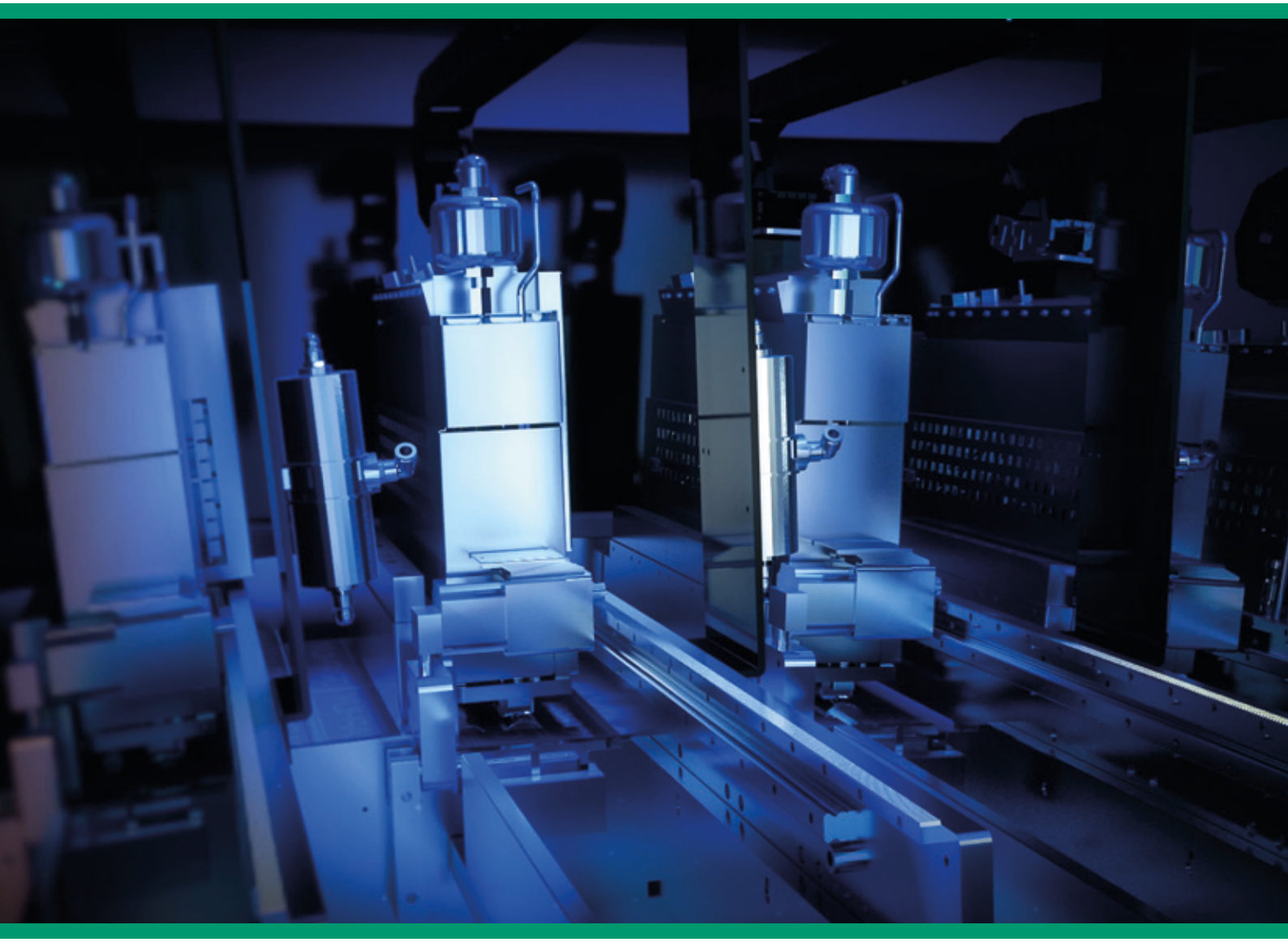
FUJIFILM



Graphium

PRODUCT BROCHURE

Versatile digital inkjet press for production of labels, packaging and speciality prints

GRAPHIUM

Economical digital label production for demanding applications

The label market, like many other print markets, is going through a process of change. Run lengths are decreasing, profits are being squeezed and the need for printers to differentiate has never been greater.

