

# SCHWARZBECK MESS - ELEKTRONIK

An der Klinge 29 D-69250 Schönau Tel.: 06228/1001 Fax.: (49)6228/1003

## VULB 9163 Kalibrierdaten (Fernfeld und 5, 4, 2 m Mitte-Prüfling)

### VULB 9163 Calibration Data (Farfield and 5, 4, 2 m Center-EuT)

Frequency	Gain (Iso.)	Ant.-Fact k	gi (5m)	k (5m)	gi (4m)	k (4m)	gi (2m)	k (2m)
Frequenz	Gewinn	Ant. Faktor	gi (5m)	k (5m)	gi (4m)	k (4m)	gi (2m)	k (2m)
MHz	dBi	dB/m	dBi	dB/m	dBi	dB/m	dBi	dB/m
25.0	-14.66	12.84	-15.43	13.61	-15.62	13.79	-16.48	14.65
27.0	-12.50	11.35	-13.27	12.12	-13.46	12.30	-14.32	13.16
30.0	-11.32	11.08	-12.09	11.85	-12.28	12.04	-13.14	12.90
35.0	-9.95	11.05	-10.72	11.82	-10.91	12.01	-11.77	12.87
40.0	-10.07	12.33	-10.84	13.10	-11.03	13.29	-11.89	14.15
45.0	-9.01	12.29	-9.78	13.07	-9.97	13.25	-10.83	14.11
50.0	-7.80	12.00	-8.57	12.77	-8.76	12.95	-9.62	13.82
55.0	-6.74	11.76	-7.51	12.54	-7.70	12.72	-8.56	13.58
60.0	-5.66	11.44	-6.43	12.22	-6.62	12.40	-7.48	13.26
65.0	-2.98	9.46	-3.75	10.23	-3.94	10.41	-4.80	11.27
70.0	-0.28	7.41	-1.05	8.17	-1.24	8.36	-2.10	9.22
75.0	1.17	6.55	0.40	7.32	0.21	7.51	-0.65	8.37
80.0	0.99	7.29	0.22	8.06	0.03	8.25	-0.83	9.11
85.0	-0.25	9.05	-1.02	9.83	-1.21	10.01	-2.07	10.87
90.0	-1.34	10.64	-2.11	11.42	-2.30	11.60	-3.16	12.46
95.0	-1.81	11.58	-2.58	12.36	-2.77	12.54	-3.63	13.40
100.0	-1.69	11.91	-2.46	12.68	-2.65	12.87	-3.51	13.73
110.0	0.05	11.00	-0.72	11.77	-0.91	11.95	-1.77	12.81
120.0	2.58	9.23	1.81	10.00	1.62	10.18	0.76	11.04
130.0	4.64	7.86	3.98	8.52	3.82	8.68	3.07	9.42
140.0	5.86	7.28	5.30	7.84	5.17	7.97	4.53	8.61
150.0	6.26	7.48	5.79	7.96	5.67	8.07	5.12	8.62
160.0	6.27	8.03	5.88	8.42	5.78	8.52	5.32	8.98
170.0	6.39	8.44	6.07	8.76	5.99	8.84	5.60	9.23
180.0	6.08	9.25	5.81	9.51	5.75	9.58	5.43	9.89
190.0	5.58	10.21	5.37	10.42	5.32	10.47	5.07	10.72
200.0	5.93	10.32	5.78	10.47	5.74	10.50	5.55	10.69
210.0	6.18	10.48	6.07	10.60	6.04	10.62	5.90	10.76
220.0	5.98	11.09	5.91	11.16	5.89	11.17	5.81	11.26
230.0	5.85	11.61	5.82	11.63	5.82	11.64	5.79	11.67
240.0	5.72	12.10	5.73	12.10	5.73	12.09	5.74	12.08
250.0	5.95	12.23	5.98	12.19	5.99	12.19	6.04	12.14
260.0	6.35	12.17	6.42	12.10	6.44	12.08	6.53	11.99
270.0	6.41	12.44	6.51	12.34	6.53	12.32	6.65	12.20
280.0	6.29	12.87	6.41	12.75	6.44	12.72	6.60	12.56
290.0	6.25	13.22	6.40	13.07	6.44	13.03	6.63	12.84
300.0	6.42	13.34	6.59	13.18	6.63	13.13	6.84	12.92
320.0	6.64	13.69	6.85	13.47	6.90	13.42	7.18	13.15
340.0	6.31	14.54	6.56	14.29	6.62	14.23	6.94	13.91
360.0	6.44	14.91	6.72	14.62	6.79	14.55	7.16	14.18
380.0	6.70	15.11	7.01	14.81	7.09	14.73	7.50	14.32
400.0	6.63	15.63	6.97	15.29	7.05	15.21	7.50	14.76
420.0	6.60	16.08	6.96	15.72	7.06	15.63	7.54	15.15
440.0	6.88	16.21	7.26	15.83	7.36	15.73	7.87	15.22
460.0	7.19	16.28	7.60	15.88	7.70	15.77	8.25	15.22
480.0	7.05	16.80	7.48	16.37	7.59	16.26	8.16	15.68
500.0	6.88	17.32	7.32	16.88	7.43	16.77	8.02	16.18
520.0	7.03	17.51	7.48	17.06	7.60	16.94	8.21	16.33
<b>Bezugs-</b> <b>punkt:</b>	<b>Strahlungs</b> <b>-zone:</b>	<b>Strahlungs</b> <b>-zone:</b>	<b>Mitte der Log. - Per. Struktur</b>					
<b>Reference</b> <b>Point:</b>	<b>Radiating</b> <b>Zone:</b>	<b>Radiating</b> <b>Zone:</b>	<b>Center of Log. - Per. Structure</b>					

