

# UGRA

## Display Analysis & Certification Tool

### Report

#### Basics

Date: 2010-4-17 19:30:54  
Report-Version: v1.3.1  
Monitor-Name: \\.\DISPLAY1  
Profile: C:/Windows/system32/spool/drivers/color/NEC-PA241W.icc  
Created: 2010-4-17 19:17  
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:	113.68 119.86 131.14
XYZ (normalized):	94.84 100.00 109.41
Luminance:	119.9 Cd/m2
Next Temperature:	6560 Kelvin
Assumed Target Whitepoint:	6600 Kelvin
Distance to assumed Target Whitepoint:	0.7 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:	1.6 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	17652	0.20	1.54	1.64	
5	7737	0.61	4.60	1.16	1.91
10	6703	1.32	9.80	0.50	2.04
15	6440	2.54	16.09	0.32	2.09
20	6499	4.26	22.15	0.19	2.11
25	6492	6.29	27.43	0.42	2.16
30	6447	9.03	32.99	0.39	2.17
35	6560	12.28	38.28	0.00	2.19
40	6613	16.14	43.46	0.28	2.20
45	6560	20.30	48.18	0.00	2.24
50	6506	25.47	53.22	0.33	2.25
55	6506	31.56	58.35	0.35	2.24
60	6506	38.25	63.27	0.38	2.24
65	6506	45.15	67.78	0.40	2.27
70	6514	53.37	72.58	0.83	2.27
75	6560	62.42	77.33	0.00	2.27
80	6506	72.35	82.03	0.47	2.27
85	6506	82.19	86.29	0.49	2.33
90	6506	93.65	90.84	0.51	2.35
95	6560	106.36	95.47	0.00	2.33
100	6560	119.86	100.00	0.00	
Average	6529			0.31	2.21
Range				1.14	
Max				0.83	

Tone values = 98.6%

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.

The assumed chromatic adaptation is: Bradford

RGB	Lab	deltaLab	deltaE
0 0 0	1.5 -0.4 -1.6	-1.5 0.4 1.6	2.3
0 0 128	11.6 42.7 -67.6	-0.6 2.5 -1.4	2.9
0 0 255	28.7 75.0 -115.6	0.3 0.2 0.6	0.7
0 128 0	44.3 -77.1 47.4	0.5 -1.0 2.0	2.3
0 128 128	46.2 -51.3 -11.6	0.3 0.4 -0.2	0.5
0 170 255	63.6 -30.8 -58.4	0.3 1.0 0.7	1.3
0 255 0	85.1 -131.0 82.6	0.2 0.8 -0.3	0.9
0 255 170	86.4 -110.9 22.8	0.1 1.3 -0.2	1.3
0 255 255	88.1 -86.3 -19.9	0.2 1.3 0.2	1.4
85 85 85	36.6 -0.2 0.2	-0.4 0.2 -0.2	0.5
128 0 0	29.5 58.8 44.6	-0.2 1.1 2.8	3.0
128 0 128	32.3 65.9 -32.2	-0.0 1.0 -0.5	1.1
128 128 0	51.9 -9.6 59.5	0.3 -0.9 1.0	1.4
128 128 128	53.6 0.0 0.0	-0.0 0.0 -0.0	0.0
128 128 255	58.2 28.1 -66.6	-0.0 0.4 0.3	0.5
128 255 128	88.8 -85.0 48.3	0.1 0.4 -0.3	0.5
170 0 255	48.1 93.3 -82.9	0.0 -0.4 0.6	0.8
170 170 170	69.6 0.8 -0.2	0.1 -0.8 0.2	0.8
170 255 0	90.6 -68.6 91.0	0.1 -0.4 -0.7	0.7
170 255 255	93.3 -41.2 -11.4	-0.0 -0.4 0.1	0.4
255 0 0	59.6 99.8 89.9	-0.2 -0.0 -1.5	1.5
255 0 170	61.6 105.0 -9.6	-0.1 -0.3 -0.1	0.3
255 0 255	64.4 111.8 -54.8	0.0 -0.2 0.2	0.3
255 128 128	71.8 65.9 30.1	-0.2 -0.4 -0.3	0.5
255 170 0	78.5 38.7 90.7	0.2 -1.3 -0.5	1.4
255 170 255	81.9 54.3 -27.5	-0.0 -0.4 0.3	0.5
255 255 0	97.6 -16.9 102.2	0.1 -0.6 -1.4	1.5
255 255 170	98.6 -10.0 42.5	0.0 -0.2 0.1	0.2
255 255 255	100.0 0.0 -0.0	0.0 0.0 -0.0	0.0
170 85 85	49.5 47.5 21.3	-0.4 -0.1 0.1	0.4
85 170 85	61.3 -60.1 34.0	0.2 -1.1 0.6	1.2
85 85 170	39.8 19.8 -47.5	-0.4 0.6 -0.3	0.8
85 170 170	62.9 -42.4 -11.3	0.2 -0.6 0.3	0.7
170 85 170	51.5 56.0 -27.6	-0.3 -0.1 -0.3	0.4
170 170 85	68.2 -8.9 45.2	0.1 -1.0 0.4	1.0
Average			1.0
Maximum			3.0

