

LIEBERMAN & WALISKO
CONSULTING TELECOMMUNICATIONS ENGINEERS
701 YEATMAN PARKWAY
SILVER SPRING, MD 20902

WFPT-TV Frederick, MD

Exhibit 33 - Figure 1-A

Antenna Specification Summary

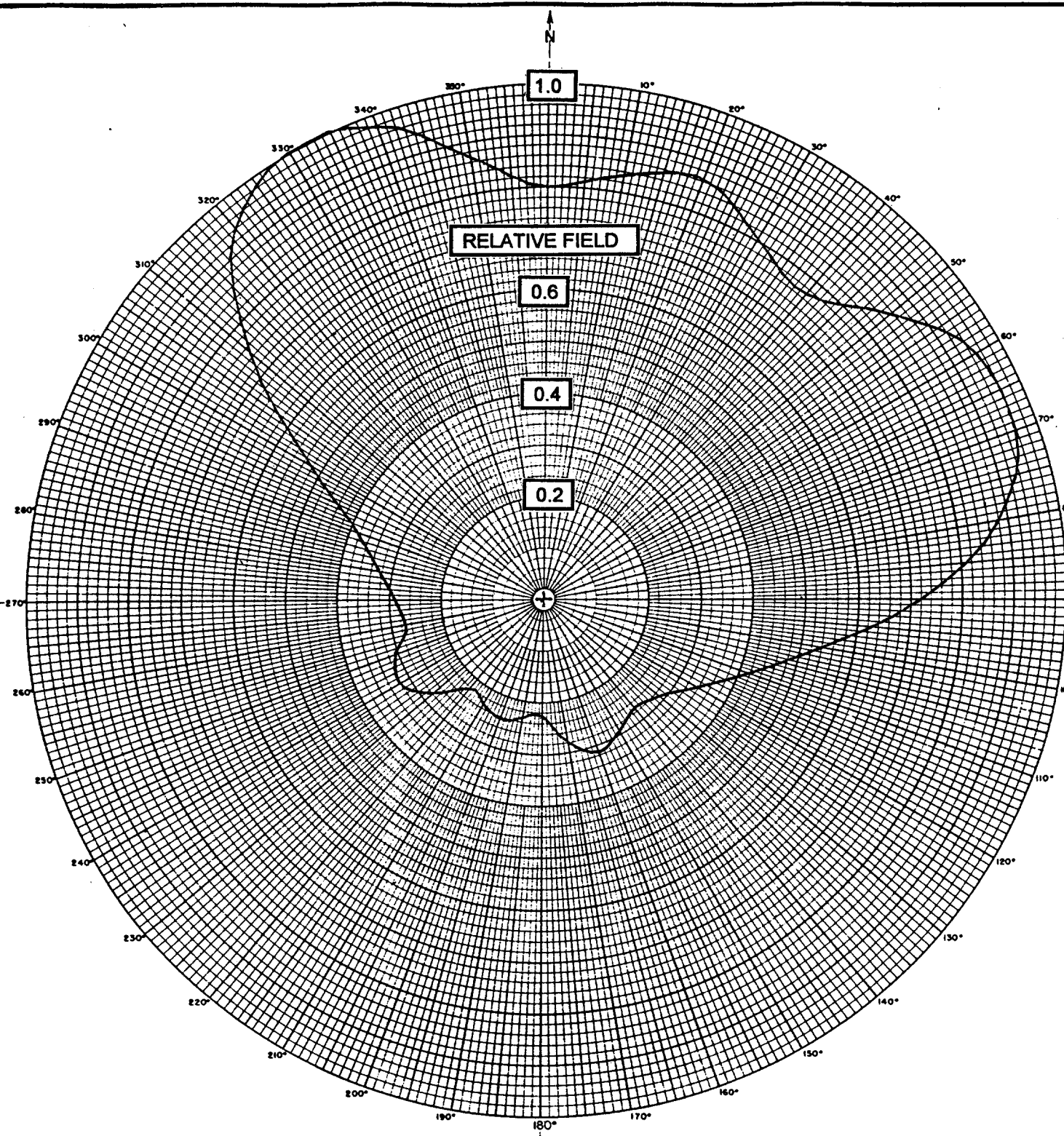
Antenna: Dielectric Communications Type TUF-C4SP-6/16U-1-T