Some label printers have turned to digital print to address these issues, and toner based systems have gained some traction in this market. However this technology has a number of fundamental flaws: it can be expensive, is generally slow and the toner often has little or no physical or chemical resistance. These deficiencies can limit the suitability of toner based systems.

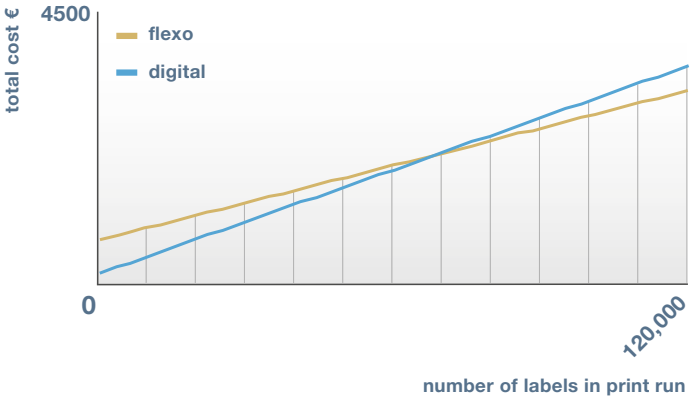
Systems using UV cured inks, on the other hand, offer many advantages. In particular, UV cured inks are more resistant to physical and chemical attack, making them highly durable, and the technology is essentially the same as that used in flexo printing today. The use of durable UV inks, when combined with a print engine that can produce ultra-high quality results at productive speeds and at an affordable price, represents a compelling package.

Graphium has been designed to fill this gap, offering ultra-high quality, economical, short to medium run label and speciality print.

Transform your business

Graphium offers a host of benefits. By improving the efficiency of short run work transferred from flexo, it can turn a time consuming loss leader into a profitable business. The time that is freed up on the flexo presses can be used for more profitable long run work, so overall capacity is significantly increased. Finally, the design flexibility offered by the digital print process can create new opportunities for versioning, variable data printing and other work that is not viable with conventional print processes.

Graphium to flexo cost crossover (single SKU)

