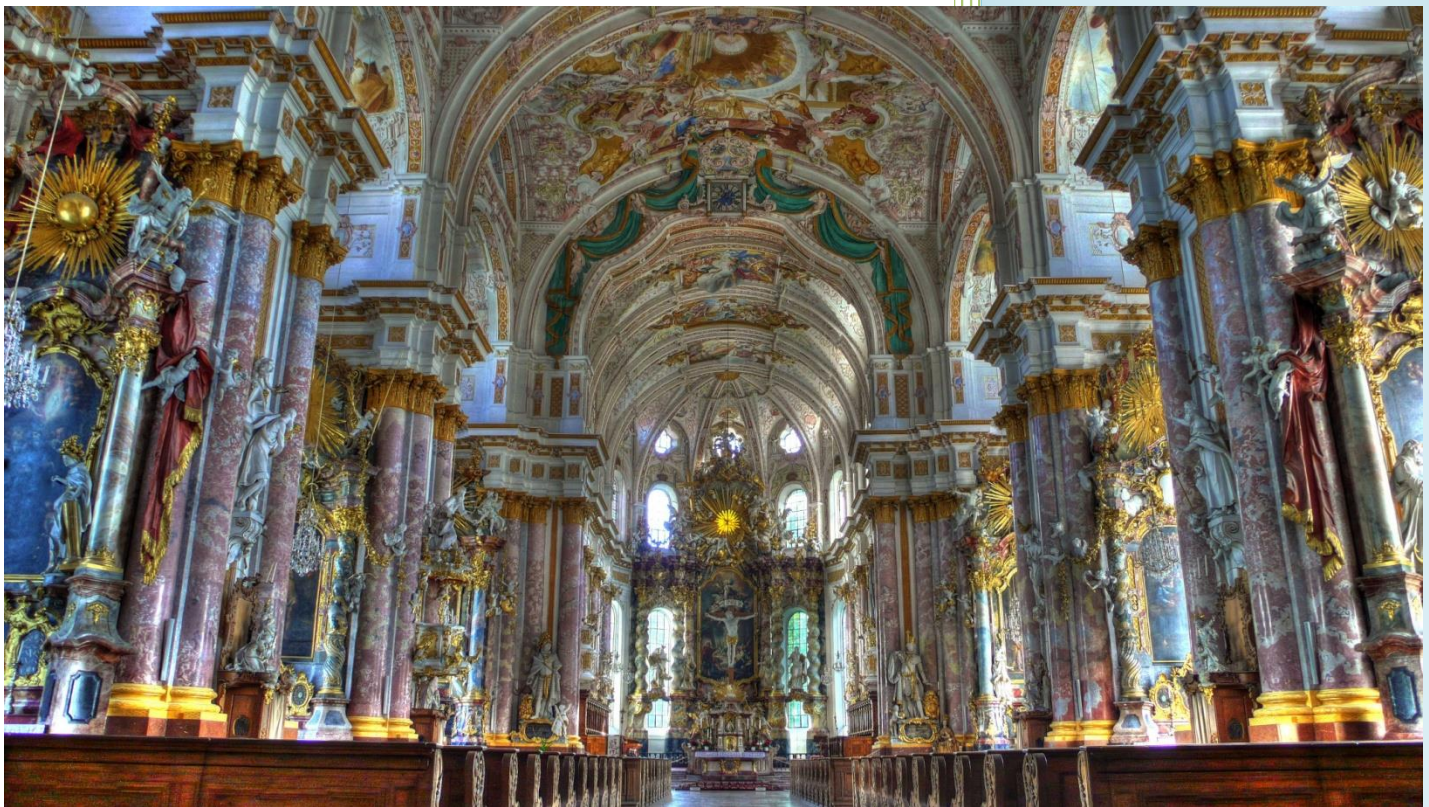


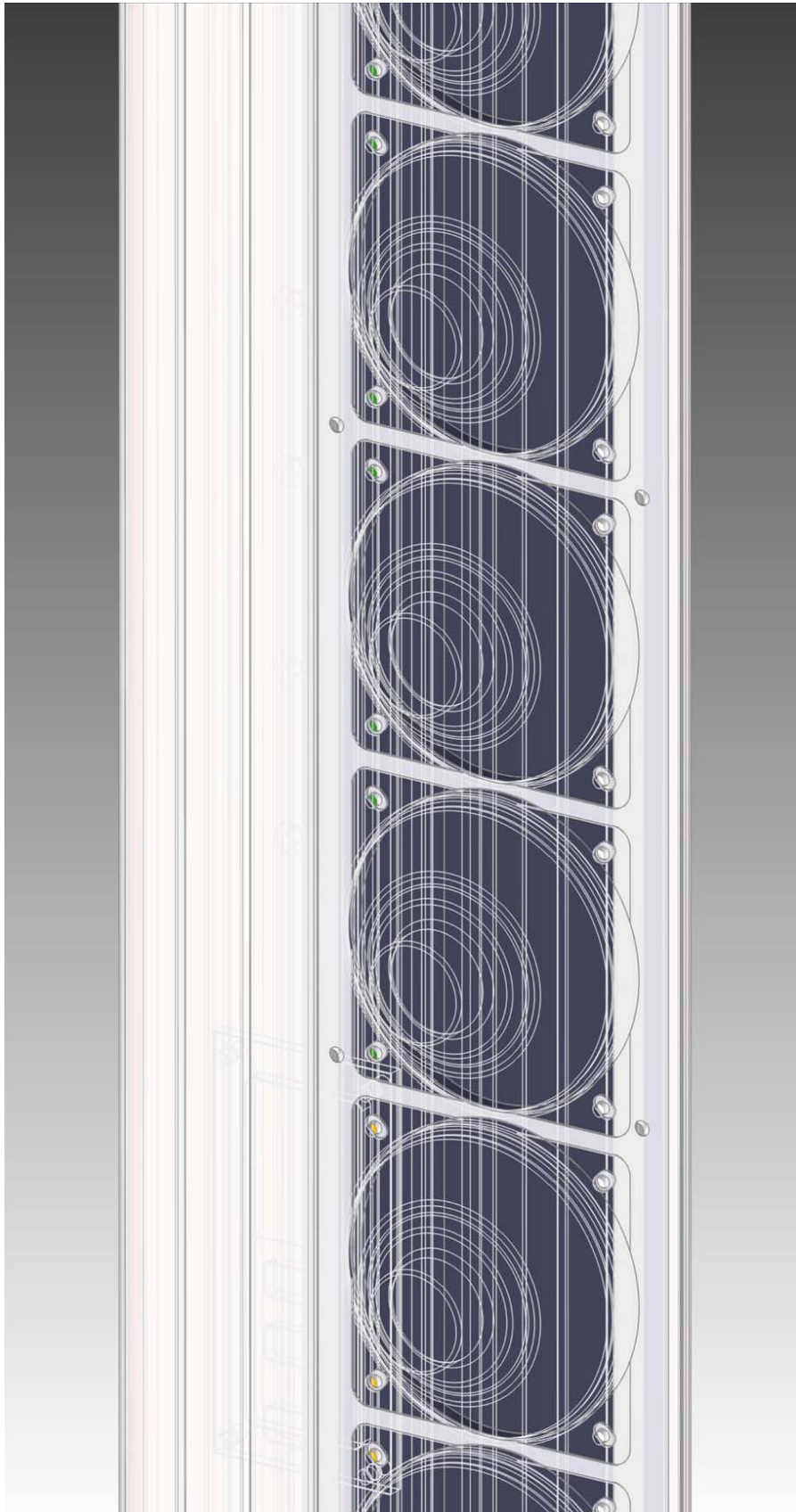
**AVE Audio**

Digitally Steerable Column Speaker  
**Ascolto**



**A.V.E. GmbH**  
**Audio Vertriebs-**  
**Entwicklungsgesellschaft**

**Germany**



**Digitally  
Steerable  
Column  
Speaker**

**Ascolto**

**AH3235**

**Datasheet**

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## 1.0 – Acoustic Specifications

### Frequency Bandwidth

80 Hz to 20 kHz ( $\pm 2$  dB)

### Maximal SPL

131 dB (A-Weighted at 1 m)

