

**K22JY-D License Modification - Antenna Pattern Data****July 27, 2023**AZIMUTH PATTERN: Kathrein 2x2-75010210

Main Beam Axis of Symmetry: 110° Electrical Beam Tilt: 1.50°

Main Beam Calculated Max. H-pol Azimuth Pattern Gain (peak) 2.673 4.27 dBd

Maximum Main Beam H-Pol. Effective Radiated Power (ERP): 0.310 kW -5.09 dBk

**Tabulation of Main Beam Azimuth Pattern (Horizontal polarization)**

Angle	RF	dBk	ERP kW
0	0.267	-16.56	0.022
10	0.347	-14.28	0.037
20	0.453	-11.96	0.064
30	0.588	-9.70	0.107
40	0.727	-7.86	0.164
50	0.852	-6.48	0.225
60	0.925	-5.76	0.265
70	0.904	-5.96	0.253
80	0.819	-6.82	0.208
90	0.810	-6.92	0.203
100	0.928	-5.74	0.267
110	1.000	-5.09	0.310
120	0.940	-5.62	0.274
130	0.831	-6.69	0.214
140	0.830	-6.70	0.214
150	0.903	-5.97	0.253
160	0.917	-5.84	0.261
170	0.841	-6.59	0.219
180	0.717	-7.98	0.159
190	0.585	-9.74	0.106
200	0.453	-11.96	0.064
210	0.350	-14.21	0.038
220	0.271	-16.43	0.023
230	0.214	-18.48	0.014
240	0.172	-20.38	0.009
250	0.155	-21.28	0.007
260	0.130	-22.81	0.005
270	0.083	-26.70	0.002
280	0.076	-27.47	0.002
290	0.094	-25.62	0.003
300	0.065	-28.83	0.001
310	0.077	-27.36	0.002
320	0.128	-22.94	0.005
330	0.148	-21.68	0.007
340	0.166	-20.68	0.009
350	0.209	-18.68	0.014

**Maximum**

Angle	RF	dBk	ERP kW
62	0.927	-5.74	0.266
110	1.000	-5.09	0.310
157	0.922	-5.79	0.264
288	0.095	-25.53	0.003

**Minimum**

Angle	RF	dBk	ERP kW
86	0.797	-7.06	0.197
135	0.812	-6.90	0.204
276	0.069	-28.31	0.001
304	0.058	-29.82	0.001