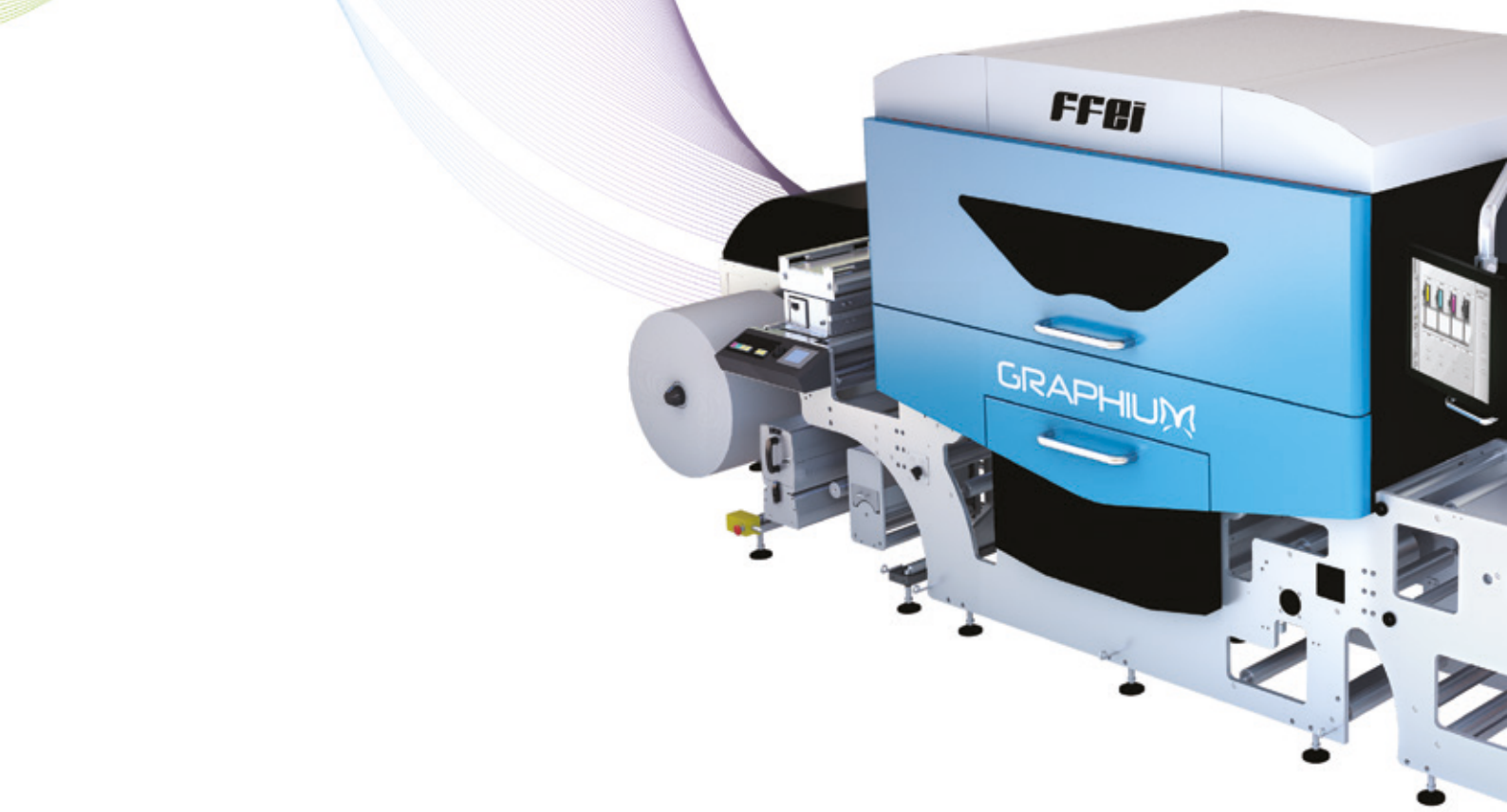


GRAPHIUM

Graphium is a high speed, five channel UV ink jet printer for label, packaging and speciality printing. It is uniquely positioned, offering ultra high quality printing at an affordable price using UV inks that are designed specifically to meet the demanding specifications of the label market.

Key features:

- 330 and 420mm versions are available, providing compatibility with existing finishing equipment
- Native resolution is 360 x 360 dpi at eight levels of grey scale, providing a visual image quality of over 1000dpi
- Durable, vibrant UV inks developed for Graphium by Fujifilm
- Custom driver electronics, data management and user interface
- FFEI Adaptive Screening for ultimate image formation without artifacts
- Intercolour UV pinning to control dot spread, enhancing image quality
- Three print modes:
  - 25 metres per minute at 360 x 360 dpi with eight levels of grey scale
  - 35 metres per minute at 360 x 360 dpi with reduced grey scale levels
  - 50 metres per minute at 360 x 180 dpi
- Suitable for most common label stock including most grades of paper, PVC and top coated polyolefins
- Modular concept allows integration of flexo printing stations before and after the digital print engine as well as on-line finishing
- Comprehensive substrate preparation including web cleaning and corona discharge treatment
- Low friction web transport design together with sophisticated anti-snaking system
- Final UV cure with dose and intensity tuned to provide optimum cure, adhesion and ink resistance properties



Transfer more jobs to digital

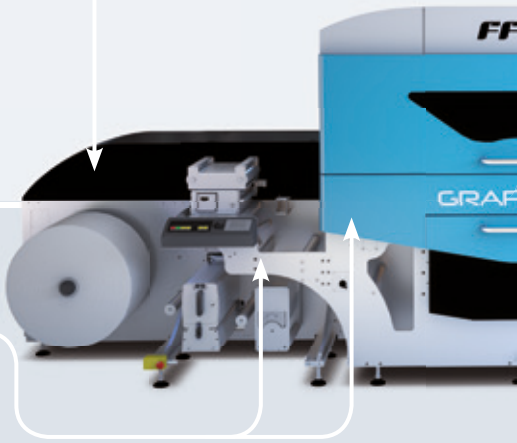
Print what you like...

