Laser Point II thermal ablative film

Image Density Characteristics

Laser Point II users may experience what appears to be a wide cross-web and down web variance in the density. This variance is normal due to the particles employed in the proprietary coating formulation and only represents a very small difference in actual "light blocking" power of the image. For instance, a variance of 0.10, i.e. from 4.30 to 4.40 represents only a .001% difference in actual "light blocking" power. The chart below illustrates this disparity:

X-Rite Densitometer Readings	% Transmission of Light through Image	% of Light Blocked (absorbed) by the Image
1.00	10.000 %	90.000 %
2.00	01.000 %	99.000 %
3.00	00.100 %	99.900 %
4.00	00.010 %	99.990 %
5.00	00.001 %	99.999 %

Any UV densitometer reading on a Laser Point II image above 4.00 has more than enough absorbance, "light blocking" power, to expose any printing plate or photoresist. Additionally, this UV density variance does not affect the speed of ablation of the image.

Laser Point II density specifications are built around a minimum UV density (not a range) to insure adequate image absorbance when exposure to a printing plate or printed circuit photoresist material is required.

Typical Image & Background Properties

VISUAL DMax	**> 3.50**
UV DMax	**> 4.00**
VISUAL DMin	**< 0.15**
UV DMin	**< 0.15**

Measured with an X-Rite 369 Densitometer. Measurements may vary depending on the densitometer employed.

Matte Background: The user will note that a matte background is left following ablation. The matte aids in providing intimate contact of film to plate through the evacuation of air during vacuum draw down which is not always effective using a film with a clear background. Trapped air will often form newton rings (rainbow patterns) which will print to a plate.

Dimensional Stability Characteristics Film Conditioning

Laser Point II is coated on a polyester film base. It is important to understand the nature of polyester film and how it reacts to its immediate environment. Polyester film, whether prepared with a silver halide coating or a Laser Point II coating will grow or shrink depending on temperature and relative humidity.

A general "rule of thumb" is that polyester film will grow with an increase in temperature or humidity and will shrink with a decrease in temperature or humidity. The two external effects are accumulative meaning that they will either enhance the growth or shrinkage or cancel each other out. It is important to note that temperature effects are almost instantaneous whereas changes affected by humidity often takes hours. Moving from an environment that is at 50% humidity to an environment that is 40% humidity will cause the film to begin to shrink but will not reach its final dimension until a certain amount of time has passed.

The percentage specified in the following chart outlines the approximate rate of equilibration that a sheet of film will follow when exposed to different relative humidity conditions. For example, a 7 mil film moving from one environment to another will have reached 45% of equilibration within one hour but in just 6 minutes will have moved 20% of its final equilibration size. In ten hours the film is fully equilibrated to its new environment as the chart below illustrates:

	6 min	30 min	1 hour	2 hours	5 hours	10 hours
4 mil Film	40%	68%	80%	91%	100%	
7 mil Film	20%	32%	45%	63%	88%	100%

These values apply to a single sheet of film (processed or unprocessed) which is freely exposed to the air. If the film is left in a stack, or on a roll, time periods of several weeks may not be sufficient for equilibrium. Film for the most critical work should be removed from the box or roll and allowed to moisture condition prior to exposure by having good circulation of room air around the sheet. This is best accomplished by hanging the sheets or by placing the film on a screen platform.

EFFECTS OF HUMIDITY CHANGES

Size change in mils for relative humidity changes

Changes in Relative Humidity △% RH

	8"	10"	12"	14"	16"	18"	20"	22"	24"	36"
+40%	3.5	4.4	5.3	6.2	7.0	7.9	8.8	9.7	10.6	15.8
+30%	2.6	3.3	4.0	4.6	5.3	5.9	6.6	7.3	7.9	11.9
+20%	1.8	2.2	2.6	3.1	3.5	4.0	4.4	4.8	5.3	7.9
+10%	0.9	1.1	1.3	1.5	1.8	2.0	2.2	2.4	2.6	4.0
+5%	0.4	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	2.0
0	0	0	0	0	0	0	0	0	0	0
- 5%	-0.4	-0.6	-0.7	-0.8	-0.9	-1.0	-1.1	-1.2	-1.3	-2.0
- 10%	-0.9	-1.1	-1.3	-1.5	-1.8	-2.0	-2.2	-2.4	-2.6	-4.0
- 20%	-1.8	-2.2	-2.6	-3.1	-3.5	-4.0	-4.4	-4.8	-5.3	-7.9
- 30%	-2.6	-3.3	-4.0	-4.6	-5.3	-5.9	-6.6	-7.3	-7.9	-11.9
- 40%	-3.5	-4.4	-5.3	-6.2	-7.0	-7.9	-8.8	-9.7	-10.6	-15.8

EFFECTS OF TEMPERATURE CHANGES

Size change in mils for temperature changes

Changes in Fahrenheit Temperature △ Degrees

	8"	10"	12"	14"	16"	18"	20"	22"	24"	36"
+40	3.0	3.8	4.6	5.3	6.1	6.6	7.6	8.4	9.1	13.7
+30	2.3	2.8	3.4	4.0	4.6	5.1	5.7	6.3	6.8	10.3
+20	1.5	1.9	2.3	2.7	3.0	3.4	3.8	4.2	4.6	6.8
+10	0.8	1.0	1.1	1.3	1.5	1.7	1.9	2.1	2.3	3.4
+5	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.7
0	0	0	0	0	0	0	0	0	0	0
- 5	-0.4	-0.5	-0.6	-0.7	-0.8	-0.9	-1.0	-1.0	-1.1	-1.7
- 10	-0.8	-1.0	-1.1	-1.3	-1.5	-1.7	-1.9	-2.1	-2.3	-3.4
- 20	-1.5	-1.9	-2.3	-2.7	-3.0	-3.4	-3.8	-4.2	-4.6	-6.8
- 30	-2.3	-2.8	-3.4	-4.0	-4.6	-5.1	-5.7	-6.3	-6.8	-10.3
- 40	-3.0	-3.8	-4.6	-5.3	-6.1	-6.6	-7.6	-8.4	-9.1	-13.7