

# 50 neutral and extra-bass over-ear headphones

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A

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

[Explanatory notes](#)

**Open** = open-back | **Closed** = closed-back

**Sen**=sensitivity (V) | **Imp**=impedance | **Wgt**=weight (G) | **Pri**=price

**orange** or **red** = notice this, ≠ inappropriate values

## Abyss Diana Phi (DMS mod)



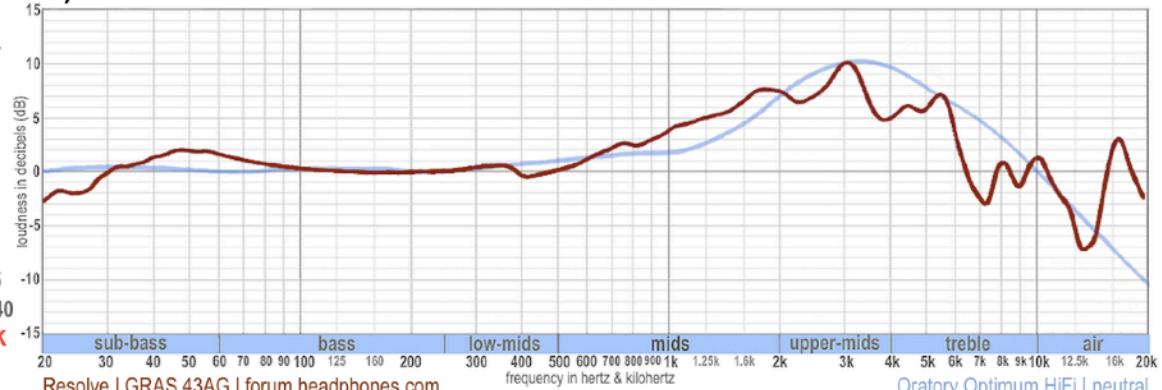
**Open**  
**Planar**

**Sen: 91**

**Imp: 35**

**Wgt: 240**

**Pri: \$4K**



Resolve | GRAS 43AG | [forum.headphones.com](http://forum.headphones.com)

Oratory Optimum HiFi | neutral

## AKG K361



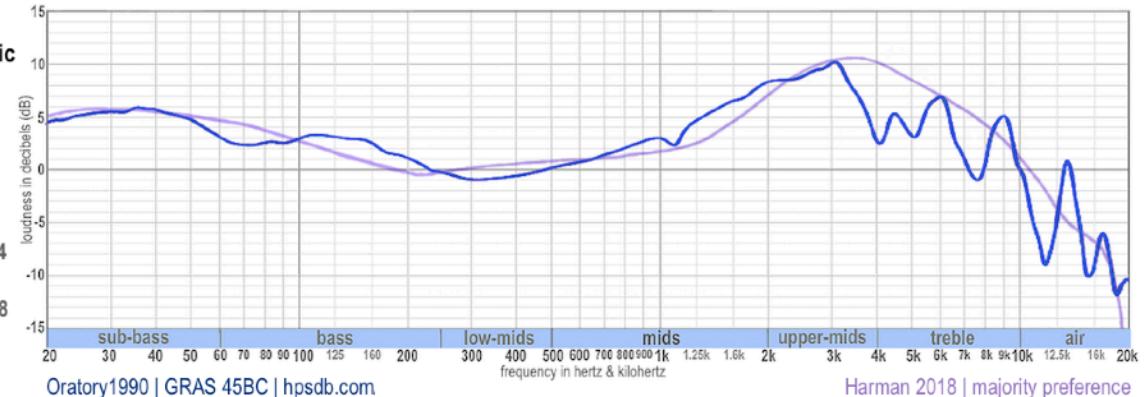
**Closed**  
**Dynamic**

**Sen: 114**

**Imp: 32**

**Wgt: 218**

**Pri: \$85**



Oratory1990 | GRAS 45BC | [hpsdb.com](http://hpsdb.com)

Harman 2018 | majority preference

## AKG K371



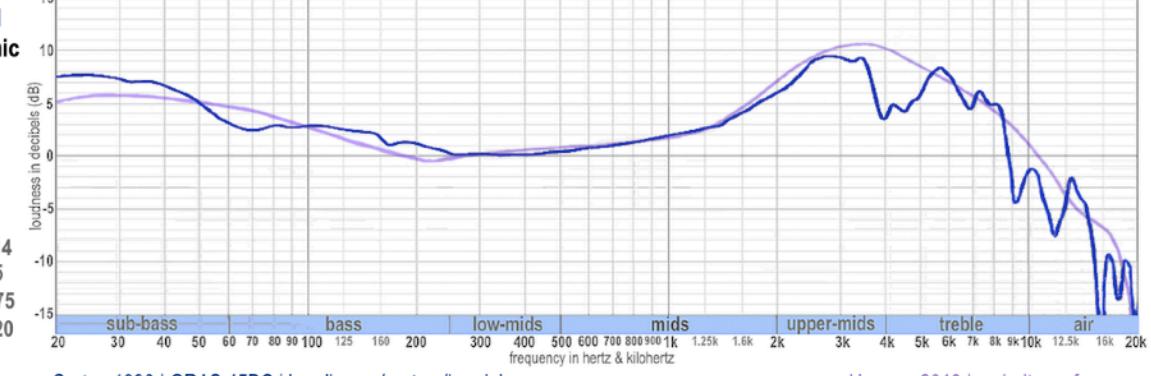
**Closed**  
**Dynamic**

**Sen: 114**

**Imp: 35**

**Wgt: 275**

**Pri: \$120**



Oratory1990 | GRAS 45BC | [hpsdb.com/oratory/headphones](http://hpsdb.com/oratory/headphones)

Harman 2018 | majority preference

## AKG K612



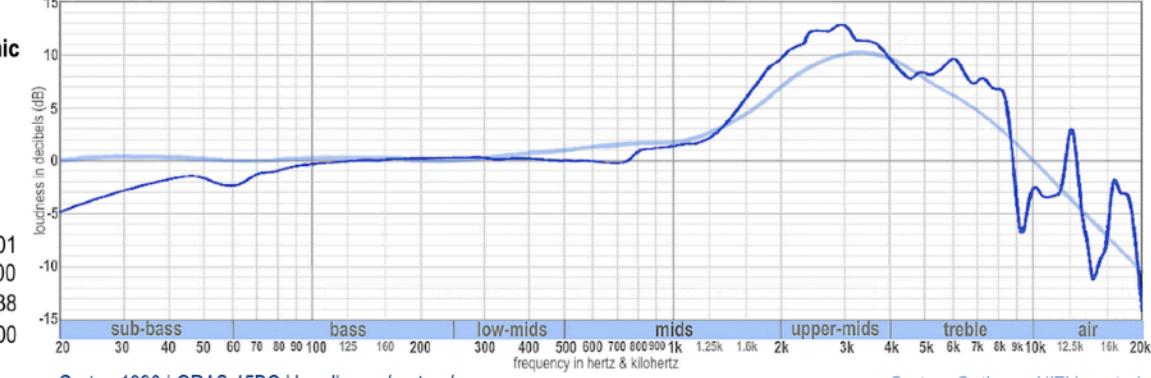
**Open**  
**Dynamic**

**Sen: 101**

**Imp: 200**

**Wgt: 238**

**Pri: \$200**



Oratory1990 | GRAS 45BC | [hpsdb.com/oratory](http://hpsdb.com/oratory)

Oratory Optimum HiFi | neutral

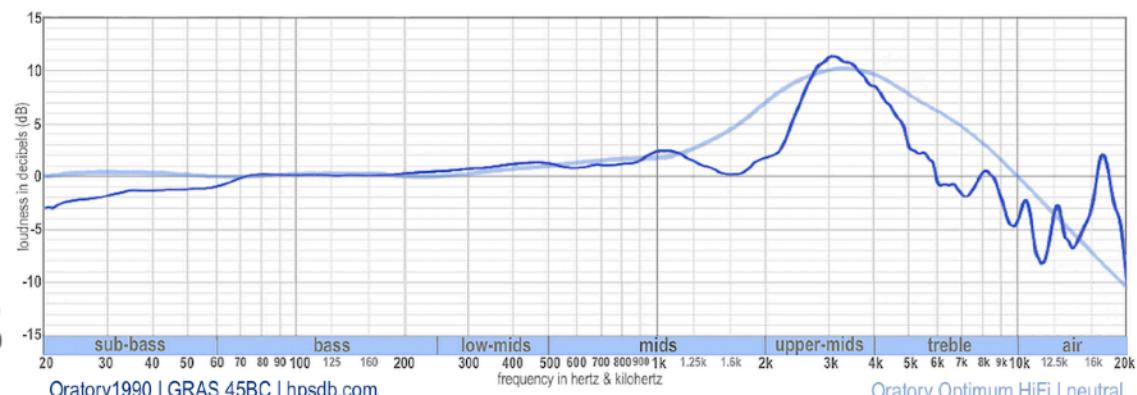
# 50 neutral and extra-bass over-ear headphones

