

The color strategy In composite materials

Presented by Andrea Vannacci



ColorWorkDesk®

soluzioni per un mondo a colori

OCTIMA 2024

made in
URAI®



Why
COLOR
is important?



**Could anyone image to
live in a **black** and
white world?**



Colors we eat.



**Colors we use
daily...**

**Color
we live in.**





Color we sleep in.



**Color
creates
emotions.**



But why is
color so
important for
us?

Color is the first thing we
recognize and the attribute we
can remember the longest.



Color challenges

To find the right color, to communicate it and to dye them constantly is one of the most challenging jobs of our daily business.



Building an emblematic association between color and brand

The goal is to build and maintain an emblematic association between brand color and brand to support instant consumer recognition and connection with that color.



COLOR defines our WORLD:

Color is visible from a greater distance than any other elements, such as copy, shape and graphics, color is vital to every brand.



White
PANTONE®

“**80%** of Brand Recognition is driven by Color.

Easy done Color Recognition increase the trust of the consumer in the Brand“

Pantone Color Institute Research



x-rite
PANTONE

COLOR & Emotions

A Color Schema of a Packaging can affect emotions and attitudes long before the consumer knows anything about the product.

Pantone Color Institute Research



Color increases brand recognition by 87%!

The Coca-Cola logo is displayed in its signature black script font on a white rectangular background.The Wanner logo features the word "Wanner" in a black script font, with a small circular icon containing a stylized figure positioned below the text.

MAERSK

Coca-Cola

Wanner




MAERSK

95% of our decisions related to color are made by our intuition and emotional factors only **5%** is rational.



*Color accounts for **65%** of purchasing decisions*

It has the single greatest influence on consumer decision.



White



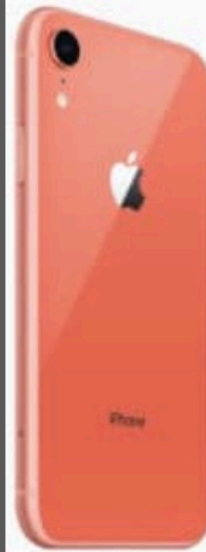
Black



Blue



Yellow



Coral



(PRODUCT)RED™

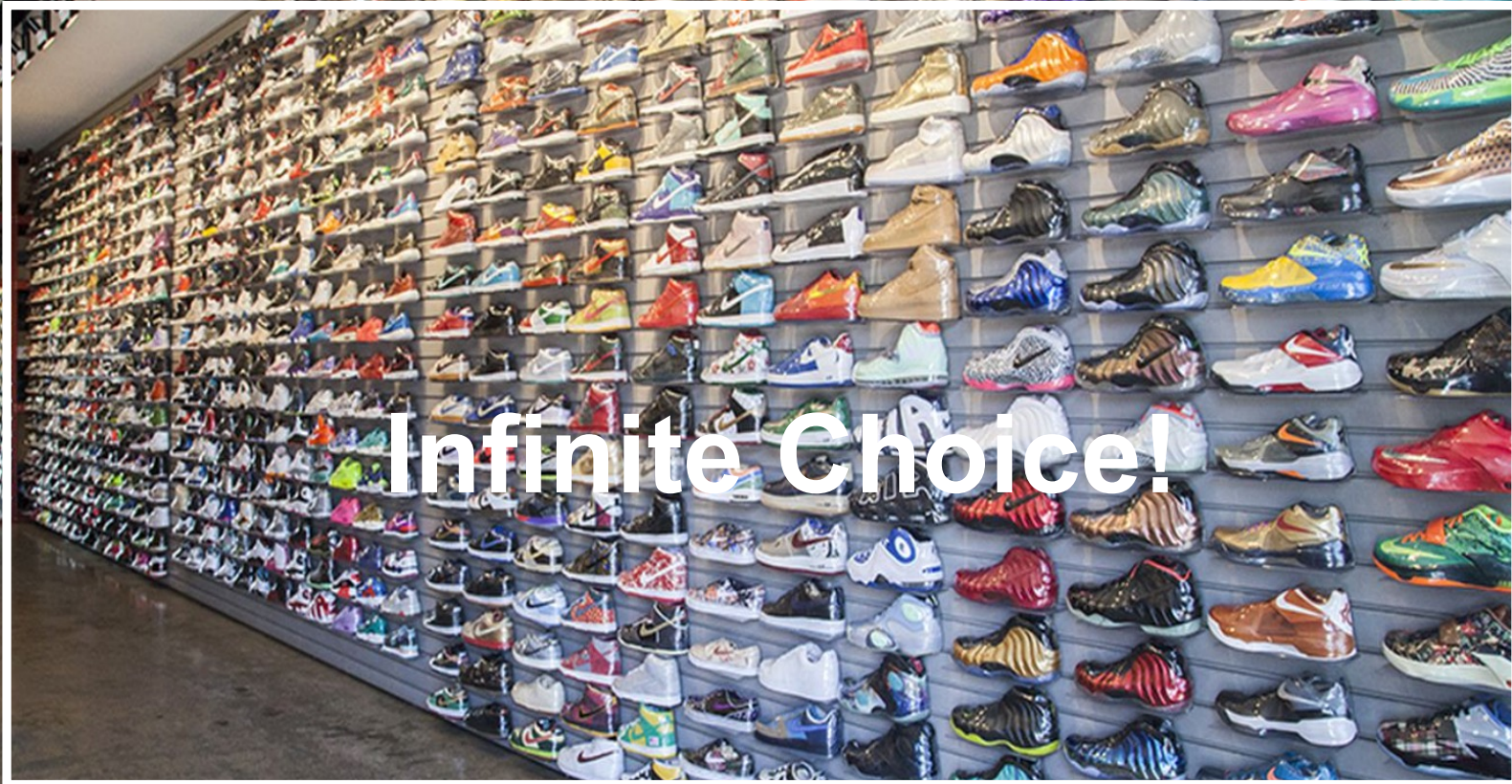
Guess how many time a customer needs to make his purchasing decision in front of a shelf?



2-7 Seconds!



Infinite Choice!



Infinite Choice!

**Color Meaning is
changing over the
years.**



1920's



1950's



1970's



Current



Color perception of consumers changes with time, and over time.

***Color
THEN***



*The
(Color) rules
of
the game have
changed.*



COLOR CHALLENGES

Color accounts for 65% of purchasing decisions

It's the single greatest influence on consumer decision making and can mean the difference between sold out and on sale.

Valid for Logos....



for Products....



for Packaging.



Accept or reject your Production: Color accounts for 60% of Rejection!

It is more critical than ever to get the right color...
and to get the color right



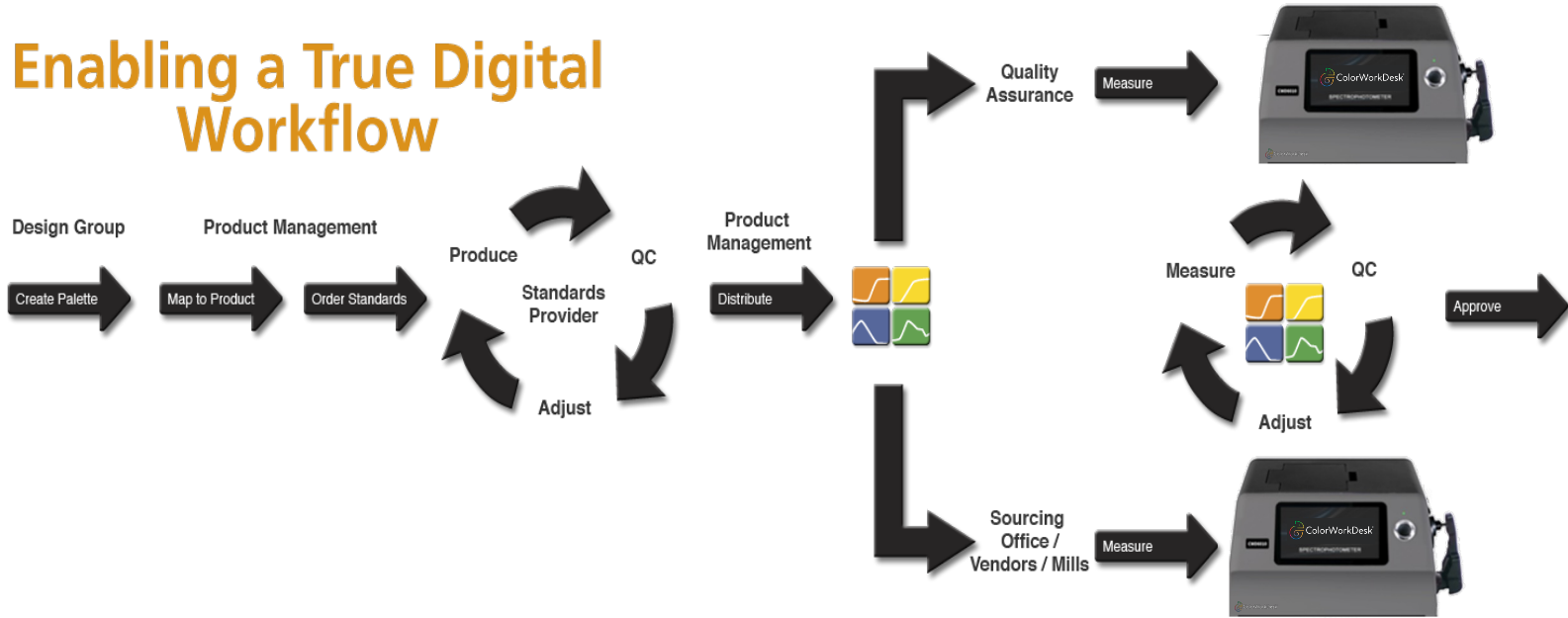
Daily big challenge for Brand Owner: Get Color accurately reproduced in different materials

Every material needs a different color standard and different digital value to get started with to get the closest match.



