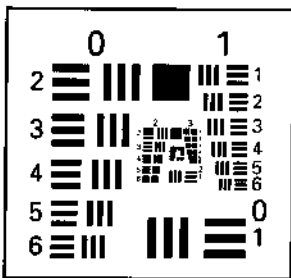
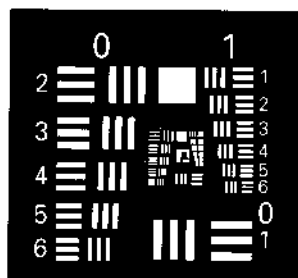


The need to assign numerical tolerances to the performance of optical systems and photographic processes has resulted in the general acceptance of the USAF 1951 resolution test target. In this target the number of line pairs per millimeter doubles with every seventh target element (a *line pair* being a dark bar plus an equally spaced clear bar). An element consists of two target patterns of three lines each, at right angles to each other. These six elements are known as a group.

USAF TEST TARGET



Positive



Negative

Our chromium test targets cover the range from group 0 to group 7, while the emulsion targets cover 0 to 6. USAF test targets, of either chromium or emulsion type, are available in either positive or negative form. The corresponding numbers of line pairs per millimeter appear in the following table.

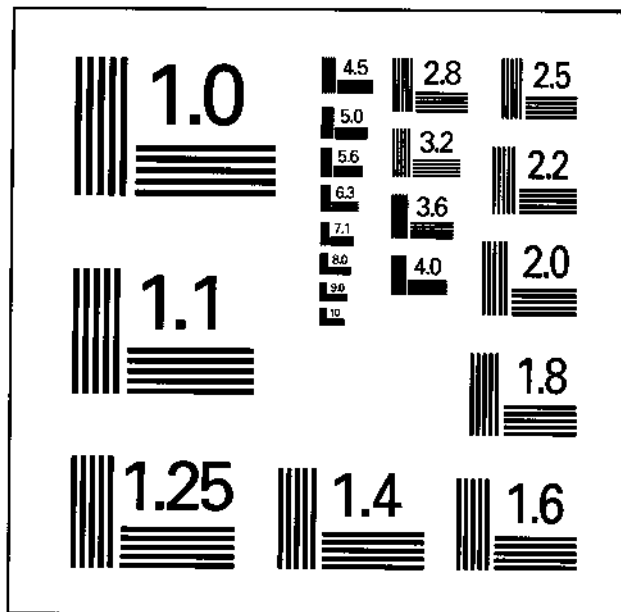
Line Pairs Per Millimeter

Element Number	Group Number							7*
	0	1	2	3	4	5	6	
1	1.00	2.00	4.00	8.00	16.0	32.0	64.0	128
2	1.12	2.24	4.49	8.98	17.95	36.0	71.8	144
3	1.26	2.52	5.04	10.10	20.16	40.3	80.6	161
4	1.41	2.83	5.66	11.30	22.62	45.3	90.5	181
5	1.59	3.17	6.35	12.70	25.39	50.8	102.0	203
6	1.78	3.56	7.13	14.30	28.51	57.0	114.0	228

*Chromium only.

Also in widespread use is the NBS 1963A test target. In appearance it is self-explanatory, the number nearest each pattern element being the number of line pairs per millimeter for that element. NBS test targets are chromium positive only.

NBS TEST TARGET



SPECIFICATIONS: TEST TARGETS

Substrate:

50 × 50 × 1.5 mm for USAF pattern
63.5 × 63.5 × 1.5 mm for NBS pattern

Type: Evaporated chromium or photographic emulsion

Pattern: USAF 1951 or NBS 1963A

Range:

USAF Chromium Type: 1–228 line pairs/mm

USAF Emulsion Type: 1–114 line pairs/mm

NBS Chromium Type: 1–18 line pairs/mm

Test Targets

Description	PRODUCT NUMBER
USAF 1951 Emulsion Positive	04 TRP 001
USAF 1951 Chromium Positive	04 TRP 003
USAF 1951 Emulsion Negative	04 TRN 001
USAF 1951 Chromium Negative	04 TRN 003
NBS 1963A Chromium Positive	04 TRP 005