



**Especificações:**

Potência Max por painel	2000W conexão 7/8" (DIN 7/16" 1KW)
Ganho	Vide tabela
Faixa de Frequência	470 - 806 MHz
Polarização	Horizontal
Diagrama Horizontal	Direcional, Omnidirecional ou específico.
Diagrama vertical	Tilt e null fill opcional (consultar)
Impedância de entrada	50 ohms
VSWR Max no canal	1,1 : 1
Dimensões e esforços	Vide tabela
Velocidade Max vento	130 Km/h
Abertura horizontal	60 graus

**Características Mecânicas - Por painel**

Modelo	Altura m	Peso Kg	Área Exposta m <sup>2</sup>	Dimensões AxLxP (m)
APWH	1,0	11,4	0,63	0,97x 0,46 x 0,20

**Características mecânicas e elétricas**

Diagrama Horizontal	Níveis	Ganho Vezes	Ganho dBd	Peso Kg	Potência Média (KW)	Altura Sistema (m)	Área de Exposição (m <sup>2</sup> )
APWH - 1	1	12.0	10.8	11.4	0.5	1.0	0.63
APWH - 1	2	26.4	14.2	28.1	1.0	2.1	1.43
APWH - 1	3	40.8	16.1	40.5	1.5	3.3	2.15
APWH - 1	4	54.0	17.3	53.3	2.0	4.5	2.90
APWH - 2	1	5.8	7.6	28.1	2.0	1.0	1.23
APWH - 2	2	12.8	11.1	52.5	4.0	2.1	2.45
APWH - 2	3	19.7	12.9	77.6	6.0	3.3	3.73
APWH - 2	4	26.1	14.2	103.6	8.0	4.5	5.08
APWH - 3	1	3.8	5.8	39.9	2.0	1.0	1.61
APWH - 3	2	8.4	9.2	76.4	4.0	2.1	3.24
APWH - 3	3	12.9	11.1	114.2	6.0	3.3	4.98
APWH - 3	4	17.1	12.3	162.3	8.0	4.5	7.00
APWH - 4	1	2.6	4.1	51.6	1.5	1.0	1.99
APWH - 4	2	5.7	7.6	100.4	3.0	2.1	4.04
APWH - 4	3	8.8	9.5	159.8	4.5	3.3	6.41
APWH - 4	4	11.7	10.7	211.8	6.0	4.5	8.73

**Características para conexão DIN 7/16**

**Modelo:**

APWH-(Nº FACES) - (Nº NÍVEIS) - (CONEXÃO) - (POTÊNCIA)

