



CSS Color Module Level 3

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Please refer to the **errata** for this document, which may include some normative corrections.

See also **translations**.

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Abstract

CSS (Cascading Style Sheets) is a language for describing the rendering of HTML and XML documents on screen, on paper, in speech, etc. It uses color-related properties and values to color the text, backgrounds, borders, and other parts of elements in a document. This specification describes color values and properties for foreground color and group opacity. These include properties and values from CSS level 2 and new values.

Status of this document

This section describes the status of this document at the time of its publication. Other documents may supersede this document. A list of current W3C publications and the

latest revision of this technical report can be found in the W3C technical reports index at <http://www.w3.org/TR/>.

The (archived) public mailing list www-style@w3.org (see instructions) is preferred for discussion of this specification. When sending e-mail, please put the text “css3-color” in the subject, preferably like this: “[css3-color] ...*summary of comment...*”

This document was produced by the CSS Working Group (part of the Style Activity).

A separate implementation report contains a test suite and shows that each test in the test suite was passed by at least two independent implementations.

The list of comments on the most recent Last Call draft explains the changes that were made since that draft. Comments received during the Candidate Recommendation period (for the 14 May 2003 draft) and how they were addressed in this draft can be found in the disposition of comments. Comments received during the Last Call period (for the 14 February 2003 draft) and how they were addressed can be found in the disposition of comments.

A complete list of changes to this document is available.

This document has been reviewed by W3C Members, by software developers, and by other W3C groups and interested parties, and is endorsed by the Director as a W3C Recommendation. It is a stable document and may be used as reference material or cited from another document. W3C's role in making the Recommendation is to draw attention to the specification and to promote its widespread deployment. This enhances the functionality and interoperability of the Web.

This document was produced by a group operating under the 5 February 2004 W3C Patent Policy. W3C maintains a public list of any patent disclosures made in connection with the deliverables of the group; that page also includes instructions for disclosing a patent. An individual who has actual knowledge of a patent which the individual believes contains Essential Claim(s) must disclose the information in accordance with section 6 of the W3C Patent Policy.

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1. Introduction

CSS beyond level 2 is a set of modules, divided up to allow the specifications to develop incrementally, along with their implementations. This specification is one of those modules.

This module describes CSS properties which allow authors to specify the foreground color and opacity of an element. This module also describes in detail the CSS `<color>` value type.

It not only defines the color-related properties and values that already exist in CSS1 and CSS2, but also defines new properties and values.

The Working Group doesn't expect that all implementations of CSS3 will implement all properties or values. Instead, there will probably be a small number of variants of CSS3, so-called "profiles". For example, it may be that only the profile for 32-bit color user agents will include all of the proposed color-related properties and values.

The specification is the result of the merging of relevant parts of the following Recommendations and Working Drafts, and the addition of some new features.

- HTML 4.01 [HTML401]
- CSS 2.0 [CSS2]
- SVG 1.0 [SVG10]
- User Interface for CSS3 (16 February 2000) [CSS3UI]

2. Dependencies

Additional terminology is defined in the Definitions section of [CSS21]. Examples of document source code and fragments are given in XML [XML10] or HTML [HTML401] syntax.

3. Color properties

3.1. Foreground color: the ‘color’ property

| | |
|------------------------|--|
| Name: | <i>color</i> |
| Value: | <color> inherit |
| Initial: | depends on user agent |
| Applies to: | all elements |
| Inherited: | yes |
| Percentages: | N/A |
| Media: | visual |
| Computed value: | <ul style="list-style-type: none">• The computed value for basic color keywords, RGB hex values and extended color keywords is the equivalent triplet of numerical RGB values, e.g. six digit hex value or rgb(...) functional value, with an alpha value of 1.• The computed value of the keyword ‘transparent’ is the quadruplet of all zero numerical RGBA values, e.g. rgba(0,0,0,0).• See the definition of the ‘currentColor’ for how its computed value is determined.• For all other values, the computed value is the specified value. |

This property describes the foreground color of an element's text content. In addition it is used to provide a potential indirect value (currentColor) for any *other* properties that accept color values. If the ‘currentColor’ keyword is set on the ‘color’ property itself, it is treated as ‘color: inherit’.

There are different ways to specify lime green:

Example III

```
em { color: lime }           /* color keyword */
em { color: rgb(0,255,0) }   /* RGB range 0-255 */
```

<color>

Color units are defined in a following section.

3.2. Transparency: the ‘opacity’ property

Opacity can be thought of as a postprocessing operation. Conceptually, after the element (including its descendants) is rendered into an RGBA offscreen image, the

opacity setting specifies how to blend the offscreen rendering into the current composite rendering. See simple alpha compositing for details.

| | |
|------------------------|---|
| <i>Name:</i> | <i>opacity</i> |
| <i>Value:</i> | <alphavalue> inherit |
| <i>Initial:</i> | 1 |
| <i>Applies to:</i> | all elements |
| <i>Inherited:</i> | no |
| <i>Percentages:</i> | N/A |
| <i>Media:</i> | visual |
| <i>Computed value:</i> | The same as the specified value after clipping the <alphavalue> to the range [0.0,1.0]. |

<alphavalue>

Syntactically a <number>. The uniform opacity setting to be applied across an entire object. Any values outside the range 0.0 (fully transparent) to 1.0 (fully opaque) will be clamped to this range. If the object is a container element, then the effect is as if the contents of the container element were blended against the current background using a mask where the value of each pixel of the mask is <alphavalue>.

Since an element with opacity less than 1 is composited from a single offscreen image, content outside of it cannot be layered in z-order between pieces of content inside of it. For the same reason, implementations must create a new stacking context for any element with opacity less than 1. If an element with opacity less than 1 is not positioned, implementations must paint the layer it creates, within its parent stacking context, at the same stacking order that would be used if it were a positioned element with ‘**z-index: 0**’ and ‘**opacity: 1**’. If an element with opacity less than 1 is positioned, the ‘z-index’ property applies as described in [CSS21], except that ‘**auto**’ is treated as ‘**0**’ since a new stacking context is always created. See section 9.9 and Appendix E of [CSS21] for more information on stacking contexts. The rules in this paragraph do not apply to SVG elements, since SVG has its own rendering model ([SVG11], Chapter 3).

4. Color units

A **<color>** is either a keyword or a numerical specification.

4.1. Basic color keywords

The list of basic color keywords is: aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, white, and yellow. The color names are case-insensitive.

