FUJIFILM

FUJIFILM ELECTRONIC IMAGING LTD.

Luxel F-9000 and F-6000

Multi-laser B1 & B2 Imagesetters

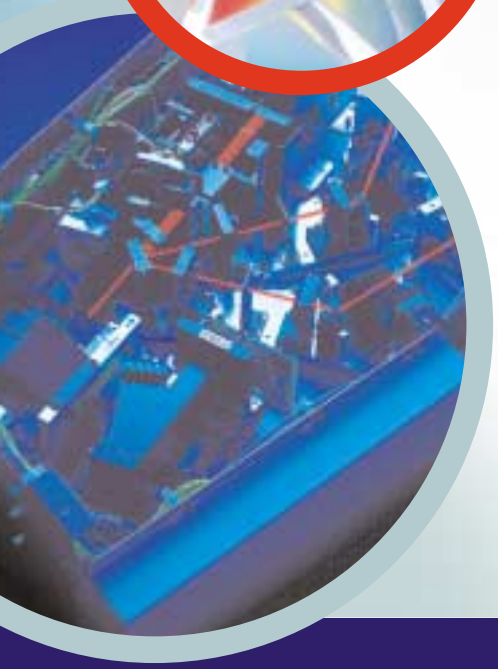
EVOLVING THE IMAGE

INPUT OUTPUT WORKFLOW

FUJIFILM

BRINGS A NE

MEMBER TO ITS



Award-winning technology

The key to the Luxel F-9000's success has been the Acousto-Optic Deflector (AOD) multi-beam technology which was originally developed by FFEI for the imagesetter. Recently awarded the sought-after 2000 GATF InterTech Technology Award, the technology brings unparalleled levels of performance to the Luxel F-9000 imagesetter. AOD is a advanced and patented multi-laser technology that is used in the Luxel F-9000, and now in the Luxel F-6000. When the multi-beam laser is combined with an internal drum configuration, the result is an unprecedented imaging speed with no cost or quality penalty.

Main Features and Functions

A safe investment

- Upgradeable on site to grow with your business

Quality of output & design

- High resolution output
- Advanced Fujifilm technology

Speed, power & productivity

- Multi-laser technology for exceptional film speeds
- Built-in redundancy with 2 and 3-laser models for continued production operation
- Automatic punching produces plate-ready positive or negative film
- Deep tank technology for faster film processing

W

FAMILY

Staying ahead in a changing industry

The graphic arts industry is witnessing unprecedented change. The role of pre-press in the path from design to print has become ill-defined as the industry rapidly advances towards an all-digital workflow. And as origination costs have fallen, there has been an expansion in demand for quality reproduction and printing. The accelerating pace of business worldwide, coupled with a growing customer awareness of the capabilities of new technology, has lead to demand for ever-shorter turnaround times, with no compromise on quality or escalation in cost.

As part of a group that spends £1 million every day on research and development, it is not surprising then to learn that we have developed the fastest and most technically advanced multi-laser imagesetters to meet – and indeed anticipate – the needs of the pre-press industry in the new millennium. The Luxel F-9000 and the new Luxel F-6000 take full advantage of our patented Acousto-Optic Deflector technology to deliver unprecedented productivity speed whilst still maintaining Fujifilm quality. With the Luxel F-9000 or the Luxel F-6000 working for you, productivity increases to exceed your customers' expectations.

Flexibility

- Choice of supporting RIPs to suit any application
- Maximum image size:
  - Luxel F-9000: 1122mm x 930mm
  - Luxel F-6000: 760mm x 630mm
- Handles a variety of film widths from:
  - Luxel F-9000: 559mm up to 1130mm
  - Luxel F-6000: 356mm up to 768mm
- Dual (Luxel F-9000) or single large capacity (Luxel F-6000) input cassettes, daylight loading and fully automatic media management

Easy to use, service & maintain

- Inverted C-drum reduces effects of stray particles and dust
- Maintenance-free spinner assembly bearings
- User-friendly, icon-driven, intuitive control interface

Reliability

- Designed for manufacture driving out complexity, designing in reliability
- In-line film acclimatisation area for optimum performance
- Guaranteed Fujifilm quality

THE RESULT OF ADVANCED TECHNOLOGY

The Fujifilm range of multi-laser imagesetters attain new level of excellence in terms of high quality film production. Quite simply, they are the fastest and most technologically advanced B1 and B2 imagesetters available in the world today.