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## VULB 9163 Kalibrierdaten (Fernfeld und 5, 4, 2 m Mitte-Prüfling)

### VULB 9163 Calibration Data (Farfield and 5, 4, 2 m Center-EuT)

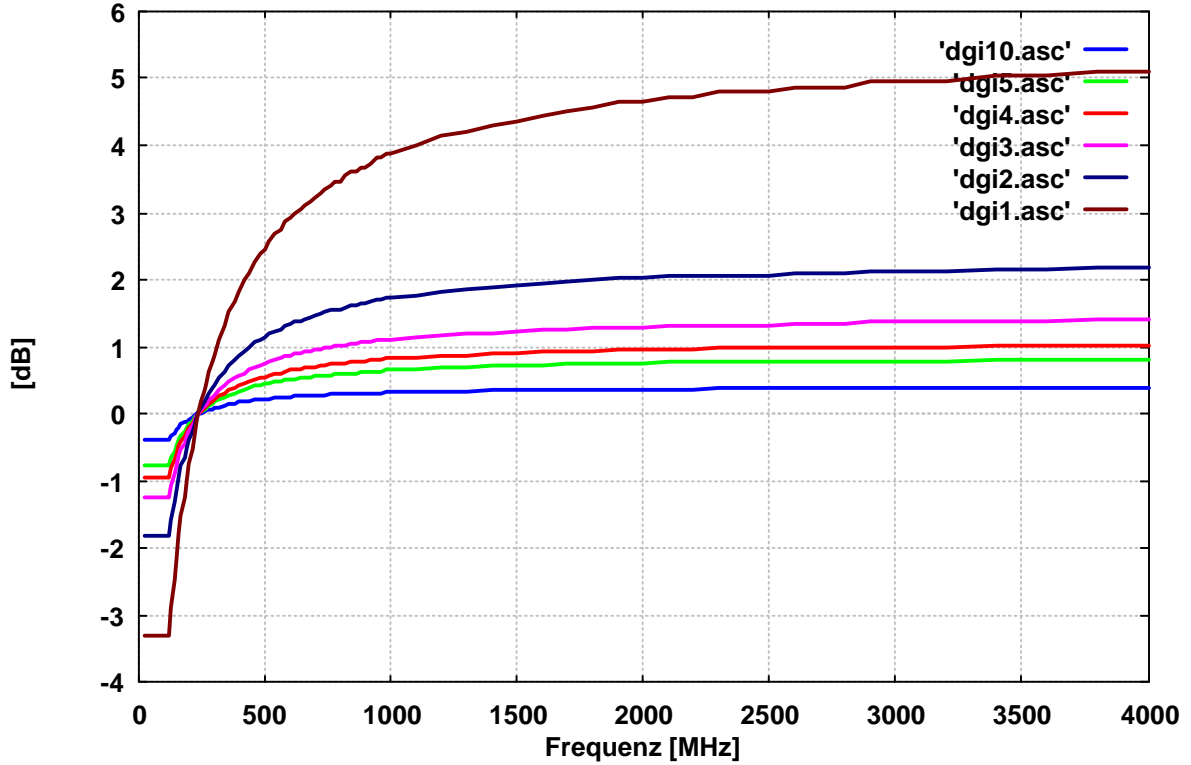
Frequency	Gain (Iso.)	Ant.-Fact k	gi (5m)	k (5m)	gi (4m)	k (4m)	gi (2m)	k (2m)
Frequenz	Gewinn	Ant. Faktor	gi (5m)	k (5m)	gi (4m)	k (4m)	gi (2m)	k (2m)
MHz	dBi	dB/m	dBi	dB/m	dBi	dB/m	dBi	dB/m
540.0	6.99	17.88	7.46	17.40	7.59	17.28	8.22	16.64
560.0	7.27	17.91	7.75	17.43	7.88	17.31	8.53	16.65
580.0	6.93	18.56	7.43	18.06	7.56	17.93	8.24	17.25
600.0	6.47	19.31	6.98	18.80	7.11	18.67	7.81	17.98
620.0	6.67	19.40	7.19	18.88	7.32	18.74	8.03	18.04
640.0	6.76	19.58	7.29	19.06	7.43	18.92	8.15	18.20
660.0	7.05	19.56	7.59	19.02	7.73	18.88	8.46	18.15
680.0	7.10	19.77	7.65	19.22	7.79	19.08	8.54	18.33
700.0	7.36	19.76	7.92	19.21	8.06	19.06	8.82	18.30
720.0	7.17	20.20	7.74	19.63	7.88	19.48	8.66	18.71
740.0	6.69	20.91	7.26	20.34	7.41	20.19	8.20	19.40
760.0	6.95	20.89	7.53	20.30	7.69	20.15	8.49	19.35
780.0	7.05	21.01	7.64	20.42	7.80	20.26	8.62	19.45
800.0	7.21	21.07	7.80	20.48	7.96	20.32	8.78	19.51
820.0	7.27	21.23	7.87	20.62	8.03	20.47	8.86	19.63
840.0	7.22	21.48	7.83	20.87	7.99	20.71	8.84	19.87
860.0	7.08	21.83	7.69	21.22	7.85	21.06	8.70	20.21
880.0	6.99	22.12	7.61	21.50	7.77	21.34	8.63	20.48
900.0	7.15	22.16	7.77	21.53	7.93	21.37	8.79	20.51
920.0	7.05	22.45	7.68	21.82	7.85	21.65	8.72	20.77
940.0	7.27	22.42	7.91	21.77	8.08	21.61	8.97	20.72
960.0	7.46	22.41	8.10	21.77	8.27	21.60	9.16	20.71
980.0	7.31	22.73	7.96	22.09	8.13	21.92	9.03	21.01
