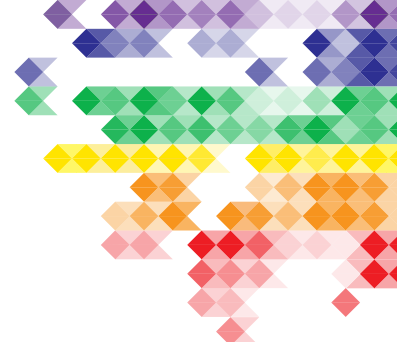


DigiEye



Putting Colour in Context

DIGITAL NON CONTACT
COLOUR ASSESSMENT



Food and drink colour measurement

Consistent and reliable colour and appearance measurement
system for the food and drink industry



www.verivide.com

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DigiEye for food and drink

Instant, accurate colour assessment
transforms food quality control

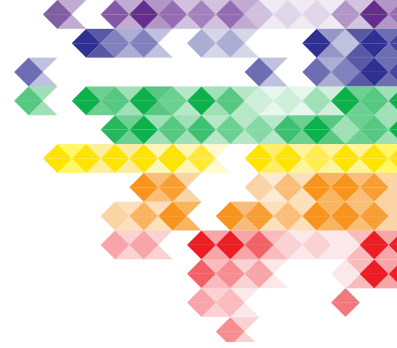
The ability to measure and assess colour accurately, instantly and repeatably can be a game-changer for food and drink producers.

Colour influences consumer choice, often profoundly. In the supply chain it can also be an important indicator of quality and consistency.

VeriVide's DigiEye is a must-have colour data capture and imaging system that helps to:

- ▶ Improve quality control
- ▶ Reduce wastage
- ▶ Sustain product integrity

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DigiEye - the complete solution

VeriVide's exclusive DigiEye is a digital colour measurement system that is simple to use but transformative in its effects. It can be used to sample any solid, powdered or liquid ingredient or product before, during or after production.

DigiEye see's what consumers see

What is innovative and brilliant about DigiEye is its ability to mimic the way human vision works. DigiEye sees colour in context, focusing on what matters and filtering out the rest.

DigiEye see's colour in context with ultra accurate measurement

It can differentiate between the sample and any packaging or other extraneous matter. It can literally, and instantly, spot the one bad apple - or nonconforming soup ingredient, biscuit coating, baked bean, bottle of wine - in the whole bunch.



DigiEye is fast, repeatable, consistent, compact and hygienic

DigiEye can be programmed to deliver, process and store exactly the data you need. Almost anyone can learn to use it, usually in less than a day.

It's a big and increasingly necessary step forward in the never-ending search for better competitiveness, quality assurance and supply chain efficiency.

What's wrong with traditional methods of colour measurement?

Visual assessment - simply looking - is too subjective and too subject to variations in viewing conditions.

Use instruments such as spectrophotometers and colorimeters and not much really improves. They have often severe operational limitations and - crucially - don't 'see' colour as the human eye sees it. They depend on the averaging of results, which may tell you little of any use.

DigiEye helps your business...



- ◆ Reduce costs
- ◆ Save time



- ◆ Increase production efficiencies
- ◆ Measure and control quality



- ◆ Achieve consumers' expectations
- ◆ Minimise wastage
- ◆ Protect your brand



Colour in context

DigiEye brings human vision to colour interpretation

The DigiEye non-contact colour measurement system has many proven and potential uses within the food and drink sector.

There is probably no product or ingredient that it can't measure. Its maximum field of view is around 40 x 50 centimetres, yet it can easily measure samples as small as a grain of rice. The DigiEye system's footprint is small enough for it to be used in almost any production environment.

How does DigiEye work?



1 Samples to be measured for colour are in the DigiEye Cube, which excludes ambient light in favour of controlled, consistent lighting to a standard close to CIE D65. Different illumination geometries are possible, including angled and diffuse lighting.



2 Attached to the Cube, a digital SLR camera captures data at millions of points. Colour and texture are recorded precisely and in extremely high resolution.



3 DigiEye software relays data to a calibrated monitor and optional printer for instant comparison and, if needed, colour-accurate printing of images for use as master product standards.



Two illumination geometries

DigiEye's illumination can be varied as required.



Diffuse illumination removes specular reflection from glossy and curved surfaces, enabling reliable measurement of samples such as tomatoes and apples.



Angled illumination clearly displays varying surface structures and textures, enabling them to be measured and evaluated.



Seeing is believing

- ✓ Unlike conventional instruments which average out data, **DigiEye 'sees' samples in context** - as a human would - and can instantly pinpoint any variation from a known standard, even among multiple ingredients and with packaging present.
- ✓ **Saved image file transfer enables samples to be compared anywhere in the world**, immediately or at intervals. This can, for example, establish supply chain standards or help research product shelf life and colour stability.
- ✓ **DigiEye is a fully non-contact system** and so there is no risk of data being influenced by the act of measurement. Nor is there, in normal operation, any risk of sample contamination.
- ✓ **DigiEye is proven to be reliable in continuous use and provides consistent high quality data across multiple sites.** Installation and training is often completed within two day's, with no previous experience of colour measurement required.