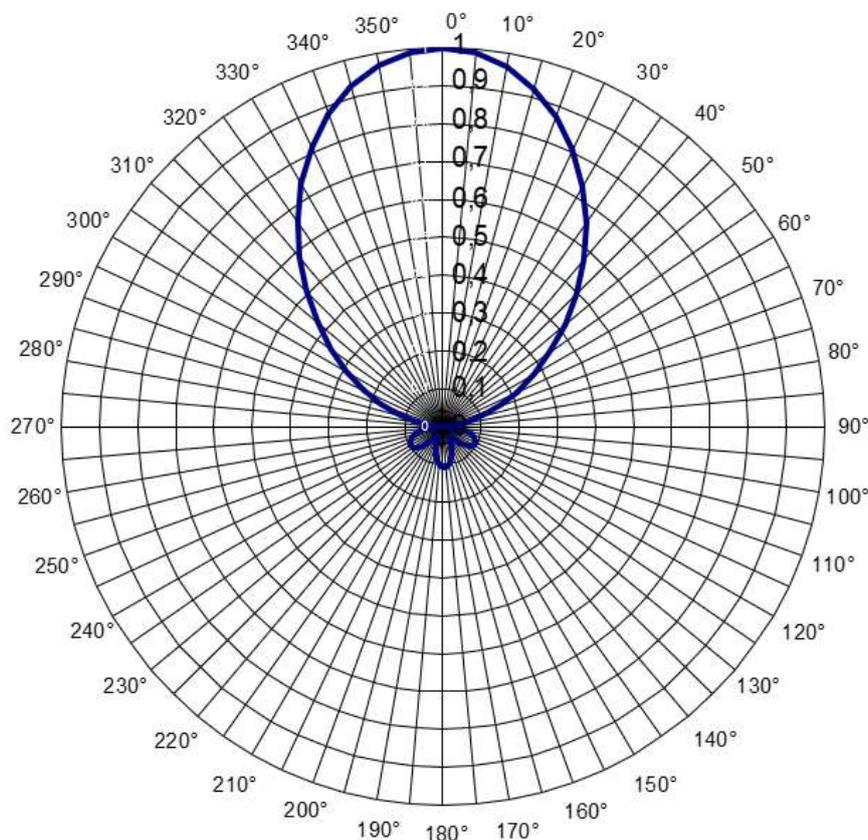
1, 2, 3, 4

1, 2, 3, 4

N, DIN, 7/8

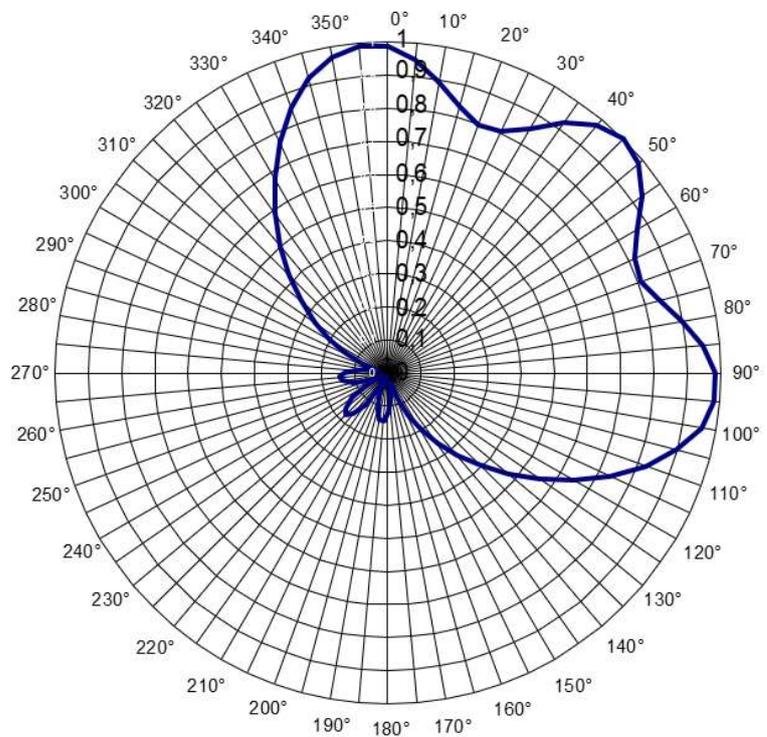
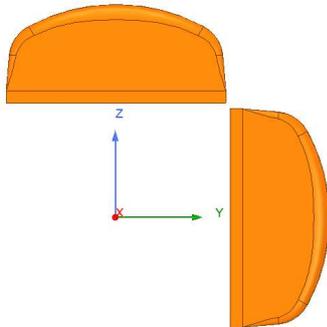
em Kilowatt

