

# AFMG Reflex Report



Creation date: 26/08/2012  
AFMG Reflex Version: 1.0.6

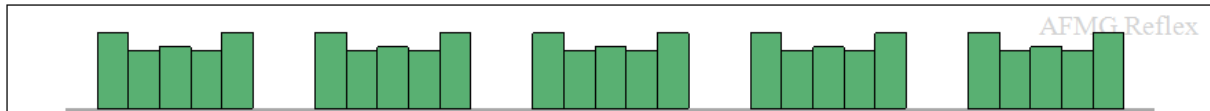
# 1. Models

## 1.1 New Model10

### 1.1.1 Description

Array of five N=7 Stepped Diffusers, optimized by Trevor J. Cox  
[Trevor J. Cox, "The Optimization of Profiled Diffusers", 1994]

### 1.1.2 Model Outline

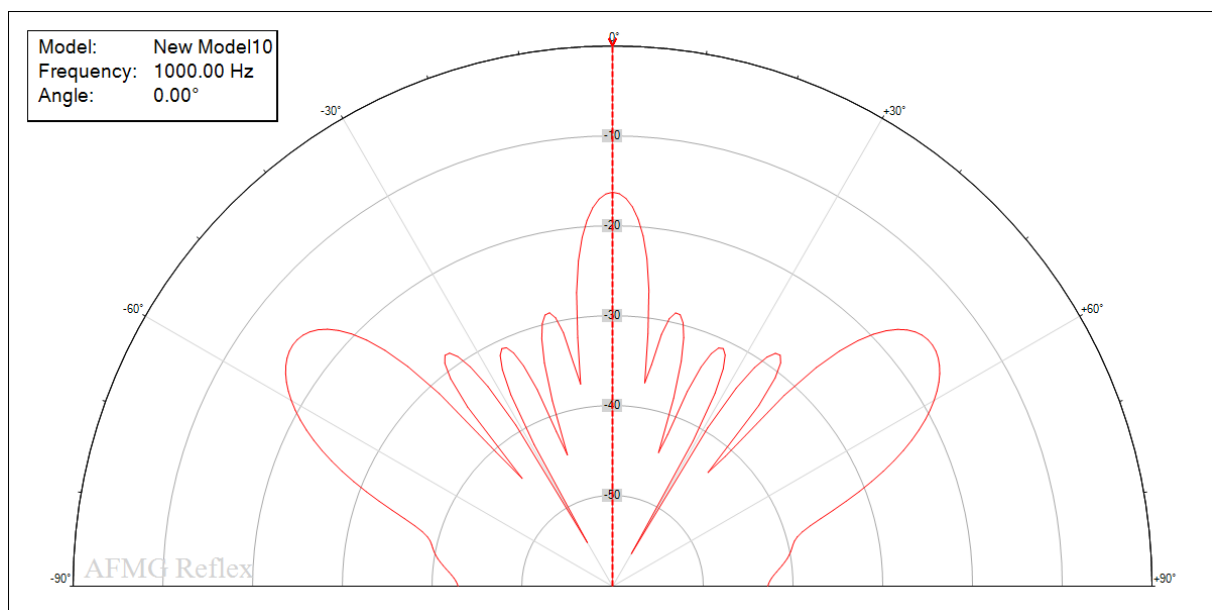


Model Outline

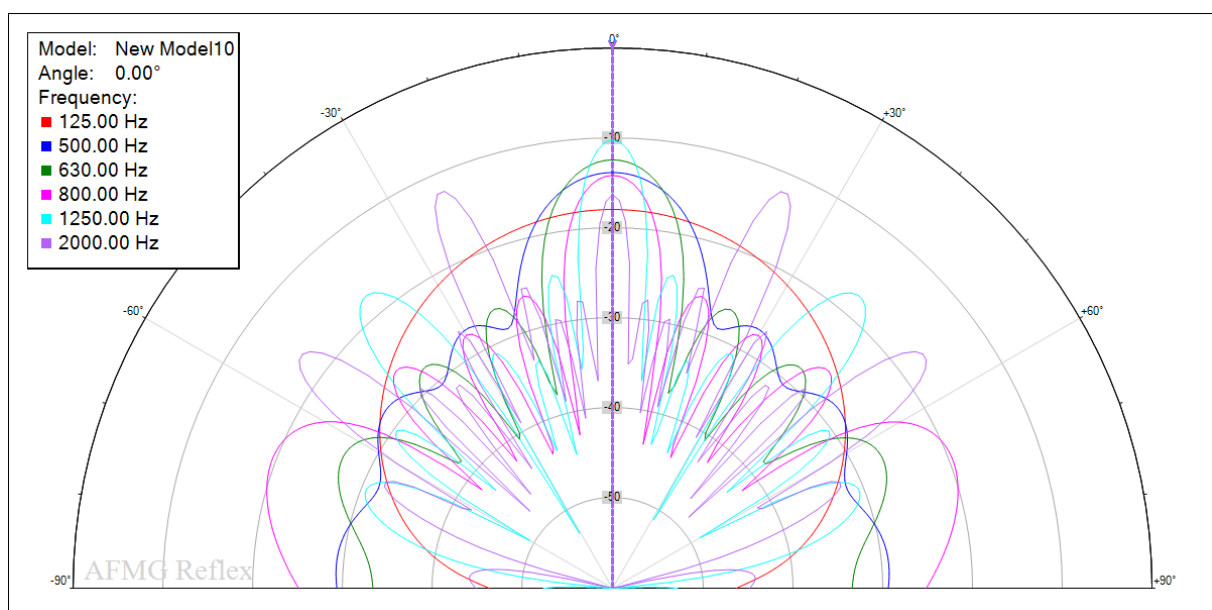
Element no.	Type	Width[cm]	Depth Base[cm]	Depth Top[cm]
1	Rectangle	6.1	0.0	0.0
2	Rectangle	6.1	14.8	0.0
3	Rectangle	6.1	11.3	0.0
4	Rectangle	6.1	12.0	0.0
5	Rectangle	6.1	11.3	0.0
6	Rectangle	6.1	14.8	0.0
7	Rectangle	6.1	0.0	0.0
8	Rectangle	6.1	0.0	0.0
