



Transform Any Flexo Press To LED-UV Curing

Illumina LED Retrofit System

Product Guide



Why Fujifilm?

Fujifilm believes that our collective future of print is based on dynamic collaboration. Therefore, you deserve a partner who understands where you have been, where you are currently, and where you want to go. Fujifilm's business is anchored to the traditions of our industry and the historical relationship we have with the print community. When we combine our history of innovation and our commitment to product development with our enthusiasm for our customers' success, together we can achieve any vision you have for your company.



History of Innovation

The Fujifilm difference is supported by 4 pillars of strength. Our long history and countless milestone achievements are proof of both our longevity and dedication to this amazing industry. Fujifilm grew up in this business and there is no substitute for the collective experiences we have had and the depth to our understanding of the business. Our portfolio truly spans the entire print industry and is purely the result of the other pillars. Our history of innovation drives a culture of progress.

Global Strength

The culture within Fujifilm is rooted in respect and innovation. The care with which we engage clients and investment in solutions has been critical to our ability to create advances in technology and infrastructure. Being devoted to traditional business processes allows us to align with traditional hierarchy while also being innovative and disruptive. Our approach is born from mutual respect for others and a willingness to drive change.

Local Partner

Fujifilm Graphic Communication Division (GCD) is full of passionate team members. While globally, Fujifilm invests in Research & Development at a frenetic pace (\$7 million dollars per day), locally, Graphics Communication Division (GCD) embraces a culture of relentless service & support. When it comes to innovation, we develop all our technology in house including printheads, inks, inkjet technology and image processing systems. And there is no better place to witness this than our remarkable Innovation Lab. Located in our North American Headquarters in Hanover Park, Illinois, just 30 minutes west of Chicago, the Fujifilm Graphics Innovation Hub (GIH) is here to showcase for you the newest innovations from Fujifilm's Graphic Communication Division. The GIH demonstrators have industry experience and are experts in the operation and use of our print equipment.

Broad Portfolio

The Fujifilm portfolio is broad and is the result of our history of innovation, our corporate reach, and our local connections. The breadth of our portfolio aims to fulfill every sector of the print market and continues to grow as our customer's needs grow. We aim to support the most progressive leaders, the maniacally detailed operators, the environmentally conscious, and the creatives that realize the impact that print can have on brand equity.



Transform virtually any flexo press



Boost productivity and reduce cost with UV-LED

The Illumina LED Retrofit System converts any traditional UV or waterbase flexo press to LED-UV curing, typically in less than a day and enjoy these incredible productivity and cost-saving benefits:

- Ultra low temperature provides reduced operating costs and improves press productivity
- High-dosage and dwell time increases production speeds, curing time and adhesion
- The industry's lowest energy consumption available for initial production or by retrofit
- Additional savings and benefits including environmental aspects, reduced labor and waste

FUJIFILM UV-LED has the power to revolutionize the flexo industry.

Fujifilm's UV-LED curing system is the most efficient on the market, enabling flexo printers to increase production speeds, reduce operating costs and enter new markets with their existing presses.

This innovative breakthrough technology is a UV-LED curing system that can convert virtually any traditional UV or waterbase flexo press to UV-LED curing, or can be installed on a new flexo press. When Illumina is combined with Fujifilm's 300 Series UV/LED inks specifically designed to optimize performance, printers enjoy a seamless solution.

In contrast to conventional LED systems, the Illumina COLDCURE system generates almost no heat. This allows production of even high percentage shrink films without the investment and maintenance of chill drum systems. Reduced heat also allows 60% faster registration of thin film substrates, saving material and labor costs, and further increasing productivity. Heat reduction also extends the life of the LED lights as heat is the primary cause of LED light degradation.

