UGRA
Display Analysis & Certification Tool
Report

Basics

Date:	2013-3-2 00:12:19
Report-Version:	v1.3.1
Monitor-Name:	DELL U2711
EDID-Name:	DELL U2711
EDID-Serial:	G606T0B90F7L
Profile:	/Users/.../DELL_U2711-2013-03-02T001023-6500K-22-100%-trc.icc
Created:	2013-3-2 0:10
Measurement device:	Silver Haze 3 & i1 Display pro, Serial: QT-12.A-02.100836.05, Correction: White LED

Summary

The monitor has passed the certification according to the UGRA DACT specifications.

Calibration (Assumed Target Whitepoint: 6500.00 Kelvin)

White Point	yes
Gray balance	yes
Profile quality	yes

Softproofing
Depends on the calibration verification.

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

White-Point 

Gray Balance 

Profile Quality 

Softproof Quality 

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:	115.42 120.80 132.87
XYZ (normalized):	95.55 100.00 110.00
xy:	0.3127 0.3273
Luminance:	120.8 Cd/m2
Next Temperature:	6516 Kelvin
Assumed Target Whitepoint:	6500.0 Kelvin
Distance to assumed Target Whitepoint:	1.1 DeltaE-76

Blackpoint

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

Luminance:	0.2 Cd/m2
Chromaticity:	1.7 Chroma (Lab)

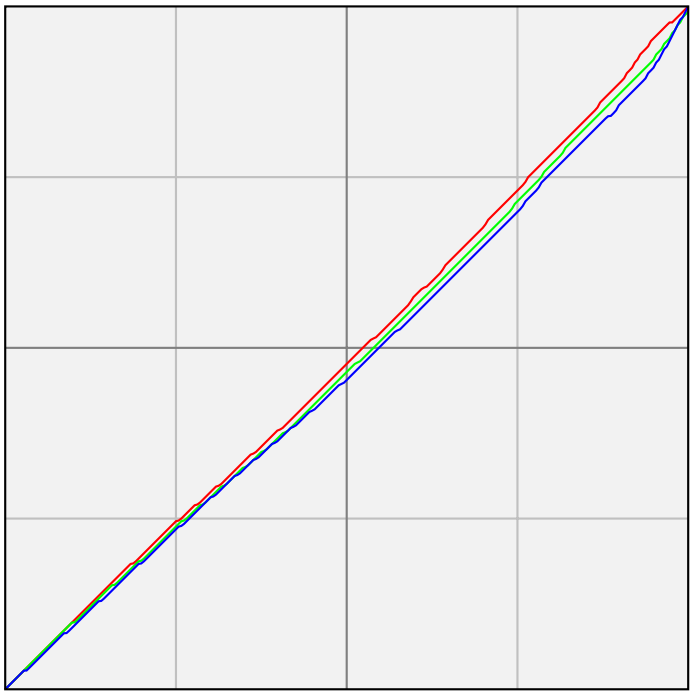
Gray balance

Average and maximum calculation will respect measurements with 1% minimum luminance only. The L-deviation shows the difference between the profile and measurement value.
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	22003	0.18	1.37	1.68	
5	10161	0.33	2.48	1.49	2.25
10	6898	0.91	6.80	0.79	2.23
15	6338	2.05	13.79	0.48	2.21
20	6326	3.66	20.17	0.51	2.21
25	6449	5.78	26.12	0.21	2.22
30	6598	8.53	31.95	0.46	2.22
35	6536	12.08	37.84	0.53	2.20
40	6451	16.19	43.37	0.47	2.20
45	6435	20.72	48.45	0.44	2.22
50	6471	26.36	53.84	0.63	2.21
55	6469	32.47	58.86	0.25	2.21
60	6457	39.46	63.89	0.33	2.20
65	6532	46.57	68.43	0.22	2.22
70	6511	54.78	73.12	0.19	2.22
75	6447	63.97	77.85	0.45	2.22
80	6561	73.89	82.47	0.95	2.18
85	6459	84.15	86.83	0.45	2.25
90	6476	95.27	91.17	0.34	2.26
95	6429	107.51	95.58	0.70	2.31
100	6516	120.80	100.00	0.00	
Average	6470			0.42	2.22
Max				0.95	
Range				1.58	

Tone values

This tests checks the calibration curves of the graphic card. 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.



