

UGRA

Display Analysis & Certification Tool

Report

Basics

Date: 2010-1-15 11:13:55
Report-Version: v1.3.1
Monitor-Name: \\.\DISPLAY1
EDID-Name: LaCie 324
EDID-Serial: 2B0384200972
Profile: C:/Windows/system32/spool/drivers/color/15.01.10-6500K-22-120cd.icc
Created: 2010-1-15 11:03
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:	117.41 123.17 133.48
XYZ (normalized):	95.33 100.00 108.37
Luminance:	123.2 Cd/m2
Next Temperature:	6437 Kelvin
Assumed Target Whitepoint:	6400 Kelvin
Distance to assumed Target Whitepoint:	0.8 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	5344	0.14	1.00	0.41	
5	5505	0.34	2.49	0.75	2.14
10	6571	0.89	6.50	0.51	2.21
15	6352	2.01	13.41	0.25	2.21
20	6319	3.70	20.05	0.51	2.20
25	6550	5.76	25.79	0.42	2.22
30	6567	8.49	31.57	0.54	2.23
35	6532	11.96	37.32	0.37	2.23
40	6525	16.09	42.85	0.37	2.23
45	6522	20.70	48.02	0.49	2.24
50	6422	26.04	53.11	0.17	2.25
55	6480	32.17	58.15	0.22	2.25
60	6484	39.19	63.19	0.26	2.24
65	6522	46.15	67.63	0.51	2.28
70	6513	54.66	72.48	0.47	2.28
75	6499	63.52	77.03	0.41	2.30
80	6499	73.46	81.64	0.43	2.31
85	6461	83.01	85.70	0.20	2.42
90	6513	94.19	90.08	0.56	2.53
95	6504	106.91	94.65	0.54	2.71
100	6437	123.17	100.00	0.00	
Average	6483			0.37	2.29
Range				0.99	
Max				0.56	

Tone values = 95.9%

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	1.0 0.4 0.0	-1.0 -0.4 -0.0	1.1
0 0 128	13.7 29.9 -63.9	1.1 -2.7 0.4	3.0
0 0 255	34.9 44.5 -106.0	0.3 0.6 0.7	0.9
0 128 0	44.1 -67.2 51.0	0.3 0.0 1.0	1.0
0 128 128	46.3 -46.7 -11.7	0.6 -0.2 0.1	0.7
0 170 255	65.2 -34.3 -56.1	0.5 0.4 1.1	1.2
0 255 0	84.2 -110.6 87.3	-0.2 -0.7 -1.2	1.4
0 255 170	85.8 -95.4 23.0	0.1 -0.3 -0.9	1.0
0 255 255	88.3 -77.7 -19.5	0.1 0.1 0.3	0.3
85 85 85	35.5 -0.5 -0.8	0.3 0.5 0.8	1.0
128 0 0	29.1 56.5 43.8	0.3 0.8 2.4	2.5
128 0 128	33.0 59.4 -31.2	0.7 -1.0 -0.5	1.3
128 128 0	51.6 -8.3 61.0	0.3 1.3 1.2	1.8
128 128 128	53.5 0.0 0.1	0.5 -0.0 -0.1	0.5
128 128 255	60.2 17.9 -63.9	0.3 0.3 0.8	0.8
128 255 128	88.0 -72.4 48.6	0.0 -0.2 -0.5	0.6
170 0 255	51.1 73.9 -78.3	0.4 0.5 0.8	1.1
170 170 170	69.5 -0.8 0.0	0.6 0.8 -0.0	1.0
170 255 0	89.6 -58.8 94.5	0.0 1.5 -0.9	1.8
170 255 255	93.3 -38.6 -11.1	0.2 0.7 0.3	0.8
255 0 0	59.2 94.7 82.5	-0.0 0.1 0.0	0.1
255 0 170	62.0 96.3 -8.9	0.3 -0.7 -1.5	1.7
255 0 255	66.3 96.9 -52.7	0.1 -0.1 0.2	0.2
255 128 128	71.6 61.2 29.6	0.1 0.1 -0.9	0.9
255 170 0	78.2 36.4 91.1	-0.0 0.6 -0.4	0.8
255 170 255	82.9 45.9 -26.3	0.1 0.3 0.2	0.3
255 255 0	96.7 -12.0 104.6	-0.2 0.4 -1.4	1.4
255 255 170	98.0 -6.6 42.7	0.0 -0.0 -1.2	1.2
255 255 255	100.0 0.0 0.0	0.0 0.0 0.0	0.0
170 85 85	48.7 44.6 20.3	0.4 1.1 1.1	1.6
85 170 85	60.9 -54.4 35.0	0.3 0.3 0.9	1.0
85 85 170	40.0 13.8 -47.0	0.7 -0.2 -0.1	0.7
85 170 170	63.0 -40.7 -10.7	0.6 0.2 -0.1	0.6
170 85 170	51.6 49.1 -27.6	0.7 0.6 -0.0	0.9
170 170 85	67.8 -7.9 45.7	0.4 1.3 1.0	1.7
Average			1.1
Maximum			3.0

Gamut-Volume

These measurements are only informative.