# Gamut-Volume

These measurements are only informative.

Gamut-Volume	
ISO	99 %
sRGB	100 %
AdobeRGB	100 %
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	55.6 -30.7 -48.5	6.5
66.9 -24.7 -37.1	66.6 -24.9 -37.2	0.3
79.7 -12.5 -21.8	79.6 -12.0 -21.4	0.6
48.0 74.0 -3.0	48.2 73.6 -2.5	0.7
60.8 50.6 -6.7	60.9 50.6 -6.4	0.4
76.4 25.8 -6.9	76.4 25.9 -6.8	0.2
89.0 -5.0 93.0	88.9 -3.9 93.7	1.3
90.3 -4.7 62.6	90.2 -4.1 62.3	0.6
92.2 -3.5 31.1	92.0 -2.6 30.7	1.0
53.1 37.7 28.9	53.3 37.9 28.6	0.4
41.5 22.7 16.8	41.8 22.6 16.6	0.4
31.9 40.0 24.0	32.4 39.2 23.6	1.0
32.5 44.4 -1.8	33.0 43.6 -1.8	1.0
51.3 1.3 44.5	51.4 1.1 44.5	0.2
34.6 -36.4 13.9	34.8 -35.7 13.8	0.8
36.0 -26.2 -20.9	36.3 -27.2 -20.2	1.3
20.9 9.6 -23.6	21.6 9.7 -23.3	0.8
89.0 0.0 -1.8	88.8 0.8 -1.8	0.8
82.8 0.0 -1.7	82.7 -0.1 -1.5	0.2
69.3 0.0 -1.4	69.1 0.7 -1.4	0.7
54.1 0.0 -1.0	53.9 0.2 -0.9	0.3
36.6 -0.0 -0.5	37.1 -0.0 -0.5	0.4
16.0 0.0 0.0	17.3 -0.1 0.1	1.3
24.0 22.0 -46.0	24.5 20.4 -44.7	2.1
40.9 17.9 -36.6	41.2 17.5 -36.0	0.7
63.7 10.3 -23.8	63.7 10.7 -23.8	0.4
47.0 68.0 48.0	47.2 67.6 47.7	0.6
58.5 47.1 37.9	58.6 47.2 37.4	0.5
74.2 22.9 21.4	74.2 23.3 21.3	0.4
50.0 -65.0 27.0	50.1 -64.6 26.5	0.7
62.1 -39.8 21.0	62.1 -39.2 20.9	0.7
77.0 -19.1 11.0	77.1 -18.7 11.5	0.7
71.2 18.8 17.3	71.3 18.9 17.3	0.1
71.2 22.2 73.1	71.1 23.4 73.4	1.3
47.7 71.2 16.2	48.1 71.3 15.8	0.6
38.0 55.4 -20.9	38.3 54.7 -20.3	1.0
73.7 -22.8 67.6	73.6 -22.3 67.9	0.6
52.3 -52.3 -20.2	52.3 -51.7 -19.8	0.7
43.3 -17.0 -48.6	43.1 -17.7 -48.5	0.7
95.0 0.0 -2.0	95.1 -0.1 -1.7	0.4
88.5 -0.4 -3.1	88.5 -0.7 -2.8	0.5
82.0 -0.9 -4.1	81.9 -0.3 -4.0	0.6
67.7 -2.0 -4.4	67.6 -1.5 -4.6	0.5
52.2 -2.5 -3.5	52.2 -2.5 -3.2	0.4
37.5 -3.9 -3.1	38.0 -3.5 -3.0	0.6
26.3 -6.8 -3.4	27.0 -6.8 -2.8	0.9
Average		0.8
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	113.68 119.86 131.14	85 85 170	17.64 13.83 49.06
0 0 0	0.19 0.20 0.36	85 170 170	24.89 38.25 52.35
12 12 12	0.58 0.61 0.76	170 85 170	38.67 23.56 49.38
25 25 25	1.26 1.32 1.49	170 170 85	38.85 45.43 16.11
38 38 38	2.41 2.54 2.73	0 148 216	22.29 29.25 83.68
51 51 51	4.04 4.26 4.62	98 175 227	35.66 44.37 95.40
63 63 63	5.95 6.29 6.78	168 204 236	60.00 67.82 106.13
76 76 76	8.59 9.03 9.77	187 48 122	38.57 19.75 24.03
89 89 89	11.65 12.28 13.44	199 114 160	50.52 34.54 44.31
102 102 102	15.26 16.14 17.71	216 174 202	69.39 60.27 75.32