Tone values = 95.7%

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 Lab values are calculated, based on the measured white point (xy: 0.3127 0.3273).

The assumed chromatic adaptation is: Bradford

RGB	Lab	deltaLab	DeltaE-76
0 0 0	1.4 -0.2 -1.7	-1.4 0.2 1.7	2.2
0 0 128	9.6 50.8 -71.9	-0.2 1.3 -0.8	1.5
0 0 255	25.8 86.2 -121.7	0.3 0.1 1.2	1.3
0 128 0	45.2 -83.5 49.0	0.2 0.7 1.6	1.7
0 128 128	46.8 -56.4 -11.1	-0.0 2.7 -1.0	2.9
0 170 255	63.5 -34.5 -58.6	0.2 3.0 0.3	3.0
0 255 0	85.8 -140.7 84.5	-0.1 3.5 -0.6	3.5
0 255 170	86.6 -118.9 22.9	0.1 3.9 -0.7	4.0
0 255 255	88.1 -92.2 -20.7	0.0 3.2 0.5	3.3
85 85 85	36.1 0.4 -0.3	-0.3 -0.4 0.3	0.6
128 0 0	29.9 61.1 45.7	-0.3 0.4 3.6	3.7
128 0 128	32.2 70.6 -33.6	-0.1 -0.2 -0.1	0.2
128 128 0	53.0 -10.9 61.2	-0.1 -0.5 1.3	1.4
128 128 128	54.3 -0.4 0.7	-0.3 0.4 -0.7	0.9
128 128 255	58.1 29.4 -67.3	-0.4 1.5 -0.1	1.5
128 255 128	89.2 -89.5 48.8	0.0 1.4 -0.5	1.5
170 0 255	47.2 99.7 -85.0	-0.0 -0.3 0.8	0.8
170 170 170	70.1 0.0 0.0	0.0 -0.0 -0.0	0.1
170 255 0	91.4 -72.2 93.2	-0.2 0.7 -0.7	1.0
170 255 255	93.3 -43.8 -11.1	-0.0 1.3 -0.2	1.3
255 0 0	60.3 103.3 92.1	-0.7 -1.3 2.5	2.9
255 0 170	61.9 110.0 -10.8	-0.5 -1.7 0.2	1.8
255 0 255	64.1 117.5 -55.2	-0.4 -0.9 -0.6	1.2
255 128 128	72.5 67.7 30.3	-0.6 -0.9 -0.1	1.1
255 170 0	79.5 39.0 93.4	-0.2 -2.0 -0.0	2.1
255 170 255	82.3 55.9 -27.3	-0.3 -0.5 0.0	0.6
255 255 0	98.4 -18.1 104.5	-0.3 -0.8 -1.0	1.3
255 255 170	99.0 -10.3 42.7	-0.1 -0.6 -0.1	0.6
255 255 255	100.0 0.0 -0.0	0.0 -0.0 0.0	0.0
170 85 85	49.7 50.5 22.1	-0.4 -0.7 0.6	1.0
85 170 85	62.1 -66.3 35.7	0.0 0.6 0.4	0.7
85 85 170	38.9 22.7 -50.4	-0.3 0.4 0.0	0.5
85 170 170	63.4 -46.7 -11.8	0.1 1.0 0.3	1.0
170 85 170	51.4 60.1 -29.3	-0.3 -0.5 0.2	0.6
170 170 85	69.2 -10.4 47.1	-0.1 -0.5 0.5	0.7
Average			1.5
Maximum			4.0

Gamut-Volume

These measurements are only informative.