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July 27, 2023

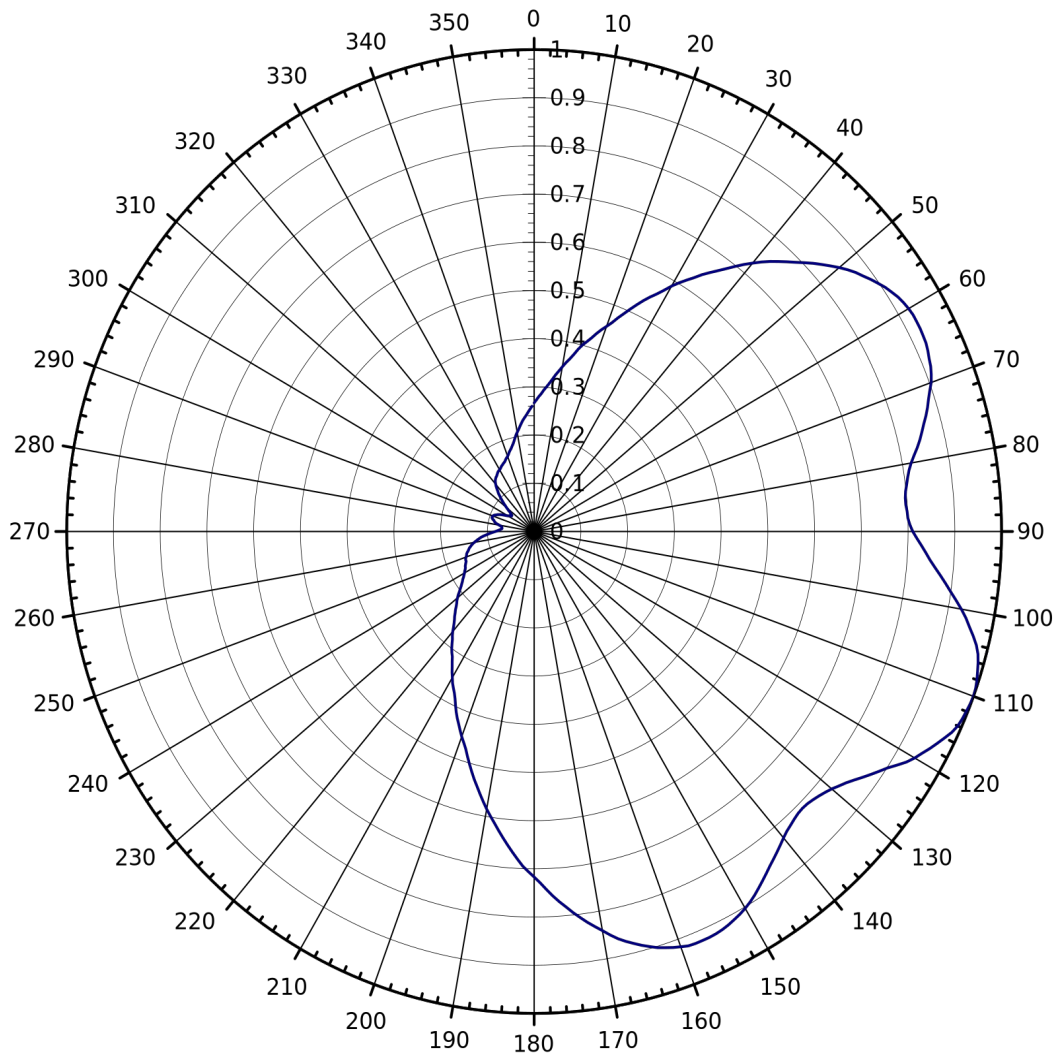
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### MAIN BEAM AZIMUTH PATTERN RELATIVE FIELD