ELECTRICAL SPECIFICATIONS

	<u>NTSC Ch 62</u>		<u>DTV Ch 28</u>	
Elevation Gain Main Lobe (RMS Gain):	13.8 Power	11.40 dB	11.7 Power	10.68 dB
Elevation Gain at Horizontal:	13.0	11.14	11.3	53
Azimuth Gain:	2.5	3.98	2.7	4.31
Power Gain (Main Lobe):	34.5	15.38	31.55	14.99
Beam Tilt:		0.50°		
Input Line Size:		6.125"		

MECHANICAL SPECIFICATIONS

Antenna Length:	7.30 m
Center of Radiation:	3.80 m
Weight:	4,225 lbs



ORIENTATION OF ANTENNA

N 20° E

FIGURE 1 - B

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RELATIVE FIELD PATTERN
HORIZONTAL PLANE

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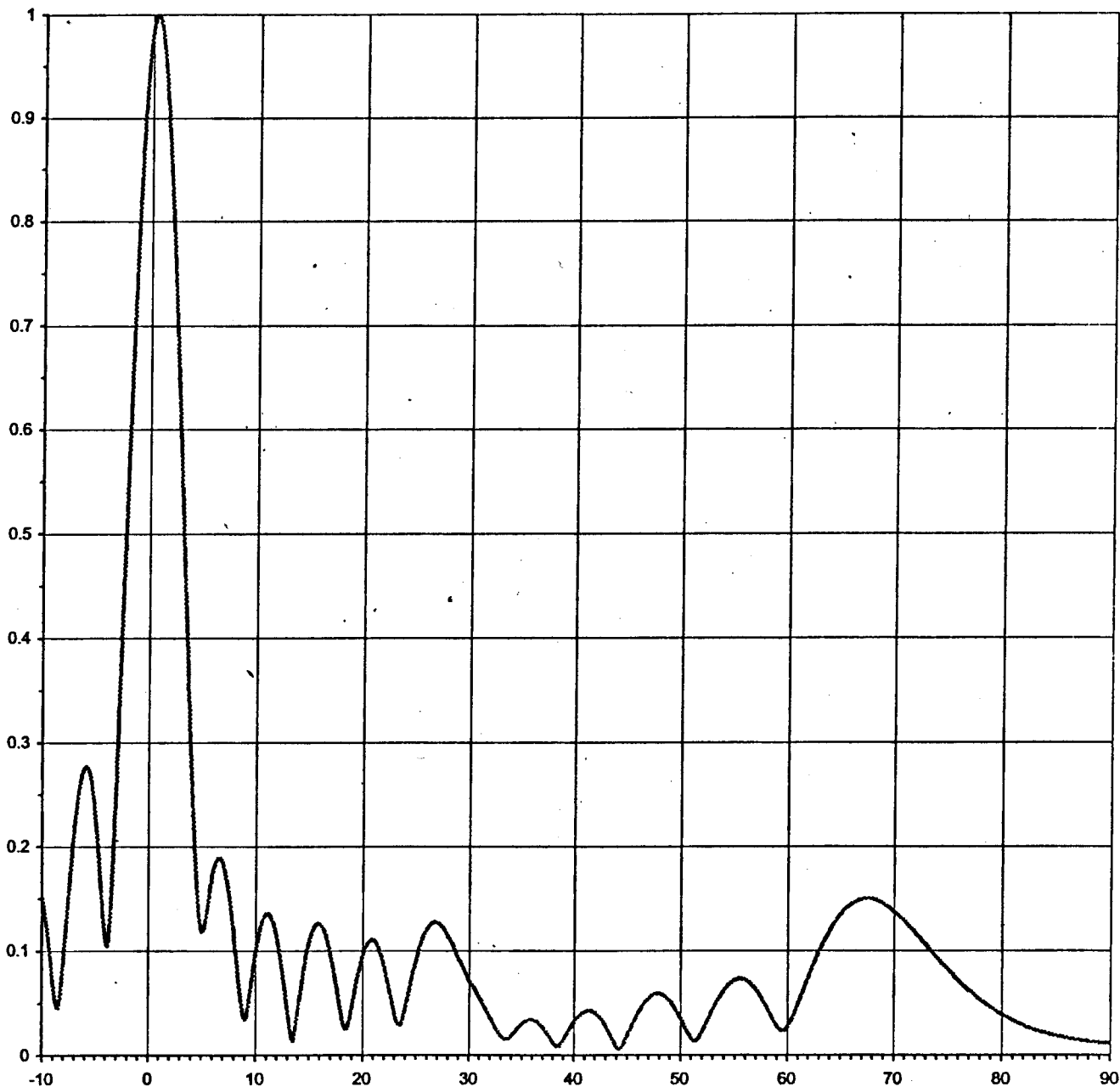


