

# UGRA

## Display Analysis & Certification Tool

### Report

#### Basics

Date: 2010-1-18 12:26:14  
Report-Version: v1.3.1  
Monitor-Name: CG221  
EDID-Name: CG221  
EDID-Serial: 10018056  
Profile: /Users/scanner/.../18012010\_Def\_119cd 0,2cd (0,3319, 0,3469) LStar  
Created: 2010-1-18 12:18  
Measurement device: eye-one pro

#### 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:	114.31 119.73 110.37
XYZ (normalized):	95.48 100.00 92.19
Luminance:	119.7 Cd/m2
Next Temperature:	5523 Kelvin
Assumed Target Whitepoint:	5500 Kelvin
Distance to assumed Target Whitepoint:	0.3 deltaE

## Blackpoint

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

Luminance:	0.4 Cd/m2
Chromaticity:	1.0 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	5273	0.39	2.93	1.00	
5	5399	1.01	7.61	0.73	1.78
10	5668	1.67	11.93	0.40	1.97
15	5473	2.82	17.26	0.25	2.06
20	5459	4.28	22.22	0.42	2.13
25	5480	6.09	26.99	0.38	2.20
30	5501	8.26	31.58	0.11	2.26
35	5505	11.15	36.58	0.09	2.29
40	5539	14.54	41.45	0.09	2.33
45	5518	18.29	46.01	0.24	2.37
50	5524	23.10	51.03	0.10	2.39
55	5515	28.54	55.92	0.46	2.41
60	5503	34.99	60.98	0.29	2.42
65	5507	41.59	65.55	0.49	2.46
70	5544	49.50	70.42	0.68	2.48
75	5541	58.69	75.46	0.36	2.48
80	5528	68.68	80.38	0.27	2.49
85	5533	78.91	84.95	0.48	2.56
90	5522	91.40	90.02	0.28	2.56
95	5522	104.66	94.92	0.40	2.59
100	5523	119.73	100.00	0.00	
Average	5521			0.31	2.33
Range				1.08	
Max				0.68	

Tone values = 100.0%

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	2.9 0.9 -0.5	-0.6 -0.9 0.5	1.2
0 0 128	13.0 30.2 -60.1	-0.2 1.7 -2.8	3.3
0 0 255	31.7 58.2 -111.9	-0.1 1.1 -0.4	1.1
0 128 0	40.4 -69.5 48.0	1.3 -3.2 1.0	3.6
0 128 128	43.0 -48.1 -12.3	0.6 -1.4 -0.3	1.5
0 170 255	61.4 -29.6 -62.4	0.2 -0.4 0.1	0.5
0 255 0	83.3 -126.4 88.4	0.1 -2.0 -0.7	2.1
0 255 170	84.5 -109.2 25.4	0.1 -1.6 -0.6	1.7
0 255 255	86.5 -85.7 -22.0	0.2 -1.2 -0.1	1.2
85 85 85	35.1 -0.2 0.2	-0.1 -0.1 0.1	0.2
128 0 0	29.5 49.9 41.9	0.9 1.7 2.0	2.7
128 0 128	32.6 54.9 -28.4	0.7 1.3 0.1	1.5
128 128 0	49.2 -7.2 59.0	0.8 -1.3 1.4	2.1
128 128 128	51.4 0.1 -0.1	0.2 -0.5 0.5	0.7
128 128 255	57.6 23.2 -68.6	-0.4 1.1 -0.7	1.4
128 255 128	87.0 -82.8 50.2	0.1 -3.2 1.2	3.4
170 0 255	50.1 77.2 -80.9	0.3 1.3 0.6	1.5
170 170 170	67.4 0.1 -0.2	0.3 -0.7 0.7	1.0
170 255 0	88.9 -67.3 96.0	0.3 -1.5 -0.4	1.6
170 255 255	91.9 -42.9 -13.3	0.3 -1.9 0.4	1.9
255 0 0	63.5 90.0 83.5	0.0 0.7 1.0	1.2
255 0 170	65.4 93.0 -1.9	0.1 0.7 0.6	0.9
255 0 255	68.5 97.6 -50.0	0.2 1.0 0.5	1.1
255 128 128	73.3 62.5 33.2	-0.1 1.0 2.1	2.3
255 170 0	78.7 40.7 93.3	0.5 -0.9 0.1	1.0
255 170 255	82.8 50.9 -27.1	0.1 1.1 0.3	1.1
255 255 0	97.4 -13.8 107.5	0.5 -1.0 -0.3	1.2
255 255 170	98.4 -8.2 45.1	0.5 -1.2 2.5	2.8
255 255 255	100.0 0.0 0.0	0.5 -0.8 0.7	1.1
170 85 85	49.1 41.6 21.8	0.1 1.4 1.4	2.0
85 170 85	58.0 -55.0 33.0	0.5 -3.0 1.3	3.3
85 85 170	38.9 14.9 -45.1	-0.4 0.9 -1.4	1.7
85 170 170	59.9 -40.4 -11.8	0.4 -2.0 0.0	2.1
170 85 170	51.5 47.1 -24.7	-0.1 2.0 -0.4	2.0
170 170 85	65.7 -7.1 44.2	0.5 -1.1 2.2	2.5
Average			1.7
Maximum			3.6

