06 - APPAREL DIGIEYE- CASE STUDY

DIGIEYE IS MANUFACTURED
IN THE UK BY VERIVIDE LTD

this case study

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.

Made in Luenthai

06 – LUEN THAI – Colour Clustering

THE APPLICATION: Enhanced Quality Control of Heather samples

The DigiEye system, manufactured in the UK by VeriVide, is used for the imaging and colour measurement of samples, which would be impossible to assess using a standard spectrophotometer.

DigiEye provides a non-contact measurement for all types of materials with different appearance characteristics. Marl and Heather fabrics can now be imaged and accurately measured.

As the image is captured in controlled and consistent lighting, developed by VeriVide, the global leaders in lighting, the DigiEye software can extract colour information from the image, which cannot be achieved with a conventional photograph.

This colour information can be communicated to the manufacturing unit for improved quality control and the image can also be recoloured on screen and assessed for suitability.

ISSUE 1: - HEATHER SAMPLES CANNOT BE MEASURED.

Traditionally Marl and Heather fabrics are non-measurable as a spectrophotometer would measure the average of the area of colour presented to it, this would vary according to the quality of the spinning or knitting so that in some areas the coloured yarn would be more prominent than in others.

MEASUREMENT OF HEATHERS

(from previous page).

The colour of Heather fabrics is notoriously difficult to control as a result of this and variation is sometimes present in the final product.

Luen Thai now use the DigiEye Clustering function to control the colour of their Heather production at the yarn stage by measuring the wraps of yarn and calculating the composition of the grey yarn and the coloured yarn to give qualitative data.

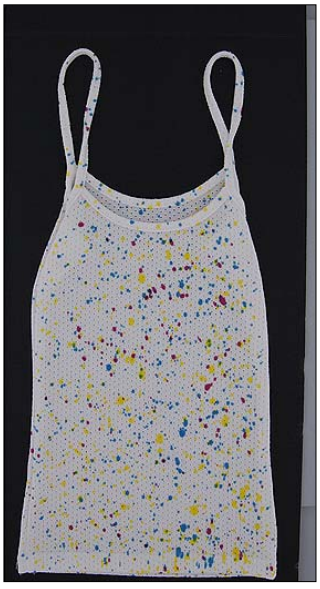
Heather yarns can now be measured and the percentage of coloured yarn can be calculated.

Qualitative data can be produced from the images of yarn wraps above

ISSUE 2: - SMALL AREAS OF COLOUR CANNOT BE MEASURED.

Historically Colour Measurement has relied on the spectrophotometer, however they were designed to measure flat areas of 2D solid colour, which are at least 4mm in size.

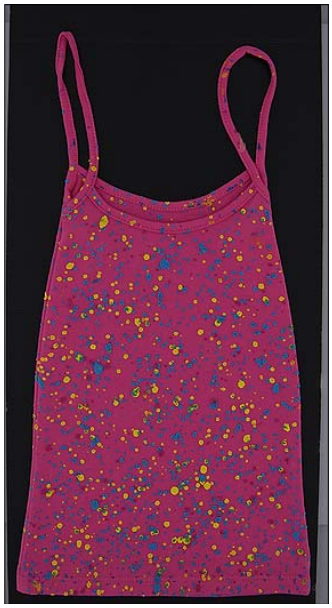
Any sample smaller than this could not be measured and in reality larger samples were required for better accuracy of result.



(from previous column).

Quality control of small areas of colour such as the dot prints illustrated on the vests below, on page one and in the previous column, has therefore relied upon visual matching techniques and communication of results has traditionally required shipping of physical samples.

This issue is further complicated when sewing threads and trims are required to match the coloured area**.**



The small splashes of colour in these can be measured using the DigiEye Colour Clustering function and the colour controlled

Luen Thai can now use DigiEye to measure and control this production.

ISSUE 3: - COMMUNICATION OF GARMENTS RELIES ON SHIPPING.

Designers and buyers at the retailers usually require new garment styles or colourways to be shipped to them for approval in order to visualise exactly what it is that they are purchasing prior to confirming an order.

DigiEye can solve this problem with its high definition imaging, capturing clear images displayed at 300dpi.

It is also possible to view the fabric construction structure or garment detailing in close-up to enhance the communication. The 3D images can be communicated around the globe in a standard electronic format.

ISSUE 3: - COMMUNICATION (from previous page).

The garments on this page illustrate just two examples of the range of samples which Luen Thai image and communicate using the DigiEye system.

Using the DigiPix colour replacement feature this concept can be developed further and different colour variations of the images can be produced and communicated in the same way as the original images.

Shipping of samples is now not required.

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 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.
- As the environment is within a controlled lighting environment consistency is the assured and measurements are repeatable. The image can be retained with its associated data for visual assessment and correlation. The whole of a garment or design repeat can be imaged with the new Large Area Imaging and since an item as small as a single pixel can be selected and measured using the DigiPix software it is ideal for the measurement of Heather fabrics or small flower and dot designs.
- 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 TECHNICAL BIT (continued from previous column)

- 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 fabric is retained during the recolouration, enabling an accurate visualisation of the final colour even on Heather fabrics.

THE BENEFITS

- With DigiEye and the DigiPix Clustering function, manufacturers and suppliers can now image Heather fabrics and extract accurate colour measurements against any standard. Luen Thai now control all the Heather production using the clustering function to calculate the composition of the grey yarn and the coloured yarn to provide quantitative data of the percentage of each component. The colour of the coloured part can also be measured.
- Using the DigiPix Colour Measurement function Luen Thai can now measure small coloured areas of an image and export this data to a .qtx file which is supplied to the producers of the trims such sewing thread, tape etc.
- These functions both provide enhanced quality control by enabling tighter colour tolerances to be applied, the images captured and the colorimetric data can be electronically communicated around the globe, leading to savings in time and shipping costs.

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.

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All the Images in the main body text of this case study have been taken with the DigiEye system or with the Large Area Imaging System.