### Diagrama horizontal escala E/E<sub>max</sub> - 1 Face



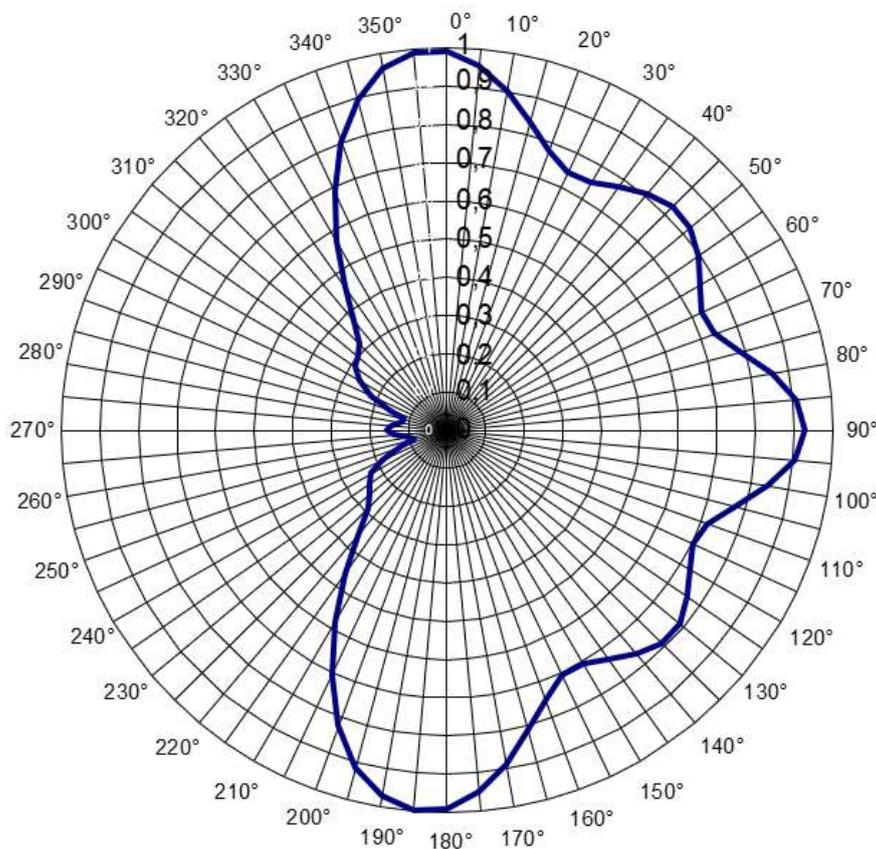
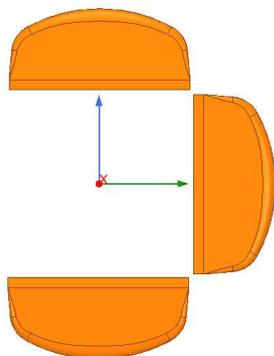
Graus	E/E <sub>max</sub>	(dB)	(%)	Graus	E/E <sub>max</sub>	(dB)	(%)	Graus	E/E <sub>max</sub>	(dB)	(%)	Graus	E/E <sub>max</sub>	(dB)	(%)
0°	1	0	100,00%	90°	0,0078253	-42,13	0,01%	180°	0,108268	-19,31	1,17%	270°	0,0072194	-42,83	0,01%
5°	0,9908319	-0,08	98,17%	95°	0,0353183	-29,04	0,12%	185°	0,1030386	-19,74	1,06%	275°	0,0399485	-27,97	0,16%
10°	0,9649393	-0,31	93,11%	100°	0,0582774	-24,69	0,34%	190°	0,0917276	-20,75	0,84%	280°	0,0798914	-21,95	0,64%
15°	0,9236342	-0,69	85,31%	105°	0,0760326	-22,38	0,58%	195°	0,0755962	-22,43	0,57%	285°	0,1247384	-18,08	1,56%
20°	0,8699614	-1,21	75,68%	110°	0,0881049	-21,1	0,78%	200°	0,0568198	-24,91	0,32%	290°	0,1747833	-15,15	3,05%
25°	0,8053784	-1,88	64,86%	115°	0,094189	-20,52	0,89%	205°	0,0387258	-28,24	0,15%	295°	0,2301442	-12,76	5,30%
30°	0,7319813	-2,71	53,58%	120°	0,0942975	-20,51	0,89%	210°	0,0297509	-30,53	0,09%	300°	0,2910717	-10,72	8,47%
35°	0,6538829	-3,69	42,76%	125°	0,0884097	-21,07	0,78%	215°	0,0382825	-28,34	0,15%	305°	0,3580964	-8,92	12,82%
40°	0,5741165	-4,82	32,96%	130°	0,0771792	-22,25	0,60%	220°	0,0553988	-25,13	0,31%	310°	0,4300312	-7,33	18,49%
45°	0,4943107	-6,12	24,43%	135°	0,0620869	-24,14	0,39%	225°	0,0726106	-22,78	0,53%	315°	0,5064073	-5,91	25,64%
50°	0,4168694	-7,6	17,38%	140°	0,0454988	-26,84	0,21%	230°	0,0866962	-21,24	0,75%	320°	0,5854637	-4,65	34,28%
55°	0,3435579	-9,28	11,80%	145°	0,033266	-29,56	0,11%	235°	0,0958297	-20,37	0,92%	325°	0,6652732	-3,54	44,26%
60°	0,2760578	-11,18	7,62%	150°	0,0352371	-29,06	0,12%	240°	0,0990832	-20,08	0,98%	330°	0,7421642	-2,59	55,08%
65°	0,2145359	-13,37	4,60%	155°	0,0500611	-26,01	0,25%	245°	0,096272	-20,33	0,93%	335°	0,8137669	-1,79	66,22%
70°	0,1590377	-15,97	2,53%	160°	0,0684699	-23,29	0,47%	250°	0,0871967	-21,19	0,76%	340°	0,8770008	-1,14	76,91%
75°	0,1093956	-19,22	1,20%	165°	0,0856052	-21,35	0,73%	255°	0,0724436	-22,8	0,52%	345°	0,9300365	-0,63	86,50%
80°	0,0653883	-23,69	0,43%	170°	0,0989692	-20,09	0,98%	260°	0,0521795	-25,65	0,27%	350°	0,9693933	-0,27	93,97%
85°	0,0269153	-31,4	0,07%	175°	0,1067825	-19,43	1,14%	265°	0,0269774	-31,38	0,07%	355°	0,993116	-0,06	98,63%