Color names and sRGB values

| Named | Numeric | Color name | Hex rgb | Decimal |
|-------|---------|------------|---------|---------|
| | | | | |

| | | | | |
|---|---|----------------|---------|-------------|
|  |  | black | #000000 | 0,0,0 |
|  |  | silver | #C0C0C0 | 192,192,192 |
|  |  | gray | #808080 | 128,128,128 |
|  |  | white | #FFFFFF | 255,255,255 |
|  |  | maroon | #800000 | 128,0,0 |
|  |  | red | #FF0000 | 255,0,0 |
|  |  | purple | #800080 | 128,0,128 |
|  |  | fuchsia | #FF00FF | 255,0,255 |
|  |  | green | #008000 | 0,128,0 |
|  |  | lime | #00FF00 | 0,255,0 |
|  |  | olive | #808000 | 128,128,0 |
|  |  | yellow | #FFFF00 | 255,255,0 |
|  |  | navy | #000080 | 0,0,128 |
|  |  | blue | #0000FF | 0,0,255 |
|  |  | teal | #008080 | 0,128,128 |
|  |  | aqua | #00FFFF | 0,255,255 |

Example IV

```
body {color: black; background: white }
h1 { color: maroon }
h2 { color: olive }
```

4.2. Numerical color values

4.2.1. RGB color values

The RGB color model is used in numerical color specifications. These examples all specify the same color:

Example V

```
em { color: #f00 }           /* #rgb */
em { color: #ff0000 }        /* #rrggbb */
em { color: rgb(255,0,0) }
em { color: rgb(100%, 0%, 0%) }
```

The format of an RGB value in hexadecimal notation is a '#' immediately followed by either three or six hexadecimal characters. The three-digit RGB notation (#rgb) is converted into six-digit form (#rrggbb) by replicating digits, not by adding zeros. For example, #fb0 expands to #ffbb00. This ensures that white (#ffffff) can be specified with the short notation (#fff) and removes any dependencies on the color depth of the display.

The format of an RGB value in the functional notation is 'rgb(' followed by a comma-separated list of three numerical values (either three integer values or three

percentage values) followed by `'`'. The integer value 255 corresponds to 100%, and to F or FF in the hexadecimal notation: `rgb(255,255,255) = rgb(100%,100%,100%) = #FFF`. White space characters are allowed around the numerical values.

All RGB colors are specified in the sRGB color space (see [SRGB]). User agents may vary in the fidelity with which they represent these colors, but using sRGB provides an unambiguous and objectively measurable definition of what the color should be, which can be related to international standards (see [COLORIMETRY]).

Values outside the device gamut should be clipped or mapped into the gamut when the gamut is known: the red, green, and blue values must be changed to fall within the range supported by the device. User agents may perform higher quality mapping of colors from one gamut to another. This specification does not define precise clipping behavior. For a typical CRT monitor, whose device gamut is the same as sRGB, the four rules below are equivalent:

Example VI

```
em { color: rgb(255,0,0) } /* integer range 0 - 255 */
em { color: rgb(300,0,0) } /* clipped to rgb(255,0,0) */
em { color: rgb(255,-10,0) } /* clipped to rgb(255,0,0) */
em { color: rgb(110%, 0%, 0%) } /* clipped to rgb(100%,0%,0%) */
```

Other devices, such as printers, have different gamuts than sRGB; some colors outside the 0..255 sRGB range will be representable (inside the device gamut), while other colors inside the 0..255 sRGB range will be outside the device gamut and will thus be mapped.

4.2.2. RGBA color values

The RGB color model is extended in this specification to include “alpha” to allow specification of the opacity of a color. See simple alpha compositing for details. These examples all specify the same color:

Example VII

```
em { color: rgb(255,0,0) } /* integer range 0 - 255 */
em { color: rgba(255,0,0,1) } /* the same, with explicit opacity of 1 */
em { color: rgb(100%,0%,0%) } /* float range 0.0% - 100.0% */
em { color: rgba(100%,0%,0%,1) } /* the same, with explicit opacity of 1 */
```

Unlike RGB values, there is no hexadecimal notation for an RGBA value.

The format of an RGBA value in the functional notation is `rgba(` followed by a comma-separated list of three numerical values (either three integer values or three percentage values), followed by an `<alphavalue>`, followed by `)`. The integer value 255 corresponds to 100%, `rgba(255,255,255,0.8) = rgba(100%,100%,100%,0.8)`. White space characters are allowed around the numerical values.

Implementations must clip the red, green, and blue components of RGBA color values to the device gamut according to the rules for the RGB color value composed of those components.

These examples specify effects that are possible with the `rgba()` notation:

```
p { color: rgba(0,0,255,0.5) } /* semi-transparent solid blue */
p { color: rgba(100%, 50%, 0%, 0.1) } /* very transparent solid orange */
```

► **Note.** If RGBA values are not supported by a user agent, they should be treated like unrecognized values per the CSS forward compatibility parsing rules ([CSS21], Chapter 4). RGBA values must *not* be treated as simply an RGB value with the opacity ignored.

4.2.3. ‘transparent’ color keyword

CSS1 introduced the ‘transparent’ value for the background-color property. CSS2 allowed border-color to also accept the ‘transparent’ value. The Open eBook(tm) Publication Structure 1.0.1 [OEB101] extended the ‘color’ property to also accept the ‘transparent’ keyword. CSS3 extends the color value to include the ‘transparent’ keyword to allow its use with all properties that accept a <color> value. This simplifies the definition of those properties in CSS3.

transparent

Fully transparent. This keyword can be considered a shorthand for transparent black, `rgba(0,0,0,0)`, which is its computed value.

4.2.4. HSL color values

CSS3 adds numerical hue-saturation-lightness (HSL) colors as a complement to numerical RGB colors. It has been observed that RGB colors have the following limitations:

- RGB is hardware-oriented: it reflects the use of CRTs.
- RGB is non-intuitive. People can learn how to use RGB, but actually by internalizing how to translate hue, saturation and lightness, or something similar, to RGB.

There are several other color schemes possible. Some advantages of HSL are that it is symmetrical to lightness and darkness (which is not the case with HSV for example), and it is trivial to convert HSL to RGB.

