

Quasar R 100™

RED INDIRECT FILM WITH WIDE PROCESSING LATITUDE AND EXCELLENT IMAGING PROPERTIES; FOR MANY APPLICATIONS, INCLUDING GRAPHICS AND ELECTRONICS

Quasar R 100 performs well under a wide variety of conditions; for best results, however, maintain shop temperature at <32° C. (90° F.).

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** or **Degreaser Concentrate 1:20**, or **Magic Mesh Prep**. (Mechanical abrasion is an option for new fabric that is not surface treated. This increases the surface area of the fabric surface for a better mechanical bond of the stencil. Use **Microgrit No. 2** before degreasing. Abrading and degreasing can be combined in one step with **Ulanogel 23**.) Rinse thoroughly.

Step 2: EXPOSE THE STENCIL FILM

Place the emulsion side of a right-reading photo positive against the backing sheet of the stencil film in a vacuum frame. The positive should be between the light source and the stencil film, and *the exposure should be through the backing sheet of the stencil film*. (That is, the duller, emulsion side of the **Quasar R 100** should be oriented *away* from the light source.) From the **Base Exposure Table** (below) select a Base Exposure Time corresponding to the light source you have. Multiply the Base Exposure Time by the factor for each relevant variable listed in the **Exposure Variables Table** (below) to find your Approximate Exposure Time. Use the Approximate Exposure Time as the central time in a Step Wedge Test, or as *the* exposure time with the **Ulano Exposure Calculator**.

Step 3: DEVELOP THE STENCIL FILM

Dissolve pre-measured A & B Developer Powders according to the instructions on the bottles. (Hydrogen peroxide can be used if A & B Powders are not available. It should be diluted to a 1 ½ % solution in a clean glass or plastic container *using distilled water only*.) To avoid trapping air bubbles between the developer and the film (these prevent the developer from reaching the surface of the film) and to assure even coverage of the developer and consequent uniformity of stencil thickness, we recommend two developing techniques: 1). Place the exposed film, emulsion side up, in a developer tray. Pour the developer quickly and uniformly over the film. Let the film develop for 90 seconds. Rock the tray occasionally to carry fresh developer across the surface of the film. 2). With developer in the tray, sweep the emulsion side of the film across the surface of the emulsion. Turn the film over and submerge it in the developer for 90 seconds.

Step 4: WASH OUT THE STENCIL

Use a gentle washout spray—preferably with an aerator nozzle—to wash out the stencil at the recommended temperature of 36 - 40° C. (97 - 104° F.). Wash out the film for several minutes until all the unexposed emulsion has been washed away. Then, gradually lower the temperature of the water to room temperature. Continue to wash for 30 seconds.

STEP 5: ADHERE THE STENCIL

Place the washed out film, emulsion side up, on a "buildup board" that is slightly smaller than the inside dimensions of the frame and thick enough so that the only contact is between the film and fabric. Gently lower a properly prepared, damp screen, printing side down, onto the film. Place several sheets of newsprint (unprinted newspaper stock) on the squeegee side of the screen. Wipe over the newsprint with a folded rag or print roller to blot the soft top layer of the film up into the fabric. Remove the bottom sheets of wet newsprint, and continue blotting. Repeat this procedure until the newsprint picks up little or no color from the film emulsion.

Step 6: DRY THE STENCIL: REMOVE THE BACKING SHEET

Dry the adhered stencil thoroughly with cool air. When the fabric surrounding the film is dry (and before the stencil is dry), with the plastic support still in place, apply **Red Blockout**, **Screen Filler No. 60**, or **Extra Heavy Blockout No. 10** to the open area of the screen. After the stencil and filler have both dried, peel off the plastic support. (By combining the drying times of the stencil and filler, there is no need to use a harmful fast-drying, methylene chloride-containing screen filler.)

STENCIL REMOVAL

Remove all ink from the screen with the recommended solvent. Degrease with **Screen Degreaser Liquid No. 3** to speed stencil removal. Wet the stencil from both sides with hot water and let stand for a few minutes. Sprinkle **Enzyme No. 1** on both sides of the screen and brush it in with a bristle brush. Turn the screen printing side up and cover the image /film area with a warm, wet rag. Wait five minutes. Remove the wet rag and



Technical Data Sheet

flush the screen with very hot water while scrubbing the stencil with the bristle brush. It is essential to neutralize the **Enzyme No. 1** with vinegar or an acetic acid solution.

BASE EXPOSURE TABLE *(for an exposure distance of 100 cm. (40 inches))*

| LIGHT SOURCE | Exposure Time |
|----------------------------|---------------|
| Carbon Arc: | |
| 15 amps | 18 ½ min. |
| 30 amps | 9 ¼ min. |
| 40 amps | 7 min. |
| 60 amps | 280 sec. |
| 110 amps | 150 sec. |
| Metal Halide: | |
| 1000 watts | 260 sec. |
| 2000 watts | 130 sec. |
| 3000 watts | 87 sec. |
| 4000 watts | 65 sec. |
| 5000 watts | 48 sec. |
| Pulsed Xenon: | |
| 2000 watts | 258 sec. |
| 5000 watts | 100 sec. |
| 8000 watts | 64 sec. |
| Mercury Vapor: | |
| 125 watts | 40 min. |
| 1000 watts | 5 min. |
| 2000 watts | 150 sec. |
| 4000 watts | 75 sec. |
| Fluorescent Tubes*: | |
| 40 watts | 11 ½ min. |

*Note: The base exposure times are given for 10 cm (4 inches) exposure distance for unfiltered black light. For “cool white” or “daylight” tubes, use at least double the exposure time.

EXPOSURE VARIABLES TABLE *(Factors for Variables Affecting Stencil Exposure)*

| Exposure Distance Factors: | | Mesh Factors: | |
|----------------------------|------|--|---------|
| 20 inches (50 cm) | 0.25 | Thick stencil on stainless steel mesh (optional) | 1.0-3.0 |
| 24 inches (60 cm) | 0.36 | Thick stencil on metalized polyester mesh (optional) | 1.0-3.0 |
| 28 inches (70 cm) | 0.49 | Imaging Factors: | |
| 32 inches (80 cm) | 0.64 | Fine line positive printing | 0.80 |
| 36 inches (90 cm.) | 0.81 | Fine line reverse printing | 1.20 |
| 40 inches (100 cm.) | 1.00 | Halftones, to 50/in (20 lines/cm) | 0.90 |
| 44 inches (110 cm.) | 1.21 | Halftones above 20 lines/cm (50in) | 0.80 |
| 48 inches (120 cm.) | 1.44 | Humidity Factors | |
| 52 inches (130 cm.) | 1.69 | Relative humidity above 75% | 0.85 |
| 56 inches (140 cm.) | 1.95 | Relative humidity below 25% | 1.15 |
| 60 inches (150 cm.) | 2.25 | Factor for Taped-Up Positives | |
| 72 inches (180 cm.) | 3.24 | Taped-up or montage positives, per layer | 1.10 |
| 84 inches ((210 cm.) | 4.41 | | |
| 100 inches (250 cm.) | 6.25 | | |

Storage: The shelf life of **Quasar R 100** can be optimized by storage at a temperature range of 10° - 21° C. (50° - 70° F.) and a relative humidity range of 40% - 80%.

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