114 114 114	19.25 20.30 22.21	242 224 13	77.68 87.19 10.12
127 127 127	24.23 25.47 27.79	242 228 109	81.57 90.99 28.35
140 140 140	30.02 31.56 34.43	241 233 175	88.14 96.08 61.32
153 153 153	36.39 38.25 41.74	173 103 82	33.62 25.01 12.32
165 165 165	42.96 45.15 49.27	126 85 73	17.80 14.61 9.41
178 178 178	50.94 53.37 58.58	117 49 42	13.38 8.44 3.54
191 191 191	59.20 62.42 68.29	118 47 81	14.89 8.86 10.63
204 204 204	68.83 72.35 78.94	135 121 46	21.55 23.14 5.88
216 216 216	78.19 82.19 89.68	45 93 58	5.52 10.14 6.52
229 229 229	89.10 93.65 102.19	30 95 116	7.68 11.25 22.06
242 242 242	100.88 106.36 116.37	48 47 85	4.93 4.18 11.31
0 0 128	4.89 1.91 25.23	223 223 227	84.40 88.40 99.59
0 0 255	22.49 8.32 118.33	205 206 209	70.11 73.91 82.99
0 128 0	5.13 16.91 2.71	168 169 171	45.25 47.40 53.40
0 128 128	9.86 18.83 27.44	129 129 131	25.02 26.29 29.44
0 170 255	31.86 40.28 123.17	86 86 87	10.88 11.47 12.77
0 255 0	23.69 79.76 11.45	40 40 40	2.69 2.84 3.09
0 255 170	32.68 83.27 58.68	49 49 126	7.61 5.35 24.78
0 255 255	46.13 88.29 129.57	96 89 155	17.83 14.66 40.24
85 85 85	10.56 11.16 12.14	154 150 196	41.63 39.22 69.01
128 0 0	14.43 6.85 0.57	186 53 41	34.39 18.60 3.86
128 0 128	19.13 8.56 25.45	199 109 81	44.04 31.05 12.46
128 128 0	19.58 23.76 2.92	216 169 146	62.18 55.61 39.49
128 128 128	24.55 25.88 28.31	43 140 71	9.40 22.26 10.71
128 128 255	42.23 32.50 121.37	111 166 112	23.54 36.72 23.95
128 255 128	43.20 88.62 37.11	172 199 169	50.57 62.04 54.05
170 0 255	49.77 20.96 119.70	202 164 145	54.99 50.53 38.68
170 170 170	45.90 48.09 52.79	216 160 37	55.02 49.62 7.15
170 255 0	50.93 92.49 11.92	188 51 92	37.19 19.50 14.10
170 255 255	73.92 101.21 130.57	137 49 124	22.15 12.18 24.52
255 0 0	67.30 31.47 1.30	174 190 49	41.68 54.73 10.16
255 0 170	76.44 34.78 49.04	0 144 157	14.07 25.01 42.61
255 0 255	89.64 39.60 119.76	0 111 181	14.09 16.58 56.10
255 128 128	77.50 50.61 29.41	240 241 244	99.97 105.38 118.33
255 170 0	76.87 63.09 5.90	220 223 228	82.99 87.75 100.50
255 170 255	99.62 71.94 124.73	201 204 211	68.44 72.12 84.52
255 255 0	91.06 111.11 12.44	160 166 172	42.24 44.94 53.97
255 255 170	100.17 114.74 60.60	120 126 130	22.65 24.41 28.88
170 85 85	31.67 21.00 12.67	83 90 93	11.02 12.12 14.55
85 170 85	17.89 35.59 15.69	54 65 67	5.23 6.13 7.46