Gamut-Volume (ISO)	100 %
sRGB	100 %
AdobeRGB	100 %
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)	Measurement (Lab)	Measurement (Yxy)	DeltaE-76
55.0 -37.0 -50.0	55.6 -34.4 -48.8	0.1727 0.2552	3.0
66.9 -24.7 -37.1	66.7 -26.1 -37.0	0.2247 0.2927	1.3
79.7 -12.5 -21.8	79.8 -13.3 -21.3	0.2855 0.3267	0.9
48.0 74.0 -3.0	48.6 74.6 -2.5	0.5110 0.2600	1.0
60.8 50.6 -6.7	61.0 51.5 -7.1	0.4308 0.2898	1.0
76.4 25.8 -6.9	76.6 26.7 -7.1	0.3764 0.3213	1.0
89.0 -5.0 93.0	89.3 -4.2 93.6	0.4615 0.4923	1.0
90.3 -4.7 62.6	90.6 -3.4 62.4	0.4324 0.4587	1.3
92.2 -3.5 31.1	92.2 -2.5 31.0	0.3908 0.4120	0.9
53.1 37.7 28.9	53.1 38.5 27.8	0.5032 0.3623	1.4
41.5 22.7 16.8	41.9 23.6 15.8	0.4588 0.3629	1.3
31.9 40.0 24.0	32.5 40.0 23.5	0.5549 0.3404	0.8
32.5 44.4 -1.8	33.2 44.6 -2.2	0.4751 0.2777	0.7
51.3 1.3 44.5	51.5 2.1 44.4	0.4520 0.4587	0.9
34.6 -36.4 13.9	34.9 -35.7 13.8	0.2746 0.4857	0.8
36.0 -26.2 -20.9	36.0 -27.1 -20.2	0.2066 0.3154	1.2
20.9 9.6 -23.6	21.3 10.2 -23.7	0.2714 0.2341	0.7
89.0 0.0 -1.8	89.3 0.2 -1.5	0.3435 0.3558	0.5
82.8 0.0 -1.7	83.0 0.4 -2.2	0.3425 0.3542	0.7
69.3 0.0 -1.4	69.5 -0.3 -1.5	0.3420 0.3556	0.4
54.1 0.0 -1.0	54.4 0.2 -0.9	0.3439 0.3558	0.4
36.6 -0.0 -0.5	37.1 0.5 -0.6	0.3450 0.3556	0.7
16.0 0.0 0.0	16.8 0.2 0.2	0.3479 0.3594	0.9
24.0 22.0 -46.0	24.3 22.0 -45.4	0.2255 0.1636	0.6
40.9 17.9 -36.6	41.2 18.2 -36.1	0.2777 0.2327	0.6
63.7 10.3 -23.8	63.9 11.0 -24.0	0.3121 0.2946	0.7
47.0 68.0 48.0	47.6 68.8 47.4	0.6212 0.3291	1.2
58.5 47.1 37.9	58.7 48.8 37.3	0.5318 0.3612	1.9
74.2 22.9 21.4	74.4 24.1 21.5	0.4303 0.3728	1.2
50.0 -65.0 27.0	50.0 -65.6 26.7	0.2427 0.5528	0.7
62.1 -39.8 21.0	62.2 -39.6 21.1	0.3070 0.4633	0.2
77.0 -19.1 11.0	77.0 -19.3 11.1	0.3330 0.4005	0.2
71.2 18.8 17.3	71.6 19.3 17.4	0.4162 0.3716	0.6
71.2 22.2 73.1	71.5 23.7 73.1	0.5097 0.4404	1.6
47.7 71.2 16.2	48.2 71.9 16.1	0.5601 0.2905	0.8
38.0 55.4 -20.9	38.4 55.4 -20.6	0.4218 0.2316	0.5
73.7 -22.8 67.6	73.7 -22.6 67.1	0.4118 0.5116	0.6
52.3 -52.3 -20.2	52.4 -55.3 -19.5	0.1831 0.3542	3.0
43.3 -17.0 -48.6	43.2 -18.8 -48.5	0.1736 0.2265	1.8
95.0 0.0 -2.0	95.0 0.7 -1.5	0.3443 0.3554	0.9
88.5 -0.4 -3.1	88.9 -0.4 -2.8	0.3404 0.3540	0.5
82.0 -0.9 -4.1	82.0 -0.8 -4.3	0.3366 0.3511	0.2
67.7 -2.0 -4.4	67.9 -1.3 -4.9	0.3329 0.3488	0.9
52.2 -2.5 -3.5	52.5 -3.2 -2.8	0.3311 0.3548	1.1
37.5 -3.9 -3.1	37.9 -3.3 -3.0	0.3262 0.3532	0.7

26.3 -6.8 -3.4	26.9 -6.5 -2.9	0.3100 0.3582	0.8
Average			1.0
Gamut-Volume			100 %

Measurement Data

This table lists all RGB measurements. The XYZ values represent the values from the measurement device.

