

# Converting Colors

CIELCh(20, 0.465, 18.825)

Have a look what the booklet for  
CIELCh(20, 0.465, 18.825) contains.

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# Color

**CIELCh(20, 0.470, 19.067)**

# Conversions

## Conversions Part 1

| Format      | Color                   |
|-------------|-------------------------|
| Hex         | 313030                  |
| RGB         | 49, 48, 48              |
| RGB Percent | 19%, 19%, 19%           |
| CMY         | 0.8075, 0.8115, 0.8115  |
| CMYK        | 0.00, 0.02, 0.02, 0.81  |
| HSL         | 0°, 1%, 19%             |
| HSV         | 0°, 2%, 19%             |
| XYZ         | 2.8655, 2.9891, 3.2305  |
| YIQ         | 48.2990, 0.5960, 0.2120 |

# Conversions

## Conversions Part 2

| <b>Format</b>                       | <b>Color</b>                |
|-------------------------------------|-----------------------------|
| <b>R<sub>YB</sub></b>               | 49, 48, 48                  |
| Decimal                             | 3223600                     |
| CIE Lab                             | 20.00, 0.44, 0.15           |
| CIE LCh                             | 20, 0.470, 19.067           |
| Yxy                                 | 2.9891, 0.3154,<br>0.3290   |
| Android<br>(android.graphics.Color) | 4281413680<br>(0xFF313030)  |
| YUV                                 | 48.2990, -0.1474,<br>0.6148 |
| Hunter-Lab                          | 17.2889, -0.6708,<br>1.0237 |

# Details

The CIELCh color  $[20, 0.470, 19.067]$  is a dark color, and the websafe version is hex `333333`. A complement of this color would be  $[20, 0.464, 199.845]$ , and the grayscale version is  $[20, 0.004, 296.813]$ .

A 20% lighter version of the original color is  $[40, 0.420, 18.701]$ , and  $[0, 0.277, 19.405]$  is the 20% darker color. If you saturate the color by 10%, you get  $[18, 2.863, 20.055]$ , and if you desaturate by 10%, it is  $[22, 1.773, 199.274]$ .

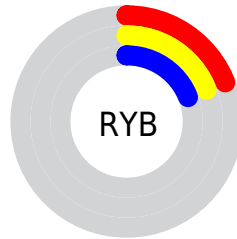
# Distribution



 Red (19%)

 Green (19%)

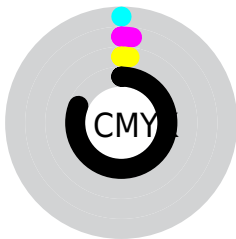
 Blue (19%)



 Red (19%)

 Yellow (19%)

 Blue (19%)

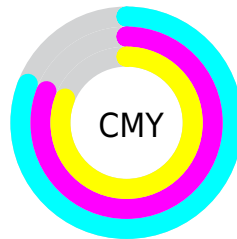


 Cyan (0%)


 Magenta (2%)

 Yellow (2%)

 Black (81%)



 Cyan (81%)

 Magenta (81%)

 Yellow (81%)

# Brightness & Saturation Gradients

These gradients show how the CIELCh color 20, 0.470, 19.067 changes by changing the brightness by 10 percent. The first figure shows a shift by +10% for each color and the second figure -10%.

Similar to the brightness gradients but the following saturation gradients show a change of the CIELCh color 20, 0.470, 19.067 by changing the saturation by 10% instead.



■ 20, 0.470, 19.067      ■ 20, 0.470, 19.067

100, 0.470, 19.067      ■ 10, 0.470, 19.067

■ 40, 0.470, 19.067      ■ 0, 0.470, 19.067

■ 50, 0.470, 19.067

■ 60, 0.470, 19.067

■ 70, 0.470, 19.067

■ 80, 0.470, 19.067

■ 90, 0.470, 19.067

■ 20, 0.470, 19.067      ■ 20, 0.470, 19.067

■ 18, 2.863, 20.055      ■ 22, 1.773, 199.274

|                    |                        |
|--------------------|------------------------|
| 17, 5.415, 20.750  | 24, 3.875, 198.851     |
| 15, 8.128, 21.583  | 25, 5.849, 198.537     |
| 13, 10.996, 22.614 | 27, 7.707, 198.281     |
| 12, 14.000, 23.900 | 29, 9.460, 198.068     |
| 10, 16.981, 24.611 | 31, 11.121,<br>197.889 |
| 9, 19.671, 23.982  | 33, 12.699,<br>197.738 |
| 8, 22.020, 22.842  | 34, 14.202,<br>197.608 |
| 7, 24.224, 21.815  | 36, 15.639,<br>197.497 |

# Harmonies

# Complementary

The Complementary color scheme is a pair of colors which are on the opposite of each other on the color wheel.