### Diagrama horizontal escala E/Emax - 2 Faces



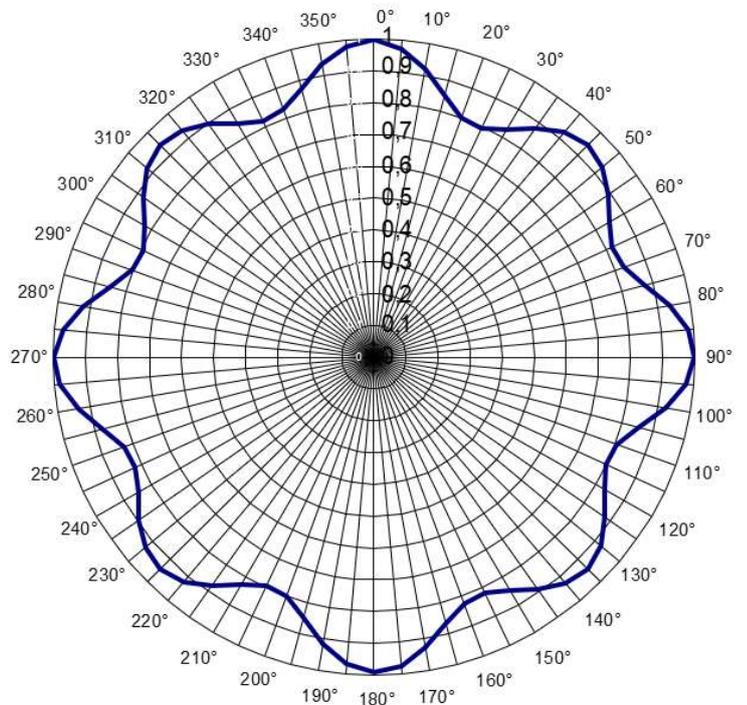
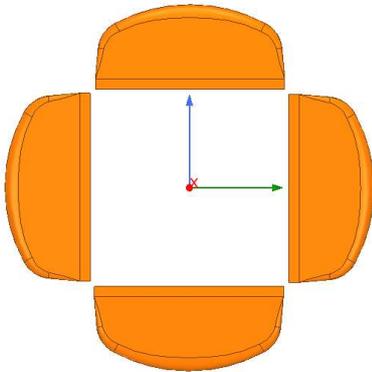
Graus	E/Emax	(dB)	(%)	Graus	E/Emax	(dB)	(%)	Graus	E/Emax	(dB)	(%)	Graus	E/Emax	(dB)	(%)
0°	0.9862795	-0.12	97.27%	90°	0.9828789	-0.15	96.61%	180°	0.1240224	-18.13	1.54%	270°	0.1306171	-17.68	1.71%
5°	0.949511	-0.45	90.16%	95°	0.9851446	-0.13	97.05%	185°	0.1440456	-16.83	2.07%	275°	0.0978363	-20.19	0.96%
10°	0.8922776	-0.99	79.62%	100°	0.9560927	-0.39	91.41%	190°	0.1422329	-16.94	2.02%	280°	0.0556545	-25.09	0.31%
15°	0.8327219	-1.59	69.34%	105°	0.8994976	-0.92	80.91%	195°	0.1170847	-18.63	1.37%	285°	0.0353997	-29.02	0.13%
20°	0.7961594	-1.98	63.39%	110°	0.8241381	-1.68	67.92%	200°	0.0707131	-23.01	0.50%	290°	0.078614	-22.09	0.62%
25°	0.8044517	-1.89	64.71%	115°	0.7379042	-2.64	54.45%	205°	0.0104232	-39.64	0.01%	295°	0.1380384	-17.2	1.91%
30°	0.8540828	-1.37	72.95%	120°	0.6471426	-3.78	41.88%	210°	0.0573456	-24.83	0.33%	300°	0.2018366	-13.9	4.07%
35°	0.9215099	-0.71	84.92%	125°	0.5571857	-5.08	31.05%	215°	0.1174898	-18.6	1.38%	305°	0.2694635	-11.39	7.26%
40°	0.9772372	-0.2	95.50%	130°	0.4731513	-6.5	22.39%	220°	0.1606941	-15.88	2.58%	310°	0.3419794	-9.32	11.69%
45°	1	0	100.00%	135°	0.3958221	-8.05	15.67%	225°	0.1782379	-14.98	3.18%	315°	0.419276	-7.55	17.58%
50°	0.9828789	-0.15	96.61%	140°	0.3254618	-9.75	10.59%	230°	0.1671091	-15.54	2.79%	320°	0.5023426	-5.98	25.23%
55°	0.9311079	-0.62	86.70%	145°	0.2606154	-11.68	6.79%	235°	0.1295687	-17.75	1.68%	325°	0.589522	-4.59	34.75%
60°	0.8669619	-1.24	75.16%	150°	0.1997561	-13.99	3.99%	240°	0.0737904	-22.64	0.54%	330°	0.679986	-3.35	46.24%
65°	0.8194076	-1.73	67.14%	155°	0.1406048	-17.04	1.98%	245°	0.0193419	-34.27	0.04%	335°	0.7691304	-2.28	59.16%
70°	0.8100279	-1.83	65.61%	160°	0.0830807	-21.61	0.69%	250°	0.0599101	-24.45	0.36%	340°	0.851138	-1.4	72.44%
75°	0.8433348	-1.48	71.12%	165°	0.0326212	-29.73	0.11%	255°	0.108893	-19.26	1.19%	345°	0.9204496	-0.72	84.72%
80°	0.8984626	-0.93	80.72%	170°	0.042462	-27.44	0.18%	260°	0.1388353	-17.15	1.93%	350°	0.9693933	-0.27	93.97%
85°	0.9516998	-0.43	90.57%	175°	0.0872971	-21.18	0.76%	265°	0.1458814	-16.72	2.13%	355°	0.993116	-0.06	98.63%