Production Workflow: save time, improve quality

Enabling a True Digital Workflow



The Communication of Colour

Color Communication

Communicating the Color is necessary:

- To the resale
- In your own home
- In dressing
- In the design
- In production
- Where else?



The request for a color

- How is a color requested in normal situations?
- How is Color described? Fiery Red
 - Country red
 - Matte Red
 - Fallen apple
 - Stop Sign



Correct color identification

Using a Colored Object

- A colorful fabric
- A printed sheet
- A photo
- Other
- But above all, through a universal reference:
- Pantone, Munsell, RAL...



Ineffective communication

- Tonality Down
- Too boring / too flat
- Too muddy
- Whiter whites but with a lot of detail
- Flesh with meatier tones
- Give me more shape
- Needs to be a commercially acceptable color
- Highlight
- Render clean colors
- Imitate Attached Copy
- Requires heat
- Reduce blue by 2%
- Needs redder reds
- Colors are too strong
- Looks off
- It doesn't have brilliance of transparency
- Add density
- Increase Detail
- Increase Saturation
- Increase sharpness
- Needs more depth
- Add contrast
- Balances neutrals
- Make it "Pop"
- Gypsum
- Granular

Colour : The "eye" factor

The Colour

Light source



Eye



Brain

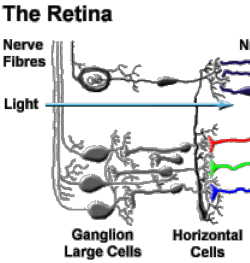
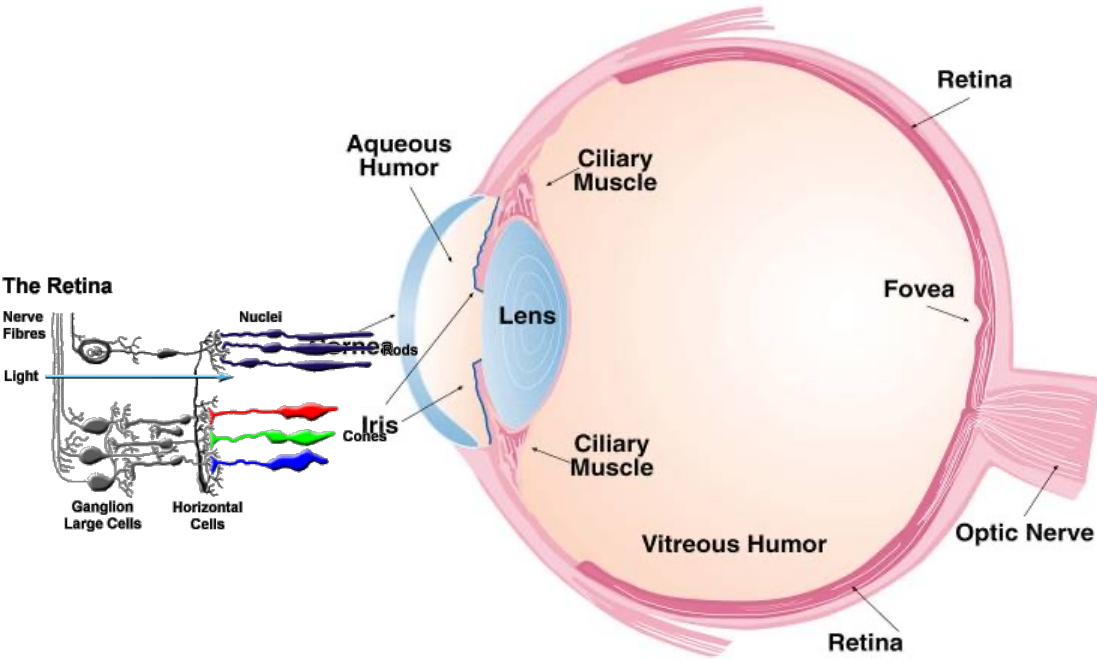


Object

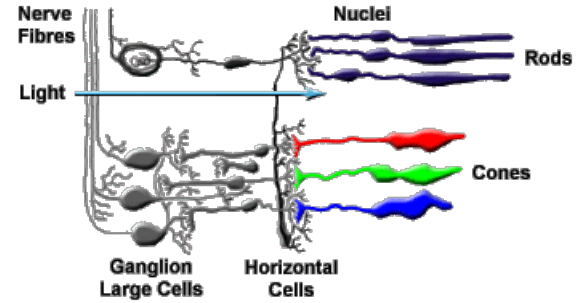


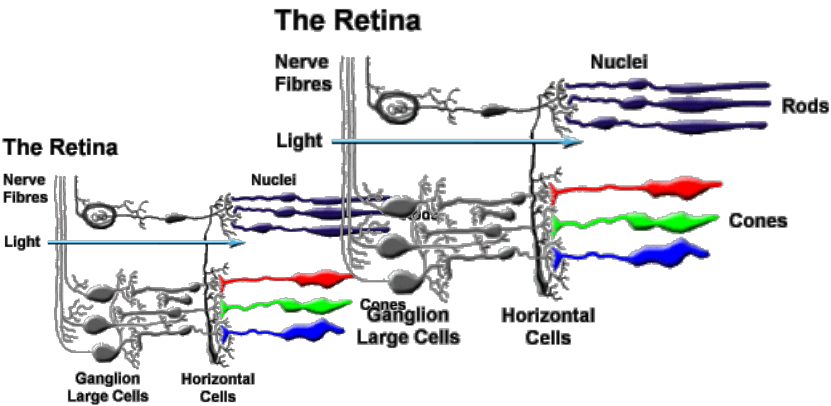
... A Human Feeling

Cross-section of the human eye



The Retina





Rods

– Approximately 120 million with a higher distribution for viewing angles greater than 4°.

Cones

– About 7 million with a greater distribution by angles between 2° and 4°.

R-type cones (Red) – 577 nm

G-type cones (Green) – 540 nm

B-Type cones (Blue) – 477 nm

- **How does individuality affect color perception?**

Heredity?

Geographical differences?

Perception learned?

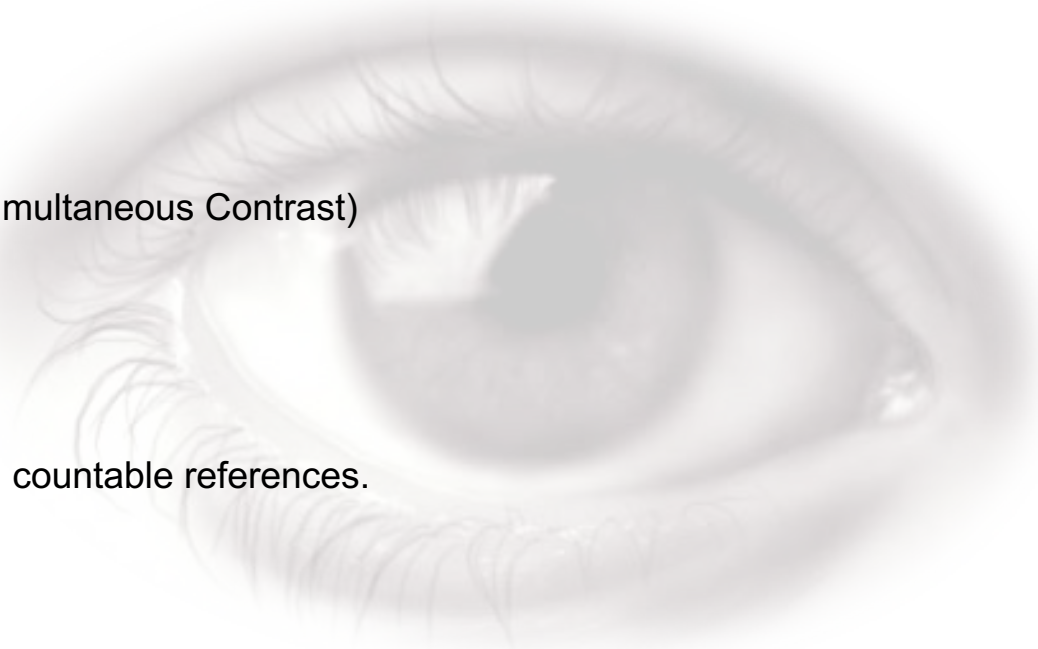
Climate?

Regional, ethnic, age differences?

Light conditions?

