

03 - APPAREL DIGIEYE- CASE STUDY

DIGIEYE IS MANUFACTURED
IN THE UK BY VERIVIDE LTD

The Company

LUEN THAI

Luen Thai is a global leader in providing end-to-end apparel services supporting their customers' speed-to-market goals and by remaining focused on customers' needs, they constantly find ways to serve them better through quality products and value-added services.

They have a wide reaching global presence; from their corporate headquarters in Hong Kong and other sales and design offices and logistics stations located in key cities around the world including Shanghai, Tokyo, New York, New Jersey, Los Angeles and Beijing to production facilities in areas such as: China, Philippines, Macau, India, Bangladesh and Indonesia.

Today, they continue to be in the forefront of the apparel industry and remain dedicated to helping them bring their products to market faster and at a lower total cost.

As a company committed to exploring the opportunities of new innovations it is not surprising that Luen Thai use the DigiEye system to assist with the design and development of their Lingerie products.



this case study

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03 – LUEN THAI – Lingerie Quality Control

THE APPLICATION: - Enhanced QC & Sample Recolouration

The DigiEye system is used for the imaging and colour measurement of samples, impossible to assess using a standard spectrophotometer.

- DigiEye provides a non-contact measurement for all types of materials with different appearance characteristics including the many fabric types intrinsic to the manufacture of lingerie; sheer, opaque and shiny materials e.g. Satin.
- Components of a bra can be imaged in the format for which they will be used as garments, i.e. with the correct number of layers, over the top of a padded cup etc.

As the image is captured in controlled and consistent lighting, the DigiEye software can extract colour information from the image not achievable using a conventional photograph. This colour information can be communicated to the manufacturing unit for enhanced quality control.

The image can also be recoloured on screen and assessed for suitability.

There are many traditional issues related to the colour measurement of Lingerie products which the DigiEye system is able to address.

ISSUE 1: - PREVIOUSLY IMPOSSIBLE TO MEASURE SINGLE LAYERS OF SHEER FABRICS

Traditionally it has been necessary for Lingerie manufacturers and suppliers, when measuring the colour of sheer fabrics, to fold the example, up to eight times, in order to achieve repeatable measurement on a spectrophotometer.

This is to ensure no light is transmitted through the fabric and, as such, is the accepted method stipulated by apparel retailers. However there are several problems associated with spectrophotometer measurement of these fabrics;

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PROBLEMS WITH SPECTROPHOTOMETER

MEASUREMENT.....

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- The fabric can bunch up and protrude through the aperture causing measurement errors and inaccurate and inconsistent results.
- The fabric sample folded 8 times is not being measured in the same format as it is intended to be used as a garment, i.e. in one or two layers.
- As the measurement is made in isolation, the appearance of individual fabric samples cannot be assessed alongside the other components of the garment.

DigiEye is able to resolve all these issues.

ISSUE 2: - THE DIFFICULTY OF MEASURING VERY SMALL FABRIC SAMPLES

Using traditional measurement equipment it is very difficult to reliably measure very small samples, for example, a single strand of yarn or a piece of mesh.

The smallest aperture on a spectrophotometer is usually around 4mm; consequently in order to measure strands of yarn, they must be wrapped around card before being presented to the instrument. This prevents, for example, the successful measurement of thread after it has been embroidered onto a base cloth.

Fine mesh constructions cannot be accurately measured using traditional methods as the Spectrophotometer averages the data measured and so would include the back plate showing through the holes in the measurement of the sample.

DigiEye can successfully measure the above examples - no more inaccurate and meaningless data.

ISSUE 3: - THE ACCURATE ASSESSMENT OF NEW COLOURWAYS IN MULTI LAYERED GARMENTS.

In addition to the advantages already highlighted of the DigiEye system over traditional methods of colour measurement, the system can also support designers and buyers in the selection of new and alternate colourways.

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Real sampling of sheer and mesh fabrics is required to assess new colourways as the type of fabric and the number of layers presented contributes to the appearance of the colour.

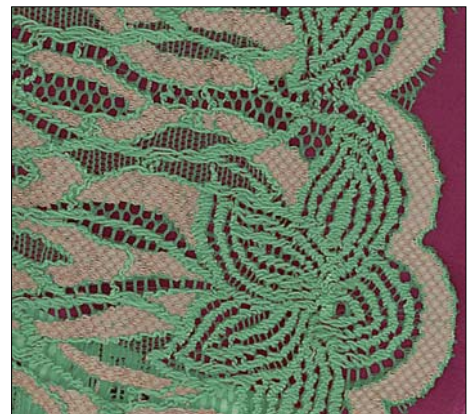
It is difficult for designers and buyers to select new colourways from flat coloured fabrics, as it is impossible to extrapolate the final result on a sheer or mesh fabric. It is also extremely difficult to conceive an accurate aesthetic appearance of the differing fabrics and components in the required layered format.

Thus real sampling has traditionally taken place and with a lengthy time scale between colour selection and going to market, this is costly.

DigiEye can solve this problem using the DigiPix colour replacement feature, as illustrated in the lace examples from Luen Thai below.



The image above is the original colourway, the DigiPix software has selected the pink thread forming the mesh construction and the embroidery and recoloured it to green (See below)



The pink thread was selected in isolation; therefore the background and the base fabric of the lace remain the same.

THE TECHNICAL BIT

- The calibrated camera captures data in RAW format for very high-resolution images; as the image is captured in controlled and consistent lighting the software can transform the RGB data from the camera into CIE colour space thereby enabling accurate non-contact Colour Measurement of any type of fabric.
- Consistency is the key - the environment is controlled therefore the measurements are repeatable. The image can be retained with its associated data for visual assessment and correlation. Lingerie components can all be imaged together and laid out in the correct number of layers or on top of each other, if required, before imaging.
- An item as small as a single pixel can be selected and measured using the DigiPix software allowing mesh fabrics and single strands of embroidery to be successfully measured.
- 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



- The appearance of the fabric is retained during the recolouration, as can be seen with the bra images below, enabling an accurate visualisation of the final colour even with sheer, shiny or mesh fabrics.

THE BENEFITS

- With DigiEye and the DigiPix Software, manufacturers and suppliers can image sheer, transparent and shiny fabrics in the correct layer format – even as a single layer and extract accurate colour measurements against any standard.
- All components of a garment can be imaged and viewed together.
- This offers enhanced quality control by enabling tighter colour tolerances to be applied and colour differences can be communicated between suppliers and retailers.
- Using the DigiPix Colour Replacement feature, the surface appearance of the fabric and the transparency is taken into consideration. This provides enhanced visualisation during the product development of new colourways. This is very useful for designers and buyers who can use the software to decide on the most appropriate colours before ordering real sampling.

END OF CASE STUDY

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VeriVide are grateful to Luen Thai for providing the information and images for this for this Case Study

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 03



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