## Audeze LCD-1



**Open  
Planar**

Sen: 117  
Imp: 16  
Wgt: 260  
Pri: \$300



Oratory1990 | GRAS 45BC | hpsdb.com

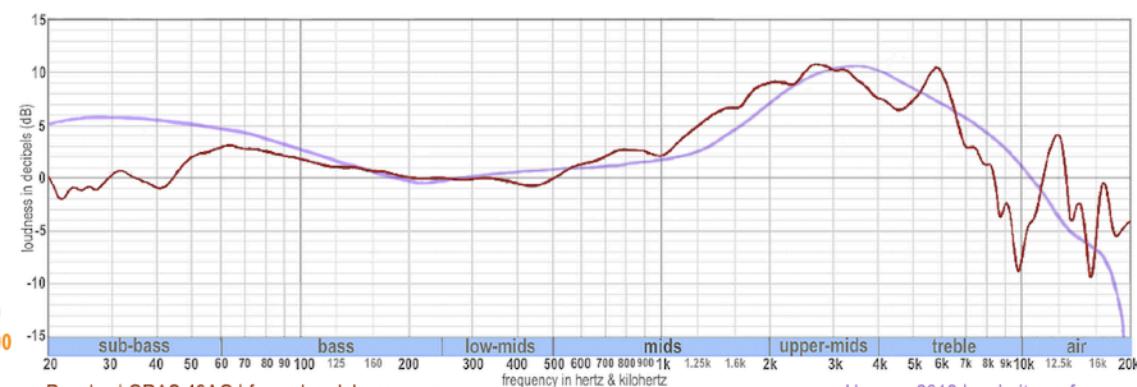
Oratory Optimum HiFi | neutral

## Audeze LCD-XC



**Closed  
Planar**

Sen: 117  
Imp: 20  
Wgt: 720  
Pri: \$1300



Resolve | GRAS 43AG | forum.headphones.com

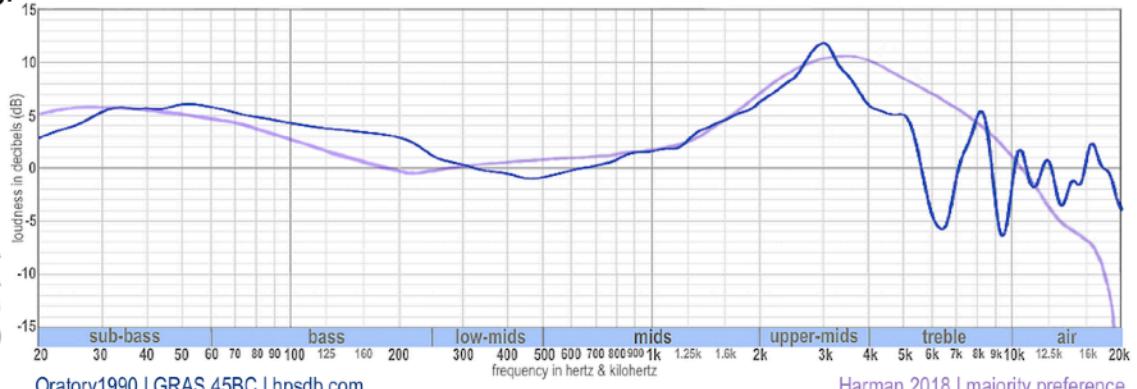
Harman 2018 | majority preference

## Audeze Mobius (gaming)



**Closed  
Planar**

Sen: N/A  
Imp: N/A  
Wgt: 350  
Pri: \$250



Oratory1990 | GRAS 45BC | hpsdb.com

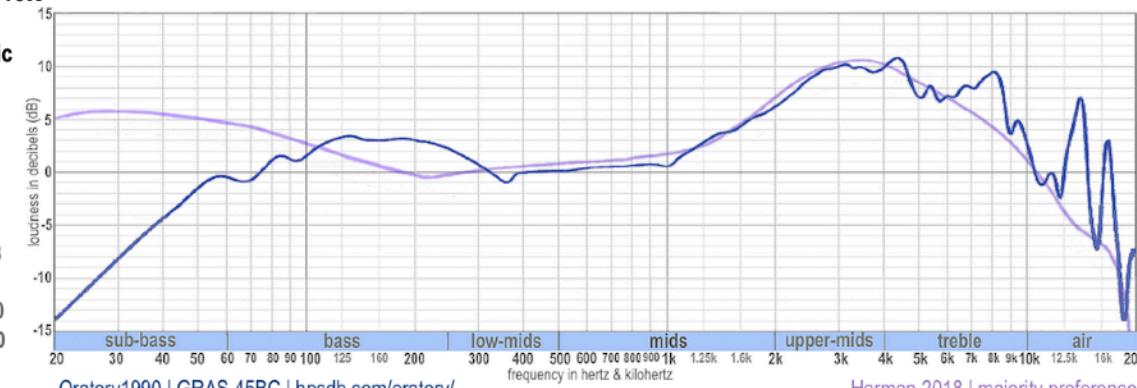
Harman 2018 | majority preference

## Audio-Technica ATH-M40x



**Closed  
Dynamic**

Sen: 113  
Imp: 35  
Wgt: 240  
Pri: \$100



Oratory1990 | GRAS 45BC | hpsdb.com/oratory/

Harman 2018 | majority preference

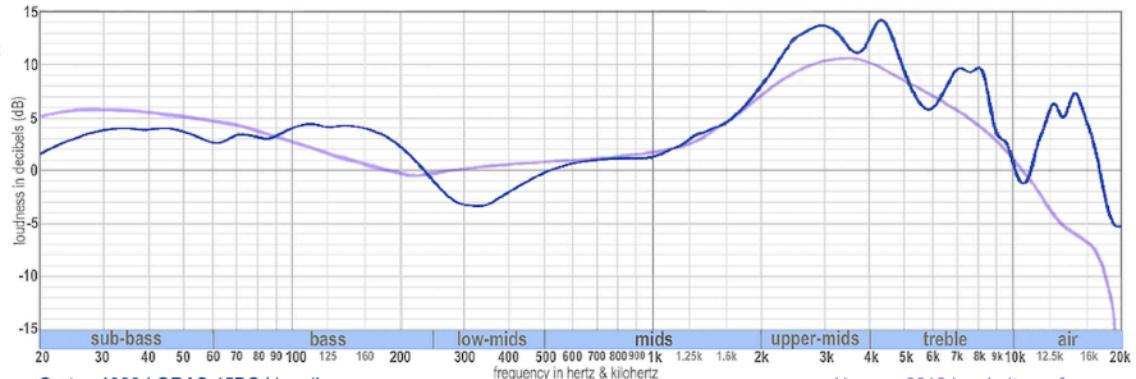
# 50 neutral and extra-bass over-ear headphones

## Audio-Technica ATH-M50x



**Closed**  
**Dynamic**

Sen: 113  
Imp: 38  
Wgt: 285  
Pri: \$150



Oratory1990 | GRAS 45BC | [hpsdb.com](https://hpsdb.com/).

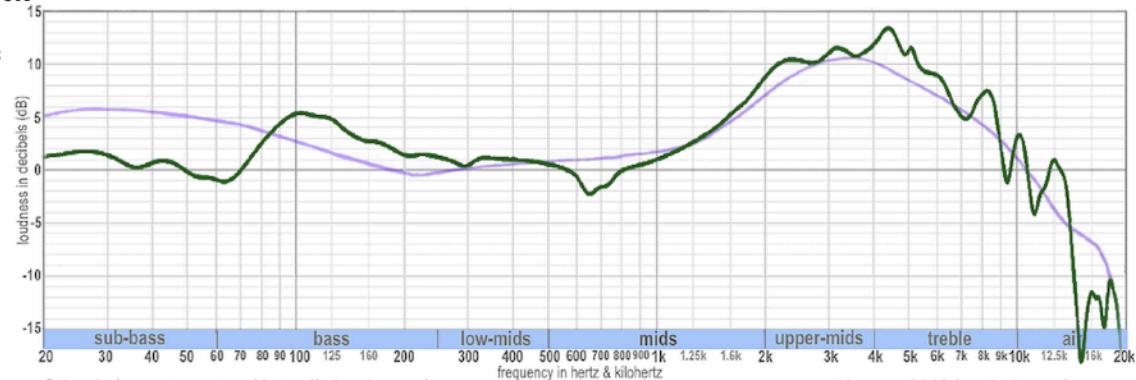
Harman 2018 | majority preference

## Audio-Technica ATH-M70x



**Closed**  
**Dynamic**

Sen: 112  
Imp: 35  
Wgt: 280  
Pri: \$350



Crinacle | GRAS 43AG-7 | <https://crinacle.com/>

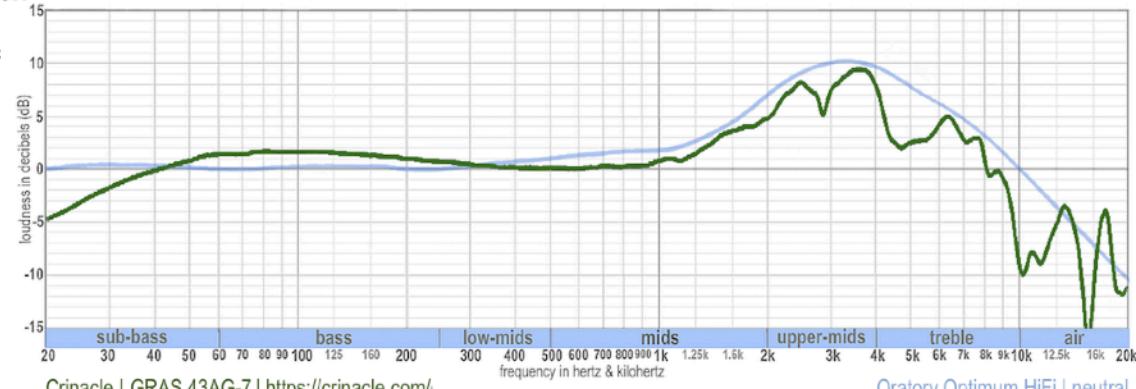
Harman 2018 | majority preference

## Audio-Technica ATH-R70x



**Open**  
**Dynamic**

Sen: 99  
Imp: 470  
Wgt: 210  
Pri: \$350



Crinacle | GRAS 43AG-7 | <https://crinacle.com/>

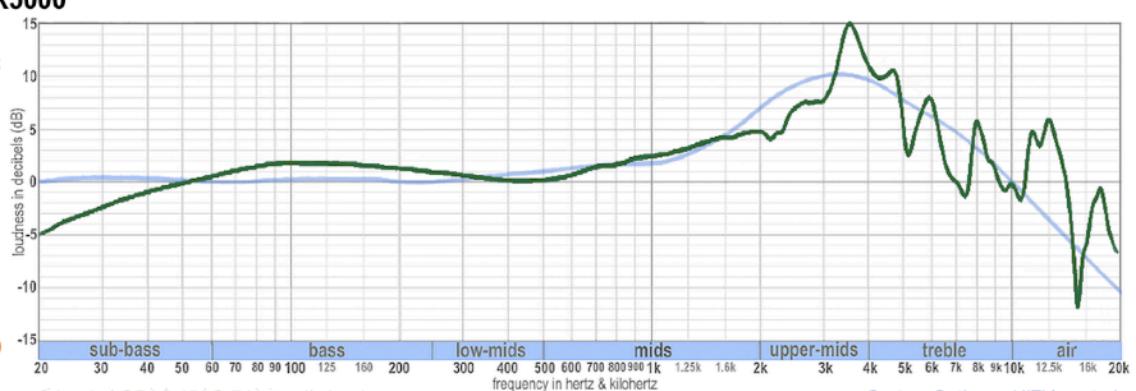
Oratory Optimum HiFi | neutral

## Audio-Technica ATH-ADX5000



**Open**  
**Dynamic**

Sen: 104  
Imp: 420  
Wgt: 270  
Pri: \$2250



Crinacle | GRAS 45AG-7 | <https://crinacle.com>

Oratory Optimum HiFi | neutral

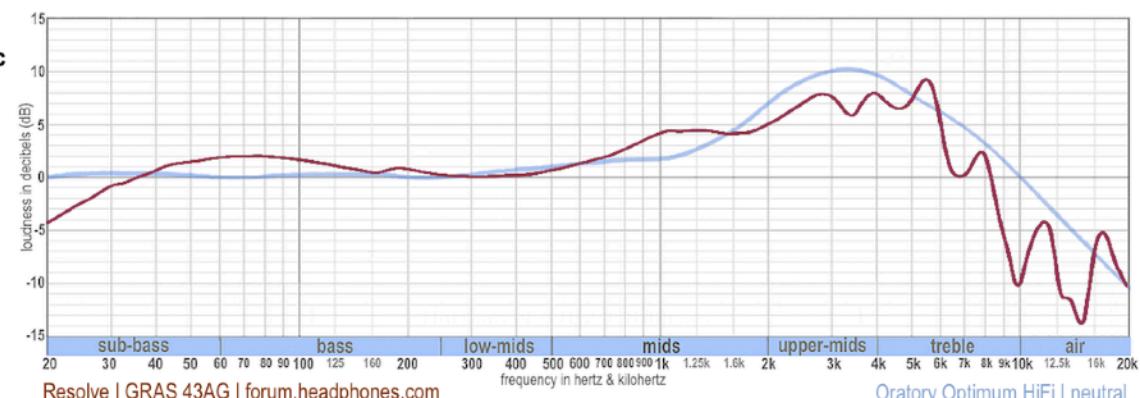
# 50 neutral and extra-bass over-ear headphones