Blue plot shows azimuth pattern relative field at horizontal polarization

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July 27, 2023

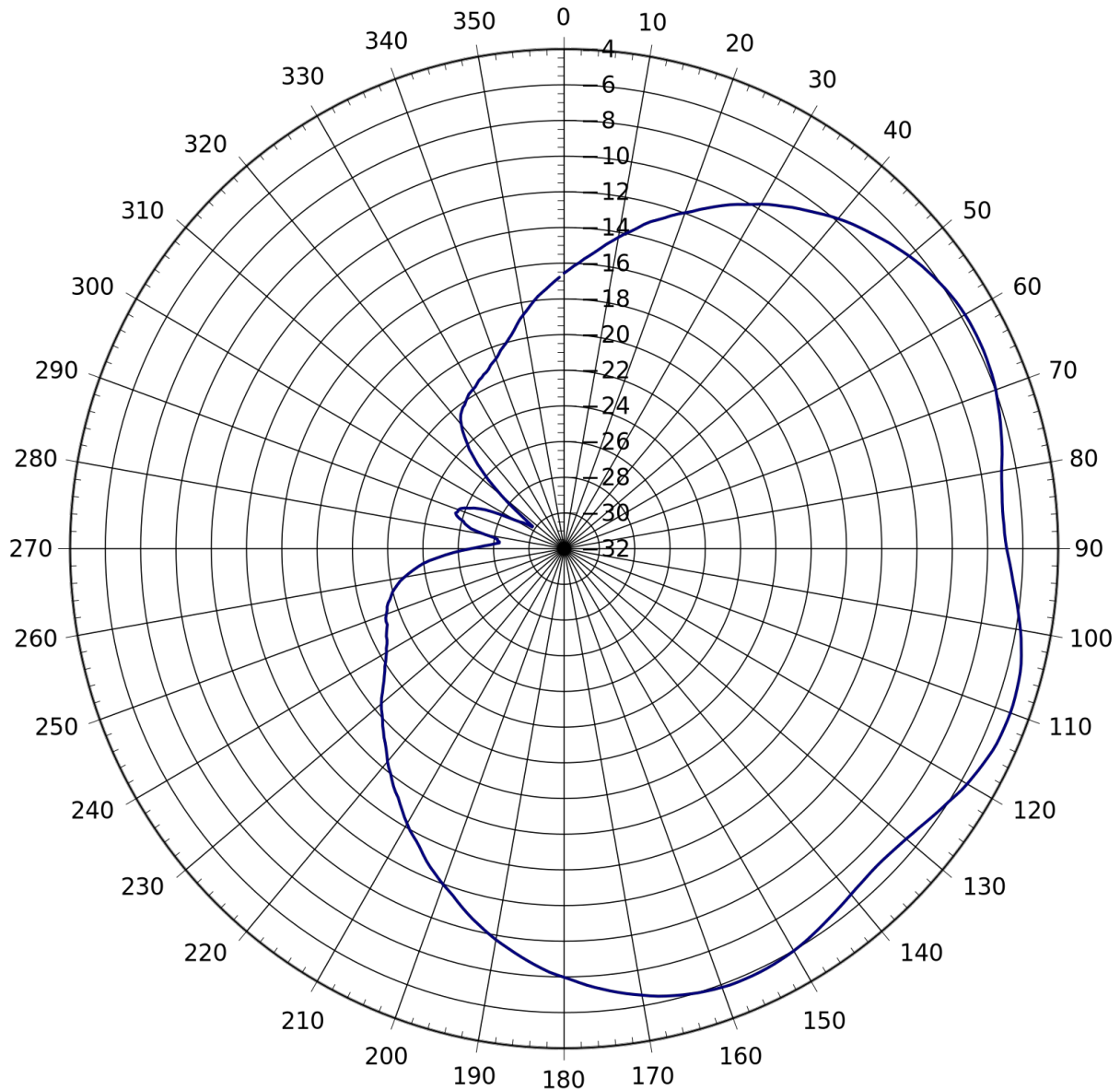
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### MAIN BEAM AZIMUTH PATTERN ERP (dBk)



