

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)	Jarroddhaas (Tonewood DML Speaker)	Aagas
link		#761	#838	#1165	#2072	2548	#2551	#2712
membran (material, thickness)	4mm poplar plywood	610x1200mm 3mm think Beech Ply 'Laserboard'	Revolution Ply underlayment plywood	Scandinavian Birch plywood 1160x300mm	plexiglass / balsa (trebles)	plywood		aluminium honeycomb 4.53kg/m² (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 : #2691
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 m²			0,24		0,74			0,92
H/W			1,44		2,00			3,49

standard panel_2

#	1	2	3	4	5	6	7
post	4116	4120	4204	4270	4270	4309	4328
builder	Homeswinghome	Negativeghostrider	Aagas	Veleric	Veleric	spedge	Toddincabo
link	#4116	#4120	#4204	#4270	#4270	#4309	#4328
membran (material, thickness)	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")
dimensions (WxH)	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)		
coating	highly diluted varnish	3 thin coats of aerosol water-based poly				epoxy	
shape detail	rounded corner R80mm	square angle					trapezoidal rounded angles
spline	yes	no (frog legs)					cross
exciter	Dayton Audio DAEX25FHE-4	Dayton DAEX25Q-4	single Thrusters				Dayton Audio DAEX25FHE-4
exciter gluing	original double side tape						
exciter position	offcenter H0.,39, V 0,36 (inspired by the IEC baffle)	basic 3/5, 2/5 node					
bandwith	about 150Hz to 20k	about 90Hz to 16kHz with sub					
mounting method	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
equalization	no	a little bit of parametric eq to smooth out the peaks and dips					
bass protection	no						
bass extention	no	2.1 configuration with a 10" velodyne sub	OB sub				
Filter	no	Dayton DSPB-K					
HP filter		3rd order 110Hz	about 200Hz				
LP filter		?					
weigth						85g raw, 122g coated	
H m	1,2	0,762	0,61	0,61	0,58		
W m	0,42	0,305	0,46	0,4	0,4		
A m²	0,50	0,23	0,28	0,24	0,23		
H/W	2,86	2,50	1,33	1,53	1,45		

canvas type

#	1	2	3
post	4050	4071	4177
Builder	Jaxboy	Spedge	Homeswinghome
post	#4050	#4071	#4177
membran (material, thickness)	canvas	canvas	canvas
dimensions (WxH)	305 x 406 (12x16inch)	30cm x 42cm	33cm x 41cm
coating	both sides with acrylic paint instead of pva/water, thinned to 30-50:70-50		raw
mounting pad	4x6 rounded piece of paneling	plywood 2mm x15cmx10cm (16g)	balsa 1mm 1 layer 15cmx10cm rounded + 1layer 10x10cm @90° (<2g)
spline	yes (soft mounting) melamine sponge to fill the gap		no
exciter	Dayton Audio DAEX25FHE-4		Dayton Audio DAEX25FHE-4
exciter gluing	original double side tape		epoxy
exciter position	center		center
bandwith			40/20k
mounting method	Hang the panels about 3 feet apart and a foot from a window, with doubled drapes		put on a low piece of furniture
equalization			
bass protection	100µF		
bass extention			
Filter			
HP filter			
LP filter			
H m	0,41	0,42	0,41
W m	0,30	0,3	0,33
A m²	0,12	0,13	0,14
H/W	1,33	1,40	1,24

absorber_diffuser

[illegible]