## Auroris Audio Borealis



**Open Dynamic**

Sen: 114  
Imp: 32  
**Wgt: 484**  
Pri: \$899



Resolve | GRAS 43AG | forum.headphones.com

Oratory Optimum HiFi | neutral

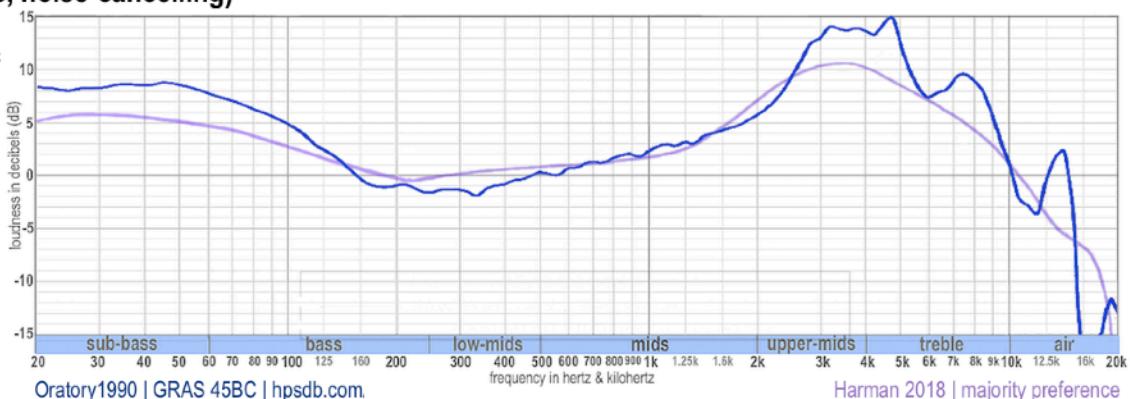
B

## Beats Solo Pro (wireless, noise-cancelling)



**Closed Dynamic**

Sen: N/A  
Imp: N/A  
Wgt: 262  
Pri: \$199



Oratory1990 | GRAS 45BC | hpsdb.com

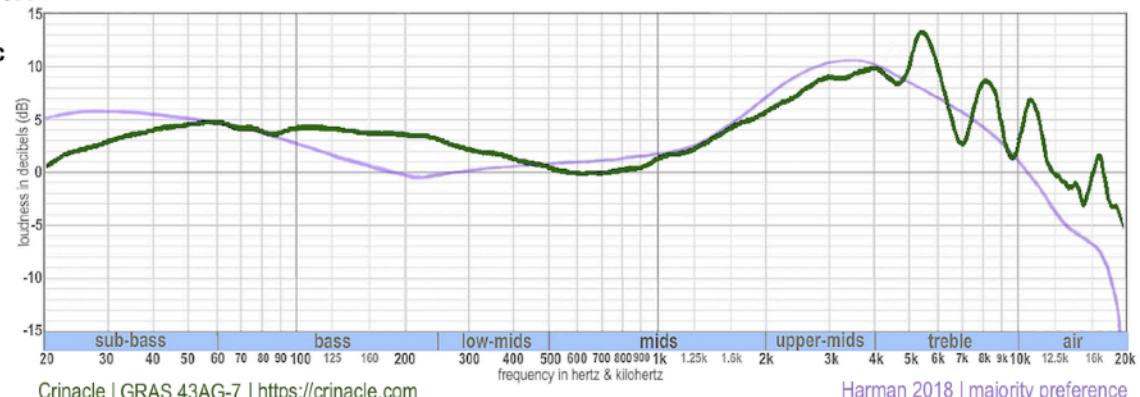
Harman 2018 | majority preference

## beyerdynamic TYGR 300R



**Closed Dynamic**

Sen: 111  
Imp: 32  
Wgt: 290  
Pri: \$180



Crinacle | GRAS 43AG-7 | https://crinacle.com

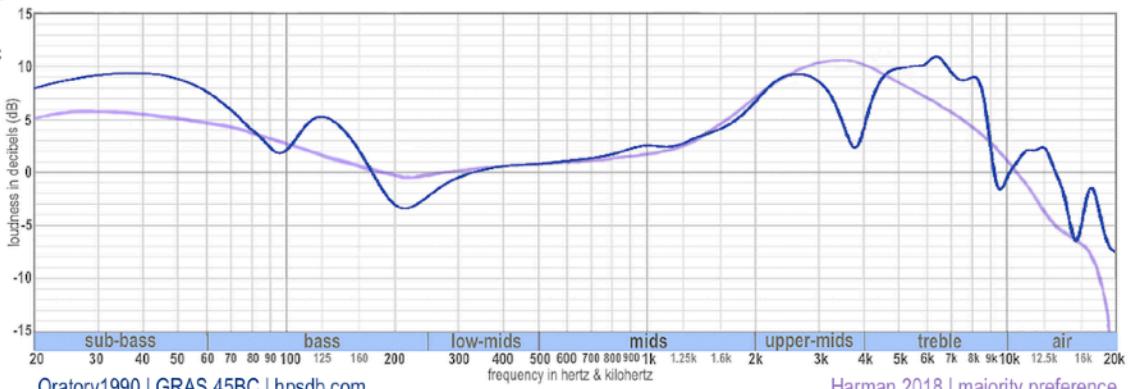
Harman 2018 | majority preference

## beyerdynamic DT770 Pro



**Closed Dynamic**

Sen: 102  
Imp: 250  
Wgt: 270  
Pri: \$160



Oratory1990 | GRAS 45BC | hpsdb.com

Harman 2018 | majority preference

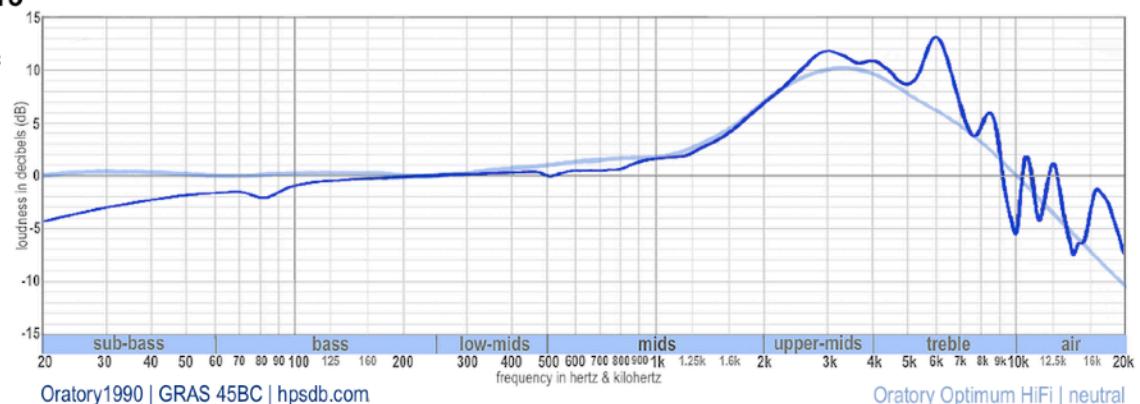
# 50 neutral and extra-bass over-ear headphones

## beyerdynamic DT 880 Pro



Open  
Dynamic

Sen: 102  
Imp: 250  
Wgt: 290  
Pri: \$230

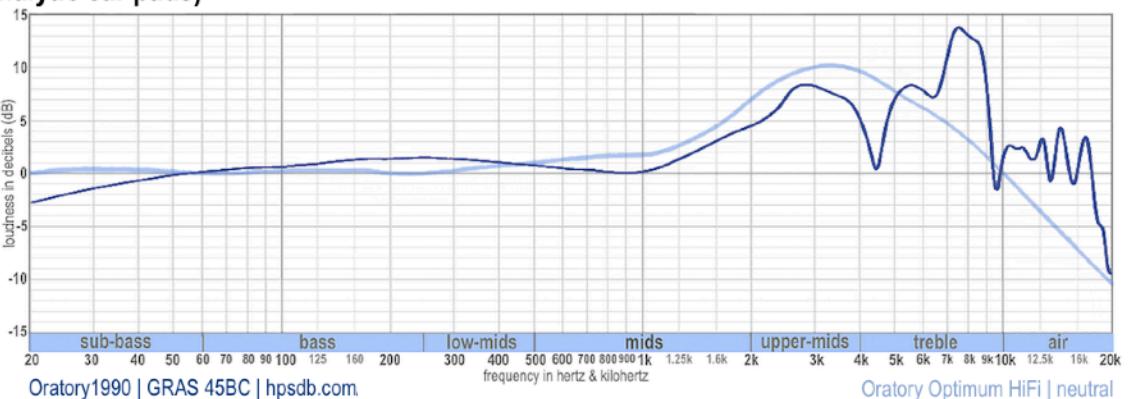


## beyerdynamic DT1990 (analytic ear pads)



Open  
Dynamic

Sen: 108  
Imp: 250  
Wgt: 379  
Pri: \$600



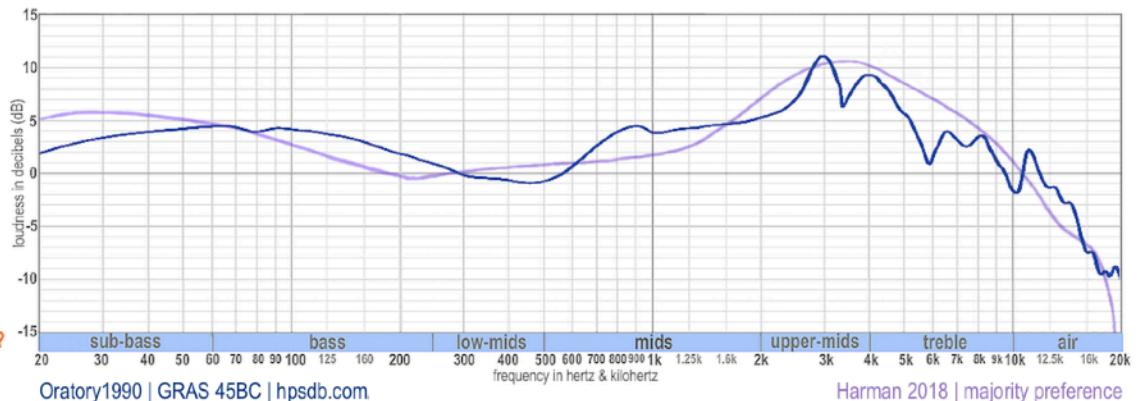
C

## Creative Aurvana Live!



Closed  
Dynamic

Sen: ?  
Imp: ?  
Wgt: 210  
Pri: Disc.?



