



# TECHNICAL SPECIFICATIONS AS490

## DESCRIPTION

A 2-way mid/high system (passive mid/high crossover) in a trapezoidal enclosure. Includes a horn-loaded 10-in MF cone and a 1.4-in exit/44mm voice coil HF compression driver on a 90 x 45 constant directivity horn.

## APPLICATION

The AS490 provides the mid/high performance capabilities of the 90° (h) AS Series systems in a separate mid/high module. It can be used as a stand-alone system for speech-only applications or, together with an AS415, AS422 or AS625 LF module, it provides full range performance in a flexible, modular, multi-enclosure format. Includes comprehensive 3/8"-16 mounting/suspension points. Six year warranty.

Applications include:

- Stadiums
- Arenas
- Dance Clubs
- Theaters
- Performing Arts Centers
- Houses of Worship

## DESCRIPTIVE DATA

|                                                |                                                                                               |
|------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Part Number                                    | 999672                                                                                        |
| Product Group                                  | I                                                                                             |
| System Configuration                           | 2-way, Mid/High                                                                               |
| Powering Configuration(s)                      | Passive MF/HF Crossover                                                                       |
| MF Subsystem & Loading                         | 1x 10-in, Horn-Loaded                                                                         |
| HF Subsystem & Loading                         | 1x 1.4-in exit/44mm voice coil Compression Driver on Constant Directivity Horn                |
| Recommended High-Pass Frequency (24 dB/Octave) | 200 HZ                                                                                        |
| Cabinet Type (shape)                           | Trapezoidal                                                                                   |
| Enclosure Materials                            | Baltic Birch Plywood                                                                          |
| Finish                                         | Black Polyurethane                                                                            |
| Connectors                                     | 2-Terminal Barrier Strip                                                                      |
| Suspension Hardware                            | (12) 3/8"-16 Threaded Mounting/Suspension Points (3 each Top and Bottom, 2 on Sides and Back) |
| Grill                                          | Powder Coated Perforated Steel                                                                |
| Options                                        | 104001 3/8"-16 Eyebolt (FC300B)                                                               |



## NOMINAL DATA

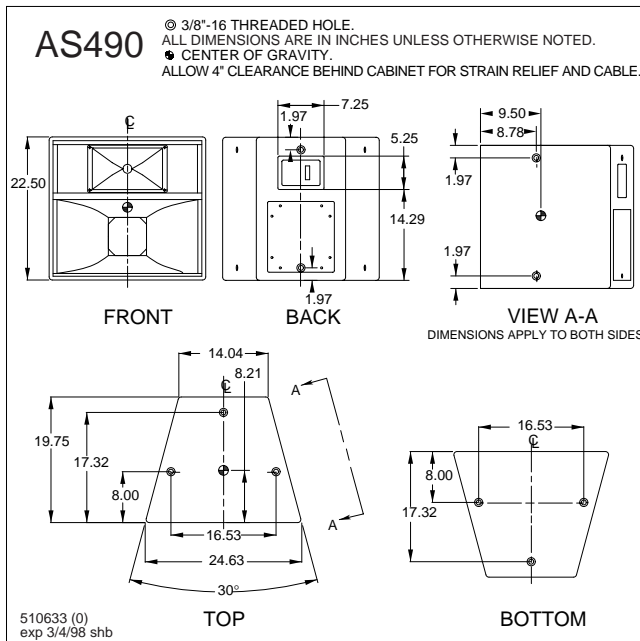
|                                                      |                     |                    |
|------------------------------------------------------|---------------------|--------------------|
| <b>Frequency Response (1 Watt @ 1m)</b>              |                     |                    |
| ±3 dB                                                | 250 Hz to 17 kHz    |                    |
| -10 dB                                               | 115 Hz              |                    |
| <b>Axial Sensitivity (dB SPL, 1 Watt @ 1m)</b>       |                     |                    |
| Passive MF/HF                                        | 105                 |                    |
| <b>Impedance (Ohms)</b>                              |                     |                    |
| Passive MF/HF                                        | 8                   |                    |
| <b>Power Handling, AES Standard (Watts)</b>          |                     |                    |
| Passive MF/HF                                        | 360                 |                    |
| <b>Calculated Maximum Output (dB SPL @ 1m)</b>       |                     |                    |
| Passive MF/HF Peak                                   | 136.6               |                    |
| Passive MF/HF Long term                              | 130.6               |                    |
| <b>Nominal Coverage Angle/-6 dB points (degrees)</b> |                     |                    |
| Horizontal                                           | 90                  |                    |
| Vertical                                             | 45                  |                    |
| <b>Dimensions</b>                                    |                     |                    |
|                                                      | <b>inches</b>       | <b>millimeters</b> |
| Height                                               | 22.50               | 572                |
| Width (Front)                                        | 24.63               | 626                |
| Width (Rear)                                         | 14.04               | 357                |
| Depth                                                | 19.75               | 502                |
| Trapezoid Angle                                      | 15 degrees per side |                    |
| <b>Weights</b>                                       |                     |                    |
|                                                      | <b>pounds</b>       | <b>kilograms</b>   |
| Net Weight                                           | 83                  | 37.8               |
| Shipping Weight                                      | 97                  | 44.1               |





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## DIMENSIONAL DRAWING



## ARCHITECTURAL SPECIFICATIONS

The passive mid/high loudspeaker systems shall incorporate a 10-in MF cone and a 1.4-in exit/44mm voice coil HF compression driver.

The MF driver shall be loaded into a midrange horn constructed of 3mm birch plywood backed with high density polyurethane foam. The HF driver shall be loaded on a constant directivity horn with a nominal coverage pattern of 90° (h) x 45° (v). An internal passive filter network shall provide fourth order acoustical crossover and system equalization.

System frequency response shall vary no more than  $\pm 3$  dB from 250 Hz to 17 kHz measured on axis. The system shall produce a Sound Pressure Level (SPL) of 105 dB SPL on axis at 1 meter with a power input of 1 Watt and shall be capable of producing a peak output of 136.6 dB SPL on axis at 1 meter. The system shall handle 360 Watts of amplifier power (AES Standard) and shall have a nominal impedance of 8 Ohms.

The loudspeaker enclosure shall be trapezoidal in shape. It shall be constructed of 15mm thickness void-free cross-grain-laminated Baltic birch plywood and shall employ extensive internal bracing. It shall be finished in black polyurethane. Input connectors shall be 2-terminal barrier strip. Twelve (12) 3/8"-16 threaded mounting/suspension points (3 each top and bottom, 2 on each side and back) shall be provided. The front of the loudspeaker shall be covered with a powder coated perforated steel grill.

The mid/high loudspeaker shall be the EAW model AS490.

## SERVICE ITEMS

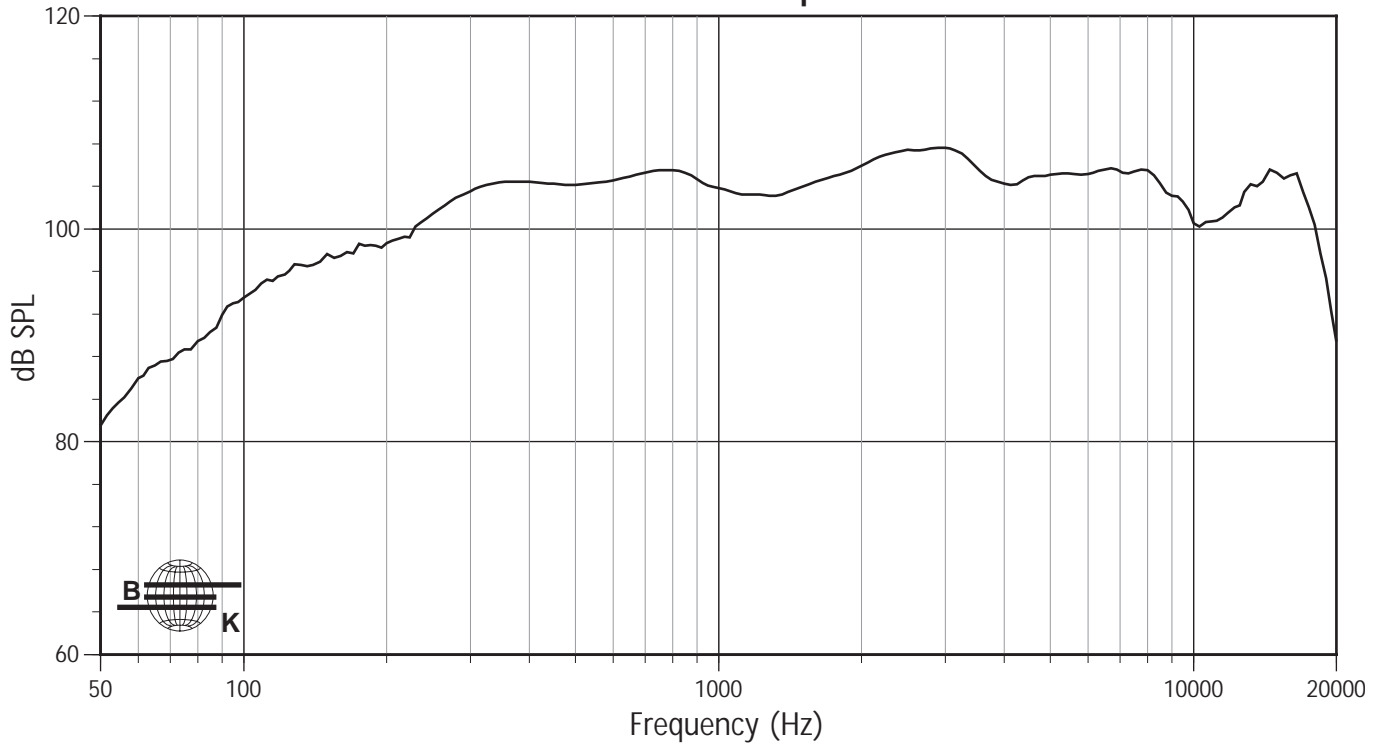
|                                                    |                     |
|----------------------------------------------------|---------------------|
| <b>MF: Complete Cone Driver</b>                    | EAW Part No. 804021 |
| <b>HF: Complete Compression Driver/Tweeter</b>     | EAW Part No. 803039 |
| <b>MF: Recone Assembly</b>                         | EAW Part No. 460010 |
| <b>HF: Diaphragm Assembly</b>                      | EAW Part No. 806019 |
| <b>Filter/Crossover Network: Complete Assembly</b> | EAW Part No. 225347 |



