

standard panel

#	1	2	3	4	5	6	7	8
post	0	761	838	1165	2072	2548	2551	2712
builder	BurntCoil (french panel)	BurntCoil (London panel)	Veleric	BurntCoil (Tall Blond)	Davelang	Anie (Tallboy)	Jarrothhaas (Tonewood DML Speaker)	Aagas
link		<a href="#">#761</a>	<a href="#">#838</a>	<a href="#">#1165</a>	<a href="#">#2072</a>	<a href="#">2548</a>	<a href="#">#2551</a>	<a href="#">#2712</a>
membran (material, thickness)	4mm poplar plywood	610x1200mm 3mm thick Beech Ply 'Laserboard'	Revolution Ply underlayment plywood	Scandinavian Birch plywood 1160x300mm	plexiglass / balsa (trebles)	plywood		aluminium honeycomb 4.53kg/m <sup>2</sup> (see #2691)
dimensions (WxH)			16" x 23" (406 x 584mm) x .2" (5mm)		plexi : 24"x48" (609x1218mm) 1/4"(6.35mm), balsa : 6"x32" (152x813mm) 1/8"(3.2mm)			70 3/4" high x 20 1/4" wide (1,80 x 0,51m) 3/8" (9,5mm) drawing : <a href="#">#2691</a>
coating			Minwax "natural" stain and 3 light coats of Formby's Tung Oil Finish on the face					yes
shape detail			square angle					square angle
spline			yes with absorber between exciters and spline					no
exciter			two Dayton Audio DAEX25FHE-4		Dayton Audio Thruster 32mm exciter 40w 4 ohm			
exciter gluing								
exciter position			The exciters are both at about 0.47 along the long side and at 0.3 and 0.44 across the short side.					center
bandwith			see post 848 (close range measurement)					
mounting method		horizontal, 160mm from rear wall	frame with EPDM foam (12" and 9" long)					3 points (2 at the botton, one on the top)
equalization								no
bass protection								no
bass extention	IB sub	IB sub			Sub			
Filter			yes					no
HP filter	200Hz	200Hz	160Hz		100Hz			
LP filter								
H m			0,58		1,22			1,80
W m			0,41		0,61			0,51
A m <sup>2</sup>			0,24		0,74			0,92
H/W			1,44		2,00			3,49

standard panel\_2

#	1	2	3	4	5	6	7
<b>post</b>	4116	4120	4204	4270	4270	4309	4328
<b>builder</b>	Homeswinghome	Negativeghostrider	Aagas	Veleric	Veleric	spedge	Toddincabo
<b>link</b>	<a href="#">#4116</a>	<a href="#">#4120</a>	<a href="#">#4204</a>	<a href="#">#4270</a>	<a href="#">#4270</a>	<a href="#">#4309</a>	<a href="#">#4328</a>
<b>membran (material, thickness)</b>	3mm poplar plywood	3mm Birch Ply	plexiglass	Homemade balsa plywood	balsa core 1/16" (1.6mm) + CF (spread tow twill weave, 0.23 mm)	5mm XPS (35kg/m³) + epoxy	Hybrid dense EPS + T cross plywood (7x7")
<b>dimensions (WxH)</b>	420 x 1200mm	305 x 762mm (12x30 inch)	18" x 24" (457 x 609mm) x 1/16" (1.6mm)	16" x 24" (406 x 609mm) x 3 layers 1/16" (1.6mm)	16" x 23" (406 x 584mm) x 1/16" (1.6mm)		
<b>coating</b>	highly diluted varnish	3 thin coats of aerosol water-based poly				epoxy	
<b>shape detail</b>	rounded corner R80mm	square angle					trapezoidal rounded angles
<b>spline</b>	yes	no (frog legs)					cross
<b>exciter</b>	Dayton Audio DAEX25FHE-4	Dayton DAEX25Q-4	single Thrusters				Dayton Audio DAEX25FHE-4
<b>exciter gluing</b>	original double side tape						
<b>exciter position</b>	offcenter H0.,39, V 0,36 (inspired by the IEC baffle)	basic 3/5, 2/5 node					
<b>bandwith</b>	about 150Hz to 20k	about 90Hz to 16kHz with sub					
<b>mounting method</b>	frame with full 17x17mm foam suspension	surface mounted with foam tape to poplar frames					1" of the 3/4" thick weatherproofing foam at the cardinal points of the cross
<b>equalization</b>	no	a little bit of parametric eq to smooth out the peaks and dips					
<b>bass protection</b>	no						
<b>bass extention</b>	no	2.1 configuration with a 10" velodyne sub	OB sub				
<b>Filter</b>	no	Dayton DSPB-K					
<b>HP filter</b>		3rd order 110Hz	about 200Hz				
<b>LP filter</b>		?					
<b>weigth</b>						85g raw, 122g coated	
<b>H m</b>	1,2	0,762	0,61	0,61	0,58		
<b>W m</b>	0,42	0,305	0,46	0,4	0,4		
<b>A m²</b>	0,50	0,23	0,28	0,24	0,23		
<b>H/W</b>	2,86	2,50	1,33	1,53	1,45		

