

SKIES project

## Edwards AFB optical resolution target reflectivity

All measurements are with sensor vertical, except two extra readings at #4.

At location #4, the sensor is tilted +30 deg (toward the sun) or -30 (away).

wave-number (cm-1)	#1	#2	#3	#4	location on optical resolution target (see diagram)				#6
					+30 deg	-30 deg	#5		
360	27778	0.135	0.100	0.276	0.118	0.229	0.190	0.226	0.102
380	26316	0.101	0.076	0.148	0.407	0.331	0.474	0.417	0.157
400	25000	0.045	0.040	0.056	0.485	0.479	0.687	0.378	0.231
420	23810	0.060	0.068	0.035	0.559	0.536	0.657	0.459	0.415
440	22727	0.035	0.082	0.050	0.595	0.578	0.705	0.489	0.443
460	21739	0.026	0.033	0.061	0.593	0.582	0.707	0.523	0.504
480	20833	0.058	0.053	0.055	0.829	0.600	0.734	0.542	0.513
500	20000	0.053	0.033	0.052	0.632	0.598	0.735	0.534	0.490
520	19231	0.061	0.054	0.053	0.649	0.597	0.752	0.567	0.515
540	18519	0.034	0.040	0.055	0.844	0.598	0.763	0.558	0.551
560	17857	0.032	0.034	0.053	0.659	0.605	0.771	0.570	0.522
580	17241	0.052	0.050	0.050	0.668	0.599	0.774	0.574	0.535
600	16687	0.028	0.048	0.057	0.663	0.602	0.759	0.582	0.508
620	16129	0.040	0.035	0.072	0.874	0.587	0.778	0.586	0.522
640	15625	0.045	0.040	0.085	0.647	0.808	0.729	0.589	0.515
660	15152	0.045	0.053	0.065	0.662	0.802	0.764	0.566	0.544
680	14706	0.043	0.048	0.056	0.655	0.589	0.755	0.574	0.544
700	14286	0.053	0.047	0.063	0.661	0.581	0.755	0.574	0.565
720	13889	0.057	0.051	0.061	0.660	0.577	0.751	0.571	0.548
740	13514	0.059	0.052	0.064	0.660	0.578	0.744	0.572	0.559
760	13158	0.082	0.055	0.084	0.876	0.583	0.735	0.588	0.582
780	12821	0.078	0.072	0.082	0.663	0.576	0.737	0.579	0.548
800	12500	0.084	0.068	0.088	0.662	0.577	0.727	0.576	0.572
820	12195	0.093	0.078	0.095	0.662	0.573	0.742	0.585	0.580
840	11905	0.068	0.065	0.092	0.650	0.570	0.732	0.589	0.554
860	11628	0.075	0.066	0.088	0.646	0.581	0.715	0.573	0.547
880	11364	0.076	0.069	0.091	0.638	0.555	0.709	0.583	0.550
900	11111	0.086	0.084	0.099	0.640	0.563	0.717	0.591	0.559
920	10870	0.096	0.085	0.119	0.637	0.552	0.703	0.598	0.547
940	10638	0.151	0.133	0.198	0.658	0.575	0.730	0.625	0.578
960	10417	0.150	0.132	0.175	0.643	0.573	0.727	0.618	0.561
980	10204	0.131	0.114	0.148	0.627	0.552	0.701	0.606	0.540
1000	10000	0.123	0.109	0.138	0.616	0.541	0.686	0.595	0.531

## weather conditions:

visibility over 50 miles  
 clouds. cirrus; 4/8 of sky  
 date 8 Feb 95  
 time 15:24 to 15:48  
 sun angle 19.0 degrees  
 temp. 74 F  
 humidity 31%  
 wind 0

location: Edwards AFB, California  
 target #: A-4  
 material black or white paint on steel

instrument: Bomem DA-2

OPEN SKIES project

## Edwards AFB optical resolution target reflectivity

All measurements are with the sensor vertical except for two extra readings at location #4.  
 At location #4, the sensor is tilted +30 degrees (toward the sun) or -30 degrees (away from the sun)