### Diagrama horizontal escala E/E<sub>max</sub> - 3 Faces



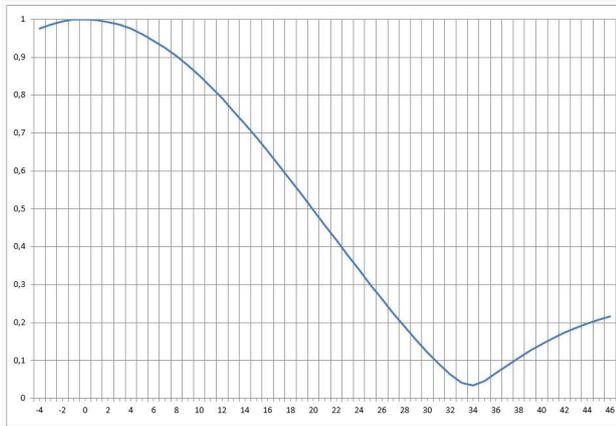
Graus	E/E <sub>max</sub>	(dB)	(%)	Graus	E/E <sub>max</sub>	(dB)	(%)	Graus	E/E <sub>max</sub>	(dB)	(%)	Graus	E/E <sub>max</sub>	(dB)	(%)
0°	0.9919733	-0.07	98.40%	90°	0.9278975	-0.65	86.10%	180°	0.9919733	-0.07	98.40%	270°	0.1559553	-16.14	2.43%
5°	0.9582967	-0.37	91.83%	95°	0.9046904	-0.87	81.85%	185°	1	0	100.00%	275°	0.1458814	-16.72	2.13%
10°	0.9015711	-0.9	81.28%	100°	0.8443062	-1.47	71.29%	190°	0.9738678	-0.23	94.84%	280°	0.1185769	-18.52	1.41%
15°	0.8346415	-1.57	69.66%	105°	0.7726806	-2.24	59.70%	195°	0.9130614	-0.79	83.37%	285°	0.1135011	-18.9	1.29%
20°	0.7762471	-2.2	60.26%	110°	0.7177943	-2.88	51.52%	200°	0.8222426	-1.7	67.61%	290°	0.1568556	-16.09	2.46%
25°	0.7455899	-2.55	55.59%	115°	0.7038822	-3.05	49.55%	205°	0.7071312	-3.01	50.00%	295°	0.216023	-13.31	4.67%
30°	0.7481695	-2.52	55.98%	120°	0.7269424	-2.77	52.84%	210°	0.5814334	-4.71	33.81%	300°	0.2630268	-11.6	6.92%
35°	0.7762471	-2.2	60.26%	125°	0.762079	-2.36	58.08%	215°	0.459198	-6.76	21.09%	305°	0.289401	-10.77	8.38%
40°	0.8090959	-1.84	65.46%	130°	0.7870458	-2.08	61.94%	220°	0.3576844	-8.93	12.79%	310°	0.3019952	-10.4	9.12%
45°	0.8279422	-1.64	68.55%	135°	0.7879524	-2.07	62.09%	225°	0.2904023	-10.74	8.43%	315°	0.3224779	-9.83	10.40%
50°	0.8231898	-1.69	67.76%	140°	0.7647157	-2.33	58.48%	230°	0.260016	-11.7	6.76%	320°	0.3736801	-8.55	13.96%
55°	0.7943282	-2	63.10%	145°	0.7311391	-2.72	53.46%	235°	0.2466039	-12.16	6.08%	325°	0.4607868	-6.73	21.23%
60°	0.7559621	-2.43	57.15%	150°	0.7055048	-3.03	49.77%	240°	0.2262039	-12.91	5.12%	330°	0.5714786	-4.86	32.66%
65°	0.7294575	-2.74	53.21%	155°	0.7079458	-3	50.12%	245°	0.1857804	-14.62	3.45%	335°	0.6902398	-3.22	47.64%
70°	0.7396053	-2.62	54.70%	160°	0.7481695	-2.52	55.98%	250°	0.130017	-17.72	1.69%	340°	0.8016781	-1.92	64.27%
75°	0.7879524	-2.07	62.09%	165°	0.8147043	-1.78	66.37%	255°	0.0864968	-21.26	0.75%	345°	0.8943345	-0.97	79.98%
80°	0.8540828	-1.37	72.95%	170°	0.8892011	-1.02	79.07%	260°	0.09977	-20.02	1.00%	350°	0.9605058	-0.35	92.26%
85°	0.9088663	-0.83	82.60%	175°	0.9516998	-0.43	90.57%	265°	0.1372461	-17.25	1.88%	355°	0.993116	-0.06	98.63%