HSL colors are encoding as a triple (hue, saturation, lightness). Hue is represented as an angle of the color circle (i.e. the rainbow represented in a circle). This angle is so typically measured in degrees that the unit is implicit in CSS; syntactically, only a <number> is given. By definition red=0=360, and the other colors are spread around the circle, so green=120, blue=240, etc. As an angle, it implicitly wraps around such that -120=240 and 480=120. One way an implementation could normalize such an angle x to the range $[0,360)$ (i.e. zero degrees, inclusive, to 360 degrees, exclusive) is to compute $((x \bmod 360) + 360) \bmod 360$. Saturation and lightness are represented as percentages. 100% is full saturation, and 0% is a shade of gray. 0% lightness is black, 100% lightness is white, and 50% lightness is “normal”.

So for instance:

Example IX

```
* { color: hsl(0, 100%, 50%) } /* red */
* { color: hsl(120, 100%, 50%) } /* lime */
* { color: hsl(120, 100%, 25%) } /* dark green */
* { color: hsl(120, 100%, 75%) } /* light green */
* { color: hsl(120, 75%, 75%) } /* pastel green, and so on */
```

The advantage of HSL over RGB is that it is far more intuitive: you can guess at the colors you want, and then tweak. It is also easier to create sets of matching colors (by keeping the hue the same and varying the lightness/darkness, and saturation)

If saturation is less than 0%, implementations must clip it to 0%. If the resulting value is outside the device gamut, implementations must clip it to the device gamut. This clipping should preserve the hue when possible, but is otherwise undefined. (In other words, the clipping is different from applying the rules for clipping of RGB colors after applying the algorithm below for converting HSL to RGB.)

The algorithm to translate HSL to RGB is simple (here expressed in ABC [ABC] which was used to generate the tables.) In these algorithms, all three values (H, S and L) have been normalized to fractions 0..1:

```

HOW TO RETURN hsl.to.rgb(h, s, l):
    SELECT:
        l<=0.5: PUT l*(s+1) IN m2
        ELSE: PUT l+s-l*s IN m2
    PUT l*2-m2 IN m1
    PUT hue.to.rgb(m1, m2, h+1/3) IN r
    PUT hue.to.rgb(m1, m2, h      ) IN g
    PUT hue.to.rgb(m1, m2, h-1/3) IN b
    RETURN (r, g, b)

HOW TO RETURN hue.to.rgb(m1, m2, h):
    IF h<0: PUT h+1 IN h
    IF h>1: PUT h-1 IN h
    IF h*6<1: RETURN m1+(m2-m1)*h*6
    IF h*2<1: RETURN m2
    IF h*3<2: RETURN m1+(m2-m1)*(2/3-h)*6
    RETURN m1

```

4.2.4.1. HSL examples

Each table below represents one hue. Twelve equally spaced colors (i.e. at 30° intervals) have been chosen from the color circle: red, yellow, green, cyan, blue, magenta, with all the intermediate colors (the last is the color between magenta and red).

