

TECHNICAL DATA / WIDE-FORMAT INKJET MEDIA

April 2005

KODAK Universal Backlit Film / 8 mil

GENERAL DESCRIPTION

This heavy weight front print backlit provides excellent pigment and dye image quality, high-speed drying and universal compatibility at a competitive price. With a heavy-weight durable polyester *Duratrans*®-like support, this film offers excellent print handling and finishing characteristics, exceptional color saturation with a quick dry time.

- Pigment compatibility for long life indoor and outdoor Performance Guaranteed backlit displays.
- Robust coating resists flaking when cut.
- The quick drying receiver layer aids in production speed dye printing.
- Excellent dry time enables high speed printing to take up reel in difficult production environments.
- Robust receiver layer resists scratching and provides excellent print handling and finishing characteristics.
- Universal compatibility allows the use of one single backlit media on all leading wide format printers and inks such as ENCAD, HP and EPSON.

COMPATIBILITY

When used with the following printers and inks, KODAK Universal Backlit Film / 8 mil is recommended for all applications. Recommendations will provide optimal output when using printing paths commonly associated with each printer. These settings are intended as starting points—other combinations of settings may also provide good results. See "Printing Notes" for more information. "Yes" in the Laminate Recommendation column indicates that this media is likely to have good adhesion with laminates in that class.

For compatibility information for all KODAK Wide-Format Inkjet Media, refer to the Inkjet Media Compatibility Chart at www.encad.com.

Manufacturer	Model	Ink Compatibility		Laminate Recommendation (See Finishing Section)			
		Ink	Print Driver Media Setting	Heat Activated Thermal 210-240°F (99-116°C)	Heat Activated Low Temperature 185-195°F (85-91°C)	Heat Assisted 185-195°F (85-91°C)	Pressure Sensitive Ambient to 120°F (49°C)
KODAK PROFESSIONAL	4000 Series	Dye*, Pigment	See Printing Notes	Yes	No	Yes	Yes
HEWLETT-PACKARD DesignJet	2000, 2500, 2800, 3000, 3500, 3800 CP	Dye*	Coated Paper	Yes	Yes	Yes	Yes
HEWLETT-PACKARD DesignJet	2000, 2500, 2800, 3000, 3500, 3800 CP	UV	Coated Paper	Yes	Yes	Yes	Yes
HEWLETT-PACKARD DesignJet	5000 Series	Dye*	HW Coated Paper	Yes	Yes	Yes	Yes
HEWLETT-PACKARD DesignJet	5000 Series	UV	Colorlucent Backlit	Yes	Yes	Yes	Yes
ENCAD NovaJet	ProE/500/600/ 700/800 Series	GS, GS+	See Printing Notes	Yes	Yes	Yes	Yes
ENCAD NovaJet	ProE/500/600/ 700/800 Series	GX*	See Printing Notes	Yes	No	Yes	Yes

Continued Next Page

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ENCAD NovaJet	ProE/500/600/700/800 Series	GO+	See Printing Notes	Yes	No	Yes	Yes
ENCAD NovaJet	1000i	Qi Dye	See Printing Notes; Printer Heater Setting: 2	Yes	Yes	Yes	Yes
ENCAD NovaJet	1000i	Qi Pigment	See Printing Notes; Printer Heater Setting: 2	Yes	Yes	Yes	Yes
Canon	7250D/7200D/8200D	Dye	Backprint Film	Yes	Yes	Yes	Yes
Canon	6200Pg/8200Pg	Pigment	Backlight Film	Yes	Yes	Yes	Yes
COLORSPAN Displaymaker	Hi-Res 8/Esprit/Series XII	EC*, PC	See Printing Notes	Yes	No	No	Yes
MUTOH Falcon	RJ-4100/RJ-6100	Dye*, Pigment	See Printing Notes	Yes	Yes-Dye No-Pigment	Yes	Yes
ROLAND	Hi-Fi Jet FJ-50/ FJ-40, Hi-Fi Jet Pro FJ-400/ FJ-500/FJ-600	Dye*, Pigment	See Printing Notes	Yes	Yes-Dye No-Pigment	Yes	Yes
EPSON Stylus Pro	7000/9000	Dye*	See Printing Notes	Yes	Yes	Yes	Yes
EPSON Stylus Pro	7600/9600/10000/10600	Photographic Dye*	See Printing Notes	Yes	Yes	Yes	Yes
EPSON Stylus Pro	7500/9500	Pigment	See Printing Notes	Yes	No	Yes	Yes
EPSON Stylus Pro	10000 Series	Archival Pigment	Backlight Film	Yes	No	Yes	Yes
EPSON Stylus Pro	7600/9600/10600	Ultra Chrome Pigment	Glossy Film	Yes	No	Yes	Yes

* For optimum durability, laminate or overcoat soon after printing within 4 hours.