Blue plot shows effective radiated power (dBk) at horizontal polarization

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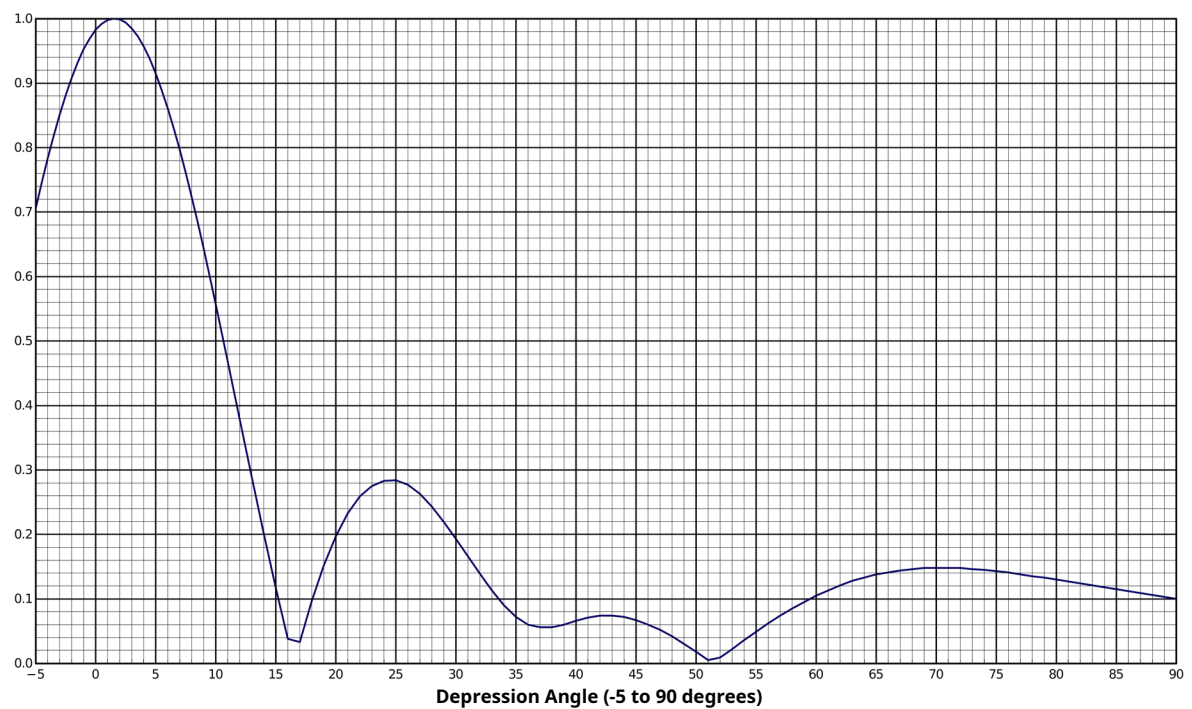
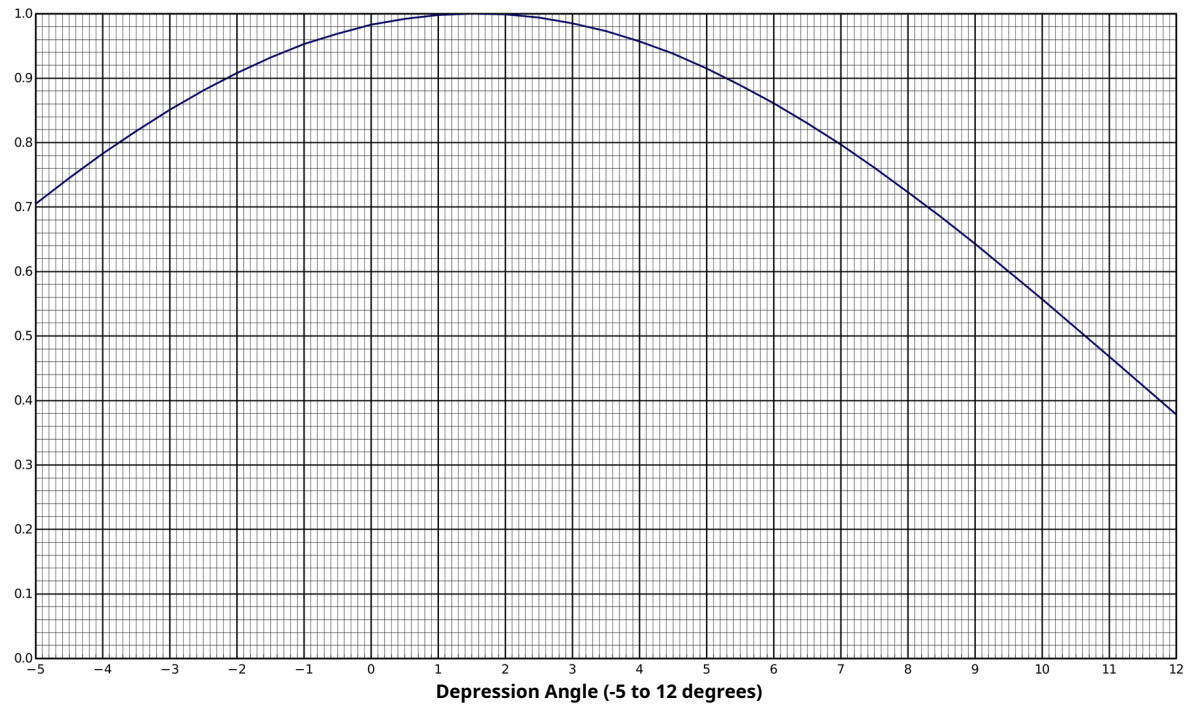
July 27, 2023

### ELEVATION PATTERN Kathrein 2x2-75010210

Main Beam Axis of Symmetry: 110°    Electrical Beam Tilt: 1.50°  
Calculated Maximum Elevation Gain : 4.688 6.71 dBd  
RMS Directivity at Horizontal: 4.530 6.56 dBd  
Maximum Main Beam H-Pol. Effective Radiated Power (ERP): 0.310 kW -5.09 dBk

1.