### Diagrama horizontal escala E/E<sub>max</sub> - 4 Faces



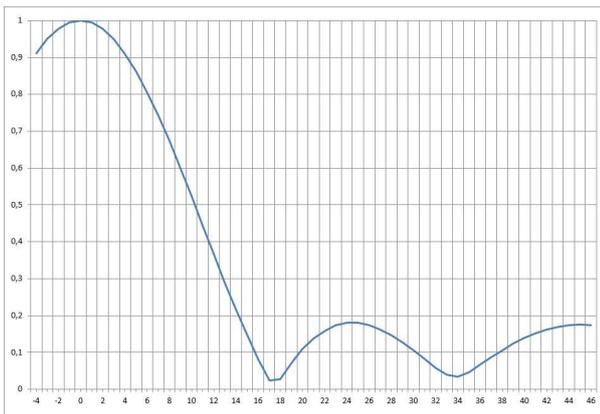
Graus	E/E <sub>max</sub>	(dB)	(%)	Graus	E/E <sub>max</sub>	(dB)	(%)	Graus	E/E <sub>max</sub>	(dB)	(%)	Graus	E/E <sub>max</sub>	(dB)	(%)
0°	0.9977001	-0.02	99.54%	90°	1	0	100.00%	180°	0.9919733	-0.07	98.40%	270°	0.9977001	-0.02	99.54%
5°	0.9738678	-0.23	94.84%	95°	0.9772372	-0.2	95.50%	185°	0.9682779	-0.28	93.76%	275°	0.9738678	-0.23	94.84%
10°	0.9183326	-0.74	84.33%	100°	0.9225714	-0.7	85.11%	190°	0.9141132	-0.78	83.56%	280°	0.9183326	-0.74	84.33%
15°	0.851138	-1.4	72.44%	105°	0.8560517	-1.35	73.28%	195°	0.8482034	-1.43	71.94%	285°	0.851138	-1.4	72.44%
20°	0.8016781	-1.92	64.27%	110°	0.807235	-1.86	65.16%	200°	0.7998343	-1.94	63.97%	290°	0.8016781	-1.91	64.42%
25°	0.7934143	-2.01	62.95%	115°	0.7979947	-1.96	63.68%	205°	0.7915895	-2.03	62.66%	295°	0.7952433	-1.99	63.24%
30°	0.8260379	-1.66	68.23%	120°	0.8298508	-1.62	68.87%	210°	0.8250875	-1.67	68.08%	300°	0.8279422	-1.64	68.55%
35°	0.8770008	-1.14	76.91%	125°	0.8800351	-1.11	77.45%	215°	0.8770008	-1.14	76.91%	305°	0.8790225	-1.12	77.27%
40°	0.9225714	-0.7	85.11%	130°	0.9236342	-0.69	85.31%	220°	0.9225714	-0.7	85.11%	310°	0.9236342	-0.69	85.31%
45°	0.9418896	-0.52	88.72%	135°	0.9418896	-0.52	88.72%	225°	0.9418896	-0.52	88.72%	315°	0.9429746	-0.51	88.92%
50°	0.9300365	-0.63	86.50%	140°	0.9300365	-0.63	86.50%	230°	0.9311079	-0.62	86.70%	320°	0.9311079	-0.62	86.70%
55°	0.8933055	-0.98	79.80%	145°	0.8922776	-0.99	79.62%	235°	0.8943345	-0.97	79.98%	325°	0.8943345	-0.97	79.98%
60°	0.8482034	-1.43	71.94%	150°	0.8472274	-1.44	71.78%	240°	0.8491805	-1.42	72.11%	330°	0.8491805	-1.42	72.11%
65°	0.8203515	-1.72	67.30%	155°	0.817523	-1.75	66.83%	245°	0.8212966	-1.71	67.45%	335°	0.8203515	-1.72	67.30%
70°	0.8298508	-1.62	68.87%	160°	0.8250875	-1.67	68.08%	250°	0.8298508	-1.62	68.87%	340°	0.8288959	-1.63	68.71%
75°	0.873977	-1.17	76.38%	165°	0.8689604	-1.22	75.51%	255°	0.8749838	-1.16	76.56%	345°	0.8729714	-1.18	76.21%
80°	0.9343294	-0.59	87.30%	170°	0.9278975	-0.65	86.10%	260°	0.9343294	-0.59	87.30%	350°	0.9332543	-0.6	87.10%
85°	0.9828789	-0.15	96.61%	175°	0.9761128	-0.21	95.28%	265°	0.9828789	-0.15	96.61%	355°	0.9806183	-0.17	96.16%

