

## FX88 and FX88-SR

### FAST-EXPOSING, GENERAL-PURPOSE DIAZO-SENSITIZED SCREEN EMULSIONS

The **FX88** and **FX88-SR** expose in about half the time of normal diazo-sensitized emulsions. They produce tough stencils with good resolution and edge definition and can be reclaimed easily. **FX88** is blue, and has good solvent resistance. It can be used with solvent-based poster or enamel inks. **FX88-SR** is undyed (for easier see-through registration; color additive supplied separately) and is *totally* solvent-resistant. Both emulsions are ideal for use with low-intensity light sources, because of their short exposure times. Both are supplied with pre-measured diazo sensitizer in powder form.

#### INSTRUCTIONS

##### **Step 1: PREPARE THE MESH**

Used or surface-treated mesh need only be degreased using **Screen Degreaser Liquid No. 3** or dilute **Screen Degreaser Concentrate No. 33**. (Mechanical abrasion is an option for new mesh that is not surface treated. It increases the surface area of 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**.)

##### **Step 2: SENSITIZE THE EMULSION**

Dissolve the diazo sensitizer by adding lukewarm water up to the shoulder of the diazo bottle. Shake it well. Wait 15 minutes for bubbles to disperse. Pour the fully dissolved sensitizer into the emulsion. Stir the emulsion with a clean, flat plastic or stainless steel instrument until it is uniform in color. Close the container. Wait at least one hour for the sensitized emulsion to de-bubble. Write the date of sensitizing on the label of the emulsion container.

##### **Step 3: COAT THE SCREEN**

Method 1: Apply one coat of emulsion on the printing side, then one coat on the squeegee side. Dry the screen thoroughly. Method 2: Apply two coats on the printing side, then two coats on the squeegee side, wet-on-wet. After each coating, rotate the screen 180°. Dry the screen thoroughly, printing side down. Method 3: Follow Method 2 (above). Then, after drying the screen, apply two additional coats on the printing side, wet-on-wet. Dry the screen again.

##### **Step 4: DRY THE SCREEN**

Dry multicoated screens (Methods 2 or 3) thoroughly in a horizontal position, printing side down, at room temperature in a dirt- and dust-free area. Use a fan to speed drying. Avoid high humidity. Under humid conditions, dry the coated 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 5: EXPOSE THE EMULSION**

Select an exposure time from the Exposure Table below based on the type of light source you have and the coating method you use. Multiply the selected exposure time by all relevant exposure variables and distance factors to obtain an Approximate Exposure Time. Use the Ulano Exposure Calculator or make a Step Wedge Test to determine the optimum exposure. Optimum exposure is indicated when: ■ No outline of the positive or darkening of the emulsion color is observable if the exposure is increased. ■ The squeegee side emulsion is hard and not slimy. ■ A print made from the stencil best duplicates test positive at the required level of resolution.

##### **Step 6: WASH OUT THE EMULSION**

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 7: BLOCKOUT & TOUCHUP**

Blockout Option 1: Before drying and exposure, use excess emulsion from the coating step to cover the blockout area.

Blockout Option 2: After exposure and washout, dry the screen. Apply **Screen Filler No. 60** or **Extra Heavy Blockout No. 10**.

Touchup Option 1: Use excess emulsion and re-expose the screen.

Touchup Option 2: Use **Screen Filler No. 60** or **Extra Heavy Blockout No. 10** thinned with water. Dry the screen.

##### **Step 8: RECLAIM THE SCREEN**

Remove the ink with the manufacturers' recommended solvent. Rinse with water. Degrease with **Screen Degreaser Liquid No. 3** to remove oily ink and solvent residues. Rinse the screen. 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 gently, then use a forceful spray of water. Use **Haze Remover Paste No. 78** to remove ink and haze and stencil scum residues, if necessary.



# Technical Data Sheet

## STORAGE

Unsensitized emulsion can be stored for up to 1 year. Sensitized emulsion can be stored for 3 – 6 weeks at room temperature; up to 3 months in a refrigerator. Store coated screens in a cool, dry, completely dark area until exposure.

## BASE EXPOSURE TABLE (For 305T/in (120T/cm) white polyester or nylon at 40 inches (100 cm.) exposure distance.

### Light Source -----FX88, FX88-SR----

Carbon Arc	Coating Method 1	Coating Method 2	Coating Method 3
15 amps	240 sec	12 min	15 min
30 amps	120 sec	6 min	8 min
40 amps	90 sec	270 sec	6 min
60 amps	60 sec	180 sec	240 sec
110 amps	33 sec	100 sec	135 sec
<b>Metal Halide</b>			
1000 watts	55 sec	155 sec	205 sec
2000 watts	28 sec	78 sec	103 sec
3000 watts	18 sec	51 sec	65 sec
4000 watts	13 sec	39 sec	51 sec
5000 watts	10 sec	30 sec	39 sec
<b>Pulsed Xenon</b>			
2000 watts	144 sec	7 min	8 min
5000 watts	58 sec	168 sec	225 sec
8000 watts	36 sec	105 sec	144 sec
<b>Mercury Vapor</b>			
250 watts	285 sec	12.5 min	17.5 min
2000 watts	36 sec	103 sec	132 sec
4000 watts	18 sec	51 sec	65 sec
<b>Fluorescent Tubes*</b>			
FT 40 watts	180 sec	7.5 min	N/R

\*Base exposure times are for unfiltered black light, or super diazo blue tubes, at 4-6' (10-15 cm) exposure distance. For plant-light, filtered black light, and "daylight" tubes, use double the time at least.

## EXPOSURE VARIABLE FACTORS (Factors for Variables Affecting Base Time)

:		<b>Viscosity Adjustment:</b>	
Steel/metalized polyester	2.0 - 4.0	5% dilution	0.95
Dyed Mesh	1.5 - 2.0	10% dilution	0.9
305T white polyester or nylon	1.0	5% more viscous	1.1
Finer than 330T (130T/cm)	0.7 - 0.9		
Coarser than 250T (100T/cm)	1.1 - 2.0		
Multifilament PET	1.3 - 1.5	<b>High Heat and Humidity:</b>	
<b>Exposure Distance:</b>		Factor	1.3-1.8
20"/50cm 0.25	36"/90cm 0.81		
24"/60cm 0.36	40"/100cm 1.00	<b>Taped-up Positives:</b>	
28"/70cm 0.49	52"/130cm 1.69	Factor	1.2-1.3
32"/80cm 0.64	60"/150cm 2.25		