



CDF®/LX DIRECT-FILMS

DUAL-CURE CAPILLARY FILM SYSTEM; PHTHALATE-FREE

CDF/LX is a series of diazo acrylic (dual-cure) capillary films formulated to enhance the CDF Capillary Direct Film line of products. CDF/LX films are resistant to most solvent-based, water-based, co-solvent, and UV inks. CDF/LX's violet-colored emulsion is coated on a textured polyester. This imparts a slight texture to the printing surface of the resulting stencil, thus minimizing hydrostatic attraction to the printing stock. Formulated for point-of-purchase displays, industrial graphics, and sportswear printing, CDF/LX is available in thicknesses of 20, 30 and 40 microns. Mesh count should be compatible with film thickness as follows: for CDF/LX-20, use 355/inch or higher (140/cm+); for CDF/LX-30, use 255-420/inch (100-165/cm.); for CDF/LX-40, use 196-305/inch (77-120/cm.).

INSTRUCTIONS

Step 1: PREPARE THE FABRIC

Used or surface-treated fabric need only be degreased using **Screen Degreaser Liquid No. 3** or dilute **Screen Degreaser Concentrate No. 33**. (Mechanical abrasion is an option for new fabric that is not surface treated. It increases the surface area of fabric for a better mechanical bond of the stencil, increasing printing run length. Use **Microgrit No. 2** before degreasing. Abrading and degreasing can be combined in one step with **Ulanogel 23**.) Rinse thoroughly. Use **CDF Mesh Prep No. 25** to promote uniform water retention during adhering.

Step 2: ADHERE CDF/LX TO THE SCREEN

Standard Method: Position CDF/LX on a flat surface, emulsion side up. Place the printing side of a wet screen on top of the film. Make a single squeegee stroke across the squeegee side. Wipe off any excess water. **"Roll-Down" Method:** Roll the cut-to-size film, emulsion side out, around a small plastic tube 1" to 1 ½" (ca. 2 ½ - 4 cm.) in diameter. Soak the fabric from the squeegee side. Contact the edge of the roll to the printing side of the fabric at the top end of the screen. Unwind the roll, maintaining firm contact with the fabric. Make one light squeegee stroke across the squeegee side to remove excess water.

Step 3: DRY THE SCREEN

Dry the screen at room temperature in a dirt- and dust-free area. Use a fan to speed drying. Avoid high humidity. Under humid conditions, dry the screen with warm, filtered air, up to 104°F. (40°C.) in a commercial dryer. Use a dehumidifier in the drying area, if possible.

Step 4: REMOVE BACKING

The backing sheet acts as a dirt and dust protector during drying and storage. Remove it immediately before exposing the stencil.

Step 5: CALCULATE THE APPROXIMATE EXPOSURE TIME

From the Base Exposure Table below, select the type of light source you have and its wattage or amperage, then refer to the thickness of CDF/LX you are using. Multiply your Base Exposure Time by all relevant Exposure Variable Factors (table below) to find your Approximate Exposure Time.

Step 6: DETERMINE THE OPTIMAL EXPOSURE TIME

Make a Step Wedge Test (instructions can be found in the **CDF Direct-Films Technical Data Booklet**) or use the **Ulano Exposure Calculator Kit**—carried through to actual printing—to determine your optimum exposure time. Optimum exposure is indicated: ■ At that exposure time when the emulsion first reaches its maximum color density and the edges of the positive do not "resolve." ■ There is no suggestion of softness or sliminess on the stencil. ■ The print best duplicates the test positive *at the level of resolution that the job requires*.

Step 7: WASHOUT

Wet both sides of the screen with a gentle spray of cold water. Then spray forcefully from the printing side until the image areas clear. Rinse both sides with a gentle spray until no soft emulsion is left on the squeegee side, and no foam or bubbles remain. Blot excess water from the printing side with unprinted newspaper stock.