canvas type

#	1	2	3
post	4050	4071	4177
<b>Builder</b>	<b>Jaxboy</b>	<b>Spedge</b>	<b>Homeswinghome</b>
<b>post</b>	<a href="#">#4050</a>	<a href="#">#4071</a>	<a href="#">#4177</a>
<b>membran (material, thickness)</b>	canvas	canvas	canvas
<b>dimensions (WxH)</b>	305 x 406 (12x16inch)	30cm x 42cm	33cm x 41cm
<b>coating</b>	both sides with acrylic paint instead of pva/water, thinned to 30-50:70-50		raw
<b>mounting pad</b>	4x6 rounded piece of paneling	plywood 2mm x15cmx10cm (16g)	balsa 1mm 1 layer 15cmx10cm rounded + 1layer 10x10cm @90° (<2g)
<b>spline</b>	yes (soft mounting) melamine sponge to fill the gap		no
<b>exciter</b>	Dayton Audio DAEX25FHE-4		Dayton Audio DAEX25FHE-4
<b>exciter gluing</b>	original double side tape		epoxy
<b>exciter position</b>	center		center
<b>bandwith</b>			40/20k
<b>mounting method</b>	Hang the panels about 3 feet apart and a foot from a window, with doubled drapes		put on a low piece of furniture
<b>equalization</b>			
<b>bass protection</b>	100µF		
<b>bass extention</b>			
<b>Filter</b>			
<b>HP filter</b>			
<b>LP filter</b>			
<b>H m</b>	0,41	0,42	0,41
<b>W m</b>	0,30	0,3	0,33
<b>A m<sup>2</sup></b>	0,12	0,13	0,14
<b>H/W</b>	1,33	1,40	1,24





thread history

date	post	page	topic	author	comment
06/04/15	1	1	1st post	xrk971	
26/05/16	250	10			
12/08/19	<a href="#">410</a>	21	how to maximize performance	Burntcoil	DML's sound like nothing else for the money with outstanding VFM and WAF.
17/09/19	500	25			
07/11/19	750	38			
09/11/19	<a href="#">761</a>	40	London panel	Burntcoil	
17/11/19	<a href="#">838</a>	42	Veleric's plywood panel	Veleric	I'm really encouraged. They sound better than I expected for a first attempt.
05/12/19	<a href="#">877</a>	44	Canvas panel	OffGridKindaGuy	
19/12/19	<a href="#">969</a>	49	ABH Acoustic Black Hole	Burntcoil	
12/01/20	<a href="#">993</a>	50	London panel pictures	Burntcoil	
15/01/20	1000	50			
17/02/20	<a href="#">1117</a>	56	Tall story build notes	Burntcoil	Tall blond pdf
20/02/20	<a href="#">1143</a>	58	Damping with sorbothane	Burntcoil	
22/02/20	<a href="#">1165</a>	59	Tall blondes	Burntcoil	
25/02/20	<a href="#">1121</a>	62	Advice for recording	xrk971	Zoom HF1n : Something like this sounds amazingly like real life "you are there" recording.
26/02/20	<a href="#">1224</a>	62	Suspension method comparison	Veleric	More methods <a href="#">1230</a>
28/02/20	<a href="#">1242</a>	63	Carved XPS DML with a closed back	JMatt	They sound very good paired with a small subwoofer but they did lose a tiny bit of magic when I closed up the back. detail of the back <a href="#">1244</a>
01/03/20	1250	63			
07/03/20	<a href="#">1325</a>	67	Panel dimensions comparison	Veleric	
08/03/20	<a href="#">1331</a>	67	XPS with PVA	Veleric	Dual exciter One Dayton Ultra (better LF), one TEAX32C30-4/B (better HF).
08/03/20	<a href="#">1334</a>	67	XPS panel	Bdjohns	Haapy with XPS (Formular 250 1p) but not enough bass (target = 100hZ), too high distorsion
27/03/20	<a href="#">1458</a>	73	DML Patents	Burntcoil	
29/03/20	1500	75			
07/04/20	1750	88			
25/05/20	2000	100			
15/06/20	<a href="#">2072</a>	104	Plexiglass panel with balsa extension	Davelang	I am very pleased with the sound, improved high frequency extension and midrange clarity.
20/08/20	2250	113			
29/08/20	<a href="#">2284</a>	115	Advice : don't use DML below room transition frequ	bradleypnw	
30/08/20	<a href="#">2289</a>	115	Link to MA recording	Geosand	<a href="#">MA recording</a>
04/09/20	<a href="#">2299</a>	115	Geosand's EPS panel	Geosand	
05/09/20	<a href="#">2305</a>	116	Spedge's recording technique	Spedge	I'm just using HI-Q app for recording stereo on my old galaxy note 4. Converting from m4a to mp4 on VLC,that's it.
05/09/20	<a href="#">2306</a>	116	Advice : don't go down to the lower resonance	Spedge	
10/11/20	2500	125			
01/12/20	<a href="#">2548</a>	128	Tallboy (with pictures)	Anie	
17/12/20	<a href="#">2624</a>	132	3M VHB Dayton audio spec : 9473	Jarrothaas	