The "Eye" Factor

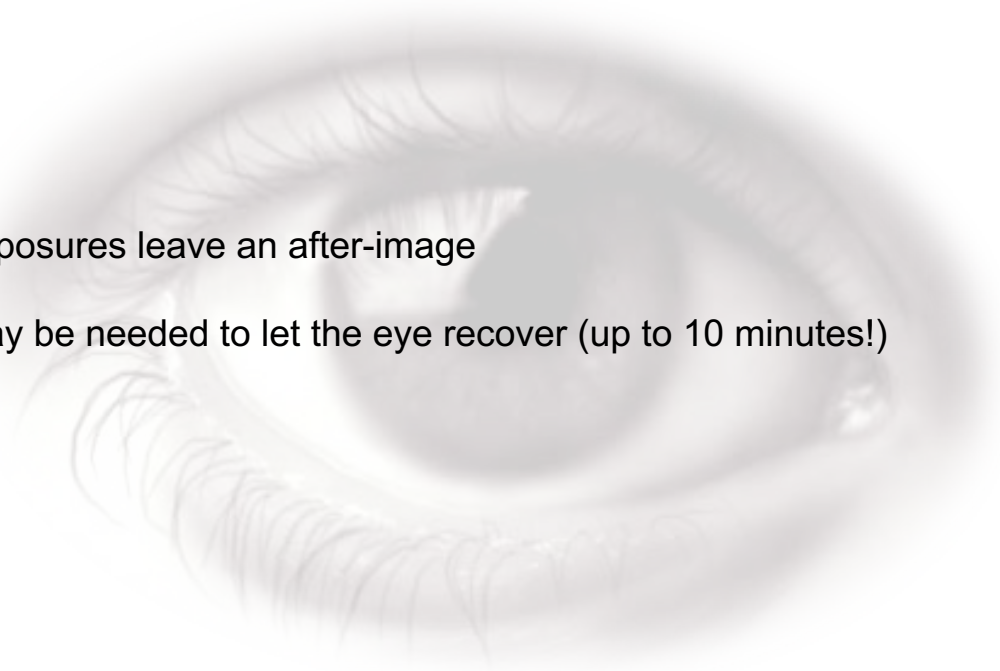
- Retinal fatigue
- Background Effects (Simultaneous Contrast)
- Poor Color Memory
- Color Defects
- Light Conditions
- Age
- Lack of recordable and countable references.



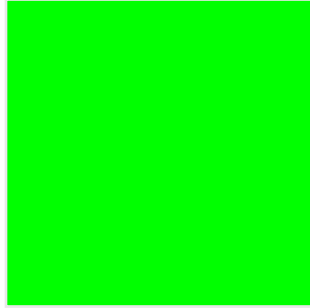
Retinal fatigue

Retinal fatigue

- Short strong color exposures leave an after-image
- Considerable rest may be needed to let the eye recover (up to 10 minutes!)



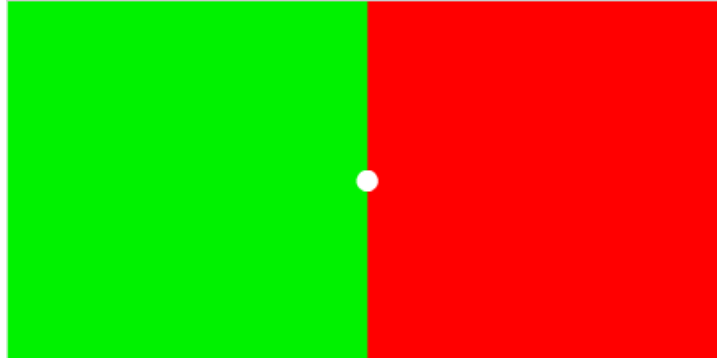
Retinal fatigue



x



Retinal fatigue



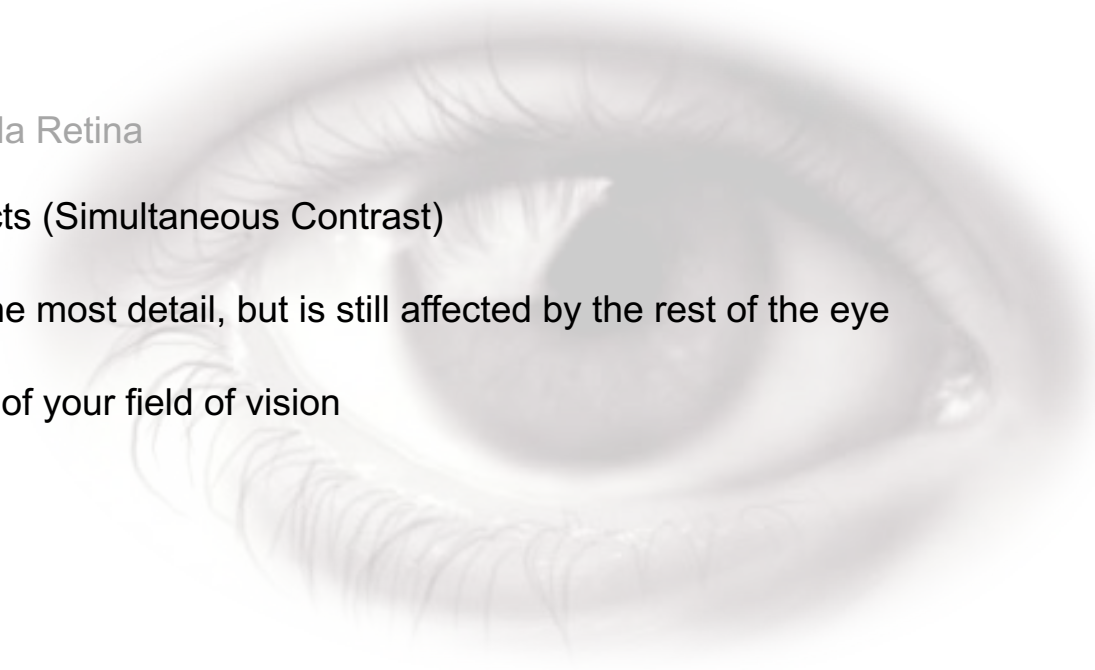
Background Effects (Contrast)

Affaticamento della Retina

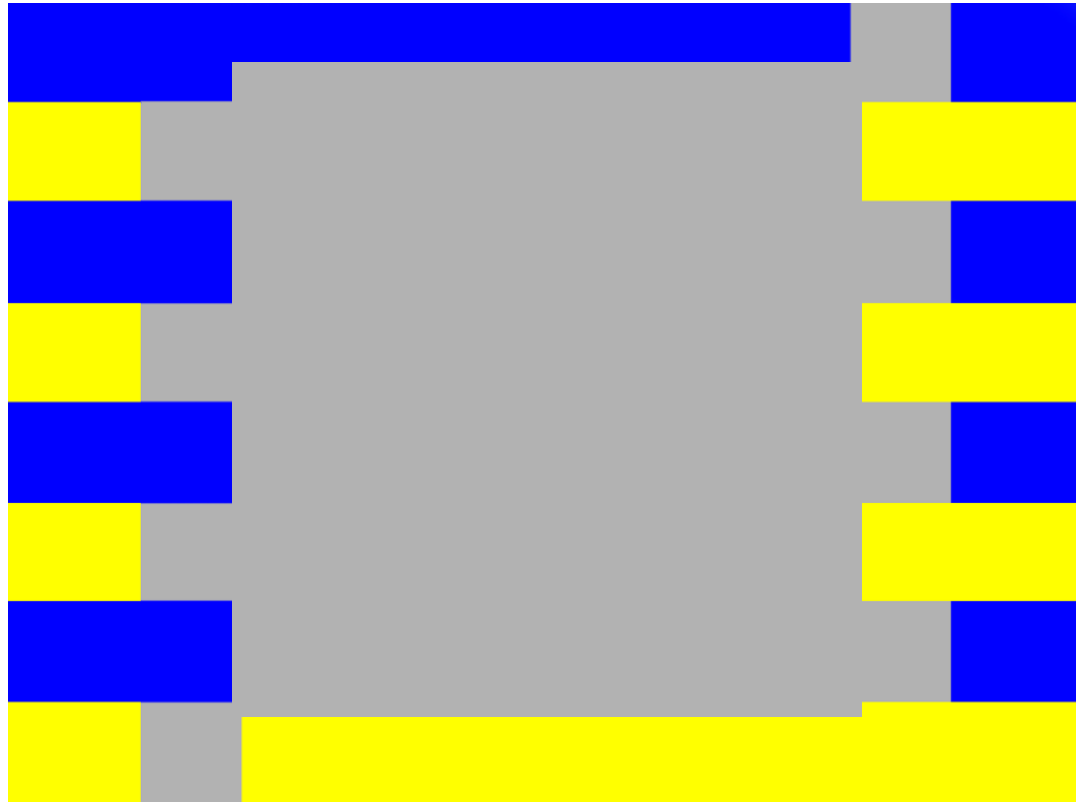
Background Effects (Simultaneous Contrast)