# Gamut-Volume

These measurements are only informative.

Gamut-Volume	
ISO	100 %
sRGB	99 %
AdobeRGB	99 %
ECI-RGB v1.0	94 %

# 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	55.0 -33.7 -48.9	3.4
66.9 -24.7 -37.1	66.7 -23.7 -36.6	1.1
79.7 -12.5 -21.8	79.3 -11.5 -22.1	1.2
48.0 74.0 -3.0	47.7 72.2 -3.8	2.0
60.8 50.6 -6.7	60.8 49.2 -7.0	1.4
76.4 25.8 -6.9	76.0 26.0 -7.4	0.7
89.0 -5.0 93.0	88.5 -3.5 91.6	2.1
90.3 -4.7 62.6	89.7 -3.2 59.5	3.4
92.2 -3.5 31.1	91.7 -2.3 29.3	2.2
53.1 37.7 28.9	53.0 37.1 27.3	1.7
41.5 22.7 16.8	41.5 21.7 15.7	1.5
31.9 40.0 24.0	31.7 38.3 22.9	1.9
32.5 44.4 -1.8	32.3 42.5 -2.5	2.0
51.3 1.3 44.5	50.7 1.6 43.0	1.6
34.6 -36.4 13.9	34.1 -32.8 12.3	4.0
36.0 -26.2 -20.9	35.6 -24.6 -20.6	1.6
20.9 9.6 -23.6	21.4 8.9 -22.3	1.6
89.0 0.0 -1.8	88.4 0.8 -2.6	1.2
82.8 0.0 -1.7	82.3 0.9 -2.6	1.3
69.3 0.0 -1.4	68.9 0.6 -2.0	1.0
54.1 0.0 -1.0	53.7 1.1 -1.6	1.3
36.6 -0.0 -0.5	36.6 0.4 -1.1	0.7
16.0 0.0 0.0	16.5 0.3 0.1	0.6
24.0 22.0 -46.0	24.2 21.2 -44.4	1.8
40.9 17.9 -36.6	40.8 16.7 -35.6	1.6
63.7 10.3 -23.8	63.3 10.4 -23.7	0.4
47.0 68.0 48.0	46.5 66.4 45.5	3.0
58.5 47.1 37.9	58.3 46.2 35.7	2.4
74.2 22.9 21.4	73.7 23.0 20.1	1.3
50.0 -65.0 27.0	49.3 -61.3 25.6	4.0
62.1 -39.8 21.0	61.7 -37.7 20.3	2.3
77.0 -19.1 11.0	76.5 -17.9 10.2	1.5
71.2 18.8 17.3	70.8 19.6 15.7	1.7
71.2 22.2 73.1	70.7 22.7 71.2	2.1
47.7 71.2 16.2	47.3 69.9 14.7	2.1
38.0 55.4 -20.9	37.8 53.7 -21.2	1.7
73.7 -22.8 67.6	72.8 -21.2 64.9	3.2
52.3 -52.3 -20.2	51.6 -50.8 -20.1	1.7
43.3 -17.0 -48.6	42.9 -16.9 -47.6	1.1
95.0 0.0 -2.0	94.1 1.0 -3.0	1.7
88.5 -0.4 -3.1	87.9 0.6 -3.8	1.3
82.0 -0.9 -4.1	81.4 0.1 -5.1	1.5
67.7 -2.0 -4.4	67.3 -1.6 -5.1	0.9
52.2 -2.5 -3.5	52.0 -2.0 -3.6	0.5
37.5 -3.9 -3.1	37.3 -3.3 -3.1	0.6
26.3 -6.8 -3.4	26.6 -6.2 -2.9	0.9
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	114.31 119.73 110.37	85 85 170	15.11 12.90 37.64
0 0 0	0.40 0.39 0.39	85 170 170	21.84 33.73 40.07
12 12 12	0.95 1.01 0.88	170 85 170	35.58 23.58 38.65
25 25 25	1.59 1.67 1.58	170 170 85	37.06 41.69 12.55
38 38 38	2.71 2.82 2.60	0 155 218	19.53 27.97 69.30
51 51 51	4.08 4.28 3.87	110 181 228	34.63 43.83 79.31
63 63 63	5.80 6.09 5.54	176 208 237	58.82 66.63 89.22
76 76 76	7.90 8.26 7.60	190 0 127	37.99 19.62 20.21
89 89 89	10.65 11.15 10.25	202 110 165	50.22 34.57 37.35