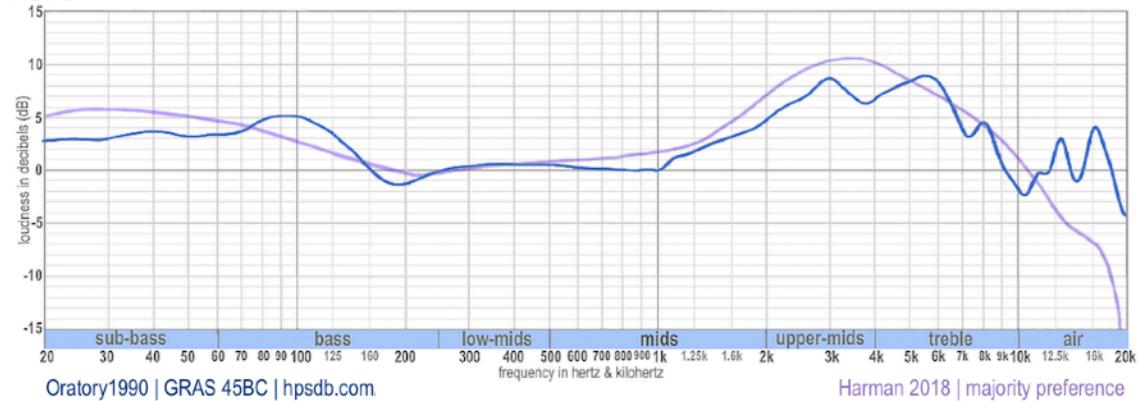
D

## Dan Clark Audio Aeon 2 Noire



Closed  
Planar

Sen: 111  
Imp: 13  
Wgt: 328  
Pri: \$900



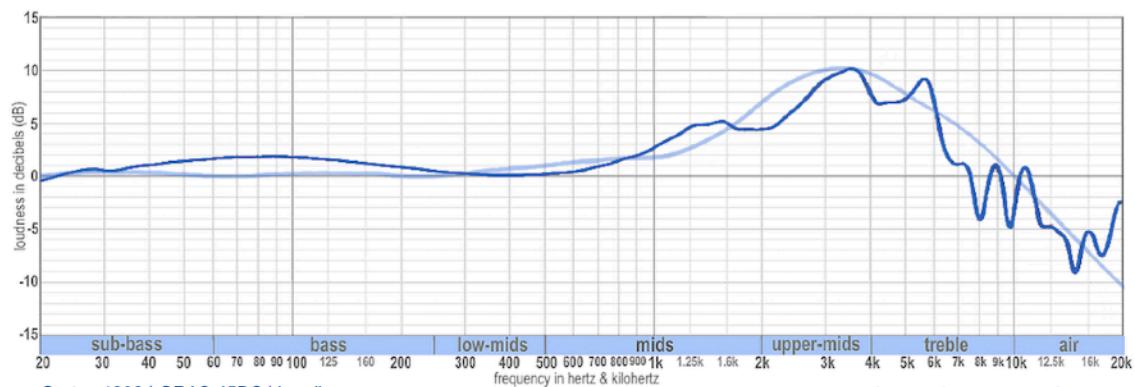
# 50 neutral and extra-bass over-ear headphones

## Drop+Focal Elex



**Open  
Planar**

**Sen: 115  
Imp: 80  
Wgt: 450  
Pri: \$700**



Oratory1990 | GRAS 45BC | hpsdb.com

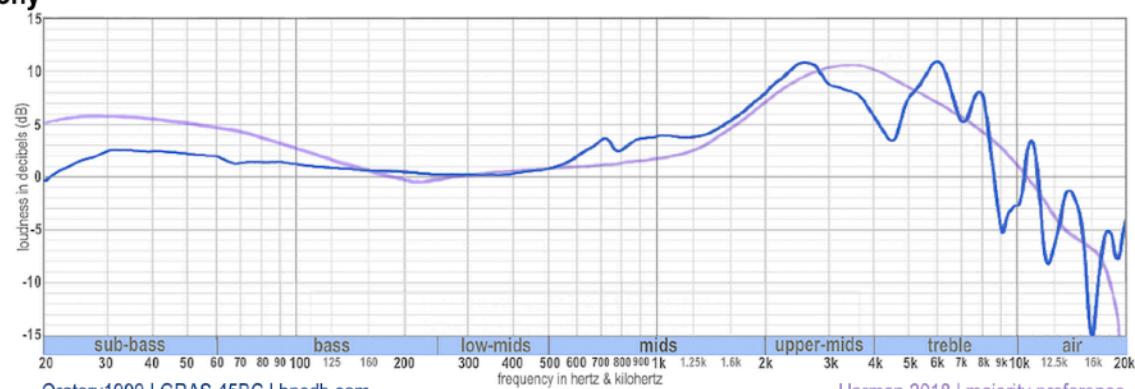
Oratory Optimum HiFi | neutral

## Drop+Fostex TR-X00 Ebony



**Closed  
Dynamic**

**Sen: 111  
Imp: 25  
Wgt: 450  
Pri: discl.**



Oratory1990 | GRAS 45BC | hpsdb.com

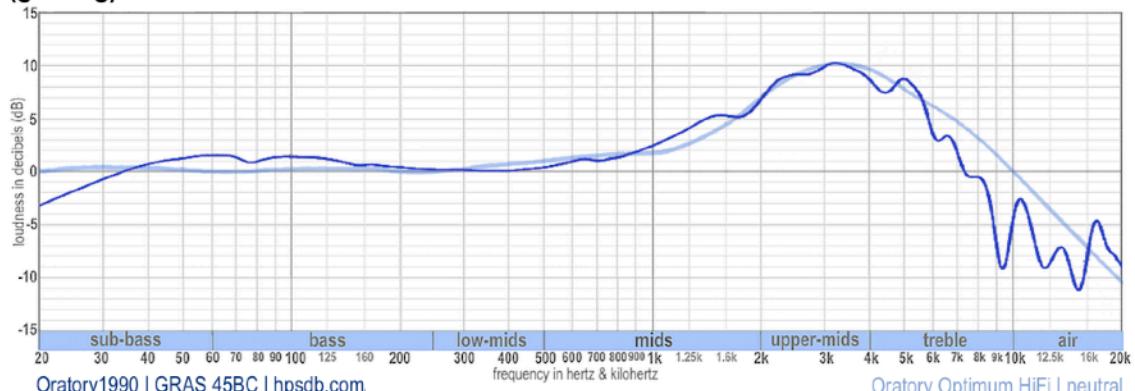
Harman 2018 | majority preference

## Drop+Sennheiser PX38X (gaming)



**Open  
Dynamic**

**Sen: 109  
Imp: 28  
Wgt: 253  
Pri: \$169**



Oratory1990 | GRAS 45BC | hpsdb.com

Oratory Optimum HiFi | neutral

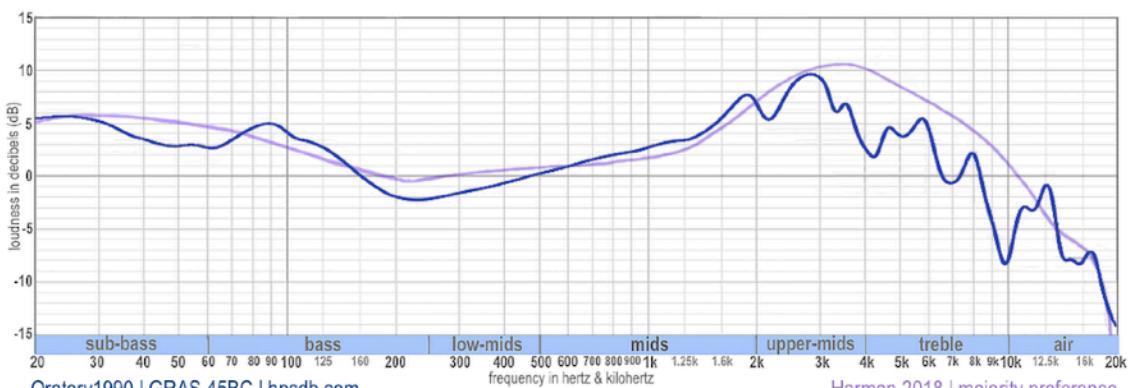
F

## Focal Celestee



**Open  
Dynamic**

**Sen: 120  
Imp: 35  
Wgt: 430  
Pri: \$990**



Oratory1990 | GRAS 45BC | hpsdb.com

Harman 2018 | majority preference

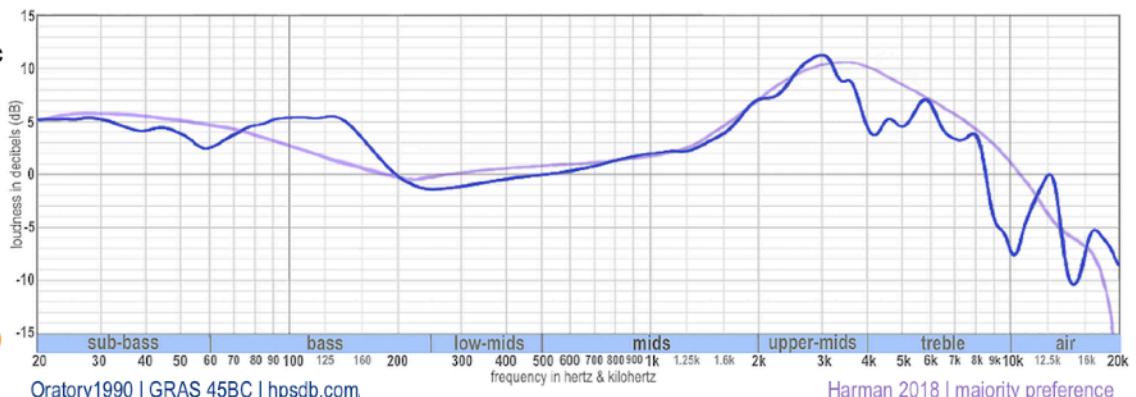
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## Focal Radiance