The fovea sees the most detail, but is still affected by the rest of the eye

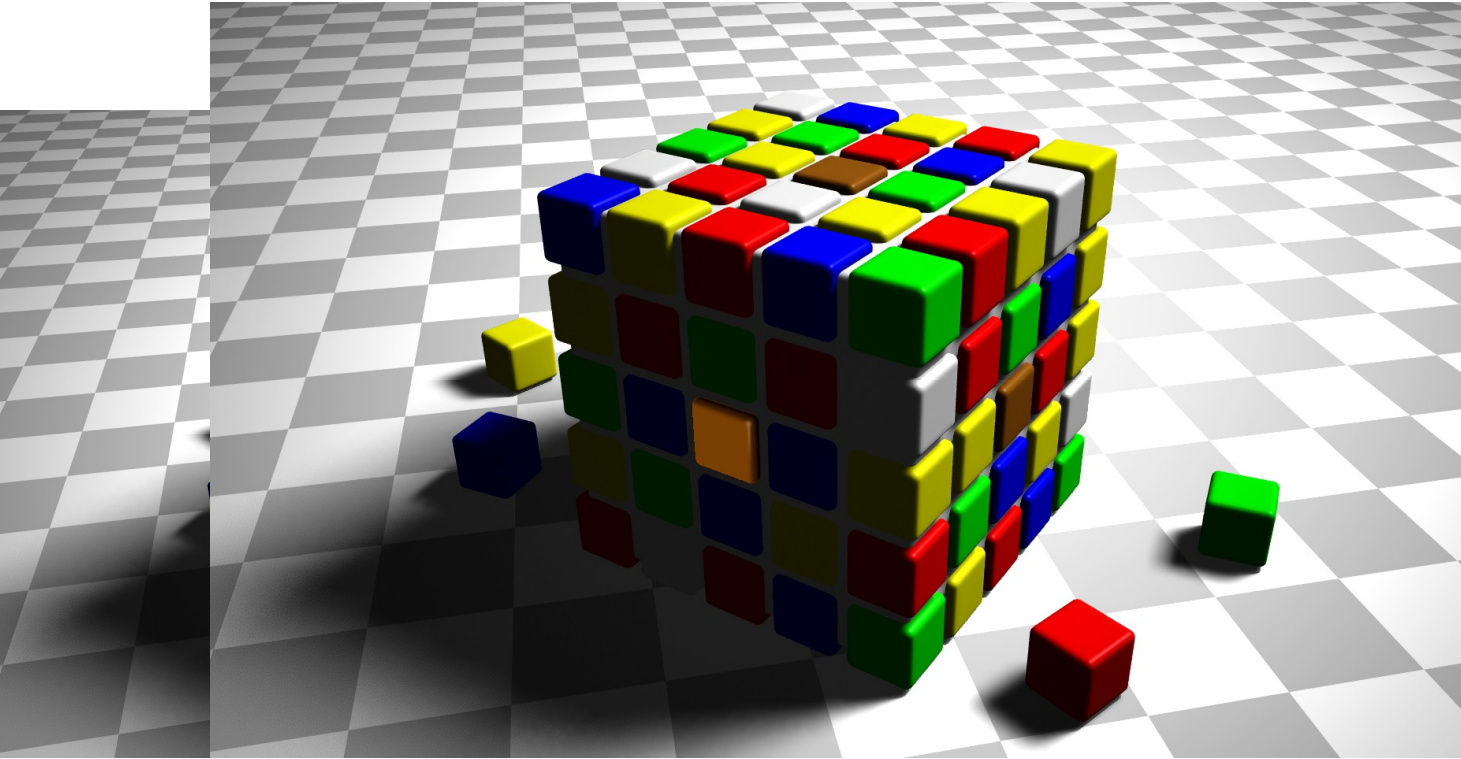
Always be aware of your field of vision



Simultaneous Contrast

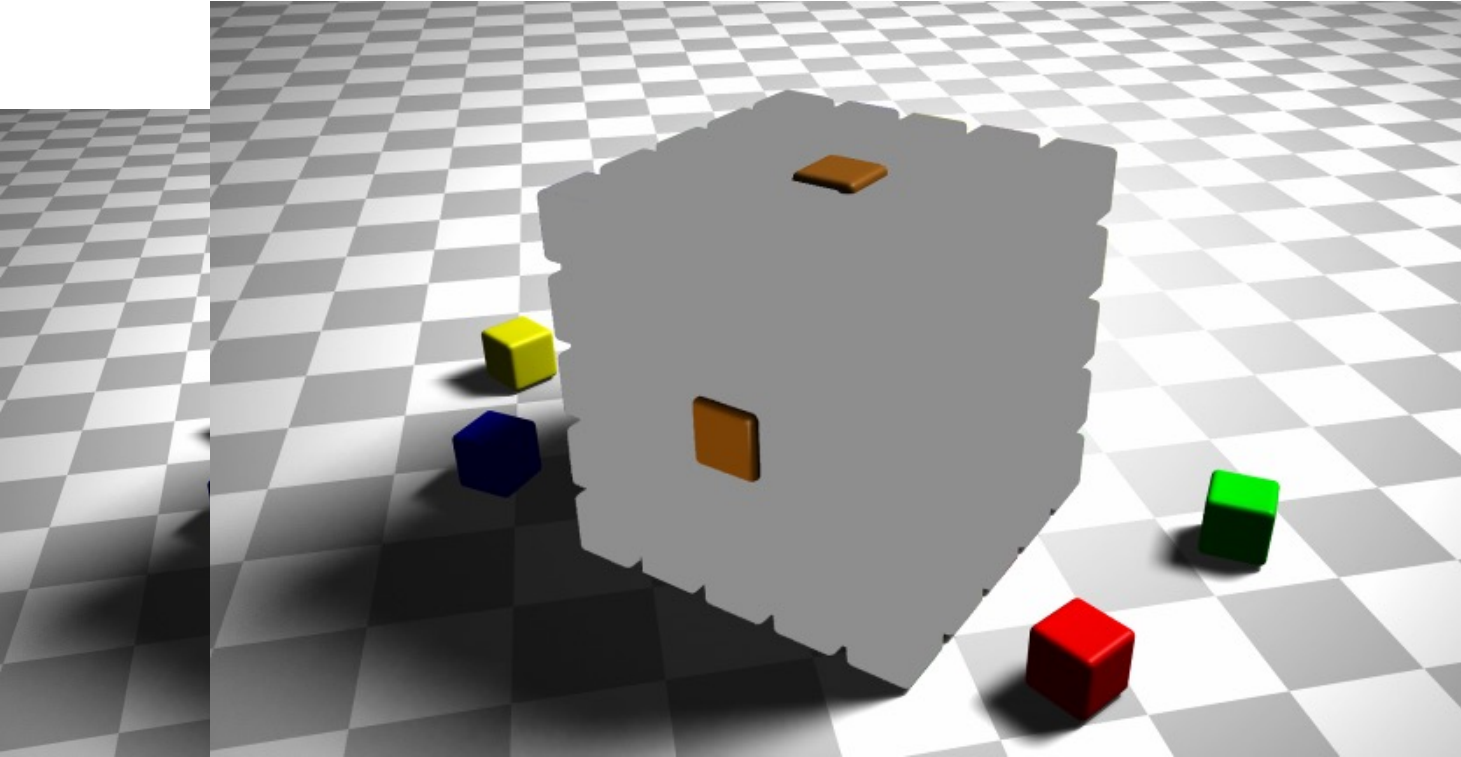


Simultaneous Contrast



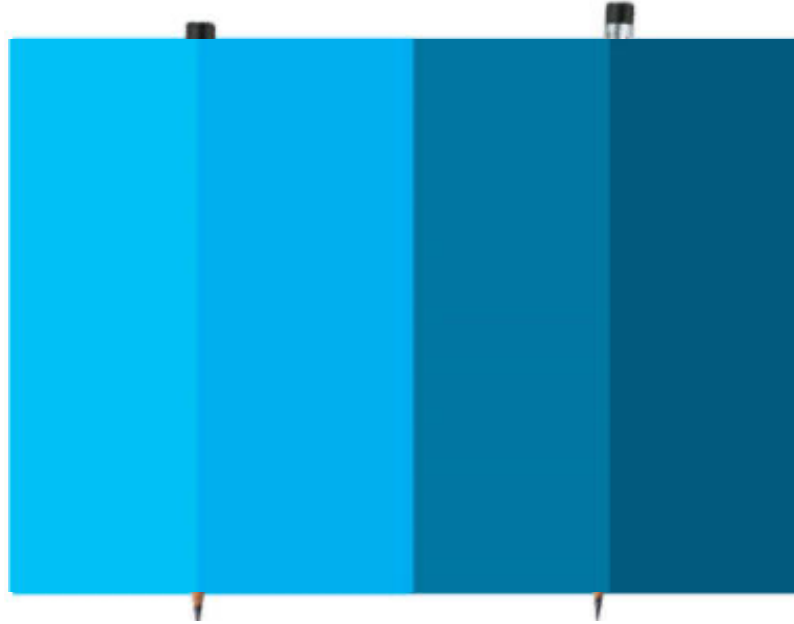
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Simultaneous Contrast



