



# TECHNICAL SPECIFICATIONS MQ1394

## DESCRIPTION

- Mid/High VA4 loudspeaker system
- Optimized for permanent installation only
- Horn-loaded 10-in cones with VA4 phase plug
- 2-in exit/75mm voice coil compression driver on constant directivity horn

The new MQ Series represents the next generation of permanent installation loudspeaker systems. Using VA4 Technology developed for the new KF700 Series, the MQ range replaces the MH and BV ranges of Virtual Array systems. The Series comprises matched sets of mid/high and low frequency enclosures that enjoy complementary dimensions and trapezoid angles to facilitate the creation of optimized-coverage arrays.

The MQ1394 uses a horn-loaded 10-in midrange cone with a specially designed geometry that produces a time-coherent wavefront through the upper portion of the midrange that is critical to vocal articulation. A phase plug with radial slots then serves to reduce the mechanical reactance of the subsystem without affecting the directivity of the source, allowing for flawless arraying of multiple MQ mid/high modules.

A high power 2-in exit/75mm voice coil high frequency compression driver is mounted on a constant directivity horn for consistent, accurate dispersal of HF information. The MQ1394 provides a nominal coverage pattern of 90° (h) x 40° (v).

## APPLICATION

The MQ1394 mid/high module works with the MQ1312 triple 12-in low frequency module to create arrays for use in a wide variety of permanently installed applications.

The most common array configuration is 2x MQ1394's separated by a single MQ1312. Unlike most other 90° horizontal coverage array modules, the MQ1394 is designed to tight pack with the MQ1312 to achieve optimal coverage. This provides an excellent center channel array for large, fan-shaped venues that use an L/C/R configuration.

All MQ Series enclosures feature a comprehensive system of 3/8"-16 threaded mounting points for maximum flexibility when suspending arrays overhead.

Applications include:

- Large House of Worship
- Arena
- Stadium
- Theater
- Performing Arts Center



## DESCRIPTIVE DATA

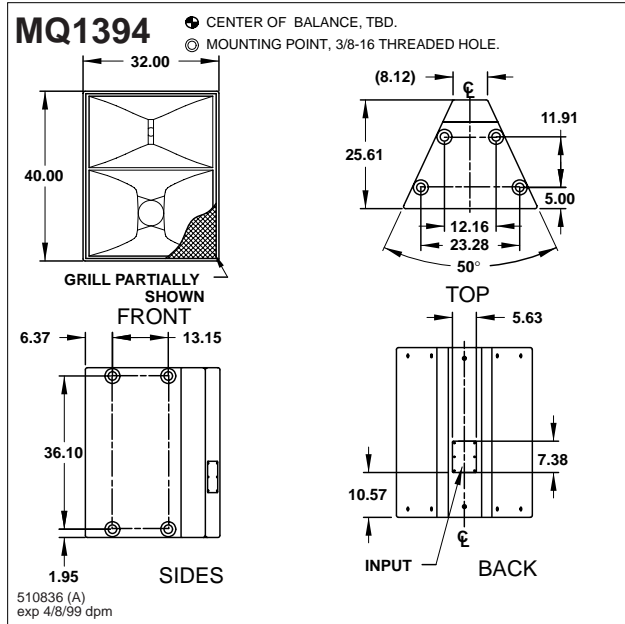
Configuration	Mid/High	
Powering	Bi-amplified	
MF Subsystem	1 x 10-in Horn-Loaded Cone, Radial Phase Plug	
HF Subsystem	1x 2-in Exit/75mm Voice Coil Compression Driver on Constant Directivity Horn	
Cabinet Type (shape)	Trapezoid	
Enclosure Materials	Baltic Birch Plywood	
Finish	Black Polyurethane	
Connectors	4-Terminal Barrier Strip & 1x Neutrik NL4 Speakon	
Suspension Hardware	(16) 3/8"-16 Threaded Mounting Suspension Points (4 each top, bottom and sides)	
Grill	Powder Coated Perforated Steel	
<b>Dimensions</b>	<b>inches    millimeters</b>	
	Height	40.00    1016
	Width (front)	32.00    813
	Width (rear)	8.12    206
	Depth	25.61    650
Trapezoid Angle	50°	
<b>Weights</b>	<b>pounds    kilograms</b>	
	Net Weight	148    67.3
	Shipping Weight	156    71.0
<b>Companion Systems</b>		
Sub Bass	SB528, BH822e	
LF	MQ1312	





