

# UGRA

## Display Analysis & Certification Tool

### Report

#### Basics

Date: 2010-12-9 2:07:16  
Report-Version: v1.3.1  
Monitor-Name: \\.\DISPLAY1  
Profile: C:/Windows/system32/spool/drivers/color/eizo-fs2331-ugra.icc  
Created: 2010-12-9 2:04  
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          | no  |
| Offset/Gravure Paper Type 1/2 | yes |
| Offset on uncoated paper      | yes |
| Newspaper Printing            | yes |
| sRGB                          | yes |
| AdobeRGB                      | no  |
| 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:                                   | 133.40 139.83 136.88 |
| XYZ (normalized):                      | 95.40 100.00 97.89   |
| Luminance:                             | 139.8 Cd/m2          |
| Next Temperature:                      | 5822 Kelvin          |
| Assumed Target Whitepoint:             | 5800 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:    | 0.1 Cd/m2        |
| Chromaticity: | 0.5 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       | 5389   | 0.12   | 0.77   | 0.50   |       |
| 5       | 6327   | 0.66   | 4.29   | 0.74   | 1.86  |
| 10      | 5745   | 2.21   | 13.11  | 0.61   | 1.83  |
| 15      | 5822   | 4.65   | 21.31  | 0.86   | 1.82  |
| 20      | 5709   | 7.85   | 28.41  | 0.52   | 1.80  |
| 25      | 5731   | 11.45  | 34.38  | 0.41   | 1.81  |
| 30      | 5780   | 15.86  | 40.15  | 0.26   | 1.82  |
| 35      | 5876   | 21.09  | 45.74  | 0.38   | 1.81  |
| 40      | 5842   | 27.07  | 51.11  | 0.73   | 1.80  |
| 45      | 5824   | 32.71  | 55.47  | 0.18   | 1.82  |
| 50      | 5841   | 40.22  | 60.57  | 0.89   | 1.81  |
| 55      | 5849   | 48.07  | 65.26  | 0.31   | 1.79  |
| 60      | 5771   | 55.94  | 69.47  | 0.39   | 1.80  |
| 65      | 5761   | 64.15  | 73.46  | 0.78   | 1.82  |
| 70      | 5849   | 73.42  | 77.58  | 0.22   | 1.81  |
| 75      | 5861   | 83.26  | 81.59  | 0.38   | 1.80  |
| 80      | 5780   | 94.31  | 85.73  | 0.78   | 1.79  |
| 85      | 5781   | 104.55 | 89.28  | 0.56   | 1.81  |
| 90      | 5807   | 115.47 | 92.83  | 0.18   | 1.83  |
| 95      | 5804   | 127.65 | 96.53  | 0.20   | 1.80  |
| 100     | 5822   | 139.83 | 100.00 | 0.00   |       |
|         |        |        |        |        |       |
| Average | 5803   |        |        | 0.45   | 1.81  |
| Range   |        |        |        | 1.14   |       |
| Max     |        |        |        | 0.89   |       |