20, 0.470, 19.067



20, 0.464, 199.845

# Rectangle

The Rectangle color scheme consists of four colors that form a rectangle on the color wheel.



20, 0.470, 19.067



20, 0.470, 69.067



20, 0.470, 199.067



20, 0.470, 249.067

# Sweetspot

The Sweet Spot groups the original color and five complimentary colors.



20, 0.469, 19.150



27, 0.286, 18.688



20, 0.833, 324.418



13, 0.165, 18.538



66, 0.008, 296.813



13, 0.003, 296.813



# Same Dimension

The Same Dimension uses a secret algorithm to generate beautiful new colors.



20, 0.469, 19.150



27, 0.574, 19.168



20, 0.408, 74.877



9, 0.263, 19.030



16, 44.914, 34.048



45, 92.488, 40.009





# Inverse Universe

The Inverse Universe completely reimagines the original color for something new.



20, 0.464, 199.845



27, 0.567, 199.827



20, 0.412, 255.959



9, 0.260, 199.965



34, 23.267, 196.532

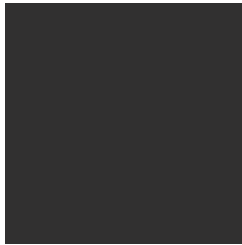


79, 44.263, 196.545



# Previews

## White Background



This preview shows how the CIELCh color 20, 0.470, 19.067 looks on a white background.

## Color Contrast Check

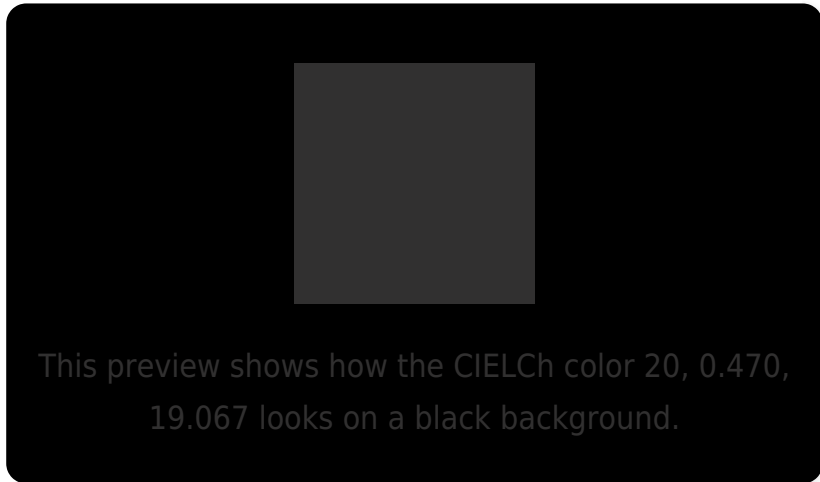
Large Text (above 18pt) WCAG AA ✓ Pass

Any Text WCAG AA ✓ Pass

Large Text (above 18pt) WCAG AAA ✓ Pass

Any Text WCAG AAA ✓ Pass

# Black Background



## Color Contrast Check

Large Text (above 18pt) WCAG AA × Fail

Any Text WCAG AA × Fail

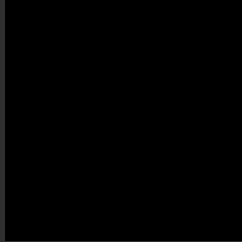
Large Text (above 18pt) WCAG AAA × Fail

Any Text WCAG AAA × Fail

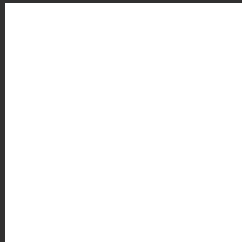
If you want to check with other color combinations, try the [Color Contrast Checker](#).

