

# AFMG Reflex Report



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

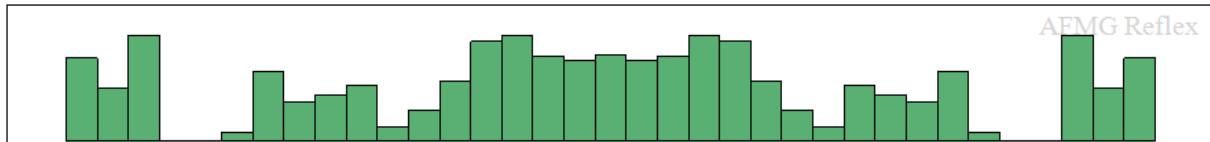
# 1. Models

## 1.1 New Model12

### 1.1.1 Description

N = 36 Optimized Stepped Diffuser (35 wells)  
 [Trevor J. Cox, "The Optimization of Profiled Diffusers", 1994]

### 1.1.2 Model Outline

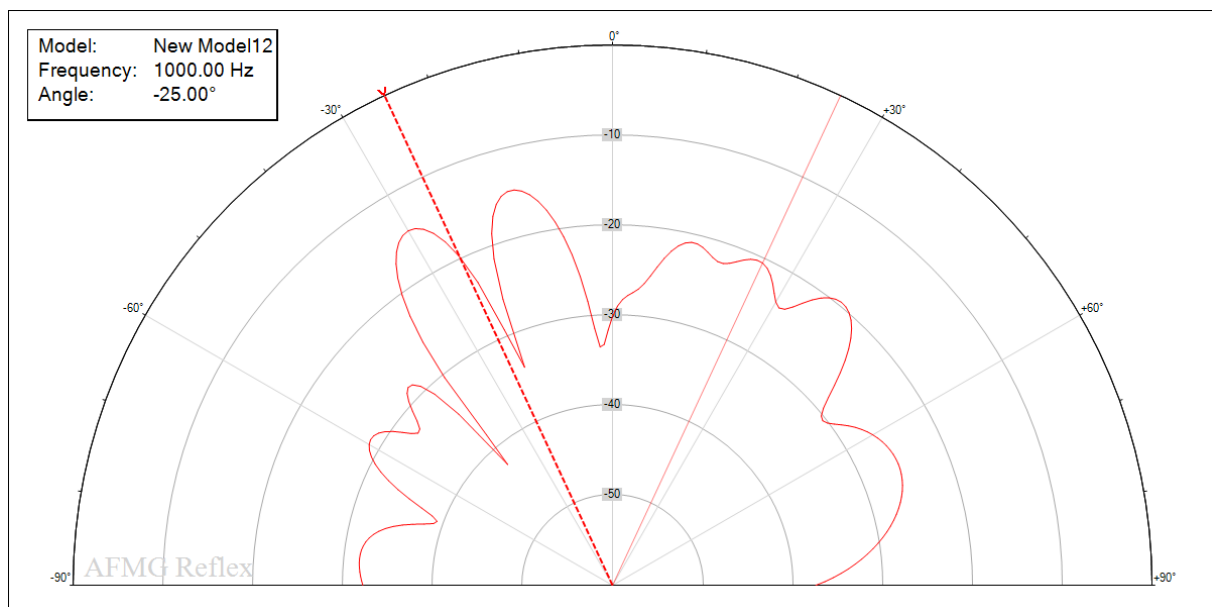


Model Outline

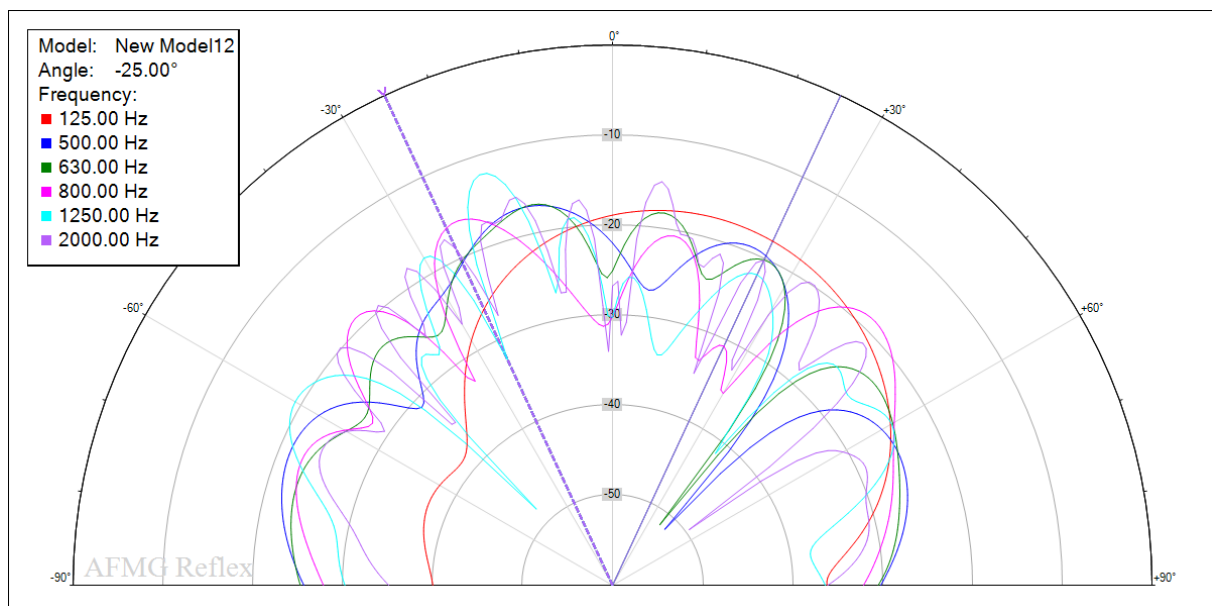
Element no.	Type	Width[cm]	Depth Base[cm]	Depth Top[cm]
1	Rectangle	5.9	15.6	0.0
2	Rectangle	5.9	10.0	0.0
3	Rectangle	5.9	19.9	0.0
4	Rectangle	5.9	0.1	0.0
5	Rectangle	5.9	0.1	0.0
6	Rectangle	5.9	1.6	0.0
7	Rectangle	5.9	13.1	0.0
8	Rectangle	5.9	7.2	0.0
9	Rectangle	5.9	8.7	0.0
