*HELIX Stats
My Audio Alchemy

Its More Than Just

MY GOAL: -
To bring great sounding cables and "Tweaks" to the DIY Audio Enthusiast :-)

PLEASE NOTE: -
I have NO affiliation to the products or companies mentioned on these pages

The products mentioned are those that I have used over time and found to perform very well.

For links to products mentioned in the text see *Product Links below

GOT QUESTIONS?
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So What's Here..

Steve Reeve
Fine Art Photography
Inspired by moments in time

Numbers - Isn't It?

10/05/19 15:52

This post addresses the electrical measurements of the three Helix Cables - Interconnect, Speaker and Power cables.

Having said that, the table below is simply a “guide”, since the values depicted are specific to the cables measured.

Minor differences can be expected due to variations in winding the helix, cable length, wire used and sleeving used.
e.g, one person has measured the capacitance of a 0.75 meter interconnect to be around 34 pF

The cables YOU build may not have identical numbers, but they will be fairly close, provided you use similar techniques, parts and wires.

Also - the numbers below are for cables of a specific length. So you will have to estimate the numbers for your cables if their length differs from those below.

Interconnect Cables - 3 ft long - using the 1mm dia Mundorf Solid Silver/Gold wire with the cotton sleeve insulation

- **Capacitance = 38 pF**
- **Inductance = 1.3 uH**

Speaker Cables - 10 ft long - using the Duelund 16 gauge tinned copper with cotton/oil insulation

- **Capacitance = 95 pF**
- **Inductance = 3.8 uH**

Power Cables - 4 ft long - using the Duelund 12 gauge tinned copper with the Polymer Insulation

- **Capacitance = 145 pF**
- **Inductance = 1.0 uH**

So if you cables are different length you could estimate their related values as follows...

e.g. if YOUR speakers cables are 7 ft long then the numbers can be *"estimated"* as follows...

Capacitance: 95 / 10 x 7 = 66.5 pf
Inductance: 3.2 / 10 x 7 = 2.24 uH

Notes:
Loop Inductance - was measured across the cable at one end, while shorting cable at the other end,
Capacitance was measured across the two conductors with the other end of the cable left "open"
Measurements were taken using an L C meter.

If you really want to get into the science take a look at this link...

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http://www.epanorama.net/documents/wiring/cable_impedance.html

So - what do all those numbers (metrics) actually mean?

Rather than delve into complex formulas, I thought that comparing the Helix numbers to other well known commercial brands of cables might be easier for readers to understand, e.g...

- The 95 pF capacitance *(roughly 30 pF/Meter)* of the Helix Speaker Cable is significantly lower than some cables from Kimber Kable and TOTL Cardas cables which often exceed 300pF/Meter. This is important if connecting to a high current solid state design amplifier.
- The 3.8 uH inductance *(roughly 1.3 uH/Meter)* of the Helix Speaker Cable is higher than some other brands, but NAIM NAC A5 cable is rated at 1.0 uH/meter (highly recommended by NAIM). I have owned a NAIM amp and the Helix cables worked very well with it and also with some other brands that adopt a high current design philosophy
- One of the few companies that seem to have been able to keep both Capacitance and Inductance to very low levels is Nordost - however, a fellow DIYer's that tried the Helix promptly sold off their Nordost cables in favour of the Helix - go figure 🙂

I consider the Capacitance and Inductance values above to be in the low to medium

range when compared to many cables I have looked at from some well established brands

Based on feedback from others who have tried them, they appear be a very good match to a lot of audio components. (see "IMPORTANT:" below) and will minimize many of the issues that conventional cable geometries suffer from.

The Loop Inductance of the Helix Speaker Cable, **may be higher than other cables** out there, and some people may believe this to be an issue in the upper end of the *"generally accepted audio spectrum"* of **20Hz and 20kHz**.

However, I believe that this does not present any problems, when you consider the frequency range of a person's "normal" hearing abilities lies between **20Hz and 12kHz** over the age of 50.

Of course - if you are a teenager with excellent hearing you may be able to hear as high as 17kHz, (and perhaps a little higher) at which point you may observe a very small decrease in volume in the 15kHz-20Khz range

If you are an engineer in one of the many companies out there that promotes frequency response of their components to be **0Hz to 100kHz -** then you may not consider these cables a viable option.

I have posted the Helix numbers above - because I have been asked for them many times, however...

Cable metrics should be used ONLY as a guide!

They ARE NOT a substitute for actually - LISTENING!

IMPORTANT:- electrostatic speakers is an area I have NO experience of, so I would strongly recommend anyone looking at using the Helix Speaker Cables with electrostatic speakers to look at the statistics above and assessing their possible impact before building or connecting Helix Speaker Cables

Tags: HELIX Spec's