# PERFORMANCE SPECIFICATIONS AS490

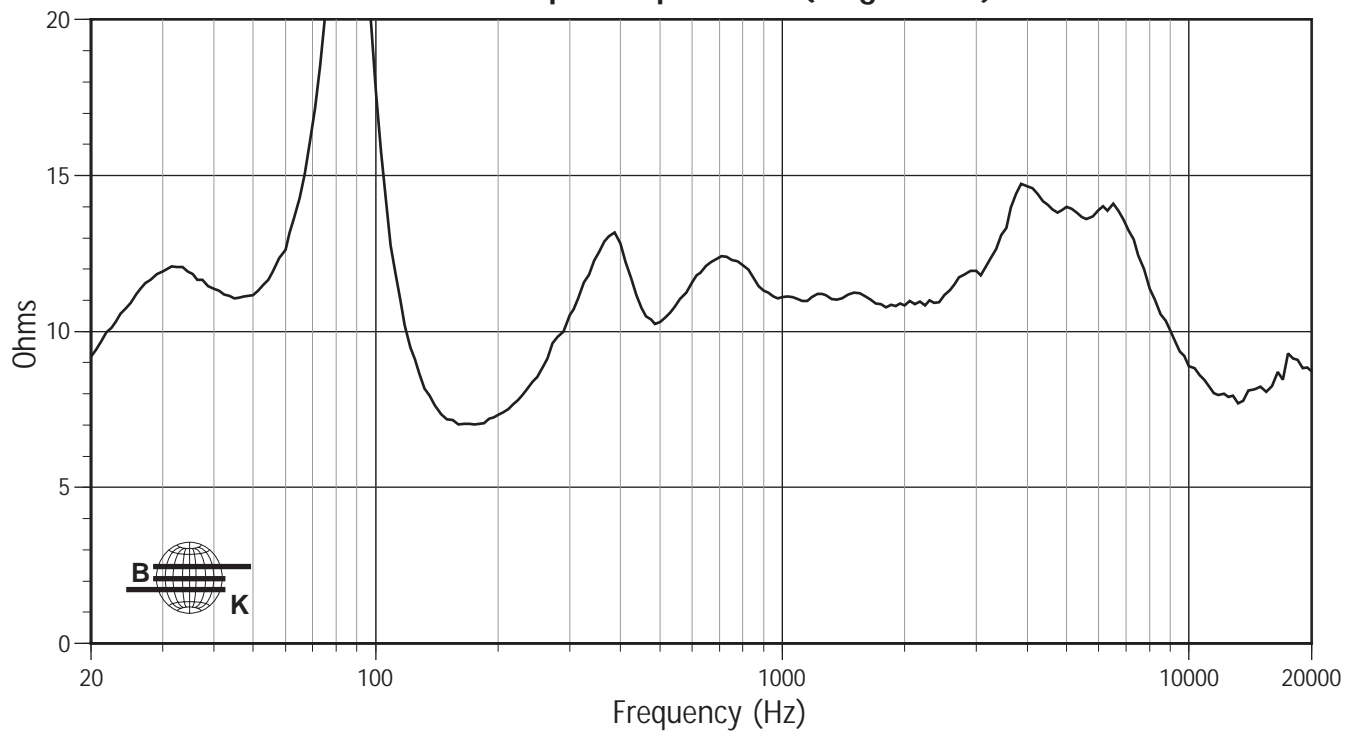
## FREQUENCY RESPONSE

### AS490 Axial Response



## INPUT IMPEDANCE

### AS490 Input Impedance (Magnitude)

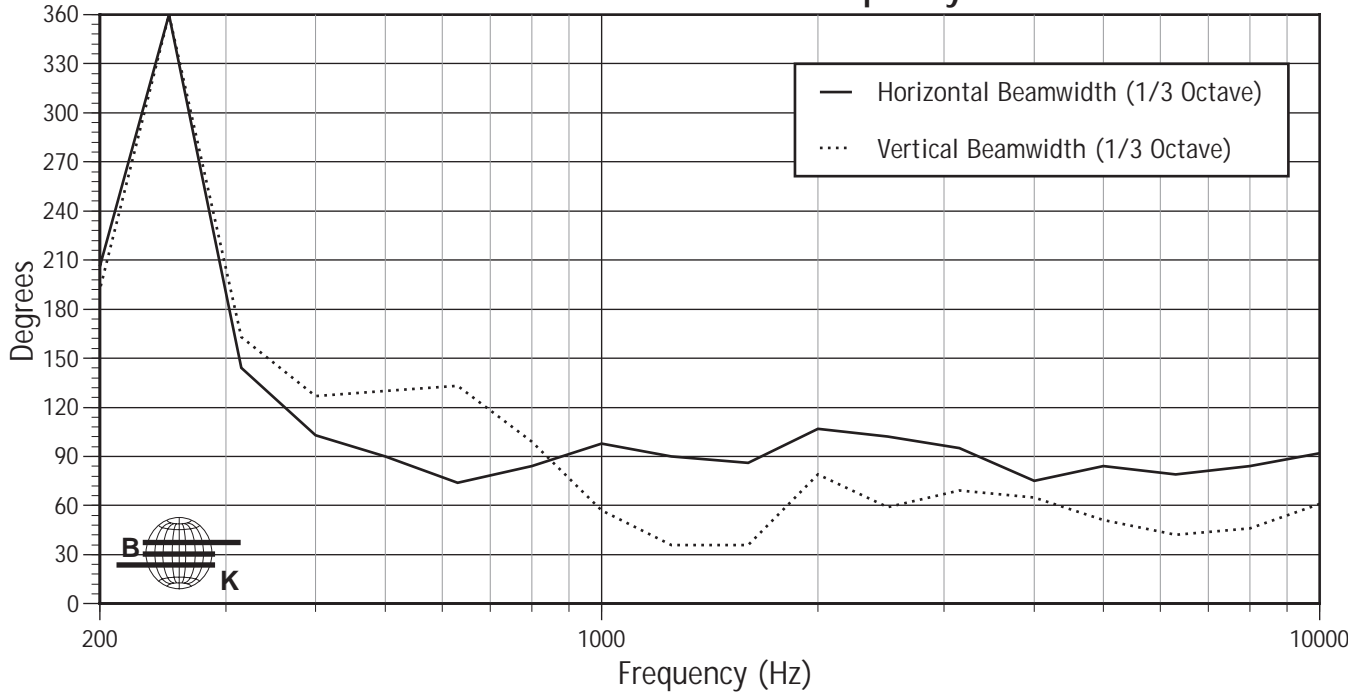




# PERFORMANCE SPECIFICATIONS AS490

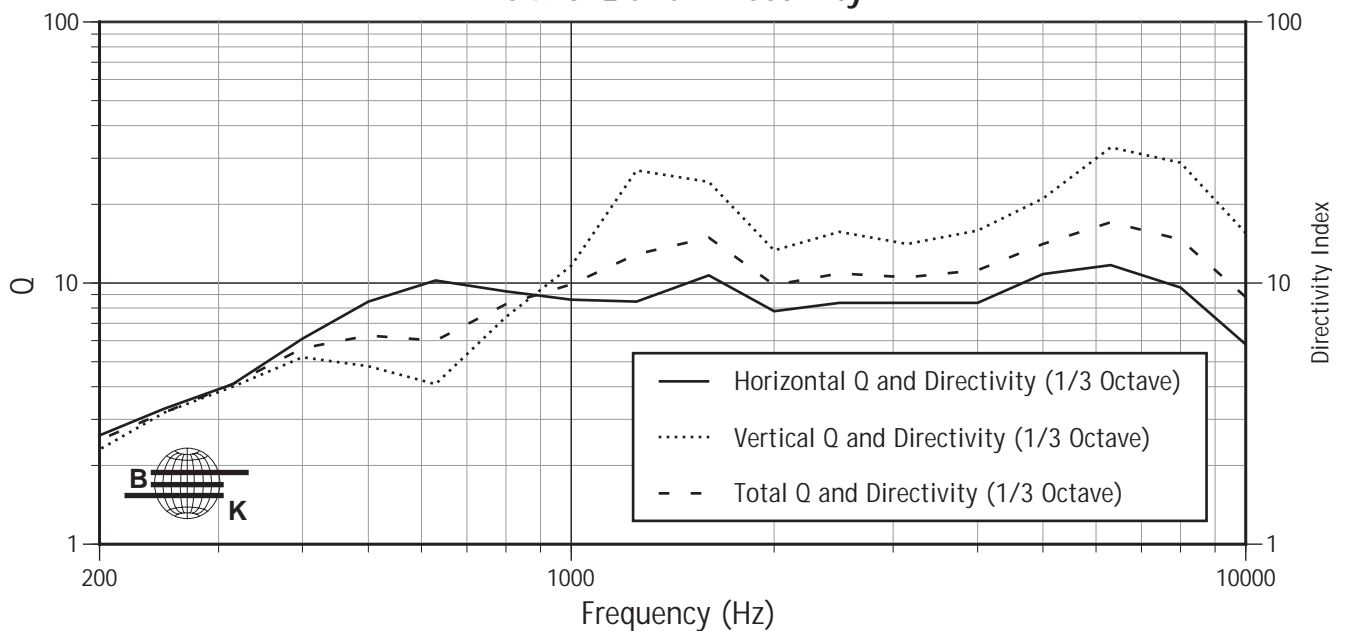
## BEAMWIDTH

### AS490 Beamwidth vs Frequency



## Q & DIRECTIVITY INDEX (DI)

### AS490 Q and Directivity





# PERFORMANCE SPECIFICATIONS AS490

## Q & DIRECTIVITY & BEAMWIDTH BY FREQUENCY

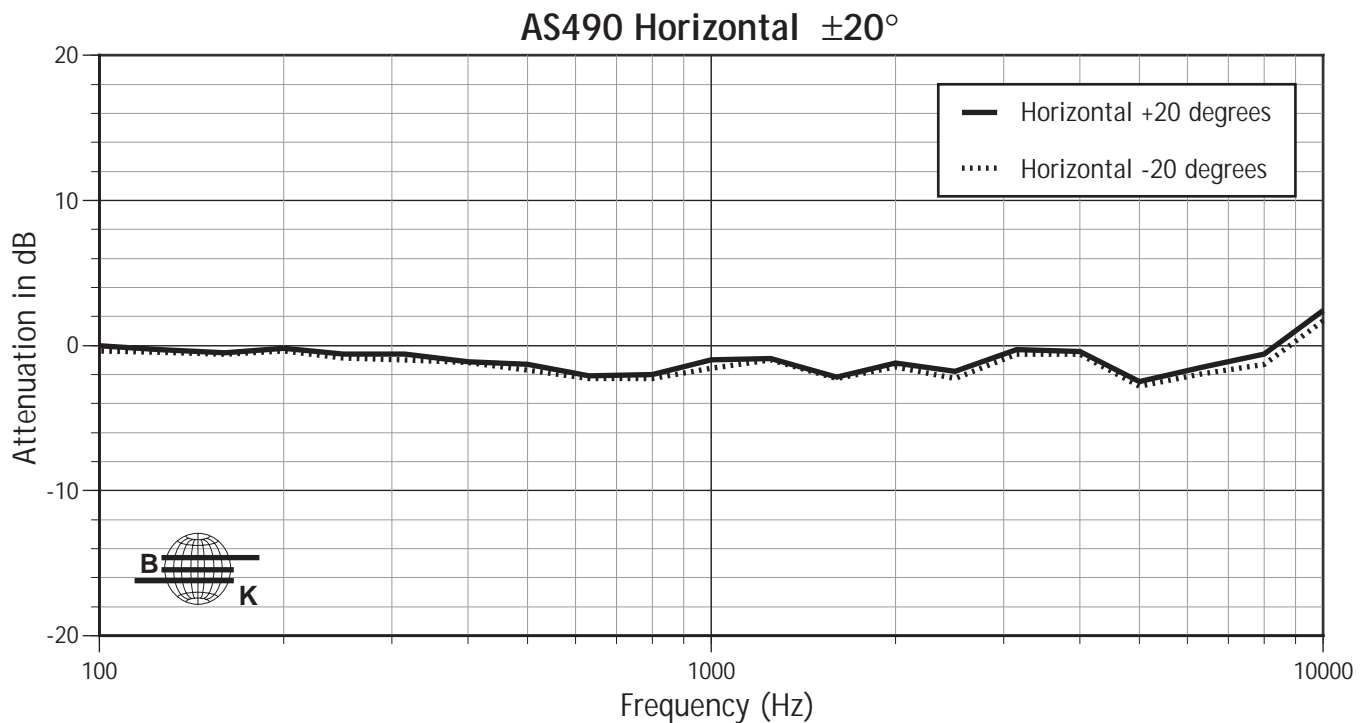
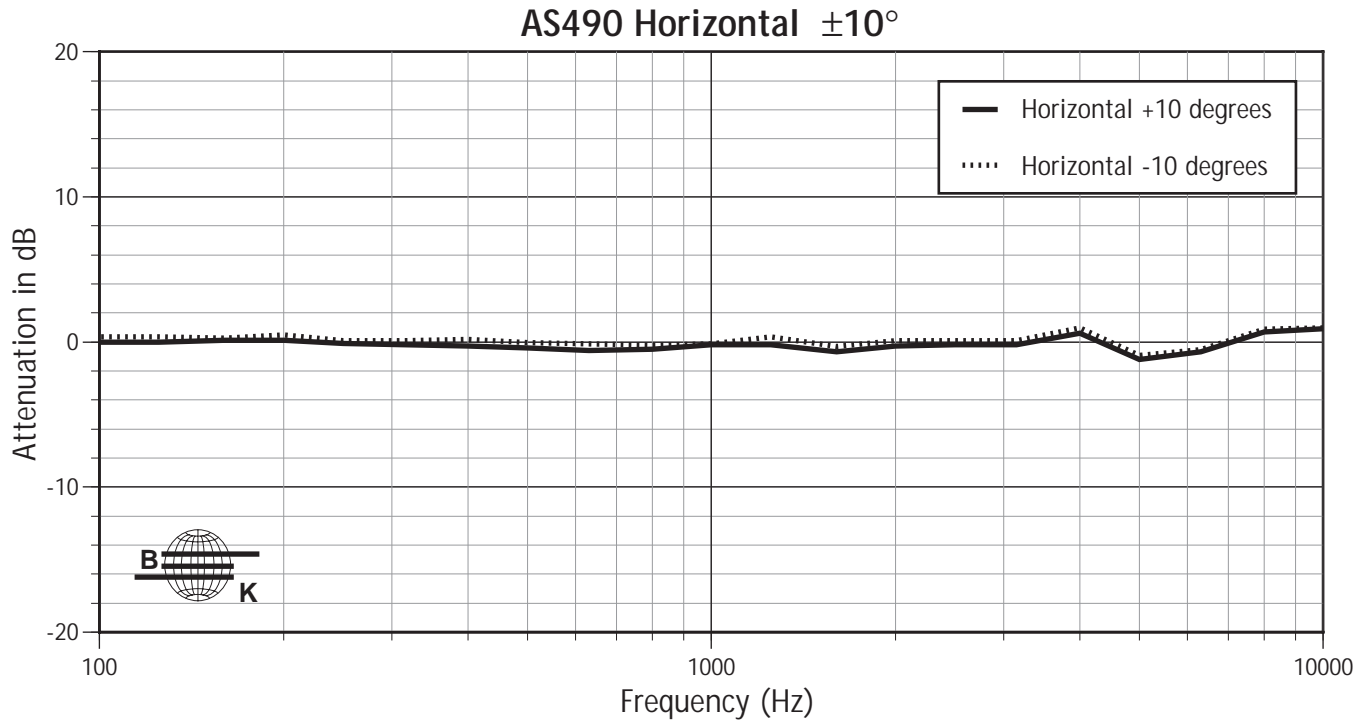
| Frequency | Hor Beamwidth | Ver Beamwidth | Hor Q & Dir | Ver Q & Dir | Tot Q & Dir |
|-----------|---------------|---------------|-------------|-------------|-------------|
| 100       | 360           | 360           | 1.6         | 1.6         | 1.6         |
| 125       | 360           | 360           | 1.5         | 1.4         | 1.4         |
| 160       | 351           | 360           | 3.1         | 2.3         | 2.6         |
| 200       | 206           | 192           | 2.6         | 2.3         | 2.5         |
| 250       | 360           | 360           | 3.3         | 3.2         | 3.2         |
| 315       | 144           | 163           | 4.1         | 4           | 4.1         |
| 400       | 103           | 127           | 6.1         | 5.2         | 5.6         |
| 500       | 90            | 130           | 8.5         | 4.8         | 6.3         |
| 630       | 74            | 133           | 10.2        | 4.1         | 6           |