1000.0	7.37	22.85	8.02	22.20	8.19	22.03	9.09	21.13
1100.0	6.87	24.17	7.54	23.51	7.71	23.33	8.65	22.40
1200.0	7.42	24.38	8.11	23.70	8.29	23.52	9.25	22.55
1300.0	6.63	25.87	7.33	25.17	7.51	24.99	8.49	24.01
1400.0	7.63	25.51	8.34	24.81	8.52	24.62	9.51	23.63
1500.0	7.06	26.68	7.77	25.97	7.96	25.78	8.97	24.77
1600.0	7.08	27.23	7.80	26.50	8.00	26.31	9.02	25.28
1700.0	7.51	27.32	8.24	26.59	8.44	26.39	9.48	25.35
1800.0	6.54	28.78	7.28	28.04	7.48	27.85	8.53	26.79
1900.0	6.48	29.32	7.23	28.56	7.43	28.36	8.50	27.30
2000.0	7.50	28.74	8.25	27.99	8.45	27.79	9.52	26.72
2100.0	7.03	29.63	7.79	28.87	7.99	28.67	9.08	27.59
2200.0	6.22	30.84	6.98	30.09	7.18	29.88	8.27	28.80
2300.0	5.77	31.68	6.54	30.91	6.75	30.71	7.84	29.61
2400.0	5.26	32.56	6.03	31.79	6.24	31.59	7.33	30.49
2500.0	5.68	32.50	6.45	31.73	6.66	31.52	7.75	30.42
2600.0	5.24	33.28	6.02	32.50	6.23	32.29	7.34	31.18
2700.0	4.95	33.90	5.73	33.12	5.94	32.91	7.05	31.79
2800.0	5.37	33.79	6.15	33.01	6.36	32.81	7.47	31.69
2900.0	5.59	33.88	6.38	33.09	6.59	32.88	7.72	31.75
3000.0	5.71	34.05	6.50	33.26	6.71	33.05	7.84	31.92
3200.0	4.18	36.14	4.97	35.35	5.18	35.14	6.31	34.01
3400.0	4.03	36.82	4.83	36.02	5.04	35.81	6.19	34.66
3600.0	4.63	36.71	5.43	35.92	5.64	35.70	6.79	34.56
3800.0	3.59	38.22	4.40	37.42	4.61	37.20	5.78	36.04
4000.0	4.81	37.45	5.62	36.64	5.83	36.43	7.00	35.27
<b>Bezugs- punkt:</b>	<b>Strahlungs- -zone:</b>	<b>Strahlungs- -zone:</b>	<b>Mitte der Log. - Per. Struktur</b>					
<b>Reference Point:</b>	<b>Radiating Zone:</b>	<b>Radiating Zone:</b>	<b>Center of Log. - Per. Structure</b>					