### Nominal SPL (1 W/Loudspeaker)

119 dB (A-Weighted at 1 m),  
 105 dB (A-Weighted at 10 m),  
 103 dB (A-Weighted at 20 m),  
 102 dB (A-Weighted at 30 m),  
 100 dB (A-Weighted at 40 m)

### Coverage

Horizontal (fixed)	130° (-6 dB average 1 kHz to 4 kHz)
Vertical (adjustable)	Tilting Up/Down Angle: -60° to 60° in 0.1° intervals Opening Angle: 9° to 40° in 0.1° intervals
Typical Throw	40 m
Maximum Throw	50 m

### Dynamic Range

102 dB (f=1 kHz, AES17 filter)

### Transducers Type

Number of Transducers	32 Full Range Loudspeakers
Diameter	3.5"
Magnet Material	Neodymium

## 2.0 – Electrical Specifications

### Audio Input 1: Line 0 dBu

Input Level Nominal	0 dBu (2.19 Vpp)
Input Level Maximum	10 dBu (6.92 Vpp)
Type	Balanced
Impedance	20 k $\Omega$ at 1 kHz

### Audio Input 2: 100 V (Distributed Speaker System)

Input Level Nominal	39.2 dBu (200 Vpp)
Type	Balanced with Transformer
Impedance	20 k $\Omega$ at 1 kHz

### Audio Input 3: Dante Audio Networking (available only in Ascolto – Dante Series)

Network	Dante Audio over IP
Transport Layer	Ethernet
Dante Latency	1, 2, or 5 ms (configurable using Dante Controller)
Support for AES67	Yes
Sample Rates	48 kHz
Bit Depths	24

### Power Amplifier

Type	PWM (Class D)
Output Power	32 × 70 W <sub>max</sub>
Power Efficiency	86%
THD+N	0.07% at 10 W <sub>rms/channel</sub>
Input Signal	Balanced
Channel Protections	Thermal Shutdown (T <sub>junction</sub> >150°C)

## Output Short Circuit

**DSP Module**

DSP Processors	48 bit Fixed Point DSP 76-bit Internal Accumulator 145 MHz
Sample Rate	48 kHz
A/D Conversion	Resolution: 24 bit Linear PCM Conversion: 1-bit delta-sigma 256× Sample Rate: 48 kHz SNR: 102 dB (A-Weighted)
D/A Conversion	Resolution: 24 bit Linear PCM Conversion: upsampling 128× Sample Rate: 48 kHz SNR: 105 dB (A-Weighted)
Signal Processing	Beam Forming Filtering Input Equalization (10 Biquad) Volume (-120 dB <sub>FS</sub> to 0 dB <sub>FS</sub> ) Delay (0 m to 50 m, step 0.1 m) Dynamic Compressor 2-Bands Input Signal Activity Detector

**Control Module**

Processor	32 bit ARM-Cortex M3 RISC 50 MHz
AVE Network Interface	RS485, Half Duplex, 115200 baud/s



	120 $\Omega$ Parallel Termination (recommended for long distance)
Dante Network Interface	Ethernet, 100 Mbit/s (available only in Ascolto – Dante Series).
Processor Activities	DSP Firmware Booting DSP Status Monitoring PWM Power Amplifier Functions Controlling PWM Power Amplifier Status Monitoring Audio Input Channel Functions Controlling Dante-Chip Ultimo XXT Control (in Ascolto – Dante Series) Auto Stand-By Controlling RS485 Communication Infrared Communication Panel LEDs Controlling Firmware Updating

## Connectors

Audio Inputs Connector	3-pole, 3.81 mm-pitch
Audio Inputs Pinout	pin 1: hot signal (+) pin 2: cold signal (-) pin 3: earth (chassis ground)
RS485 Network Connector	3-pole, 3.81 mm-pitch
RS485 Network Pinout	pin 1: data + pin 2: data - pin 3: digital ground
Dante Network Connector	8 pin Ethernet RJ45, female connector
Mains Connector	Module IEC 320-C14, ratings 250 VAC, 10 A Approvals: UL, CSA, TÜV, CCC

