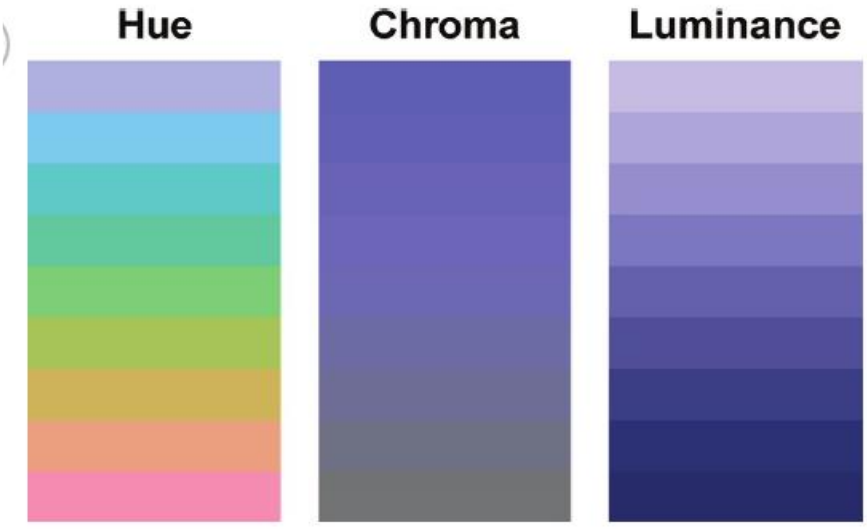
## Introduction

The one unique feature of every human is their fingerprint , so it can be easily used for identification purposes. We therefore conclude that your fingerprint is unique , no one in the world has the same set of ridges and lines that you have , not even your identical twin. This is due to your unique DNA structure.


The one unique feature of every COLORPLUS color is that they are unique so lets talk COLOR.

## Understanding COLOR ( DNA structure )

The technical terms concerning Color can be summarised in three main characteristics …..



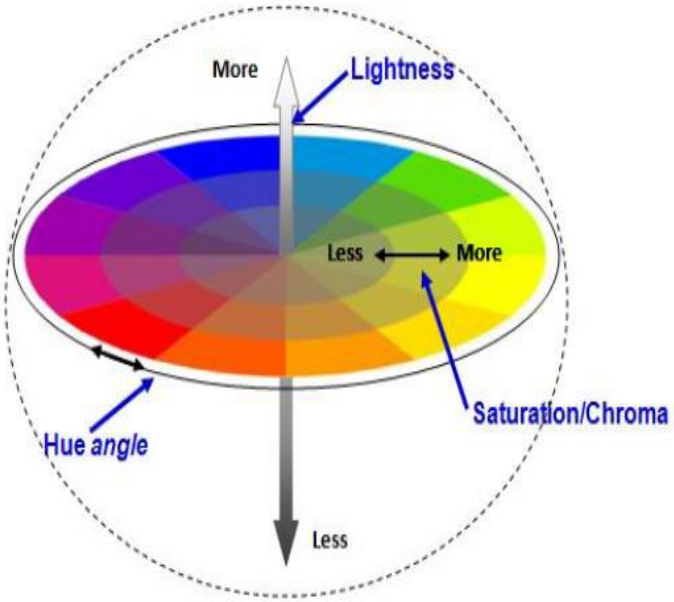

**HUE :** This is simply the response to " What Color is this? " , the answer can be Red , Blue , Purple, therefore an infinite number of Color.

**CHROMA :** This is the purity , intensity or saturation of a color.

**Luminance:** This is the brightness or lightness of a color

Combining these three characteristics we can obtain a beautiful picture of COLOR ..

**Diagram for Hue , Chroma and Luminance**



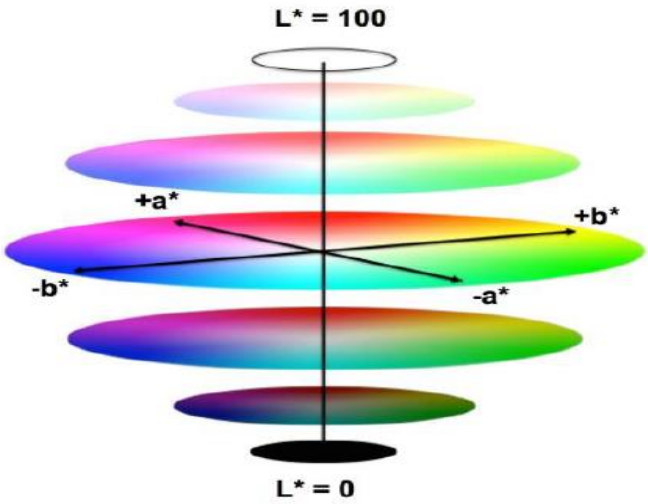

We have now identified the main characteristics of color , that is we know the DNA structure. The question that remains HOW DO YOU MEASURE the COLOR FINGERPRINT ?