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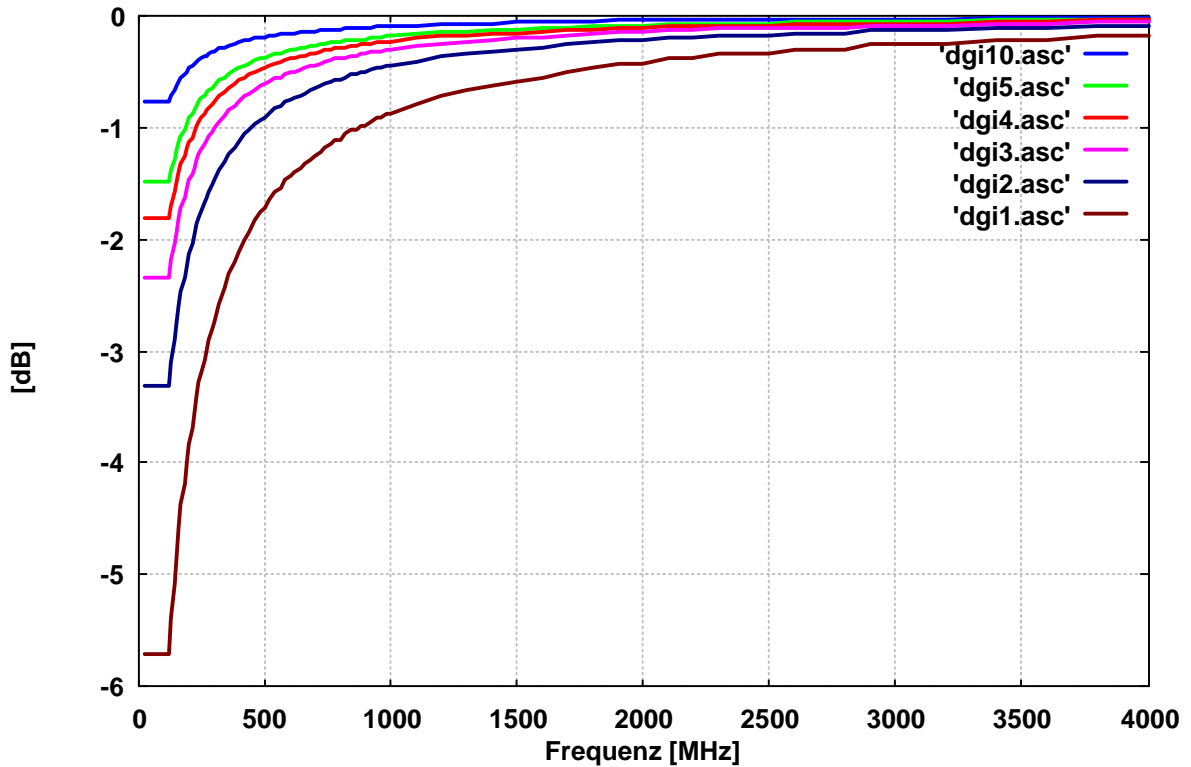
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## VULB 9163 Korrekturdaten für kurze Messentfernung VULB 9163 Correction data for short measuring distances