wave-length (nm)	wave-number (cm <sup>-1</sup> )	location on optical resolution target (see diagram)						#5	#6
		#1	#2	#3	#4	+30 deg	-30 deg		
360	27778	0.040	0.107	0.041	0.330	0.140	0.446	0.288	0.054
380	26316	0.061	0.088	0.064	0.427	0.154	0.528	0.351	0.112
400	25000	0.095	0.094	0.083	0.564	0.188	0.674	0.510	0.400
420	23810	0.123	0.111	0.105	0.809	0.215	0.733	0.559	0.675
440	22727	0.139	0.129	0.116	0.639	0.230	0.769	0.605	0.697
460	21739	0.152	0.144	0.130	0.659	0.245	0.788	0.635	0.713
480	20833	0.169	0.160	0.141	0.673	0.256	0.798	0.653	0.719
500	20000	0.181	0.172	0.151	0.689	0.264	0.808	0.672	0.722
520	19231	0.191	0.181	0.155	0.702	0.277	0.820	0.687	0.731
540	18519	0.198	0.186	0.162	0.712	0.283	0.823	0.697	0.735
560	17857	0.200	0.191	0.164	0.719	0.291	0.828	0.705	0.738
580	17241	0.200	0.189	0.163	0.721	0.295	0.826	0.707	0.739
600	16687	0.198	0.191	0.159	0.720	0.294	0.827	0.708	0.742
620	16129	0.192	0.185	0.159	0.711	0.299	0.813	0.698	0.740
640	15625	0.199	0.200	0.166	0.718	0.300	0.809	0.703	0.726
660	15152	0.199	0.196	0.158	0.718	0.296	0.792	0.708	0.741
680	14706	0.205	0.197	0.166	0.712	0.302	0.790	0.705	0.731
700	14286	0.211	0.203	0.171	0.711	0.304	0.774	0.707	0.730
720	13889	0.214	0.208	0.173	0.707	0.304	0.774	0.703	0.729
740	13514	0.220	0.212	0.178	0.708	0.306	0.770	0.703	0.729
760	13158	0.238	0.227	0.197	0.698	0.299	0.768	0.709	0.719
780	12821	0.232	0.223	0.186	0.705	0.307	0.758	0.706	0.724
800	12500	0.237	0.229	0.190	0.702	0.307	0.748	0.704	0.720
820	12195	0.238	0.233	0.194	0.697	0.308	0.748	0.706	0.713
840	11905	0.237	0.229	0.190	0.695	0.307	0.739	0.703	0.708
860	11628	0.231	0.223	0.185	0.687	0.307	0.734	0.697	0.701
880	11364	0.223	0.215	0.179	0.681	0.307	0.724	0.694	0.695
900	11111	0.216	0.210	0.173	0.672	0.309	0.718	0.689	0.688
920	10870	0.210	0.205	0.171	0.667	0.311	0.710	0.686	0.676
940	10638	0.212	0.210	0.175	0.655	0.317	0.705	0.687	0.661
960	10417	0.209	0.207	0.174	0.651	0.319	0.700	0.682	0.656
980	10204	0.209	0.202	0.173	0.647	0.320	0.692	0.676	0.649
1000	10000	0.213	0.203	0.178	0.645	0.323	0.686	0.674	0.645

## weather conditions:

visibility over 50 miles  
 clouds cumulus; 6/8 of sky  
 date 8 Feb 85  
 time 12:45 to 13:04  
 sun angle 38.2 deg  
 temp. 56 F  
 humidity 84%  
 wind 15 mph ESE

location: Edwards AFB, California  
 target #: A-5  
 material black or white paint on steel

Instrument:  
 Bomem DA-2

OPEN SKIES project

## Edwards AFB optical resolution target reflectivity

All measurements are with sensor vertical, except for two extra readings at #4.