## Understanding Measuring a COLOR ( Color Fingerprint )

In 1931, the Vienna based international standards body , the International Commission on Illumination ( CIE : Commission Internationale d'Eclairage ), devised a model , enabling the numerical description of all colors visible to the human eye.

This means that we are now able to measure the numerical values , that makes every color unique.

**CIELAB Color System**



The CIELAB Color system measures three numerical values as follows :

**Value L*** - The value L* measure the Color Lightness

L = 0 is pure Black
L= 100 is diffuse White

**Value a*** - The value a* measures as follows..

Positive value a* tends towards Red
Negative value a* tends towards Blue

**Value b*** - The value b* measures as follows …

Positive value b* tends towards yellow
Negative value b* tends towards blue

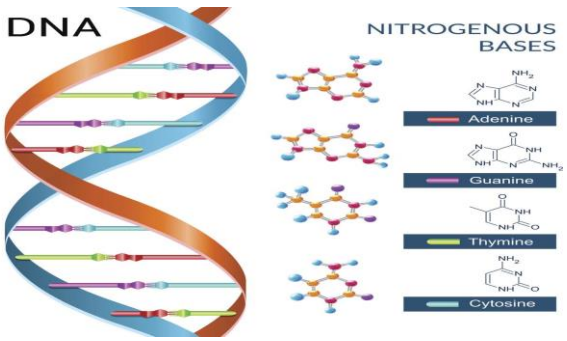
So, the value L* related to the Luminance and the values a* and b* relates to the Hue and Chroma.

We have now reached the level of understanding the Colour DNA structure and able to measure every colors fingerprint .

## Why is it important to understand Color DNA and Fingerprint ?

The answer relates to RAL color codes , many times we would like to compare a unique COLORPLUS color to a UNIQUE RAL color code.

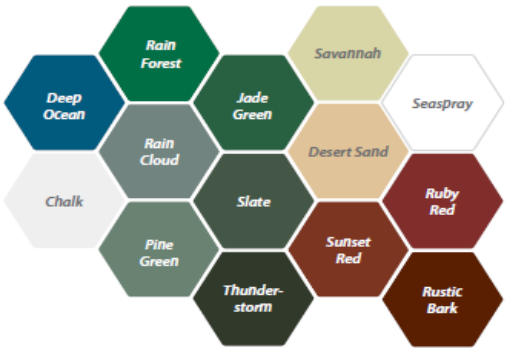
Since RAL codes are European colour matching system defined colors for paints , coatings and plastics , they are reasonably unique and can therefore differ from our COLORPLUS range.



To assist in the comparison between RAL codes the table below compares the closest RAL colors to the current COLORPLUS colors, it should be noted these are typical comparisons, only.

**Table** : RAL K5 Classic Codes

| | COLOR | | | | THERMAL Properties | | |
|---|---|---|---|---|---|---|---|
| **Brochure** | **RAL** | **Name** | **% Match** | | **Total Solar Reflectance** | **Thermal Emittance** | **Solar Reflectance Index** |
| Seaspray | 9003 | Signal White | 85% | | 65% | 0,85 | 78 |
| Chalk | 9010 | Pure White | 90% | | 68% | 0,85 | 81 |
| Savannah | 1014 | Ivory | 80% | | 58% | 0,85 | 68 |
| Desert Sand | 1001 | Beige | 50% | | 51% | 0,87 | 58 |
| Sunset Red | 3009 | Oxide Red | 95% | | 34% | 0,84 | 34 |
| Crimson Red | 3009 | Oxide Red | 90% | | 34% | TBA | TBA |
| Rustic Bark | 8016 | Mahogany Brown | 95% | | 26% | 0,83 | 24 |
| Rainforest | 6028 | Pine Green | 80% | | 30% | 0,83 | 29 |
| Emerald Green | 6028 | Pine Green | 80% | | 35% | TBA | TBA |
| Pine Green | 6011 | Reseda Green | 80% | | 18% | TBA | TBA |
| Deep Ocean | 5001 | Green Blue | 80% | | 29% | 0,83 | 28 |
| Raincloud | 7042 | Traffic Grey | 85% | | 32% | 0,83 | 32 |
| Slate | 7012 | Basalt Grey | 85% | | 29% | 0,88 | 30 |
| Thunderstorm | 7021 | Black Grey | 95% | | 25% | 0,84 | 23 |
| Coolgrey | 7044 | Silk Grey | 75% | | Na | Na | Na |
| | | | | | | | |

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