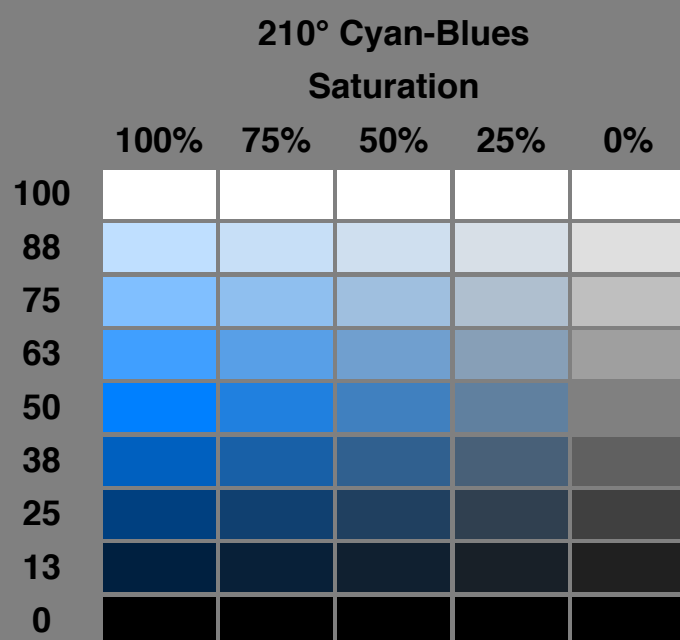
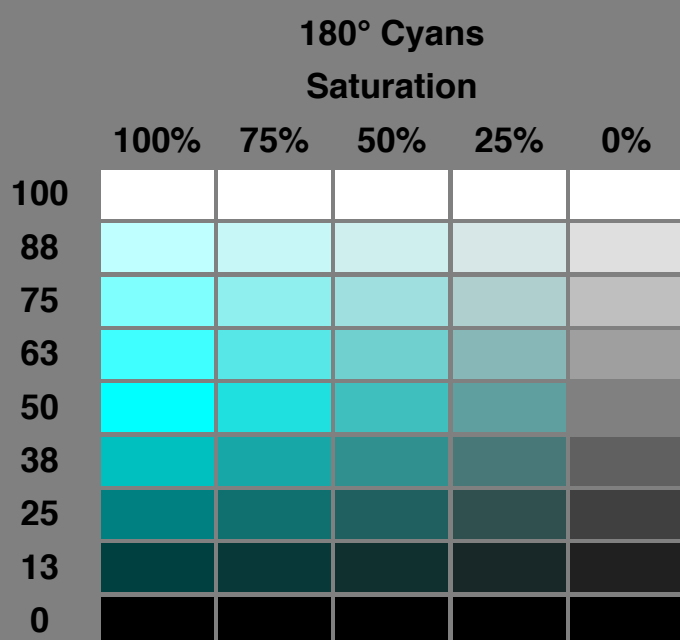
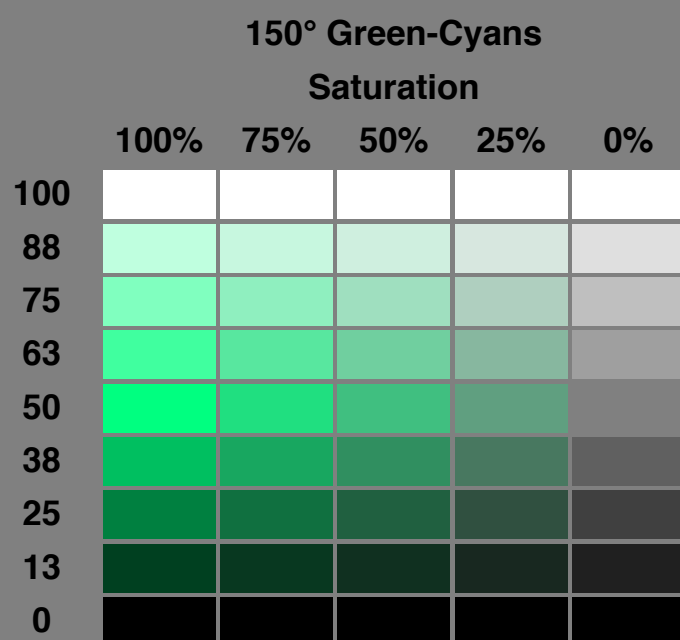
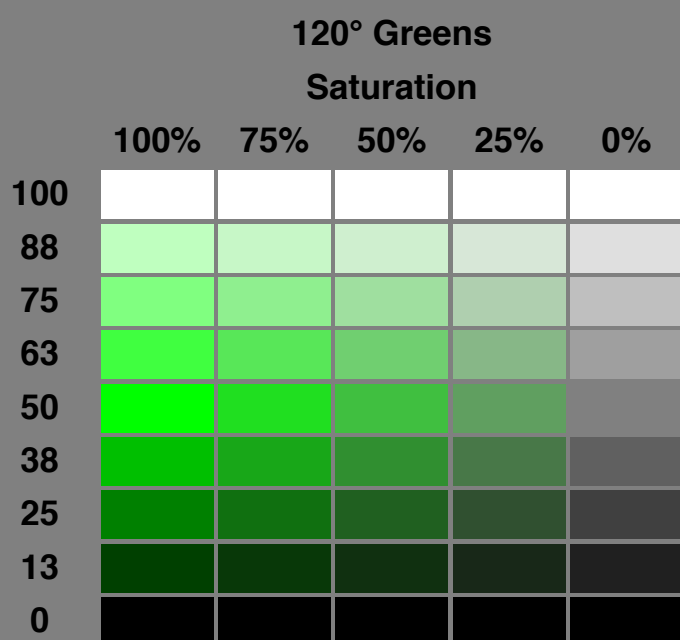
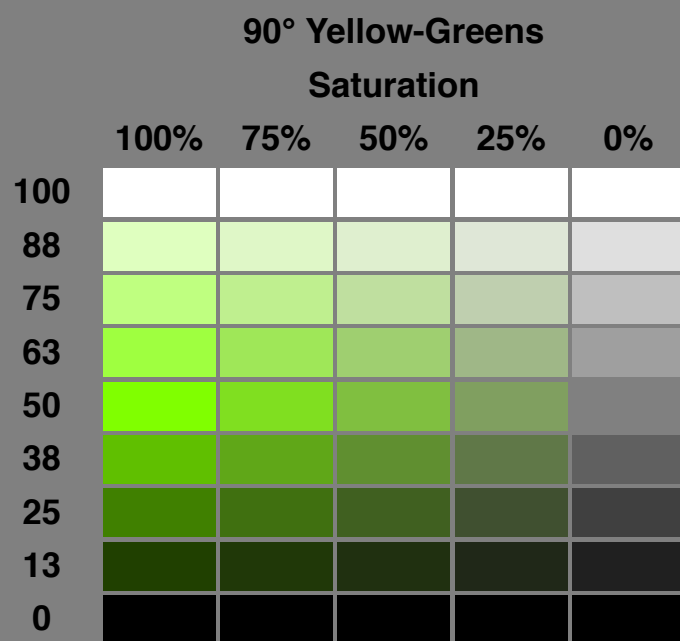
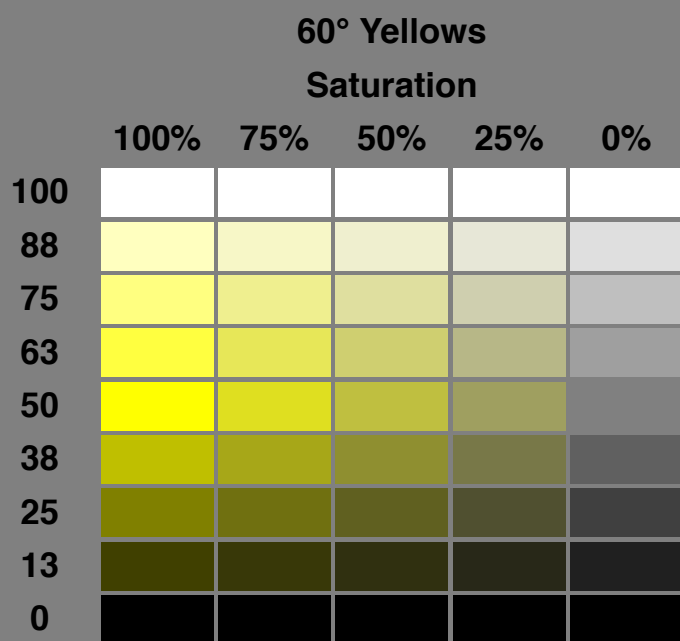
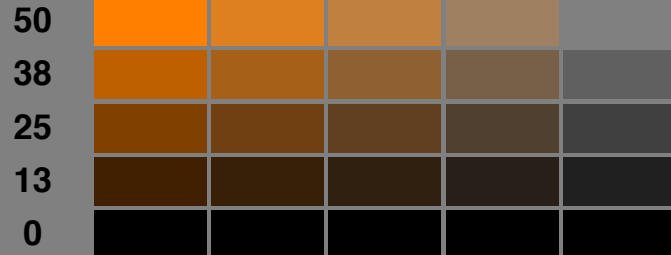
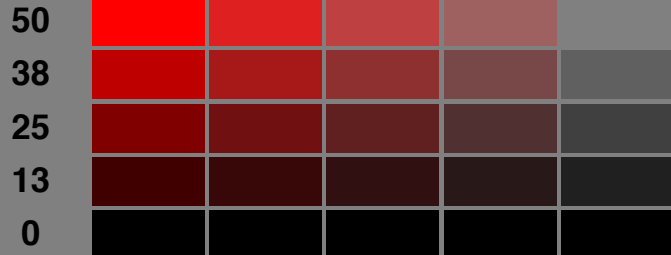
The X axis of each table represents the saturation (100%, 75%, 50%, 25%, 0%). The Y axis represents the lightness. 50% is “normal”.