At location #4, the sensor is tilted +30 deg (toward sun) and -30 (away).

wave-length (nm)	wave-number (cm-1)	location on optical resolution target (see diagram)							
		#1	#2	#3	#4	+30 deg	-30 deg	#5	#6
360	27778	0.180	0.232	0.132	0.331	0.348	0.319	0.158	0.045
380	28316	0.200	0.223	0.198	0.378	0.423	0.443	0.201	0.101
400	25000	0.219	0.238	0.204	0.540	0.548	0.622	0.317	0.309
420	23810	0.232	0.245	0.225	0.593	0.608	0.676	0.369	0.559
440	22727	0.240	0.250	0.236	0.634	0.645	0.725	0.397	0.568
460	21739	0.248	0.262	0.245	0.661	0.671	0.769	0.424	0.565
480	20833	0.254	0.261	0.252	0.678	0.686	0.792	0.446	0.572
500	20000	0.259	0.264	0.259	0.690	0.702	0.808	0.462	0.571
520	19231	0.263	0.266	0.265	0.707	0.718	0.829	0.476	0.575
540	18519	0.266	0.268	0.270	0.715	0.729	0.841	0.487	0.574
560	17857	0.265	0.266	0.272	0.720	0.736	0.848	0.496	0.576
580	17241	0.264	0.265	0.269	0.728	0.742	0.855	0.503	0.576
600	16667	0.262	0.256	0.267	0.724	0.744	0.860	0.500	0.570
620	16129	0.255	0.255	0.261	0.723	0.741	0.857	0.524	0.570
640	15625	0.255	0.249	0.266	0.719	0.743	0.852	0.507	0.568
660	15152	0.250	0.246	0.257	0.707	0.734	0.834	0.501	0.574
680	14708	0.256	0.252	0.265	0.722	0.739	0.844	0.508	0.569
700	14288	0.258	0.255	0.264	0.718	0.739	0.844	0.508	0.567
720	13889	0.256	0.255	0.264	0.717	0.734	0.837	0.505	0.566
740	13514	0.260	0.258	0.267	0.718	0.734	0.830	0.510	0.569
760	13158	0.275	0.272	0.283	0.719	0.741	0.830	0.498	0.555
780	12821	0.264	0.262	0.271	0.712	0.728	0.823	0.511	0.565
800	12500	0.267	0.264	0.275	0.712	0.723	0.819	0.510	0.558
820	12195	0.267	0.265	0.274	0.709	0.724	0.813	0.507	0.556
840	11905	0.268	0.266	0.275	0.703	0.716	0.808	0.510	0.556
860	11628	0.267	0.266	0.274	0.700	0.712	0.799	0.508	0.552
880	11364	0.267	0.265	0.275	0.695	0.707	0.792	0.504	0.550
900	11111	0.269	0.266	0.279	0.692	0.706	0.781	0.496	0.541
920	10870	0.274	0.271	0.282	0.685	0.699	0.777	0.495	0.538
940	10638	0.291	0.289	0.300	0.689	0.704	0.776	0.490	0.528
960	10417	0.297	0.293	0.306	0.683	0.701	0.788	0.487	0.525
980	10204	0.303	0.299	0.313	0.874	0.890	0.759	0.488	0.526
1000	10000	0.313	0.309	0.323	0.670	0.685	0.752	0.489	0.527

## weather conditions:

visibility over 50 miles  
 clouds cumulus; 1/8 of sky  
 date 8 Feb 95  
 time 11:02 to 11:36  
 sun angle 38 degrees  
 temp. 56 F  
 humidity 64%  
 wind 20 mph, SW

location: Edwards AFB, California

target #: A7

material: gray or white paint on steel

Instrument: BOMEM DA-2

## OPEN SKIES project

## Edwards AFB optical resolution target reflectivity

All measurements are with sensor vertical, except two extra readings at #4.

At location #4, the sensor is tilted +30 deg (toward sun) or -30 deg (away).