thread history\_2

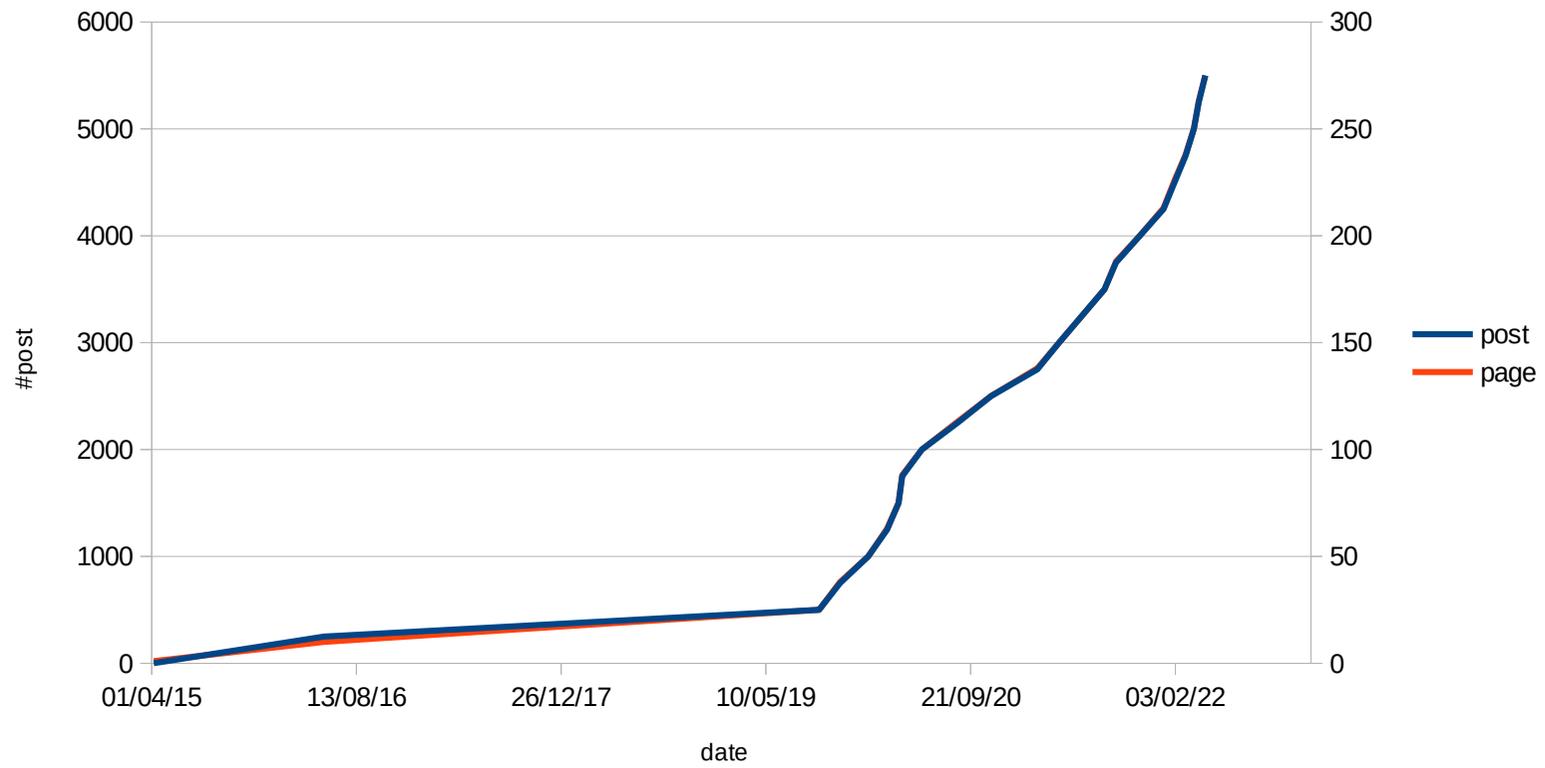
date	post	page	topic	author	comment
03/01/21	<a href="#">2634</a>	132	3mm plywood tall DML	Moldie	Exemple of typical panel FR
16/02/21	<a href="#">2696</a>	135	Guitar top composite technic	Veleric	
17/02/21	<a href="#">2699</a>	135	Tesa tape alternative	Stimper	
28/02/21	<a href="#">2712</a>	136	Alu honeycomb panel	Aagas	I don't have any idea what you've done, but this is f____ing amazing
03/03/21	<a href="#">2750</a>	138			
25/04/21	<a href="#">3000</a>	150			
29/04/21	<a href="#">3024</a>	152	Spedge's canvas picture	Spedge	
19/06/21	<a href="#">3251</a>	163	Jaxboy's canvas panel picture	Jaxboy	
19/06/21	<a href="#">3252</a>	163	Alu + foam receipe	Aagas	
28/07/21	<a href="#">3410</a>	171	EPS panels records	Spedge	1cm x 23inchx 14inch low density eps panel with some 50x50 pva coating + dome (see #3385)
07/08/21	<a href="#">3431</a>	171	Spedge's opinion about material	Spedge	
07/08/21	<a href="#">3433</a>	172	Spedge's exciter	Spedge	<a href="#">TEAX25C10-8/HS - Tectonic</a> . Picture #4419
14/08/21	<a href="#">3500</a>	175			
30/08/21	<a href="#">3619</a>	181	1st reflections and ABH (acoustic black hole)	Pway	
09/09/21	<a href="#">3729</a>	187	Epoxy coating, sound of panels	Spedge	
10/09/21	<a href="#">3730</a>	187	4 material tests	Lordtarquin	canvas, medium grade EPS (21kg/m3), 3mm poplar ply, high grade EPS (31kg/m3)
10/09/21	<a href="#">3732</a>	187	9k spike and 2.5k spike	Spedge	
11/09/21	<a href="#">3750</a>	188			
08/11/21	<a href="#">4000</a>	200			
16/12/21	<a href="#">4116</a>	206	Homeswinghome's ply panel	Homeswinghome	
17/12/21	<a href="#">4120</a>	206	NegativeGhostrider's ply panel	NegativeGhostrider	