0° Reds Saturation

| | 100% | 75% | 50% | 25% | 0% |
|-----|------|-----|-----|-----|----|
| 100 | | | | | |
| 88 | | | | | |
| 75 | | | | | |
| 63 | | | | | |

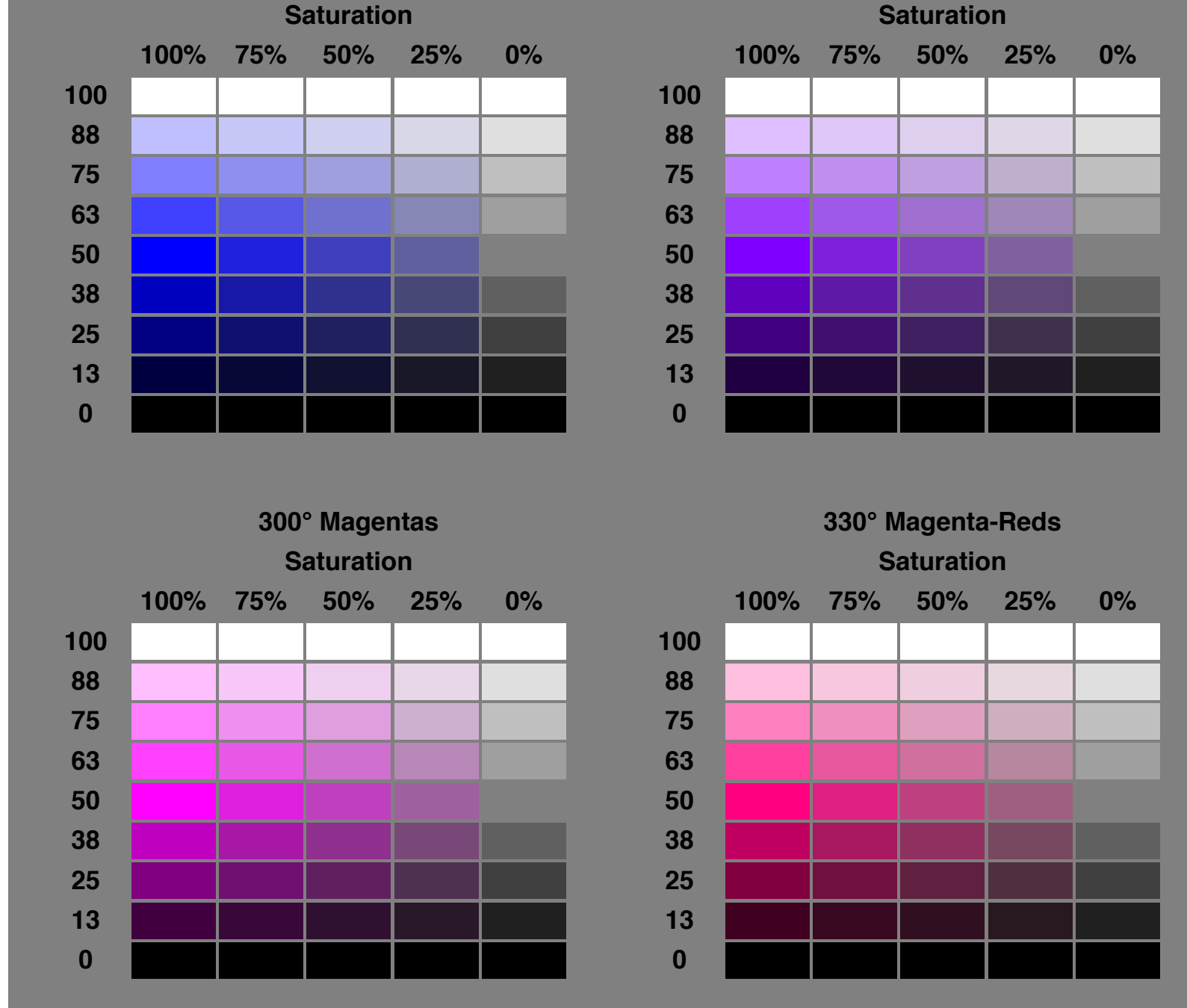
30° Red-Yellows (=Oranges) Saturation

| | 100% | 75% | 50% | 25% | 0% |
|-----|------|-----|-----|-----|----|
| 100 | | | | | |
| 88 | | | | | |
| 75 | | | | | |
| 63 | | | | | |



240° Blues

270° Blue-Magentas



4.2.5. HSLA color values

Just as the `rgb()` functional notation has the `rgba()` alpha counterpart, the `hsl()` functional notation has the `hsla()` alpha counterpart. See simple alpha compositing for details. These examples specify the same color:

Example X

```
em { color: hsl(120, 100%, 50%) } /* green */
em { color: hsla(120, 100%, 50%, 1) } /* the same, with explicit opacity of 1 */
```

The format of an HSLA color value in the functional notation is `hsla()` followed by the hue in degrees, saturation and lightness as a percentage, and an `<alphavalue>`, followed by `)`. White space characters are allowed around the numerical values.

Implementations must clip the hue, saturation, and lightness components of HSLA color values to the device gamut according to the rules for the HSL color value composed of those components.



These examples specify effects that are possible with the `hsla()` notation:















Example XI

```
p { color: hsla(240, 100%, 50%, 0.5) } /* semi-transparent solid blue */
p { color: hsla(30, 100%, 50%, 0.1) } /* very transparent solid orange */
```

4.3. Extended color keywords

The table below provides a list of the X11 colors [X11COLORS] supported by popular browsers with the addition of gray/grey variants from SVG 1.0. The resulting list is precisely the same as the SVG 1.0 color keyword names. This specification extends their definition beyond SVG. The two color swatches on the left illustrate setting the background color of a table cell in two ways: The first column uses the named color value, and the second column uses the respective numeric color value.

