



**Kodak** Flexcel  
Direct System

**Expand**  
your capabilities and be Direct!

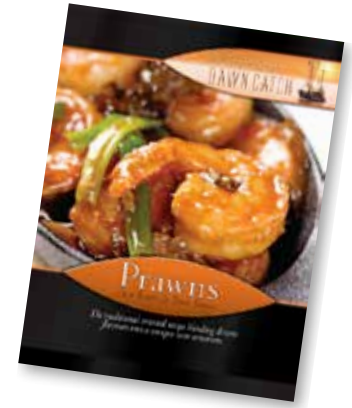
# Expand capabilities and exceed expectations

Economic and efficient in-the-round (ITR) print form manufacturing is now available to the flexo industry. The **Flexcel** Direct System gives Kodak customers access to in-house creation of continuous image carriers that will expand their capabilities and exceed their customers' expectations. The **Flexcel** Direct System uses no solvents, has a low cost of ownership and integrates with current **Kodak Prinergy Powerpack** Workflow to produce continuous in-the-round sleeves and flat plates. Unique laser technology, fast engraving speed, a small footprint and predictable image quality enables customers to expand production capabilities to include ITR sleeves which can lead to new business.

## Who can benefit from the Kodak Flexcel Direct System?

The **Flexcel** Direct System is ideal for both printers and prepress service providers. For those who are new to form manufacturing it provides a simple, robust solution for production of ITR sleeves and flat plates that eliminates the multiple steps of UV exposure and chemical or thermal processing. The system has been designed to include software and laser engraving technology that is user friendly and provides a very smooth transition to in-house sleeve and flat plate manufacturing.

For those who already have a demand for continuous images, or for those wanting to take advantage of in-the-round technology benefits, the **Flexcel** Direct System is a natural choice for simplicity and quality.



## COMPLETELY INTEGRATED TURNKEY SOLUTION

### Kodak Flexcel Direct Imager



The **Flexcel** Direct Imager utilizes Kodak's proven high-resolution multi-channel laser diode array technology to directly engrave elastomer material for flexographic printing. This versatile device has been designed to combine a high power laser system for maximum productivity with accurate 3D engraving for excellent printing performance. The imager can be used to engrave continuous sleeves to a maximum width of 1.6 m (63") and maximum repeat of 1067 mm (42"). The unit is energy-efficient, ergonomic and simple to operate, and comes with an extraction unit to collect process waste.

### Kodak TIFF Front End Software with 3D workflow

Powerful **Kodak** TIFF Front End Software drives the **Flexcel** Direct Imager and provides both layout and preview features for continuous sleeve workflow. It enables automatic converting of industry-standard 2D TIFF files to the 3D TIFF file required to drive laser engraving. The conversion results in features that are unique to digital direct engraving, such as variable shoulder angle and undercuts of small features. Pre-defined qualified 3D conversion sets allow immediate use in a variety of applications.



### Kodak Flexcel Direct Flexographic Media



#### Kodak Flexcel

Direct Flexographic Media is formulated to maximize engraving speed on the **Flexcel** Direct Imager and deliver outstanding print performance on press. The combination of media and laser technology results in engraving speeds that are designed to be 50% faster than traditional laser engraving systems. The elastomer is designed to resist chemical attack, promote excellent ink transfer and ink density, and is highly durable. The combination of the printing form, accurate engraving, and qualified 3D conversion sets deliver high-quality print results for both process and solid images.

### System Ancillaries

Additional system ancillaries are available to enable sleeves to be loaded, unloaded and transported by a single operator, and to enable flat plate handling and engraving.

# INNOVATION THAT DELIVERS

## Unique imaging technology

Key to the many features and benefits of the **Flexcel** Direct System is the unique laser imaging technology employed in the imager. Kodak's proven multi-channel laser diode imaging technology is more accurate and faster than traditional direct laser systems. It provides higher resolution engraving, uses more laser power, is significantly more energy efficient and requires less power consumption and chilling during operation.

## Cost-effective and productive

In addition to the lower cost of ownership and faster engraving speed of Kodak's unique laser imaging technology, the complete **Flexcel** Direct System has been designed with efficiency and productivity in mind. **Flexcel** Direct Media is optimized to the imaging system for maximum engraving speed, and the imager is designed to minimize downtime with rapid changeovers of sleeves. To keep production running even in the unlikely event of laser failure, the redundancy engineered into the laser system enables the imager to continue operation until replacement is convenient. Additionally, a laser diode is a fraction of the cost of a traditional direct laser source.

## Process control

Superior process control is achieved by eliminating unnecessary steps, removing potential sources of variability and automating processes where possible. The **Flexcel** Direct System eliminates many of the steps traditionally associated with photopolymer processing and replaces them with a simple two-step engrave and rinse process. Moreover, automatic built-in laser calibrations, high-accuracy laser control, precision dynamic autofocus and automatic defect detection in the imager help ensure consistent, repeatable engraving. The automatic file conversions in the **Kodak** TIFF Front End Software reduce the potential for errors.