102 102 102	13.87 14.54 13.43	218 175 205	69.06 59.65 63.12
114 114 114	17.51 18.29 16.92	240 227 36	80.15 87.01 9.76
127 127 127	22.07 23.10 21.34	240 230 119	83.47 90.17 25.66
140 140 140	27.35 28.54 26.47	240 235 182	89.36 95.53 52.82
153 153 153	33.50 34.99 32.29	177 102 85	33.84 24.94 10.64
165 165 165	39.86 41.59 38.51	130 86 75	17.72 14.46 8.00
178 178 178	47.42 49.50 46.14	121 38 38	13.11 8.22 2.89
191 191 191	56.10 58.69 54.45	122 32 83	14.37 8.57 8.69
204 204 204	65.66 68.68 63.55	139 126 48	21.73 22.60 5.18
216 216 216	75.50 78.91 73.22	42 99 60	5.56 9.64 5.61
229 229 229	87.39 91.40 84.49	32 100 122	7.27 10.63 18.11
242 242 242	100.13 104.66 96.86	47 43 87	4.62 4.06 9.02
0 0 128	3.79 2.01 18.41	225 225 229	83.80 87.23 83.87
0 0 255	18.75 9.04 100.63	209 209 213	69.99 72.81 70.19
0 128 0	4.60 13.76 1.68	174 174 177	45.06 46.95 45.10
0 128 128	8.20 15.87 20.45	135 134 137	25.13 26.02 24.92
0 170 255	27.37 36.34 103.54	89 89 91	10.73 11.17 10.67
0 255 0	24.03 74.92 7.94	36 36 36	2.54 2.64 2.42
0 255 170	30.74 77.96 44.63	53 41 131	7.08 5.12 20.27
0 255 255	42.32 83.31 108.16	102 89 160	16.80 14.22 32.80
85 85 85	9.73 10.22 9.37	161 153 199	40.50 38.47 57.03
128 0 0	13.46 7.12 0.66	188 21 37	34.27 18.48 3.39
128 0 128	17.12 8.84 19.50	201 107 84	44.49 31.15 10.94
128 128 0	18.40 21.12 2.15	217 171 152	62.42 55.11 33.63
128 128 128	22.40 23.45 21.66	41 149 76	9.62 21.40 9.11
128 128 255	37.65 31.13 102.84	116 174 119	23.78 35.94 20.26
128 255 128	42.25 83.72 28.59	177 204 176	50.37 60.72 45.92
170 0 255	45.01 22.61 101.83	205 166 152	55.41 49.91 33.12
170 170 170	42.55 44.50 41.19	216 164 42	56.03 49.55 6.73
170 255 0	50.79 88.30 8.59	190 9 95	36.49 19.18 11.64
170 255 255	69.50 96.82 109.29	142 27 129	21.44 11.92 20.39
255 0 0	73.01 37.83 2.21	177 196 58	42.42 53.49 9.58
255 0 170	79.68 40.94 39.71	6 152 163	13.11 23.92 35.18
255 0 255	91.02 46.30 103.12	24 116 185	12.90 15.99 45.75
255 128 128	81.12 54.08 24.35	240 240 245	98.52 102.49 99.07
255 170 0	81.39 64.51 4.87	223 224 230	82.68 86.16 84.54
255 170 255	99.77 74.04 106.07	205 207 215	67.89 70.96 71.43
255 255 0	96.04 111.19 9.64	166 171 178	41.95 44.45 45.48
255 255 170	103.01 114.32 48.72	126 131 136	22.64 24.18 24.36
170 85 85	30.26 20.93 10.22	86 93 97	10.67 11.65 11.85
85 170 85	16.52 31.03 11.70	53 66 68	5.11 5.92 6.11