10	Rectangle	5.9	10.3	0.0
11	Rectangle	5.9	2.7	0.0
12	Rectangle	5.9	5.8	0.0
13	Rectangle	5.9	11.3	0.0
14	Rectangle	5.9	18.7	0.0
15	Rectangle	5.9	19.9	0.0
16	Rectangle	5.9	15.8	0.0
17	Rectangle	5.9	15.0	0.0
18	Rectangle	5.9	16.1	0.0
19	Rectangle	5.9	15.0	0.0
20	Rectangle	5.9	15.8	0.0
21	Rectangle	5.9	19.9	0.0
22	Rectangle	5.9	18.7	0.0
23	Rectangle	5.9	11.3	0.0
24	Rectangle	5.9	5.8	0.0
25	Rectangle	5.9	2.7	0.0

26	Rectangle	5.9	10.3	0.0
27	Rectangle	5.9	8.7	0.0
28	Rectangle	5.9	7.2	0.0
29	Rectangle	5.9	13.1	0.0
30	Rectangle	5.9	1.6	0.0
31	Rectangle	5.9	0.1	0.0
32	Rectangle	5.9	0.1	0.0
33	Rectangle	5.9	19.9	0.0
34	Rectangle	5.9	10.0	0.0
35	Rectangle	5.9	15.6	0.0