Note: KODAK Universal Backlit Film / 8 mil is not recommended for use with "lightfast" dye inks unlaminated due to premature fading (which is caused by oxidation). If prints are laminated within 4 hours of printing to seal the image from exposure to air, the print lifetime can be extended—depending on the type of overlaminates. "Lightfast" inks include: Encad GX, Ilford Archiva, ColorSpan EnduraChrome, Hewlett-Packard dyes, and KODAK Lightfast Plus inks.

PRINTING NOTES

The Print driver media settings recommended in the Compatibility section are intended to provide usable results with available media profiles found in the printer manufacturer's provided drivers and RIPs. These recommendations will provide proper ink laydowns with no pooling or bleeding, and color which will be acceptable for many applications. It is suggested that tests be run using these recommendations and color corrections be made to meet user expectations.

In cases where no recommendation is made, choose the media setting closest to the KODAK Wide-Format Inkjet Media you are using. For example, if you are printing on New KODAK Premium Photographic Glossy Paper / 180g, choose a setting in your driver or RIP which is intended for another glossy photo paper. This should give you a print which requires little or no adjustment to get usable results.

RIPs and Profiles for Encad and Other Printers

For more exacting color, several third party RIPs (Raster Image Processors) are available with profiles supporting Kodak media for Encad, Kodak and other printers. For more information visit Encad's website at <http://www.encad.com/Support/RIP-Support/index.asp>

Following is a list of RIPs for which Encad printer support and Kodak-built media profiles are available:

Encad	www.encad.com/Support/RIP-Support/index.asp
Colorgate Photo RIP	www.colorgate.com/home_e/products_e.html
Onyx Graphics	www.onyxgfx.com
Scanvec Amiable	www.scanvecamiable.com

In addition to the above list, the following software companies provide RIPs and profiles that support Encad printers:

Best GmbH	www.bestcolor.com/bcint/index.htm
AIT International	www.applied-image.com/Shiraz-RIP.htm
Image Technologies	www.imagetechdev.com
Global Graphics	www.globalgraphics.com
Colorburst Systems	www.compatsys.com
Wasatch Computer Technology, Inc.	www.wasatchinc.com
CADlink Technology	www.cadlink.com
JET RIP	www.jangeun.co.kr

Custom Profiles

While the above printing recommendations and available profiles from Encad will provide adequate results for many wide-format inkjet applications, there are applications, such as inkjet proofing, which demand more exacting color requirements. It is suggested that for these applications, custom profiles be built for given ink/media/printer combinations. Many color management and profile building software applications are available which allow the user to manage color to meet their needs. Also, many RIPs will provide color profiling options which allow the user to control the color of their output. Please contact your dealer or Encad technical support for help determining the best solution for your application.

Viewing and Taking Density Readings

When creating profiles for media that is viewed by transmissive light, use transmission measurement devices. Transmission measurement devices, especially those which are strip readers, often need to be calibrated several times before they are ready to take density readings. If a transmission measurement device is not available, acceptable profiles can be created with a reflective device by placing the media printed side up on white paper (a piece of inkjet paper will work) when making measurements. Results may be slightly lighter and less saturated than when a true transmission device is used, but it will provide you with a good starting point and, if necessary, you can adjust the brightness and colors with your RIP or image manipulation software.

Hewlett-Packard Printers

Some backlit medias may not work properly with the media sensors on printer take-up spools, such as those supplied with the HP Designjet 5000 and 5500. When this happens, tape a cut piece of the same media over both the front and back media take-up sensors. This will provide enough density for the take-up spool to work correctly. Be sure to remove these pieces when using other types of media or the take-up spool will not operate correctly.

In low humidity environments many types of film based media will show static marks when printed on HP Designjet 5000 series printers. These marks, which appear as low density ink blotches aligned with the bottom rubber rollers, are noticeable in areas which are intended to be white and are next to high density areas, such as large black text. The marks are not present within image areas. To help reduce or eliminate these static marks, try one or all of the following suggestions:

- Operate the printer in a higher humidity environment or place a humidifier near the printer. The static marks will virtually disappear as the humidity is higher, at about 45% RH or higher.
- Print at slower speeds. This will cause less static

buildup and make the marks less noticeable.

- Add a 1% or higher fill color for CMYK in white areas; the exact amount to be determined by testing in your working environment. It has been demonstrated in a 30% RH environment that filling white areas with a 1% dot for all 4 channels, C, M, Y, and K, will virtually remove the marks. The resulting light gray in white areas is not objectionable, especially when prints are trimmed so that no unprinted media is visible as a reference. The fill color can be added in the application that the file was created in or within your RIP software. In ONYX Postershop, simply use the "Replace Color" tool, select white, and add 1% to all 4 colors.



