Package ‘ColorNameR’

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Description A tool for transforming coordinates in a color space to common color names using data from the Royal Horticultural Society and the International Union for the Protection of New Varieties of Plants.
License MIT + file LICENSE
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cie76  Get the CIE76 color difference between two CIELab values.

cie94  Get the CIE94 color difference between two CIELab values.

Description

Get the CIE76 color difference between two CIELab values.

Usage

cie76(lab_color1, lab_color2)

Arguments

lab_color1  A vector with three components corresponding to a Lab value.
lab_color2  A vector with three components corresponding to another Lab value.

Value

The CIE76 color difference between the two given values.

References


Description

Get the CIE94 color difference between two CIELab values.

Usage

cie94(
    lab_color1,
    lab_color2,
    k_L = 1,
    k_C = 1,
    k_H = 1,
    K1 = 0.045,
    K2 = 0.015,
    symmetric = FALSE
)

References

**ciede2000**

**Arguments**

- `lab_color1` A vector with three components corresponding to a Lab value.
- `lab_color2` A vector with three components corresponding to another Lab value.
- `k_L` Weighting factor for the L component.
- `k_C` Weighting factor for the C component.
- `k_H` Weighting factor for the H component.
- `K1` Application dependent weighting factor.
- `K2` Application dependent weighting factor.
- `symmetric` If TRUE, use the symmetric version of the formula.

**Value**

The CIE94 color difference between the two given values.

**References**


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**Usage**

ciede2000(lab_color1, lab_color2, k_L = 1, k_C = 1, k_H = 1)

**Arguments**

- `lab_color1` A vector with three components corresponding to a Lab value.
- `lab_color2` A vector with three components corresponding to another Lab value.
- `k_L` Weighting factor for the L component.
- `k_C` Weighting factor for the C component.
- `k_H` Weighting factor for the H component.

**Value**

The CIEDE2000 color difference between the two given values.
References


colordiff

Get the color difference between values in the CIELab color space.

Description

Get the color difference between values in the CIELab color space.

Usage

colordiff(color, reference, metric = "CIEDE2000", ...)

Arguments

color A matrix whose rows specify color coordinates in the CIELab color space.
reference A reference color.
metric The color metric, between CIE76, CIE94, and CIEDE2000.
... Weighting factors k_L, k_C, k_H, K1, and/or K2 for CIE94 and CIEDE2000, if applicable. Also, symmetric=TRUE to use a symmetric version of CIE94.

Value

The color difference between the two given values.

References

get_closest_color

Examples

colordiff(rbind(c(50, 2.6772, -79.7751),
               c(50, 3.1571, -77.2803),
               c(50, 2.8361, -74.0200)), c(50, 0, -82.7485))
colordiff(rbind(c(50, 2.6772, -79.7751),
               c(50, 3.1571, -77.2803),
               c(50, 2.8361, -74.0200)), c(50, 0, -82.7485), metric="CIE94")
colordiff(rbind(c(50, 2.6772, -79.7751),
                c(50, 3.1571, -77.2803),
                c(50, 2.8361, -74.0200)), c(50, 0, -82.7485), metric="CIE94", symmetric=TRUE)

get_closest_color  Get information about the closest RHS color to some CIELab coordinates.

Description

Get information about the closest RHS color to some CIELab coordinates.

Usage

get_closest_color(L, a, b, metric = "CIEDE2000")

Arguments

L  The lightness L* of the color.
a  The chromatic component a* (red-green).
b  The chromatic component b* (blue-yellow).
metric  The color distance to use.

Value

A one-row tibble.

Examples

get_closest_color(65, 20, -20)
Name a color given its coordinates in a specified color space.

Description

Name a color given its coordinates in a specified color space.

Usage

name(color, colorspace = "Lab", illuminant = NULL, language = "english")

Arguments

color A matrix whose rows specify colors.
colorspace The color space the coordinates of the colors are in.
illuminant The reference white, or NULL if not needed.
language The language of the color name, between English, French, German, and Spanish.

Details

The available color spaces are "XYZ", "sRGB", "Apple RGB", "CIE RGB", "Luv", and "Lab" (default). If the color space is an RGB variant, the coordinates must take values between 0 and 1.

Value

The name of the color, according to the UPOV.

Examples

name(c(65, 20, -20))
name(c(65, 20, -20), language="Spanish")
name(c(65, 20, -20), language="es")
name(c(244/255, 234/255, 184/255), colorspace="sRGB")
name(rbind(c(65, 20, -20), c(69, 4, -31)))
**rhs_color_names_2015**  
*UPOV names and groups for RHS colors.*

**Description**

Data set containing English, French, German, and Spanish names for the colors defined by the RHS in its sixth edition (2015), alongside their UPOV group number.

**Usage**

rhs_color_names_2015

**Format**

A data frame with 920 rows and 10 variables:

- **UPOVGroup**  the UPOV group of the color
- **RHS**  the RHS code of the color
- **english**  the English name for the color
- **french**  the French name for the color
- **german**  the German name for the color
- **spanish**  the Spanish name for the color

**Source**


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**rhs_color_values_2007**  
*RHS colors in different color spaces.*

**Description**

Data set containing the coordinates in RGB, CIELab, and CIELCh of the colors defined by the Royal Horticultural Society in its fifth edition (2007).

**Usage**

rhs_color_values_2007
Format

A data frame with 892 rows and 10 variables:

- **RHS** the RHS code of the color
- **R** the red component in sRGB
- **G** the green component in sRGB
- **B** the blue component in sRGB
- **L** the lightness component in CIELab (D65 / 10°)
- **a** the red-green component in CIELab (D65 / 10°)
- **b** the blue-yellow component in CIELab (D65 / 10°)
- **L2** the lightness component in CIELCh (D65 / 10°)
- **C** the colorfulness component in CIELCh (D65 / 10°)
- **h** the hue in CIELCh (D65 / 10°)

Source

http://rhscf.orgfree.com/
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