Bezugspunkt Antennenmitte, 0 dB entspricht Fernfeld-Daten  
Reference Point Antenna Center, 0 dB corresponds to farfield data



Bezugspunkt Antennenspitze, 0 dB entspricht Fernfeld-Daten  
Reference Point Antenna Tip, 0 dB corresponds to farfield data



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### VULB 9163 Calibration Data (Farfield and 5, 4, 2 m Tip-EuT)

Frequency	Gain(Iso.)	Ant.-Fact k	gi (5m)	k (5m)	gi (4m)	k (4m)	gi (2m)	k (2m)
Frequenz	Gewinn	Ant.Faktor	gi (5m)	k (5m)	gi (4m)	k (4m)	gi (2m)	k (2m)
MHz	dB <i>i</i>	dB/m	dB <i>i</i>	dB/m	dB <i>i</i>	dB/m	dB <i>i</i>	dB/m
25.0	-14.66	12.84	-16.14	14.32	-16.48	14.65	-17.98	16.16
27.0	-12.50	11.35	-13.98	12.83	-14.32	13.16	-15.82	14.66
30.0	-11.32	11.08	-12.80	12.56	-13.14	12.90	-14.64	14.40
35.0	-9.95	11.05	-11.43	12.53	-11.77	12.87	-13.27	14.37
40.0	-10.07	12.33	-11.55	13.81	-11.89	14.15	-13.39	15.65
45.0	-9.01	12.29	-10.49	13.78	-10.83	14.11	-12.33	15.61
50.0	-7.80	12.00	-9.28	13.48	-9.62	13.82	-11.12	15.32
55.0	-6.74	11.76	-8.22	13.25	-8.56	13.58	-10.06	15.08
60.0	-5.66	11.44	-7.14	12.92	-7.48	13.26	-8.98	14.76
65.0	-2.98	9.46	-4.46	10.94	-4.80	11.27	-6.30	12.78
70.0	-0.28	7.41	-1.76	8.88	-2.10	9.22	-3.60	10.72
75.0	1.17	6.55	-0.31	8.03	-0.65	8.37	-2.15	9.87
80.0	0.99	7.29	-0.49	8.77	-0.83	9.11	-2.33	10.61
85.0	-0.25	9.05	-1.73	10.54	-2.07	10.87	-3.57	12.38
90.0	-1.34	10.64	-2.82	12.13	-3.16	12.46	-4.66	13.96
95.0	-1.81	11.58	-3.29	13.07	-3.63	13.40	-5.13	14.90
100.0	-1.69	11.91	-3.17	13.39	-3.51	13.73	-5.01	15.23
110.0	0.05	11.00	-1.43	12.48	-1.77	12.81	-3.27	14.31
120.0	2.58	9.23	1.10	10.71	0.76	11.04	-0.74	12.54
130.0	4.64	7.86	3.26	9.24	2.95	9.55	1.53	10.97