| 800       | 84            | 99            | 9.3         | 7.4         | 8.3         |
| 1000      | 98            | 57            | 8.6         | 11.6        | 9.9         |
| 1250      | 90            | 36            | 8.5         | 26.9        | 12.9        |
| 1600      | 86            | 36            | 10.7        | 24.3        | 14.9        |
| 2000      | 107           | 79            | 7.8         | 13.3        | 9.8         |
| 2500      | 102           | 59            | 8.4         | 15.7        | 10.9        |
| 3150      | 95            | 69            | 8.4         | 14.1        | 10.5        |
| 4000      | 75            | 65            | 8.4         | 15.9        | 11.2        |
| 5000      | 84            | 51            | 10.8        | 21          | 14.1        |
| 6300      | 79            | 42            | 11.7        | 33          | 17.1        |
| 8000      | 84            | 46            | 9.6         | 28.8        | 14.7        |
| 10000     | 92            | 61            | 5.8         | 15.5        | 8.8         |
| 12500     | 74            | 49            | 12.6        | 29.8        | 17.3        |
| 16000     | 37            | 37            | 31.7        | 42.2        | 35.9        |
| 20000     | 38            | 38            | 28.4        | 44.7        | 34.4        |



# PERFORMANCE SPECIFICATIONS AS490

## HORIZONTAL OFF-AXIS RESPONSE

On-axis response normalized to 0 dB.

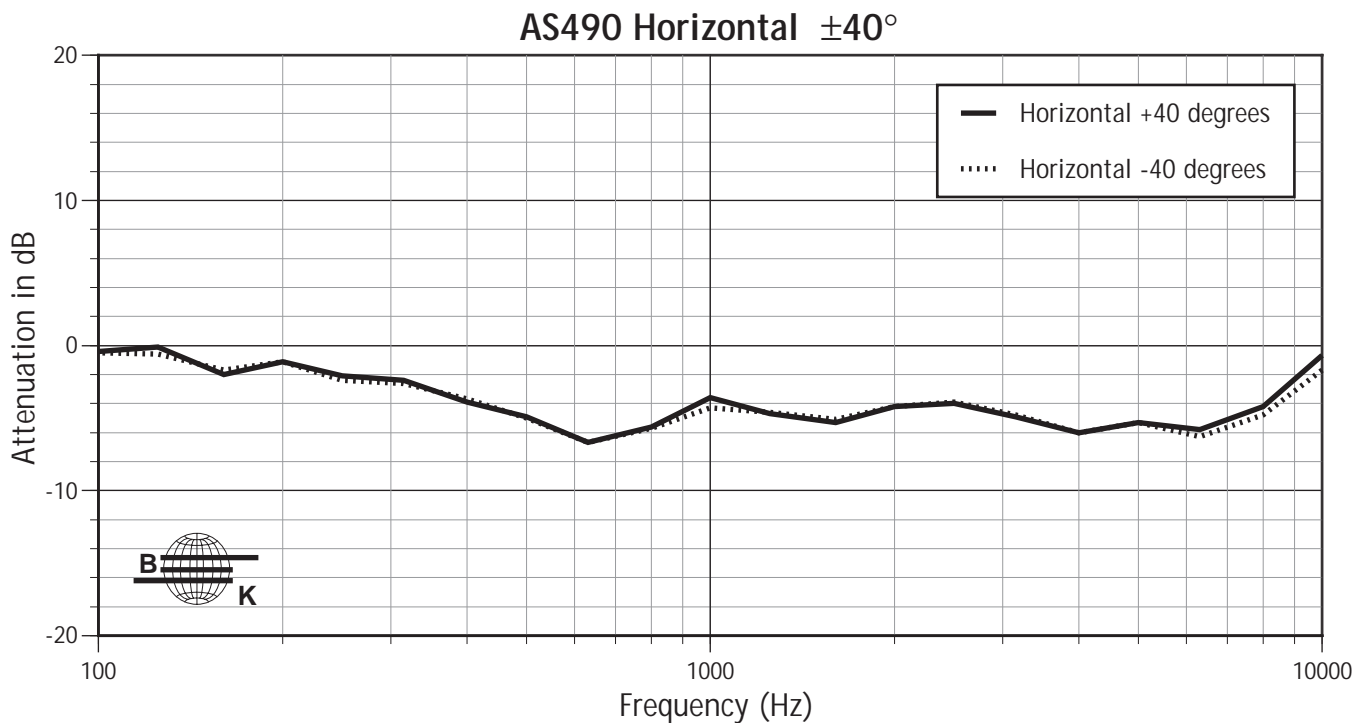
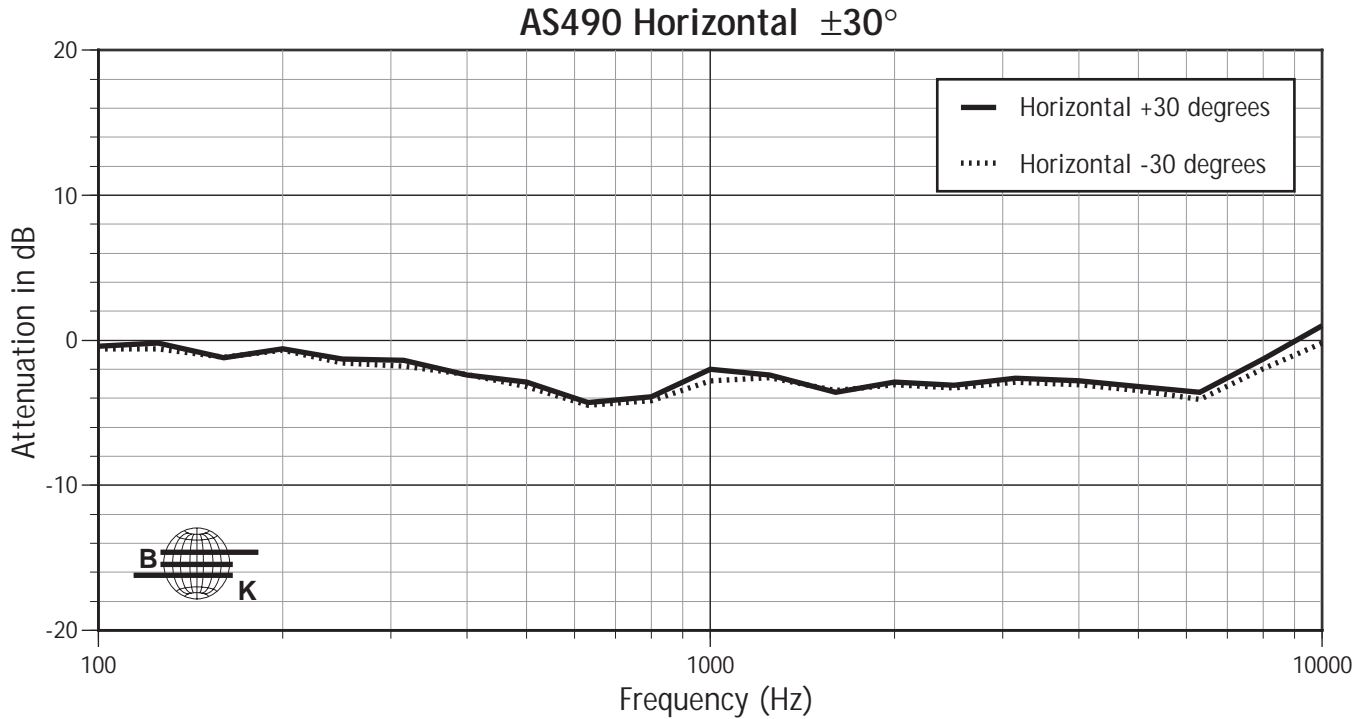




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## HORIZONTAL OFF-AXIS RESPONSE

On-axis response normalized to 0 dB.



