

# The DigiEye System

Manufactured by  
**VeriVide Ltd**

a complete non-contact color  
measurement and imaging  
solution.



# The Challenge of Colour Managing Plastic Products



- Often a manufacturer uses a flat, plastic chip as a standard
- The final product is often a curved or irregular surface
- This makes instrumental comparison of standard and batch almost impossible using traditional colour measurement devices

# The Challenge of Colour Managing Plastic Products

The traditional method of Quality Control has been either:

## Visual Assessment

with uncontrolled or inconsistent viewing methods in terms of :

- The Observer - subjectivity
- Light Source
- Angle of Observation

OR

## Instrumental Measurement (Spectrophotometer / Colorimeter)

with restrictions and limitation. . . .

- Limited to flat, opaque objects.
- Very limited with uneven or curved finished products



# The Challenge of Colour Managing Plastic Products

## The

## DigiEye – Measuring Colour in Context

The DigiEye System from VeriVide is different.



- Digitally capturing and measuring .....
  - **colour & appearance**
- High resolution - great precision.
- Consistent and repeatable results.
- Calibrated images – colour visualisation.
- Measures colour in context not in isolation.
- Colour as seen by the consumer

## What is DigiEye?

- **DigiEye is a digital colour imaging system with proven applications in the plastics industry.**
- **Offers the ability to consistently and reliably measure colour & appearance using a non-**



- **Characterized SLR Camera.**
  - Recording colour data at millions of points
- **Calibrated Monitor & Printer.**
  - Accurate on-screen product representation.
  - Colour accurate photographic images.
- **Enclosed 'DigiEye Cube'.**
  - Eliminating all ambient light
  - Product capture in Consistent lighting
  - Both Angled and Diffuse lighting

## Measuring Plastics Using DigiEye

- **DigiEye does not have the aperture restrictions of a spectrophotometer**
  - We can measure the whole imaged area
    - Allowing comparison of the entire finished product verses the standard
  - Angled and diffuse illumination
  - We can both visualise AND measure the colour differences



# Measuring Plastics Using DigiEye

- DigiEye allows the comparison of flat standards against irregular surfaced batches
- DigiEye uses diffuse illumination to minimise the influence of specular reflection
  - **More representative lightness values**
- Sophisticated selection tools to allow the user to focus only on areas of interest
  - **Not just averaging the measurement over the whole aperture**
  - Comparison of masterbatch plastics in palette form

# Measuring Plastics Using DigiEye

## DigiEye Illumination

## Diffuse



- Diffuse illumination removes the specular highlight from the surface of the plastic
- Much more accurate colour measurement due to no specular influence

# Measuring Plastics Using DigiEye

**DigiEye Illumination**

**Angled**

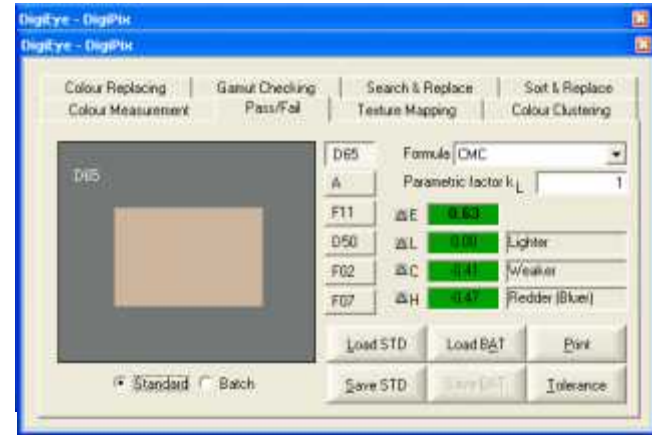
**Opt**



- All specular reflection and shadow is preserved
- Highly realistic product appearance
- Excellent for product visualisation

# Measuring Plastics Using DigiEye

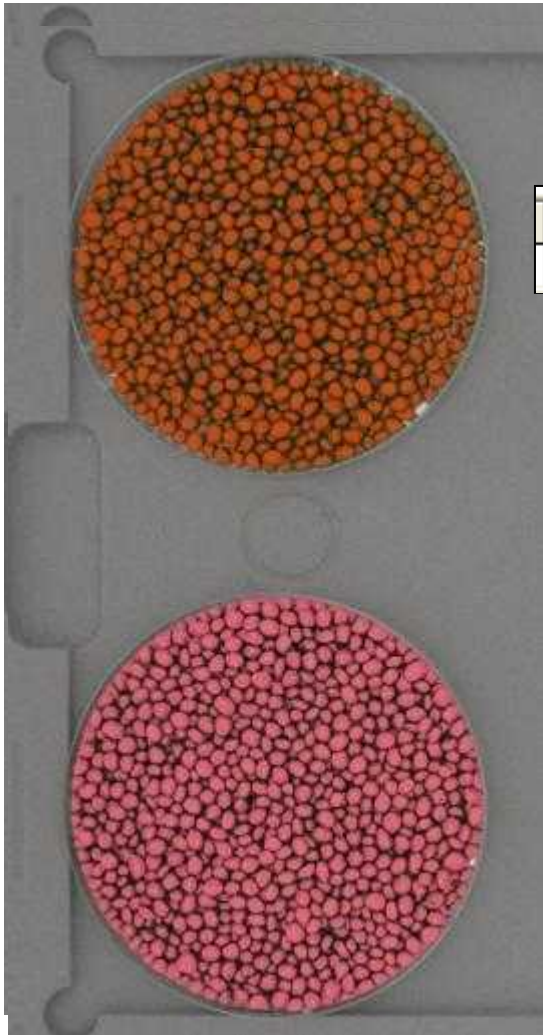
## Comparison of flat standard verses finished



- Select large section of the plastic standard
- Using 'magic wand' selection to select only area of interest on batch
- Note that the white text and the thumb wheel are excluded

# Measuring Plastics Using DigiEye

## Comparison of masterbatch pellets



The screenshot shows the DigiEye software interface. At the top, there are several menu options: Colour Measurement, Pass/Fail, Texture Mapping, Colour Clustering, Colour Replacing, Gamut Checking, Search & Replace, and Sort & Replace. Below these is a table with measurement data:

dE	dL	dC	dH	Descriptor
1.10	-1.05	-0.23	-0.23	Darker; Weaker; Yellower (Redder)

Below the table, there are several controls: a Database button, a Tolerance button, an Output section with radio buttons for Colour Map and False Colour (selected), and a Sort button. At the bottom, there are buttons for Clear All, Delete, Save as, and Print.

- Using sort and replace selection we can measure non solid plastics
- Note that the shadow between the pellets has been excluded from the selection
- This means much more representative colour measurement
- The same type of measurement is repeated on the batch
- dL, dC, dH & dE values are automatically returned

## Product Visualisation Using DigiEye

We can use DigiEye to digitally re-colour the ima



- The virtual sample has been retextured to ensure all of the original detail is retained.
- Save time in the development process and speeds up time to market.
- LAB data can be extracted from the virtual sample and used in formulation software.

# The DigiEye System

Manufactured in the UK by VeriVide Ltd



Registered under BS EN ISO 9001 Certificate No. 3393.

VeriVide Limited. Quartz Close  
Warrens Business Park  
Enderby, Leicester. LE19 4SG  
United Kingdom

Tel: **+44 (0) 116 284 7790**

Fax: **+44 (0) 116 284 7799**

Email: **enquires@verivide.com**

**[www.verivide.com/digieye](http://www.verivide.com/digieye)**

**[www.digieye.co.uk](http://www.digieye.co.uk)**