9	Rectangle	6.1	14.8	0.0
10	Rectangle	6.1	11.3	0.0
11	Rectangle	6.1	12.0	0.0
12	Rectangle	6.1	11.3	0.0
13	Rectangle	6.1	14.8	0.0
14	Rectangle	6.1	0.0	0.0
15	Rectangle	6.1	0.0	0.0
16	Rectangle	6.1	14.8	0.0
17	Rectangle	6.1	11.3	0.0
18	Rectangle	6.1	12.0	0.0
19	Rectangle	6.1	11.3	0.0
20	Rectangle	6.1	14.8	0.0
21	Rectangle	6.1	0.0	0.0
22	Rectangle	6.1	0.0	0.0
23	Rectangle	6.1	14.8	0.0
24	Rectangle	6.1	11.3	0.0
25	Rectangle	6.1	12.0	0.0
26	Rectangle	6.1	11.3	0.0

27	Rectangle	6.1	14.8	0.0
28	Rectangle	6.1	0.0	0.0
29	Rectangle	6.1	0.0	0.0
30	Rectangle	6.1	14.8	0.0
31	Rectangle	6.1	11.3	0.0
32	Rectangle	6.1	12.0	0.0
33	Rectangle	6.1	11.3	0.0
34	Rectangle	6.1	14.8	0.0
35	Rectangle	6.1	0.0	0.0