140.0	5.86	7.28	4.58	8.56	4.29	8.86	2.95	10.19
150.0	6.26	7.48	5.05	8.69	4.78	8.97	3.51	10.23
160.0	6.27	8.03	5.14	9.16	4.88	9.42	3.68	10.62
170.0	6.39	8.44	5.32	9.51	5.07	9.76	3.93	10.90
180.0	6.08	9.25	5.06	10.26	4.83	10.50	3.73	11.59
190.0	5.58	10.21	4.62	11.18	4.39	11.40	3.35	12.44
200.0	5.93	10.32	5.02	11.22	4.80	11.44	3.80	12.44
210.0	6.18	10.48	5.30	11.36	5.10	11.57	4.14	12.53
220.0	5.98	11.09	5.14	11.92	4.95	12.12	4.02	13.04
230.0	5.85	11.61	5.05	12.40	4.87	12.59	3.98	13.47
240.0	5.72	12.10	4.96	12.87	4.77	13.05	3.92	13.90
250.0	5.95	12.23	5.21	12.97	5.03	13.15	4.21	13.97
260.0	6.35	12.17	5.64	12.88	5.47	13.05	4.68	13.84
270.0	6.41	12.44	5.73	13.12	5.56	13.28	4.79	14.06
280.0	6.29	12.87	5.63	13.53	5.47	13.69	4.72	14.44
290.0	6.25	13.22	5.61	13.85	5.46	14.01	4.74	14.73
300.0	6.42	13.34	5.80	13.96	5.65	14.11	4.95	14.82
320.0	6.64	13.69	6.06	14.26	5.92	14.40	5.26	15.07
340.0	6.31	14.54	5.76	15.09	5.63	15.22	5.00	15.85
360.0	6.44	14.91	5.93	15.42	5.80	15.54	5.21	16.14
380.0	6.70	15.11	6.21	15.61	6.09	15.72	5.52	16.29
400.0	6.63	15.63	6.16	16.10	6.05	16.21	5.51	16.75
420.0	6.60	16.08	6.16	16.53	6.05	16.63	5.54	17.15
440.0	6.88	16.21	6.46	16.63	6.35	16.74	5.86	17.23
460.0	7.19	16.28	6.79	16.68	6.69	16.78	6.23	17.25
480.0	7.05	16.80	6.67	17.18	6.57	17.27	6.12	17.72
500.0	6.88	17.32	6.51	17.69	6.41	17.78	5.97	18.23
520.0	7.03	17.51	6.67	17.87	6.59	17.95	6.16	18.38
<b>Bezugs-</b> <b>punkt:</b>	<b>Strahlungs</b> <b>-zone:</b>	<b>Strahlungs</b> <b>-zone:</b>	<b>Spitze der Log. - Per. Struktur</b>					
<b>Reference</b> <b>Point:</b>	<b>Radiating</b> <b>Zone:</b>	<b>Radiating</b> <b>Zone:</b>	<b>Tip of Log.-Per. Structure</b>					