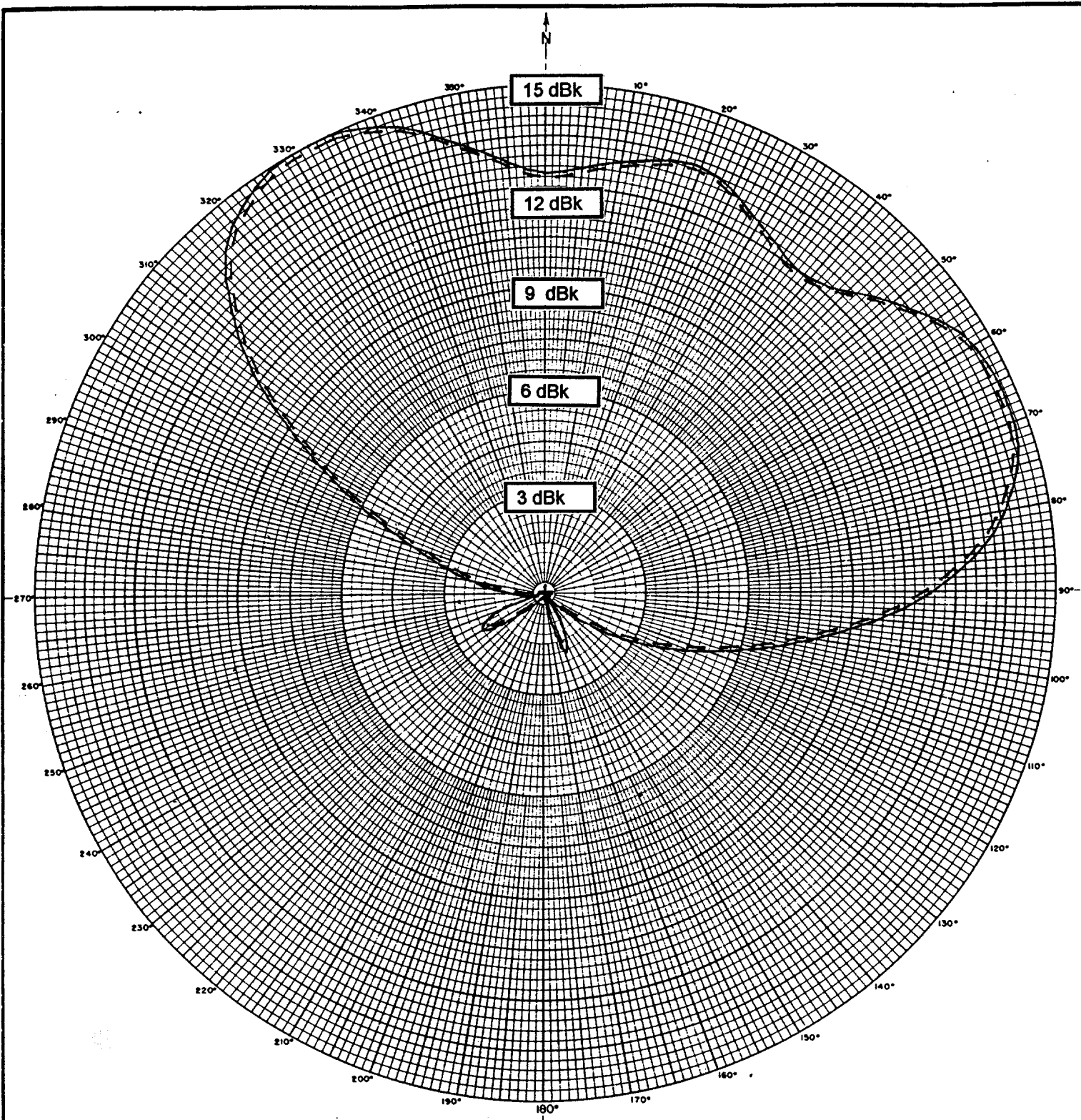
FIGURE 1 - C

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RELATIVE FIELD PATTERN
VERTICAL PLANE

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———— RADIATION - MAIN BEAM

----- RADIATION - HORIZONTAL BEAM

FIGURE 1 - D

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**RADIATION PATTERN IN
dBk - HORIZONTAL PLANE**

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Exhibit 33 - Figure 1-E

Calculated Radiation Values

BEAR. (DEG)	ANT. FACT.	ANT. GAIN (dB)	CALCULATED RAD. HORIZONTAL PLANE		CALCULATED RAD. MAIN BEAM	
			(ERP)	(dBk)	(ERP)	(dBk)
0	0.801	13.06	8.70	9.39	8.98	9.53
10	0.837	13.44	9.50	9.78	9.81	9.92
19	0.870	13.78	10.26	10.11	10.60	10.25
20	0.868	13.76	10.21	10.09	10.55	10.23
30	0.807	13.13	8.83	9.46	9.12	9.60
38	0.771	12.73	8.01	9.04	8.32	9.20
40	0.775	12.78	8.14	9.11	8.41	9.25
50	0.863	13.71	10.10	10.04	10.43	10.18
60	0.954	14.58	12.34	10.91	12.74	11.05
65	0.963	14.66	12.57	10.99	12.98	11.13
70	0.959	14.63	12.47	10.96	12.88	11.10
80	0.879	13.87	10.47	10.20	10.82	10.34
90	0.716	12.09	6.95	8.42	7.18	8.56