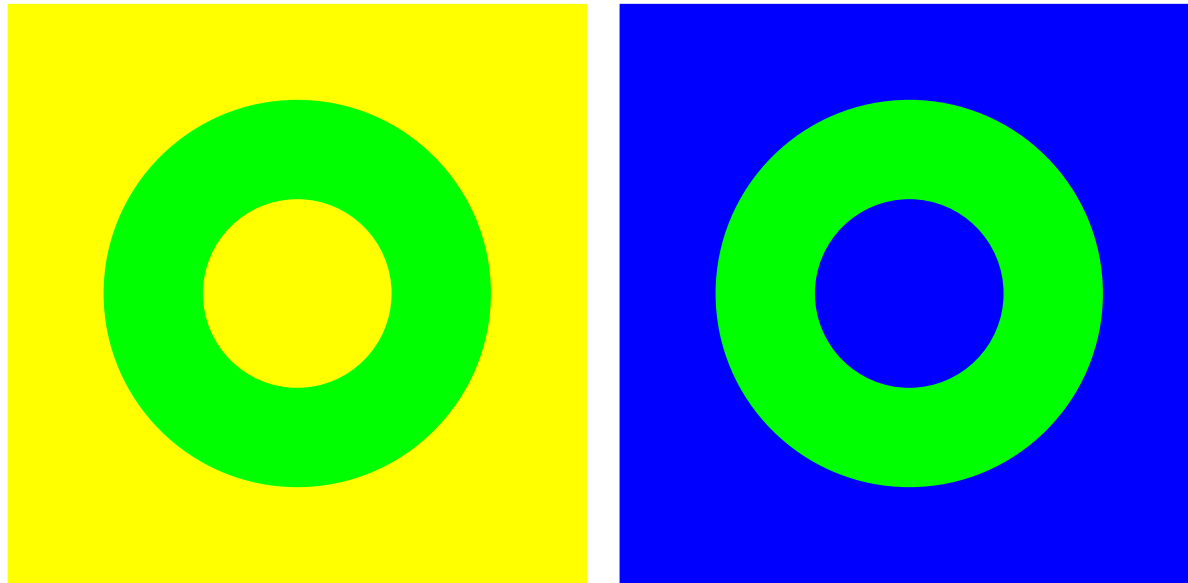
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Simultaneous Contrast



Optical Illusions

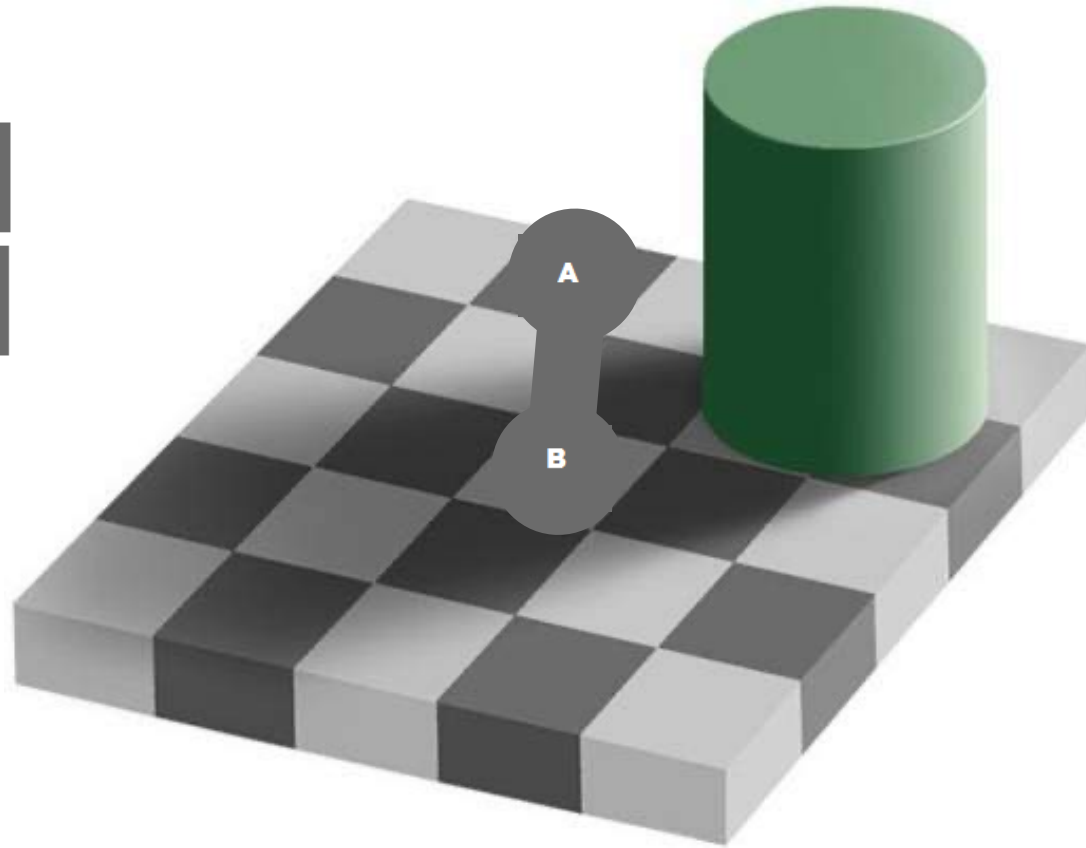
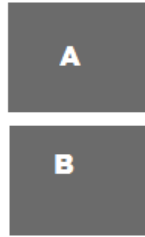
Is the green we see on the left the same as the green we see on the right?



Optical Illusions



Optical Illusions



Action of the Brain

NERO ROSSO VERDE
GIALLO BLU ARANCIO
BLU ROSSO VIOLA
VERDE BLU ARANCIO
ARANCIO VERDE NERO
VIOLA GIALLO ROSSO

Memoria del Colore

Retinal fatigue

Background Effects

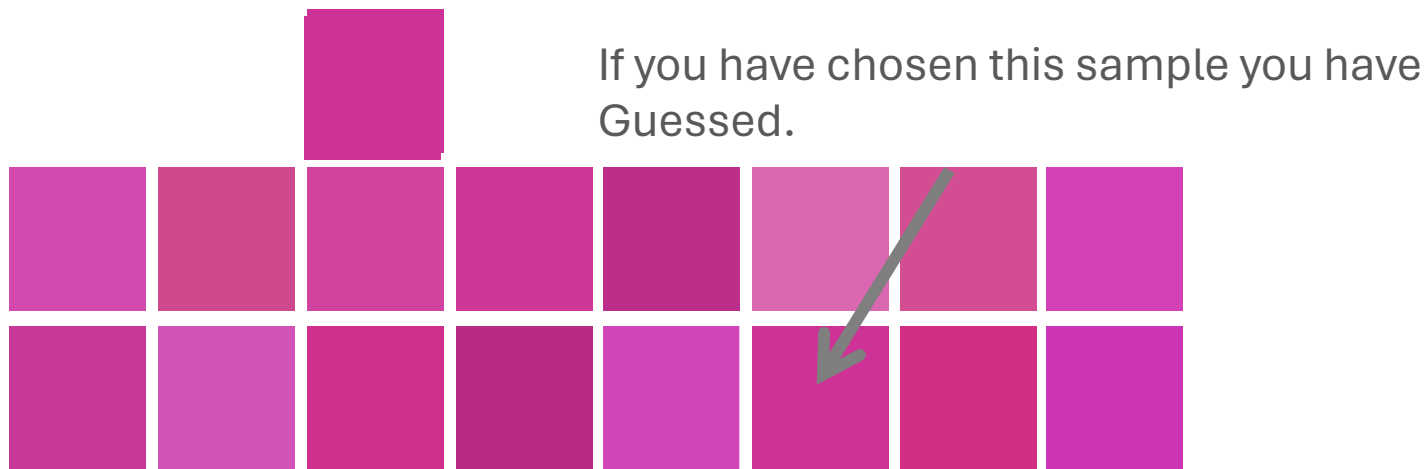
Poor Color Memory

- Two objects must be viewed simultaneously to fully judge their differences



Color Memory

Now tell me which one was among them...
Look at this color for a few seconds...



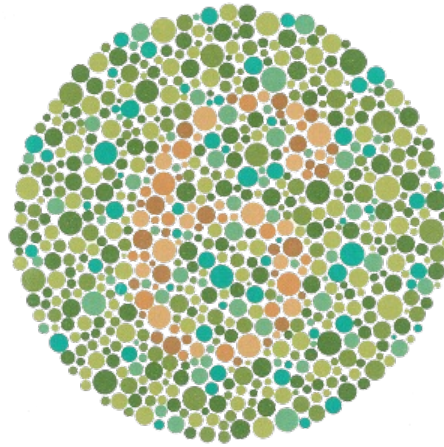
Structural deficiencies

Color defects (structural deficiencies)

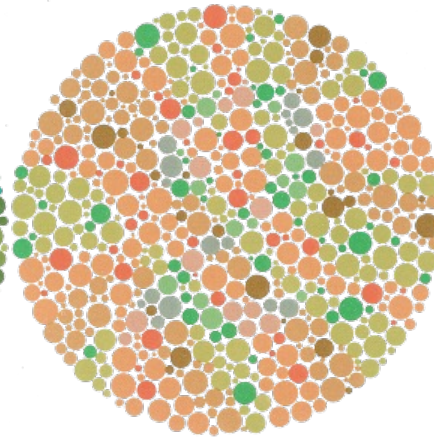
- 1 in 13 males suffers from red-green color blindness:
- 1 in 300 females.



