Subject: H290C Horn Tweeter Review
Posted by rkeman on Fri, 11 Apr 2014 23:59:20 GMT
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The H290C tweeter horn has been available for some time now and replaces the now discontinued Eminence H290. Upgrading my 6 Pi cornerhorns and 3 Pi center and surrounds was not particularly difficult. The H290C molding is substantial, but has a thinner lip than the Eminence horn necessitating some modification of the cabinet if the horns are flush recessed into the front panel. A thin gasket (I used 1/8" door skin plywood) suffices to fill the gap. The horns have a smooth finish compared to the pebble texture of the H290S. My 290Cs were painted with matte black spray paint for plastic and the cosmetic result is excellent.

The measured differences between the two horns is fairly small. The frequency response is very smooth for both and the polar responses are nearly identical in the 3 Pi. The distortion in the octave between 1 and 2 kHz is a touch lower (third and fifth harmonics) and the impedance curve a bit flatter with the 290C and modified crossover.

The difference in sound is somewhat greater than I had expected from the measurements. Treble clarity is subtlely enhanced and lends a relaxed quality that may not be immediately apparent. There is a tad more "quiet between the notes" most noticable in complex musical passage with strings and cymbals. The effect may be misinterpreted by some as a shelved down high end, but the frequency response plots show that this is definitely not the case.

The 290C is a worthwhile upgrade for those seeking the best performance possible from their Pi Speakers incorporating a horn loaded tweeter. It is the only option for new builds and that is a good thing. At $50, it is a great value and superb performer.

Subject: Re: H290C Horn Tweeter Review
Posted by JCDC on Sat, 12 Apr 2014 12:09:08 GMT
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Great review!

Could you post some of the measurements you've made?

Cheers,
Jeff

PS Hey Wayne, on the next rev of the horn maybe you could make the lip a tad thicker so that they're perfectly back compatible?

PPS rkeman, you have 3 Pi surrounds! Me=jealous!

Subject: Re: H290C Horn Tweeter Review

Eminence H290 Radial Horn Amplitude Response and Harmonic Distortion

Pi H290C OSEC Waveguide Amplitude Response and Harmonic Distortion

Eminence H290 Radial Horn Amplitude Response

Pi H290C OSEC Waveguide Amplitude Response

Some of the measurements for the H290C and H290 are posted. These are unsmoothed curves taken one meter from the horn in-room. The top and third plots are the H290 and the second and fourth are the H290C. Notice in particular the lower third (red) and fifth (magenta) harmonic distortion for the H290C. The response is also a bit smoother and there is no rise in the higher frequencies that most likely represents the crossover modifications.

File Attachments

1) H290C 1 m.bmp, downloaded 4376 times
2) H290S 1 m.bmp, downloaded 4515 times
3) H290C 1 m Distortion 2.bmp, downloaded 4449 times
4) H290S 1 m Distortion 2.bmp, downloaded 4430 times