Reduce utility energy cost by up to 80% to 95%

Low Energy Requirements

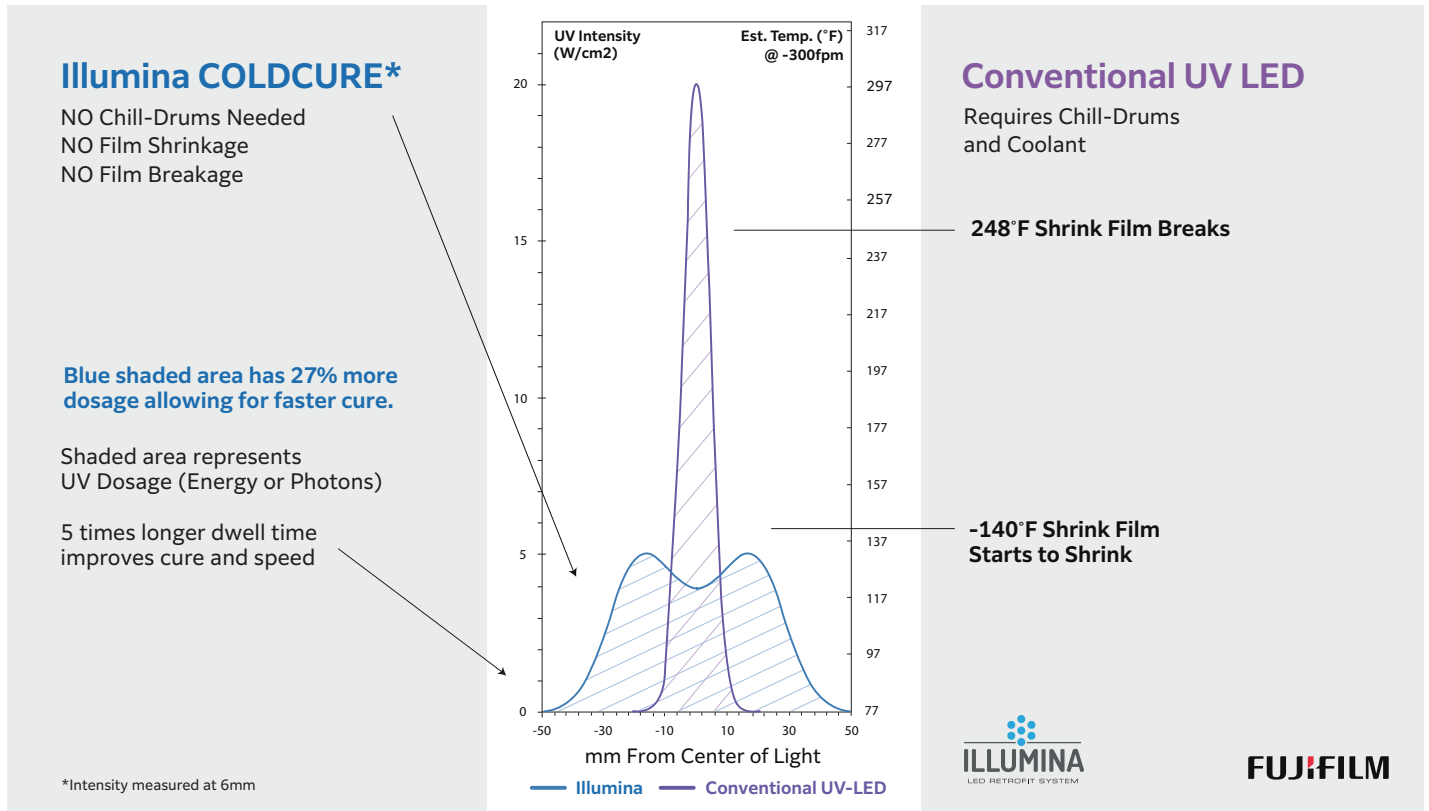
UV-LED is an instant on/off process, dramatically lowering the energy usage and stress on lamp bulbs experienced in conventional "always-on" UV mercury lamp curing. UV-LED also eliminates the costs generated by cooling air blowers, ozone extraction and heat makeup systems.

Illumina employs additional patented and patent-pending technology to achieve even greater savings, resulting in significant savings per press per year:

- 80-95% less energy than convention UV arc
- 50% less energy than conventional LED
- Eliminates cost of exhaust system
- Reduces ambient air cooling costs
- Qualifies for energy reduction rebates in many localities

Illumina's ultra-efficient design takes full advantage of the latest LED ink technology, including the breakthrough Fujifilm 300 Series flexo ink system that performs under both UV-LED and conventional UV-arc curing. Illumina also provides the longest operating lifetime of any LED-curing technology on the market. The system's higher efficiency, combined with a patented heat dissipation system, dramatically reduces chip degradation over time. The result is a lamp life expectancy that is more than 20 times that of traditional UV mercury lamps.