30/12/21	<a href="#">4177</a>	209	Canvas panel, frequency response	Homeswinghome	
01/01/22	<a href="#">4183</a>	210	Picture of ceiling DML	Cheapvega	Difficulties with the close ceiling (4 to 6 inches). FR in post #4147, pic #3234
01/01/22	<a href="#">4185</a>	210	DML material characteristics measurements	Homeswinghome	Bending stiffness, arial mass : cantilever beam, 3 points method (Veleric, see #4180)
02/01/22	<a href="#">4204</a>	211	Plexiglass panel	Aagas	Not nearly as majestic and immersive as my large aluminum panels, but very satisfying.
05/01/22	<a href="#">4250</a>	213			
07/01/22	<a href="#">4270</a>	214	Balsa plywood panel	Veleric	
11/01/22	<a href="#">4328</a>	217	Hybrid EPS/plywood panel	Toddincabo	BOOM!...that was it. see previous design #3076 (canvas + wood) and #3207 (dense EPS + back frame/spine)
20/01/22	<a href="#">4374</a>	219	Simply supported plate eigenfrequencies	Veleric	<a href="https://www.comsol.com/multiphysics/eigenfrequency-analysis">https://www.comsol.com/multiphysics/eigenfrequency-analysis</a>
24/01/22	<a href="#">4414</a>	221	Spedge's spine for canvas	Spedge	picture of spine
30/01/22	<a href="#">4453</a>	223	Carbon Fiber on Balsa core technique	Veleric	all about making a CF/balsa membrane + <a href="#">2700</a>
30/01/22	<a href="#">4454</a>	223	CF/balsa DML characterisitics	Veleric	frequency response see <a href="#">4477</a> and plywood <a href="#">4483</a>
31/01/22	<a href="#">4484</a>	225	Mass placement technique	Spedge	Against some low feq holes ?
01/02/22	<a href="#">4494</a>	225	A blob of blue tack against HF peak	Spedge	More technique (foam, hole) <a href="#">4502</a>
01/02/22	<a href="#">4500</a>	226			