FFEI'S UK MANUFACTURING FACILITY

THE MIYANODAI R & D CENTRE, JAPAN.

Luxel F-9000

HOURLY OUTPUT @ 2438 dpi	
1 LASER	16 B1s
2 LASERS	29 B1s
3 LASERS	38 B1s

Luxel F-6000

HOURLY OUTPUT @ 2438 dpi	
1 LASER	30 B2s
2 LASERS	51 B2s
3 LASERS	67 B2s

Multi-laser technology and micro engineering

The Fujifilm Luxel imagesetters are able to output film at astonishing speeds due to the use of a true multi-laser system within an internal drum architecture – as opposed to the more common, but speed limited, multi-beam external drum systems. Fujifilm's research engineers achieved what was thought to be impossible: a combination of inspired thinking and leading-edge engineering produced an optical system that overcame the challenge of aligning multiple laser beams that reflect off a spinning mirror.

Forward thinking....

A Controller Area Network (CAN) bus system has been implemented within the Luxel film imagesetters, a development based on the type of distributed communication systems found in prestigious motor vehicles, for example, Mercedes. This system gives "intelligence" to distributed modular parts of the Luxel F-9000 and Luxel F-6000 with many benefits in control, reliability and error management.

Reliability by design; excellence by pedigree

It took a 40-strong core development team a whole year to develop the Luxel F-9000 from an initial design concept into a rigorously tested manufactured product in an inspired joint effort between the UK and Japan. No stone was left unturned in the quest for technical excellence.

Only once the Luxel F-9000 had been launched and proven in the field to be an excellent product did the team start work on the Luxel F-6000.

Performance is nothing without reliability

The major design goals were based around performance, productivity and reliability. The result is a truly advanced machine, not only in technology but also manufacturing terms.

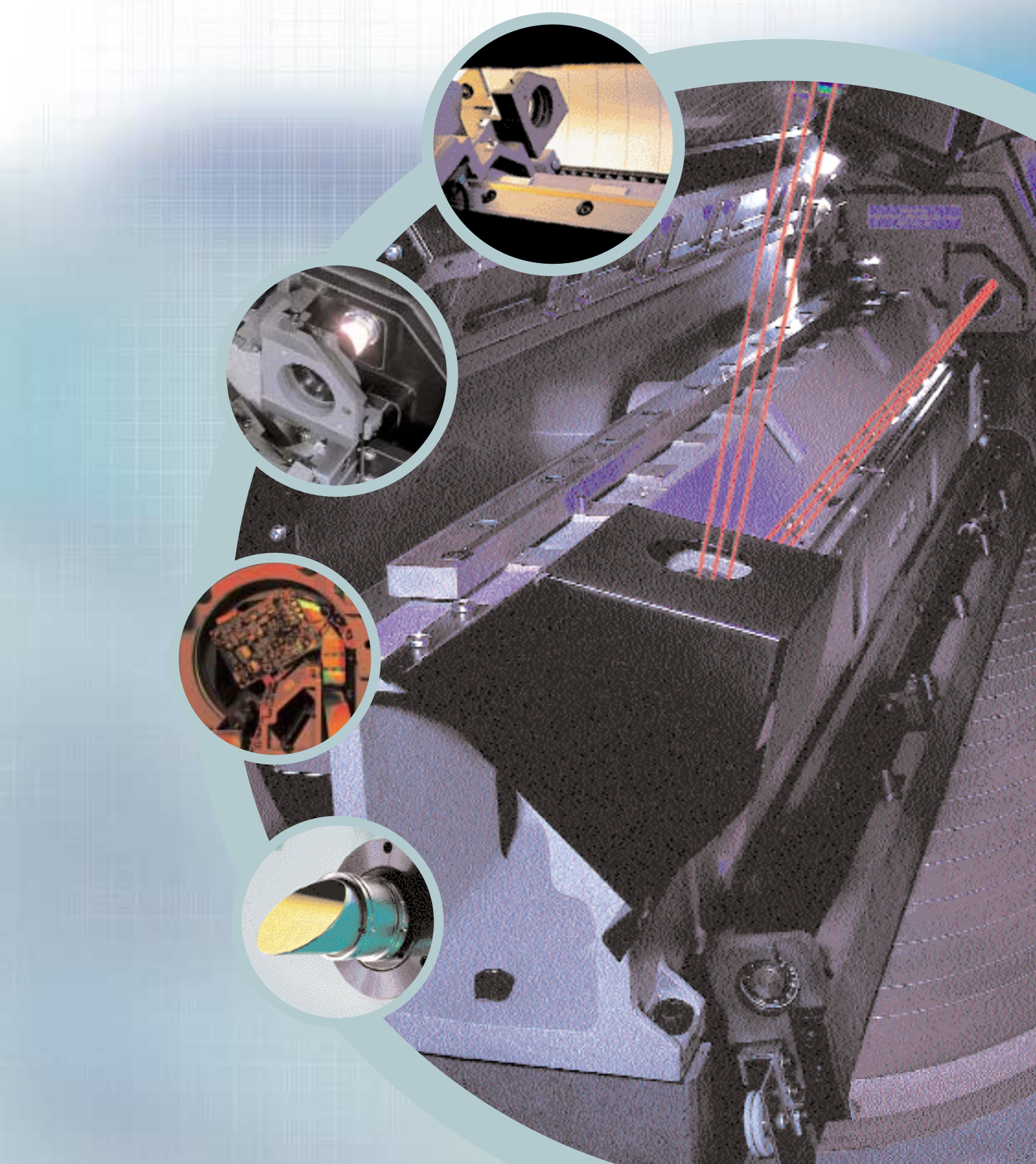
With reliability very high on the list of priorities, Fujifilm's design engineers focussed on driving out complexity by minimising the number of component parts. Fewer parts means less to go wrong and, with Fujifilm's dedication to build quality, assures a long, trouble-free working life.