UV-LED Energy Profile for Flexo Printing



As illustrated in the chart above, the UV dosage of the Illumina COLDCURE process is below the 140°F indicator line where shrink film begins to shrink, so heat and its effects are taken out of the equation. The COLDCURE benefits of Ultra Low Temperature plus High Dosage and Dwell Time are numerous.

Ultra Low Temperature Advantages

- Prints heat sensitive films without chill drum rollers
- Eliminates condensation issues
- Lengthens life of LED lights
- Eliminates substrate distortion to improve registration
- Improved substrate stability resulting in controlled ramp-up speed
- Eliminates post print curl of laminated labels

High Dosage and Dwell Time Benefits

- 30% to 50% faster production speeds than conventional UV
- 100% faster than waterbase printing on paper substrates
- Improved adhesion range on variable substrates



Annual Average Operating Cost Comparison

Category	Elements Included	UV Arc Lamp	Illumina
Replacement Parts	Reflectors, lamps	\$6,400	\$0
Maintenance Expense	Shutter operating, ductwork, plenum, filter for cooling agent	\$1,450	\$50
Utility Costs	UV lamps, cooling air blower, ozone extraction system, heat makeup air power	\$23,375	\$1,300
Total Annual Costs Per Production Line		\$31,225	\$1,350

Other Savings and Benefits

- Reduce material waste and labor cost by 60%
- Eliminate noise from exhaust system
- Lower odor ink than UV or waterbase
- Small equipment footprint
- Eliminate VOC and Mercury as required with conventional UV arc



**Get up to speed in one day.
See the difference right away.**

A typical Illumina retrofit takes less than a day followed by ink and substrate testing. By the second day, you'll be in full UV-LED production mode. Illumina's cold-cure technology sets a new standard for Screen Printing registration accuracy on heat sensitive substrates, so you can make up for the limited downtime to convert to Illumina in almost no time at all.

To learn more about the benefits of the Illumina LED Retrofit System, contact your Fujifilm representative or call/email us using the information below.

Remove any remaining guesswork with inks designed specifically for UV-LED systems.

Fujifilm's 300 Series flexo and rotary screen inks were developed in conjunction with the Illumina COLDCURE system to optimize the performance of the system. A full range of inks including adhesives, coatings, expanded gamut process colors, fluorescents, metallics and extended life pigment inks are available. By knowing that the inks will work seamlessly with the Illumina system, printers can experience low risk and easy conversion to UV-LED.

Fujifilm is the only LED system AND ink package provider in the industry, both supported with our world-class service organization.

Duracal UV LED LDCL

UV Curing Ink System for Long Term Decal

Printers specializing in the long-term and OEM decal markets recognize the importance of producing a consistent quality product for a demanding market. Fujifilm has combined decades of experience in developing UV screen printing inks with the exacting requirements of the Fleet and OEM markets to engineer the ideal ink system for these applications. With the addition of UV LED Cure inks, the Duracal inks are now in transition to the LDCL item numbers with are curable with both traditional lamps and new LED lamps.



A close-up photograph of a pink flower, likely a chrysanthemum, with many layers of petals. The petals are a vibrant pink color and are arranged in a dense, circular pattern. The background is a soft, out-of-focus light pink and white.

Transform **virtually any** **screen printing** **production line**

Boost productivity and reduce cost with UV-LED

The Illumina LED Retrofit System converts any Screen Printing production line to LED-UV curing, typically in less than a day and enjoy these incredible productivity and cost-saving benefits:

- Ultra low temperature provides reduced operating costs and improves press productivity
- High-dosage and dwell time increases production speeds, curing time and adhesion
- The industry's lowest energy consumption available for initial production or by retrofit
- Additional savings and benefits including environmental aspects, reduced labor and waste

FUJIFILM UV-LED has the power to revolutionize the screen printing industry.

Fujifilm's UV-LED curing system is the most efficient on the market, enabling printers to increase production speeds, reduce operating costs and enter new markets with their existing presses.

This innovative breakthrough technology is a UV-LED curing system that can convert virtually any traditional UV Screen Printing Production line to UV-LED curing. When Illumina is combined with Fujifilm's LDCL Series or LGSO Series UV/LED inks specifically designed to optimize performance, printers enjoy a seamless solution.