Tone values = 97.3%

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       | 0.8 0.4 -0.2     | -0.8 -0.4 0.2  | 0.9    |
| 0 0 128     | 11.3 48.3 -74.9  | 1.4 -2.1 -0.2  | 2.6    |
| 0 0 255     | 26.6 70.8 -114.2 | 0.8 -0.9 0.6   | 1.3    |
| 0 128 0     | 52.1 -56.0 47.9  | 0.1 0.6 1.4    | 1.6    |
| 0 128 128   | 53.4 -37.1 -11.0 | 0.5 0.4 0.5    | 0.8    |
| 0 170 255   | 68.4 -24.9 -48.1 | 0.5 0.0 1.2    | 1.3    |
| 0 255 0     | 87.3 -83.3 76.8  | -0.1 -0.4 -2.2 | 2.2    |
| 0 255 170   | 88.3 -68.7 17.8  | 0.1 -0.6 -0.6  | 0.9    |
| 0 255 255   | 89.7 -55.1 -16.2 | 0.1 -0.4 0.3   | 0.5    |
| 85 85 85    | 44.2 -0.5 0.3    | -0.2 0.5 -0.3  | 0.6    |
| 128 0 0     | 32.1 54.0 38.0   | -0.3 0.0 5.6   | 5.6    |
| 128 0 128   | 34.9 63.2 -36.5  | 0.1 -0.9 -1.4  | 1.6    |
| 128 128 0   | 59.7 -10.8 55.0  | -0.4 1.0 2.6   | 2.8    |
| 128 128 128 | 61.0 -0.1 0.1    | -0.3 0.1 -0.1  | 0.3    |
| 128 128 255 | 64.1 19.6 -54.3  | -0.2 0.1 0.0   | 0.3    |
| 128 255 128 | 91.4 -49.8 40.0  | -0.1 -1.0 -0.8 | 1.3    |
| 170 0 255   | 48.1 83.4 -79.0  | 0.1 -0.9 0.2   | 0.9    |
| 170 170 170 | 75.1 -0.1 0.4    | -0.2 0.1 -0.4  | 0.5    |
| 170 255 0   | 92.9 -43.4 82.2  | -0.2 -0.5 -1.2 | 1.3    |
| 170 255 255 | 95.0 -23.3 -8.0  | -0.1 -1.0 0.1  | 1.0    |
| 255 0 0     | 56.1 81.6 65.9   | 0.2 0.1 0.3    | 0.3    |
| 255 0 170   | 58.2 88.5 -20.9  | 0.5 -0.4 -1.0  | 1.2    |
| 255 0 255   | 60.8 94.7 -57.6  | 0.4 -0.4 0.3   | 0.6    |
| 255 128 128 | 74.1 41.8 20.9   | -0.4 1.7 -1.3  | 2.2    |
| 255 170 0   | 81.1 18.6 76.7   | -0.3 1.2 0.2   | 1.2    |
| 255 170 255 | 83.8 34.5 -23.9  | -0.1 0.9 0.6   | 1.1    |
| 255 255 0   | 98.0 -15.1 89.1  | -0.1 0.2 -2.0  | 2.0    |
| 255 255 170 | 98.9 -7.3 33.7   | 0.0 -0.1 -1.1  | 1.1    |
| 255 255 255 | 100.0 -0.0 0.0   | 0.0 0.0 0.0    | 0.0    |
| 170 85 85   | 54.6 34.0 15.5   | -0.4 0.2 0.0   | 0.5    |
| 85 170 85   | 68.1 -40.2 30.2  | -0.0 0.2 0.6   | 0.6    |
| 85 85 170   | 46.4 15.2 -42.0  | 0.1 0.4 -0.7   | 0.8    |
| 85 170 170  | 69.3 -28.3 -8.1  | 0.1 0.3 -0.5   | 0.6    |
| 170 85 170  | 56.2 42.5 -26.3  | -0.2 0.1 -0.9  | 0.9    |
| 170 170 85  | 73.9 -8.1 38.2   | -0.1 -0.1 0.8  | 0.8    |
|             |                  |                |        |
| Average     |                  |                | 1.2    |
| Maximum     |                  |                | 5.6    |

# Gamut-Volume

These measurements are only informative.

| Gamut-Volume |      |
|--------------|------|
| ISO          | 91 % |
| sRGB         | 99 % |
| AdobeRGB     | 79 % |
| ECI-RGB v1.0 | 70 % |