**Open  
Dynamic**

Sen: 115  
Imp: 35  
Wgt: 435  
Pri: \$1290



Oratory1990 | GRAS 45BC | hpsdb.com

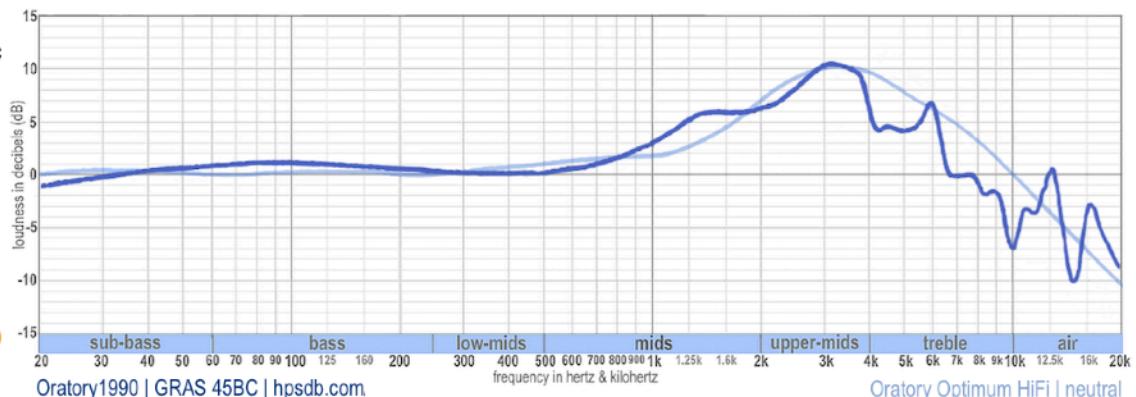
Harman 2018 | majority preference

## Focal Clear



**Open  
Dynamic**

Sen: 116  
Imp: 55  
Wgt: 450  
Pri: \$1490



Oratory1990 | GRAS 45BC | hpsdb.com

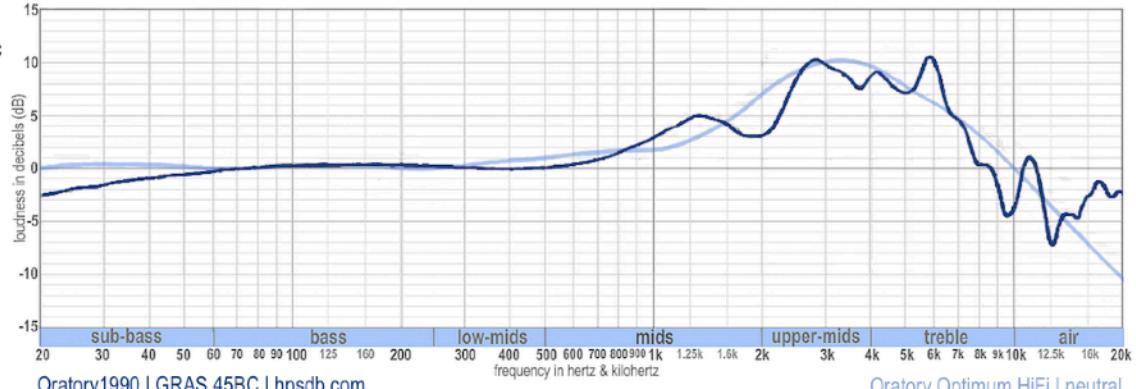
Oratory Optimum HiFi | neutral

## Focal Utopia



**Open  
Dynamic**

Sen: 109  
Imp: 80  
Wgt: 490  
Pri: \$3330



Oratory1990 | GRAS 45BC | hpsdb.com

Oratory Optimum HiFi | neutral

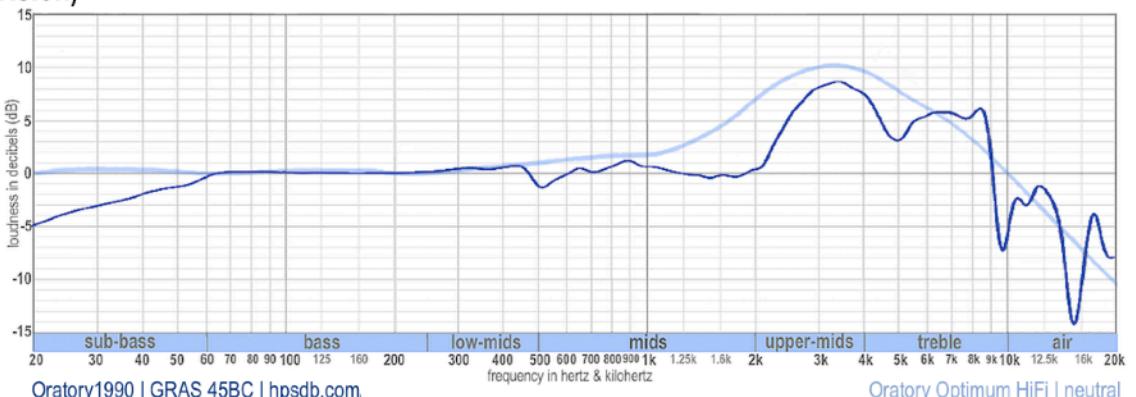
## H

### Hifiman HE400i (2020 revision)



**Open  
Planar**

Sen: 107  
Imp: 35  
Wgt: 370  
Pri: \$200



Oratory1990 | GRAS 45BC | hpsdb.com

Oratory Optimum HiFi | neutral

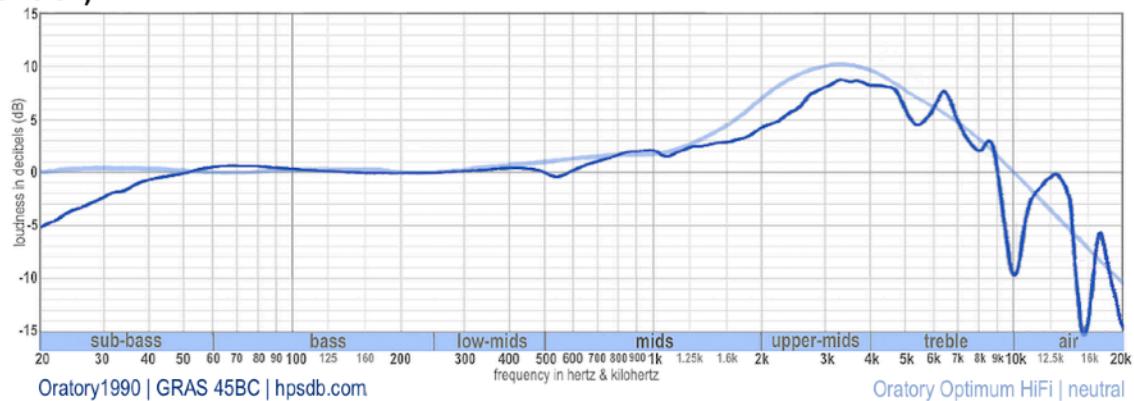
# 50 neutral and extra-bass over-ear headphones

## Hifiman Sundara (2020 revision)



**Open  
Planar**

Sen: 108  
Imp: 37  
Wgt: 372  
Pri: \$350

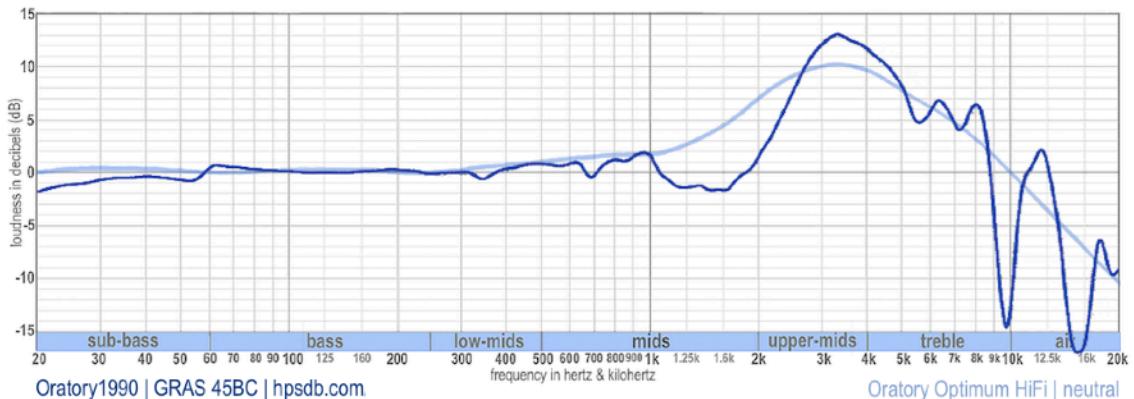


## Hifiman Ananda



**Open  
Planar**

Sen: 103  
Imp: 25  
Wgt: 399  
Pri: \$850

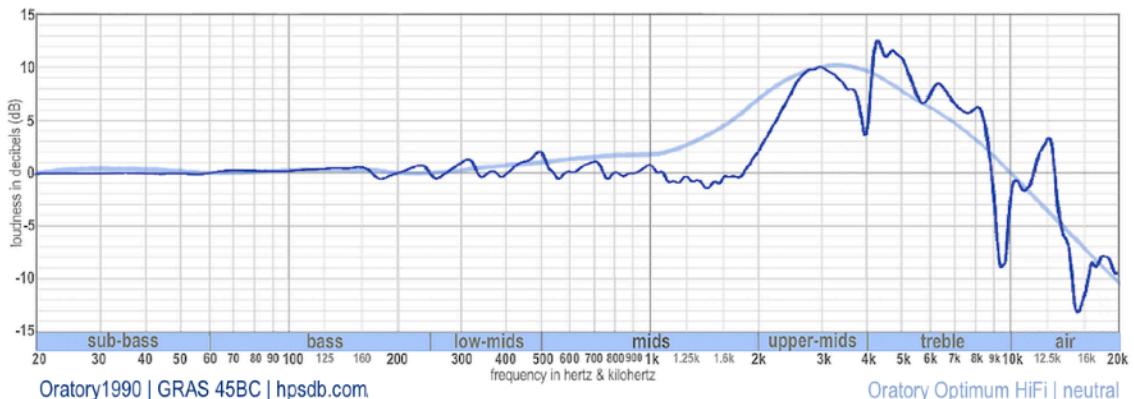


## Hifiman Arya



**Open  
Planar**

Sen: 105  
Imp: 35  
Wgt: 399  
Pri: \$160



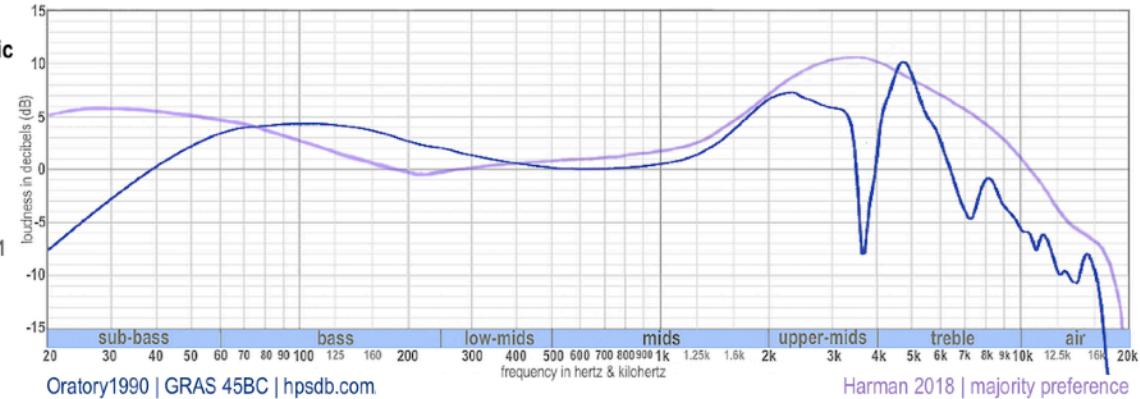
K

## Koss Porta Pro



**Closed  
Dynamic**

Sen: 101  
Imp: 60  
Wgt: 79  
Pri: \$45



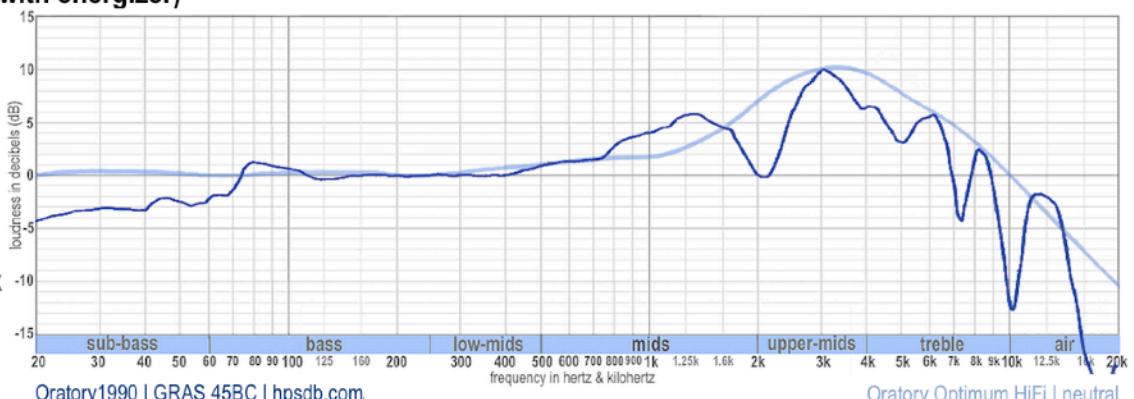
# 50 neutral and extra-bass over-ear headphones

