

WMAQ-TV Application for Auxiliary Facility (Willis)**73.625(c) Data
September 16, 2019****AZIMUTH PATTERN (H-Pol): RFS PHP24C**

Main beam axis of symmetry: 215° true

Electrical Beam Tilt: 1.00°

Main Beam Calculated Max. H-pol Azimuth Pattern Gain (peak) 1.76 (2.46 dBd)

Maximum Main Beam H-Pol. Effective Radiated Power (ERP): 175.0 kW 22.43 dBk

Tabulation of Azimuth Pattern (Horizontal polarization)

Angle	RF	dBk	ERP kW
0	0.193	8.16	6.5
10	0.190	7.98	6.3
20	0.179	7.50	5.6
30	0.136	5.10	3.2
40	0.136	5.10	3.2
50	0.179	7.50	5.6
60	0.190	7.98	6.3
70	0.193	8.16	6.5
80	0.341	13.09	20.4
90	0.542	17.11	51.4
100	0.717	19.53	89.8
110	0.855	21.07	128.0
120	0.943	21.92	155.6
130	0.952	22.00	158.7
140	0.890	21.41	138.5
150	0.866	21.18	131.3
160	0.931	21.81	151.8
170	0.994	22.38	172.9
180	0.968	22.15	164.1
190	0.875	21.27	133.8
200	0.852	21.03	126.9
210	0.916	21.66	146.7
220	0.916	21.66	146.7
230	0.852	21.03	126.9
240	0.875	21.27	133.8
250	0.968	22.15	164.1
260	0.994	22.38	172.9
270	0.931	21.81	151.8
280	0.866	21.18	131.3
290	0.890	21.41	138.5
300	0.952	22.00	158.7
310	0.943	21.92	155.6
320	0.855	21.07	128.0
330	0.717	19.53	89.8
340	0.542	17.11	51.4
350	0.341	13.09	20.4

Maximum

Angle	RF	dBk	ERP kW
13	0.193	8.16	6.5
57	0.193	8.16	6.5
128	0.966	22.13	163.2
174	1.000	22.43	175.0
214	0.930	21.80	151.4
216	0.930	21.80	151.4
256	1.000	22.43	175.0
305	0.967	22.14	163.5

Minimum

Angle	RF	dBk	ERP kW
4	0.180	7.53	5.7
35	0.127	4.53	2.8
66	0.180	7.53	5.7
149	0.857	21.09	128.6
196	0.837	20.88	122.6
215	0.923	21.74	149.1
234	0.837	20.88	122.6
281	0.857	21.09	128.6

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AZIMUTH PATTERN (H-Pol): RFS PHP24C