The world's fastest imagesetter

Three separate lasers give the Luxel F-9000 and F-6000 extraordinary imaging speed unmatched by any other imagesetter.

An etched, gold-plated encoder keeps precise track of the spinning mirror's position and maintenance-free bearings ensure smooth tracking.

At 30,000 rpm (Luxel F-9000) and 40,000 rpm (F-6000), the spinning mirror's bowed surface flattens to give perfectly spaced dots, even at 3657 dpi.



THERE'S MORE TO THE LUXEL FILM IMA THAN MEETS THE EYE...

The Luxel F-9000 and F-6000 upgrades keep pace with your business growth

Speed

Gain a competitive edge through increased speed: the Luxel F-9000 and F-6000 have been designed to produce film at an unprecedented rate. At a standard resolution of 2,438 dpi, the single laser configuration has a production capability of 16 (30) full size B1 (B2) flats per hour for the Luxel F-9000 (Luxel F-6000). The dual laser laser 29 (51) and the triple laser an amazing 38 (67) B1 (B2) flats per hour!

Both imagesetters can image plate-ready film in all modes and can automatically punch the long edge of the film to ensure maximum registration accuracy, so saving time and money, and getting jobs to press more quickly.

Combined with a high speed film processor, output capacity is unrivalled. With the world's fastest B1 and B2 imagesetters at your disposal, you can take those "impossible" jobs in your stride.

Quality

High workload capacity has not been obtained at the expense of consistently high image quality. The Luxel F-9000 and F-6000 will image at all resolutions with a very sharp dot and precise fit.

To further ensure consistent image accuracy, an in-line acclimatisation area helps to minimise film size variations that could be caused by temperature and humidity differences.

Add to this the peace of mind of Fujifilm's reputation for quality engineering and reliability, and the Fujifilm Luxel F-9000 and F-6000 makes even more business sense.

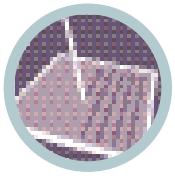
Reliability

Fujifilm's engineers designed the Luxel film imagesetters from the ground up to be a workhorse able to cope easily with long shifts, day in and day out. Because of the use of advanced technology, the Luxel F-9000 and F-6000 have been designed for manufacture and achieves its remarkable performance using less than 2000 component parts (a typical B1 imagesetter may use up to twice as many), resulting in superb reliability.