Graphium's modular approach enables printers to create a digital press line to match their requirements.

Uvijet Graphium inks from Fujifilm are carefully specified and matched to the Xaar 1001 print heads to produce print with a wide colour gamut and excellent adhesion, light fastness and durability. Thanks to Fujifilm Uvijet ink technology, more pigment can be applied to the media enabling a highly opaque white ink to be printed at high speed, which is unsurpassed by any other digital process. Graphium presents a digital emulation of the qualities of traditional printing processes such as UV flexo and screen printing, allowing it to excel in the same target markets.

Transfer more jobs to digital:

- High productivity digital printing in combination with optional flexo and die cutting



Correct tools as standard:

- Web clean, corona and inter colour pinning
- Adaptive Screening Technology
- High opacity white
- Wide gamut UV ink with superior light fastness, scratch and rub resistance

...on what you like

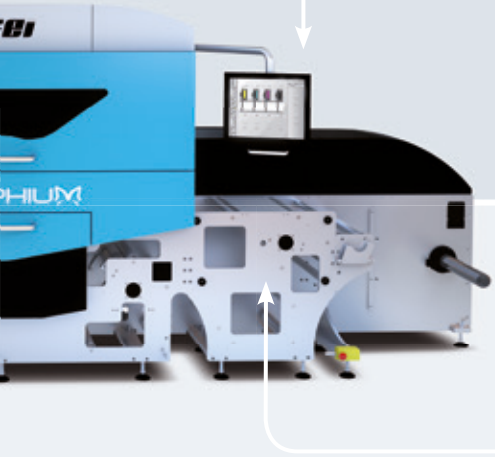
The ability to achieve consistent colour across a wide range of substrates requires more than ink and inkjet printhead.

This is why Graphium comes built with what is required for professional printing as standard. It utilises full size unwind and rewind allowing the same substrates to be used as on traditional press lines. The combination of web cleaning, corona and inter colour pinning as standard ensures substrate surface energy is consistent for jetting whether it is on paper with different surface finishes, or filmics such as PE, PET, PP, vinyl and metalised materials.

...when you want it

Print on demand, in hours not days. Customers' expectations are changing; they want smaller more frequent quantities with more variations - all produced cost effectively.

By utilising stock cutters or pre-cut label stock with highly automated pre-press tools, it is possible to produce high quality finishing and take designs from web to press in minutes not hours. RealPro Toolkit can import your existing CAD data for cutters and step 1-up automatically. Graphium's repeat length is variable so it can easily sync the job to auxiliary equipment using virtual cylinder repeats. If changes are made to a job, Graphium can stop/start without any loss of registration.



Print on demand in hours, not days:

- Reduce inventory (profitable print on demand)
- Minimise over processing (on press proofing)
- Reduce touch points (automated pre-press)
- Minimise defects and spoilage (repeatable consistent colour)
- Reduce waiting (no plates or films, no make ready)
- Minimise over production (print the exact quantities you want)

Fully modular transport options for:

- Digital print
- UV Flexo
- Aqueous Flexo
- Die cutting, slitting, embossing
- Banner printing
- Variable data print

...how you want it

Graphium automates pre-press and workflow tasks so it can handle more jobs

Graphium utilises a touch screen interface for ease of operation on the press floor. The system provides controls to perform a number of on-press tasks including job queue management, colour management, calibration and media scripts, viewing jobs, and ink usage calculations. File formats supported are PDF and CMYK TIFF.

Eliminate unwanted printing artifacts with Adaptive Screening Technology (AST)

Graphium utilises FFEI's proprietary Adaptive Screening Technology. The screening algorithms are calibrated according to the substrate type and adapted to ensure droplets behave in a predictable and precise way. This ensures the very highest levels of image quality and uniformity in inkjet printing.

Consistent quality and colour matching on every job, again and again

Graphium stores all of the press data for a particular substrate ensuring consistent print without the risk of user error. It is also designed to meet international standards for colour reproduction so colours can be accurately emulated on a proofing device. In addition, jobs can be reprinted at a later date with full confidence that colours will match the proof print accurately.