Gamut-Volume	
ISO	99 %
sRGB	97 %
AdobeRGB	93 %
ECI-RGB v1.0	88 %

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	55.1 -30.2 -48.5	7.0
66.9 -24.7 -37.1	66.4 -24.9 -37.3	0.5
79.7 -12.5 -21.8	78.9 -12.6 -22.0	0.9
48.0 74.0 -3.0	47.4 73.8 -3.3	0.7
60.8 50.6 -6.7	60.3 49.7 -6.7	1.1
76.4 25.8 -6.9	75.8 25.1 -6.9	0.9
89.0 -5.0 93.0	88.2 -5.9 92.7	1.3
90.3 -4.7 62.6	89.3 -5.0 61.3	1.6
92.2 -3.5 31.1	90.9 -2.7 29.8	2.0
53.1 37.7 28.9	52.7 36.9 27.9	1.3
41.5 22.7 16.8	41.4 22.1 15.5	1.4
31.9 40.0 24.0	31.9 39.4 23.2	1.0
32.5 44.4 -1.8	32.3 44.0 -2.8	1.2
51.3 1.3 44.5	51.1 -0.0 43.4	1.7
34.6 -36.4 13.9	34.6 -35.9 13.9	0.6
36.0 -26.2 -20.9	35.7 -25.6 -21.4	0.8
20.9 9.6 -23.6	21.2 10.1 -23.5	0.6
89.0 0.0 -1.8	87.9 0.2 -2.6	1.3
82.8 0.0 -1.7	81.9 -0.5 -1.7	1.0
69.3 0.0 -1.4	68.8 -0.8 -1.1	0.9
54.1 0.0 -1.0	53.6 0.3 -1.4	0.8
36.6 -0.0 -0.5	36.5 -0.1 -0.6	0.1
16.0 0.0 0.0	16.7 0.6 -0.1	0.9
24.0 22.0 -46.0	23.8 23.5 -45.6	1.6
40.9 17.9 -36.6	40.4 17.9 -36.4	0.5
63.7 10.3 -23.8	62.9 10.7 -24.2	0.9
47.0 68.0 48.0	46.7 66.4 46.4	2.3
58.5 47.1 37.9	58.3 45.8 37.0	1.6
74.2 22.9 21.4	73.7 21.8 21.3	1.2
50.0 -65.0 27.0	49.9 -64.7 25.7	1.4
62.1 -39.8 21.0	61.7 -39.3 20.1	1.1
77.0 -19.1 11.0	75.9 -18.6 10.6	1.2
71.2 18.8 17.3	70.7 17.9 17.0	1.1
71.2 22.2 73.1	71.0 19.9 72.1	2.5
47.7 71.2 16.2	47.3 70.3 15.8	1.1
38.0 55.4 -20.9	37.4 55.8 -20.9	0.7
73.7 -22.8 67.6	73.1 -22.7 66.2	1.5
52.3 -52.3 -20.2	52.1 -46.8 -20.0	5.5
43.3 -17.0 -48.6	42.5 -16.6 -48.7	0.9
95.0 0.0 -2.0	93.9 -0.2 -2.8	1.4
88.5 -0.4 -3.1	87.6 -0.6 -3.6	1.1
82.0 -0.9 -4.1	81.0 -1.3 -4.2	1.0
67.7 -2.0 -4.4	67.2 -2.8 -4.5	1.0
52.2 -2.5 -3.5	51.9 -3.0 -3.5	0.6
37.5 -3.9 -3.1	37.2 -3.6 -3.3	0.4
26.3 -6.8 -3.4	26.6 -6.2 -3.5	0.6
Average		1.3
Gamut-Volume		99 %