Both imagesetters have undergone gruelling tests, both during development and production, to ensure it performs in demanding print and repro environments. These include X/Y vibration tests, temperature and humidity cycling.

The end result is a product of which Fujifilm are justifiably proud and confident.

G E S E T T E R S



Ease of use

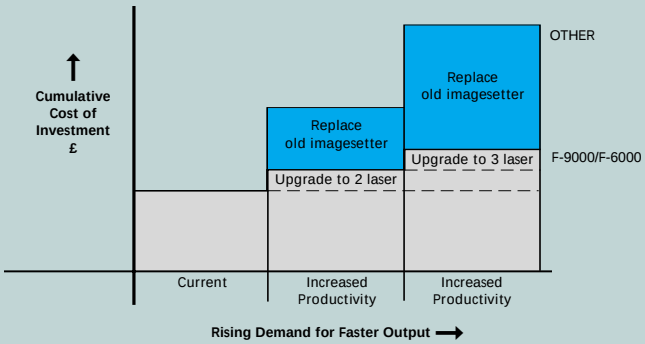
Advanced technology, and its application to simplify machine operation, was also a design goal for both imagesetters, resulting in an innovation menu-driven touch screen interface. The back-lit screen features icons and graphics for quick and easy machine operation and maintenance, and provides simple instructions for each operator task.

The inverted C-Drum design (rather than a conventional "U" shape) minimises dust build-up and contamination on the film: extraneous particles naturally drop clear of the imaging area.

In addition, any contamination on the spinner mirror is detected and automatically adjusted for. When cleaning is required, this is a simple user function.

The maintenance and serviceability of the imagesetters has been designed with the future in mind – including the capability for remote tracking, maintenance and diagnostics of machine functionality.

A SAFE INVESTMENT



Obsolescence is built-out

When your production schedule demands it, the Luxel film imagesetters will be able to keep pace since it can be upgraded to 2 or 3 laser status on site with minimal disruption to the working environment. This means that the requirement for increased productivity does not automatically mean a large capital outlay on new machinery.

Flexibility

Both Luxel film imagesetters have been designed to fit into existing production environments, with a choice of supporting RIPs and output resolutions.

The maximum imaging size is 1122mm x 930mm on the Luxel F-9000 and 760mm x 630mm on the Luxel F-6000, with capability of handling a variety of film widths from 559mm up to 1130mm on the Luxel F-9000 or 356mm up to 768mm on the Luxel F-6000. Both imagesetters can produce plate ready film for all popular press sizes with minimal film wastage in positive and negative mode.

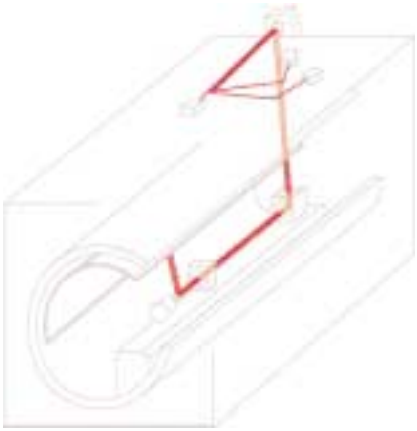
On the Luxel F-9000, dual input drop-in film cassettes (on the Luxel F-6000 there is a single large capacity cassette) make film loading fast and error-free with the option of using two different film sizes, or double the amount of one size for longer film runs. A unique cassette database identifies different film sizes and types, including the amount of film remaining, for up to seven cassettes.

As floor space is often at a premium, the good news is that Fujifilm have managed to achieve a footprint of only 2.2m^2 (Luxel F-9000) and 1.4m^2 (Luxel F-6000) which coupled with design features such as the counter balanced film cassette access door and direct, daylight film loading, means it uses up less working floorspace and is flexible enough to fit.

HOW IT WORKS

The Luxel film imagesetters are the first imagesetter in the world to use multiple lasers to image film simultaneously.

