

Original Photopaper Developments and Applications to Further the Advancement and Growth of the Premium Photo Book Segment

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Abstract

Original Photopaper is now leading Premium photo book segment, next developments will not only bring the medium segment in reach for Original Photopaper photo books, but will attract also new players into Original Photopaper technology.

Listening to customer needs, listening to central lab needs, continuously innovating and the success of honest cost - margin calculations leading to new Original Photopaper developments and its applications. Since first time FUJIFILM is developing papers specific for central lab high speed printing equipment. Next to that FUJIFILM organizes cooperation of best in class Original Photopaper equipment manufacturers who will bring our industry into next era where central lab production will be leading in costs, quality and speed of fulfilling customers needs. It's also the era where pure digital printing companies decide to enter the Original Photopaper production technologies, as we see several companies starting with it the last couple of months.

Introduction - Original Photopaper

FUJIFILM Original Photopaper consists out of the silver halide emulsion technology. The emulsion is embedded in gelatin which gives the unique benefits. This gelatin protects the paper against image degradation by pollutants (such as Ozone), prevents bleeding and gives physically overall durability. After exposing the silver halide crystals on the photographic paper a latent image is created by an RGB exposing system. Then paper is chemically processed by developer and bleach/fix to get the image on the paper.

Original Photopaper delivers superb print quality and long lasting images to maximize the enjoyment and longevity of an image. Already decades of years, original photopaper is appreciated at customers. Image stability for photo books is more than excellent, because there is no significant change of image quality at dark storage within multiple life time. Each printing technology has its own benefits. Original Photopaper (silver halide paper) will give the broadest range of benefits, making FUJIFILM Original Photopaper the leading player in the digital photo printing market.

FUJIFILM Original Photopaper technology fits for high printing speed over a wide range of substrates, such as glossy matt lustre silk high gloss deep matte and textured papers. The technology enables both sheet and roll-to-roll digital printers. Work flow solutions include creation software and automatic image enhancement software. Post-processing solutions by partners include book binding, framing cutting and stacking and more.

Original Photopaper is used by the central lab, professional lab, commercial lab and retail, to create photo books, calendars, greeting cards, yearbooks, portraits, photo prints and more.

Customer needs, Premium Photo products, Lay-Flat

The customer preference is premium lay-flat photo book with so called "wow" effect for the photo book experience. The original Fujifilm photo paper guarantees exceptional quality by natural gloss and feeling (haptics), brilliant whites, deep blacks, pleasant dynamic range, wide colour range, image sharpness, continuous tone and excellent image stability. Lay flat paper are bound using a very different technology than regular books printed using digital press on both sides of the paper, in which the paper doesn't lay flat, unless a special and more expensive lay flat paper is used. The lay-flat feature is beautiful and important when designing a professional wedding book, but also a standard consumer photo book.

Key attributes are the smooth continuous tone and uniform natural gloss. Those contribute to a pleasing image quality or so called "WOW" effect. The extremely high resolution of a continuous tone printing system (Original Photopaper technology) in combination with the special coupler technology is resulting in superb image sharpness.

Central Lab needs, Cost-Quality-Speed and Durability, Partnership

Central labs are focussed on low cost, high productivity, good quality and good durability. The Original

Photopaper technology is unbeatable for the combination of all 4 attributes in comparison with other print technologies. Central labs are therefore using the Imaging Solutions R2R printers and post-processors to get high productivity at relative low cost. The up time of those ISAG machines is excellent and much higher than the up time of digital press equipment. Partnership between FUJIFILM and central lab is another key attribute. FUJIFILM will continue production of Original Photopapers and listens to the customer's voice for the development of new paper. Based on customer's voice, innovative products will be developed at honest cost margins.

Market trends: retail versus central lab production

In the past, digital minilabs were introduced to be able to produce prints on the same day (one hour) at retail. Digitalization did change the customers demand and the amount of prints per year decreased due to pc and smartphone storage, but the amount of prints per order increased significantly. This resulted also in a shift from minilab (retail) printing to R2R printing (central lab) based on price per print and also photobook. Nowadays, the percentage paper consumption (Europe) at central lab is exceeding the paper consumption in retail.