Structural deficiencies

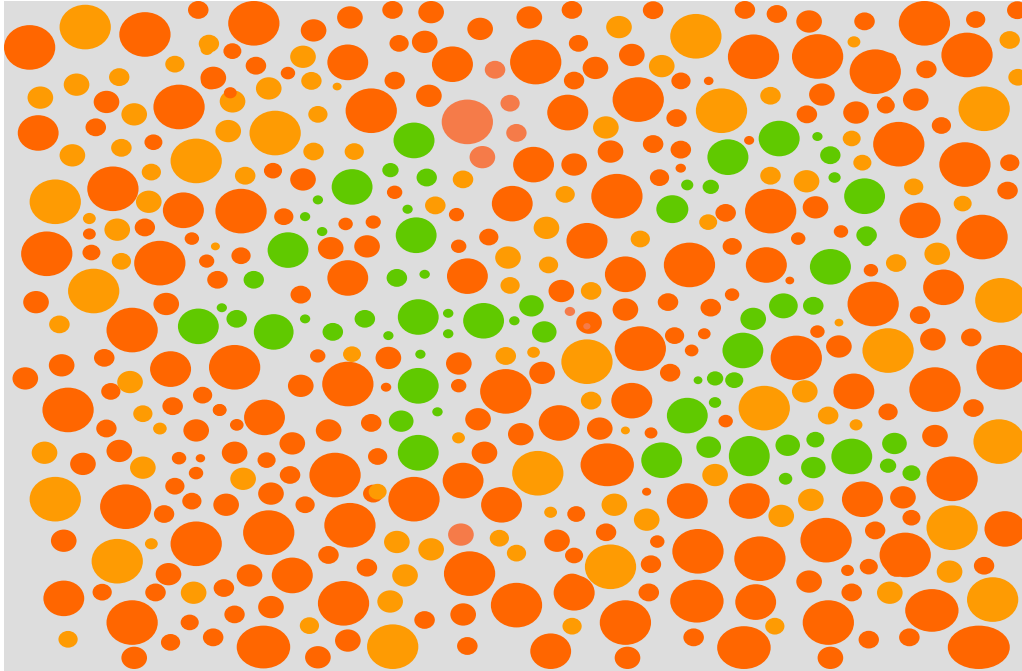


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Structural deficiencies



42

Light Condition

Retinal fatigue
Background Effects
Poor Color Memory
Color Defects

Light Conditions

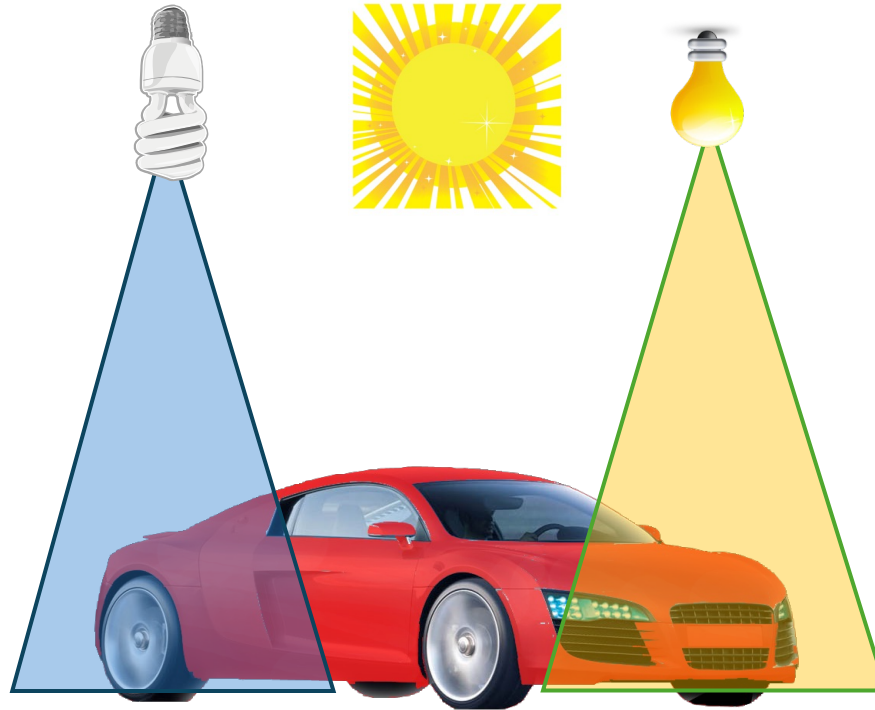
Failure to adopt display condition standards?
It often results in poor color decisions



Light Condition



Light Condition



Fluorescent light

Incandescent Light

Age

Retinal fatigue
Background Effects
Poor Color Memory
Color Defects
Light Conditions

Age



Age



The young Claude Monet...



...& the old Claude Monet

Other Factors

Stress

Drugs

Diseases

Glasses or tinted lenses



Measure the

COLOR

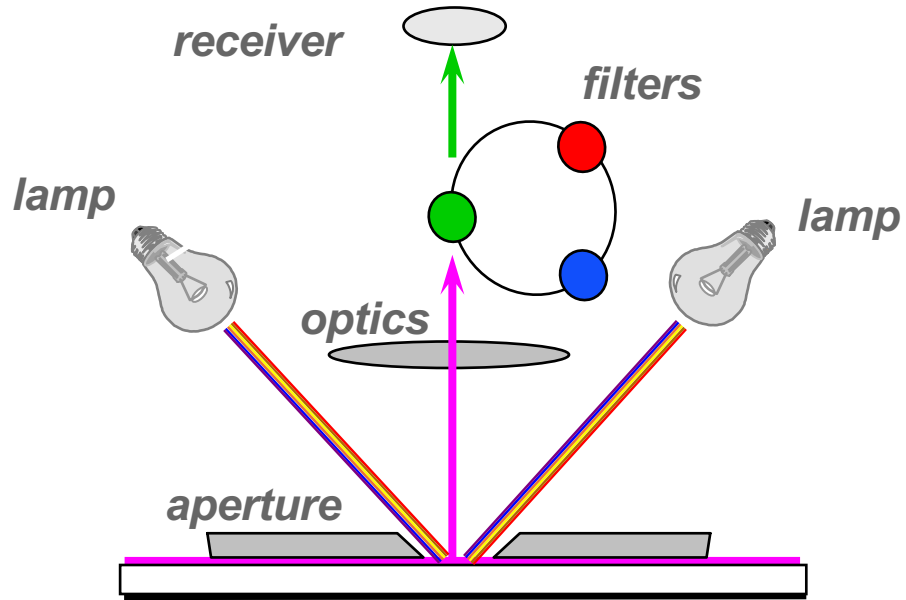
**The answer to the
problem**

Color Measurement Instruments

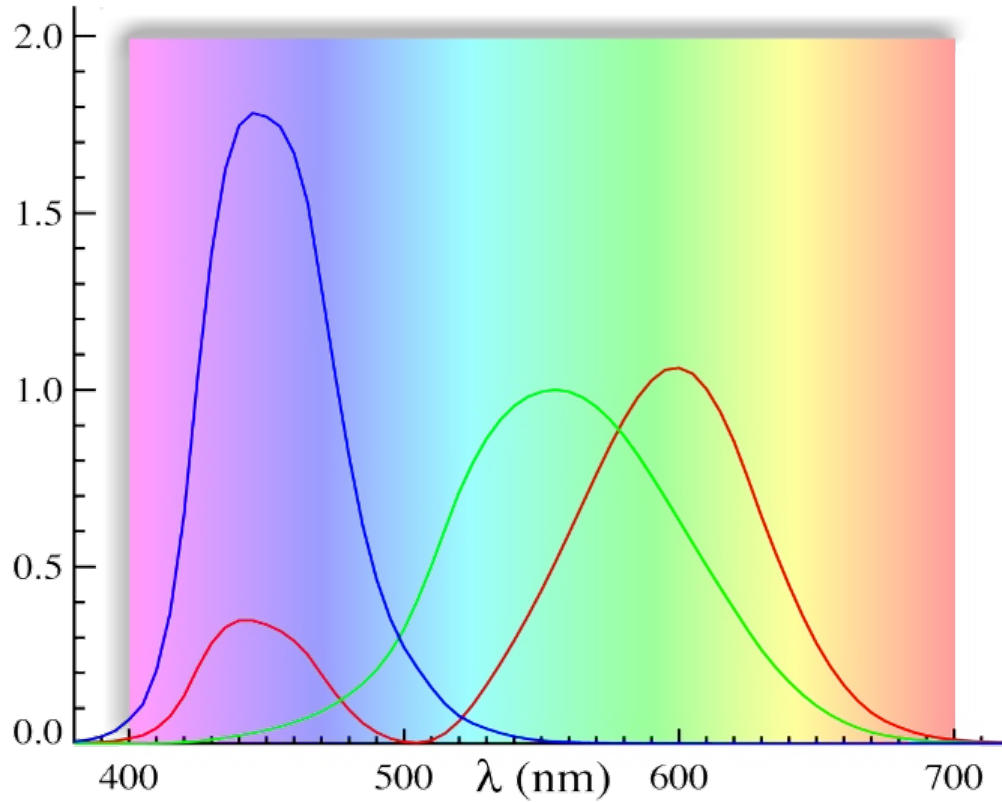
State-of-the-art instrumentation

- Colorimeters
- Spectrophotometers:
 - Geometry $0/45^\circ$
 - Sphere $D/8^\circ$
 - Multi-angle