**Switched-Mode Power Supply Unit**

AC Range	90 VAC to 264 VAC (Universal Input)
Input Frequency	47 Hz to 67 Hz
Efficiency	90% typ at 230 VAC
Input Current at Full Load	8.0 A typ at 115 VAC 4.0 A typ at 230 VAC
Power Consumption	Continuous: 703 VA Peak: 914 VA Idle: 48 VA Stand-By: 16 VA
Protection	Thermal Protection Output Current Limiting Under-Voltage Lock Out
Main Fuse	1 × 6.3 A (slow blow)



### 3.0 – Electromagnetic compatibility

#### Electromagnetic Interference (EMI)

Complete System	EN 55032
Switched-Mode Power Supply Unit	EN 55024 EN 60601-1-2 (Medical Devices) EN 61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11

#### Electromagnetic Susceptibility (EMS)

Complete System	EN 61000-3-2, -3-3 EN 61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-11
Switched-Mode Power Supply Unit	EN 60601-1-2 (Medical Devices) EN 55011 class A, B EN 55032 class A, B EN 61000-3-2, class A, D EN 61000-3-3

## 4.0 – General Specifications

### Mechanical

Height	3197 mm
Width	120 mm
Depth	121 mm
Weight	23 Kg (50.70 lbs)
Cabinet	Powder Coated Aluminum Extrusion
Colour	RAL 9010
Special colour	Available for an additional charge

### Temperature Range

0°C to 40°C (32°F to 102°F)