| Named | Numeric | Color name | Hex rgb | Decimal |
|---|---|------------------------------|---------|-------------|
|  |  | <i>aliceblue</i> | #F0F8FF | 240,248,255 |
|  |  | <i>antiquewhite</i> | #FAEBD7 | 250,235,215 |
|  |  | <i>aqua</i> | #00FFFF | 0,255,255 |
|  |  | <i>aquamarine</i> | #7FFFD4 | 127,255,212 |
|  |  | <i>azure</i> | #F0FFFF | 240,255,255 |
|  |  | <i>beige</i> | #F5F5DC | 245,245,220 |
|  |  | <i>bisque</i> | #FFE4C4 | 255,228,196 |
|  |  | <i>black</i> | #000000 | 0,0,0 |
|  |  | <i>blanchedalmond</i> | #FFEBCD | 255,235,205 |
|  |  | <i>blue</i> | #0000FF | 0,0,255 |
|  |  | <i>blueviolet</i> | #8A2BE2 | 138,43,226 |
|  |  | <i>brown</i> | #A52A2A | 165,42,42 |
|  |  | <i>burlywood</i> | #DEB887 | 222,184,135 |
|  |  | <i>cadetblue</i> | #5F9EA0 | 95,158,160 |
|  |  | <i>chartreuse</i> | #7FFF00 | 127,255,0 |
|  |  | <i>chocolate</i> | #D2691E | 210,105,30 |
|  |  | <i>coral</i> | #FF7F50 | 255,127,80 |
|  |  | <i>cornflowerblue</i> | #6495ED | 100,149,237 |
|  |  | <i>cornsilk</i> | #FFF8DC | 255,248,220 |
|  |  | <i>crimson</i> | #DC143C | 220,20,60 |
|  |  | <i>cyan</i> | #00FFFF | 0,255,255 |
|  |  | <i>darkblue</i> | #00008B | 0,0,139 |
|  |  | <i>darkcyan</i> | #008B8B | 0,139,139 |
|  |  | <i>darkgoldenrod</i> | #B8860B | 184,134,11 |
|  |  | <i>darkgray</i> | #A9A9A9 | 169,169,169 |
|  |  | <i>darkgreen</i> | #006400 | 0,100,0 |
|  |  | <i>darkgrey</i> | #A9A9A9 | 169,169,169 |
|  |  | <i>darkkhaki</i> | #BDB76B | 189,183,107 |
|  |  | <i>darkmagenta</i> | #8B008B | 139,0,139 |
|  |  | <i>darkolivegreen</i> | #556B2F | 85,107,47 |
|  |  | | | |

| | | | | |
|---|---|-----------------------------|----------|-------------|
|  |  | <i>darkorange</i> | #FF8C00 | 255,140,0 |
|  |  | <i>darkorchid</i> | #9932CC | 153,50,204 |
|  |  | <i>darkred</i> | #8B0000 | 139,0,0 |
|  |  | <i>darksalmon</i> | #E9967A | 233,150,122 |
|  |  | <i>darkseagreen</i> | #8FBC8F | 143,188,143 |
|  |  | <i>darkslateblue</i> | #483D8B | 72,61,139 |
|  |  | <i>darkslategray</i> | #2F4F4F | 47,79,79 |
|  |  | <i>darkslategrey</i> | #2F4F4F | 47,79,79 |
|  |  | <i>darkturquoise</i> | #00CED1 | 0,206,209 |
|  |  | <i>darkviolet</i> | #9400D3 | 148,0,211 |
|  |  | <i>deeppink</i> | #FF1493 | 255,20,147 |
|  |  | <i>deepskyblue</i> | #00BFFF | 0,191,255 |
|  |  | <i>dimgray</i> | #696969 | 105,105,105 |
|  |  | <i>dimgrey</i> | #696969 | 105,105,105 |
|  |  | <i>dodgerblue</i> | #1E90FF | 30,144,255 |
|  |  | <i>firebrick</i> | #B22222 | 178,34,34 |
|  |  | <i>floralwhite</i> | #FFFAF0 | 255,250,240 |
|  |  | <i>forestgreen</i> | #228B22 | 34,139,34 |
|  |  | <i>fuchsia</i> | #FF00FF | 255,0,255 |
|  |  | <i>gainsboro</i> | #DCDCDC | 220,220,220 |
|  |  | <i>ghostwhite</i> | #F8F8FF | 248,248,255 |
|  |  | <i>gold</i> | #FFD700 | 255,215,0 |
|  |  | <i>goldenrod</i> | #DAA520 | 218,165,32 |
|  |  | <i>gray</i> | #808080 | 128,128,128 |
|  |  | <i>green</i> | #008000 | 0,128,0 |
|  |  | <i>greenyellow</i> | #ADFF2F | 173,255,47 |
|  |  | <i>grey</i> | #808080 | 128,128,128 |
|  |  | <i>honeydew</i> | #F0FFF0 | 240,255,240 |
|  |  | <i>hotpink</i> | #FF69B4 | 255,105,180 |
|  |  | <i>indianred</i> | #CD5C5C | 205,92,92 |
|  |  | <i>indigo</i> | #4B0082 | 75,0,130 |
|  |  | <i>ivory</i> | #FFFFFF0 | 255,255,240 |
|  |  | <i>khaki</i> | #F0E68C | 240,230,140 |
|  |  | <i>lavender</i> | #E6E6FA | 230,230,250 |
|  |  | <i>lavenderblush</i> | #FFF0F5 | 255,240,245 |
|  |  | <i>lawngreen</i> | #7CFC00 | 124,252,0 |
|  |  | <i>lemonchiffon</i> | #FFFACD | 255,250,205 |
|  |  | <i>lightblue</i> | #ADD8E6 | 173,216,230 |