Caution

Caution

When using film based medias on printers in very low humidity conditions, 30% or lower, static charges may be enough to damage your printer. It is not recommended that you print in these conditions. Be sure to follow your printer manufacturers guidelines for operating conditions, which are especially critical when using film based medias.

HANDLING

All inkjet media must be handled with care before and after printing to prevent damage to the ink receiving layer and printed images. Use the following guidelines, your experience, and common sense for the proper care of your media.

- Store unused media in its original packaging, using the core-plugs and plastic sleeves.
- Allow media to acclimate to your environmental conditions for at least 24 hours before use.
- Kodak Inkjet media is rolled printable side out. Avoid touching the printable side by handling by the edges of the roll.
- Wear cotton gloves when handling media to avoid scratches, abrasions and fingerprints from moisture and oils on your hands.
- Do not allow the media to come into contact with moisture. Moisture will damage many types of inkjet medias before and after printing.
- Avoid handling, trimming, laminating or other finishing until prints are completely dry. Dry times will vary based on media type, ink type and environmental conditions.
- Do not fold, bend or crease media or damage may occur to the ink receiving layer.
- Do not allow the surface of the media to come into contact with itself or another inkjet media.
- Use media only in recommended operating

conditions—see "Physical Characteristics" section.

Curl

Most types of roll-based inkjet media will exhibit some amount of curl, either toward the base side or toward the print side. This will vary based on media type and environmental conditions. Some media will curl more in low humidity environments and others in high humidity environments. Also, media may curl more towards the core or end of the roll due to "roll memory."

Although curl is mainly an issue when printing, it can also have an impact on laminating and other finishing procedures. Follow these guidelines, and use your experience and common sense to avoid issues caused by curl.

When printing:

- Advance media several inches past the print platen before starting a print job.
- Add weights or clips to the leading edge of the media.
- Attach media to the printer's take-up spool before starting printing.
- Adjust vacuum settings accordingly on printers equipped with variable media vacuum settings.
- Adjust heater and dryer settings on equipped printers to obtain optimum conditions to ensure flat media. See printer owners' manual for their recommendations.

During finishing:

- Reverse wind media, when completely dry, to counteract roll memory.
- Do not allow media to remain rolled for extended periods of time.
- Rough cut prints and lay them flat before laminating.

FINISHING

Detailed information and tips can be found in Kodak publication E-2600, *Laminating, Mounting, and Finishing KODAK Wide-Format Inkjet Media*.

Lamination

Refer to "Laminate Compatibility" in the Compatibility section for specific printer/ink/laminate/recommendations.

Lamination Definitions

Heat Activated Thermal, 210-240°F (99-116°C)*	Polyester laminates applied with hot roll laminators at 210-240°F.
Heat Activated Low Temperature, 185-195°F (85-91°C)*	Polyester laminates applied with hot roll laminators at 185-195°F.
Heat Assisted, 185-195°F (85-91°C)	Polyester or vinyl laminates with pressure sensitive adhesives; specially formulated for inkjet prints, and applied with hot roll laminators at 185-195°F.
Pressure Sensitive, Ambient to 120°F (49°C)	Polyester or vinyl laminates with pressure sensitive adhesives on a release liner, applied at ambient conditions or at low temperature, 100-120°F.

* For both Heat Activated Thermal and Low Temperature, use a laminate with a total thickness (polyester and adhesive) of 3 mils or less on the face side. Thicker laminates may be applied to the back of the print for increased total thickness.

For best results, use inkjet-specific laminate products and follow the laminate manufacturer's instructions. It is important that your print be dry before laminating. Lamination performance varies as a function of materials, technique, and environmental conditions. For increased durability, choose a laminate with UV protection.

Mounting

For a rigid, durable backlit display, laminate this media and mount it to plexiglass with an optically clear mounting adhesive. A low-glare front laminate is desirable to reduce reflections in brightly lit areas.

In view boxes that have plexiglass in them already, mounting is not necessary, and a thicker (10-mil) surface laminate may offer enough rigidity for the print to lay flat. For extra rigidity or for larger displays, laminate the back of the print with a laminate equally thick as the front material.

PERFORMANCE GUARANTEE

Indoor Applications (Fluorescent Display)

Encad will guarantee prints from compatible systems against noticeable fading, cracking, yellowing, and bleeding when the print is viewed from its intended viewing distance.

