

UGRA

Display Analysis & Certification Tool

Report

Basics

Date: 2010-1-15 10:52:40
Report-Version: v1.3.1
Monitor-Name: \\.\DISPLAY1
EDID-Name: LaCie 324
EDID-Serial: 2B0384200972
Profile: C:/Windows/system32/spool/drivers/color/15.01.10-5000K-22-120cd.icc
Created: 2010-1-15 10:46
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	no

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:	122.10 126.78 103.82
XYZ (normalized):	96.31 100.00 81.89
Luminance:	126.8 Cd/m2
Next Temperature:	4986 Kelvin
Assumed Target Whitepoint:	5000 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:	0.1 Cd/m2
Chromaticity:	0.6 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	5266	0.13	0.91	0.57	
5	4847	0.35	2.48	0.39	2.13
10	4947	0.92	6.54	1.25	2.20
15	5090	2.02	13.18	0.95	2.23
20	5028	3.69	19.67	0.19	2.22
25	5093	5.68	25.20	0.53	2.25
30	4945	8.50	31.13	0.62	2.25
35	4994	12.01	36.87	0.19	2.25
40	4957	16.17	42.39	0.35	2.25
45	5006	20.66	47.37	0.23	2.28
50	4993	26.02	52.42	0.10	2.29
55	4974	32.21	57.47	0.66	2.29
60	5001	39.01	62.31	0.72	2.30
65	4994	46.15	66.83	0.26	2.35
70	4999	54.56	71.58	0.47	2.36
75	5039	63.59	76.16	0.87	2.39
80	5024	73.28	80.63	0.62	2.45
85	5007	83.16	84.79	0.85	2.57
90	5006	94.54	89.19	0.67	2.75
95	5007	106.60	93.49	0.73	3.31
100	4986	126.78	100.00	0.00	
Average	5008			0.50	2.37
Range				1.68	
Max				0.95	

Tone values = 95.6%

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.

RGB	Lab	deltaLab	deltaE
0 0 0	0.9 0.3 -0.5	-0.9 -0.3 0.5	1.1
0 0 128	12.0 33.0 -65.3	0.4 -0.0 -1.4	1.5
0 0 255	31.8 52.1 -110.0	-0.7 2.6 -0.7	2.8
0 128 0	43.3 -71.2 47.3	0.9 -1.6 1.7	2.5
0 128 128	45.2 -49.6 -12.7	1.1 -1.4 0.3	1.8
0 170 255	63.3 -35.0 -58.5	0.7 -1.8 1.9	2.7
0 255 0	84.1 -118.6 82.6	-0.3 -2.0 -1.4	2.4
0 255 170	85.3 -103.0 22.9	-0.1 -1.0 -2.2	2.4
0 255 255	87.5 -83.4 -20.6	-0.3 -1.1 0.1	1.1
85 85 85	35.4 0.0 0.1	0.5 -0.0 -0.1	0.5
128 0 0	29.5 56.5 41.7	1.1 0.6 3.1	3.4
128 0 128	32.8 60.5 -30.2	1.1 0.0 -0.5	1.2
128 128 0	51.2 -8.1 56.9	1.1 0.6 1.9	2.3
128 128 128	52.8 0.1 -0.4	1.2 -0.1 0.4	1.3
128 128 255	58.6 20.5 -65.7	0.6 -0.1 1.5	1.6
128 255 128	87.8 -77.8 47.1	0.1 0.2 -0.8	0.9
170 0 255	50.0 78.8 -79.0	0.4 1.1 1.0	1.5
170 170 170	68.8 0.3 0.2	1.3 -0.3 -0.2	1.4
170 255 0	89.6 -62.0 89.5	0.2 1.3 -1.0	1.6
170 255 255	92.8 -40.9 -11.9	0.1 0.6 0.5	0.8
255 0 0	60.6 95.6 77.8	0.6 -1.0 -1.7	2.1
255 0 170	62.8 98.1 -5.9	0.7 -1.0 -2.4	2.7
255 0 255	66.3 100.5 -51.4	0.3 -0.1 0.4	0.5
255 128 128	72.2 63.5 30.0	0.7 -1.1 -0.6	1.5
255 170 0	78.6 38.7 86.3	0.8 -1.3 -0.8	1.7
255 170 255	82.4 49.4 -26.5	0.7 -1.1 1.1	1.7
255 255 0	97.3 -12.6 99.6	0.1 0.1 -2.0	2.0
255 255 170	98.2 -7.0 43.1	0.2 -0.2 -2.3	2.3
255 255 255	100.0 0.0 0.0	0.0 0.0 -0.0	0.0
170 85 85	49.0 45.7 21.6	0.9 0.8 0.4	1.3
85 170 85	60.1 -56.2 33.7	1.0 -1.6 0.8	2.1
85 85 170	39.0 15.1 -46.6	0.7 0.2 -1.3	1.5
85 170 170	61.8 -42.2 -11.1	1.1 -1.2 -0.5	1.7
170 85 170	51.4 50.8 -25.9	1.0 1.0 -0.9	1.7
170 170 85	67.4 -6.8 44.5	1.2 -0.3 1.0	1.6
Average			1.7
Maximum			3.4