membrane material

3,5

material	thickness mm	mu kg/m²	D N.m	D/mu	√(D/mu)	rho (kg/m³)	E (GPa)	ν (Poisson)	shear speed	Fc Hz	A.f0 Hz.m²	F0 @A=.5m² Hz	A @F0=40H z m²	D/mu³	Zm	Estimated efficiency dB/1w/1m	Width for 3,4 aspect ratio (fo=40Hz)	Heigh
XPS 20	20	0,63	10	15,9	3,98	31,5	0,015	0,3	428,0	4618	13	25,0	0,31	39,99	20,08	91	0,30	1,03
XPS 9	9	0,3	1,3	4,3	2,08	33,3	0,021	0,3	496,9	8838	7	13,1	0,16	48,15	5,00	91	0,22	0,75
EPS 20	20	0,36	5	13,9	3,73	18	0,006	0,35	351,4	4937	12	23,4	0,29	107,17	10,73	93	0,29	1,00
PLY 3	3	1,6	20	12,5	3,54	533		9	2547,6	5204	11	22,2	0,28	4,88	45,25	86	0,29	0,97
NXT ?		0,55	1,2	2,2	1,48					12456	5	9,3	0,12	7,21	6,50	87	0,18	0,63
Paper on nomex 5mm	5	0,44	18,4	41,8	6,47					2845	20	40,6	0,51	216,00	22,76	95	0,39	1,31
Tectonics DML100 ?	3,5	0,5	5	10,0	3,16					5818	10	19,9	0,25	40,00	12,65	91	0,27	0,92
Polyester on paper honeycomb		0,5	3,4	6,8	2,61					7055	8	16,4	0,20	27,20	10,43	90	0,25	0,83
Balsa 3mm	3	0,45	8,4	18,7	4,32	150,0	3,733	0,3	3094,0	4258	14	27,1	0,34	92,18	15,55	93	0,32	1,07
Acrylic (plexiglas) 1/8" PPMA	3,175	3,81	8,3	2,2	1,47	1200	3,1	0,4	960,5	12489	5	9,3	0,12	0,15	44,90	79	0,18	0,63
Acrylic (plexiglas) 1/16"	10,0	12	258,3	21,5	4,64	1200	3,1			3965	15	29,2	0,36	0,15	445,42	79	0,33	1,11
Canvas		0,45	6,9	15,4	1,76					10426	6		0,14	75,94	14,12	92	0,20	0,69
Cardboard	1	0,42	2	4,8	2,18					8431	7	13,7	0,17	26,99	7,33	90	0,22	0,76
CF on balsa core (Veleric)	2,1	0,95	20	21,1	4,59					4010	14	28,8	0,36	23,33	34,87	90	0,33	1,11
Carbon on Rohacell	2	0,65	3,33	5,1	2,26					8129	7	14,2	0,18	12,13	11,77	88	0,23	0,78
BioFusion (printer)						1250	3,2	0,3						0,14		79		
GF on balsa core (Veleric)	1,8	0,74	3,6	4,9	2,22	411	7,5			8290	7	13,9	0,17	9,00	13,14	88	0,23	0,77
GF on balsa core (Veleric)	3,4	0,86	9,8	11,4	3,38	253	3			5443	11	21,2	0,27	15,45	23,26	89	0,28	0,95