In order to create this breakthrough, Fujifilm's engineers had to overcome the problems of maintaining the integrity of two or more parallel laser beams when they are projected on to a spinning mirror in the centre of an imagesetter drum. Under normal circumstances, and without special processing, the laser beams would tend to 'tangle' as they reflected off the mirror. The implementation of Fujifilm-patented AOD (Acousto Optic Deflector) technology keeps the lasers perfectly aligned by controlling the refractive index of elements in the lasers' paths.



The laser path

The laser sub assembly is located above the C-drum and contains one, two or three separate lasers: each laser is carefully aligned and calibrated. The beams pass through a series of lenses, mirrors and prisms and exit through the main lens/prism unit at the end of the laser sub assembly housing.

The beams are reflected twice to hit the spinning mirror, which travels the length of the drum's axis.

The spinning mirror is slightly bowed when stationary but G-forces at 30,000 (40,000 on the Luxel F-6000) rpm flatten it to present a perfect optical surface. Each beam hits the spinning mirror at a slightly different angle, which is part of the secret of its unique ability to image using multiple lasers.

The spinner carriage is mounted on a track which uses special maintenance-free bearings. Its location is precisely monitored using a reference strip whose top surface is made of gold, finely etched with position markings.

The Luxel F-9000 and F-6000 has been designed to use the minimum of floorspace.

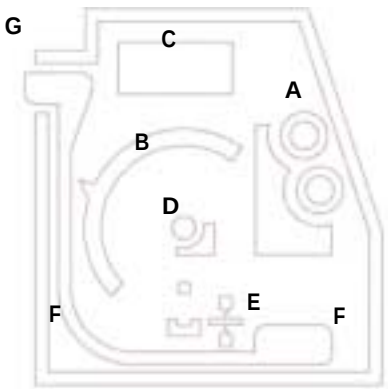
F-9000

Film is loaded directly into either of the cassettes (A). Film feeds into the C-drum and is held in place by vacuum and punched ready for imaging (B). The laser beams exit from the optics section (C) are reflected through 180° by 2 stationary mirrors to the spinning mirror (D), which images the film. After exposure, the film is carried to the punch/guillotine assembly (E) then is guided under the drum into the film output path (F) and exits the imagesetter at (G) where it is taken into the AP-1250X, a fast, deep tank processor which has been specially developed for use with the Luxel F-9000.

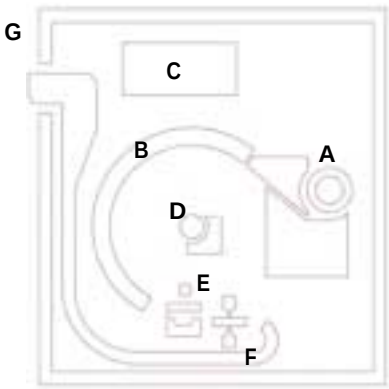
F-6000

Film is loaded into the cassette (A). Film feeds into the C-drum and is held in place by vacuum and punched ready for imaging (B). The laser beams exit from the optics section (C) and are reflected through 180° by 2 stationary mirrors to the spinning mirror (D), which images the film. After exposure, the film is carried to the punch/guillotine assembly (E) then is guided into the online film processing path under the drum (F) and exits the imagesetter at (G) where it is taken into a fast, deep tank processor which has been specially developed for use with the Luxel F-6000.

Luxel F-9000



Luxel F-6000



LUXEL F-9000

F-9000's multi-laser sub assembly

The three lasers fire through a series of precision optical elements before the beams pass down to the imaging mirror inside the drum.

S P E C I F I

Performance

Luxel F-6000

- B2 +
- Maximum media size: 768mm x 686mm (30.2" x 27")
- Maximum imaging size: 760mm x 630mm (29.9" x 24.8")
- Full size plate-ready film in positive and negative modes
- Media Widths: 768mm (30.2"), 720mm (28.3"), 670mm (26.4"), 559mm (22"), 520mm (20.5"), 356mm (14")
- Media Thickness: 0.1mm (0.004") and 0.18mm (0.007") - clear and matt
- Media Supply: High Capacity Input Cassette; cassette database for up to 7 cassettes; drop-in daylight loading

