

# Color Management for the Internet

- In-depth analysis and test of the CSS Color Module



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## Problem statements

- Color consistency
  - does the CSS defined colors render identical on various platforms?
- Color predictability
  - is it possible to predict the CSS defined colors via PhotoShop?





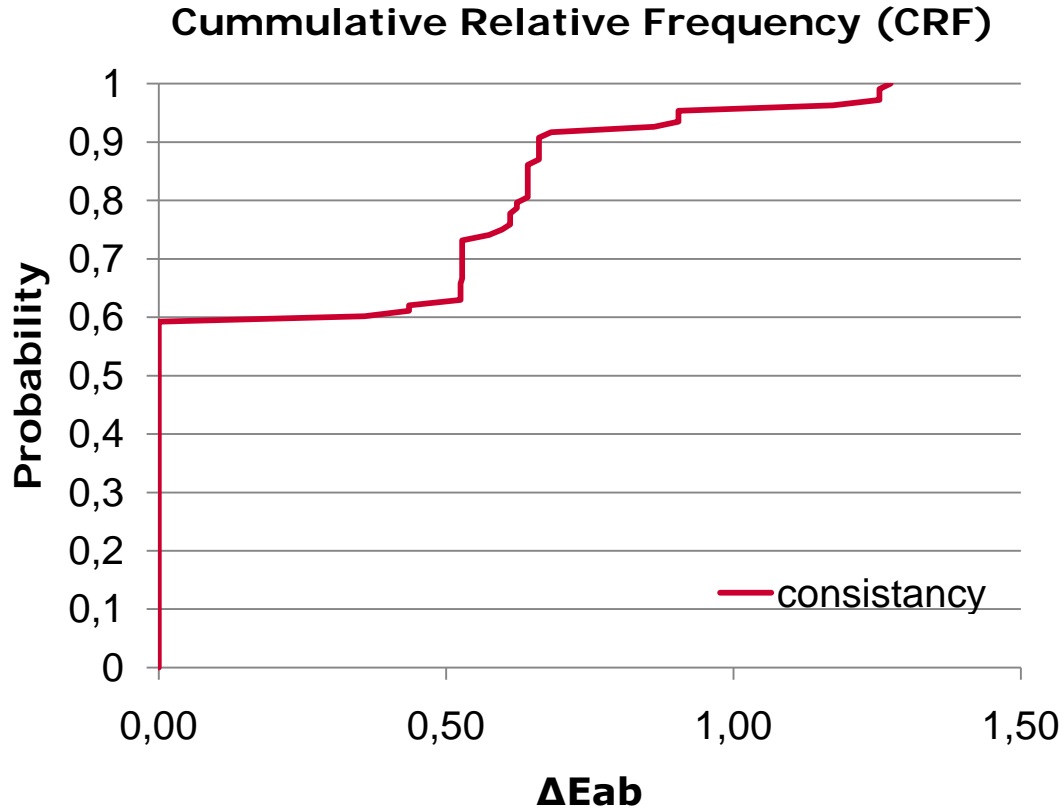




# Results - Color consistency

Patch	Opera 10.51	FireFox 3.6.2	Chrome 4.1.2	Safari 4.0.3	IE 8.0.6	IE 9	iPhone
HEX	255 0 0	255 0 0	255 0 0	255 0 0	255 0 0	255 0 0	255 0 0
RGBa	255 0 0	255 0 0	255 0 0	255 0 0		255 0 0	255 0 0
HSLa	255 0 0	255 0 0	255 0 0	255 0 0			255 0 0
HEX	255 128 128	255 127 127	255 128 128	255 127 127		255 127 127	255 127 127
RGBa	255 126 126	255 127 127	254 127 127	255 128 128		255 127 127	255 128 128
HSLa	255 126 126	255 127 127	254 127 127	255 128 128			255 128 128
HEX	236 104 6	236 104 6	236 104 6	236 104 6	236 104 6	236 104 6	236 104 6
RGBa	236 104 6	236 104 6	236 104 6	236 104 6		236 104 6	236 104 6
HSLa	236 104 6	233 104 5	234 105 6	234 105 6			234 105 6
HEX	247 194 155	247 195 155	247 194 155	248 195 156		247 195 155	248 195 156
RGBa	247 195 155	247 194 155	246 193 154	247 194 155		247 195 155	247 195 155
HSLa	247 195 155	246 194 155	246 194 154	247 194 155			247 195 155
HEX	29 224 203	29 224 203	29 224 203	29 224 203	29 224 203	29 224 203	29 224 203
RGBa	29 224 203	29 224 203	29 224 203	29 224 203		29 224 203	29 224 203
HSLa	29 224 203	29 225 206	29 226 206	29 226 206			29 226 206
HEX	187 246 240	188 246 240	187 246 240	187 246 240		187 246 239	187 246 240
RGBa	188 246 240	186 245 239	186 245 239	188 246 240		187 245 239	188 246 240
HSLa	188 246 240	186 246 240	186 245 239	188 246 240			188 246 240

# Results - Color consistency



<b>59%</b>	<b>90%</b>	<b>Max.</b>
0 $\Delta E_{ab}$	0.66 $\Delta E_{ab}$	1.27 $\Delta E_{ab}$





## Conclusions

- The implementation of standards is not consistent among browsers manufactures
- Web developers have to be consistent when they define colors
- The color differences are small and probably not noticeable visually
- Browser manufactures or W3C should standardize the way they render colors and the math converting the colors



# Any Questions?

thank you for attending this presentation

link to the test website:

<http://www.uppercase.dk/color/>