| | | | |
|--|--|-----------------------------|---------------------|
| | | | |
| | | <i>lightcoral</i> | #F08080 240,128,128 |
| | | <i>lightcyan</i> | #E0FFFF 224,255,255 |
| | | <i>lightgoldenrodyellow</i> | #FAFAD2 250,250,210 |
| | | <i>lightgray</i> | #D3D3D3 211,211,211 |
| | | <i>lightgreen</i> | #90EE90 144,238,144 |
| | | <i>lightgrey</i> | #D3D3D3 211,211,211 |
| | | <i>lightpink</i> | #FFB6C1 255,182,193 |
| | | <i>lightsalmon</i> | #FFA07A 255,160,122 |
| | | <i>lightseagreen</i> | #20B2AA 32,178,170 |
| | | <i>lightskyblue</i> | #87CEFA 135,206,250 |
| | | <i>lightslategray</i> | #778899 119,136,153 |
| | | <i>lightslategrey</i> | #778899 119,136,153 |
| | | <i>lightsteelblue</i> | #B0C4DE 176,196,222 |
| | | <i>lightyellow</i> | #FFFFE0 255,255,224 |
| | | <i>lime</i> | #00FF00 0,255,0 |
| | | <i>limegreen</i> | #32CD32 50,205,50 |
| | | <i>linen</i> | #FAF0E6 250,240,230 |
| | | <i>magenta</i> | #FF00FF 255,0,255 |
| | | <i>maroon</i> | #800000 128,0,0 |
| | | <i>mediumaquamarine</i> | #66CDAA 102,205,170 |
| | | <i>mediumblue</i> | #0000CD 0,0,205 |
| | | <i>mediumorchid</i> | #BA55D3 186,85,211 |
| | | <i>mediumpurple</i> | #9370DB 147,112,219 |
| | | <i>mediumseagreen</i> | #3CB371 60,179,113 |
| | | <i>mediumslateblue</i> | #7B68EE 123,104,238 |
| | | <i>mediumspringgreen</i> | #00FA9A 0,250,154 |
| | | <i>mediumturquoise</i> | #48D1CC 72,209,204 |
| | | <i>mediumvioletred</i> | #C71585 199,21,133 |
| | | <i>midnightblue</i> | #191970 25,25,112 |
| | | <i>mintcream</i> | #F5FFFA 245,255,250 |
| | | <i>mistyrose</i> | #FFE4E1 255,228,225 |
| | | <i>moccasin</i> | #FFE4B5 255,228,181 |
| | | <i>navajowhite</i> | #FFDEAD 255,222,173 |
| | | <i>navy</i> | #000080 0,0,128 |
| | | <i>oldlace</i> | #FDF5E6 253,245,230 |
| | | <i>olive</i> | #808000 128,128,0 |
| | | <i>olivedrab</i> | #6B8E23 107,142,35 |

| | | | |
|--|--|----------------------|---------------------|
| | | | |
| | | orange | #FFA500 255,165,0 |
| | | orangered | #FF4500 255,69,0 |
| | | orchid | #DA70D6 218,112,214 |
| | | palegoldenrod | #EEE8AA 238,232,170 |
| | | palegreen | #98FB98 152,251,152 |
| | | paleturquoise | #AFEEEE 175,238,238 |
| | | palevioletred | #DB7093 219,112,147 |
| | | papayawhip | #FFEFD5 255,239,213 |
| | | peachpuff | #FFDAB9 255,218,185 |
| | | peru | #CD853F 205,133,63 |
| | | pink | #FFC0CB 255,192,203 |
| | | plum | #DDA0DD 221,160,221 |
| | | powderblue | #B0E0E6 176,224,230 |
| | | purple | #800080 128,0,128 |
| | | red | #FF0000 255,0,0 |
| | | rosybrown | #BC8F8F 188,143,143 |
| | | royalblue | #4169E1 65,105,225 |
| | | saddlebrown | #8B4513 139,69,19 |
| | | salmon | #FA8072 250,128,114 |
| | | sandybrown | #F4A460 244,164,96 |
| | | seagreen | #2E8B57 46,139,87 |
| | | seashell | #FFF5EE 255,245,238 |
| | | sienna | #A0522D 160,82,45 |
| | | silver | #C0C0C0 192,192,192 |
| | | skyblue | #87CEEB 135,206,235 |
| | | slateblue | #6A5ACD 106,90,205 |
| | | slategray | #708090 112,128,144 |
| | | slategrey | #708090 112,128,144 |
| | | snow | #FFFAFA 255,250,250 |
| | | springgreen | #00FF7F 0,255,127 |
| | | steelblue | #4682B4 70,130,180 |
| | | tan | #D2B48C 210,180,140 |
| | | teal | #008080 0,128,128 |
| | | thistle | #D8BFD8 216,191,216 |
| | | tomato | #FF6347 255,99,71 |
| | | turquoise | #40E0D0 64,224,208 |
| | | violet | #EE82EE 238,130,238 |
| | | | |

| | | | | |
|--|--|--------------------|---------|-------------|
| | | <i>wheat</i> | #F5DEB3 | 245,222,179 |
| | | <i>white</i> | #FFFFFF | 255,255,255 |
| | | <i>whitesmoke</i> | #F5F5F5 | 245,245,245 |
| | | <i>yellow</i> | #FFFF00 | 255,255,0 |
| | | <i>yellowgreen</i> | #9ACD32 | 154,205,50 |

4.4. 'currentColor' color keyword

CSS1 and CSS2 defined the initial value of the 'border-color' property to be "the value of the 'color' property" but did not define a corresponding keyword. This omission was recognized by SVG, and thus SVG 1.0 introduced the 'currentColor' value for the 'fill', 'stroke', 'stop-color', 'flood-color', and 'lighting-color' properties. CSS3 extends the color value to include the 'currentColor' keyword to allow its use with all properties that accept a <color> value. This simplifies the definition of those properties in CSS3.

currentColor

The value of the 'color' property. The computed value of the 'currentColor' keyword is the computed value of the 'color' property. If the 'currentColor' keyword is set on the 'color' property itself, it is treated as 'color: inherit'.

4.5. CSS system colors

4.5.1. CSS2 system colors

Deprecated. In addition to being able to assign color keyword values to text, backgrounds, etc., CSS2 allowed authors to specify colors in a manner that integrated them into the user's graphic environment.

For systems that do not have a corresponding value, the specified value should be mapped to the nearest system color value, or to a default color. Note that some profiles of CSS may not support System Colors at all.

The following lists additional values for color-related CSS values and their general meaning. Any color property can take one of the following names. Although these are case-insensitive, it is recommended that the mixed capitalization shown below be used, to make the names more legible.

ActiveBorder

Active window border.

ActiveCaption

Active window caption.

AppWorkspace

Background color of multiple document interface.

Background

Desktop background.

ButtonFace

The face background color for 3-D elements that appear 3-D due to one layer of surrounding border.

ButtonHighlight

The color of the border facing the light source for 3-D elements that appear 3-D due to one layer of surrounding border.

ButtonShadow

The color of the border away from the light source for 3-D elements that appear 3-D due to one layer of surrounding border.

ButtonText

Text on push buttons.

CaptionText

Text in caption, size box, and scrollbar arrow box.

GrayText

Grayed (disabled) text. This color is set to #000 if the current display driver does not support a solid gray color.

Highlight

Item(s) selected in a control.

HighlightText

Text of item(s) selected in a control.

InactiveBorder

Inactive window border.

InactiveCaption

Inactive window caption.

InactiveCaptionText

Color of text in an inactive caption.

InfoBackground

Background color for tooltip controls.

InfoText

Text color for tooltip controls.

Menu

Menu background.

MenuText

Text in menus.

Scrollbar

Scroll bar gray area.