Gamut-Volume

These measurements are only informative.

Gamut-Volume	
ISO	100 %
sRGB	98 %
AdobeRGB	97 %
ECI-RGB v1.0	89 %

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	54.2 -32.8 -49.2	4.4
66.9 -24.7 -37.1	65.9 -23.9 -36.8	1.3
79.7 -12.5 -21.8	78.2 -11.7 -21.8	1.7
48.0 74.0 -3.0	46.6 73.1 -2.9	1.7
60.8 50.6 -6.7	59.5 49.5 -6.7	1.7
76.4 25.8 -6.9	74.8 25.1 -6.6	1.7
89.0 -5.0 93.0	86.8 -5.1 90.0	3.7
90.3 -4.7 62.6	88.2 -5.0 61.1	2.6
92.2 -3.5 31.1	89.9 -3.3 30.0	2.6
53.1 37.7 28.9	52.1 36.8 28.4	1.4
41.5 22.7 16.8	40.7 21.5 16.4	1.5
31.9 40.0 24.0	31.3 38.7 22.8	1.8
32.5 44.4 -1.8	31.9 43.3 -1.8	1.3
51.3 1.3 44.5	50.6 0.7 43.1	1.6
34.6 -36.4 13.9	34.2 -36.5 13.3	0.7
36.0 -26.2 -20.9	35.5 -26.2 -20.0	1.0
20.9 9.6 -23.6	20.8 8.8 -23.3	0.9
89.0 0.0 -1.8	86.9 1.0 -3.0	2.5
82.8 0.0 -1.7	81.0 -0.2 -2.1	1.9
69.3 0.0 -1.4	67.9 -0.1 -1.2	1.4
54.1 0.0 -1.0	52.9 0.5 -1.6	1.5
36.6 -0.0 -0.5	36.2 0.2 -1.1	0.8
16.0 0.0 0.0	16.3 -0.9 0.2	1.0
24.0 22.0 -46.0	23.6 21.3 -44.6	1.6
40.9 17.9 -36.6	40.1 17.6 -36.2	0.9
63.7 10.3 -23.8	62.4 10.5 -23.8	1.3
47.0 68.0 48.0	45.8 66.7 46.6	2.2
58.5 47.1 37.9	57.3 45.4 37.0	2.3
74.2 22.9 21.4	72.5 22.8 20.5	1.9
50.0 -65.0 27.0	49.1 -63.6 25.9	2.0
62.1 -39.8 21.0	61.0 -38.9 20.3	1.6
77.0 -19.1 11.0	75.3 -17.7 10.3	2.2
71.2 18.8 17.3	69.5 18.9 15.9	2.2
71.2 22.2 73.1	69.8 21.9 72.0	1.8
47.7 71.2 16.2	46.5 70.0 16.0	1.8
38.0 55.4 -20.9	37.1 54.8 -20.2	1.3
73.7 -22.8 67.6	72.3 -22.6 66.4	1.8
52.3 -52.3 -20.2	51.0 -50.4 -20.0	2.3
43.3 -17.0 -48.6	42.6 -16.3 -48.2	1.2
95.0 0.0 -2.0	92.6 0.0 -2.9	2.5
88.5 -0.4 -3.1	86.5 0.5 -4.1	2.4
82.0 -0.9 -4.1	80.2 -0.4 -4.4	1.8
67.7 -2.0 -4.4	66.1 -2.1 -4.7	1.7
52.2 -2.5 -3.5	51.2 -2.4 -3.3	1.0
37.5 -3.9 -3.1	36.8 -2.9 -2.9	1.2
26.3 -6.8 -3.4	25.9 -6.5 -3.6	0.5
Average		1.7
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	122.10 126.78 103.82	85 85 170	15.69 13.54 36.73
0 0 0	0.13 0.13 0.13	85 170 170	24.65 38.31 39.80
12 12 12	0.35 0.35 0.30	170 85 170	38.89 24.90 37.31
25 25 25	0.91 0.92 0.81	170 170 85	42.86 47.13 12.72
38 38 38	1.90 2.02 1.62	0 146 216	19.15 28.05 63.97
51 51 51	3.55 3.69 3.04	104 173 227	34.80 44.60 73.16
63 63 63	5.44 5.68 4.74	169 203 237	59.96 67.96 81.19
76 76 76	8.26 8.50 7.03	186 33 120	39.36 19.91 17.67
89 89 89	11.58 12.01 9.89	199 108 158	51.48 34.95 33.24