World-leading UV inkjet ink

A key factor in the growth of inkjet for wide format, packaging and industrial applications has been the ability to print with UV cured inks. This is a technology that was pioneered by Fujifilm in 1999, and one in which the company is an acknowledged world leader. Thanks to over sixty years of experience in ink design and development, the company also has expertise in designing UV inks for narrow web applications. The combination of these skills means Fujifilm is uniquely placed to develop world-leading UV cured ink for high speed digital label production.

Designing high performance UV cured inkjet inks

UV cured inks offer many advantages over traditional drying methods. In particular, UV cured inks are more resistant to physical and chemical attack, making them highly durable and superior to toner based digital printing systems. Like all the inks the company produces, Fujifilm has carefully blended a range of cosmetic, functional and operational properties to produce formulations that meet the needs of high speed digital label production.

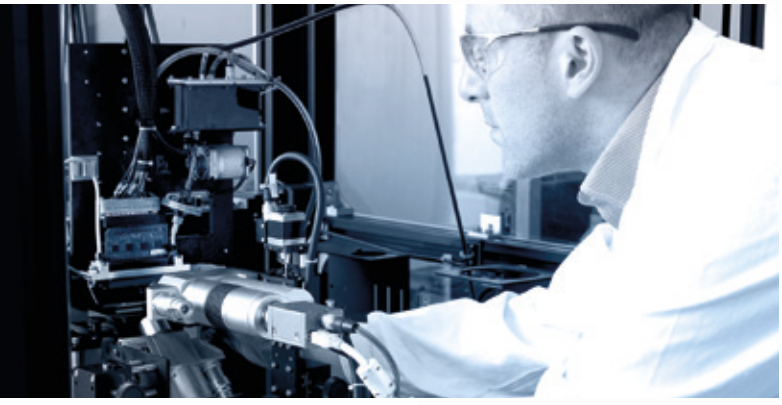
High quality, vibrant colours with excellent application properties

Fujifilm Uvijet Graphium inks are designed to allow long runs of high quality labels and self-adhesive decals to be printed with excellent adhesion, resistance and durability. This blend of properties is achieved by careful management of the complex interaction between printhead, inks, UV curing components and overall system design.

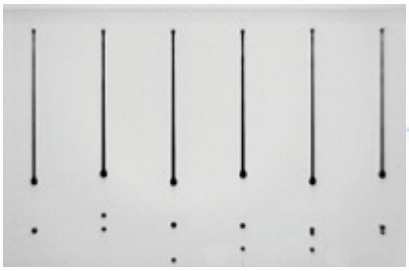
In addition to the vibrant colours, Uvijet Graphium inks also include an ultra-opaque white that can be printed at high speeds, setting a performance standard for digital label production that surpasses other digital technologies. The end result is a true digital emulation of traditional printing processes such as UV flexo and screen printing.

Summary of benefits

- Suitable for a wide range of applications, including labels and self-adhesive decals
- Excellent adhesion to a wide range of substrates, including most grades of top coated PE, top coated PP, PVC and paper
- High strength pigmentation with wide colour gamut
- High opacity white for background printing and fine detail
- Compatible with typical finishing processes including die cutting, foil blocking and embossing
- Supplied in 5kg recyclable ‘bag in a box’ containers



Fujifilm uses sophisticated equipment to optimise jetting performance



A scalable, modular system

Graphium is designed as a modular machine and its capability can be enhanced with the addition of flexo print stations and on-line finishing. With these additions, Graphium can be configured as a fully fledged on-line label conversion press.

Pre and post digital flexo stations and finishing options

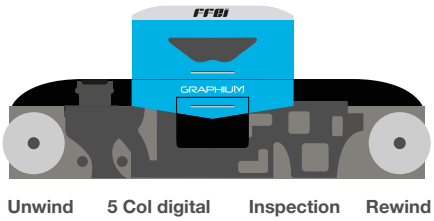
Semi rotary die cutting with matrix removal
This minimises tooling costs associated with die cutting while managing variable repeat lengths.

