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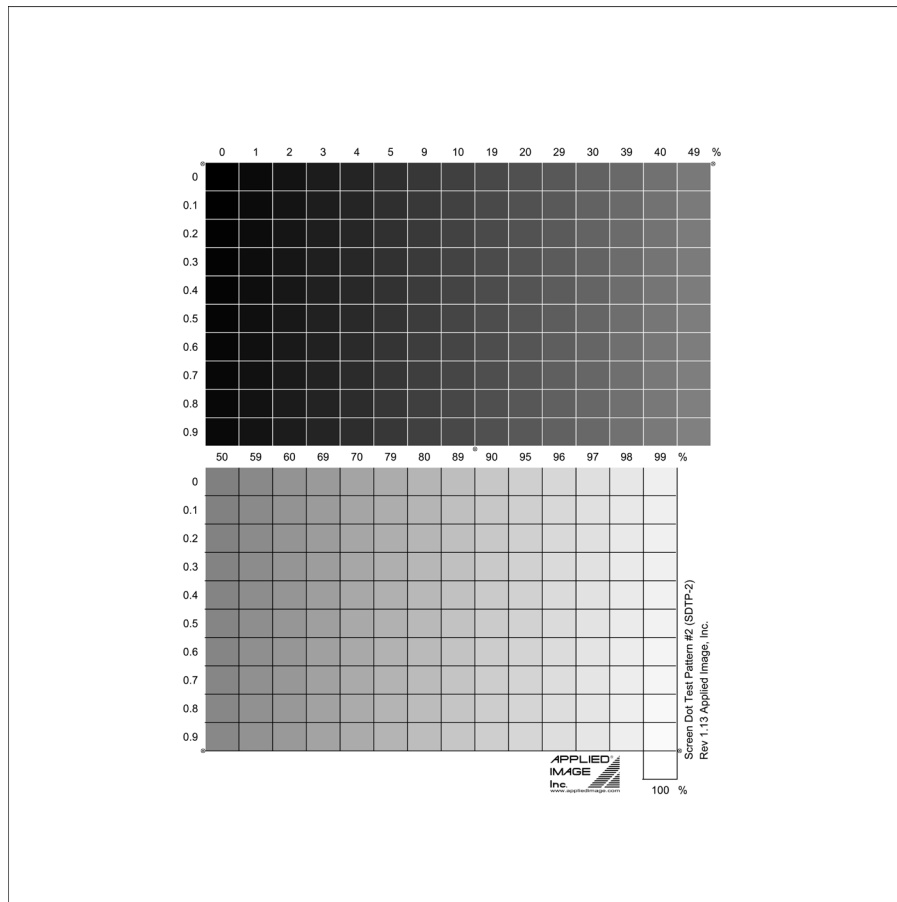
SDTP-2
Screen Dot Test Pattern
Product Specifications



Catalog Part No: SDTP-2-CG / SDTP-2-TM/ SDTP-2-RM

Product Name: Screen Dot Test Pattern #2


Drawing / Photo of part:



The above image is an approximate representation of the actual product.
Specifications are subject to change without notice.

Description: This chart features a range of screen dot percentage patterns supplied in increments of 0.1 percent.

Image Description: The test pattern consists of two arrays of individual patches 4.7mm wide by 4.0mm high. The total image area consists of 291 patches in a grid layout measuring approximately 71mm wide by 83mm high. Screen dot patterns use round dots having a pitch of 169.3 microns (150.03 LPI).

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The following Dot Percent ranges are included:

0.0-5.9%	9.0-10.9%	19.0-20.9%	29.0-30.9%
39.0-40.9%	49.0-50.9%	59.0-60.9%	69.0-70.9%
79.0-80.9%	89.0-90.9%	95.0-100%	

Typical (ideal) Dot Diameters (microns):

% Dot	0.1	0.2	1.0	5.0	10.0	20.0	30.0	40.0	50.0
Dot diameter	6.04	8.54	19.1	42.72	60.41	85.43	104.63	120.82	135.08
Note that dot polarity flips at 50%	% Dot		50.1	60.0	70.0	80.0	90.0		
	Dot diameter		134.95	120.82	104.63	85.43	60.41		

Substrate size: 127mm x 127mm, glass thickness is 1.42mm and thicker

Substrate Type, Image Forming Material and Reading Direction:

<i>Part Number</i>	<i>*Reading Direction</i>	<i>Substrate Type</i>	<i>Image Forming Material</i>
SDTP-2-CG	RRCD	Soda-lime glass	Chrome
SDTP-2-TM	RREU	Transparent polyester	Photo-emulsion
SDTP-2-RM	RREU	Photo-paper (glossy)	Photo-emulsion

*Reading Direction (Text Orientation):
RRCD = Right Reading Chrome Down
RREU = Right Reading Emulsion Up

Other Image Characteristics – Chrome on Glass:

- 0% patch is clear
- 100% patch is opaque
- Image is a “*positive screen pattern*”
- Test orientation is correct reading chrome down (RRCD)
- Chrome optical density is 4.0 or higher
- 1% → 50% patches have opaque dots on a clear surround
- 50.1% → 99.9% patches have clear dots on an opaque surround
- Tolerance of the 50% patch is $\pm 0.5\%$

Other Image Characteristics – Photographic Film:

- 0% patch is opaque
- 100% patch is clear
- Image is a “*negative screen pattern*”
- Test orientation is correct reading emulsion up (RREU)
- Transmission optical density of opaque is 3.0 or higher
- 1% → 50% patches have clear dots on an opaque surround
- 50.1% → 99.9% patches have opaque dots on a clear surround
- Tolerance of the 50% patch is $\pm 0.7\%$
- Due to the extremely fine dot sizes in the 0.1 → 0.9% and 99.0 → 99.9% ranges, some dots may be missing or deviate from the nominal size

Other Image Characteristics – Photographic Paper:

- 0% patch is black
- 100% patch is white
- Image is a “*negative screen pattern*”
- Test orientation is correct reading emulsion up (RREU)
- Reflective optical density of black is 1.8 or higher
- 1% → 50% patches have white dots on a black surround
- 50.1% → 99.9% patches have black dots on a white surround
- Tolerance of 50% patch is $\pm 0.9\%$
- Due to the extremely fine dot sizes in the 0.1 → 0.9% and 99.0 → 99.9% ranges, some dots may be missing or deviate from the nominal size

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Screen Dot Notes:

Conventional screen-dot terminology specifies 100% coverage as black. In a *positive image*, 100% indicates opaque or black and 0% indicates clear.

Optical density is a logarithmic value of the transmission or reflectance of a material. Density = $\log(1/\text{transmission}) = -\log(\text{transmission})$. Example: Glass with transmission of 10% would have a density of 1.0,

$$1.0 \text{ optical density} = \log(1/0.1).$$

Note that this is an absolute number and includes any base density. It does not convert directly into percent screen dot area.

Percent Screen Dot Area denotes percent coverage of a background material by screen dots and is not the same as percent reflectance or transmission. This indicates a major difference therefore from Density measurements. For example, when measuring screen dot area, Zero is set on the base material. When measuring optical density, Zero is set on air for transmission measurements or on a standard patch of known reflectance for reflection measurements. Screen dot area indicates a relative difference between transmission or reflectance of the background material alone and the light transmission or reflectance modulated by the dots.

History/ typical use: Used for very fine incremental testing of the effects of very small feature size changes and area changes.

Related Parts: ST-51