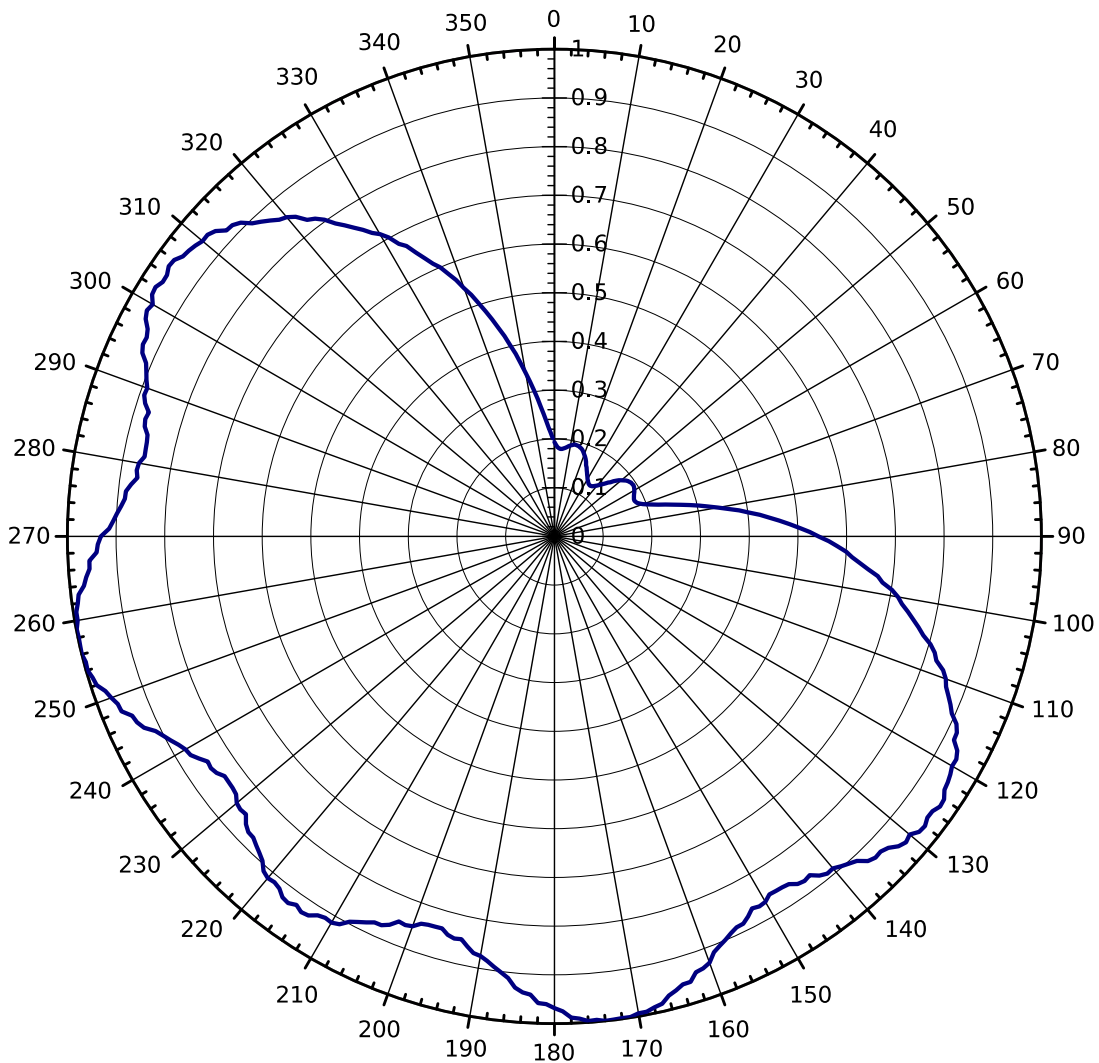
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AZIMUTH PATTERN RELATIVE FIELD



Blue plot shows azimuth pattern relative field