102 102 102	15.64 16.17 13.27	216 170 200	70.66 60.88 56.41
114 114 114	19.85 20.66 16.92	238 226 0	82.18 88.36 8.65
127 127 127	25.03 26.02 21.29	238 230 105	85.52 91.84 21.59
140 140 140	31.18 32.21 26.63	238 234 172	90.84 96.40 46.10
153 153 153	37.71 39.01 32.38	171 101 80	35.22 25.66 9.14
165 165 165	44.49 46.15 37.97	124 85 73	18.34 14.78 6.98
178 178 178	52.63 54.56 45.05	116 49 44	13.94 8.59 2.62
191 191 191	61.26 63.59 52.93	118 45 81	15.21 8.92 7.80
204 204 204	70.57 73.28 60.67	133 121 48	23.26 23.96 4.77
216 216 216	80.30 83.16 68.99	46 95 61	5.70 10.30 5.11
229 229 229	91.20 94.54 78.21	39 95 116	7.31 11.07 16.66
242 242 242	102.84 106.60 88.24	53 49 86	4.59 4.05 8.48
0 0 128	3.53 1.77 19.00	222 222 226	85.80 88.49 76.14
0 0 255	16.80 8.87 92.40	204 205 208	71.22 74.08 62.96
0 128 0	6.14 16.96 2.16	167 168 170	46.22 48.04 40.31
0 128 128	9.61 18.64 21.45	128 128 130	25.68 26.54 22.61
0 170 255	28.20 40.47 96.50	87 87 88	11.15 11.55 9.82
0 255 0	29.92 81.49 9.45	44 44 44	2.58 2.73 2.21
0 255 170	36.32 84.53 45.42	58 47 126	6.90 5.04 18.67
0 255 255	46.60 90.03 102.27	99 86 155	17.05 14.34 30.49
85 85 85	10.60 11.00 8.97	155 147 195	41.36 39.17 52.22
128 0 0	15.78 7.67 0.62	184 46 39	36.11 19.17 2.80
128 0 128	19.38 9.43 19.40	197 106 78	46.06 31.95 9.26
128 128 0	21.85 24.70 2.66	214 166 143	64.50 56.26 29.89
128 128 128	25.53 26.47 21.92	40 142 73	9.97 22.39 8.33
128 128 255	39.01 33.65 95.05	108 167 112	24.57 37.07 18.47
128 255 128	49.31 90.79 29.77	169 199 168	51.92 61.90 41.36
170 0 255	46.87 23.39 93.03	200 161 143	56.77 50.72 29.46
170 170 170	47.87 49.58 40.39	213 159 31	58.65 51.25 5.67
170 255 0	59.45 95.77 10.31	186 41 90	38.17 19.82 10.04
170 255 255	76.59 104.54 103.02	137 42 123	22.31 12.17 18.13
255 0 0	75.48 36.54 2.08	169 192 48	44.77 55.88 8.21
255 0 170	81.97 39.77 37.02	0 144 156	13.22 24.42 32.29
255 0 255	92.23 45.33 93.77	35 109 181	12.86 16.31 43.07
255 128 128	85.24 55.65 23.58	239 240 244	100.34 104.17 89.29
255 170 0	86.96 68.79 5.89	219 221 227	84.52 87.48 76.79
255 170 255	103.82 77.49 98.06	200 203 210	69.56 72.41 64.19
255 255 0	105.14 118.10 11.37	159 164 171	42.45 44.87 40.55
255 255 170	111.62 120.98 47.22	120 125 129	23.19 24.69 21.99
170 85 85	33.86 22.35 9.64	84 90 93	11.09 11.96 10.76
85 170 85	19.60 35.79 12.03	57 67 69	5.15 5.97 5.65