**CIELCh 20, 0.470, 19.067**

## **Background**



This preview shows how black text looks on a background with the CIELCh color 20, 0.470, 19.067.

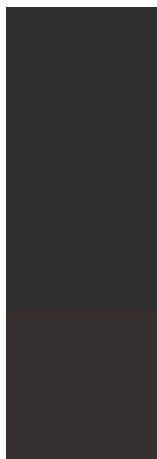


This preview shows how white text looks on a background with the CIELCh color 20, 0.470, 19.067.

# Color Blindness Simulation

Color vision deficiency is a very complex topic, and I could not describe the different causes any better than Wikipedia does, so if you want to learn more, you should check out their [article about color blindness](#).

## Dichromacy



### Original Color

20, 0.470, 19.067

### Protanopia

20, 0.470, 19.067

### Deuteranopia

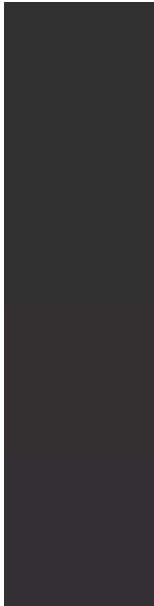
20, 2.935, 6.629



**Tritanopia**  
20, 2.253, 314.842



# Trichromacy



## Original Color

20, 0.470, 19.067

## Protanomaly

20, 0.470, 19.067

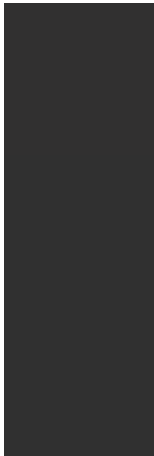
## Deuteranomaly

20, 2.470, 3.919

## Tritanomaly

20, 1.659, 324.565

# Monochromacy



## Original Color

20, 0.470, 19.067

## Achromatopsia

20, 0.004, 296.813

## Achromatomaly

20, 0.004, 296.813

# CSS Examples

## Text

The CSS property to change the color of the text to CIELCh 20, 0.470, 19.067 is called "color". The color property can be set on classes, ids or directly on the HTML element.

This example shows how text in the color `rgb(49, 48, 48)` looks like.

```
.text, #text, p{  
    color:rgb(49, 48, 48)  
}
```

If you want to add a text shadow in that color use the text-shadow property, you can generate a text shadow directly with our [CSS Text Shadow Generator](#).

Here you see how black text with a 4 pixel rgb(49, 48, 48) colored shadow looks like.

```
.shadow{ text-shadow: 4px 4px 2px rgb(49, 48, 48) }
```

## Border

The CSS property to change the border of an element to CIELCh 20, 0.470, 19.067 is called "border". The border property can be set on classes, ids or directly on the HTML element.

This example shows the color as border, it can be applied via the CSS property "border" or "border-color".

```
.border, #border, table{ border:4px solid rgb(49, 48, 48) }
```

If only the border color should be changed use the property `border-color`.

```
.border{ border-color:rgb(49, 48, 48) }
```

If you want to add a box shadow in that color use:

Here you see how a box with a 4 pixel `rgb(49, 48, 48)` colored shadow looks like.

```
.boxshadow{ -moz-box-shadow:4px 4px 4px  
4px rgb(49, 48, 48); -webkit-box-  
shadow:4px 4px 4px 4px rgb(49, 48, 48);  
box-shadow:4px 4px 4px 4px rgb(49, 48, 48)  
}
```

# Background

The CSS property to change the background color of an element to CIELCh 20, 0.470, 19.067 is called "background". The background property can be set on classes, ids or directly on the HTML element.

```
.background, #background, body{  
background: rgb(49, 48, 48) }
```

If only the background color should be changed can be used:

```
.background{ background-color: rgb(49, 48,  
48) }
```

This example shows the color as background, it is applied via the CSS property "background".

To optimize and compress your CSS code, you can use our [online CSS compressor and optimizer](#) based on csstidy. If you want to create a linear or radial gradient as background or border, check our [CSS Gradient Generator](#).

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