

Eton MW 10 Flat + MW 12 Flat:
Premium bass chassis with little installation depth

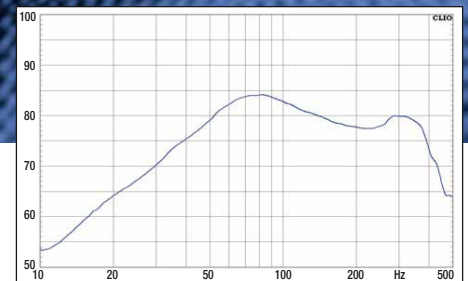
Premium flat subwoofer



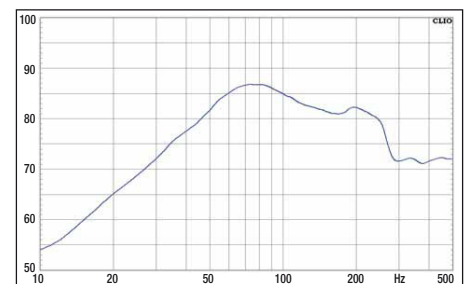
Those looking for inconspicuous bass enclosures but not willing to sacrifice performance are best served by a high-quality flat subwoofer. We present two models from Eton's new MW series, the MW 10 Flat and the MW 12 Flat.

Flat subwoofers are practical and yet enable tones as deep as those from a conventional bass box, but in a slim enclosure that can, for example, be concealed in the trunk double bottom. Basically, they need as much volume as a bass box, but with a more comfortable form factor as the magnet is „missing“ from the subwoofer chassis. Of course this is not missing because a flat subwoofer works just like a conventional one. The difficulty for the designer is to tease out a similar performance from a flat subwoofer. In this respect we talk primarily about the stroke: only if the cone can move properly do you get real bass. And in a flat subwoofer there is simply less space and freedom of movement. This is the reason why flat subwoofers generally perform more weakly than their fullsize fellows. At Eton they know that too. Therefore with

the MW flat models they place much importance on getting out maximum bass power. As a basis they took the very stable die-cast baskets of the MW woofers: bulky, though very well ventilated fellows, that offer sufficient internal room for a moving assembly. The drivers also had to go in the basket, and no budget versions on account of the sought after performance. Heavy ferite magnets 25 mm thick provide field strength. Underneath the basket of the flat MWs only the slightly flared pole core with its lower plate peeks out. In this way the MW 10 Flat and MW 12 Flat achieve installation depths of 9.8 and 10.6 cm respectively in the ready-made box, plus a couple of centimeters „breathing space“. A large pole-core hole and a ring of holes adorn the pole plates of the woofers to achieve effective cooling of the voice coils. On both



The MW 10 Flat delivers 84 dB with a maximum around 70 Hz



The MW 12 Flat achieves 86 dB with a satisfactorily even roll-off to low frequencies

woofers these measure an impressive 64 mm in diameter, and they are also wound quite high. Eton states 16 mm in each direction (linear/50 % BI). These are the best conditions for powerful bass, if you have enough power. Now we come to the most important part of the flat construction: this is found above the thick driver mentioned above. Eton

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makes use here of cones made of pressed paper. Starting from a central conical shape, their edges are drawn down and outwards. This way the cones are very flat and the transitions to the coil formers can move outward, which in turn is good for freedom of movement and hence the potential stroke. The centering spiders make a very robust impression. They sit on specially designed spacers mounted on the upper pole plates. This way the spider sits in the right place. As a side-effect the whole thing is wonderfully airy.

Measurements and Sound

Examination of the Thiele/Small parameters show both MW Flat speakers to be solid subwoofers, with all parameters remaining in limits. The Q factors of a good 0.5 make them ideal for enclosed housings, but ventilated boxes are also possible without any problems. The resonant frequencies are not overly low, which is due to the extremely solid cone suspensions. The drivers for both are quite powerful. Eton has not cut corners here: the flat woofers attain the level of the fullsize woofer MW 8, with which they also share the diameter of the 2 x 2 ohm voice coil. In enclosed housings the MW 10 Flat in particular shows a nice amplitude response with a gentle roll-off: it is packed into 17 liters with an installed textbook Q of 0.68. The MW 12 Flat with 25 liters is on the compact side. Here we measured 0.76 as the installed Q, which is still very clean tuning. Altogether the frequency responses of both are quite similar: the smaller MW 10 Flat can compete especially in terms of bass response. The main difference is the characteristic sound pressure level of 86 compared to 84 dB (1 W/1 m) in favor of the larger MW 12 Flat with more cone area. In terms of sound, both are impressive from the very first note. The mix of deep punch, bass response and clean reproduction is just right. No matter what we present to the woofers, they play it and it is fun. Fat tuned bass drums sound just as good as sustained electric basses. The listener never feels underserved. Even the MW 10 Flat puts out this much pressure. The 12 Flat is a little more powerful and also delivers the better peak level. However, the differences are not very great. You can already get pretty far with the MW 10 Flat. Overall the MW Flat speakers do not sound like flat subwoofers. There are no compromises in normal use.

Summary

MW 10 Flat and MW 12 Flat with their powerful design and tuning belong to the elite class of subwoofers with little installation depth. Here you have serious bass, but in flat packaging.



A spacer locates the centering spider between pole plate and cone



Top build quality with stable die-cast baskets and finely machined pole plates

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Subwoofer

	Eton MW 10 Flat	Eton MW 12 Flat
Price	about 180 Euro	about 200 Euro
Distributor	ACR CH-5330 Zurzach info@eton-audio.eu eton-audio.com	ACR CH-5330 Zurzach info@eton-audio.eu eton-audio.com
Hotline		
Internet		

Summary

Sound quality	50 %	1,0	1,0
Bass foundation	12,5 %	1,5	1,5
Pressure	12,5 %	1,0	1,0
Clearance	12,5 %	1,0	0,5
Dynamics	12,5 %	0,5	1,0
Lab	30 %	1,8	1,7
Frequency response	10 %	1,5	1,5
Efficiency	10 %	3,0	2,5
Max. SPL	10 %	1,0	1,0
Workmanship	20 %	1,0	1,0

Technical data

Diameter	27,5 cm	32,5cm
Mounting diameter	24,2 cm	28,5 cm
Mounting depth	9,8 cm	10,6 cm
Magnet diameter	-	-
Weight	6,1 kg	7,0 kg
Nominal impedance	2 x 2 ohms	2 x 2 ohms
DC resistance Rdc	4,11 ohms	4,09 ohms
Coil inductivity Le	3,80 mH	3,77 mH
Coil diameter	64 mm	64 mm
Cone surface Sd	353 cm²	515 cm²
Resonance frequency fs	40 Hz	35 Hz
Mechanical quality Qms	7,67	8,37
Electrical quality Qes	0,55	0,55
Total quality Qts	0,51	0,52
Equivalent volume Vas	16,7 l	40,0 l
Moving mass Mms	166 g	187 g
Rms	5,42 kg/s	4,97 kg/s
Cms	0,10 mm/N	0,11 mm/N
B*I	17,60 Tm	17,58 Tm
Pressure 1 W, 1 m	84 dB	86 dB
Power handling	150 – 400 W	150 – 400 W
Test chamber	closed 17 l	closed 25 l
Port (d x l)	-	-

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Price/performance: excellent

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"Solid construction with little installation depth."