# TECHNICAL SPECIFICATIONS MQ1394

## DIMENSIONAL DRAWINGS



## NOMINAL DATA

### Frequency Response (1 W @ 1m)

±3 dB	190 Hz to 19 kHz
-10 dB	145 Hz

### Axial Sensitivity (dB SPL, 1 Watt @ 1m)

MF	108.5
HF	110.5

### Impedance (Ohms)

MF	8
HF	8

### Power Handling, AES Standard (Watts)

MF	400
HF	200

### Calculated Maximum Output (dB SPL)

MF Peak	140.5
HF Peak	139.5
MF Long Term	134.5
HF Long Term	133.5

### Nominal Coverage Angle/-6 dB points (degrees)

Horizontal	90
Vertical	40

### Recommended High-Pass Frequency

24 dB/Octave	190 Hz
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## ARCHITECTURAL SPECIFICATIONS

The two-way mid/high loudspeaker system shall incorporate a 10-in cone MF transducer and a 2-in exit compression driver HF transducer.

The MF driver shall be loaded into a midrange horn constructed of 3mm birch plywood reinforced with high density polyurethane foam. The MF horn shall incorporate a phase/displacement plug. The HF driver shall be loaded on constant directivity horn with a nominal coverage pattern of 90° (h) x 40° (v). An internal passive filter network shall provide system equalization.

System frequency response shall vary no more than ±3 dB from 190 Hz to 19 kHz measured on axis. The midrange frequency section shall produce a Sound Pressure Level (SPL) of 108.5 dB SPL on axis at 1 meter with a power input of 1 Watt, and shall be capable of producing a peak output of 140.5 dB SPL on axis at 1 meter. The high frequency section shall produce a Sound Pressure Level (SPL) of 110.5 dB SPL on axis at 1 meter with a power input of 1 Watt, and shall be capable of producing a peak output of 139.5 dB SPL on axis at 1 meter. The midrange frequency section shall handle 400 Watts of amplifier power (AES Standard) and shall have a nominal impedance of 8 Ohms. The high frequency section shall handle 200 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 catalyzed polyurethane. Input connectors shall be 4-terminal barrier strip and one Neutrik NL4 Speakon. A total of sixteen 3/8"-16 threaded mounting/suspension points (4 each top, bottom and sides) shall be provided. The front of the loudspeaker shall be covered with a powder coated perforated steel grill.

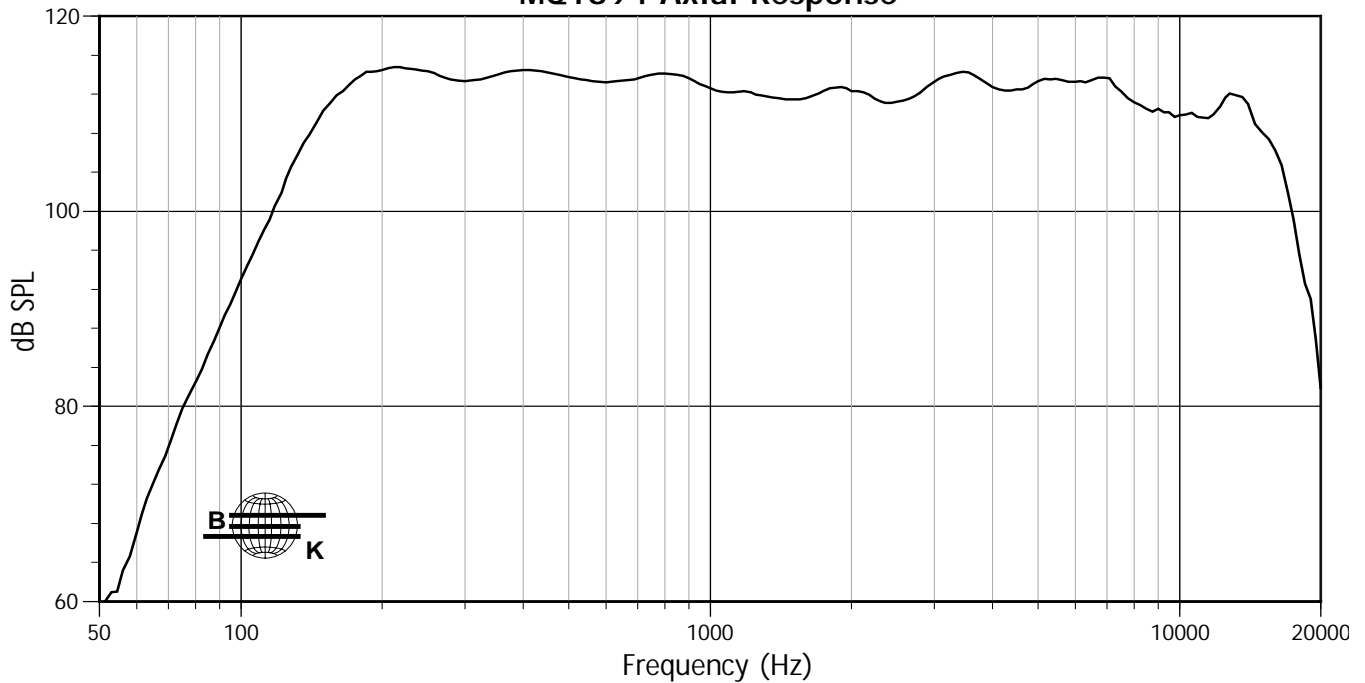
The two-way mid/high loudspeaker shall be the EAW model MQ1394.