### 1.1.3 Spatial Response Plots



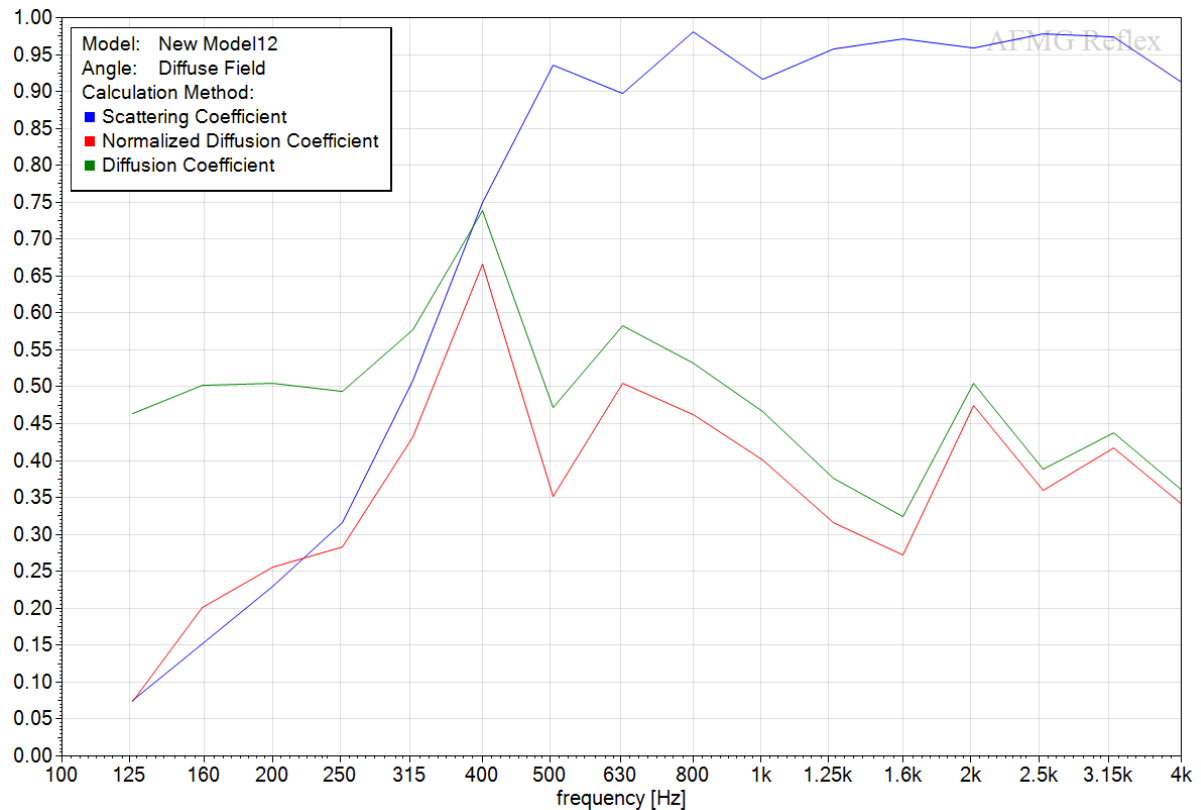
**Spatial Response**



**Spatial Response**

## 1.1.4 Coefficients Plots

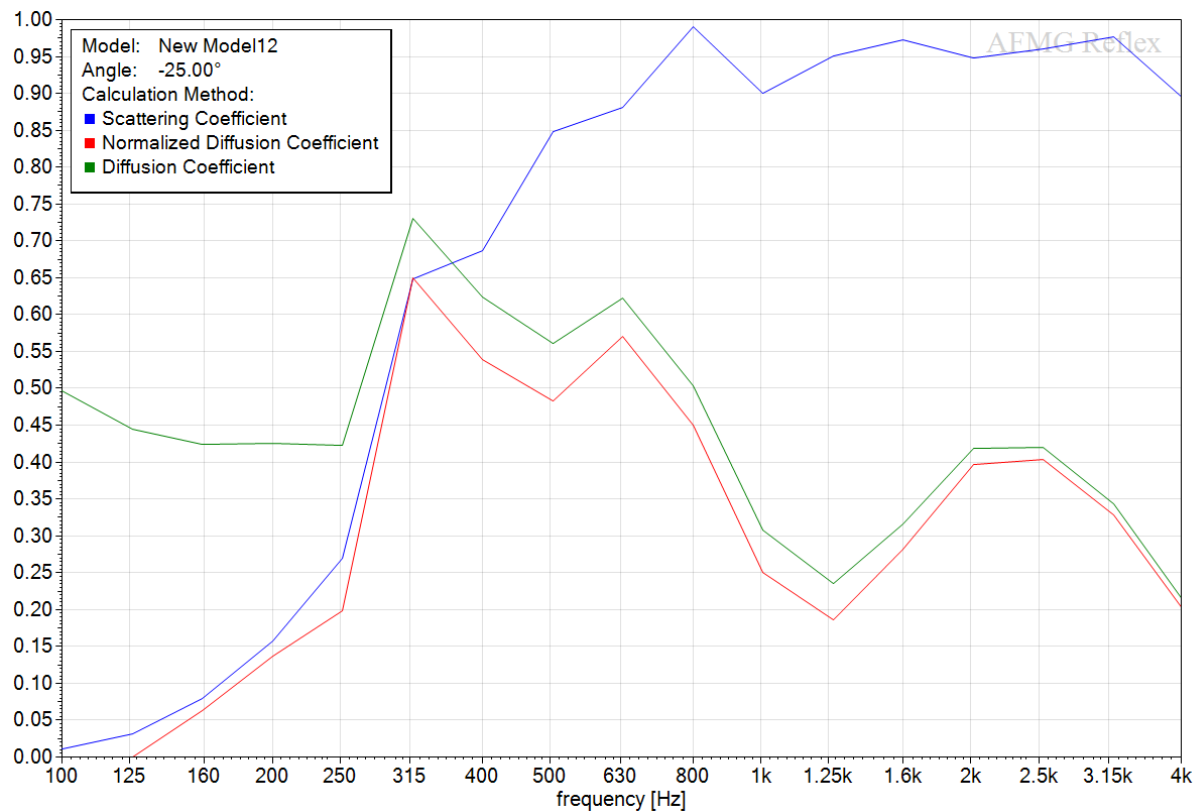
Angle: Random Incidence, Frequency Range: [100 Hz, 4000 Hz]



Coefficients

Frequency [Hz]	Scattering Coefficient	Normalized Diffusion Coefficient	Diffusion Coefficient
125	0.075	0.074	0.464
160	0.151	0.201	0.503
200	0.229	0.256	0.505
250	0.316	0.284	0.494
315	0.509	0.433	0.577
400	0.750	0.666	0.739
500	0.936	0.351	0.472
630	0.897	0.505	0.582
800	0.981	0.462	0.532
1000	0.916	0.401	0.466
1250	0.957	0.315	0.376
1600	0.971	0.273	0.325
2000	0.959	0.475	0.505
2500	0.978	0.359	0.389
3150	0.974	0.417	0.438
4000	0.911	0.339	0.358

**Angle: -25°, Frequency Range: [100 Hz, 4000 Hz]**



**Coefficients**

Frequency [Hz]	Scattering Coefficient	Normalized Diffusion Coefficient	Diffusion Coefficient
100	0.011	0.000	0.497
125	0.032	0.000	0.445
160	0.079	0.063	0.425
200	0.158	0.136	0.425
250	0.269	0.198	0.422
315	0.648	0.650	0.730
400	0.687	0.539	0.624
500	0.848	0.482	0.560
630	0.881	0.570	0.622
800	0.991	0.450	0.503
1000	0.900	0.250	0.307
1250	0.951	0.186	0.235
1600	0.972	0.282	0.316
2000	0.948	0.396	0.418
2500	0.960	0.403	0.420
3150	0.976	0.329	0.343
4000	0.893	0.199	0.212