## thread history\_3

date	post	page	topic	author	comment
06/02/22	<a href="#">4559</a>	228	3M VHB alternative	Veleric	
07/02/22	<a href="#">4585</a>	230	Link to CF panel supplier	Leob	<a href="https://shop1.r-g.de/en/art/6195K">https://shop1.r-g.de/en/art/6195K</a>
08/02/22	<a href="#">4603</a>	231	Cardboard PVA coating to avoid warping	Spedje	
11/02/22	<a href="#">4656</a>	233	Spectral contamination	Homeswinghome	<a href="https://linearaudio.net/downloads">https://linearaudio.net/downloads</a>
12/02/22	<a href="#">4659</a>	233	Testing methods	Spedje	
25/02/22	<a href="#">4735</a>	237	Link to 3M spray glue	Veleric	<a href="https://www.3m.com/3M/en_US/p/dc/v000350555/">https://www.3m.com/3M/en_US/p/dc/v000350555/</a>
26/02/22	<a href="#">4739</a>	237	Link to Tectonic video (Youtube)	Veleric	<a href="https://www.youtube.com/user/TectonicAudioLabs/videos">https://www.youtube.com/user/TectonicAudioLabs/videos</a>
27/02/22	<a href="#">4743</a>	238	Canvas panel construction tips	Jaxboy	
28/02/22	<a href="#">4750</a>	238	Screwed panel exciter interface	Hkguy6	
05/03/22	<a href="#">4842</a>	243	Exciter choice	Homeswinghome	see also 3433, 4419
08/03/22	<a href="#">4874</a>	244	Printed panel	Leob	3D printed panel picture
08/03/22	<a href="#">4888</a>	244	Microphone calibration	Homeswinghome	<a href="https://www.diyaudio.com/community/threads/a-study-of-dmls-as-a-full-range-speaker.272576/">https://www.diyaudio.com/community/threads/a-study-of-dmls-as-a-full-range-speaker.272576/</a>
10/03/22	<a href="#">4906</a>	246	USB microphone (alernative to Umik1)	Leob	Omnitronic MM-2USB
11/03/22	<a href="#">4913</a>	246	Introduction to the tap test	Veleric	<a href="https://www.diyaudio.com/community/threads/application-of-impulse-excitation-for-dml-design-a">https://www.diyaudio.com/community/threads/application-of-impulse-excitation-for-dml-design-a</a>
15/03/22	<a href="#">4962</a>	249	EU PS source	Leob	<a href="https://www.dekokopf.com/styroporplatten/">https://www.dekokopf.com/styroporplatten/</a>
22/03/22	<a href="#">5034</a>	252	Exemple of plywood panel FR	Lordtarquin	This is a plot from my 30x40 2mm plywood panels using cheap Chinese exciters.
22/03/22	<a href="#">5053</a>	252	Chladni patterns	Homeswinghome	
25/03/22	<a href="#">5074</a>	254	Where I am	Homeswinghome	
26/03/22	<a href="#">5094</a>	254	Neopor panel picture	Leob	
27/03/22	<a href="#">5110</a>	254	Link about zobel circuit	Homeswinghome	5113 : <a href="https://audioxpress.com/article/voice-coil-lab-notes-improved-zobel-network">https://audioxpress.com/article/voice-coil-lab-notes-improved-zobel-network</a>
28/03/22	<a href="#">5130</a>	257	Effect of adding mass (ie nut and washer)	Homeswinghome	
29/03/22	<a href="#">5136</a>	257	Audio spectrum chart	HCSebastian	+ introduction to guitar bracing
29/03/22	<a href="#">5152</a>	258	E-glass on 3mm honeycomb	NaRenaud	<a href="https://www.youtube.com/watch?v=oH2yrfEYk-w">https://www.youtube.com/watch?v=oH2yrfEYk-w</a>
30/03/22	<a href="#">5177</a>	259	Tectonic patent	Homeswinghome	<a href="https://patents.google.com/patent/WO2016118341A1/ko">https://patents.google.com/patent/WO2016118341A1/ko</a>