wave-length (nm)	wave-number (cm <sup>-1</sup> )	location on optical resolution target (see diagram)							
		#1	#2	#3	#4	+30 deg	-30 deg	#5	#6
360	27778	0.063	0.039	0.095	0.043	0.100	0.111	0.039	0.066
380	26316	0.134	0.142	0.141	0.084	0.105	0.151	0.129	0.126
400	25000	0.155	0.139	0.167	0.349	0.332	0.448	0.339	0.355
420	23810	0.186	0.164	0.201	0.588	0.584	0.722	0.624	0.684
440	22727	0.183	0.167	0.225	0.819	0.589	0.759	0.882	0.582
460	21739	0.192	0.177	0.240	0.649	0.601	0.778	0.688	0.689
480	20833	0.198	0.183	0.250	0.680	0.608	0.790	0.709	0.591
500	20000	0.204	0.191	0.263	0.676	0.618	0.802	0.728	0.596
520	19231	0.217	0.202	0.282	0.896	0.830	0.816	0.749	0.601
540	18519	0.226	0.211	0.296	0.708	0.840	0.828	0.770	0.602
560	17857	0.236	0.221	0.312	0.722	0.850	0.838	0.785	0.604
580	17241	0.245	0.227	0.325	0.733	0.858	0.846	0.799	0.605
600	16667	0.251	0.231	0.335	0.736	0.865	0.851	0.807	0.606
620	16129	0.254	0.228	0.340	0.740	0.871	0.857	0.819	0.590
640	15625	0.255	0.238	0.348	0.768	0.875	0.860	0.825	0.601
660	15152	0.251	0.243	0.340	0.751	0.878	0.883	0.831	0.602
680	14706	0.257	0.242	0.353	0.758	0.884	0.886	0.834	0.600
700	14286	0.261	0.245	0.380	0.764	0.889	0.888	0.840	0.605
720	13889	0.264	0.248	0.387	0.770	0.896	0.870	0.841	0.607
740	13514	0.268	0.250	0.372	0.774	0.700	0.871	0.846	0.609
760	13158	0.272	0.259	0.379	0.782	0.709	0.878	0.859	0.602
780	12821	0.275	0.258	0.383	0.778	0.706	0.873	0.850	0.613
800	12500	0.276	0.258	0.384	0.780	0.707	0.874	0.850	0.610
820	12195	0.276	0.258	0.388	0.778	0.709	0.871	0.852	0.608
840	11805	0.276	0.258	0.388	0.777	0.707	0.870	0.850	0.606
860	11628	0.275	0.256	0.369	0.776	0.706	0.867	0.850	0.599
880	11384	0.272	0.254	0.387	0.774	0.705	0.864	0.848	0.592
900	11111	0.270	0.252	0.387	0.771	0.708	0.861	0.844	0.584
920	10870	0.269	0.250	0.386	0.768	0.705	0.859	0.841	0.580
940	10638	0.271	0.252	0.392	0.766	0.707	0.854	0.839	0.574
960	10417	0.271	0.251	0.391	0.764	0.705	0.852	0.838	0.568
980	10204	0.270	0.249	0.388	0.762	0.702	0.852	0.837	0.561
1000	10000	0.271	0.249	0.387	0.760	0.700	0.850	0.836	0.556

## weather conditions:

visibility over 50 miles  
 clouds cumulus, 2/8 of sky  
 date 8 Feb 95  
 time 13:54 to 14:11  
 sun angle 32.5 degrees  
 temp. 82 F  
 humidity 51%  
 wind 14 mph SSW