thread history

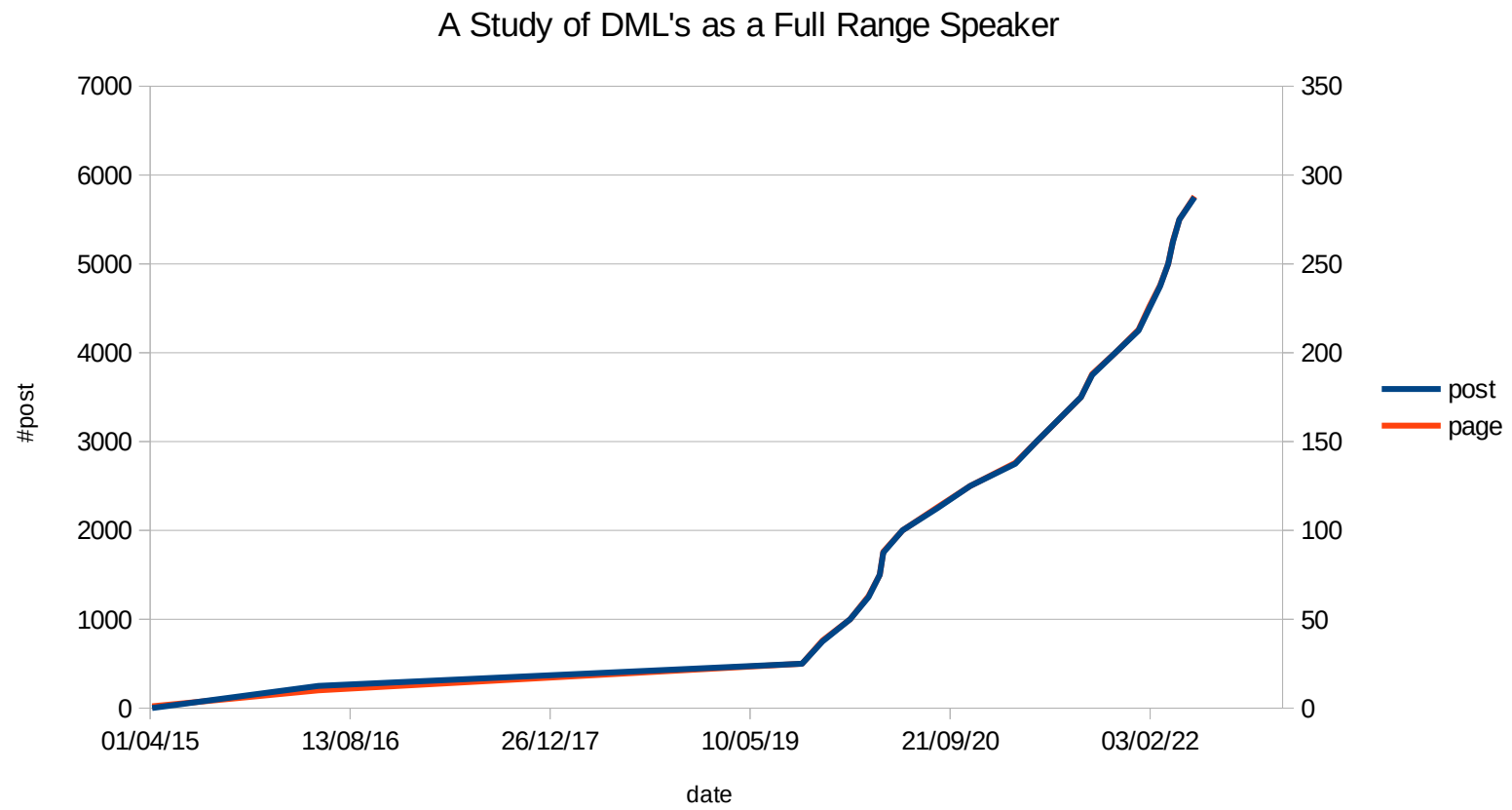
date	post	page	topic	author	comment
06/04/15	1	1	1st post	xrk971	
26/05/16	250	10			
12/08/19	410	21	how to maximize performance	Burntcoil	DML's sound like nothing else for the money with outstanding VFM and WAF.
17/09/19	500	25			
07/11/19	750	38			
09/11/19	761	40	London panel	Burntcoil	
17/11/19	838	42	Veleric's plywood panel	Veleric	I'm really encouraged. They sound better than I expected for a first attempt.
05/12/19	877	44	Canvas panel	OffGridKindaGuy	
19/12/19	969	49	ABH Acoustic Black Hole	Burntcoil	
12/01/20	993	50	London panel pictures	Burntcoil	
15/01/20	1000	50			
17/02/20	1117	56	Tall story build notes	Burntcoil	Tall blond pdf
20/02/20	1143	58	Damping with sorbothane	Burntcoil	
22/02/20	1165	59	Tall blondes	Burntcoil	
25/02/20	1121	62	Advice for recording	xrk971	Zoom HF1n : Something like this sounds amazingly like real life "you are there" recording.
26/02/20	1224	62	Suspension method comparison	Veleric	More methods 1230
28/02/20	1242	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 1244
01/03/20	1250	63			
07/03/20	1325	67	Panel dimensions comparison	Veleric	
08/03/20	1331	67	XPS with PVA	Veleric	Dual exciter One Dayton Ultra (better LF), one TEAX32C30-4/B (better HF).
08/03/20	1334	67	XPS panel	Bdjohns	Haapy with XPS (Formular 250 1p) but not enough bass (target = 100hZ), too high distorsion
27/03/20	1458	73	DML Patents	Burntcoil	
29/03/20	1500	75			
07/04/20	1750	88			
25/05/20	2000	100			
15/06/20	2072	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	2284	115	Advice : don't use DML below room transition frequ	bradleyprnw	
30/08/20	2289	115	Link to MA recording	Geosand	MA recording
04/09/20	2299	115	Geosand's EPS panel	Geosand	
05/09/20	2305	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	2306	116	Advice : don't go down to the lower resonance	Spedge	
10/11/20	2500	125			
01/12/20	2548	128	Tallboy (with pictures)	Anie	
17/12/20	2624	132	3M VHB Dayton audio spec : 9473	Jarroddhaas	

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

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

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post graph



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			
25/05/22	5750	288	6,58			

Audio spectrum chart

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

