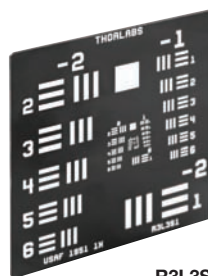


1951 USAF Resolution Targets

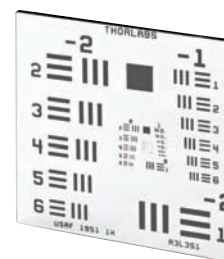
Features

- Determine Resolution of an Optical System
- 3" x 1" Wheel Pattern Targets for Measuring Resolution Across Image
- 3" x 3" Targets Offer up to 4.4 μm per Line Pair Resolution
- Conforms to MIL-S-150A Standard
- Positive and Negative Patterns Available

NEW
versions



R3L3S1N
Negative Pattern



R3L3S1P
Positive Pattern



R3L1S4P
Positive Wheel Pattern

Thorlabs offers positive and negative resolution test targets that are made from plating chrome on a soda lime glass substrate and measure either 3" x 1" or 3" x 3". A set of six elements (horizontal and vertical line pair) are in one group and ten groups compose the

resolution chart. The spacing between the lines in each element is equal to the thickness of the line itself. When the target is imaged, the resolution of an imaging system can be determined by viewing the clarity of the horizontal and vertical lines. The largest set of non-distinguishable horizontal and vertical lines determines the resolving power of the imaging system.

The 3" x 3" targets have 10 groups (-2 to +7), with 6 elements per group to offer resolution from 0.250 line pairs per mm (lp/mm) to 228.0 lp/mm. On the other hand, the 3" x 1" wheel pattern targets have 9 USAF 1951 targets, each with 6 groups (+2 to +7) to also offer a maximum resolution of 228.0 lp/mm with a minimum of 4.00 lp/mm.

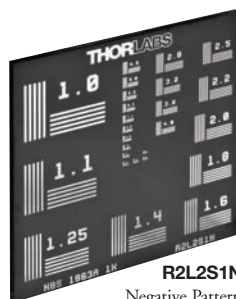
USAF 1951 Targets*

Element	Group Number									
	-2	-1	0	1	2	3	4	5	6	7
1	0.250	0.500	1.00	2.00	4.00	8.00	16.00	32.00	64.00	128.00
2	0.280	0.561	1.12	2.24	4.49	8.98	17.95	36.0	71.8	144.0
3	0.315	0.630	1.26	2.52	5.04	10.10	20.16	40.3	80.6	161.0
4	0.353	0.707	1.41	2.83	5.66	11.30	22.62	45.3	90.5	181.0
5	0.397	0.793	1.59	3.17	6.35	12.70	25.39	50.8	102.0	203.0
6	0.445	0.891	1.78	3.56	7.13	14.30	28.50	57.0	114.0	228.0

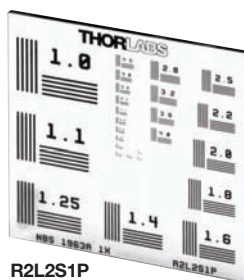
* Units are line pairs per millimeter

ITEM #	\$	£	€	RMB	DESCRIPTION
R3L3S1N	\$ 160.00	£ 115.20	€ 139.20	¥ 1,275.20	Negative 1951 USAF Test Target, 3" x 3"
R3L3S1P	\$ 160.00	£ 115.20	€ 139.20	¥ 1,275.20	Positive 1951 USAF Test Target, 3" x 3"
R3L1S4N	\$ 200.00	£ 144.00	€ 174.00	¥ 1,594.00	Negative 1951 USAF Wheel Pattern, 3" x 1"
R3L1S4P	\$ 200.00	£ 144.00	€ 174.00	¥ 1,594.00	Positive 1951 USAF Wheel Pattern, 3" x 1"

NBS 1963A Resolution Targets



R2L2S1N
Negative Pattern



R2L2S1P
Positive Pattern

- Determine Resolution of an Optical System
- Frequencies from 1 to 18 cycles/mm
- 2" x 2" Soda Lime Glass Substrate
- Positive and Negative Patterns Available

NEW
products

Thorlabs offers positive and negative NBS 1963A resolution test targets that are made from plating chrome on a glass substrate and measure 2" x 2". These targets have sets of 5 horizontal and 5 vertical lines. Each set of lines is labeled with a number, which refers to the number of cycles per mm. With a maximum frequency of 18 cycles/mm, the smallest cycles are only 0.056 mm. The minimum frequency is 1.0 cycle/mm.

NBS 1963A Targets

Cycles/mm	Cycle Size	Cycles/mm	Cycle Size
1.0	1.00 mm	4.5	0.222 mm
1.1	0.909 mm	5.0	0.200 mm
1.25	0.800 mm	5.6	0.179 mm
1.4	0.714 mm	6.3	0.159 mm
1.6	0.625 mm	7.1	0.141 mm
1.8	0.556 mm	8.0	0.125 mm
2.0	0.500 mm	9.0	0.111 mm
2.2	0.455 mm	10.0	0.100 mm
2.5	0.400 mm	11.0	0.091 mm
2.8	0.357 mm	12.5	0.080 mm
3.2	0.313 mm	14.0	0.071 mm
3.6	0.278 mm	16.0	0.063 mm
4.0	0.250 mm	18.0	0.056 mm

ITEM #	\$	£	€	RMB	DESCRIPTION
R2L2S1N	\$ 120.00	£ 86.40	€ 104.40	¥ 956.40	Negative NBS 1963A Resolution Target, 2" x 2"
R2L2S1P	\$ 200.00	£ 144.00	€ 174.00	¥ 1,594.00	Positive NBS 1963A Resolution Target, 2" x 2"