In contrast to conventional LED systems, the Illumina COLDCURE system generates almost no heat. This allows production of heat sensitive substrates without fear of registration issues due to heat related shrinkage. Reduced heat also allows faster registration of thin film substrates, saving material and labor costs, and further increasing productivity. Heat reduction also extends the life of the LED lights as heat is the primary cause of LED light degradation.

Reduce utility energy cost by 80% to 95%

Low Energy Requirements

UV-LED is an instant on/off process, dramatically lowering the energy usage and stress on lamp bulbs experienced in conventional "always-on" UV mercury lamp curing. UV-LED also eliminates the costs generated by cooling air blowers, ozone extraction and heat makeup systems as they are not required for Illumina.

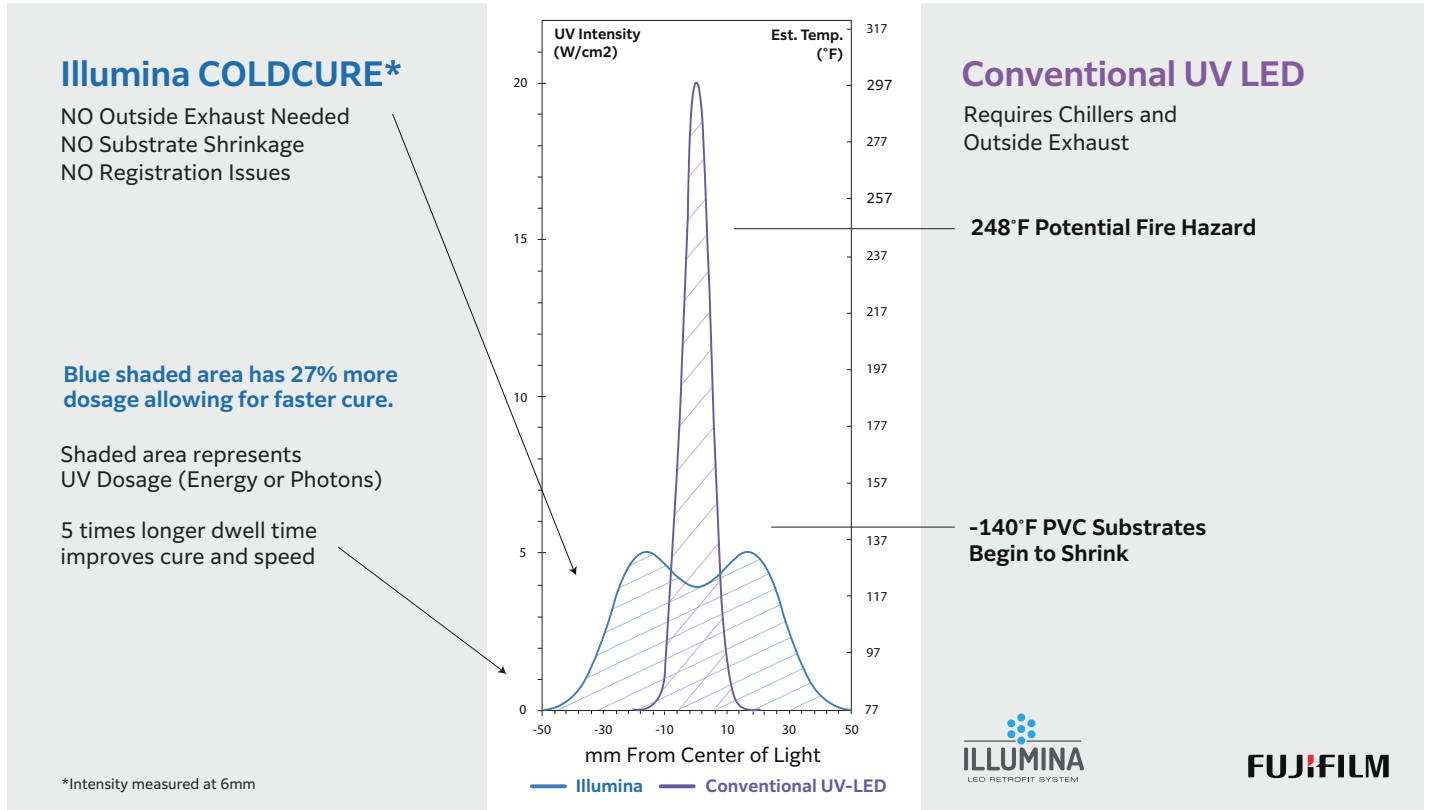
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Illumina also provides the longest operating lifetime of any LED-curing technology on the market. The system's higher efficiency, combined with a patented heat dissipation system, dramatically reduces chip degradation over time. The result is a lamp life expectancy that is more than 20 times that of traditional UV mercury lamps.