The Indoor Performance Guarantee durations will vary based on the media/printer/ink system. The stated durations assume the media is displayed indoors under fluorescent light (average intensity 450-lux, 12 hours/day), and/or with indirect sunlight exposure (at least 6 feet from a window, with no direct sunlight). Plexiglas™, Lexan™, or a similar sheet must protect prints, and light box illumination is expected to not exceed 5000-lux fluorescent. The guarantee covers both laminated or unlaminated prints as noted in the table below. The unlaminated guarantee assumes the media will be displayed in a typical office environment and will not be exposed to a high level of pollutants (above a typical ozone level for an office environment).

Terms, conditions and additional information about the Performance Guarantee can be found at www.encad.com.

Manufacturer	Model	Ink	Durability
HEWLETT-PACKARD DesignJet	2000/3000/5000 Series	4/6 Color Dye	1 year laminated
		4/6 Color UV	2 years laminated
ENCAD NovaJet	800/700/600/500 Series	4/8 Color GS+	TBD
		4/8 Color GX	TBD
		4/6/8 Color GO+	TBD
	1000i	Qi Dye	6 months laminated
		6 Color Qi Pigment	2 years laminated
EPSON Stylus Pro	7600/9600/10000/10600	6 Color Photographic Dye	TBD
	10000/10600	6 Color Archival Pigment	TBD
	7000/9000	6 Color Dye	TBD
	9500	6 Color Pigment	TBD
	7600/9600/10600	7 Color Ultra Chrome Pigment	TBD
Canon	7250D/7200D/8200D	6 Color Dye	1 month laminated
	6200Pg/8200Pg	6 Color Pigment	2 years laminated

Outdoor Applications

Outdoor exposure, including exposure to ultraviolet radiation, moisture, oxidation, and chemical pollutants all influence the final outdoor longevity of a graphic image. Encad guarantees that the effects of those exposures will not affect the quality and suitability of the graphic image print, based on accepted industry test standards, for advertising purposes and other customary outdoor display uses. Specifically, Encad guarantees prints from the systems below against excessive fading, peeling, cracking, yellowing, bleeding, and running for the periods stated below. Plexiglas™, Lexan™, or a similar sheet must protect prints, and light box illumination is expected to not exceed 5000-lux fluorescent.

Terms, conditions and additional information about the Performance Guarantee can be found at www.encad.com.

Manufacturer	Model	Ink	Durability
HEWLETT-PACKARD DesignJet	2000/3000/5000 Series	4/6 Color UV	18 months laminated
ENCAD NovaJet	800/700/600/500 Series	4/6/8 Color GO+	TBD
	1000i	4 Color Qi Pigment	2 years laminated
		6 Color Qi Pigment	18 months laminated
EPSON Stylus Pro	10000/10600	6 Color Archival Pigment	TBD
	9500	6 Color Pigment	TBD
	7600/9600/10600	7 Color Ultra Chrome Pigment	TBD
Canon	6200Pg/8200Pg	6 Color Pigment	TBD

Additional Durability Information

The following table can be used as a guide for printers and inks not included in the Performance Guarantee.

Durability Guidelines for Printers Not Included in Performance Guarantee

If Using	Expect Durability Similar To:
KODAK Lightfast Plus Dye	Encad GX
Colorspan EC Dye	Encad GX
Colorspan PC Pigment	Encad GO+
Roland Dye	Epson 9000 Dye
Roland Pigment	Epson 9500 Pigment
Mutoh Dye	Epson 9000 Dye
Mutoh Pigment	Epson 9500 Pigment

ORDERING INFORMATION

KODAK Universal Backlit Film / 8 mil

Roll Length	Roll Width / Order No.				
	24 in. (61 cm)	36 in. (91.4 cm)	42 in. (106.7 cm)	50 in. (127 cm)	60 in. (152.4 cm)
100 ft (30.5 m)	NA	222773-00	222774-00	222775-00	222776-00
16.4 ft (5 m) (sample)	222772-00	NA	NA	NA	NA

NA = Not available

PHYSICAL CHARACTERISTICS

Physical Characteristics	Value	Test Method Reference
Caliper	8 mil (203 µm)	ISO 534
Opacity	>70	Tappi T 524
CIE Whiteness	157	Tappi T 524
Weight	275 g/sm	ISO 536
Brightness	116	Tappi T 524
60-degree Gloss	<5	ISO 7668
L*(D65/10 uvi/BBW)	98	Tappi T 524
Flame Spread Classification	TBD	ASTM E84
Operating Conditions	59-86°F (15-30°C), 20-70% RH (non-condensing)	
Recommended Storage Conditions	68°F (20°C), 50% RH	

If you have questions or need assistance, visit Encad's website at www.encad.com, or in the U.S. contact Encad Technical Support at 1-877-362-2387.

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