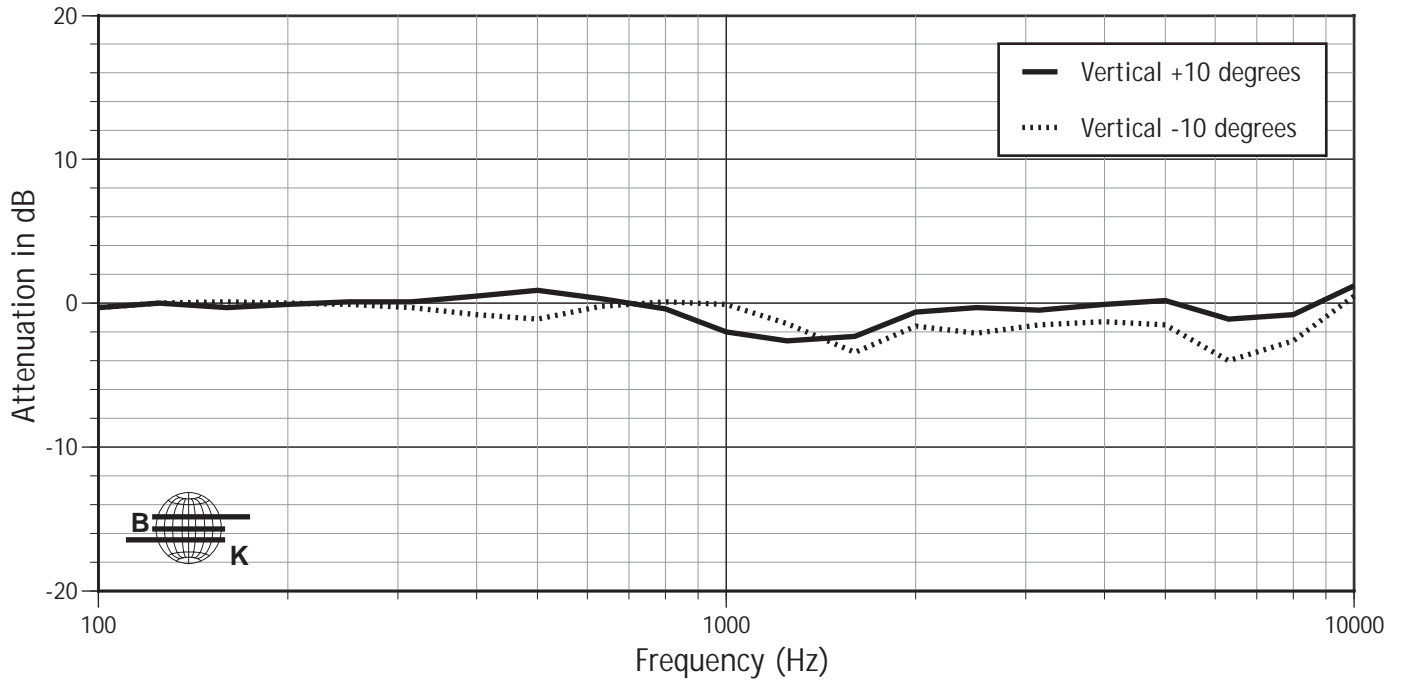


# PERFORMANCE SPECIFICATIONS AS490

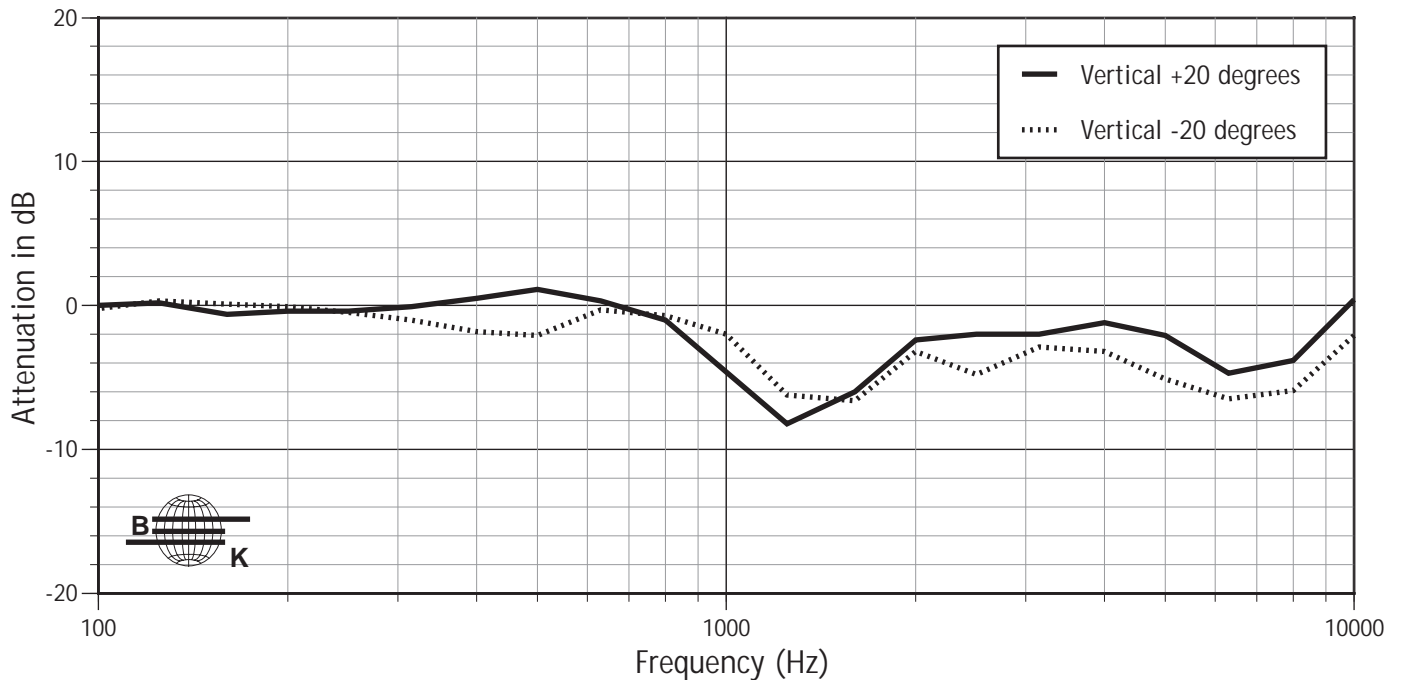
## VERTICAL OFF-AXIS RESPONSE

On-axis response normalized to 0 dB.

### AS490 Vertical $\pm 10^\circ$



### AS490 Vertical $\pm 20^\circ$

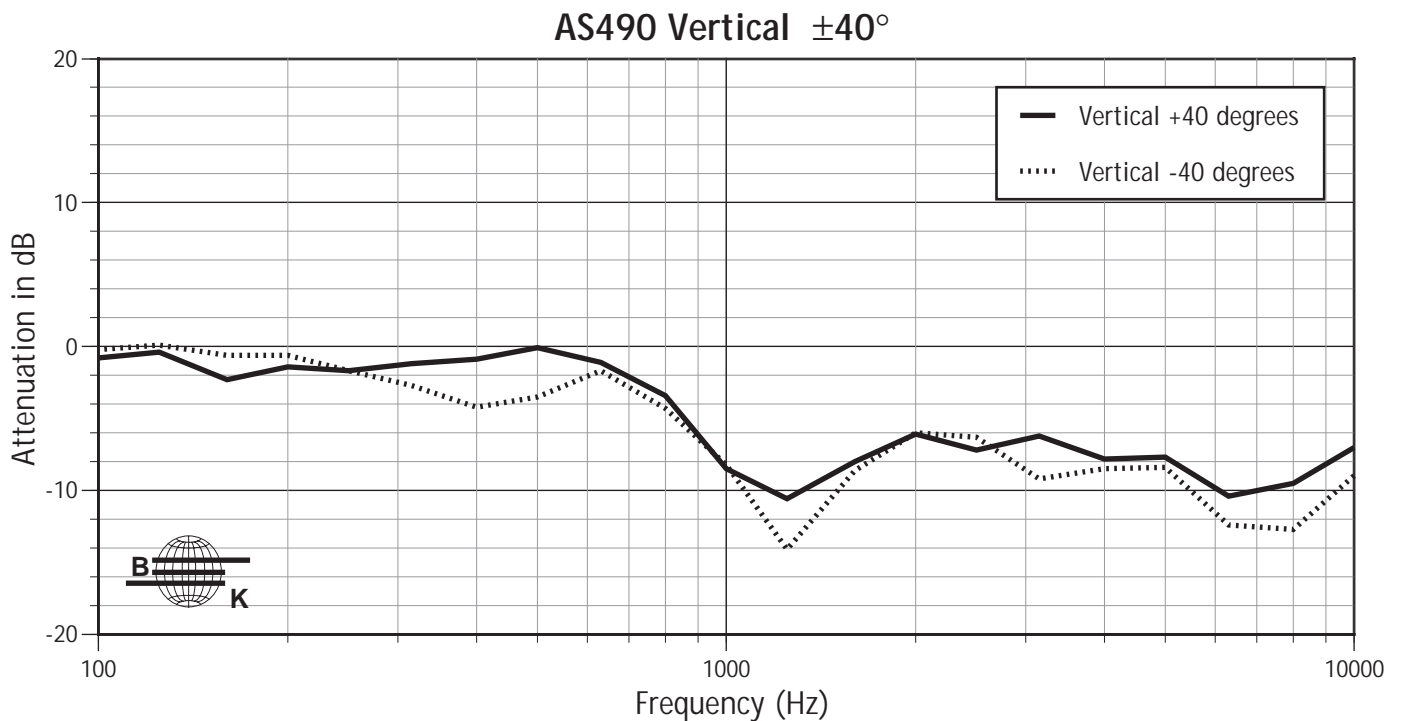
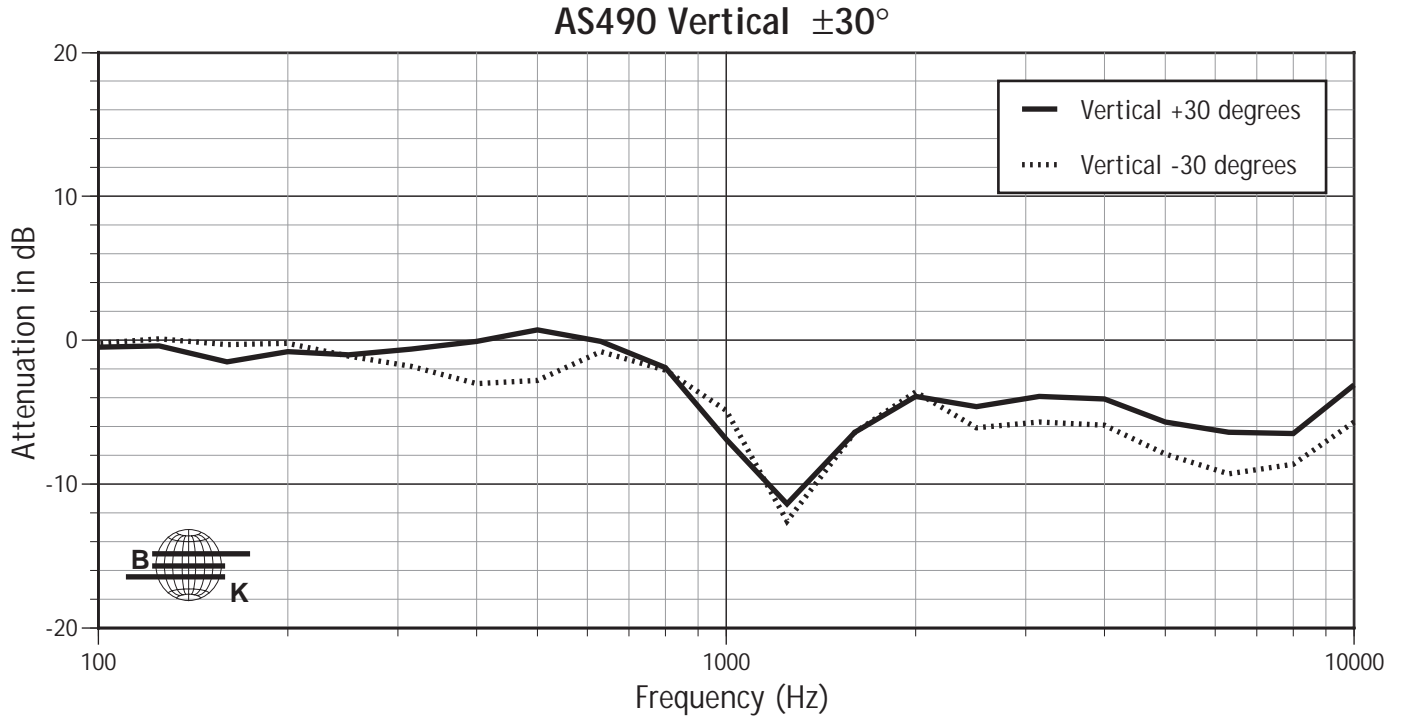