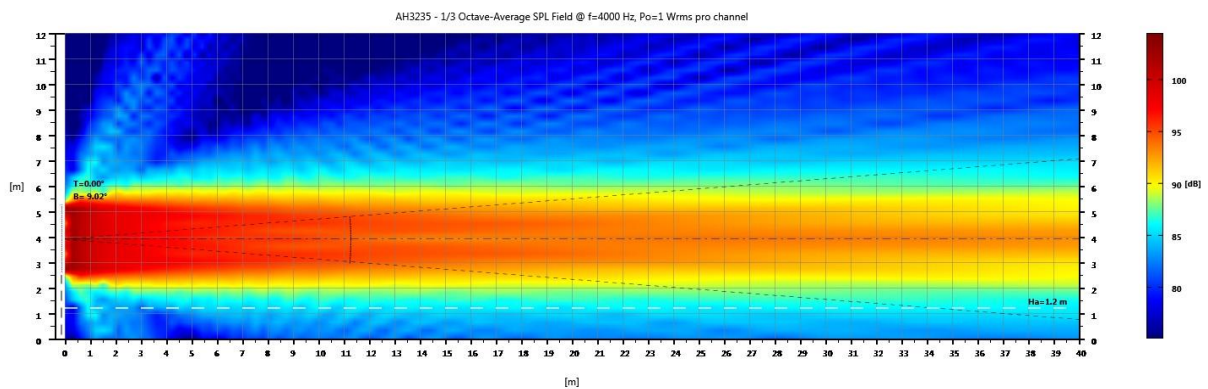
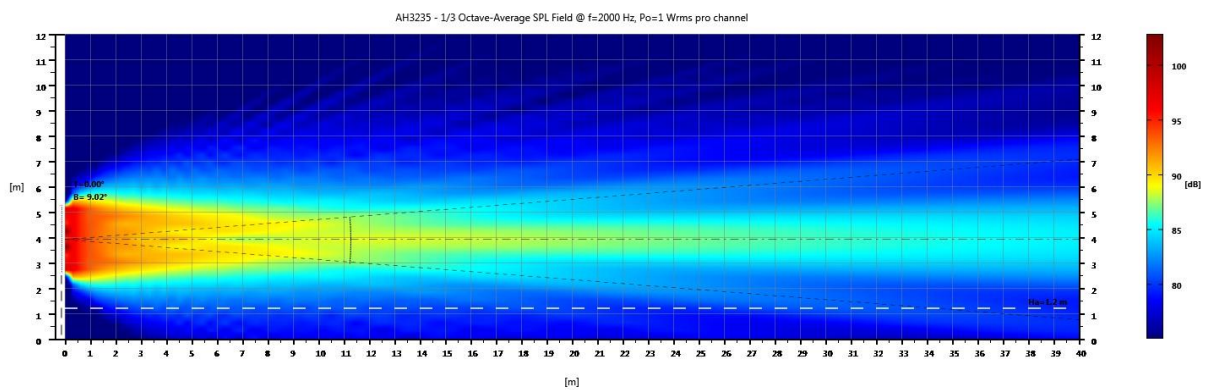
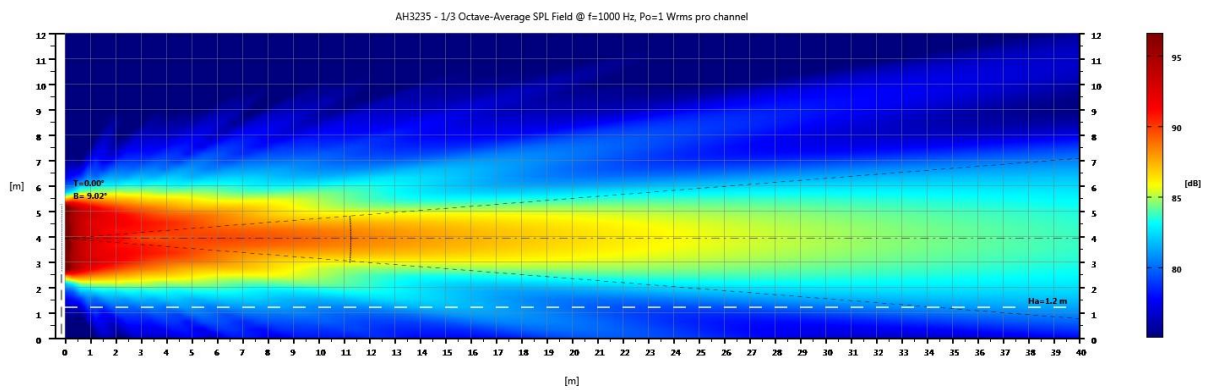
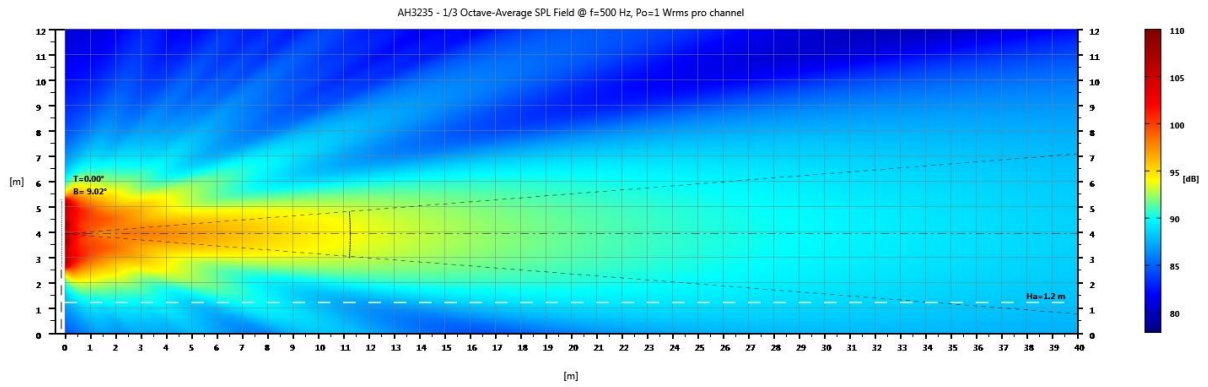
### Electrical Protection Class