### 1.1.3 Spatial Response Plots

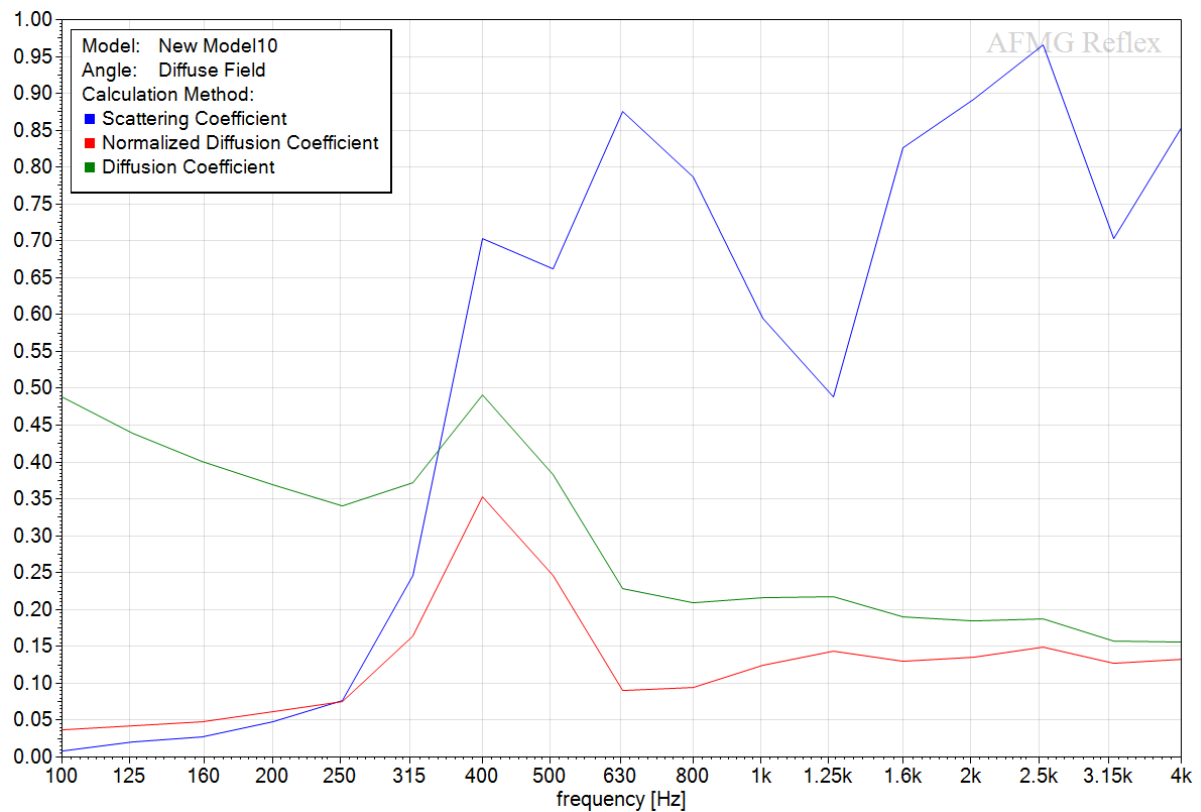


Spatial Response



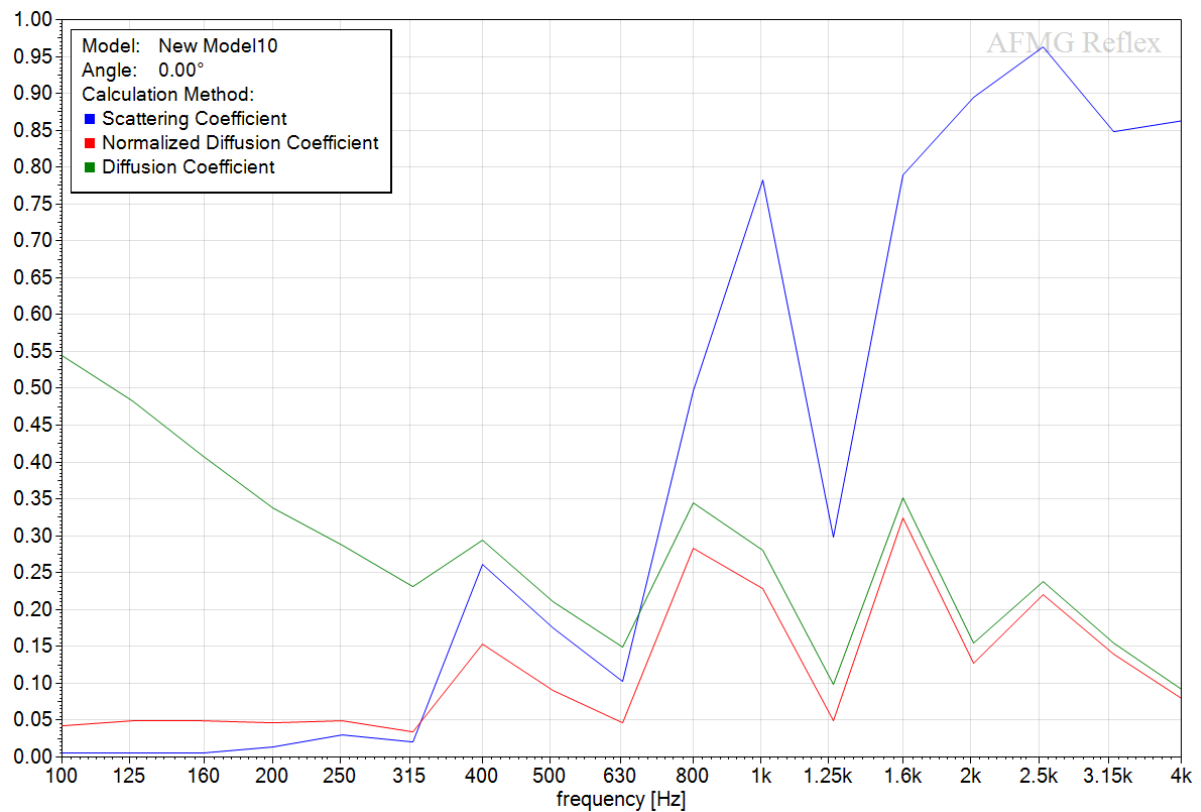
Spatial Response

### 1.1.4 Coefficients Plots

**Angle: Random Incidence, Frequency Range: [100 Hz, 4000 Hz]****Coefficients**

Frequency [Hz]	Scattering Coefficient	Normalized Diffusion Coefficient	Diffusion Coefficient
100	0.009	0.038	0.488
125	0.021	0.042	0.439
160	0.027	0.048	0.401
200	0.047	0.061	0.369
250	0.076	0.075	0.341
315	0.246	0.164	0.372
400	0.703	0.353	0.491
500	0.662	0.247	0.383
630	0.876	0.090	0.229
800	0.786	0.094	0.209
1000	0.596	0.124	0.216
1250	0.488	0.144	0.217
1600	0.826	0.129	0.190
2000	0.891	0.136	0.184
2500	0.966	0.149	0.187
3150	0.704	0.127	0.157
4000	0.858	0.132	0.156

**Angle: 0°, Frequency Range: [100 Hz, 4000 Hz]**



**Coefficients**

Frequency [Hz]	Scattering Coefficient	Normalized Diffusion Coefficient	Diffusion Coefficient
100	0.005	0.042	0.544
125	0.005	0.049	0.483
160	0.005	0.049	0.408
200	0.014	0.047	0.338
250	0.030	0.049	0.287
315	0.020	0.034	0.232
400	0.261	0.154	0.294
500	0.175	0.090	0.211
630	0.103	0.047	0.149
800	0.496	0.283	0.344
1000	0.783	0.229	0.281
1250	0.298	0.049	0.099
1600	0.789	0.324	0.351
2000	0.895	0.127	0.155
2500	0.963	0.220	0.239
3150	0.848	0.139	0.155
4000	0.863	0.078	0.090