# 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	117.96 Cd/m2	120.11 Cd/m2	117.57 Cd/m2
Luminance to Centre	99 %	101 %	99 %
Lab-Chroma to Centre	0.42	0.44	0.78
Absolute Luminance	119.13 Cd/m2	119.28 Cd/m2	117.50 Cd/m2
Luminance to Centre	100 %	100 %	99 %
Lab-Chroma to Centre	0.51	0.00	0.22
Absolute Luminance	118.48 Cd/m2	119.06 Cd/m2	115.62 Cd/m2
Luminance to Centre	99 %	100 %	97 %
Lab-Chroma to Centre	0.51	0.18	0.12

Results of the gray measurements:

Absolute Luminance	23.51 Cd/m2	24.00 Cd/m2	23.88 Cd/m2
Luminance to Centre	100 %	102 %	101 %
Lab-Chroma to Centre	0.28	0.26	0.41
Absolute Luminance	23.65 Cd/m2	23.54 Cd/m2	23.78 Cd/m2
Luminance to Centre	100 %	100 %	101 %
Lab-Chroma to Centre	0.21	0.15	0.30
Absolute Luminance	23.64 Cd/m2	23.52 Cd/m2	23.36 Cd/m2
Luminance to Centre	100 %	100 %	99 %
Lab-Chroma to Centre	0.37	0.22	0.36

Results of the dark measurements:

Absolute Luminance	6.02 Cd/m2	6.18 Cd/m2	6.09 Cd/m2
Luminance to Centre	99 %	101 %	100 %
Lab-Chroma to Centre	0.29	0.33	0.28
Absolute Luminance	6.05 Cd/m2	6.10 Cd/m2	6.07 Cd/m2
Luminance to Centre	99 %	100 %	100 %
Lab-Chroma to Centre	0.46	0.16	0.40
Absolute Luminance	6.02 Cd/m2	5.92 Cd/m2	5.95 Cd/m2
Luminance to Centre	99 %	97 %	98 %
Lab-Chroma to Centre	0.27	0.42	0.35

Summary:

	Average	Max
Luminance Deviation	1%	3%
Chroma Deviation	0	1