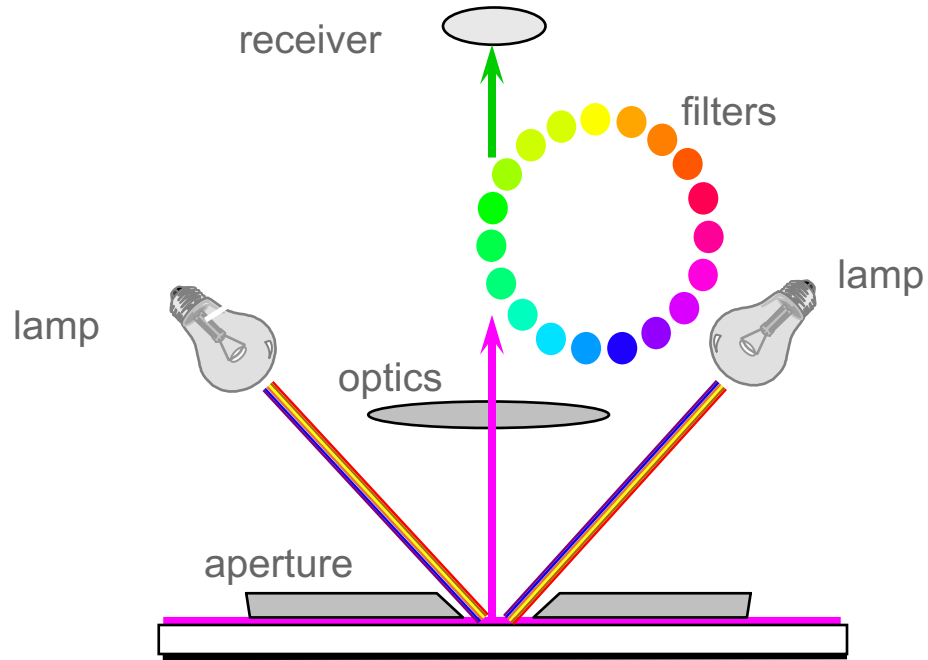
Colorimeter



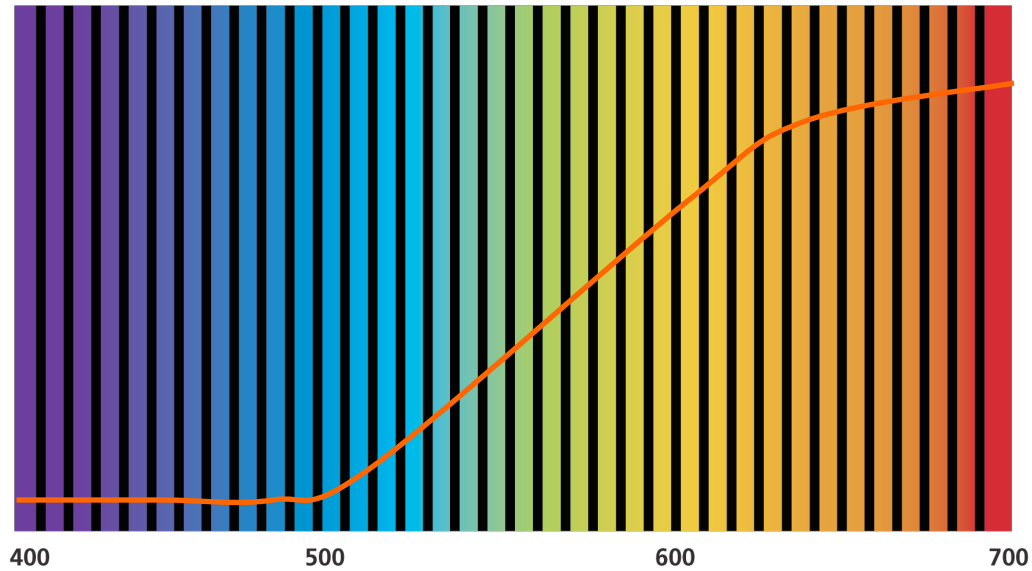
Colorimeter



Spectrophotometer



Spectrophotometer – The Spectrum



Color Control- Spectrophotometry

It provides the "fingerprint" of the color, i.e. it determines its Spectral Curve.

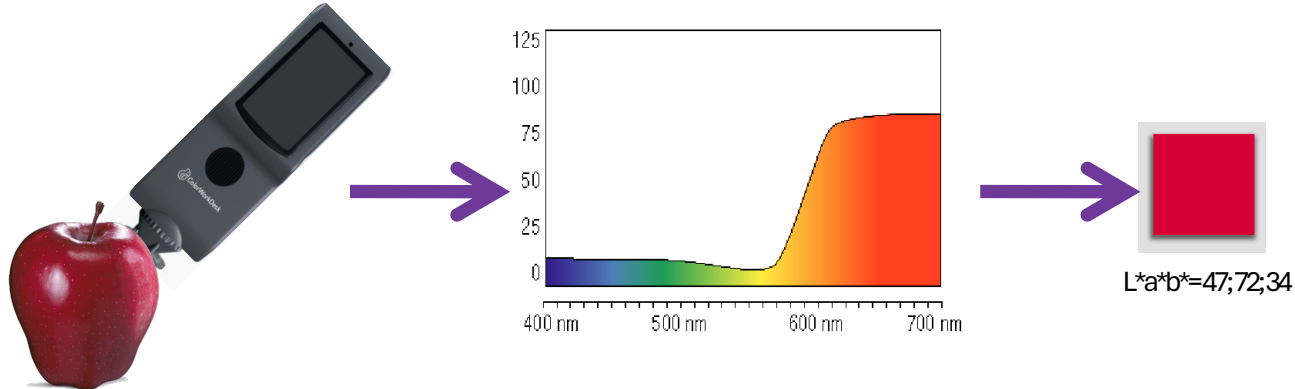
The Spectrophotometer therefore:

- It is necessary for the formulation of
- Identify metamerism
- It is more accurate than a colorimeter



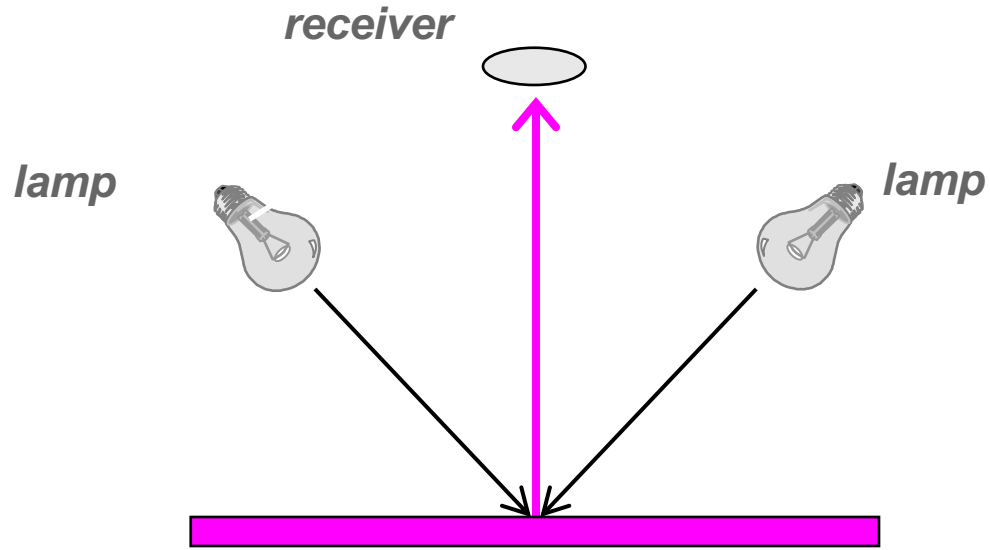
Color Control- Spectrophotometry

- With a spectrophotometer:
 - ▶ Measure the complete spectral information of a color
 - ▶ Measure color objectively
 - ▶ Provides device-independent color information
 - ▶ Provides Spectral values of the colored object
 - ▶ Transform Spectral values into Coordinates CIEL*a*b*, CIEL*C*H*...

