -0.5	36.7 -0.1 -0.4	0.2
16.0 0.0 0.0	16.3 0.7 -0.2	0.8
24.0 22.0 -46.0	24.0 23.4 -45.9	1.4
40.9 17.9 -36.6	41.1 18.1 -36.4	0.3
63.7 10.3 -23.8	63.6 11.0 -23.8	0.7
47.0 68.0 48.0	47.4 68.5 47.8	0.7
58.5 47.1 37.9	58.7 48.1 38.4	1.1
74.2 22.9 21.4	73.9 24.2 20.8	1.5
50.0 -65.0 27.0	49.4 -65.0 27.1	0.6
62.1 -39.8 21.0	61.6 -39.0 20.3	1.2
77.0 -19.1 11.0	76.8 -17.6 11.1	1.5
71.2 18.9 17.3	71.1 20.2 17.1	1.4
71.2 22.1 73.1	71.3 22.7 73.6	0.7
47.7 71.2 16.2	47.8 71.7 17.3	1.1
38.0 55.4 -20.9	38.2 56.2 -20.4	0.9
73.7 -22.8 67.6	73.7 -22.1 68.1	0.9
52.3 -52.3 -20.1	52.0 -53.0 -19.8	0.9
43.3 -17.0 -48.6	42.9 -17.2 -48.7	0.4
95.0 0.0 -2.0	95.1 1.1 -1.9	1.1
88.5 -0.4 -3.1	88.4 0.7 -2.9	1.1
82.0 -0.9 -4.1	81.7 0.4 -4.0	1.4
67.7 -2.0 -4.4	67.2 -0.3 -4.9	1.8
52.2 -2.5 -3.5	51.7 -2.3 -3.8	0.6
37.5 -3.9 -3.1	37.5 -3.0 -3.3	0.9
26.3 -6.8 -3.4	26.3 -5.9 -2.3	1.5
Average		1.1
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	107.64 113.57 110.70	85 85 170	21.10 18.69 49.08
0 0 0	0.11 0.13 0.13	85 170 170	27.87 42.28 51.92
12 12 12	0.50 0.55 0.53	170 85 170	44.95 30.96 49.86
25 25 25	1.68 1.75 1.62	170 170 85	45.71 51.48 19.02
38 38 38	3.53 3.70 3.62	0 130 206	18.08 26.05 71.06
51 51 51	6.06 6.37 6.02	89 159 219	32.81 41.49 80.58
63 63 63	8.72 9.19 8.94	156 193 231	56.30 63.75 89.82
76 76 76	12.17 12.73 12.61	170 0 102	37.10 18.90 19.87
89 89 89	16.27 16.95 16.59	185 86 142	48.64 32.99 36.64
102 102 102	20.51 21.48 21.24	206 154 190	66.13 57.08 63.33
114 114 114	25.39 26.50 26.21	234 221 27	76.05 84.18 9.53
127 127 127	30.93 32.31 31.65	234 225 93	79.06 86.87 24.36
140 140 140	36.96 38.81 37.50	235 230 160	85.08 92.16 51.03
153 153 153	43.24 45.02 44.43	154 80 64	32.46 23.81 10.19
165 165 165	49.28 51.75 50.59	105 66 57	17.24 14.05 7.61
178 178 178	56.66 59.36 57.80	96 31 31	12.87 7.96 2.77
191 191 191	64.78 67.62 65.81	97 27 63	14.09 8.24 8.56
204 204 204	72.30 76.03 74.39	114 103 37	20.73 21.85 5.18
216 216 216	80.84 85.14 82.64	35 77 45	5.00 9.20 5.30
229 229 229	89.00 93.72 90.98	29 77 97	6.78 10.04 18.36
242 242 242	98.83 103.62 100.83	37 33 66	4.29 3.63 9.08
0 0 128	5.31 2.70 28.91	215 216 220	80.16 84.58 83.78
0 0 255	18.33 9.71 100.86	194 195 199	66.72 69.88 69.88
0 128 0	5.58 19.40 2.33	152 153 155	42.72 44.64 44.79
0 128 128	10.87 22.00 31.59	110 110 112	23.99 24.93 24.96
0 170 255	27.66 42.28 104.79	68 68 69	10.09 10.66 10.53
0 255 0	19.70 67.96 7.71	30 30 30	2.37 2.46 2.43
0 255 170	28.40 72.30 55.74	41 31 106	6.97 4.84 20.90
0 255 255	37.93 77.48 108.70	80 67 137	16.50 13.74 33.80
85 85 85	14.96 15.56 15.53	138 129 182	38.95 36.95 57.78
128 0 0	20.27 10.44 0.75	168 23 30	33.79 18.10 3.29
128 0 128	25.72 13.11 29.50	183 84 63	42.84 29.81 10.29
128 128 0	25.85 30.05 2.98	204 150 128	59.32 52.38 33.48
128 128 128	31.35 32.76 32.15	35 126 57	8.51 20.34 8.71
128 128 255	44.40 39.85 103.68	92 153 94	21.86 33.95 20.24
128 255 128	45.46 81.12 37.92	156 189 154	47.93 58.18 45.76
170 0 255	52.01 26.90 101.53	188 145 127	52.73 47.71 32.61
170 170 170	51.81 54.67 52.78	202 143 32	53.34 47.80 6.46
170 255 0	53.20 85.16 8.70	170 15 72	35.53 18.55 11.11
170 255 255	71.73 94.99 109.47	117 22 104	21.17 11.55 20.44
255 0 0	69.26 35.46 1.81	156 181 43	40.47 52.14 9.14
255 0 170	77.87 39.80 49.01	20 129 139	12.44 23.20 35.52
255 0 255	87.39 45.03 102.15	27 91 165	12.51 15.35 46.82
255 128 128	80.16 57.96 33.23	236 237 242	95.19 99.68 100.10
255 170 0	78.71 68.79 5.59	212 215 221	79.02 82.92 84.77
255 170 255	96.93 78.31 106.08	189 193 201	64.59 67.83 70.91
255 255 0	88.82 103.63 9.41	144 149 156	39.80 42.00 45.19
255 255 170	97.80 108.13 57.41	101 107 111	20.96 22.60 24.19
170 85 85	38.89 27.84 16.20	66 72 75	10.20 11.16 12.04
85 170 85	21.76 39.20 18.32	41 50 51	4.77 5.54 5.91