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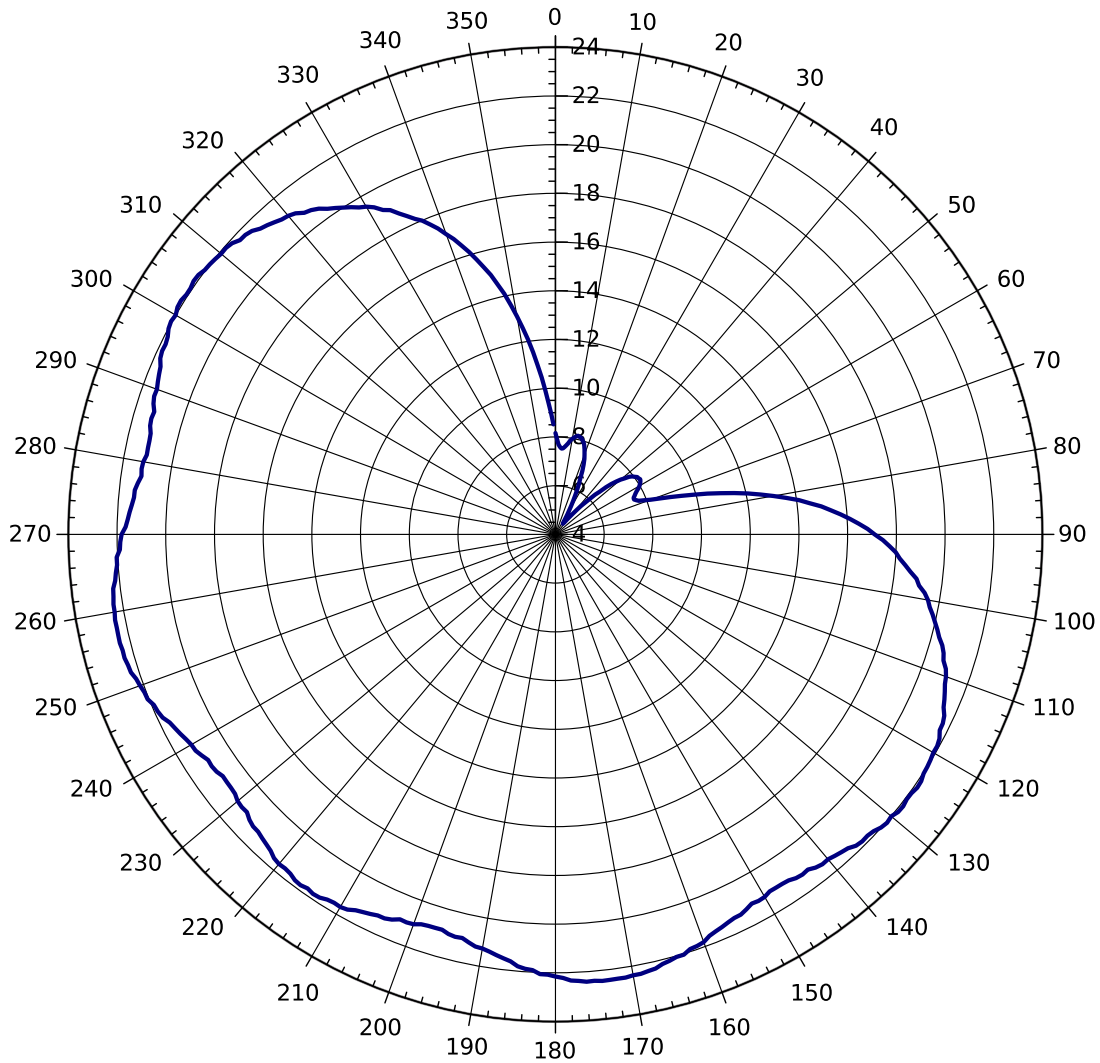
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AZIMUTH PATTERN ERP (dBk)