# PERFORMANCE SPECIFICATIONS AS490

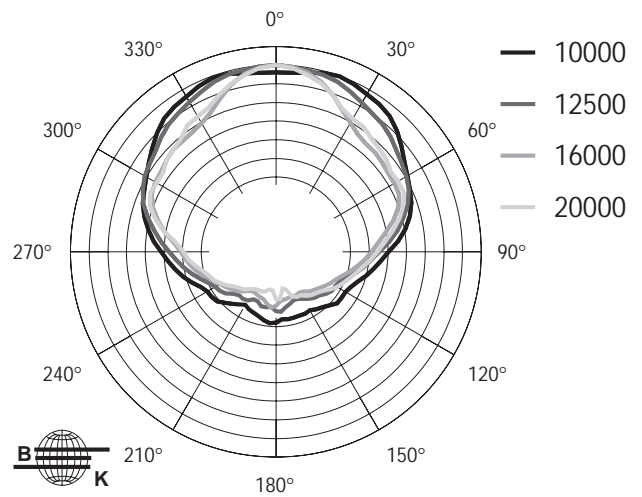
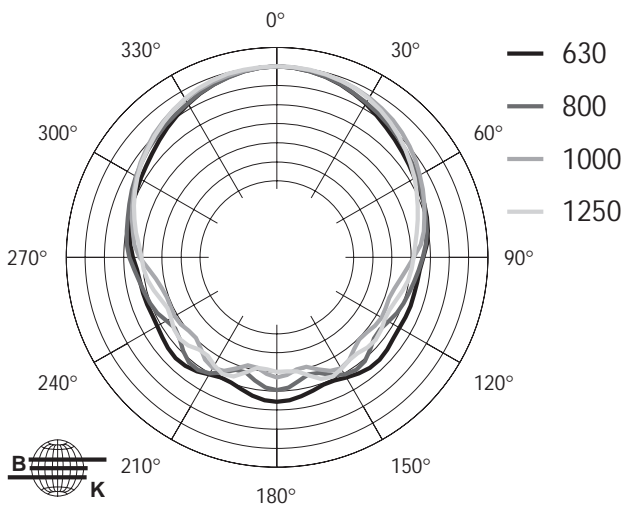
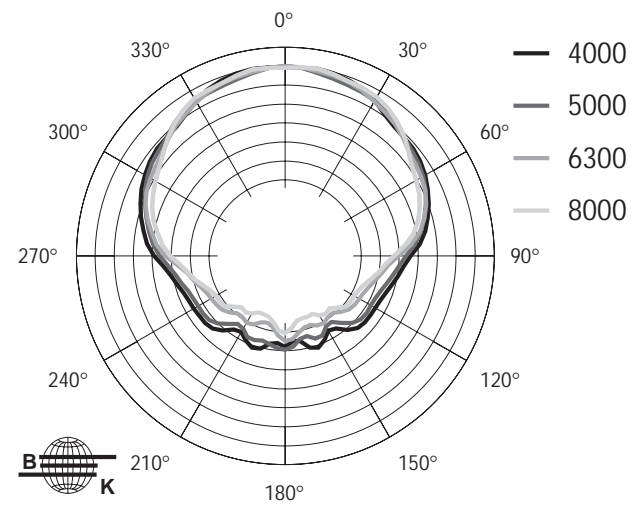
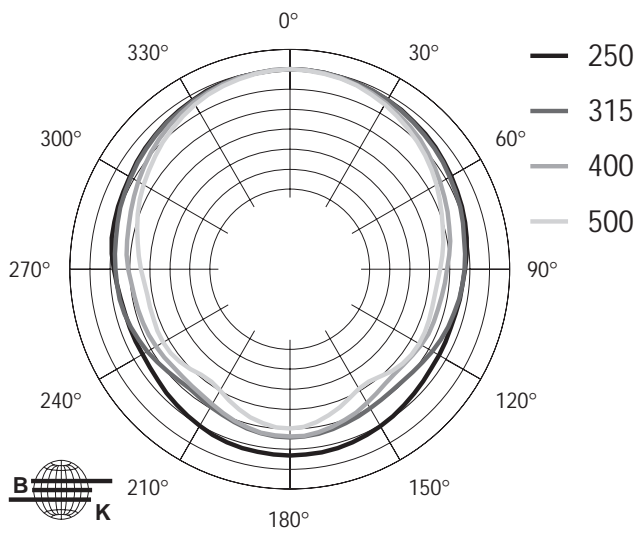
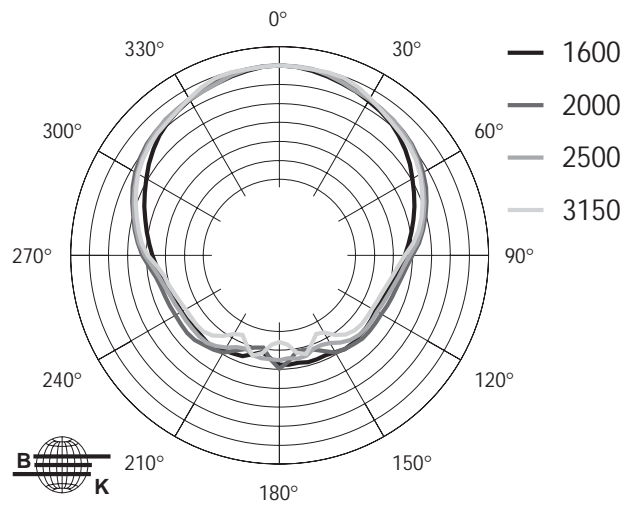
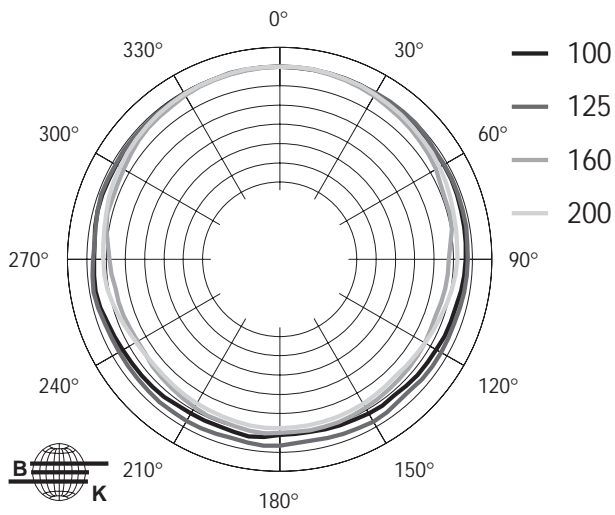
## VERTICAL OFF-AXIS RESPONSE

On-axis response normalized to 0 dB.