# 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 | 57.4 -18.9 -45.7 | 18.7     |
| 66.9 -24.7 -37.1 | 67.0 -25.4 -36.9 | 0.7      |
| 79.7 -12.5 -21.8 | 79.7 -12.0 -22.2 | 0.7      |
| 48.0 74.0 -3.0   | 47.9 74.4 -2.7   | 0.5      |
| 60.8 50.6 -6.7   | 61.2 50.3 -6.3   | 0.6      |
| 76.4 25.8 -6.9   | 76.7 25.7 -6.6   | 0.4      |
| 89.0 -5.0 93.0   | 89.5 -4.9 81.8   | 11.2     |
| 90.3 -4.7 62.6   | 90.7 -5.1 63.3   | 0.9      |
| 92.2 -3.5 31.1   | 92.3 -3.9 31.7   | 0.7      |
| 53.1 37.7 28.9   | 53.8 37.2 28.6   | 0.9      |
| 41.5 22.7 16.8   | 41.9 22.3 15.8   | 1.1      |
| 31.9 40.0 24.0   | 32.2 39.7 22.0   | 2.0      |
| 32.5 44.4 -1.8   | 32.8 44.2 -1.6   | 0.4      |
| 51.3 1.3 44.5    | 51.9 0.2 42.9    | 2.0      |
| 34.6 -36.4 13.9  | 34.3 -35.8 13.1  | 1.0      |
| 36.0 -26.2 -20.9 | 35.9 -21.1 -20.2 | 5.1      |
| 20.9 9.6 -23.6   | 20.7 9.7 -23.4   | 0.4      |
| 89.0 0.0 -1.8    | 89.4 0.0 -1.3    | 0.7      |
| 82.8 0.0 -1.7    | 82.8 0.1 -1.5    | 0.2      |
| 69.3 0.0 -1.4    | 69.4 0.3 -1.5    | 0.3      |
| 54.1 0.0 -1.0    | 54.3 -0.6 -0.7   | 0.7      |
| 36.6 -0.0 -0.5   | 36.6 0.1 -0.1    | 0.4      |
| 16.0 0.0 0.0     | 16.3 -0.4 0.4    | 0.7      |
| 24.0 22.0 -46.0  | 23.7 22.8 -45.1  | 1.2      |
| 40.9 17.9 -36.6  | 40.8 18.3 -36.6  | 0.4      |
| 63.7 10.3 -23.8  | 63.9 10.6 -23.9  | 0.4      |
| 47.0 68.0 48.0   | 47.3 68.1 45.8   | 2.2      |
| 58.5 47.1 37.9   | 59.0 46.5 37.3   | 1.0      |
| 74.2 22.9 21.4   | 74.6 22.1 22.2   | 1.2      |
| 50.0 -65.0 27.0  | 51.4 -51.3 28.7  | 13.9     |
| 62.1 -39.8 21.0  | 62.3 -40.1 21.0  | 0.3      |
| 77.0 -19.1 11.0  | 77.0 -18.8 11.5  | 0.6      |
| 71.2 18.8 17.3   | 71.6 18.0 17.9   | 1.2      |
| 71.2 22.2 73.1   | 71.8 21.4 68.0   | 5.1      |
| 47.7 71.2 16.2   | 47.9 71.3 16.6   | 0.4      |
| 38.0 55.4 -20.9  | 38.4 55.7 -19.8  | 1.2      |
| 73.7 -22.8 67.6  | 74.0 -23.3 66.0  | 1.7      |
| 52.3 -52.3 -20.2 | 54.4 -34.5 -16.7 | 18.2     |
| 43.3 -17.0 -48.6 | 43.9 -9.1 -46.4  | 8.3      |
| 95.0 0.0 -2.0    | 95.1 0.1 -1.6    | 0.4      |
| 88.5 -0.4 -3.1   | 88.7 -0.3 -3.0   | 0.2      |
| 82.0 -0.9 -4.1   | 82.0 -0.5 -4.4   | 0.5      |
| 67.7 -2.0 -4.4   | 68.0 -2.8 -4.0   | 1.0      |
| 52.2 -2.5 -3.5   | 52.6 -3.4 -3.0   | 1.1      |
| 37.5 -3.9 -3.1   | 37.4 -3.5 -2.9   | 0.4      |
| 26.3 -6.8 -3.4   | 26.2 -6.6 -3.9   | 0.6      |
|                  |                  |          |
| Average          |                  | 2.4      |
| Gamut-Volume     |                  | 91 %     |