## Koss ESP950 (supplied with energizer)



**Open  
Electro-  
static**

Sen: 104  
Imp: 100K  
Wgt: 353  
Pri: \$999



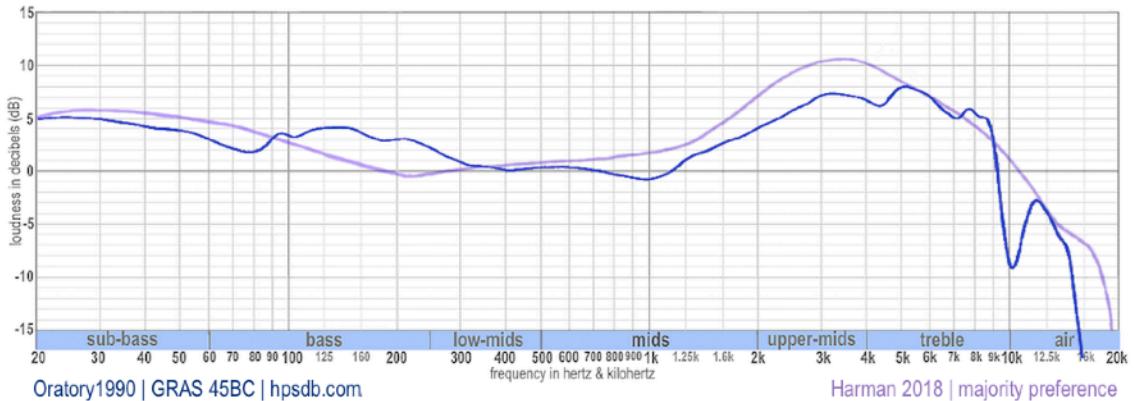
**N**

## NAD Viso HP 50



**Closed  
Dynamic**

Sen: 115  
Imp: 32  
Wgt: 272  
Pri: \$250



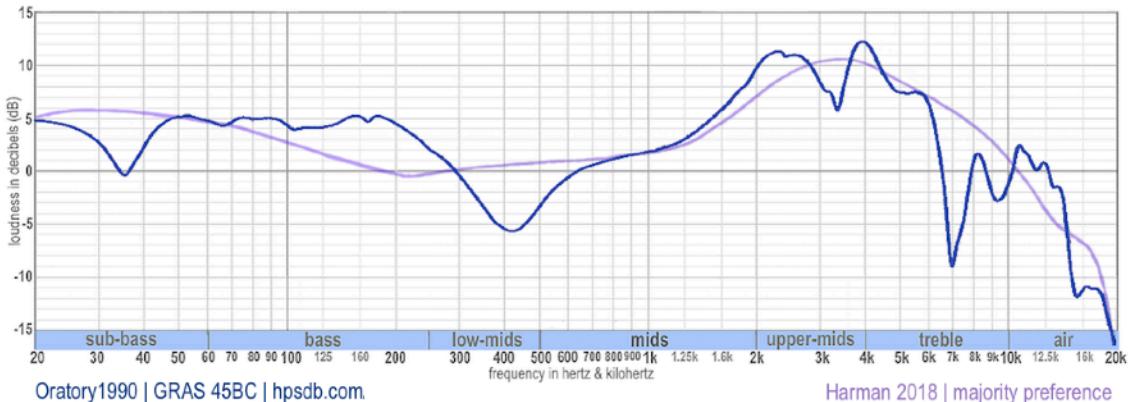
**O**

## Ollo S4R



**Closed  
Dynamic**

Sen: 111  
Imp: 32  
Wgt: 382  
Pri: \$390

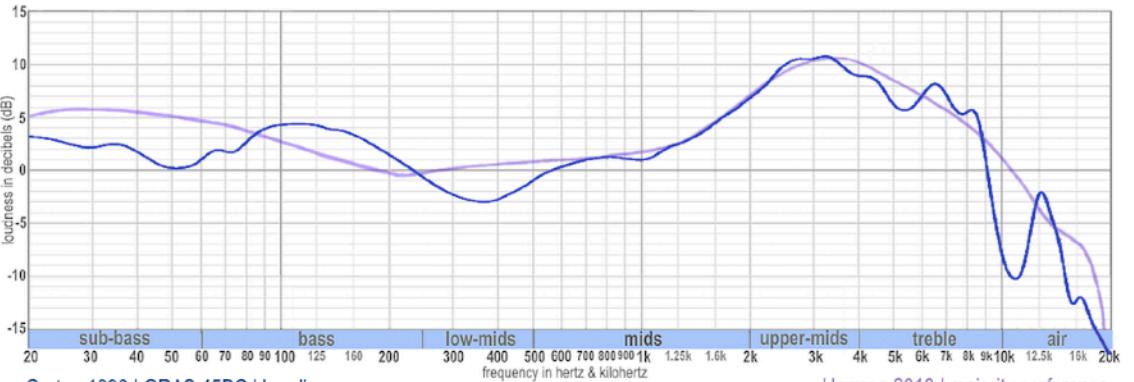


## Oppo PM-3



**Open  
Planar**

Sen: 118  
Imp: 26  
Wgt: 373  
Pri: Disc.



# 50 neutral and extra-bass over-ear headphones

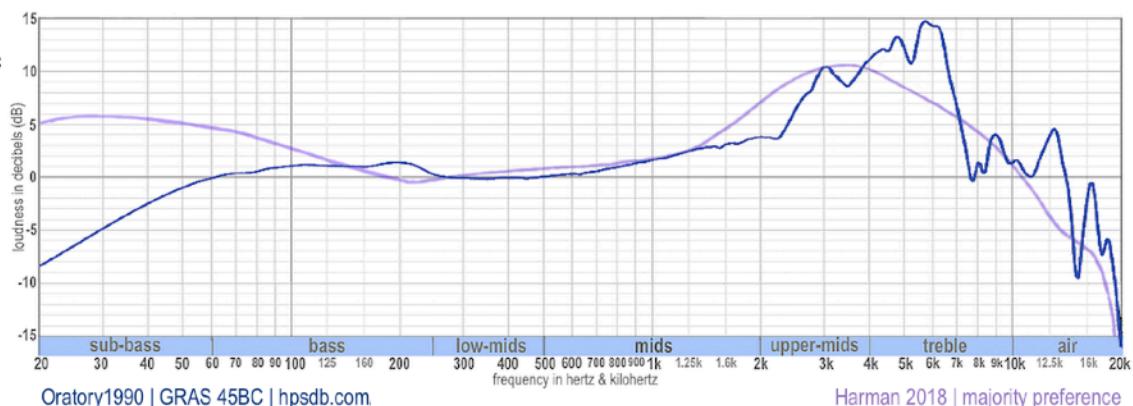
P

## Philips SHP9500



Open  
Dynamic

Sen: 101  
Imp: 32  
Wgt: 320  
Pri: \$90



Oratory1990 | GRAS 45BC | hpsdb.com

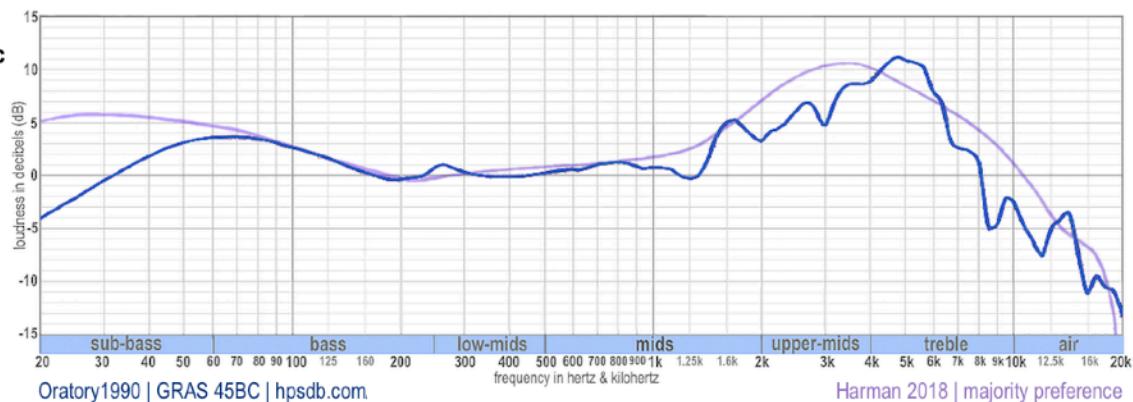
Harman 2018 | majority preference

## Philips Fidelio X2/HR



Open  
Dynamic

Sen: 115  
Imp: 30  
Wgt: 380  
Pri: \$145



Oratory1990 | GRAS 45BC | hpsdb.com

Harman 2018 | majority preference

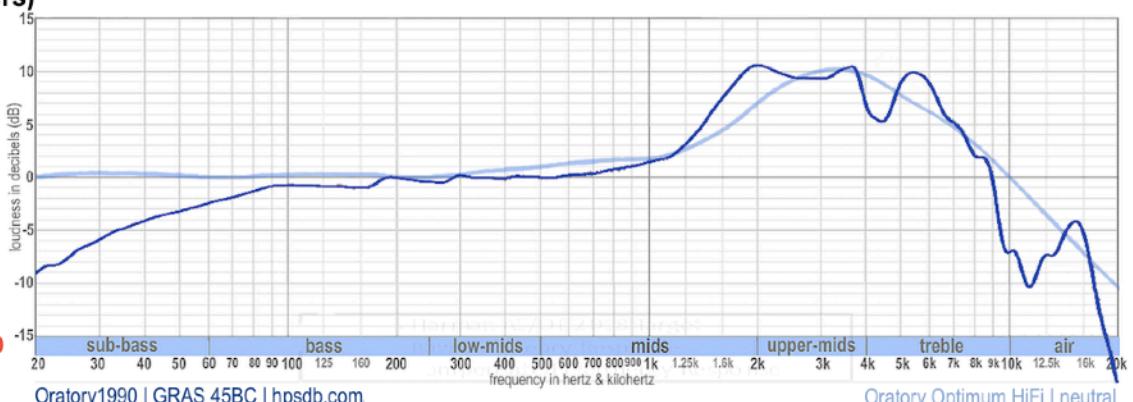
R

## RAAL SR1a (ear speakers)



Open  
Ribbon

Sen: 128  
Imp: 0.2  
Wgt: 425  
Pri: \$3500



Oratory1990 | GRAS 45BC | hpsdb.com

Oratory Optimum HiFi | neutral

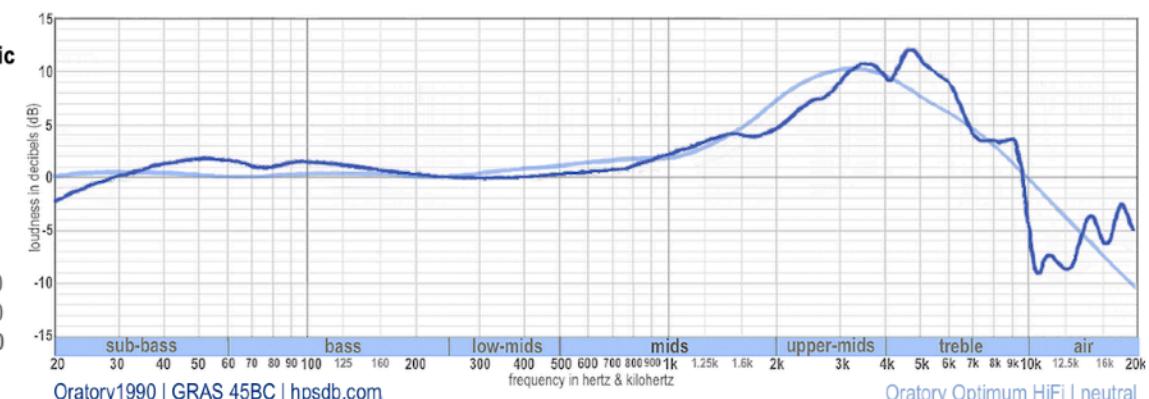
S

## Sennheiser HD 560S



Open  
Dynamic

Sen: 110  
Imp: 120  
Wgt: 240  
Pri: \$200



Oratory1990 | GRAS 45BC | hpsdb.com

Oratory Optimum HiFi | neutral

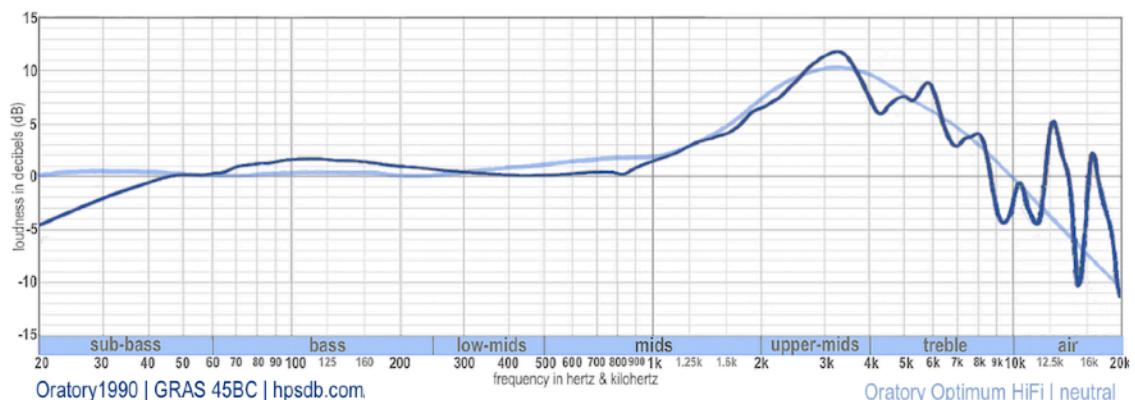
# 50 neutral and extra-bass over-ear headphones