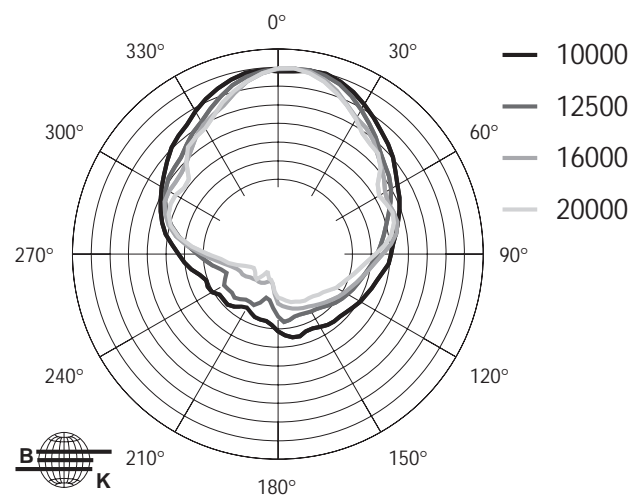
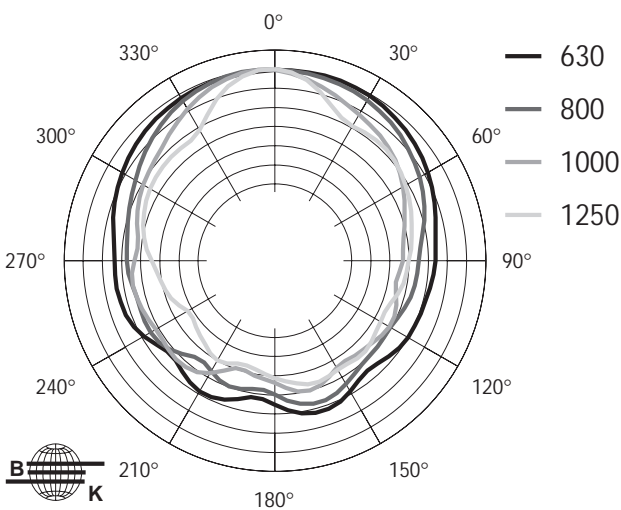
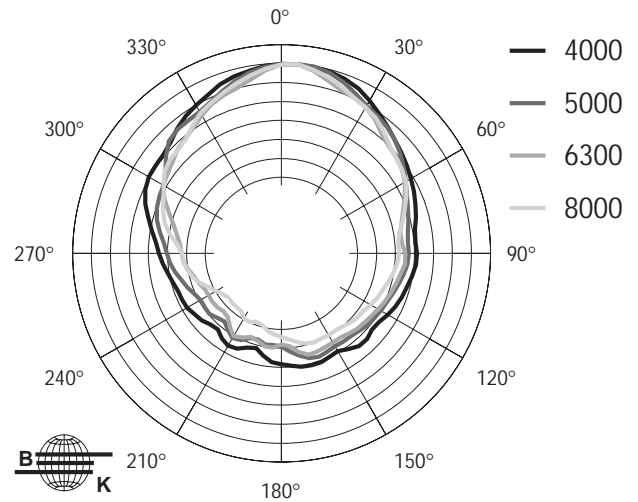
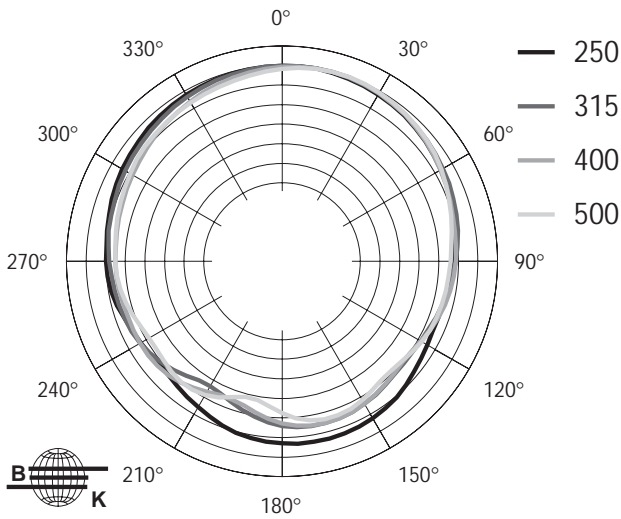
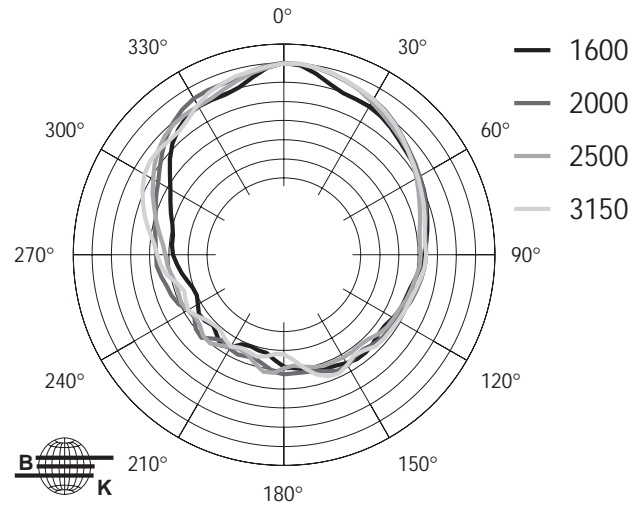
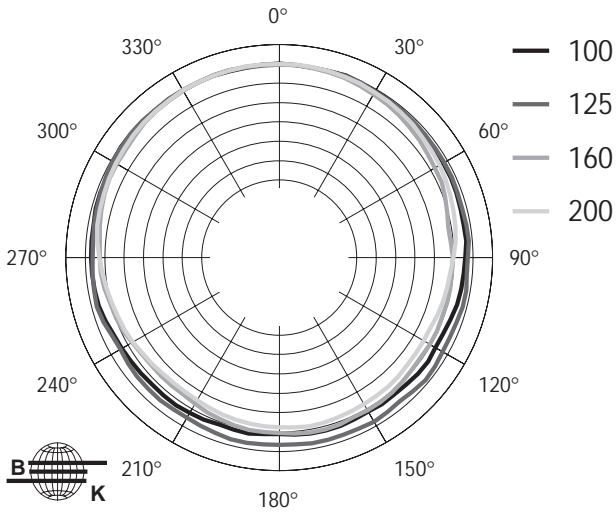
# HORIZONTAL 1/3 OCTAVE POLAR DATA AS490



6 db/div.



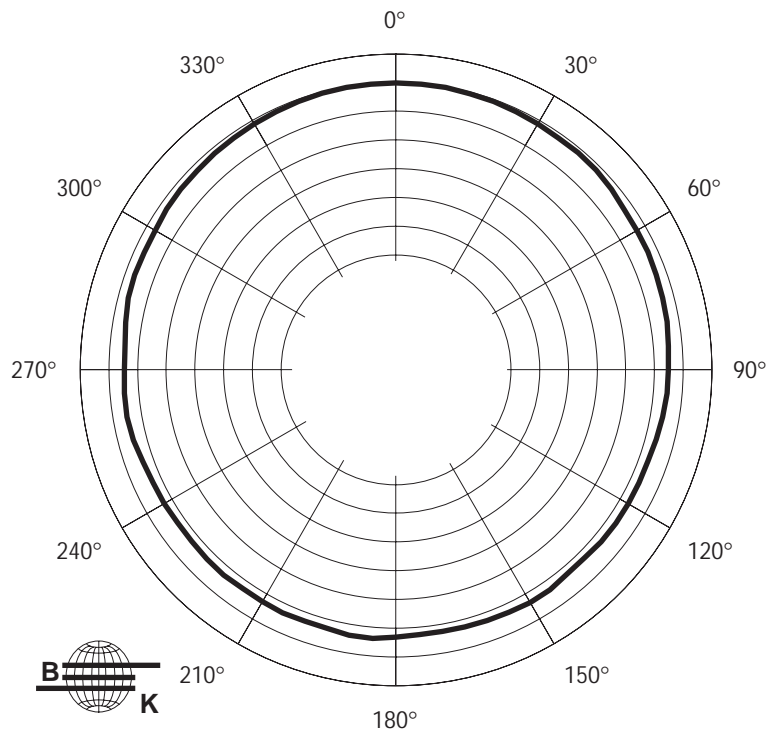
# VERTICAL 1/3 OCTAVE POLAR DATA AS490



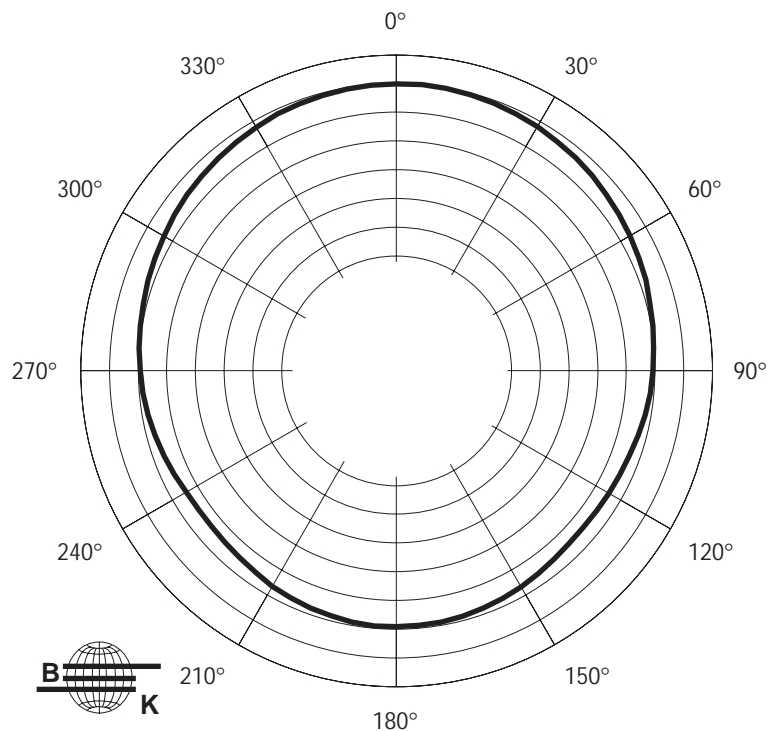


# HORIZONTAL OCTAVE POLAR DATA AS490

## AS490 125 Hz Horizontal Octave Polar Data



## AS490 250 Hz Horizontal Octave Polar Data

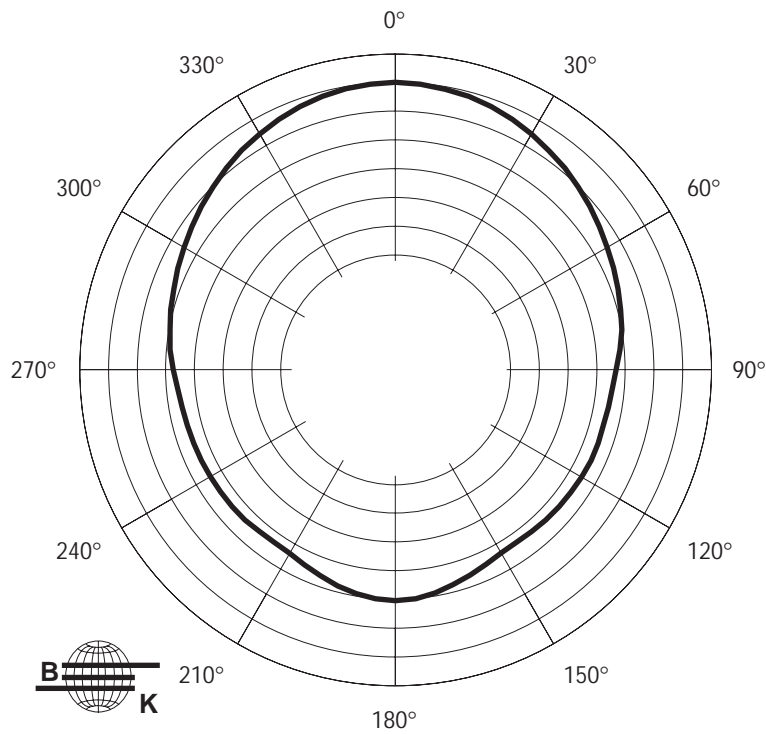


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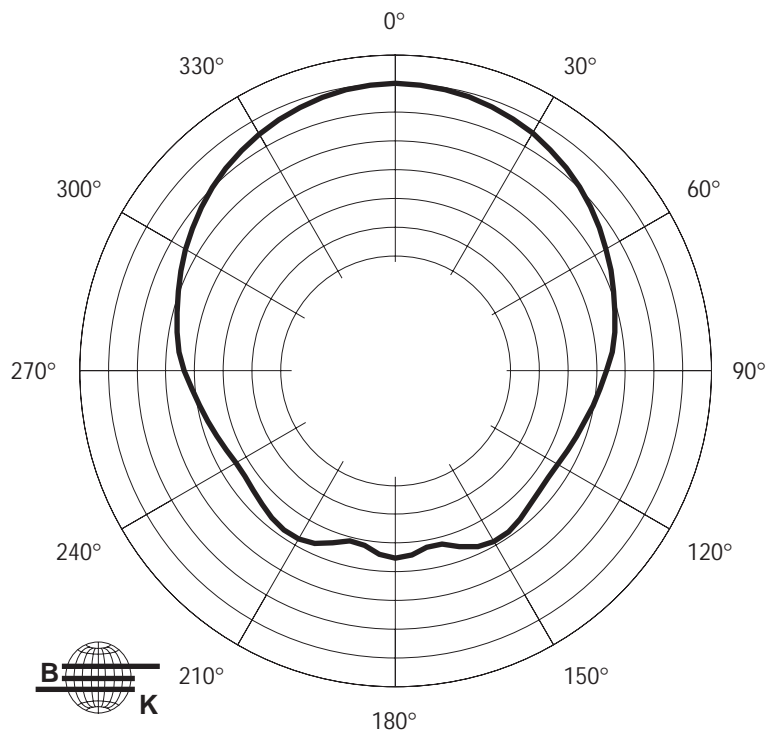