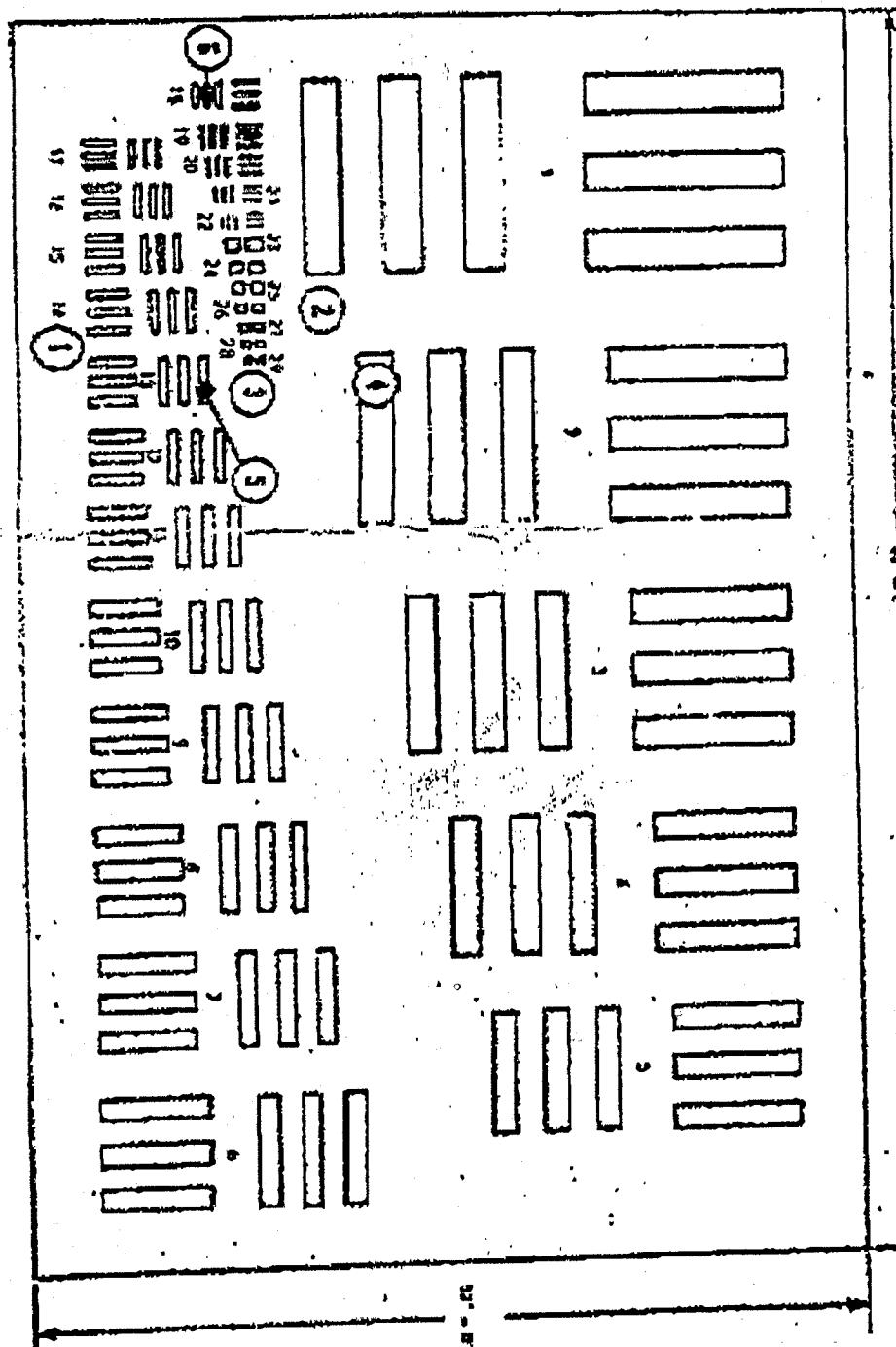
location: Edwards AFB, California

target #: A-11

material: white paint on steel, asphalt

instrument:

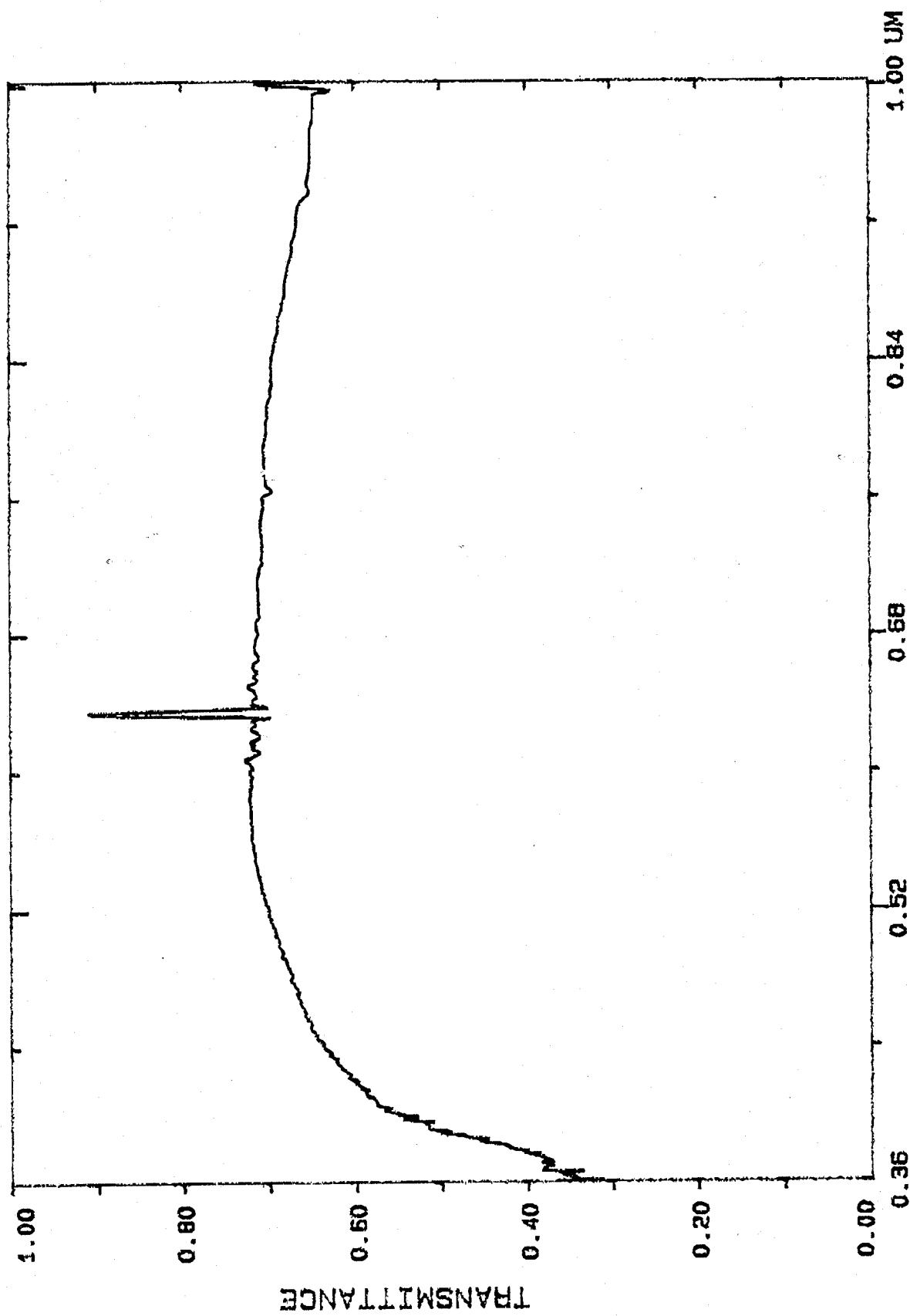
Bonom DA-2



## MEASUREMENT LOCATION MAP

720	3.68	3.54	5.10	69.0	61.0	62.0
740	2.29	2.34	5.10	62.0	53.0	54.0
750	2.38	2.38	4.85	60.0	60.9	60.1

EDNTST020 .WVL  
RES: 64.000  
Test at Edwards, 08-Feb-95  
Target A-5, Position #4



## SIZE A TARGET

## BAR DIMENSIONS

GROUP NUMBER	GROUND RESOLVED DISTANCE*		GROUP NUMBER	GROUND RESOLVED DISTANCE*	
	ENGLISH	METRIC		ENGLISH	METRIC
1	60.50 in	1.536 m	16	10.62 in	0.269 m
2	53.88 in	1.368 m	17	9.50 in	0.241 m
3	48.00 in	1.219 m	18	8.50 in	0.215 m
4	42.76 in	1.086 m	19	7.62 in	0.193 m
5	38.12 in	0.968 m	20	6.76 in	0.171 m
6	34.00 in	0.863 m	21	6.00 in	0.152 m
7	30.26 in	0.768 m	22	5.38 in	0.136 m
8	27.00 in	0.685 m	23	4.76 in	0.120 m
9	24.00 in	0.609 m	24	4.24 in	0.107 m
10	21.38 in	0.543 m	25	3.76 in	0.095 m
11	19.00 in	0.482 m	26	3.38 in	0.085 m
12	17.00 in	0.431 m	27	3.00 in	0.076 m
13	15.12 in	0.384 m	28	2.68 in	0.068 m
14	13.50 in	0.342 m	29	2.38 in	0.060 m
15	12.00 in	0.304 m			

## SIZE B TARGET

## BAR DIMENSIONS

GROUP NUMBER	GROUND RESOLVED DISTANCE*		GROUP NUMBER	GROUND RESOLVED DISTANCE*	
	ENGLISH	METRIC		ENGLISH	METRIC
1	135.60 in	3.444 m	5	85.40 in	2.169 m
2	121.00 in	3.073 m	6	76.20 in	1.935 m
3	107.60 in	2.733 m	7	67.80 in	1.722 m
4	96.00 in	2.438 m			