Luxel F-9000

- B1+
- Maximum media size: 1130mm x 930mm (44.5" x 36.6")
- Maximum imaging size: 1122mm x 930mm (44.1" x 36.6")
- Full size plate-ready film in positive and negative modes
- Media Widths: 559mm (22"), 670mm (26.5"), 768mm (30"), 914mm (36"), 1067mm (42"), 1130mm (44.5")
- Media Thickness: 0.1mm (0.004") and 0.18mm (0.007") - clear and matt
- Media Supply Dual Input Cassettes: cassette database for up to 7 cassettes; drop-in daylight loading

Punching options

- Billows; standard and US Bacher; Stoesser; Kamata. Custom options available

Resolutions & imaging speed

Luxel F-6000

Resolution	Resolution	Raw imaging speed (cm^2/min)		
Dpi	l/mm	1 laser	2 laser	3 laser
1200	47	5362	10723	16085
1219	48	5250	10500	15750
1800	70	3600	7200	10800
1828	72	3500	7000	10500
2400	94.5	2667	5333	8000
2438	96	2625	5250	7875
2540	100	2520	5040	7560
3657	144	1750	3500	5250

Luxel F-9000

Resolution	Resolution	Raw imaging speed (cm^2/min)		
Dpi	l/mm	1 laser	2 laser	3 laser
1200*	47	5906	11811	17717
1219	48	5813	11625	17438
1800*	70	3937	7874	11811
1828	72	3875	7750	11625
2400*	94.5	2953	5906	8858
2438	96	2907	5813	8719
2540*	100	2790	5580	8370
3657	144	n/a	3875	5813

*Under development -availability TBA

C A T I O N S

Technology

Imaging

Precision engineered internal inverted C-drum

Upgradeable advanced multi-laser technology

High speed spinner control

Fully automatic film handling and transport

Light sources

Red laser diode 635 nm wavelength

User Interface

Innovative touch screen control panel

Software support

Choice of RIPs:

Celebrant Extreme, Valiano ROOM and HQ RIP

RIP-recorder interface

Ultra wide SCSI

Processor

Luxel F-9000: AP-1250X high speed deep tank processor

Luxel F-6000: AP-800A high speed deep tank processor

Media Types

Red sensitive roll-fed

Fujifilm HQ – HXR/HSR film

Environment

Optimum performance range:
23°C ± 2°C; 55% RH ± 5%

Operating tolerance: 18° - 29°C;
20 – 70% RH, non condensing

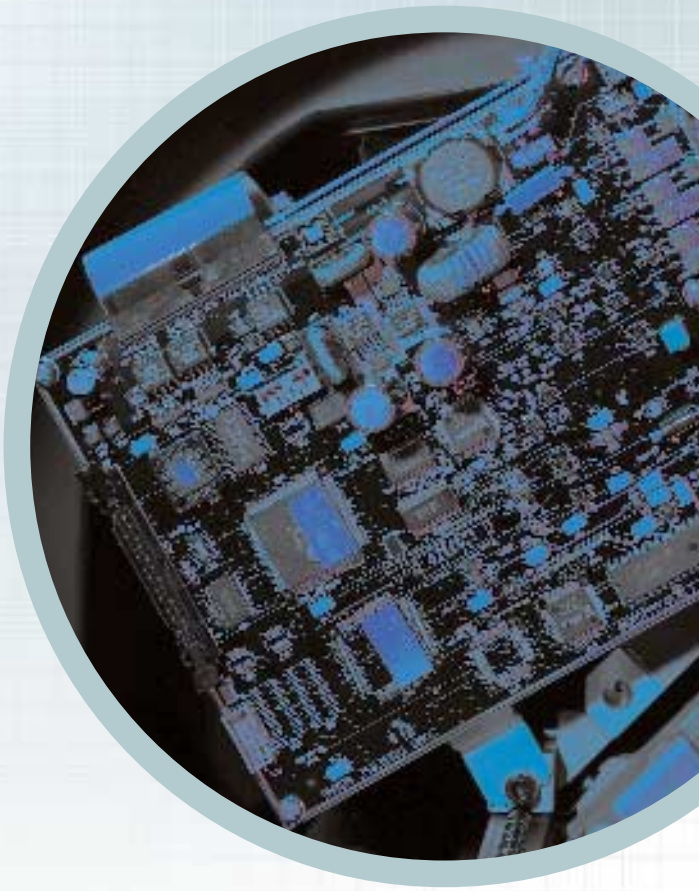
Footprint (imaging unit)