IEC 61140 - Class 1

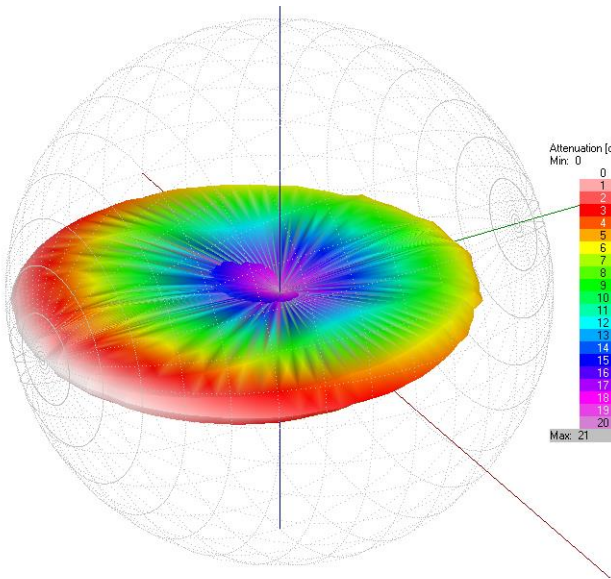
### Certificates

CE

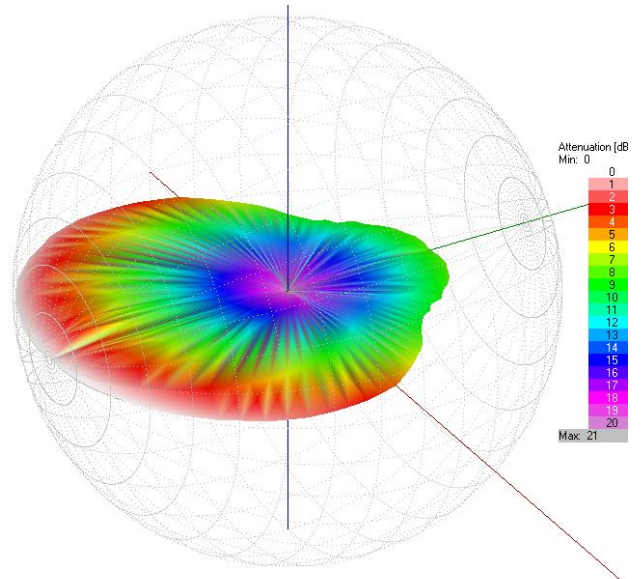
## 5.0 – Vertical Beam Pattern



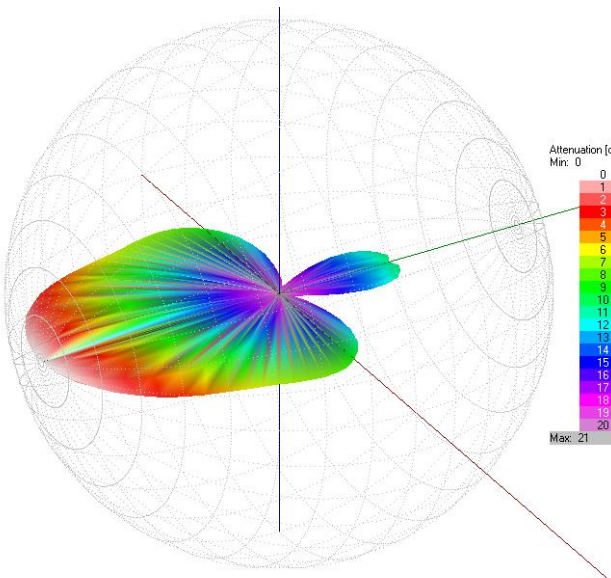
## 6.0 - Attenuation Balloon



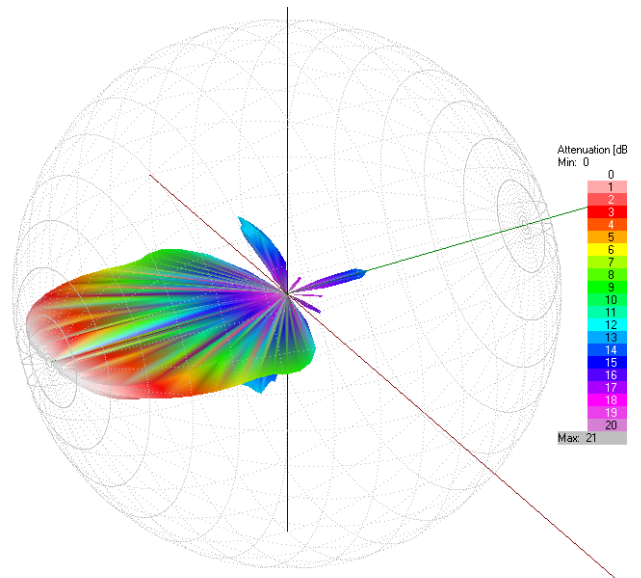
AH3235 – Attenuation Balloon – Freq = 500 Hz