# 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 | 133.40 139.83 136.88 | 85 85 170   | 25.63 22.21 57.21    |
| 0 0 0       | 0.13 0.12 0.14       | 85 170 170  | 42.15 55.82 63.85    |
| 12 12 12    | 0.61 0.66 0.66       | 170 85 170  | 47.88 33.87 58.65    |
| 25 25 25    | 2.09 2.21 2.10       | 170 170 85  | 57.24 64.75 27.42    |
| 38 38 38    | 4.38 4.65 4.44       | 0 134 212   | 29.88 36.18 87.25    |
| 51 51 51    | 7.49 7.85 7.53       | 41 163 225  | 40.86 51.93 99.50    |
| 63 63 63    | 10.96 11.45 11.08    | 138 195 235 | 69.88 79.16 112.27   |
| 76 76 76    | 15.13 15.86 15.40    | 200 6 104   | 45.40 23.07 24.61    |
| 89 89 89    | 20.03 21.09 20.69    | 210 87 144  | 59.94 41.06 46.44    |
| 102 102 102 | 25.65 27.07 26.27    | 221 155 191 | 82.18 71.29 78.86    |
| 114 114 114 | 31.16 32.71 31.94    | 242 216 0   | 94.54 104.25 17.47   |
| 127 127 127 | 38.10 40.22 38.99    | 241 221 74  | 98.00 107.89 30.29   |
| 140 140 140 | 45.73 48.07 47.06    | 238 228 153 | 104.45 113.30 63.94  |
| 153 153 153 | 53.48 55.94 54.44    | 175 79 60   | 40.49 30.06 13.27    |
| 165 165 165 | 61.11 64.15 61.87    | 116 65 55   | 21.15 17.23 10.16    |
| 178 178 178 | 69.96 73.42 72.08    | 111 30 29   | 15.89 9.86 3.92      |
| 191 191 191 | 79.40 83.26 82.05    | 113 28 64   | 17.48 10.29 10.76    |
| 204 204 204 | 89.78 94.31 91.20    | 120 101 26  | 26.09 27.73 7.04     |
| 216 216 216 | 99.68 104.55 101.41  | 0 77 43     | 6.25 11.40 6.82      |
| 229 229 229 | 110.16 115.47 112.71 | 0 78 99     | 9.27 12.73 22.56     |
| 242 242 242 | 121.82 127.65 124.59 | 37 35 69    | 5.28 4.52 11.13      |
| 0 0 128     | 5.78 2.16 30.92      | 215 216 220 | 100.16 104.91 104.96 |
| 0 0 255     | 20.92 8.18 112.79    | 194 195 199 | 82.60 86.48 86.85    |
| 0 128 0     | 13.80 28.24 5.82     | 152 153 156 | 53.34 55.74 56.18    |
| 0 128 128   | 19.65 30.23 38.20    | 110 110 112 | 29.61 31.20 31.02    |
| 0 170 255   | 44.02 54.94 124.04   | 68 68 69    | 12.48 13.07 12.83    |
| 0 255 0     | 48.72 98.45 18.06    | 30 30 30    | 2.86 3.02 2.89       |
| 0 255 170   | 58.74 101.96 73.00   | 41 36 110   | 8.41 5.84 25.03      |
| 0 255 255   | 69.88 106.50 133.49  | 81 70 141   | 20.18 16.67 41.48    |
| 85 85 85    | 18.54 19.54 18.97    | 139 131 186 | 48.61 46.03 72.23    |
| 128 0 0     | 18.60 9.71 1.58      | 198 19 23   | 41.45 22.23 4.43     |
| 128 0 128   | 24.65 11.95 32.82    | 209 82 58   | 52.91 37.22 13.42    |
| 128 128 0   | 32.61 38.55 7.48     | 221 149 124 | 74.10 66.22 41.32    |
| 128 128 128 | 38.91 40.84 39.87    | 0 125 50    | 14.25 27.36 11.50    |
| 128 128 255 | 54.24 46.95 121.62   | 64 152 90   | 27.72 42.96 25.42    |
| 128 255 128 | 73.77 110.58 52.51   | 144 188 151 | 59.22 72.02 56.49    |
| 170 0 255   | 52.28 24.40 116.07   | 202 144 124 | 65.44 59.96 40.47    |
| 170 170 170 | 64.57 67.76 65.83    | 222 139 0   | 66.57 59.93 10.10    |
| 170 255 0   | 79.76 114.76 20.36   | 200 14 72   | 43.80 22.91 14.04    |
| 170 255 255 | 101.44 123.06 135.65 | 136 27 107  | 26.23 14.37 25.01    |
| 255 0 0     | 63.16 32.81 3.54     | 150 178 4   | 50.23 64.82 12.31    |
| 255 0 170   | 72.90 36.41 56.45    | 0 130 141   | 21.39 31.63 45.06    |
| 255 0 255   | 84.29 41.02 117.13   | 0 95 171    | 17.83 19.83 57.38    |
| 255 128 128 | 83.79 64.84 41.59    | 235 237 242 | 117.41 122.92 123.35 |
| 255 170 0   | 86.91 81.09 13.06    | 211 215 222 | 98.18 103.03 105.95  |
| 255 170 255 | 108.01 89.18 128.48  | 188 193 202 | 80.38 84.40 89.19    |
| 255 255 0   | 112.08 131.64 21.62  | 141 150 157 | 49.67 53.21 56.48    |
| 255 255 170 | 122.35 135.36 76.25  | 99 107 112  | 26.68 28.90 30.48    |
| 170 85 85   | 40.89 31.28 20.60    | 63 72 75    | 12.50 13.70 14.69    |
| 85 170 85   | 35.05 53.12 25.93    | 37 50 52    | 5.79 6.76 7.72       |