RGB	XYZ	Yxy
255 255 255	115.42 120.80 132.87	120.80 0.3127 0.3273
0 0 0	0.17 0.18 0.34	0.18 0.2487 0.2609
12 12 12	0.32 0.33 0.49	0.33 0.2779 0.2907
25 25 25	0.88 0.91 1.06	0.91 0.3075 0.3191
38 38 38	1.98 2.05 2.23	2.05 0.3160 0.3272
51 51 51	3.53 3.66 3.97	3.66 0.3161 0.3283
63 63 63	5.53 5.78 6.31	5.78 0.3138 0.3282
76 76 76	8.17 8.53 9.53	8.53 0.3116 0.3252
89 89 89	11.60 12.08 13.43	12.08 0.3126 0.3255
102 102 102	15.56 16.19 17.80	16.19 0.3140 0.3268
114 114 114	19.89 20.72 22.69	20.72 0.3142 0.3274
127 127 127	25.09 26.36 28.64	26.36 0.3133 0.3291
140 140 140	31.07 32.47 35.57	32.47 0.3135 0.3276
153 153 153	37.74 39.46 43.10	39.46 0.3137 0.3280
165 165 165	44.55 46.57 51.42	46.57 0.3125 0.3267
178 178 178	52.42 54.78 60.34	54.78 0.3129 0.3270
191 191 191	61.22 63.97 69.86	63.97 0.3139 0.3280
204 204 204	70.91 73.89 82.33	73.89 0.3122 0.3253
216 216 216	80.43 84.15 91.85	84.15 0.3136 0.3282
229 229 229	91.21 95.27 104.53	95.27 0.3134 0.3274
242 242 242	103.06 107.51 117.42	107.51 0.3142 0.3278
0 0 128	4.96 1.62 26.12	1.62 0.1517 0.0495
0 0 255	22.64 7.18 121.95	7.18 0.1492 0.0473
0 128 0	5.00 17.78 2.71	17.78 0.1961 0.6977
0 128 128	9.76 19.55 28.25	19.55 0.1696 0.3396
0 170 255	31.42 40.53 125.20	40.53 0.1594 0.2056
0 255 0	22.51 81.85 11.21	81.85 0.1948 0.7083
0 255 170	31.35 84.39 59.76	84.39 0.1786 0.4809
0 255 255	45.00 88.90 132.91	88.90 0.1687 0.3332
85 85 85	10.54 10.97 12.19	10.97 0.3128 0.3254
128 0 0	15.39 7.15 0.56	7.15 0.6664 0.3095
128 0 128	20.37 8.65 26.71	8.65 0.3655 0.1552
128 128 0	20.58 25.07 2.95	25.07 0.4235 0.5158
128 128 128	25.55 26.87 29.03	26.87 0.3137 0.3299
128 128 255	43.26 32.71 124.27	32.71 0.2161 0.1634
128 255 128	42.98 90.23 37.67	90.23 0.2515 0.5280
170 0 255	51.50 20.40 122.52	20.40 0.2649 0.1049
170 170 170	47.30 49.48 54.40	49.48 0.3129 0.3273
170 255 0	51.73 95.22 11.62	95.22 0.3262 0.6005
170 255 255	73.91 102.07 131.91	102.07 0.2400 0.3315
255 0 0	71.39 32.72 1.25	32.72 0.6776 0.3106
255 0 170	80.76 35.54 51.52	35.54 0.4812 0.2118
255 0 255	93.58 39.67 121.52	39.67 0.3673 0.1557
255 128 128	81.27 52.41 30.58	52.41 0.4948 0.3191
255 170 0	80.42 65.74 5.70	65.74 0.5296 0.4329
255 170 255	102.94 73.36 127.33	73.36 0.3390 0.2416
255 255 0	93.90 114.47 12.16	114.47 0.4258 0.5191
255 255 170	102.64 116.88 61.89	116.88 0.3647 0.4153
170 85 85	33.29 21.41 12.68	21.41 0.4940 0.3178
85 170 85	17.65 36.96 15.69	36.96 0.2510 0.5258
85 85 170	17.77 13.30 51.03	13.30 0.2164 0.1620
85 170 170	24.81 39.22 54.41	39.22 0.2095 0.3311
170 85 170	40.50 23.67 51.61	23.67 0.3498 0.2045
170 170 85	40.26 47.30 16.14	47.30 0.3883 0.4561
0 148 214	21.95 29.49 85.29	29.49 0.1606 0.2157