UV-LED Energy Profile for Screen Printing



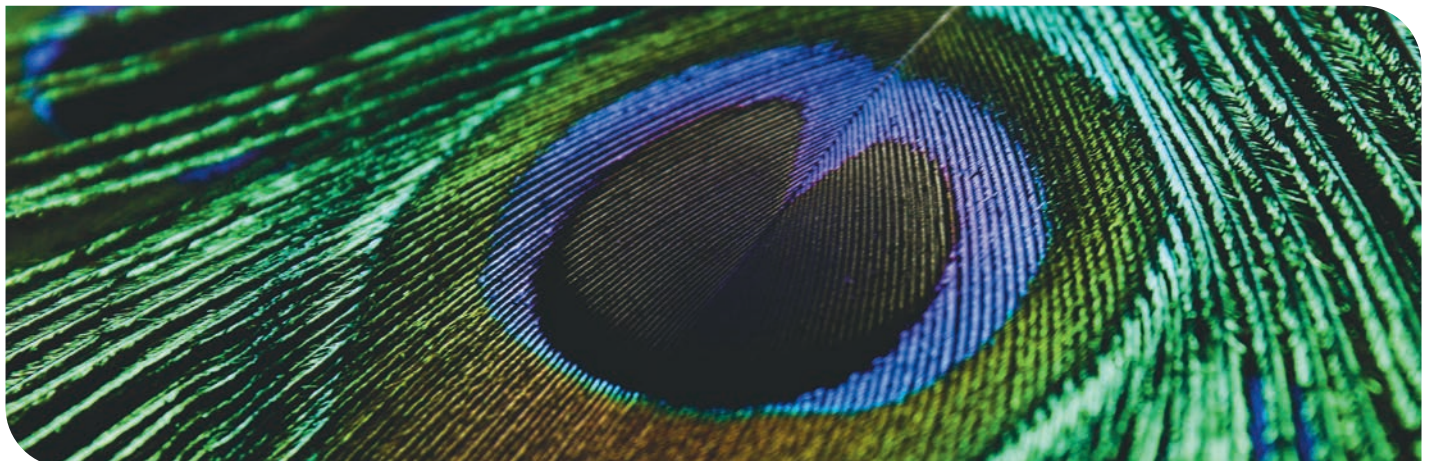
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Ultra Low Temperature Advantages

- Cure heat sensitive substrates without chillers and outside exhaust venting
- Eliminates condensation issues
- Lengthens life of LED lights
- Eliminates substrate distortion to improve registration
- Improved substrate stability resulting in a controlled ramp-up speed
- Eliminates post print curl of heat sensitive substrates

High Dosage and Dwell Time Benefits

- 30% to 50% faster production speeds than conventional UV
- Able to cure opaque colors and thicker ink films at speed
- Improved adhesion range on variable substrates
- Cure opaque whites and blacks more effectively



Annual Average Operating Cost Comparison

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Other Savings and Benefits

- Low heat, low air exchange, for clean room applications
- Eliminate noise from exhaust system
- Reduce HVAC costs
- Small equipment footprint
- Eliminate VOC and Mercury as required with conventional UV arc
- Unique lamp architecture - 10 in. to 80 in. wide



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Duracal UV LED LDCL

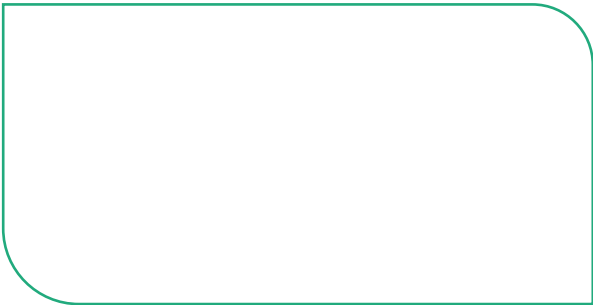
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Find more information at:
print-us.fujifilm.com



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