## Sennheiser HD 600



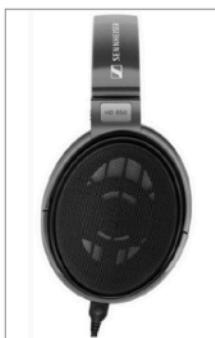
Open  
Dynamic

Sen: 104  
Imp: 300  
Wgt: 260  
Pri: \$400



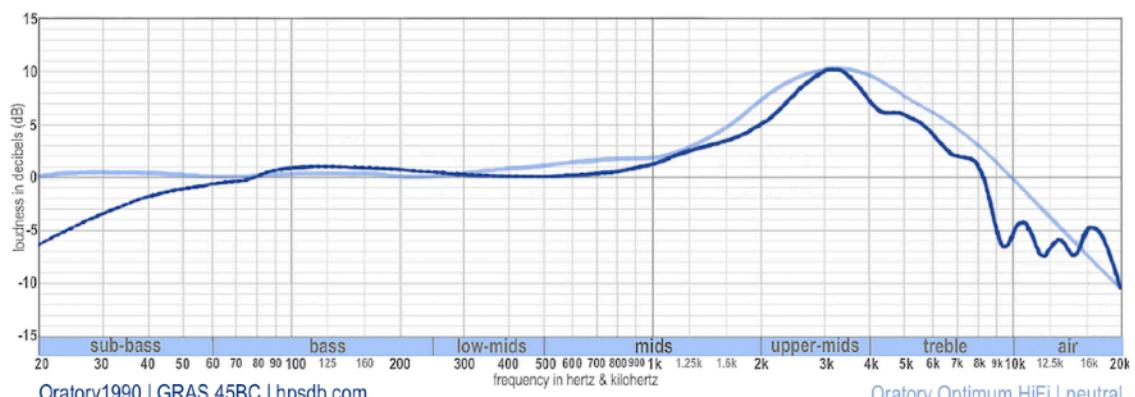
Oratory Optimum HiFi | neutral

## Sennheiser HD 650



Open  
Dynamic

Sen: 104  
Imp: 300  
Wgt: 260  
Pri: \$400



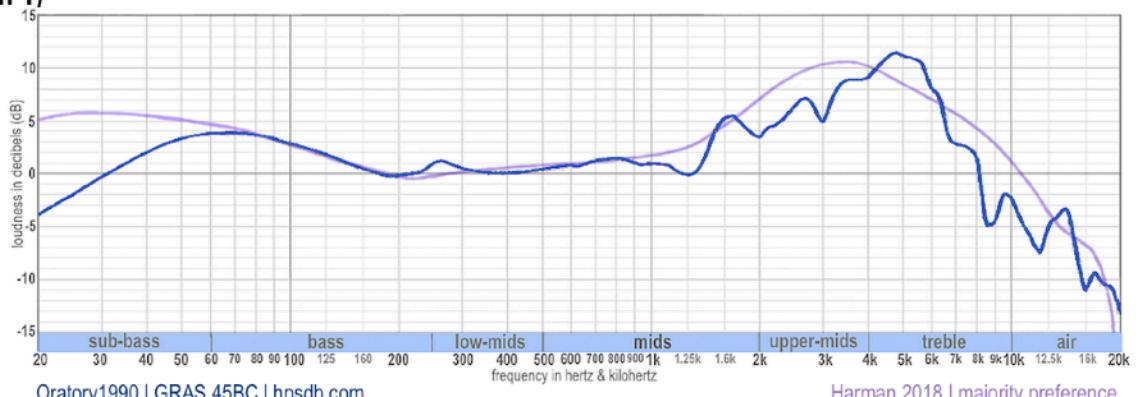
Oratory Optimum HiFi | neutral

## Sennheiser HE 1 (version 1)



Open  
Electro-  
static

Sen: ?  
Imp: ?  
Wgt: ?  
Pri: Disc.



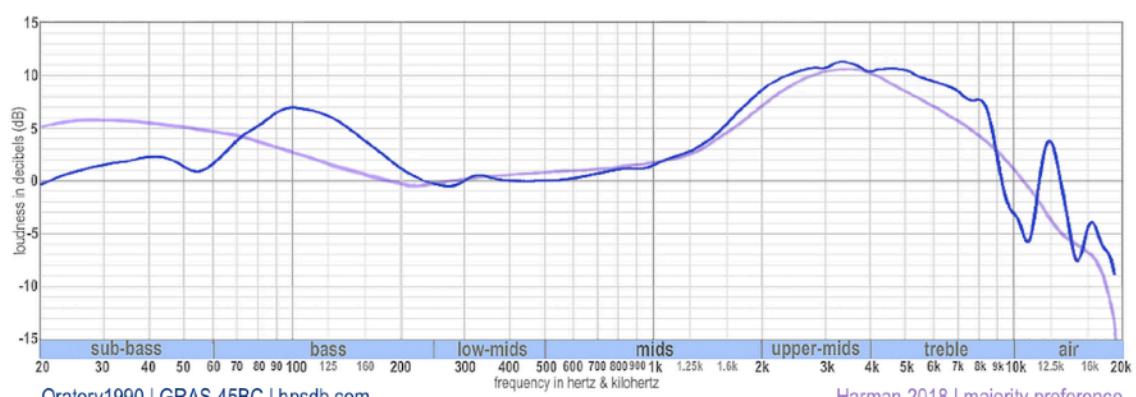
Harman 2018 | majority preference

## Shure SRH840



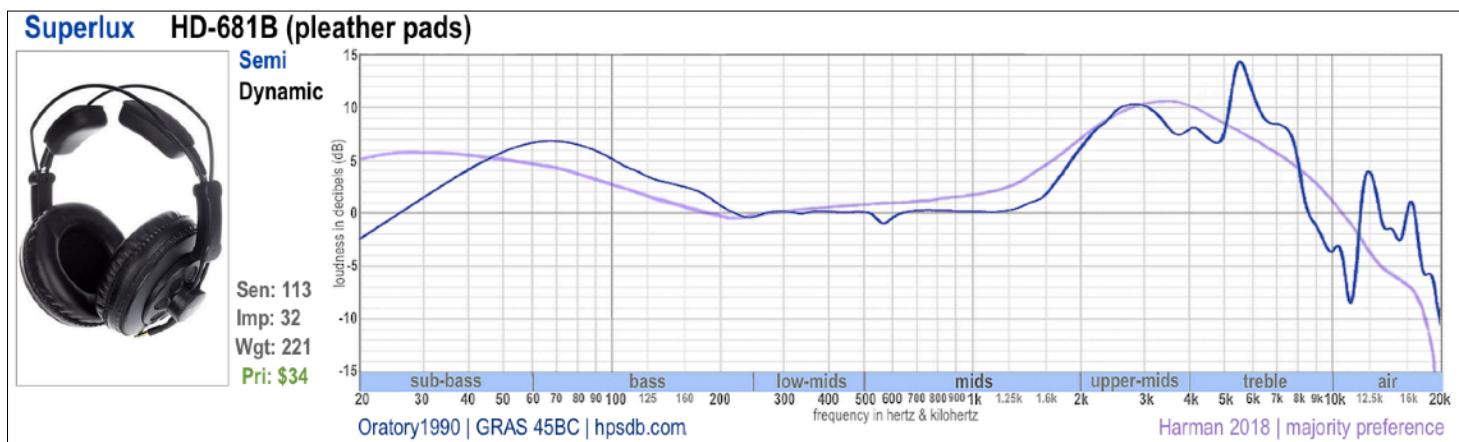
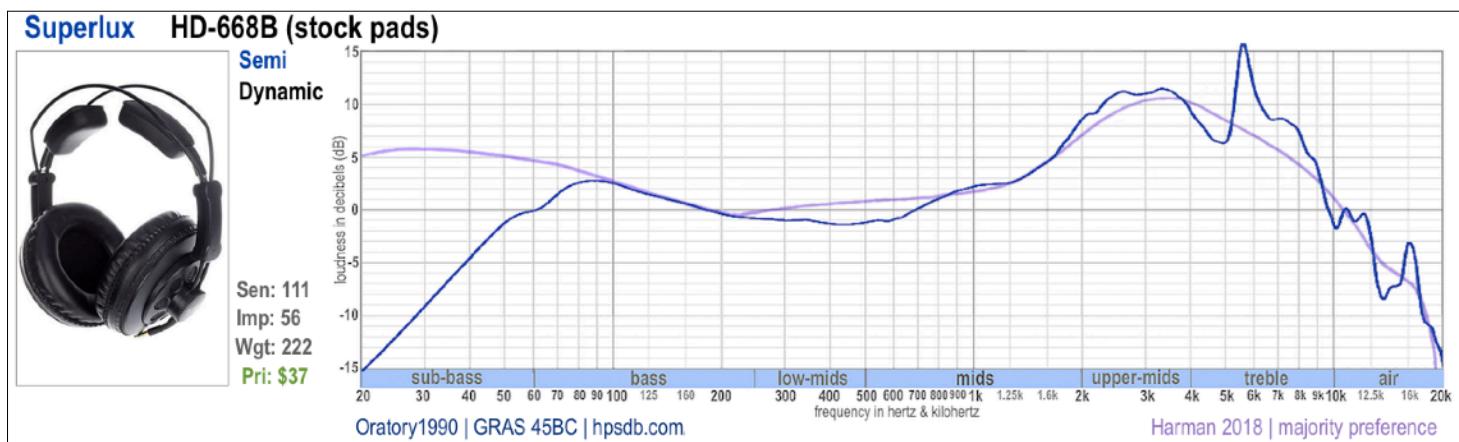
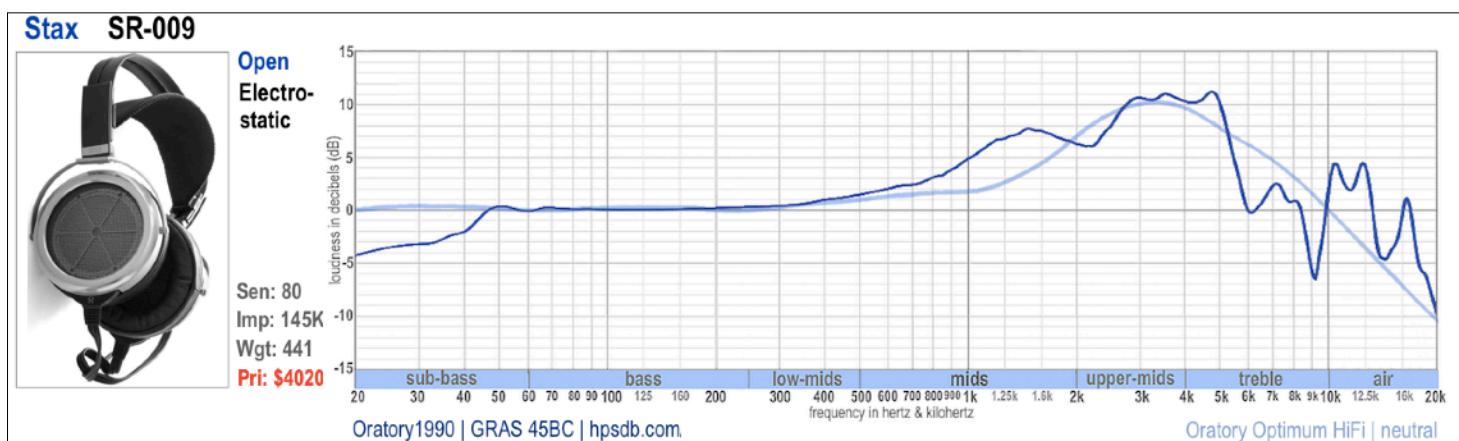
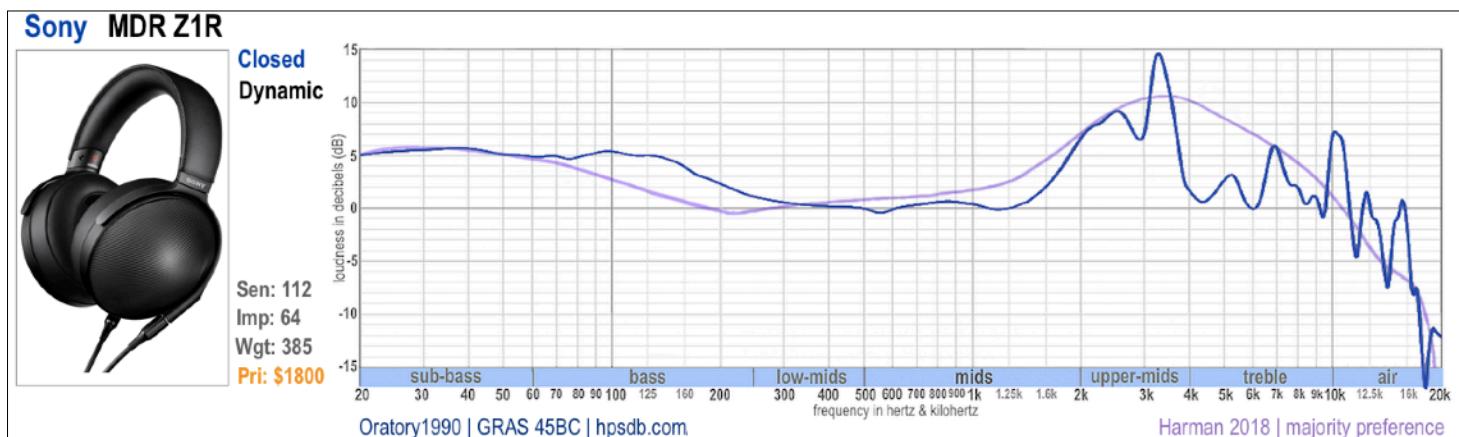
Open  
Dynamic