### Diagrama vertical escala E/E<sub>max</sub> - 1 Nível



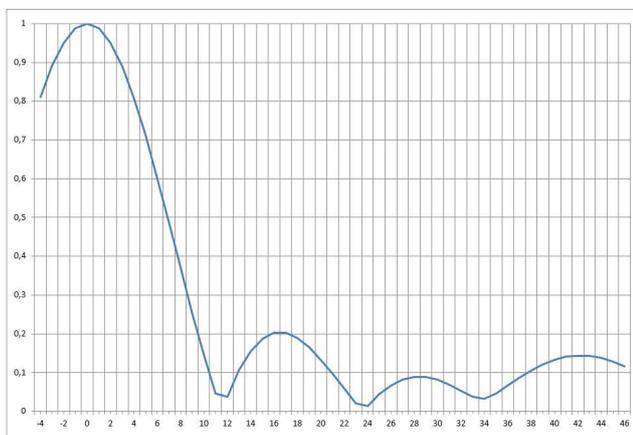
Graus	dB	E/E <sub>max</sub>	Graus	dB	E/E <sub>max</sub>
0	0,00	1,00	11	-0,59	0,93
1	-0,01	1,00	12	-0,70	0,92
2	-0,02	1,00	13	-0,81	0,91
3	-0,04	1,00	14	-0,94	0,90
4	-0,08	0,99	15	-1,08	0,88
5	-0,12	0,99	16	-1,23	0,87
6	-0,18	0,98	17	-1,38	0,85
7	-0,24	0,97	18	-1,55	0,84
8	-0,31	0,96	19	-1,72	0,82
9	-0,39	0,96	20	-1,91	0,80
10	-0,49	0,95	21	-2,10	0,79
22	-2,31	0,77	33	-5,29	0,54
23	-2,52	0,75	34	-5,62	0,52
24	-2,75	0,73	35	-5,97	0,50
25	-2,99	0,71	36	-6,33	0,48
26	-3,24	0,69	37	-6,70	0,46
27	-3,49	0,67	38	-7,09	0,44
28	-3,77	0,65	39	-7,48	0,42
29	-4,05	0,63	40	-7,89	0,40
30	-4,34	0,61	41	-8,32	0,38
31	-4,64	0,59	42	-8,77	0,36
32	-4,96	0,56	43	-9,24	0,35

### Diagrama vertical escala E/E<sub>max</sub> - 2 Níveis



Graus	dB	E/E <sub>max</sub>	Graus	dB	E/E <sub>max</sub>
0	0,00	1,00	11	-7,05	0,44
1	-0,05	0,99	12	-8,72	0,37
2	-0,20	0,98	13	-10,76	0,29
3	-0,46	0,95	14	-13,30	0,22
4	-0,82	0,91	15	-16,67	0,15
5	-1,29	0,86	16	-21,70	0,08
6	-1,87	0,81	17	-32,45	0,02
7	-2,59	0,74	18	-31,12	0,03
8	-3,44	0,67	19	-22,83	0,07
9	-4,45	0,60	20	-19,26	0,11
10	-5,64	0,52	21	-17,20	0,14
22	-15,96	0,16	33	-28,03	0,04
23	-15,23	0,17	34	-29,38	0,03
24	-14,90	0,18	35	-26,69	0,05
25	-14,90	0,18	36	-23,61	0,07
26	-15,20	0,17	37	-21,23	0,09
27	-15,78	0,16	38	-19,46	0,11
28	-16,66	0,15	39	-18,12	0,12
29	-17,89	0,13	40	-17,11	0,14
30	-19,53	0,11	41	-16,36	0,15
31	-21,72	0,08	42	-15,81	0,16
32	-24,60	0,06	43	-15,44	0,17