Blue plot shows effective radiated power (dBk)

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ELEVATION PATTERN: RFS PHP24C

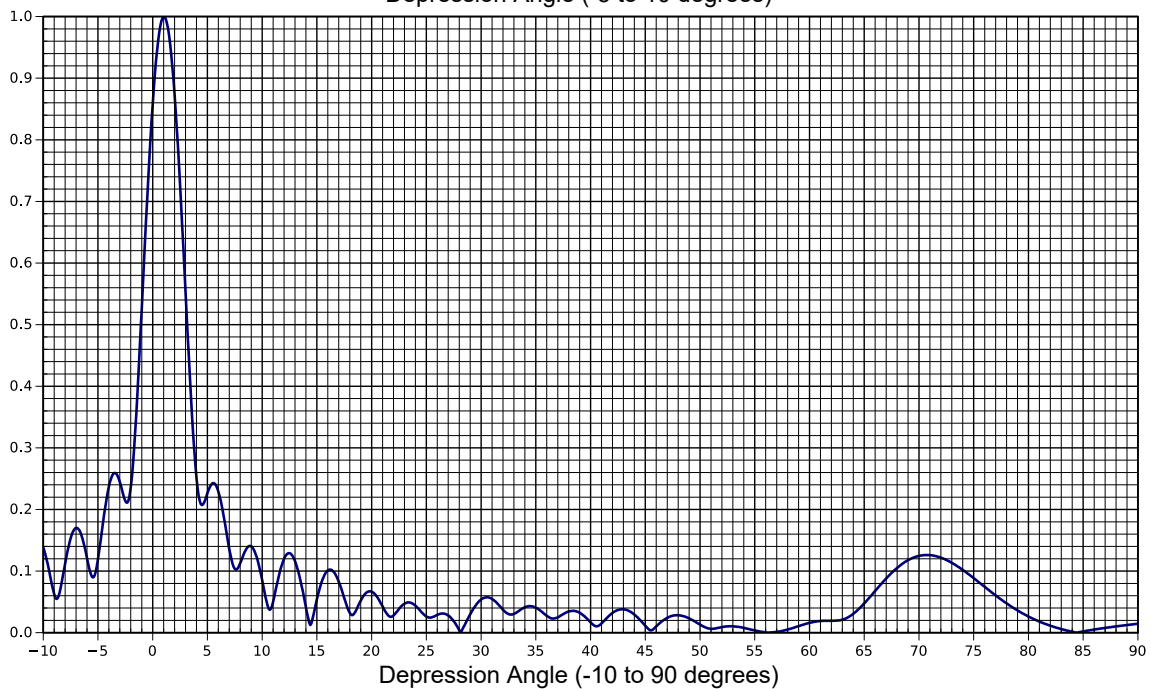
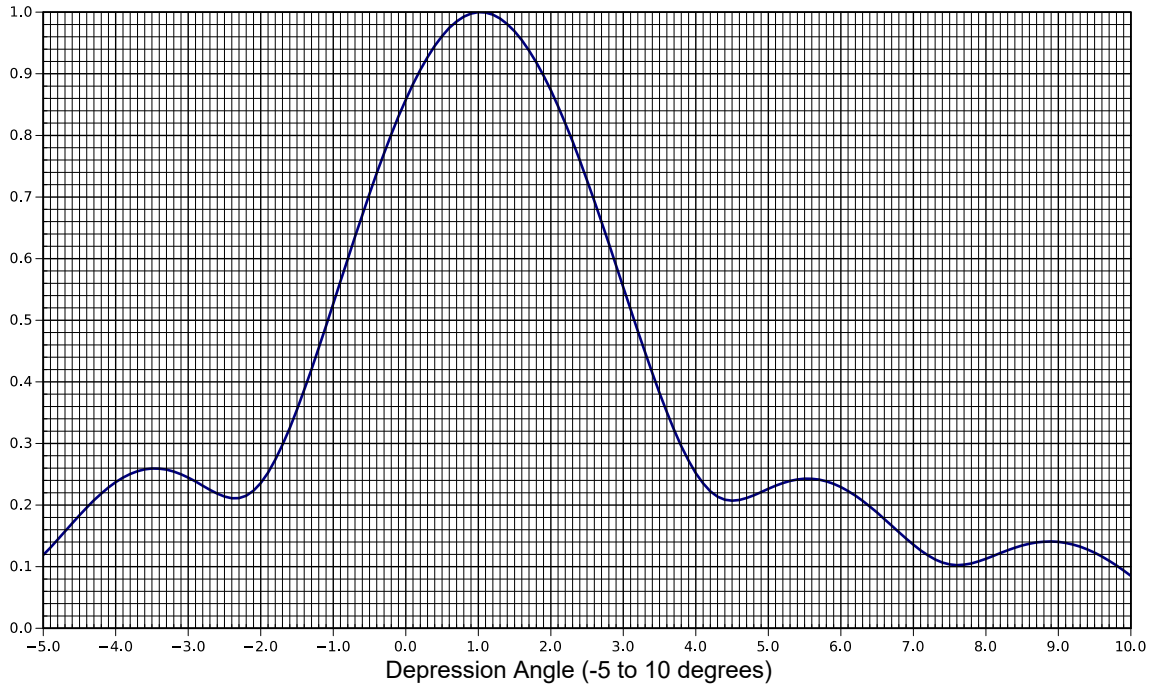
Electrical Beam Tilt: 1.00°