## With simplicity in mind

For rapid ramp-up to full production following installation, the **Flexcel** Direct System is delivered as a complete integrated solution with components that are designed to perform optimally together for productivity and print performance. A pre-defined set of standard 3D techniques for a range of print applications are delivered in the **Kodak** TIFF Front End Software for superior print performance right out of the box. The imaging device itself

has been designed for rapid operator familiarization, with intuitive interface and simple mechanical loading and unloading mechanisms for the sleeves.

## Superior print quality

The unique 3D structure created during engraving results in image features that are optimized for printing:

- Variable shoulders with increased slope angle at the surface create sharp images.
- Precision undercuts minimize the stress on small features, resulting in clean highlights with low tendency for wear.
- The sculpted base of the features provide maximum support during printing.
- Accurate, controlled relief depth results in a print form that remains cleaner during printing.
- The highly engineered elastomer provides excellent ink transfer and laydown with a variety of substrates and inks.

These distinct characteristics deliver enhanced print quality and increased stability. Open shadows, clear highlights, clean text, smooth vignettes and uniform ink laydown (including reverses) are made possible with the **Kodak Flexcel** Direct System.

Kodak continues to bring game changing technology to the packaging industry. From innovative software to image carrier solutions, this is the new Kodak. Find out if the **Flexcel** Direct System is right for your operation. The technology is now affordable, convenient and ready to help you expand your market offerings. Never before has it been so easy to go Direct. Call your Kodak sales professional for the new look of **Flexcel** Direct!



# Kodak Flexcel Direct System

Physical characteristics		Weight
Imager dimensions (H x W x D)	1,353 x 3,300 x 1,336 mm (53.3 x 130 x 52.5")	2,500 kg (5,512 lb)
Imager height with top open	2,000 mm (76.7")	
Debris removal unit (H x W x D)	2,150 x 1,112 x 1320 mm (84.65 x 43.78 x 51.97")	820 kg (1,808 lb)
Chiller unit (H x W x D)	1,016 x 499 x 790 mm (40 x 19.6 x 31.1")	123 kg (271 lb)
Workflow specifications		
Operating system	<b>Windows 7</b>	
Workflow connectivity	<b>Kodak TIFF Front End Software optional: Kodak Prinergy Powerpack Workflow System</b>	
Input files	1-bit Tiff files and Kodak's 8-bit Tiff files	
Engraving device specifications		
Laser wavelength	915 nm	
Power	1280 watts	
Engraving speed*	1.5 m <sup>2</sup> /hr	
Relief depth	≤ 1.0 mm (300 to 1,000 microns)	
Resolution	Customer selectable between 2,150 dpi (84 dpm) to 2,946 dpi (116 dpm)	
Screen ruling	3% to 98% at 175 lpi; 2% to 98% @ 150 lpi	
Post engraving cleaning	Mechanical rinsing with aqueous solution; see media washing procedure document	
Media dimensions	Repeat*: min 250 mm (9.8") max 1,080 mm (42.5") Length*: min 100 mm (4") max 1,600 mm (63") * for repeat <320 mm (12.6") , max length is 1,300 mm (51.2")	
Engraving max dimensions	Repeat: 1,060 mm (41.7") Length: 1,598 mm (62.9")	
Kodak Flexcel Direct Media		
Media dimensions	Image repeat: 250 to 1,080 mm (10 to 42"); Length: 50 to 1,600 mm (2 to 63")	
Sleeve dimensions	Made to order; must comply with media sizes range	
Plate dimensions	Thickness: 1.14 mm (0.045") and 1.7 mm (0.067") Rolls of 1,600 mm (63") width and 20 m length (787.4")	
Media durometer	70 Shore A (± 5) according to ASTM D2240-03	
Ink compatibility	Solvent, UV, water-based	
Safelight recommendations	None	
Media handling and storage	Temperature: 15 - 30°C (59 - 86°F) Humidity: 40 - 80% Ideally, sleeves should be stored vertically (on end), individually, either in the shipping tube or wrapped with protective paper or polyethelene foam wrap. No need for special treatment beyond what is customary for ITR sleeves.	
Shelf life	3 years from manufacturing date	

\* Engraving speed is defined based on the following conditions:  
 1. Kodak media  
 2. Engraving depth ≤ 575 μm  
 3. Media dimension: 1.6m along, full repeat coverage (seamless)

## Global service and support organization

Kodak Solutions for the packaging market are supported by a world-class team of dedicated sales, professional consulting and service staff. Our global service and support organization is fast, effective and targeted.

### To learn more about packaging solutions from Kodak:

Visit [www.kodak.com/go/packaging](http://www.kodak.com/go/packaging)  
 Produced using Kodak Technology.

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