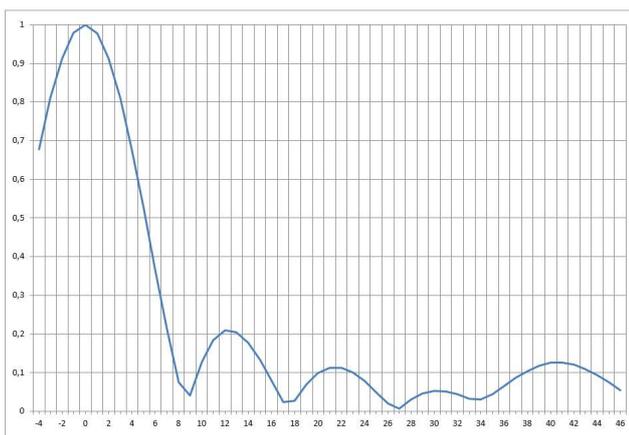
### Diagrama vertical escala E/E<sub>max</sub> - 3 Níveis



Graus	dB	E/E <sub>max</sub>	Graus	dB	E/E <sub>max</sub>
0	0,00	1,00	11	-26,71	0,05
1	-0,11	0,99	12	-28,51	0,04
2	-0,45	0,95	13	-19,57	0,11
3	-1,02	0,89	14	-16,18	0,16
4	-1,85	0,81	15	-14,52	0,19
5	-2,96	0,71	16	-13,83	0,20
6	-4,40	0,60	17	-13,83	0,20
7	-6,26	0,49	18	-14,43	0,19
8	-8,68	0,37	19	-15,61	0,17
9	-11,95	0,25	20	-17,48	0,13
10	-16,84	0,14	21	-20,30	0,10

Graus	dB	E/E <sub>max</sub>	Graus	dB	E/E <sub>max</sub>
22	-24,75	0,06	33	-28,65	0,04
23	-34,00	0,02	34	-29,71	0,03
24	-36,69	0,01	35	-26,83	0,05
25	-27,14	0,04	36	-23,63	0,07
26	-23,53	0,07	37	-21,23	0,09
27	-21,75	0,08	38	-19,51	0,11
28	-21,01	0,09	39	-18,30	0,12
29	-21,05	0,09	40	-17,49	0,13
30	-21,79	0,08	41	-17,02	0,14
31	-23,28	0,07	42	-16,83	0,14
32	-25,63	0,05	43	-16,91	0,14

### Diagrama vertical escala E/E<sub>max</sub> - 4 Níveis



Graus	dB	E/E <sub>max</sub>	Graus	dB	E/E <sub>max</sub>
0	0,00	1,00	11	-14,67	0,18
1	-0,20	0,98	12	-13,59	0,21
2	-0,80	0,91	13	-13,76	0,21
3	-1,84	0,81	14	-15,01	0,18
4	-3,38	0,68	15	-17,50	0,13
5	-5,57	0,53	16	-21,98	0,08
6	-8,66	0,37	17	-32,47	0,02
7	-13,36	0,21	18	-31,16	0,03
8	-22,45	0,08	19	-23,15	0,07
9	-27,74	0,04	20	-20,14	0,10
10	-17,81	0,13	21	-18,96	0,11

Graus	dB	E/E <sub>max</sub>	Graus	dB	E/E <sub>max</sub>
22	-18,95	0,11	33	-29,56	0,03
23	-19,98	0,10	34	-30,18	0,03
24	-22,13	0,08	35	-27,02	0,04
25	-25,96	0,05	36	-23,67	0,07
26	-33,73	0,02	37	-21,23	0,09
27	-42,70	0,01	38	-19,58	0,10
28	-30,39	0,03	39	-18,55	0,12
29	-26,77	0,05	40	-18,03	0,13
30	-25,50	0,05	41	-17,98	0,13
31	-25,70	0,05	42	-18,36	0,12
32	-27,16	0,04	43	-19,18	0,11