Calculated Maximum Elevation Gain (H polarization): 18.20 12.60 dBd

RMS Gain at Horizontal (H polarization): 13.40 11.27 dBd

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Relative Field



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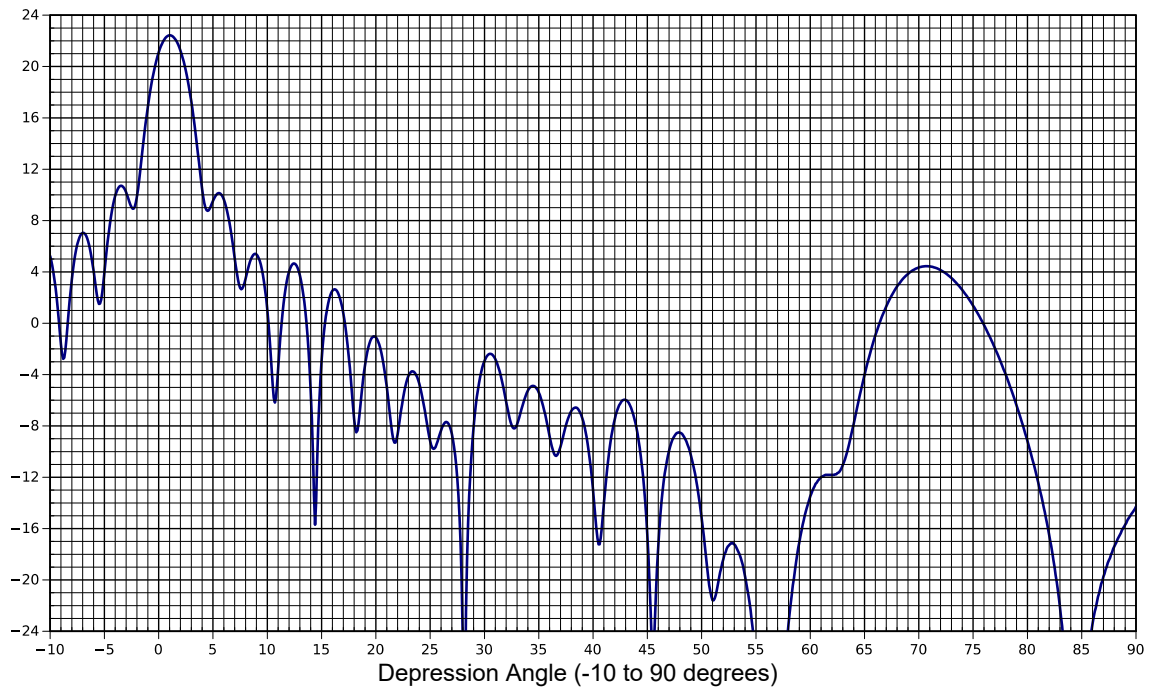
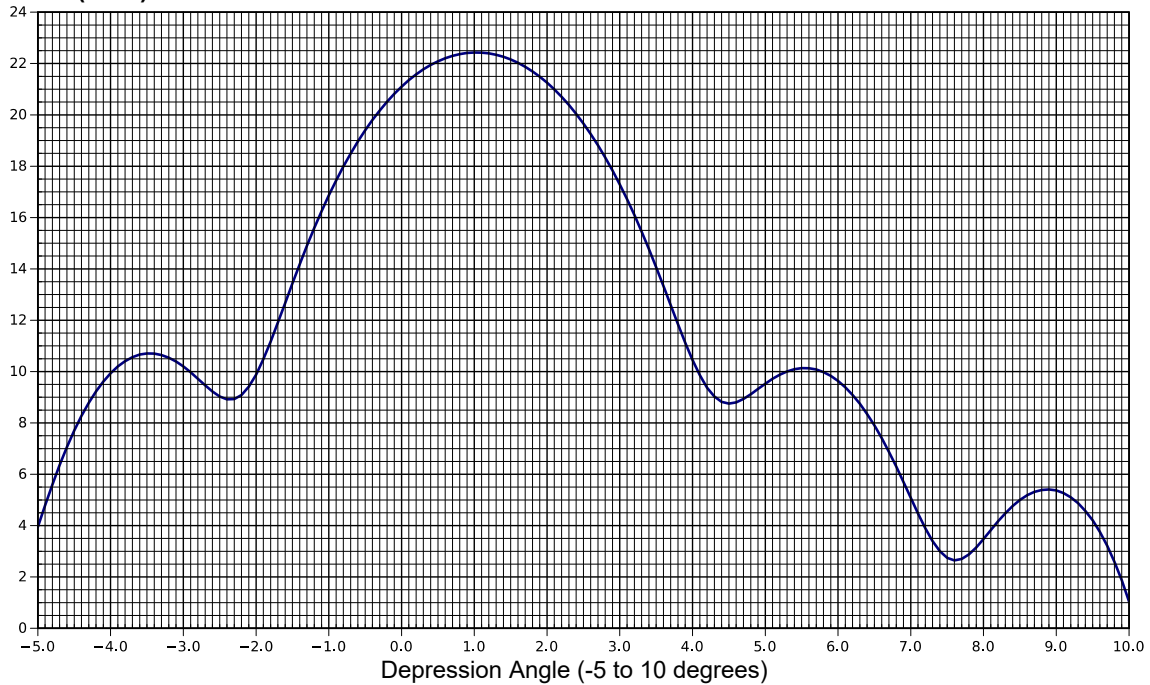
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ERP (dBK)



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Elevation Pattern Tabulation:

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.138	1.2	0.996	8.2	0.122	23.0	0.047	40.5	0.010	58.0	0.005	75.5	0.082
-9.5	0.104	1.4	0.981	8.4	0.131	23.5	0.049	41.0	0.015	58.5	0.008	76.0	0.074
-9.0	0.063	1.6	0.955	8.6	0.137	24.0	0.044	41.5	0.024	59.0	0.011	76.5	0.067
-8.5	0.065	1.8	0.919	8.8	0.141	24.5	0.035	42.0	0.032	59.5	0.014	77.0	0.061
-8.0	0.112	2.0	0.873	9.0	0.140	25.0	0.026	42.5	0.037	60.0	0.016	77.5	0.054
-7.5	0.153	2.2	0.820	9.2	0.136	25.5	0.025	43.0	0.038	60.5	0.018	78.0	0.048
-7.0	0.170	2.4	0.759	9.4	0.128	26.0	0.029	43.5	0.035	61.0	0.019	78.5	0.042
-6.5	0.158	2.6	0.694	9.6	0.117	26.5	0.031	44.0	0.030	61.5	0.019	79.0	0.036
-6.0	0.121	2.8	0.625	9.8	0.102	27.0	0.028	44.5	0.021	62.0	0.019	79.5	0.031
-5.5	0.090	3.0	0.553	10.0	0.085	27.5	0.019	45.0	0.011	62.5	0.020	80.0	0.026
-5.0	0.119	3.2	0.483	10.5	0.044	28.0	0.004	45.5	0.004	63.0	0.021	80.5	0.022
-4.5	0.184	3.4	0.414	11.0	0.050	28.5	0.013	46.0	0.010	63.5	0.025	81.0	0.018
-4.0	0.237	3.6	0.351	11.5	0.090	29.0	0.030	46.5	0.018	64.0	0.031	81.5	0.015
-3.5	0.259	3.8	0.296	12.0	0.120	29.5	0.044	47.0	0.024	64.5	0.039	82.0	0.011
-3.0	0.245	4.0	0.252	12.5	0.129	30.0	0.054	47.5	0.028	65.0	0.048	82.5	0.009
-2.8	0.232	4.2	0.222	13.0	0.116	30.5	0.058	48.0	0.028	65.5	0.058	83.0	0.006
-2.6	0.219	4.4	0.209	13.5	0.085	31.0	0.055	48.5	0.027	66.0	0.068	83.5	0.004
-2.4	0.211	4.6	0.208	14.0	0.041	31.5	0.047	49.0	0.023	66.5	0.078	84.0	0.002
-2.2	0.215	4.8	0.216	14.5	0.015	32.0	0.037	49.5	0.018	67.0	0.088	84.5	0.000
-2.0	0.236	5.0	0.226	15.0	0.054	32.5	0.030	50.0	0.013	67.5	0.097	85.0	0.002
-1.8	0.274	5.2	0.236	15.5	0.086	33.0	0.031	50.5	0.009	68.0	0.105	85.5	0.004
-1.6	0.325	5.4	0.242	16.0	0.101	33.5	0.036	51.0	0.006	68.5	0.112	86.0	0.005
-1.4	0.387	5.6	0.243	16.5	0.100	34.0	0.041	51.5	0.007	69.0	0.118	86.5	0.007
-1.2	0.455	5.8	0.239	17.0	0.083	34.5	0.043	52.0	0.009	69.5	0.122	87.0	0.008
-1.0	0.527	6.0	0.229	17.5	0.056	35.0	0.041	52.5	0.010	70.0	0.125	87.5	0.009
-0.8	0.600	6.2	0.215	18.0	0.032	35.5	0.035	53.0	0.010	70.5	0.126	88.0	0.010
-0.6	0.671	6.4	0.198	18.5	0.034	36.0	0.027	53.5	0.010	71.0	0.126	88.5	0.011
-0.4	0.739	6.6	0.177	19.0	0.052	36.5	0.023	54.0	0.008	71.5	0.124	89.0	0.012
-0.2	0.802	6.8	0.156	19.5	0.065	37.0	0.025	54.5	0.006	72.0	0.122	89.5	0.014
0.0	0.858	7.0	0.136	20.0	0.067	37.5	0.030	55.0	0.004	72.5	0.118	90.0	0.015
0.2	0.906	7.2	0.118	20.5	0.058	38.0	0.034	55.5	0.002	73.0	0.113	89.0	0.000
0.4	0.945	7.4	0.107	21.0	0.043	38.5	0.035	56.0	0.001	73.5	0.108	89.5	0.000
0.6	0.975	7.6	0.103	21.5	0.028	39.0	0.032	56.5	0.000	74.0	0.102	90.0	0.000
0.8	0.993	7.8	0.105	22.0	0.028	39.5	0.026	57.0	0.001	74.5	0.095		
1.0	1.000	8.0	0.113	22.5	0.039	40.0	0.017	57.5	0.003	75.0	0.089		