100	0.535	9.56	3.88	5.89	4.01	6.03
110	0.416	7.37	2.35	3.70	2.42	3.84
120	0.339	5.59	1.56	1.93	1.61	2.07
130	0.290	4.24	1.14	0.57	1.18	0.71
140	0.272	3.68	1.00	0.01	1.04	0.15
150	0.292	4.30	1.16	0.63	1.19	0.77
160	0.314	4.93	1.34	1.26	1.38	1.40
170	0.281	3.96	1.07	0.30	1.11	0.44
180	0.229	2.19	0.71	-1.48	0.73	-1.34
184	0.222	1.92	0.67	-1.75	0.69	-1.61
190	0.233	2.34	0.74	-1.33	0.76	-1.19
198	0.246	2.81	0.82	-0.86	0.85	-0.72
200	0.245	2.77	0.81	-0.90	0.84	-0.76
210	0.233	2.34	0.74	-1.33	0.76	-1.19
217	0.219	1.80	0.65	-1.87	0.67	-1.73
220	0.226	2.07	0.69	-1.60	0.72	-1.46
230	0.284	4.06	1.09	0.39	1.13	0.53
240	0.323	5.17	1.41	1.51	1.46	1.65
250	0.305	4.68	1.26	1.01	1.30	1.15
257	0.272	3.68	1.00	0.01	1.04	0.15
260	0.273	3.71	1.01	0.04	1.04	0.18
270	0.290	4.24	1.14	0.57	1.18	0.71
280	0.326	5.25	1.44	1.59	1.49	1.73
290	0.387	6.74	2.03	3.08	2.10	3.22
300	0.523	9.36	3.71	5.69	3.83	5.83
310	0.744	12.42	7.50	8.75	7.75	8.89
320	0.934	14.40	11.83	10.73	12.21	10.87
330	0.999	14.98	13.53	11.31	13.97	11.45
335	1.000	14.99	13.56	11.32	14.00	11.46
340	0.976	14.78	12.91	11.11	13.34	11.25
350	0.872	13.80	10.31	10.13	10.65	10.27