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	110.46 Cd/m2	115.81 Cd/m2	119.43 Cd/m2
Luminance to Centre	98 %	102 %	106 %
Lab-Chroma to Centre	2.11	2.12	2.77
Absolute Luminance	108.68 Cd/m2	113.06 Cd/m2	115.01 Cd/m2
Luminance to Centre	96 %	100 %	102 %
Lab-Chroma to Centre	2.42	0.00	0.82
Absolute Luminance	101.01 Cd/m2	105.15 Cd/m2	106.82 Cd/m2
Luminance to Centre	89 %	93 %	94 %
Lab-Chroma to Centre	3.45	1.28	0.47

Results of the gray measurements:

Absolute Luminance	31.47 Cd/m2	32.49 Cd/m2	33.45 Cd/m2
Luminance to Centre	98 %	101 %	104 %
Lab-Chroma to Centre	0.96	2.03	2.86
Absolute Luminance	30.67 Cd/m2	32.19 Cd/m2	31.65 Cd/m2
Luminance to Centre	95 %	100 %	98 %
Lab-Chroma to Centre	1.28	1.12	2.13
Absolute Luminance	28.88 Cd/m2	29.33 Cd/m2	29.00 Cd/m2
Luminance to Centre	90 %	91 %	90 %
Lab-Chroma to Centre	1.22	0.92	0.98

Results of the dark measurements:

Absolute Luminance	8.34 Cd/m2	8.66 Cd/m2	9.29 Cd/m2
Luminance to Centre	94 %	98 %	105 %
Lab-Chroma to Centre	0.99	1.21	0.56
Absolute Luminance	8.29 Cd/m2	8.86 Cd/m2	8.69 Cd/m2
Luminance to Centre	94 %	100 %	98 %
Lab-Chroma to Centre	0.97	0.42	0.82
Absolute Luminance	7.62 Cd/m2	7.67 Cd/m2	7.76 Cd/m2
Luminance to Centre	86 %	87 %	88 %
Lab-Chroma to Centre	1.67	0.50	0.26

Summary:

	Average	Max
Luminance Deviation	5%	14%
Chroma Deviation	1	3