01/04/22	<a href="#">5227</a>	262	Free edge vs foam suspension comparison	Veleric	
01/04/22	<a href="#">5248</a>	263	Plywood 14inch x48inch	Veleric	with pictures
01/04/22	<a href="#">5254</a>	263	Composite on honeycomb process	NaRenaud	
02/04/22	<a href="#">5259</a>	263	Variable naming proposal	Homeswinghome	
02/04/22	<a href="#">5270</a>	264	One vs 2 exciters : any difference ?	Homeswinghome	No conclusion...
02/04/22	<a href="#">5271</a>	264	Composite starter kit in EU	Veleric	<a href="https://www.easycomposites.co.uk/el2-epoxy-laminating-resin">https://www.easycomposites.co.uk/el2-epoxy-laminating-resin</a>
03/04/22	<a href="#">5277</a>	264	Influence of the suspension method	Homeswinghome	free, string suspension, foam
04/04/22	<a href="#">5299</a>	265	Non rectangular shape (4 ellipses)	Pway	for FR see : <a href="#">5326</a>
05/04/22	<a href="#">5334</a>	267	Some FR about HF and suspension methods	Homeswinghome	EPS, XPS, plywood
07/04/22	<a href="#">5360</a>	268	Bracing techniques and tools	HCSebastian	
07/04/22	<a href="#">5321</a>	269	Plywood DML with bracing	HCSebastian	FR : <a href="#">5373</a> , more about the construction : <a href="#">5378</a> , <a href="#">plywood source and spec</a>
08/04/22	<a href="#">5379</a>	269	Link to guitar building video	HCSebastian	<a href="https://www.youtube.com/watch?v=o0FT2nsg0sQ">https://www.youtube.com/watch?v=o0FT2nsg0sQ</a>
17/04/22	<a href="#">5476</a>	274	Efficiency and form factor	Pway	<a href="https://www.researchgate.net/publication/41663333_La_table_d%27harmonie_du_piano_-_Etu">https://www.researchgate.net/publication/41663333_La_table_d%27harmonie_du_piano_-_Etu</a>
18/04/22	<a href="#">5515</a>	276	FR of high form factor panels	Veleric	
19/04/22	<a href="#">5522</a>	277	Damping factor table	Pway	<a href="https://qualia.webs.com/newdampingfactors.htm">https://qualia.webs.com/newdampingfactors.htm</a>
23/04/22	<a href="#">5568</a>	279	Link to wood density and aspect	Spedje	<a href="https://endurancelasers.com/density-of-various-kinds-of-wood-and-plywood/">https://endurancelasers.com/density-of-various-kinds-of-wood-and-plywood/</a>
23/04/22	<a href="#">5569</a>	279	Link to tone wood list	Eucyblues99	<a href="http://tonewooddatasource.weebly.com">http://tonewooddatasource.weebly.com</a>
	4750				

post graph

### A Study of DML's as a Full Range Speaker



graph\_data

date	post	page	rate post/day	topic	author	comment
06/04/15	1	1	0	1st post	xrk971	
26/05/16	250	10	0,60			
17/09/19	500	25	0,21			
07/11/19	750	38	4,90			
15/01/20	1000	50	3,62			
01/03/20	1250	63	5,43			
29/03/20	1500	75	8,93			
07/04/20	1750	88	27,78			
25/05/20	2000	100	5,21			
20/08/20	2250	113	2,87			
10/11/20	2500	125	3,05			
03/03/21	2750	138	2,21			
25/04/21	3000	150	4,72			
14/08/21	3500	175	2,25			
11/09/21	3750	188	8,93			
08/11/21	4000	200	4,31			
05/01/22	4250	213	4,31			
01/02/22	4500	226	9,26			
28/02/22	4750	238	9,26			
20/03/22	5000	250	12,50			
01/04/22	5250	263	20,83			
17/04/22	5500	275	15,63			

Audio spectrum chart

<https://www.diyaudio.com/community/threads/a-study-of-dmls-as-a-full-range-speaker.272576/post-6982482>