Sen: 116  
Imp: 44  
Wgt: 374  
Pri: \$149

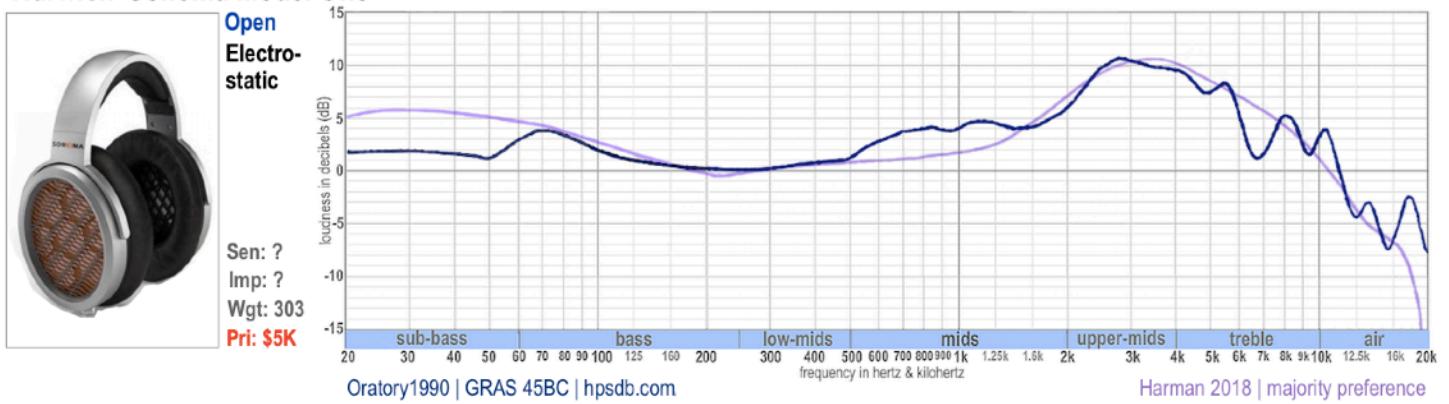


Harman 2018 | majority preference

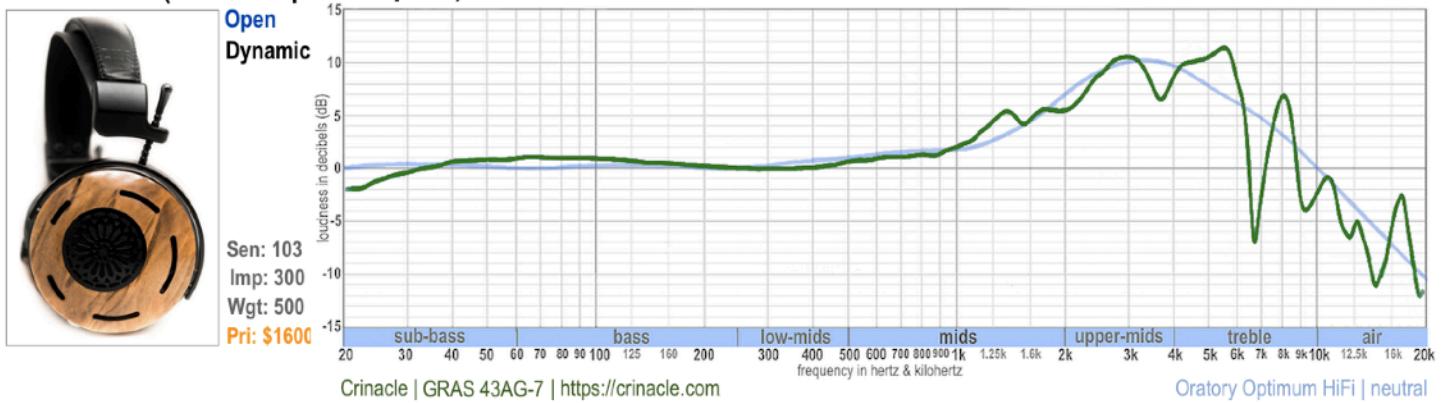
# 50 neutral and extra-bass over-ear headphones



W

**Warwick Sonoma Model One**

Z

**ZMF Auteur (lambskin perf. earpads)****Explanatory notes**

I explain the rationale for this oddball collection of headphones starting on page 12 of [Wrapping your head around the whole flat/neutral/Harman thing](#).

**Note:** this resource doesn't tell you anything about sound quality, except how much departure the headphone exhibits compared to neutral or consumer preference.

Regardless, you may also find it useful if researching the purchase of a headphone with a relatively accurate/uncoloured frequency response. If frequency response graphs look confusing or intimidating, you might want to read my tutorial [The Skinny on Headphone Frequency Response Graphs](#). The general idea, however, is simplicity itself. If the jagged line of the headphone measurements goes above or below the pale blue or purple smoothly curved line, that's a possible source of concern. The labeling in the blue bar at the bottom shows you where from bass to treble a given area of concern lies. Headphones with a pale blue reference curve are best considered if you're looking for all-around accuracy/neutralit. The pale purple reference curve shows what a reasonable amount of boosted bass looks like, including especially where the boost should taper off to zero.

That said, a common mistake is to assume that the *amount* of bass loudness tells the whole bass story. In fact, a headphone with a very incisive, resonant bass *quality* (like many planar magnetic models) can be more satisfying without a loudness boost, than other headphones with bass that is only boosted in *quantity*. This points to the limitation of frequency response graphs. They give a lot of information about one dimension of the headphone sound experience, but none at all about other dimensions, such as stereo imaging, dynamics and transients. They also don't tell the complete story on detail/clarity — although serious deviations in frequency response are absolutely culprits in muddying the detail waters.

## 50 neutral and extra-bass over-ear headphones

Another caveat regarding the graphs is that both the sub-bass and the air regions on the far left and right seldom come into play. No voices and very few instruments (or even natural phenomena) produce sounds at either extreme. These are also areas in which even the best measuring equipment has serious limitations.

Another, practical, issue is sound isolation. Each headphone has an indication of open vs closed. **Open-back** means the headphone allows at least a significant amount of sound to spill out into the surrounding air. So an open-back headphone is already a non-starter in situations in which you need to keep from annoying other people. But for sealing *out* external sound, even **closed-back** models vary drastically in effectiveness. Headphones with a porous ear pad construction allow sound to leak in.

As well as the graph, each headphone model includes a short list of sensitivity, impedance, weight and price numbers:

**Sensitivity** expressed as dB<sub>SPL</sub>/1Volt (rather than the more common dB<sub>SPL</sub>/1mW) directly corresponds to the loudness dial on your device. For a portable player like a smart phone, any sensitivity number over roughly 98 to 100 should work just fine. (These devices typically output 1.2 volts).

**Impedance** essentially shows how much electrical current your headphone requires to produce sound. Here values that are too *low* are of concern. Anything under roughly 30 (Ohms) has a good chance of demanding more sustained current flow than an unaided portable player can deliver.

**Weight.** It's impossible to express comfort/fit in a simple way. Weight is just one aspect. But headphones weighing more than a pound (454 grams) are fairly likely to be problematic for a long listening session.

The **Price** given for each model is its US dollars list. This gives you a general idea whether a headphone is even worth looking at, depending on your budget. Many uninitiated into the depths of the headphone enthusiast microcosm will be flabbergasted that such a thing as a headphone selling for more than \$500 dollars even exists (let alone the roughly \$60,000 of the current model Sennheiser HE 1). Nevertheless, for the headphones in this collection evidence suggests sound quality scales with price — just not linearly, especially after \$1000. Law of diminishing returns.