# HORIZONTAL OCTAVE POLAR DATA AS490

## AS490 500 Hz Horizontal Octave Polar Data



## AS490 1000 Hz Horizontal Octave Polar Data

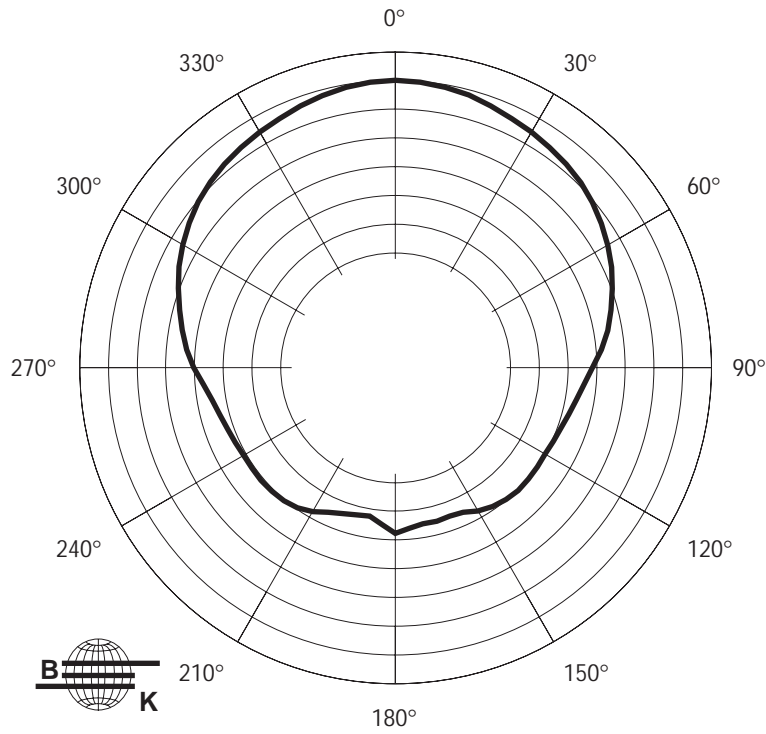


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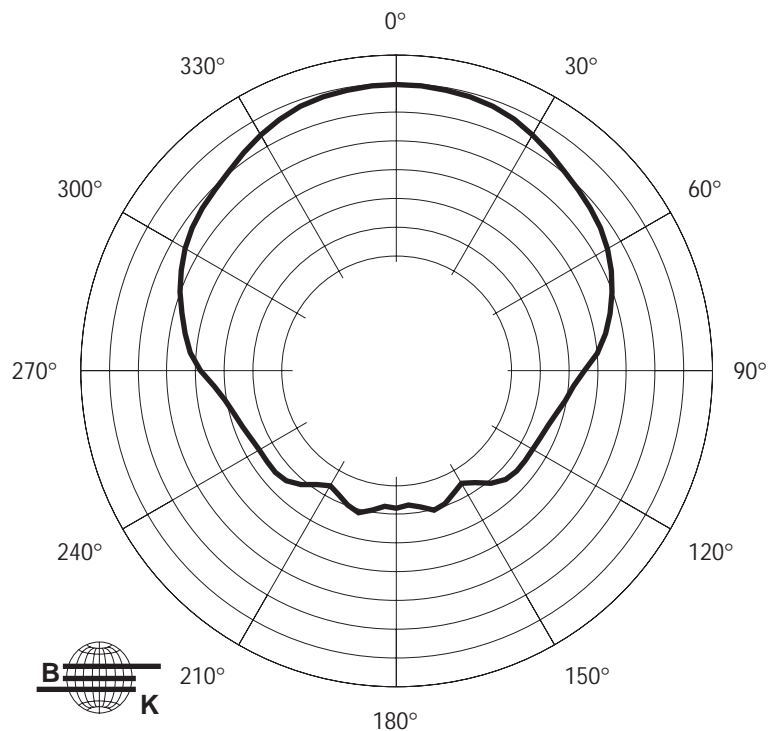


# HORIZONTAL OCTAVE POLAR DATA AS490

## AS490 2000 Hz Horizontal Octave Polar Data



## AS490 4000 Hz Horizontal Octave Polar Data

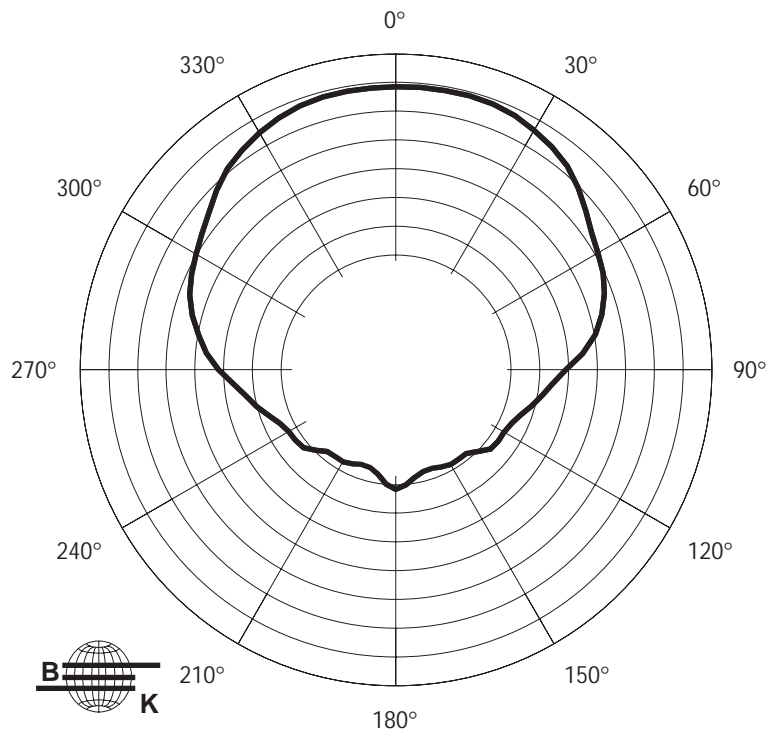


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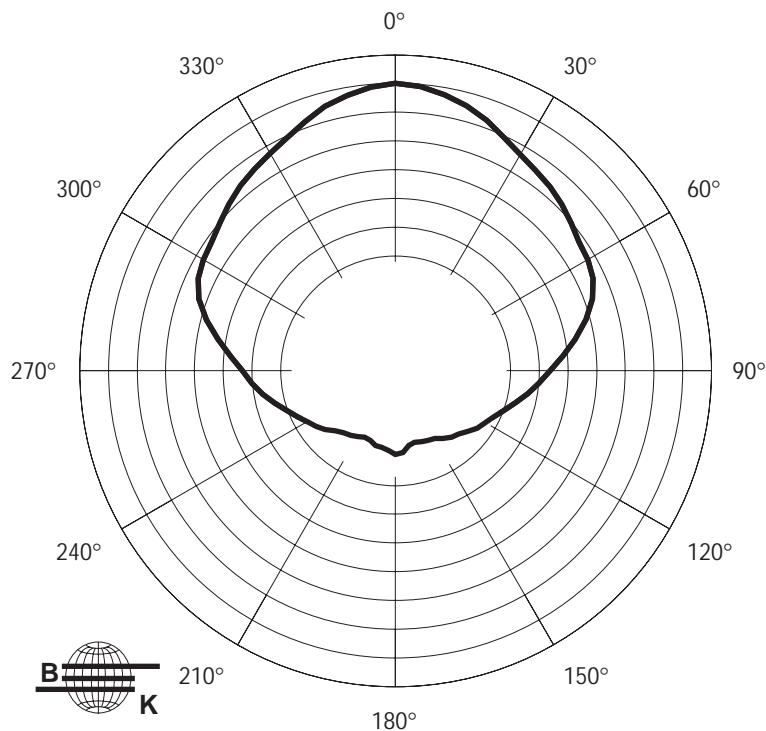


# HORIZONTAL OCTAVE POLAR DATA AS490

## AS490 8000 Hz Horizontal Octave Polar Data



## AS490 16000 Hz Horizontal Octave Polar Data

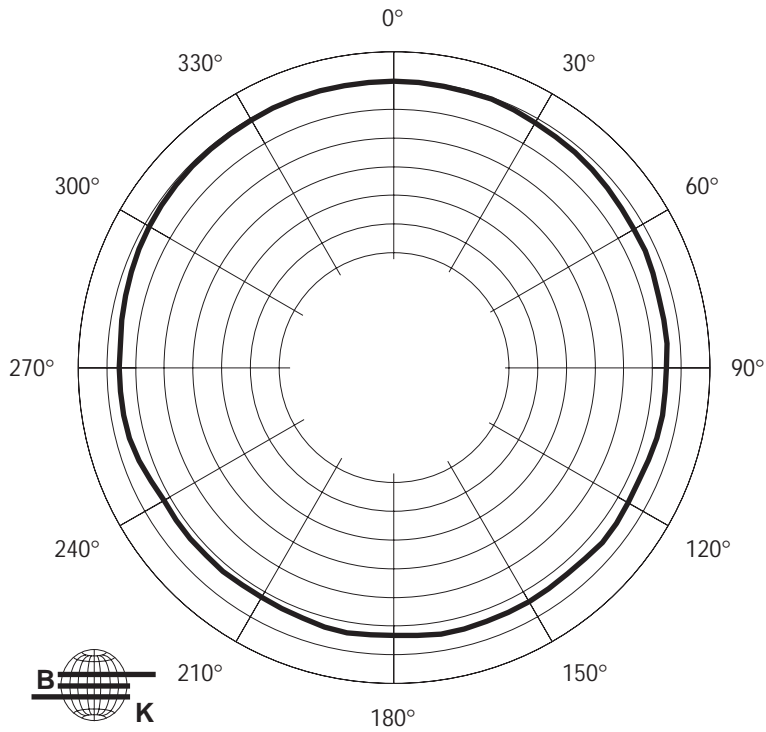


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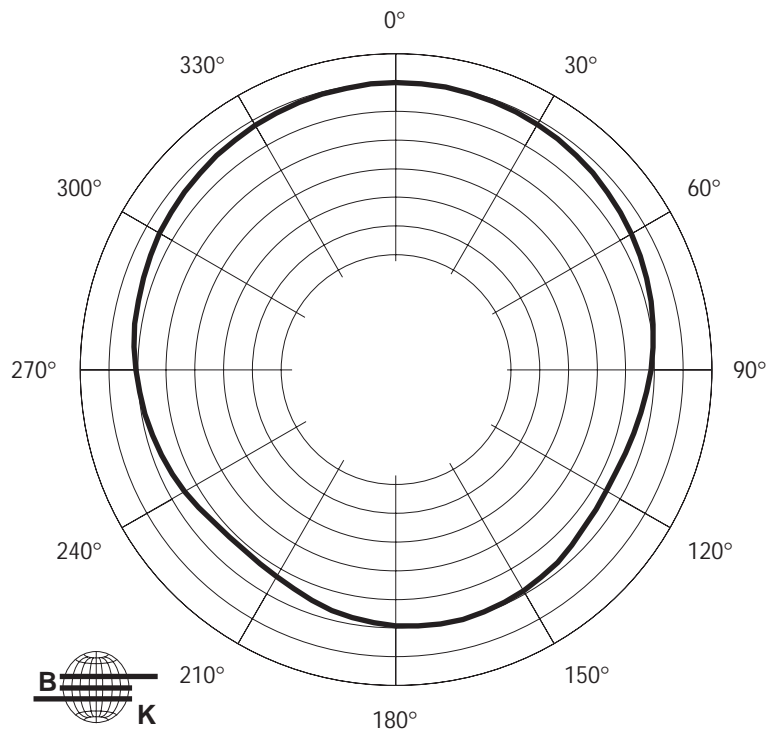