AH3235 – Attenuation Balloon – Freq = 1000 Hz

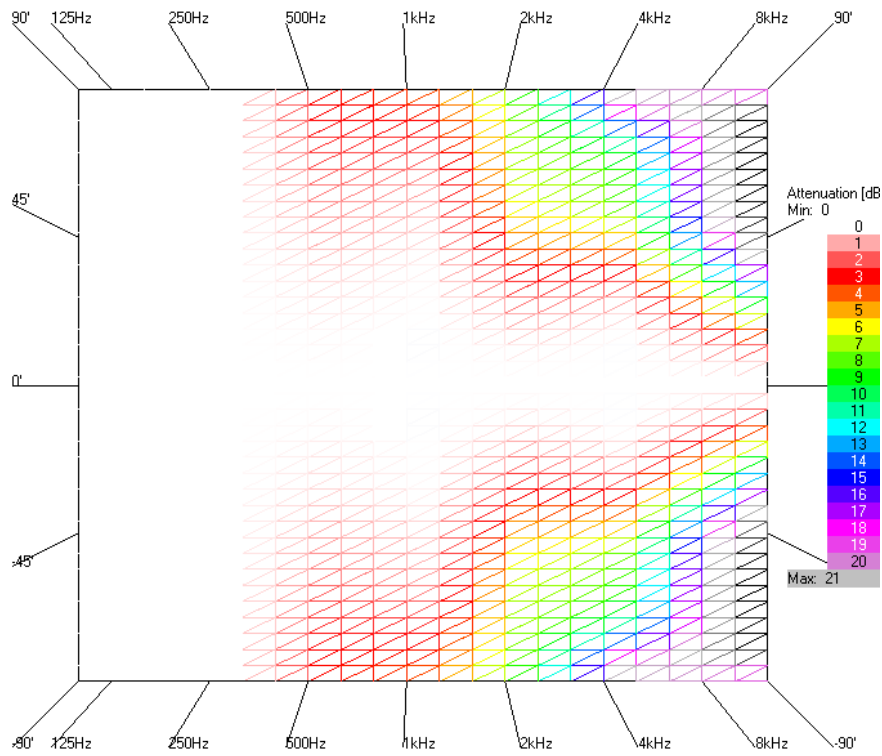


AH3235 – Attenuation Balloon – Freq = 2000 Hz

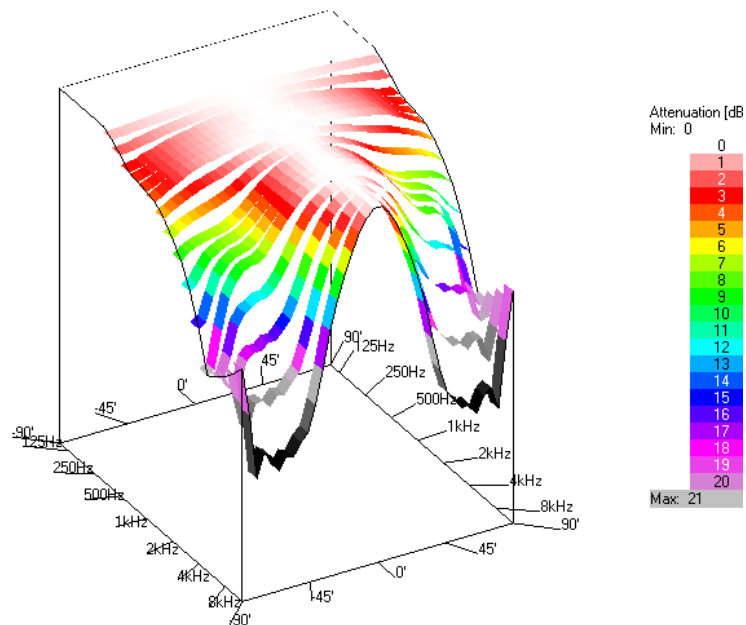


AH3235 – Attenuation Balloon – Freq = 4000 Hz

## 7.0 - Horizontal Polar Responses



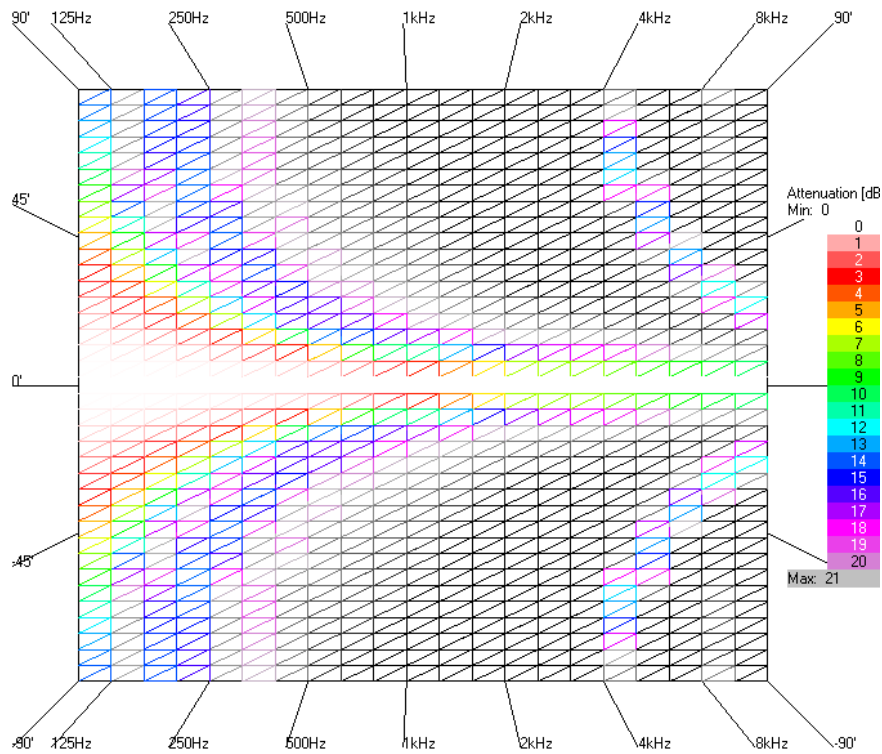