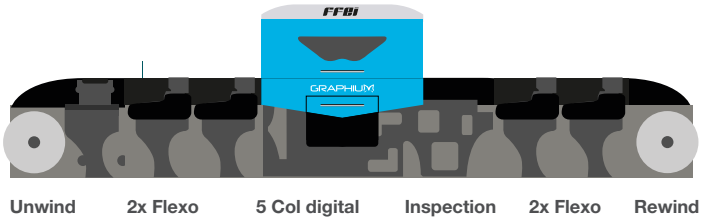
Flexo printing stations
These add flexo printing capability both before and after the digital print engine, allowing the use of a number of effects including spot colours or primers for difficult substrates.

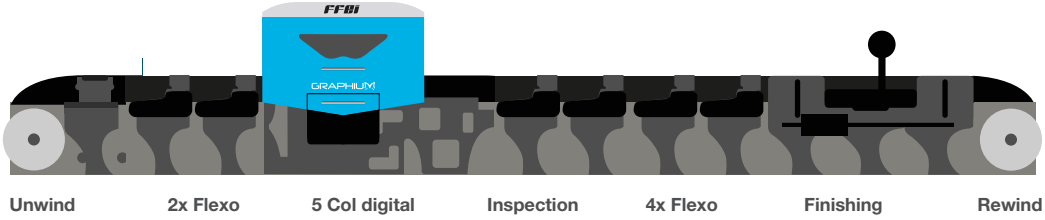
Cold foil blocking
This creates a metallic embellishment where metallic foil is applied to a flexo printed adhesive.

Lamination
On-line lamination may be included to enhance mechanical or physical abrasion as well as providing a range of surface finishes.

Slitting
Web slitting may be carried out to finish converting the web prior to delivery to the customer.







Specifications

Graphium	
Number of colours	
Min number of colours digital	4
Max number of colours digital	5 (CMYK + white)
Max number of colours flexo (Pre digital)	2
Max number of colours flexo (Post digital)	4
Total colours possible	11
Print resolutions (perceived)	
360 x 360 dpi (8 grey levels)	>1080dpi
360 x 360 dpi (6 grey levels)	>1080dpi
180 x 360 dpi (8 grey levels)	>540dpi
Image size	
Max image width 5 heads wide	330mm
Max image width 6 heads wide	410mm
Max image length	1,000mm
Max image length with banner print option	4,978mm
Speed	
360 x 360 dpi (8 grey levels)	25m/min
180 x 360 dpi (8 grey levels)	50m/min
360 x 360 dpi (6 grey levels)	35m/min
Productivity	
5 head 360 x 360 dpi (8 grey levels)	495m²/hr
5 head 360 x 360 dpi (6 grey levels))	693m²/hr
5 head 180 x 360 dpi (8 grey levels)	990m²/hr
6 head 360 x 360 dpi (8 grey levels)	615m²/hr
6 head 360 x 360 dpi (6 grey levels)	861m²/hr
6 head 180 x 360 dpi (8 grey levels)	1,230m²/hr
Ink specifications	
Fujifilm Uvijet Graphium ISO optimised UV-curable ink	cyan, magenta, yellow, black + high opacity white
Print technology	
UV inkjet DoD	Xaar 1001 with TF Technology™

Substrate	
Min thickness	40micron
Max thickness	250micron
Max substrate width	432mm
Min substrate width	216mm
Max roll diameter	1000mm
Max roll kg	400kg
Substrates	
Most grades of standard self adhesive label and packaging materials	Papers (coated, uncoated, high-gloss, cast-coated, thermal) Filmic such as PVC, PE, PET, PP, OPP and metalised material
Footprint	
Minimum footprint (no flexo/finishing units)	6800 x 4000mm
Power	
Frequency	50-60 Hz
Voltage	380 to 440V 3-phase, neutral and earth
Max power / max power consumption	65kw / 95A (TBC)
Digital front end	
Control panel	Touch-screen
Options at purchase	
5 head or 6 head print width, variable data and content printing, banner printing, pre flexo unit, post flexo unit, die cutting, RealPro Toolkit software* *Also available post purchase	
Air specifications	
Room temperature min	18°C
Room temperature max	25°C
Thermal fluctuation max	2°C/hour
Relative humidity min	25%
Relative humidity max	60%
Ambient temperature max	32°C

Please contact your local Fujifilm partner or visit www.fujifilm.eu/print

For further information:

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