### Relative Field



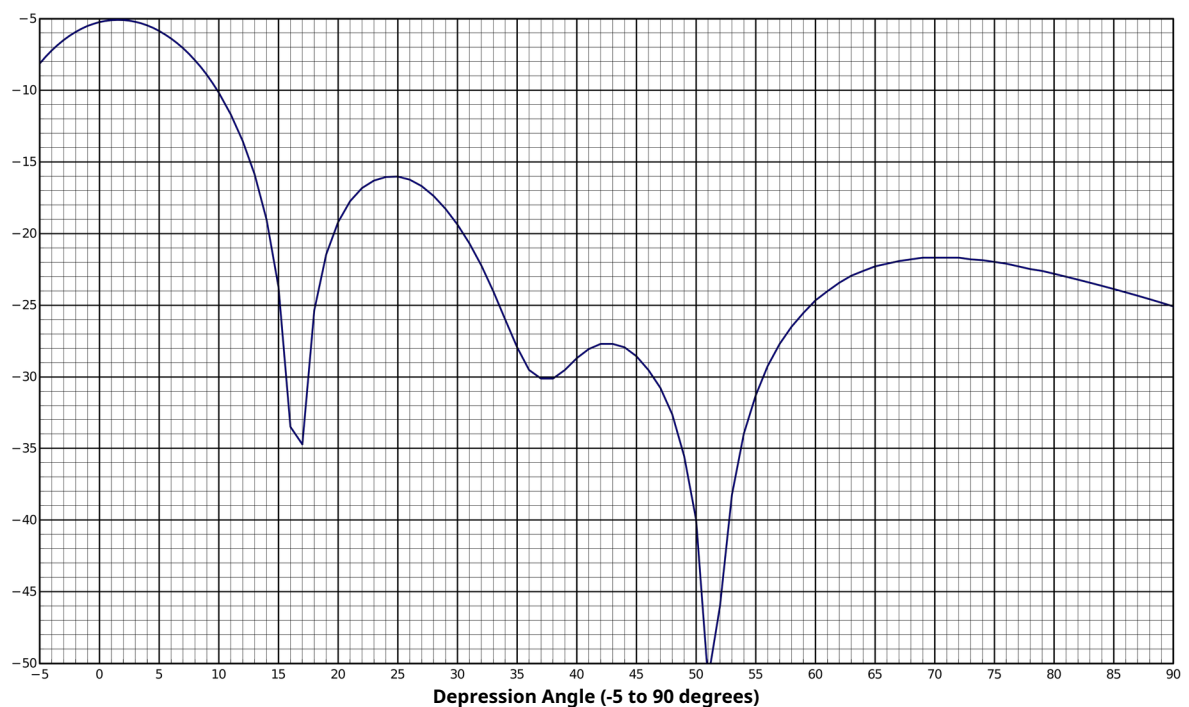
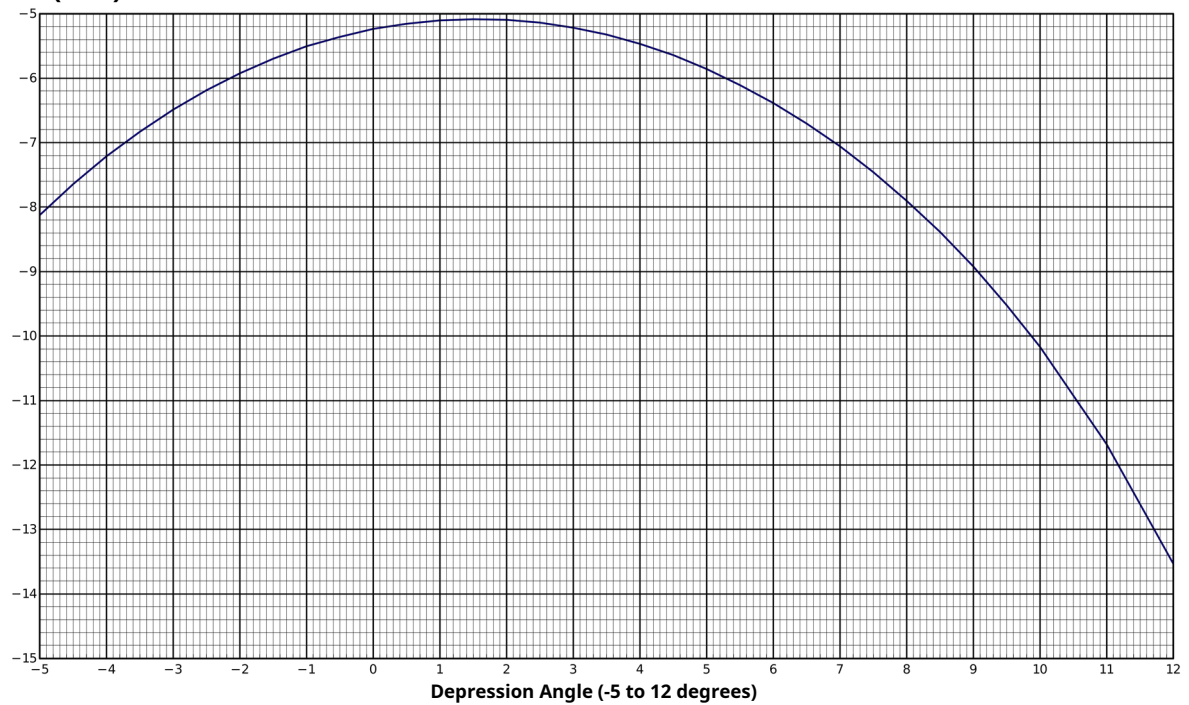
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**July 27, 2023**