Luxel F-9000 Dimensions:
1400 x 2000 x 1100mm (hwd);
55 x 79 x 43" (hwd)

Weight: 840kg / 1848lbs (approx)

Luxel F-6000 Dimensions:
1200 x 1600 x 900mm (hwd)
47 x 63 x 35.4" (hwd)

Weight: 450kg / 990lbs (approx)



PROCESSOR FOR
LUXEL F-9000
AP-1250X

HIGH SPEED DEEP TANK PROCESSOR

Transportation speed

168cm/mm (66") at 15 sec. dev. time.

Materials

Fujifilm HQ System.

Tank contents

Dev: 40 litres (11gal)
Fix: 40 litres (11gal)

Washsection 1: 15 litres (4gal)

Washsection 2: 15 litres (4gal)

Power consumption

Max. 7,000 Watt at 230V

Weight (net)

Non crated: 225kg (495lbs)

Standard accessories

Developer filter, closed stand, rack drip tray, process management system, dual wash rack, timer auto start, service manual, spare part kit, installation parts kit and user manual.

Optional accessories

Drip tray below processor, rack hoist, plumbless water installation, multicycle water, multiclean air, charcoal filer, multialarm, replenish containers 2 x 30 litres on trolley, waste containers 2 x 30 litres on trolley, fume exhaust hose, two room installation kit and water panel (USA only).

Deep Tank Processing

Luxel F-9000's on-line processor has been specially designed using new deep tank technology to process film at speeds that match its ultra fast imaging capabilities.

Fujifilm recommends the AP-1250X deep tank processor for the Luxel F-9000 and the AP-800A for the Luxel F-6000. The AP-1250X produces consistently high quality film output, including highly accurate temperature control, uniform transport speed and extra drying capacity to complement the inherent quality features of the Luxel F-9000.

As an operator, cost is always a major factor within the buying decision process. In-built economy features such as a double wash section and anti oxidation covers makes the AP-1250X a great choice.

Its fast warm-up time, efficient dryer and electronic monitoring of uniform feeding speed means that not only is it one of the most flexible processors on the market, it is also one of the fastest.

The Luxel film imagesetters are class-leading products and as such deserve only the best. Fujifilm's HQ system consumables and the range of Fujifilm RIPs offer the total solution.

PROCESSOR FOR LUXEL F-6000 AP-800A

HIGH SPEED DEEP TANK PROCESSOR

Transportation speed

21mm/sec at 20 sec.dev.time

Materials

Fujifilm HQ System

Tank Contents

Dev 18.7 litres (5gal)

Fix & Wash 18.2 litres (4.9 gal)

Power consumption

Max. 5,040 WATT at 240V

Dimension

Height: 1167mm (46.85")

Width: 1230mm (48.42")

Depth: 1230mm including basket (48.42")

Weight

240kg (528lbs) Dry

310kg (682lbs) inc. chemistry

Standard accessories

Developer filter, closed stand, rack drip tray, process management system, timer auto start, service manual, spare part kit, installation parts kit and user manual.

Making the most of the Luxel film imagesetter's speed and quality

Fujifilm HQ System*

Combining the quality of manual film making with the efficiency of full-page laser output, the Fujifilm hard dot HQ System delivers consistent results, time after time. Especially developed to match the performance of the Luxel film imagesetters, HXR includes the following benefits:

- Extremely sharp dots and lines
- High D-max – a high density film image that ensures flawless transfer to the printing plate
- Superior linearity – outstanding developing characteristics that require little or no linear correction of the recording equipment

Fujifilm RIPs

Fujifilm's range of leading edge, high speed RIPs provide a choice of options to meet individual business needs – precisely.

Celebrant Extreme RIP*

Developed in conjunction with Adobe, Celebrant Extreme is a genuine Adobe® Postscript® 3™ PDF workflow solution.

Valiano ROOM RIP*

A 'Rip Once Output Many' RIP is available for use with the Luxel film imagesetters.

Harlequin RIP

A proven RIP based on the Harlequin® Scriptworks® technology. It's fully featured and remarkably easy to set-up and operate.

* Refer to separate specification sheets for further details

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