# VERTICAL OCTAVE POLAR DATA AS490

## AS490 125 Hz Vertical Octave Polar Data



## AS490 250 Hz Vertical Octave Polar Data

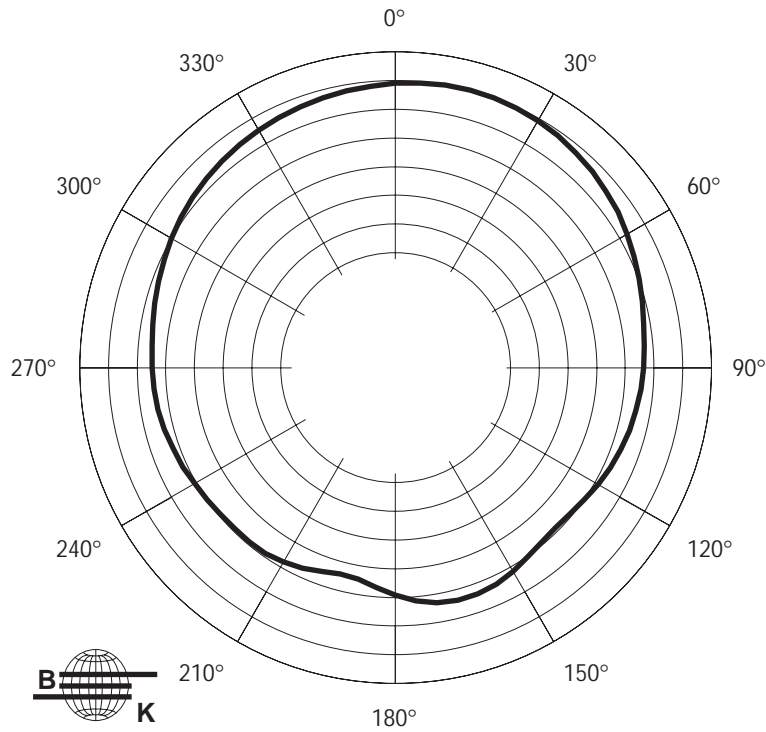


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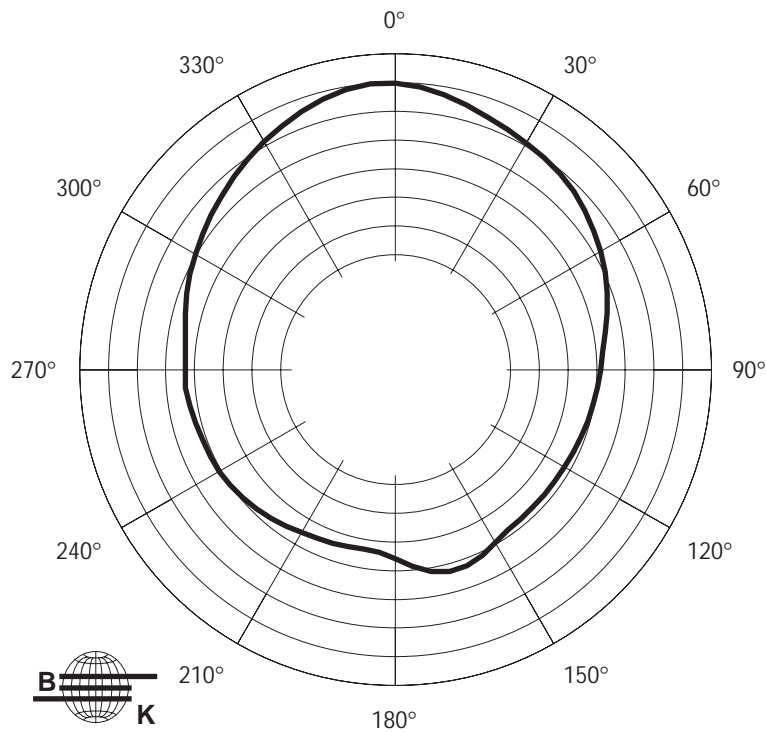


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## AS490 500 Hz Vertical Octave Polar Data



## AS490 1000 Hz Vertical Octave Polar Data

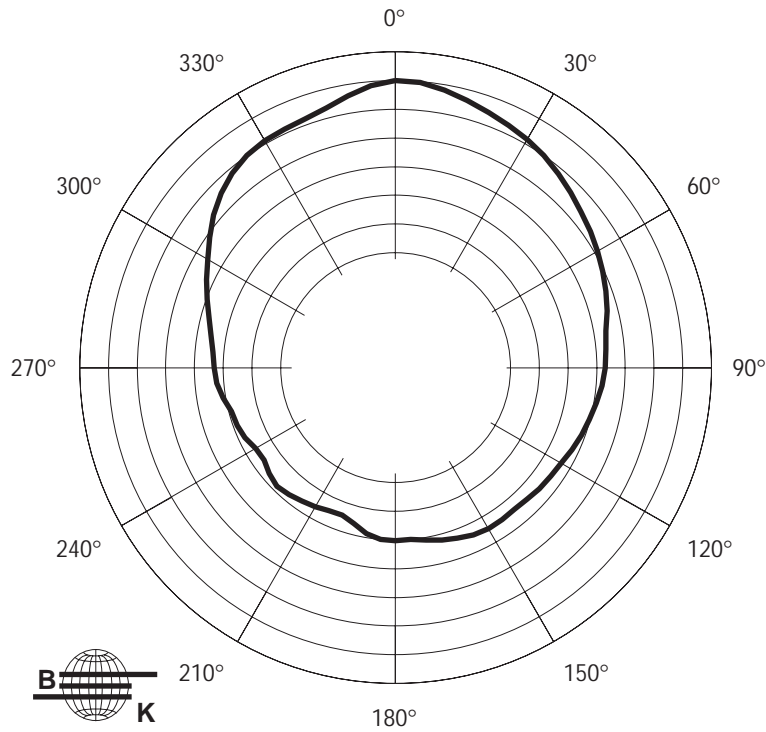


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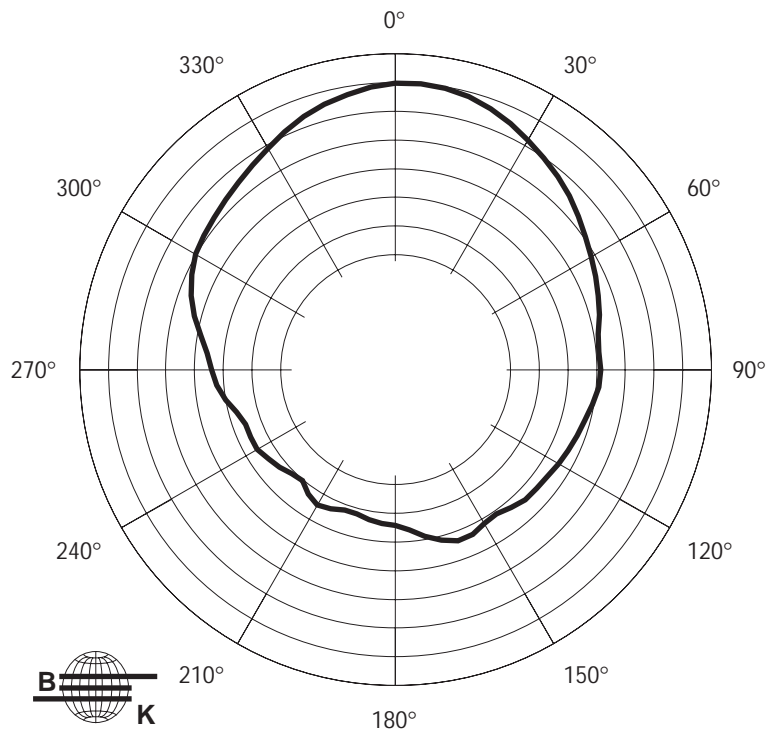


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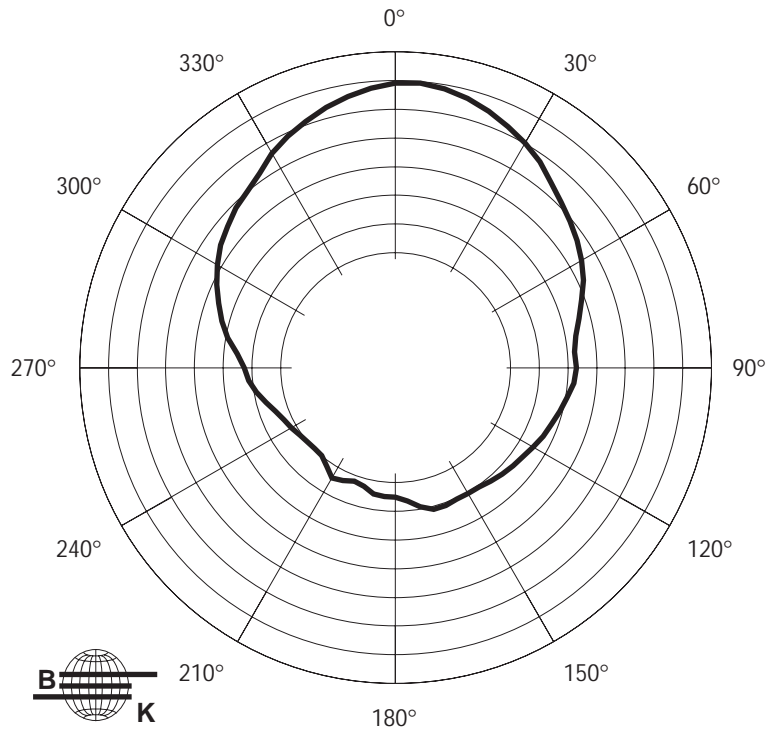


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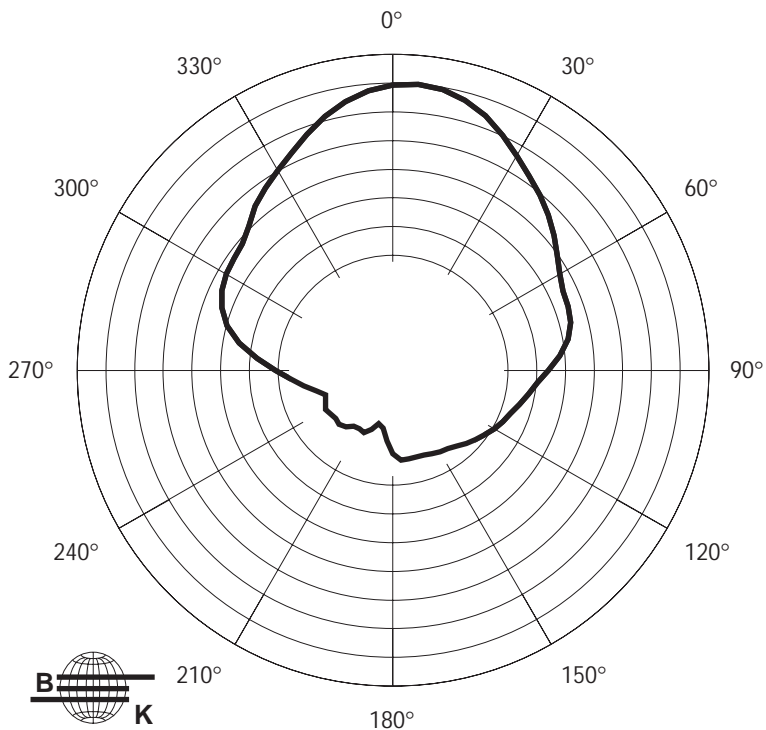


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