ELEVATION PATTERN Kathrein 2x2-75010210

Main Beam Axis of Symmetry: 110°	Electrical Beam Tilt:	1.50°	
Calculated Maximum Elevation Gain	:	4.688	6.71 dBd
RMS Directivity at Horizontal:		4.530	6.56 dBd
<u>Maximum Main Beam H-Pol. Effective Radiated Power (ERP):</u>		<u>0.310 kW</u>	<u>-5.09 dBk</u>

**ERP (dBk):**



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Calculated Maximum Elevation Gain : 4.688 6.71 dBd

RMS Directivity at Horizontal: 4.530 6.56 dBd

Maximum Main Beam H-Pol. Effective Radiated Power (ERP): 0.310 kW -5.09 dBk

**Tabulated Elevation Pattern**

Angle	Field	Angle	Field	Angle	Field	Angle	Field
-5.00	0.705	15.00	0.117	50.00	0.018	85.00	0.115
-4.50	0.745	16.00	0.038	51.00	0.005	86.00	0.112
-4.00	0.783	17.00	0.033	52.00	0.009	87.00	0.109
-3.50	0.818	18.00	0.097	53.00	0.022	88.00	0.106
-3.00	0.851	19.00	0.152	54.00	0.036	89.00	0.103
-2.50	0.881	20.00	0.197	55.00	0.049	90.00	0.100
-2.00	0.908	21.00	0.233	56.00	0.062		
-1.50	0.932	22.00	0.259	57.00	0.074		
-1.00	0.953	23.00	0.275	58.00	0.085		
-0.50	0.969	24.00	0.283	59.00	0.095		
0.00	0.983	25.00	0.284	60.00	0.105		
0.50	0.992	26.00	0.277	61.00	0.113		
1.00	0.998	27.00	0.263	62.00	0.121		
<b>1.50</b>	<b>1.000</b>	28.00	0.243	63.00	0.128		
2.00	0.999	29.00	0.219	64.00	0.133		
2.50	0.994	30.00	0.193	65.00	0.138		
3.00	0.985	31.00	0.166	66.00	0.141		
3.50	0.973	32.00	0.139	67.00	0.144		
4.00	0.957	33.00	0.113	68.00	0.146		
4.50	0.938	34.00	0.090	69.00	0.148		
5.00	0.915	35.00	0.072	70.00	0.148		
5.50	0.889	36.00	0.060	71.00	0.148		
6.00	0.861	37.00	0.056	72.00	0.148		
6.50	0.830	38.00	0.056	73.00	0.146		
7.00	0.797	39.00	0.060	74.00	0.145		
7.50	0.761	40.00	0.066	75.00	0.143		
8.00	0.723	41.00	0.071	76.00	0.141		
8.50	0.684	42.00	0.074	77.00	0.138		
9.00	0.643	43.00	0.074	78.00	0.135		
9.50	0.600	44.00	0.072	79.00	0.133		
10.00	0.557	45.00	0.067	80.00	0.130		
11.00	0.468	46.00	0.060	81.00	0.127		
12.00	0.378	47.00	0.052	82.00	0.124		
13.00	0.289	48.00	0.042	83.00	0.121		