\*GROUND RESOLVED DISTANCE = BAR WIDTH + SPACE WIDTH

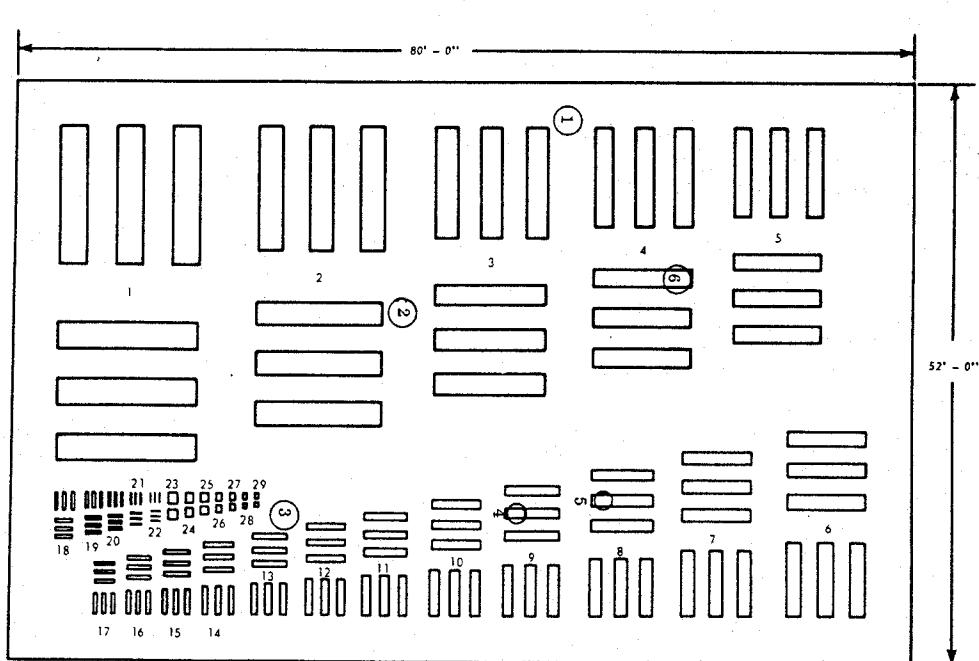
Note: Equations for calculation of System Resolution (lines/mm) from GRD (ground resolved distance) values above may be found in the introduction of this manual.

**TARGET TYPE:** A-4  
**MEASUREMENT DATE:** 9 March 1972  
**TIME:** 0825 Hrs

### SPECTRAL REFLECTANCE

$\lambda$ (nm)	1st % R/nm	2nd % R/nm	3rd % R/nm	4th % R/nm	5th % R/nm	6th % R/nm
360	4.00	4.43	4.72	36.4	37.4	45.6
380	4.15	4.49	4.66	43.3	42.1	51.4
400	4.84	4.66	5.12	53.9	49.9	60.9
420	5.11	4.77	5.13	55.7	52.1	61.0
440	5.36	4.71	5.26	60.0	55.2	65.3
460	5.21	4.65	5.08	61.0	55.3	67.2
480	4.96	4.47	4.97	62.2	57.0	67.4
500	4.79	4.19	4.75	62.7	57.2	67.7
520	4.61	4.05	4.62	63.7	57.8	68.6
540	4.43	3.95	4.48	64.6	58.1	68.7
560	4.32	3.82	4.35	65.3	58.7	69.7
580	4.06	3.65	4.17	65.1	58.6	69.8
600	3.93	3.55	4.00	65.4	58.4	69.7
620	3.67	3.49	3.89	65.9	58.8	69.9
640	3.44	3.52	3.86	66.6	59.2	70.6
660	3.10	3.46	3.98	65.2	58.9	69.1
680	2.58	3.47	3.90	66.3	59.7	70.1
700	3.60	3.10	3.98	67.0	59.7	68.3
720	4.09	3.29	3.90	65.9	59.1	69.3
740	3.90	3.16	3.83	65.1	57.9	68.4
760	3.35	2.19	3.36	65.1	58.7	68.9

### MEASUREMENT LOCATION MAP



**EDWARDS AFB, CALIF.**

---