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	117.41 123.17 133.48	85 85 170	17.17 14.36 49.73
0 0 0	0.14 0.14 0.15	85 170 170	26.21 39.40 52.91
12 12 12	0.35 0.34 0.36	170 85 170	37.76 24.39 50.35
25 25 25	0.85 0.89 0.99	170 170 85	39.90 45.97 15.79
38 38 38	1.93 2.01 2.17	0 143 214	22.48 29.33 83.74
51 51 51	3.56 3.70 4.00	97 171 226	36.33 45.07 96.46
63 63 63	5.49 5.76 6.35	166 202 236	60.19 68.02 106.84
76 76 76	8.10 8.49 9.39	191 34 120	38.69 19.57 24.05
89 89 89	11.39 11.96 13.12	202 108 158	50.69 34.66 44.38
102 102 102	15.31 16.09 17.61	218 170 200	70.07 60.90 75.42
114 114 114	19.64 20.70 22.53	239 229 33	77.83 87.99 10.24
127 127 127	24.80 26.04 28.12	239 232 110	81.70 91.12 28.39
140 140 140	30.63 32.17 35.01	239 235 174	88.22 95.66 61.07
153 153 153	37.32 39.19 42.69	174 102 82	33.63 25.04 12.36
165 165 165	43.93 46.15 50.51	126 86 74	17.93 14.68 9.69
178 178 178	52.00 54.66 59.70	119 50 46	13.54 8.45 3.54
191 191 191	60.43 63.52 69.23	120 45 82	14.93 8.75 10.76
204 204 204	69.93 73.46 80.15	133 122 51	21.80 23.53 6.14
216 216 216	79.14 83.01 90.27	42 95 61	5.59 10.25 6.48
229 229 229	89.62 94.19 102.88	32 94 116	7.83 11.18 22.61
242 242 242	101.82 106.91 116.81	53 48 85	4.95 4.15 11.31
0 0 128	4.75 2.39 25.73	222 222 226	84.76 88.67 100.30
0 0 255	22.24 11.95 122.40	204 205 208	70.55 74.17 82.80
0 128 0	6.18 17.13 2.19	167 168 170	45.64 48.15 53.39
0 128 128	10.87 19.42 28.18	128 128 130	25.44 26.59 29.83
0 170 255	33.67 43.82 126.40	87 87 87	10.90 11.44 12.64
0 255 0	29.02 79.46 9.30	44 44 44	2.65 2.75 2.99
0 255 170	37.78 83.74 58.32	58 43 125	7.80 5.20 25.02
0 255 255	51.08 91.05 131.90	99 84 153	17.71 14.42 40.02
85 85 85	10.24 10.81 12.05	155 145 194	41.74 39.13 68.96
128 0 0	14.21 6.90 0.58	189 51 44	34.45 18.69 3.99
128 0 128	19.05 9.27 26.05	201 108 81	44.57 31.62 12.65
128 128 0	20.28 24.09 2.65	217 168 145	62.76 56.42 39.59
128 128 128	25.22 26.45 28.58	20 142 74	9.63 22.65 11.08
128 128 255	42.94 36.15 125.02	104 167 113	23.86 37.04 24.35
128 255 128	48.11 88.64 36.33	167 199 168	50.26 61.33 53.76
170 0 255	48.85 24.78 122.91	202 162 144	55.47 51.05 38.82
170 170 170	46.79 49.41 53.48	215 162 44	55.31 51.00 7.60
170 255 0	55.12 92.21 10.09	191 44 91	37.01 19.40 13.75
170 255 255	77.63 103.87 132.32	140 40 122	22.21 11.94 24.32
255 0 0	66.24 32.03 1.92	169 193 57	42.21 55.21 10.61
255 0 170	75.12 36.50 49.75	0 143 156	15.19 25.45 43.36
255 0 255	88.69 43.98 124.00	17 106 179	14.20 16.50 56.20
255 128 128	77.18 51.85 30.04	239 240 244	99.90 104.75 118.53
255 170 0	77.70 64.46 5.77	219 221 227	83.54 87.79 100.91
255 170 255	100.15 76.33 127.88	199 203 210	68.42 72.23 84.22
255 255 0	95.03 111.55 11.12	159 164 171	42.54 45.51 53.97
255 255 170	104.00 115.94 60.12	119 125 129	22.94 24.72 29.23
170 85 85	30.90 20.86 12.69	83 90 93	10.88 11.91 14.32
85 170 85	19.35 35.93 15.18	56 67 69	5.29 6.12 7.60

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	127.33 Cd/m2	127.54 Cd/m2	127.70 Cd/m2
Luminance to Centre	105 %	105 %	105 %
Lab-Chroma to Centre	1.16	0.69	0.32
Absolute Luminance	124.51 Cd/m2	121.33 Cd/m2	119.79 Cd/m2
Luminance to Centre	103 %	100 %	99 %
Lab-Chroma to Centre	1.09	0.00	0.52
Absolute Luminance	116.09 Cd/m2	112.05 Cd/m2	113.13 Cd/m2
Luminance to Centre	96 %	92 %	93 %
Lab-Chroma to Centre	2.00	1.42	0.93

Results of the gray measurements:

Absolute Luminance	28.32 Cd/m2	27.31 Cd/m2	26.97 Cd/m2
Luminance to Centre	109 %	105 %	103 %
Lab-Chroma to Centre	0.58	0.40	0.96
Absolute Luminance	27.64 Cd/m2	26.07 Cd/m2	25.27 Cd/m2
Luminance to Centre	106 %	100 %	97 %
Lab-Chroma to Centre	0.98	0.37	0.20
Absolute Luminance	25.30 Cd/m2	23.27 Cd/m2	23.51 Cd/m2
Luminance to Centre	97 %	89 %	90 %
Lab-Chroma to Centre	1.23	0.58	0.50

Results of the dark measurements:

Absolute Luminance	6.54 Cd/m2	5.91 Cd/m2	5.76 Cd/m2
Luminance to Centre	117 %	106 %	103 %
Lab-Chroma to Centre	1.89	1.04	0.66
Absolute Luminance	6.28 Cd/m2	5.59 Cd/m2	5.30 Cd/m2
Luminance to Centre	112 %	100 %	95 %
Lab-Chroma to Centre	1.35	1.19	0.70
Absolute Luminance	5.55 Cd/m2	4.74 Cd/m2	4.84 Cd/m2
Luminance to Centre	99 %	85 %	86 %
Lab-Chroma to Centre	0.66	0.61	0.55

Summary:

	Average	Max
Luminance Deviation	6%	17%
Chroma Deviation	1	2