Features and benefits

Measurement and assessment

- Non-contact colour measurement, more capable and versatile than spectrophotometers.
- No limit to type of sample that can be accurately measured.
- Measures colour in any context.
- Measures the whole sample, multiple areas of the sample or specific small areas, depending on what is required to optimise brand integrity.
- Totally enclosed area with controlled, consistent lighting for image capture.
- Reliable, repeatable results with no ambient lighting to affect data integrity.
- Accurately measures different colours in a food or mixture.
- Colorimeters can only average colour data. DigiEye calculates the exact percentage of each visible colour.
- Measures powders and liquids with no need to dispense or decant product.
- 'Sees' colour or texture exactly as a consumer does. For example, wine in a bottle or yogurt as the lid is peeled back.

Non-solid colours and liquids

Curved and irregular shaped foods

Sensitive to rapid deterioration products

Uneven or inconsistent surfaces



Multi-coloured products

Shelf-life assessment

Powdered and granular products

Glossy and high shine surfaces

Usage and data capture

- Instant internet/intranet communication of colour, shape, size, texture etc.
- Improved visual consistency and product reliability across multi-location production units, with colour data added to product specifications.
- Colour replacement.
- Digitally change on-screen colour to assess differences between new and existing products. For example, icing on biscuits or cakes.
- Easy retrieval of master production standards.
- No more reliance on subjective visual assessment during production. Automated detection of non-compliant product improves quality control and reduces waste.
- Auto-control and simplicity means almost anyone can operate the system.
- No IT or photographic skills necessary, minimal training required.



DigiEye typical end-user applications

- Visual quality control across multiple production sites.
- Post-harvest storage and shelf-life monitoring.
- Measurement of coverage area of coatings.
- Assessing colour effects of different ways of removing crustacean shells.
- Measuring the way different processing methods change appearance.
- Colour measurement and analysis without having to separate components.
- Percentage distribution of visible product components.
- Production of images used in frozen fruit and vegetable specifications.



Improving quality control

Based in the UK, one of the world's premium drinks businesses uses DigiEye for the colour quality control of packaging and for other end-uses to safeguard brand integrity.



Research and development

A seed potato grower in the Netherlands uses DigiEye to obtain colour data from cooked and uncooked product. The data is used to analyse potential defects in the structure and texture of different types of potato when cooked.



A Scandinavian seafood processing research body uses DigiEye for research into factors that influence fish flesh colour, and for shelf life studies of products stored in variable conditions.



Multi-site standards referencing

The largest food producer in the UK uses multiple DigiEye systems to create photographic references and to improve the colour quality control of products such as baked beans and cooking sauce.



Monitor freshness and condition

A Colombian producer of cooked and processed meat uses DigiEye for colour quality control and colour measurement.



Comparison made easy

A long-established US global food producer uses DigiEye to assess tinned products such as beans, soups and spaghetti. The aim is to analyse the effects of different process treatments on product colour.



DigiEye measures the unmeasurable

One of the world's leading producers of flavours, fragrances and colourants use DigiEye to assess the colour of liquid in bottles and to assess the colour of small confectionery items impossible to measure by a spectrophotometer.



A producer of natural colourants in Germany uses DigiEye to assess the colour of difficult substrates, such as small sweets and confectionery items that cannot be measured using a spectrophotometer.

Don't just take our word for it

Leaders in the food industry rely on **DigiEye**



"One major advantage of the DigiEye system is that it allows us to turn colour data into a completely new asset for the business. We're still exploring where that can take us but we've already enjoyed significant production benefits from using DigiEye."

"Colour is getting to be a big supply chain issue and this system helps smaller producers like us compete at a higher level. If we get asked, "Can you meet this colour spec and keep hitting it week in, week out?" the DigiEye system now gives us the confidence to say yes, of course we can."



Need more information?

Find out how VeriVide's ground-breaking DigiEye System can help your business, contact the DigiEye team

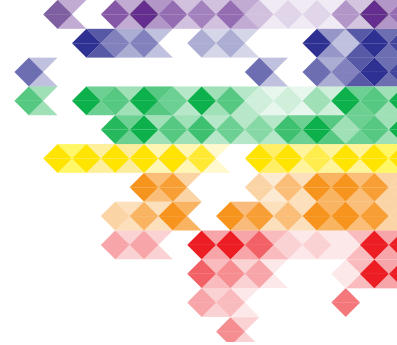
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“DigiEye is one of those rare leaps in technology that makes itself indispensable very quickly. If our experience is anything to go by, you soon reach a point where you can’t imagine being without it.”

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VeriVide is committed to innovation in colour assessment and quality control. From constructing bespoke standardised viewing environments to developing new lighting products to meet industry standards, improving your quality and productivity is always our priority.

VeriVide

See in Truth

For further technical information
visit: www.verivide.com



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