

# 04 - APPAREL DIGIEYE- CASE STUDY

DIGIEYE IS MANUFACTURED  
IN THE UK BY VERIVIDE LTD

## Denim Then & Now

The true origins of the cotton fabric known as denim is often the cause of heated debate.

The majority of reference books indicate that the word denim is a 17<sup>th</sup> century English corruption of the French “*serge de Nimes;*” named after a fabric from the town of Nimes in the south of France. However, some question this view opinion as Serge de Nimes was made of silk and wool, but denim has always been made of cotton.

To add to the confusion a fabric known as “*jean*” was also popular around the same time although this fabric was a different, lighter cotton fabric.

It is said that the modern use of jean comes from the French word for Genoa in Italy (Gênes), where the first denim trousers were made.

However, there is one fact without question, since those early days when Denim was traditionally coloured blue with indigo dye to make blue “*jeans,*” both denim fabric and denim products have now evolved into multiple types with an incredibly diverse array of colours with differing effects and differing appearances.

And to help ensure the quality control of these diverse appearances the DigiEye System is an invaluable tool.



## this case study

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## 04 – Colour Measurement of Stonewashed Denim

### THE APPLICATION: - Reliable Imaging & Measurement of Denim Wash Effects

The DigiEye system is used for the imaging and colour measurement of samples, impossible to assess using a standard spectrophotometer. A spectrophotometer measures a small area, usually up to 30mm in diameter giving an average result and therefore is totally unsuitable for measuring garments of this type.

The DigiEye system can image a larger area to concentrate on a pocket or knee image or even a whole pair of jeans with the use of the Large Area Imaging Cabinet. (An image of the Large Area Imaging system is on page 3).

### DENIM WASH EFFECTS - THE INACCURACY OF A SPECTROPHOTOMETER.

Colour Measurement has traditionally relied on spectrophotometers, however they were designed to measure very flat areas of 2D solid colour.

A spectrophotometer works by averaging all the pixels of colour in the small area measured and so is inaccurate when measuring a variable area that varies across the surface such as washed or enzyme treated denim fabric.

DigiEye can image a much larger area of the Denim to produce visual standards for the degree of washdown on a critical area such as the pocket or fly.

The DigiEye DigiPix software can select different sized samples for colour measurement from as small as one pixel up to a large area of the image. By taking a larger sample area the average measurement of all of the pixels is more accurate.

More accurate reporting of the Denim appearance can be achieved by using the DigiPix Colour Clustering technique in.

Colour Clustering works by automatically grouping pixels of the same colour together and reporting them as a percentage of the total, thus the number of white pixels can be compared to the number of coloured pixels for example.

The two images below of two different time periods of stonewashing have been taken using the DigiEye System.



The denim washed for 10 minutes is measured and compared with the second example which was washed for 20 minutes with the latter measuring a DE of 1.29 Darker, Weaker and Greener to the first.



### THE TECHNICAL BIT

- The calibrated camera captures data in RAW format for very high-resolution images; since the image is captured in controlled and consistent lighting, produced by VeriVide, the software can transform the RGB data from the camera into CIE colour space thereby enabling accurate non-contact Colour Measurement of the Denim fabric.
- Consistency is the key, as the environment is controlled, measurements are repeatable. The image can be retained with its associated data for visual assessment and correlation.
- The software also contains a choice of Colour difference equations so that components can be imaged with and compared to an agreed standard component.
- The DigiPix Colour Replacement software also enables an object to be recoloured using colour information from a variety of sources including Pantone colours, or company colour library information in several data formats. The appearance of the Denim fabric is retained during the recolouration enabling an accurate visualisation of the final colour.



The recolouration can be seen in the example above.

The jeans on the left in the original shade have been recoloured to produce the image on the right.

### THE BENEFITS

- With DigiEye and the DigiPix Software, manufacturers and suppliers can image Denim fabrics to accurately capture the critical area of the fabric to produce visual standards for the degree of washdown.
- Any colour measurements of these imaged areas are more accurate than that supplied by a spectrophotometer as the whole of the critical area is measured not just a small piece.
- Using the DigiPix Colour Replacement feature, the surface appearance of the Denim fabric is taken into consideration. This provides enhanced visualisation during the product development of new colourways and is very useful for designers and buyers who can use the software to decide on the most appropriate colours before ordering real sampling.

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- The images and any associated colour data can be communicated quickly and easily between suppliers and retailers, enhancing the communication of these often-subjective effects.

### END OF CASE STUDY



The Large Area version of the DigiEye Imaging system, shown above, can accommodate large product, including two garments side by side.

### CONTACT DETAILS OVERLEAF

### DIGIEYE IN THE APPAREL SECTOR – GENERAL INFORMATION

The versatility of the VeriVide's DigiEye Imaging system provides an ideal tool for those in the apparel supply chain. The unique controlled lighting cabinet is ideal for capturing and measuring the colour of a range of product including lingerie, footwear, garments etc.

With the introduction of the Large Area Imaging cabinet, also manufactured in the UK by VeriVide, the range of products that DigiEye is capable of imaging and colour measuring has increased to include full outfits on a mannequin as well as adult sized hanging garments such as dresses, trousers and coats.

The standard DigiEye imaging cabinet is able to image and measure small garments and footwear and to assess lab dips and production hangers.

The DigiPix software can measure very small areas of colour, which are unable to be measured by a spectrophotometer, this is an invaluable tool for suppliers and retailers of printed fabrics and lingerie products containing mesh and lace fabrics.

DigiEye is also an invaluable tool for specifiers sourcing coloured components from different suppliers within a global supply chain.

It provides an accurate, comprehensive specification for both colour and appearance against which suppliers can assess the quality of their production batches prior to dispatch. The synthetic colour constant spectral curves generated by DigiEye help to ensure that all product components match in all specified lighting conditions.

DigiEye also provides a method of assessing the appearance of irregular fabrics such as Denim wash effects and can be used to set appearance standards for these.

DigiEye with the DigiPix software is ideal for the quality control of pile fabrics such as fleece, towelling, velour and heavily textured knitwear. The non-contact colour measurement of DigiEye ensures that the product is captured in its natural state, whereas measurement with a spectrophotometer would flatten the pile giving an inaccurate measurement.

The DigiPix colour replacement feature allows the colour of whole garments or even parts of a specific colourway within a print to be changed and viewed, with the excellent quality of the image, designers and buyers can easily select the required garments for their stores.

## CASE STUDY 04



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