101 174 226	35.98 44.81 96.62	44.81 0.2028 0.2526
168 204 235	60.79 68.79 107.97	68.79 0.2559 0.2896
184 56 122	39.96 20.32 24.75	20.32 0.4699 0.2390
196 115 159	51.78 34.97 45.75	34.97 0.3908 0.2640
214 173 201	71.32 61.24 77.27	61.24 0.3399 0.2918
241 222 33	79.75 89.03 10.54	89.03 0.4447 0.4965
241 226 110	83.97 92.52 29.00	92.52 0.4086 0.4502
240 232 174	89.98 97.34 62.16	97.34 0.3607 0.3902
170 103 83	34.07 25.03 12.67	25.03 0.4747 0.3488
124 86 75	18.34 14.80 9.84	14.80 0.4267 0.3443
115 53 47	13.80 8.60 3.65	8.60 0.5297 0.3300
116 52 82	15.39 9.02 11.00	9.02 0.4346 0.2548
134 119 51	22.21 23.42 6.00	23.42 0.4301 0.4536
50 93 61	5.62 10.21 6.61	10.21 0.2503 0.4551
39 95 115	7.68 11.15 22.06	11.15 0.1878 0.2726
51 51 85	4.94 4.12 11.41	4.12 0.2413 0.2012
222 223 226	86.47 90.31 101.75	90.31 0.3105 0.3242
204 205 208	72.19 75.22 85.89	75.22 0.3094 0.3224
167 168 170	46.13 48.34 54.79	48.34 0.3091 0.3239
128 128 130	25.91 27.03 30.41	27.03 0.3109 0.3243
87 87 87	11.12 11.56 12.98	11.56 0.3119 0.3242
44 44 44	2.63 2.74 2.98	2.74 0.3149 0.3284
53 54 125	7.79 5.31 25.36	5.31 0.2026 0.1382
96 91 154	18.18 14.76 40.78	14.76 0.2466 0.2002
153 149 194	42.59 39.77 70.50	39.77 0.2786 0.2602
183 58 47	35.76 19.15 4.10	19.15 0.6060 0.3245
196 109 82	45.48 31.51 12.79	31.51 0.5066 0.3510
214 167 145	63.86 56.47 40.18	56.47 0.3979 0.3518
52 137 73	9.42 22.36 10.72	22.36 0.2216 0.5260
112 163 112	23.91 37.08 24.21	37.08 0.2806 0.4352
171 197 168	51.00 62.33 55.10	62.33 0.3028 0.3701
200 162 144	56.60 51.52 39.58	51.52 0.3832 0.3488
214 158 46	56.79 50.84 7.56	50.84 0.4930 0.4414
184 57 92	38.03 19.81 14.22	19.81 0.5278 0.2749
134 56 123	22.73 12.40 25.16	12.40 0.3771 0.2056
173 187 56	42.39 55.27 10.63	55.27 0.3915 0.5104
15 143 155	13.82 25.28 43.08	25.28 0.1681 0.3076
20 112 179	14.21 16.77 57.00	16.77 0.1616 0.1906
239 240 244	101.83 105.98 119.38	105.98 0.3112 0.3239
219 222 227	85.38 89.44 102.93	89.44 0.3074 0.3220
199 203 210	69.53 72.95 86.47	72.95 0.3037 0.3186
159 164 171	43.43 45.73 55.56	45.73 0.3001 0.3160
119 125 129	23.16 24.97 29.42	24.97 0.2987 0.3219
84 90 93	11.15 12.13 14.64	12.13 0.2941 0.3198
57 67 69	5.29 6.12 7.53	6.12 0.2792 0.3234