In future, this change (minilab to central lab) will continue and the central lab will have a leading roll in the production of prints, photobook and merchandise products using Original Photopaper. The majority of the professional photo book

including wedding photo books is produced using Original Photopaper. The medium segment (consumer photo book) is in reach for Original Photopaper, based on cost and quality ratio. The percentage of photo books produced with Original Photopaper is already above 20% of total amount produced photo books and rapidly increasing. Another change in the market is that pure digital printing companies are investing in equipment based on the Original Photopaper technology.

Cooperation with best of class Original Photopaper equipment manufacturers; R2R products

Imaging Solutions is manufacturing high speed printers and post-processing equipment for the original photo papers and extends its comprehensive AgX product portfolio. The fastPrint (20,000 prints/hour 4x6 inch) in combination with VSP50 and widePrint12nG (3,000 prints/hour 12x16 inch) in combination with the VSP25 is very successful especially in the European market. Almost all major central labs are using the Imaging Solutions equipment for printing and/or post-processing. The fastBlock (180 book blocks/hour) and fastBooklet (160 softcover booklets/ hour) machine are famous to make lay-flat bookblocks and booklets with high productivity. The fastFrame and miniFrame equipment is suitable to make frames in many sizes using Original Photopaper as wall-decoration.

There are several equipment manufacturers which offer robust solutions for fast and simple wide-format print production of photo products in excellent quality. Those printers are used at the professional printing lab for commercial printing and central lab for cover printing and/or large size wedding Album.

Developments and its Applications

The product development is therefore focussed on professional and also merchandise applications to extend the amount of applications using original photographic paper products.

Exclusive paper product development

The development team designed a new technology for high speed production of textured photographic paper. Key attributes of the exclusive photographic textured papers is easy and high speed printing (wet process) and post-processing. Recently, the textured canvas paper and velvet paper were introduced in the market. Upcoming are the textured linen and textured leather original photo papers.

Unique canvas paper design for mounted or framed wall decoration

The new Fujicolor Crystal Archive Professional Textured Paper Canvas turns photos into striking works of art. This color

paper incorporates the heirloom silver halide emulsion technology and comes with a professional coating and a unique, irregular canvas-like surface design. From now on, photo professionals can start the production of mounted or stretched canvases in silver halide photo quality with the new photo paper on the mounting systems.

Luxurious LayFlat photo books with FUJIFILM velvet photo paper

FUJIFILM also developed a new photo paper with a magnificent velvet surface for luxurious photo books and photo albums: Fujicolor Crystal Archive Professional Velvet Paper. Its professional coating with a zero-reflective top layer creates a stunningly soft and deep-matte effect. A special protective finish makes it resistant to fingerprints and the ideal material for exceptional photo books in the premium segment, e.g. wedding photography. The high-class FUJIFILM Velvet photo paper is the perfect material for producing photo books.

Paper development strategy

Development activities for Original Photopaper are mainly focussed on R2R printing and central lab operation. The Album paper (170 micron) for R2R printing was introduced in 2008 at the same time that ISAG introduced the first generation fastBook making bookblocks on a speed of 100 books per hour. In 2010, the Album HD was introduced. This paper with glossy surface incorporates the innovative toplayer technology to overcome sticky pages or blocking under extreme environmental conditions as high relative humidity and high temperature. Customer demand is more pages in a photo book so therefore development started towards Album XS paper (super thin). Album XS paper is suitable on R2R printers and post processing equipment. The outcome is a bookblock with really a “WOW” factor for print quality, haptics of pages and natural gloss in combination with more pages in a photo book in comparison with the current Original Photopaper photo book.

Conclusion

Original Photopaper is now leading the premium photo book segment and will bring Original Photopaper to the medium photo book segment. In future, central lab will be more and more important for the Imaging printing world. Producing Photo products using Original Photopaper on R2R equipment is unbeatable based on high speed, low cost and good quality. New Original Photopaper products such as Album XS will be developed at FUJIFILM specific for R2R printing equipment at central lab. Those central lab embrace the new Original Photopaper products and besides that, pure digital printing companies decide to enter the Original Photopaper production technology.