ThreeDDarkShadow

The color of the darker (generally outer) of the two borders away from the light source for 3-D elements that appear 3-D due to two concentric layers of surrounding border.

ThreeDFace

The face background color for 3-D elements that appear 3-D due to two concentric layers of surrounding border.

ThreeDHighlight

The color of the lighter (generally outer) of the two borders facing the light source for 3-D elements that appear 3-D due to two concentric layers of surrounding border.

ThreeDLightShadow

The color of the darker (generally inner) of the two borders facing the light source for 3-D elements that appear 3-D due to two concentric layers of surrounding border.

ThreeDShadow

The color of the lighter (generally inner) of the two borders away from the light source for 3-D elements that appear 3-D due to two concentric layers of surrounding border.

Window

Window background.

WindowFrame

Window frame.

WindowText

Text in windows.

Example XII

For example, to set the foreground and background colors of a paragraph to the same foreground and background colors of the user's window, write the following:

```
p { color: WindowText; background-color: Window }
```

► **Note.** The CSS2 System Color values have been deprecated in favor of the CSS3 UI ‘**appearance**’ property. If you want to emulate the look of a user interface related element or control, please use the ‘**appearance**’ property instead of attempting to mimic a user interface element through a combination of system colors.

4.6. Notes on using colors

Although colors can add significant amounts of information to document and make them more readable, please consider the W3C Web Content Accessibility Guidelines [WCAG20] when including color in your documents.

- *1.4.1 Use of Color:* Color is not used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element

5. Simple alpha compositing

When drawing, implementations must handle alpha according to the rules in Section 14.2 Simple alpha compositing of [SVG11]. (If the ‘**color-interpolation**’ or ‘**color-rendering**’ properties mentioned in that section are not implemented or do not apply, implementations must act as though they have their initial values.)

6. Sample style sheet for (X)HTML

This appendix is informative, not normative. This style sheet could be used by an implementation as part of its default styling of HTML4, XHTML1, XHTML1.1, XHTML Basic, and other XHTML Family documents.

```

html {
    color: black;
    background: white;
}

/* traditional desktop user agent colors for hyperlinks */
:link    { color: blue; }
:visited { color: purple; }

/* default focus outline */
:focus {
    outline: 1px dotted; /* or 1px dotted invert */
}

```

7. Profiles

Each specification using CSS3 Color must define the subset of CSS3 Color features it allows and excludes, and describe the local meaning of all the components of that subset.

Non normative examples:

| CSS3 Color profile | |
|--------------------------|---|
| Specification | HTML4 |
| Accepts | Basic color keywords RGB six digit hex color values |
| Excludes | ‘color’ property ‘opacity’ property RGB three digit hex color values and RGB functional notation color value RGBA color values HSL and HSLA color values Extended color keywords ‘currentColor’ color value CSS2 UI Colors ‘transparent’ color value |
| Extra constraints | none. |
| CSS3 Color profile | |
| Specification | CSS level 1 |
| Accepts | ‘color’ property Basic color keywords RGB color values |
| | ‘opacity’ property RGBA color values HSL and HSLA color values |

| | |
|---------------------------|---|
| Excludes | Extended color keywords 'currentColor' color value CSS2 UI Colors 'transparent' color value |
| Extra constraints | none. |
| CSS3 Color profile | |
| Specification | CSS level 2 |
| Accepts | 'color' property Basic color keywords RGB color values CSS2 UI Colors 'transparent' color value |
| Excludes | 'opacity' property RGBA color values HSL and HSLA color values Extended color keywords 'currentColor' color value |
| Extra constraints | 'transparent' color value not valid for 'color' property. 'orange' color value (part of Extended color keywords) is accepted in CSS level 2 revision 1 |
| CSS3 Color profile | |
| Specification | SVG 1.0 and 1.1 |
| Accepts | 'color' property 'opacity' property Basic color keywords RGB color values CSS2 UI Colors Extended color keywords 'currentColor' color value |
| Excludes | RGBA color values HSL and HSLA color values 'transparent' color value |
| Extra constraints | 'currentColor' color value not valid for 'color' property. |

8. Test suite

A CSS Color Module Test Suite has been developed, although further tests may be added. This test suite is intended to allow user agents to verify their basic conformance

to the specification. This test suite does not pretend to be exhaustive and does not cover all possible numerical color values. These tests are available at <http://www.w3.org/Style/CSS/Test/CSS3/Color/current/>.

9. Call for Implementations of dropped features

A number of features that were present in the 14 May 2003 Candidate Recommendation are no longer present in this specification. However, the call for implementations for these features remains, and they may be included in a future level of this specification given sufficient implementations and a test suite to demonstrate interoperability. These features are:

- ICC Color Profile: the ‘color-profile’ property
- The ‘rendering-intent’ property
- The ‘@color-profile’ at-rule
- ‘flavor’ system color

10. Acknowledgments

Thanks to Brad Pettit both for writing up color-profiles, and for implementing it. Thanks to Steven Pemberton for his write up on HSL colors. Thanks especially to the feedback from Marc Attinasi, Bert Bos, Joe Clark, fantasai, Patrick Garies, Tony Graham, Ian Hickson, Susan Lesch, Alex LeDonne, Cameron McCormack, Krzysztof Maczyński, Chris Moschini, Chris Murphy, Christoph Päper, David Perrell, Jacob Refstrup, Dave Singer, Jonathan Stanley, Andrew Thompson, Russ Weakley, Etan Wexler, David Woolley, Boris Zbarsky, Steve Zilles, the XSL FO subgroup of the XSL working group, and all the rest of the www-style community. And thanks to Chris Lilley for being the resident CSS Color expert.

11. Changes

This document differs from the previous, 28 October 2010, Proposed Recommendation document as follows: the date, status and styling are updated for W3C Recommendation, the references are updated, and this changes appendix lists no substantive changes.

12. References

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[WCAG20]

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[X11COLORS]

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[XML10]

C. M. Sperberg-McQueen; et al. *Extensible Markup Language (XML) 1.0 (Fifth Edition)*. 26 November 2008. W3C Recommendation. URL:

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| Property | Values | Initial | Applies to | Inh. | Percentages | Media |
|----------|------------------------|-----------------------|--------------|------|-------------|--------|
| color | <color> inherit | depends on user agent | all elements | yes | N/A | visual |
| opacity | <alphavalue> inherit | 1 | all elements | no | N/A | visual |