Step 8: BLOCKOUT & TOUCHUP

Option 1: If you plan to print with a water-based ink, after exposing and washing out a CDF/LX stencil, use a water-resistant emulsion to cover the blockout area. Let it dry, then expose it.

Option 2: For non-water-based inks, after exposing a CDF/LX stencil, wash out the image and dry the screen. Apply **Screen Filler No. 60** or **Extra Heavy Blockout No. 10**.

Touchup Option 1: If you plan to print with a water-based ink, after exposing and washing out a CDF/LX stencil, touch up imperfections with a water-resistant emulsion. Let it dry, then expose it.

Touchup Option 2: For non-water-based inks, use **Screen Filler No. 60** or **Extra Heavy Blockout No. 10** thinned with water.

Technical Data Sheet



Step 9: RECLAIM THE SCREEN

Remove ink with the appropriate solvent. Rinse the screen with water. Degrease with **Screen Degreaser Liquid No. 3** to remove ink and solvent residues. Rinse with a forceful spray. Brush **Stencil Remover Liquid No. 4** or **Stencil Remover Paste No. 5** on both sides of the screen. Do not let the stencil remover dry on the screen. Rinse off the stencil remover with a gentle spray of water, then follow with a forceful spray. Use **Haze Remover Paste No. 78** or **Ghost Remover** with **Ghost Remover Activator** to remove any ink and residues.

BASE EXPOSURE TABLE

LIGHT SOURCE	CDF/LX DIRECT-FILMS		
	CDF/LX-20	CDF/LX-30	CDF/LX-40
Carbon Arc			
30 amps	256 sec.	423 sec.	671 sec.
60 amps	128 sec.	212 sec.	336 sec.
110 amps	70 sec.	116 sec.	183 sec.
Metal Halide			
1000 watts	105 sec.	173 sec.	275 sec.
2000 watts	52 sec.	87 sec.	137 sec.
3000 watts	35 sec.	58 sec.	92 sec.
4000 watts	26 sec.	44 sec.	69 sec.
5000 watts	21 sec.	35 sec.	55 sec.
7000 watts	15 sec.	25 sec.	39 sec.
Pulsed Xenon			
2000 watts	293 sec.	484 sec.	768 sec.
5000 watts	117 sec.	194 sec.	307 sec.
8000 watts	73 sec.	121 sec.	192 sec.
Mercury Vapor			
1000 watts	143 sec.	236 sec.	374 min.
2000 watts	71 sec.	118 sec.	187 sec.
4000 watts	36 sec.	59 sec.	93 sec.
Fluorescent Tubes*			
40 watts	315 sec.	520 sec.	825 sec.

*Base exposure times are for unfiltered black light, or super diazo blue tubes at 4-6" (10-15 cm.)

EXPOSURE VARIABLES

Factors for Variables Affecting Base Time

Fabric	Exposure Distance
stainless steel /metalized PE	20 inches /50 cm. 0.25 44 inches /110 cm. 1.21
dyed fabric	24 inches /60 cm. 0.36 48 inches /120 cm. 1.44
	36 inches /90 cm. 0.81 60 inches /150 cm. 2.25
	40 inches /100 cm. 1.00 72 inches /180 cm. 3.24
Imaging Requirements	
Fine line positive printing	0.8
Fine line reverse printing	1.2
Halftones, to 50 lines/in (20/m)	0.9
Halftones ,to 50lines/in(20/cm)	0.8
Taped-Up Positives	
Factor	1.2 – 1.3

Factors for Non-Standard Adhering Methods

Dry Method (Direct/Indirect Method) 1.3-1.5
Wet Adhered, Emulsion-Reinforced 1.3-1.5

STORAGE: Store CDF/LX Direct-Film rolls in their tubes and sheets in their original packaging to protect against mechanical damage. Storage temperature should range between 19° and 24°C (65°-75°F) with a relative humidity of 40%-60%. Store film-mounted screens in a cool, dry, completely dark area until exposure. 204dm