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	130.43 Cd/m ²	132.08 Cd/m ²	131.04 Cd/m ²
Luminance to Centre	103 %	104 %	103 %
Lab-Chroma to Centre	1.73	2.09	2.91
Absolute Luminance	130.93 Cd/m ²	127.03 Cd/m ²	124.98 Cd/m ²
Luminance to Centre	103 %	100 %	98 %
Lab-Chroma to Centre	0.24	0.00	0.99
Absolute Luminance	121.47 Cd/m ²	119.24 Cd/m ²	119.04 Cd/m ²
Luminance to Centre	96 %	94 %	94 %
Lab-Chroma to Centre	0.42	2.21	0.80

Results of the gray measurements:

Absolute Luminance	28.33 Cd/m ²	27.45 Cd/m ²	27.17 Cd/m ²
Luminance to Centre	107 %	104 %	103 %
Lab-Chroma to Centre	1.77	1.56	1.37
Absolute Luminance	28.16 Cd/m ²	26.40 Cd/m ²	25.81 Cd/m ²
Luminance to Centre	107 %	100 %	98 %
Lab-Chroma to Centre	0.94	0.38	0.47
Absolute Luminance	26.04 Cd/m ²	24.30 Cd/m ²	24.17 Cd/m ²
Luminance to Centre	99 %	92 %	92 %
Lab-Chroma to Centre	1.21	1.69	0.46

Results of the dark measurements:

Absolute Luminance	6.55 Cd/m ²	5.89 Cd/m ²	5.76 Cd/m ²
Luminance to Centre	117 %	105 %	103 %
Lab-Chroma to Centre	1.63	1.10	0.78
Absolute Luminance	6.36 Cd/m ²	5.61 Cd/m ²	5.41 Cd/m ²
Luminance to Centre	113 %	100 %	96 %
Lab-Chroma to Centre	0.95	0.66	0.18
Absolute Luminance	5.67 Cd/m ²	4.98 Cd/m ²	4.95 Cd/m ²
Luminance to Centre	101 %	89 %	88 %
Lab-Chroma to Centre	1.28	1.33	0.21

Summary:

	Average	Max
Luminance Deviation	5%	17%
Chroma Deviation	1	3