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## VULB 9163 Kalibrierdaten (Fernfeld und 5, 4, 2 m Spitze-Prüfling)

### VULB 9163 Calibration Data (Farfield and 5, 4, 2 m Tip-EuT)

Frequency	Gain(Iso.)	Ant.-Fact k	gi (5m)	k (5m)	gi (4m)	k (4m)	gi (2m)	k (2m)
Frequenz	Gewinn	Ant.Faktor	gi (5m)	k (5m)	gi (4m)	k (4m)	gi (2m)	k (2m)
MHz	dB <i>i</i>	dB/m	dB <i>i</i>	dB/m	dB <i>i</i>	dB/m	dB <i>i</i>	dB/m
540.0	6.99	17.88	6.65	18.22	6.57	18.30	6.16	18.71
560.0	7.27	17.91	6.94	18.25	6.86	18.33	6.46	18.72
580.0	6.93	18.56	6.61	18.87	6.54	18.95	6.16	19.33
600.0	6.47	19.31	6.16	19.62	6.09	19.70	5.72	20.06
620.0	6.67	19.40	6.37	19.70	6.30	19.77	5.94	20.13
640.0	6.76	19.58	6.47	19.87	6.40	19.95	6.05	20.29
660.0	7.05	19.56	6.77	19.84	6.70	19.91	6.36	20.25
680.0	7.10	19.77	6.83	20.04	6.76	20.11	6.43	20.44
700.0	7.36	19.76	7.09	20.03	7.03	20.09	6.71	20.41
720.0	7.17	20.20	6.91	20.45	6.85	20.52	6.54	20.82
740.0	6.69	20.91	6.44	21.16	6.38	21.22	6.08	21.52
760.0	6.95	20.89	6.71	21.13	6.65	21.19	6.36	21.47
780.0	7.05	21.01	6.82	21.24	6.76	21.30	6.48	21.58
800.0	7.21	21.07	6.98	21.30	6.92	21.36	6.64	21.64
820.0	7.27	21.23	7.05	21.45	6.99	21.50	6.72	21.77
840.0	7.22	21.48	7.01	21.70	6.95	21.75	6.69	22.01
860.0	7.08	21.83	6.87	22.04	6.81	22.10	6.55	22.36
880.0	6.99	22.12	6.78	22.33	6.73	22.38	6.48	22.63
900.0	7.15	22.16	6.94	22.36	6.89	22.41	6.64	22.66
920.0	7.05	22.45	6.85	22.64	6.80	22.69	6.56	22.93
940.0	7.27	22.42	7.08	22.60	7.03	22.65	6.80	22.88
960.0	7.46	22.41	7.27	22.59	7.22	22.64	6.99	22.87
980.0	7.31	22.73	7.13	22.92	7.08	22.96	6.87	23.18
1000.0	7.37	22.85	7.19	23.03	7.14	23.08	6.93	23.29
1100.0	6.87	24.17	6.71	24.34	6.67	24.38	6.47	24.58
1200.0	7.42	24.38	7.27	24.53	7.24	24.57	7.06	24.75
1300.0	6.63	25.87	6.49	26.01	6.46	26.04	6.29	26.21
1400.0	7.63	25.51	7.50	25.64	7.47	25.67	7.31	25.83
1500.0	7.06	26.68	6.94	26.80	6.91	26.83	6.76	26.98
1600.0	7.08	27.23	6.97	27.33	6.94	27.36	6.80	27.50
1700.0	7.51	27.32	7.41	27.42	7.38	27.45	7.25	27.58
1800.0	6.54	28.78	6.44	28.88	6.42	28.90	6.30	29.02
1900.0	6.48	29.32	6.39	29.40	6.37	29.42	6.27	29.53
2000.0	7.50	28.74	7.41	28.83	7.39	28.85	7.29	28.96
2100.0	7.03	29.63	6.95	29.71	6.93	29.73	6.84	29.83
2200.0	6.22	30.84	6.14	30.93	6.12	30.95	6.03	31.04
2300.0	5.77	31.68	5.70	31.75	5.68	31.77	5.60	31.86
2400.0	5.26	32.56	5.19	32.63	5.17	32.65	5.09	32.74
2500.0	5.68	32.50	5.61	32.57	5.59	32.59	5.51	32.67
2600.0	5.24	33.28	5.18	33.34	5.16	33.36	5.09	33.43
2700.0	4.95	33.90	4.89	33.96	4.87	33.97	4.80	34.05
2800.0	5.37	33.79	5.31	33.85	5.29	33.87	5.22	33.94
2900.0	5.59	33.88	5.54	33.93	5.53	33.94	5.46	34.01
3000.0	5.71	34.05	5.66	34.10	5.65	34.12	5.58	34.18
3200.0	4.18	36.14	4.13	36.19	4.12	36.21	4.05	36.27
3400.0	4.03	36.82	3.99	36.86	3.98	36.87	3.92	36.93
3600.0	4.63	36.71	4.59	36.76	4.58	36.77	4.52	36.82
3800.0	3.59	38.22	3.56	38.26	3.55	38.27	3.50	38.31
4000.0	4.81	37.45	4.78	37.49	4.77	37.49	4.72	37.54
<b>Bezugs-</b> <b>punkt:</b>	<b>Strahlungs</b> <b>-zone:</b>	<b>Strahlungs</b> <b>-zone:</b>	<b>Spitze der Log. - Per. Struktur</b>					
<b>Reference</b> <b>Point:</b>	<b>Radiating</b> <b>Zone:</b>	<b>Radiating</b> <b>Zone:</b>	<b>Tip of Log.-Per. Structure</b>					