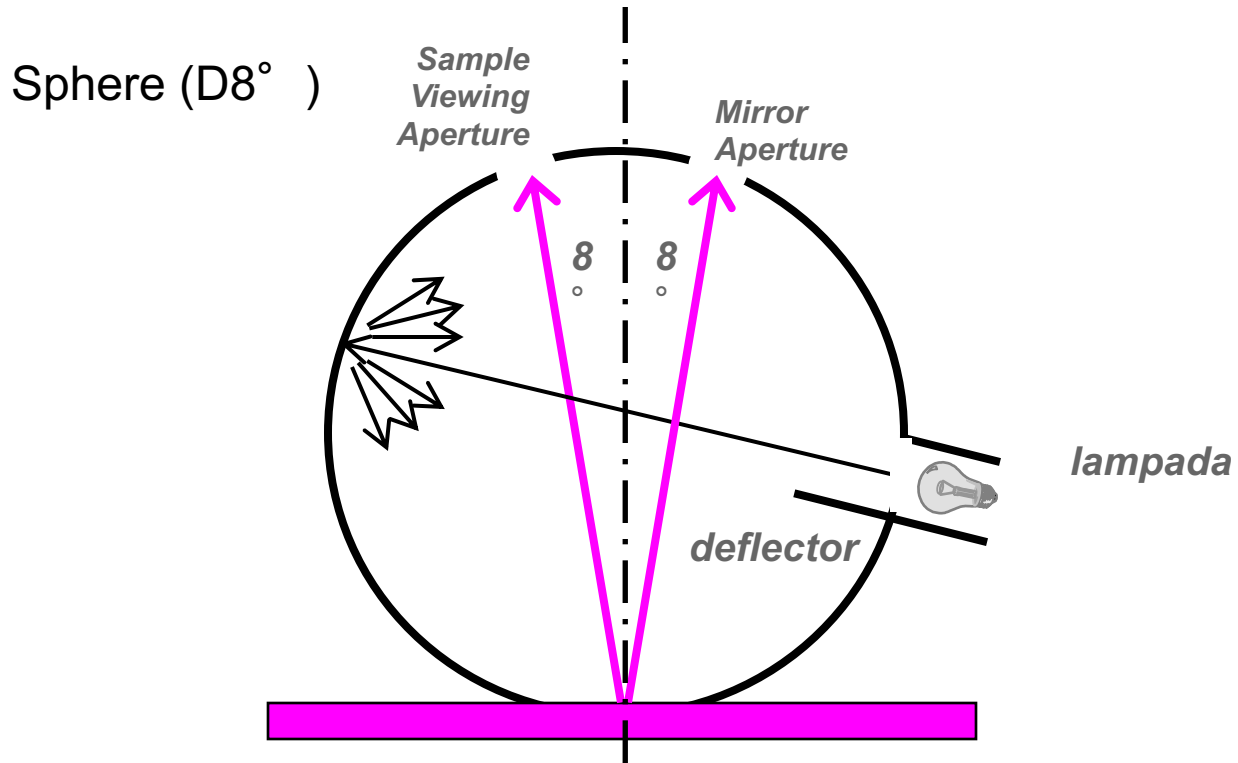


Instrument geometries - 0°/45°

Single Angle (45/0°)

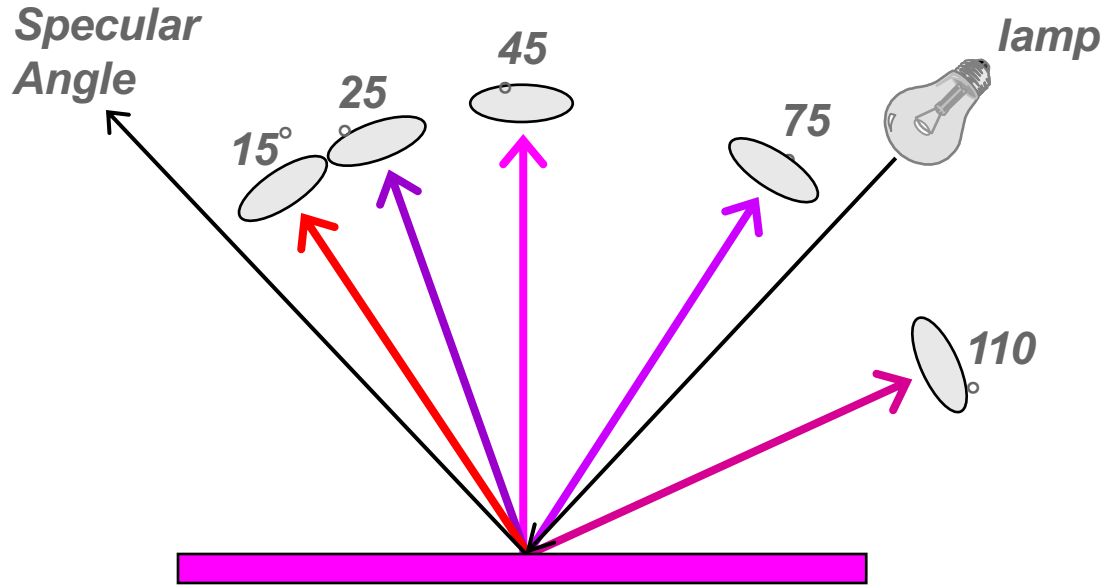


Tool Geometries - Spherical



Tool Geometries – Multi-Angle

Multi-Angle (15° /25° /45° /75° /110°)



Choice of instrument

**A Color Measuring Instrument is chosen in
based on different criteria:**

- Types of Data Needed
- Price
- Quality
- Inter-Instrumental Agreement
- Repeatability
- Application
- Ease of Use

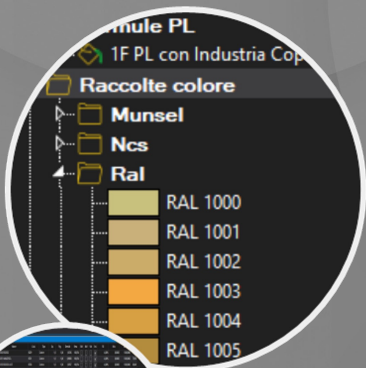
The Solution

ColorWorkDesk is the new line of products for colorimetry created by URAI that includes innovative software and performing instruments.

Thanks to modular software with a simple, intuitive and modern interface ColorWorkDesk meets every need in the field of quality control and color formulation.



Software's Features



- Data Navigator
- Quality Control
- File dyes Maintenance
- Industry Formulation
- Product Line Creation
- Line Products Formulation
- Tail formulation (Ind./PL)

Graphic Library - User Interface



- Simple and intuitive
- Well defined and standardized operation
- Non-invasive help graphic plots
- Screens composed of several separable modules
- Multiple screens use available

Spectrophotometers

- Benchtop and portable spectrophotometers with different reading geometries (d/8-sphere and 45/0-sphere) for measurements in transmittance and reflectance
- Lighting System LED or XENON
- Connection via USB or Bluetooth ports

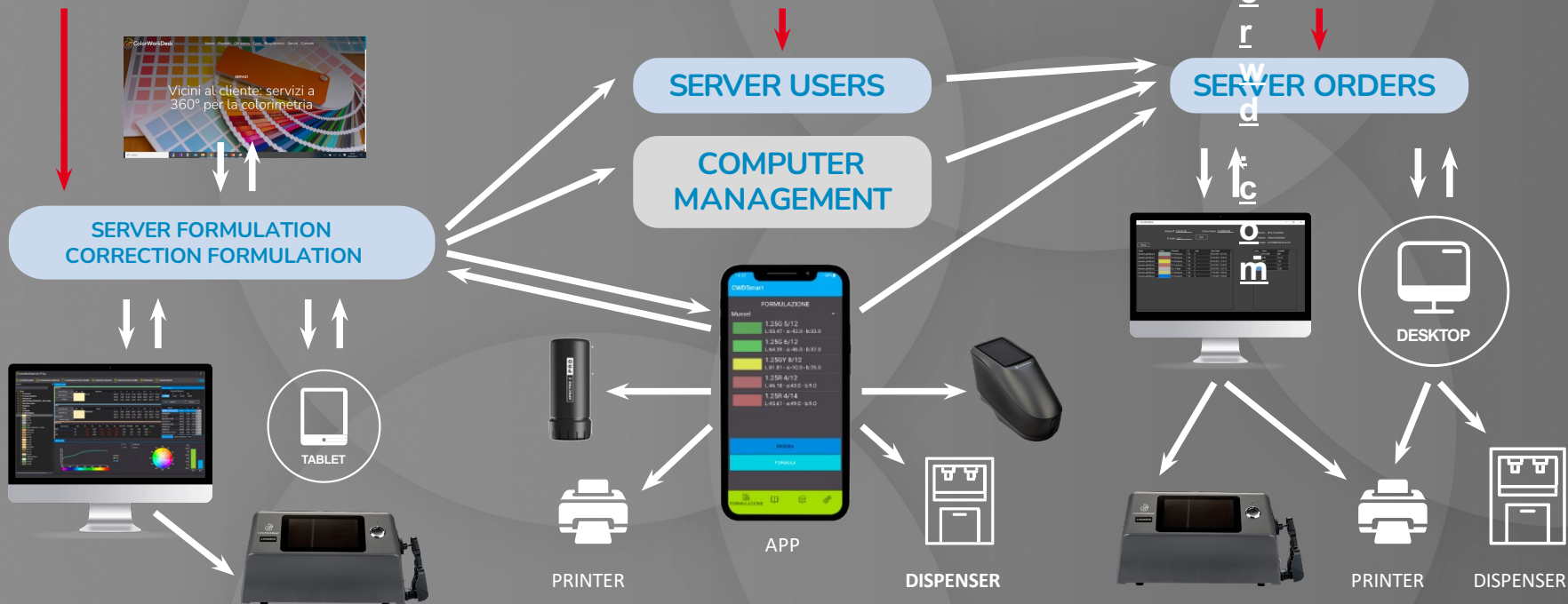


Internet Server (Laboratory/Production/POS Management)

- Sending and receiving formula/correction
- Sending request for formula management (Formulation, Correction, Similar Research)

- Brand, System, Product Management for individual reseller, group or user

- Request for competence formulas
- Sending formulas (Order, printing, dosage)



Hardware Service and Maintenance



Service & Support
in Italy at **URAI**

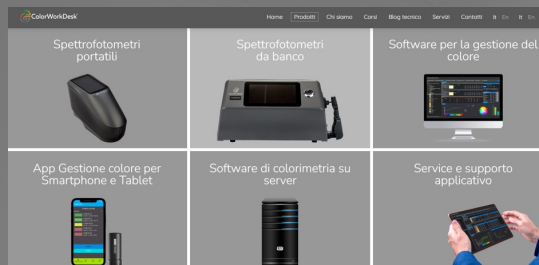
- Spectrophotometer Certification and Control
- Maintenance Contracts





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