**AH3235 - Horizontal Polar Responses vs Frequency**



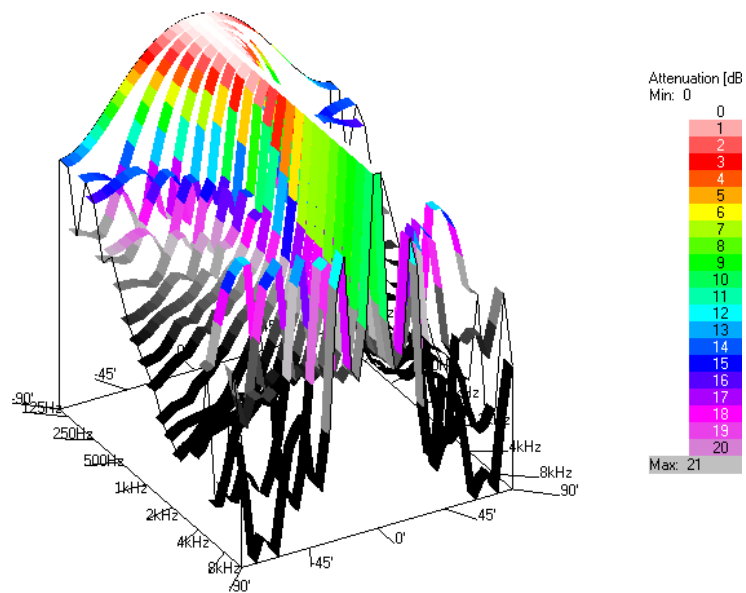
**AH3235 - Horizontal Polar Responses vs Frequency**



## 8.0 - Vertical Polar Responses



**AH3235 - Vertical Polar Responses vs Frequency**



**AH3235 - Vertical Polar Responses vs Frequency**

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