# PERFORMANCE SPECIFICATIONS MQ1394

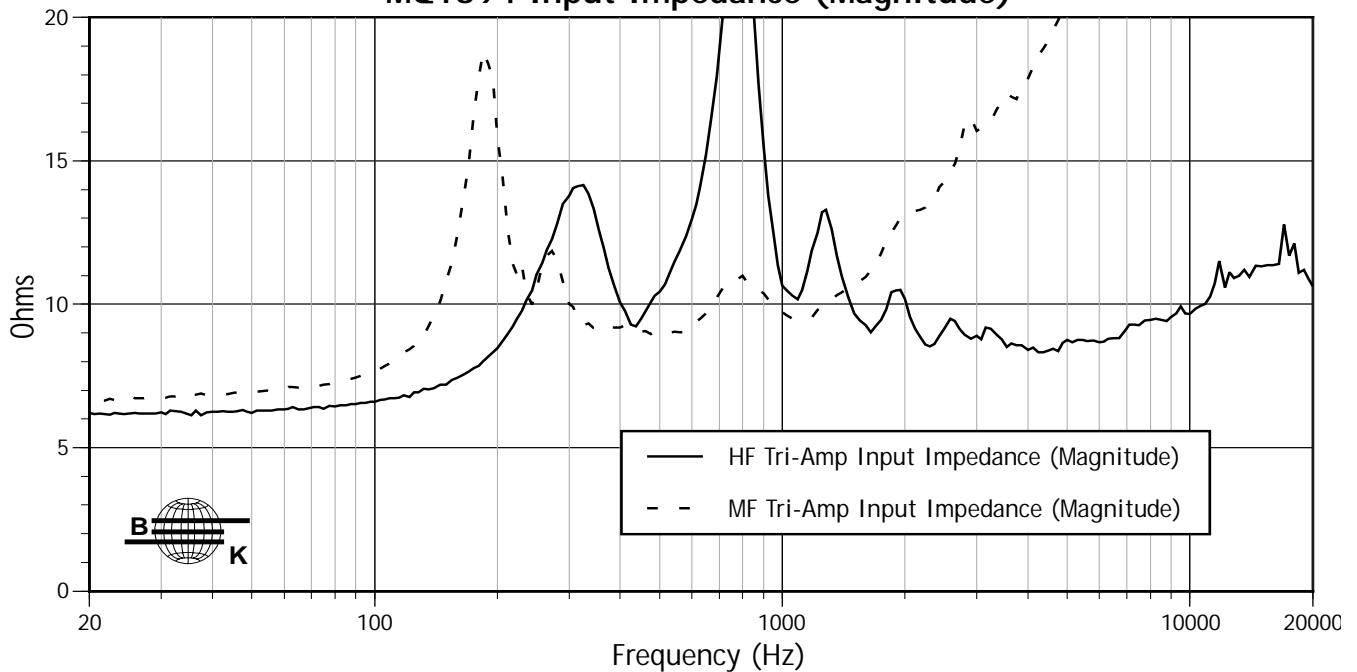
## FREQUENCY RESPONSE

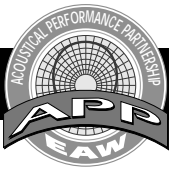
### MQ1394 Axial Response



## INPUT IMPEDANCE

### MQ1394 Input Impedance (Magnitude)

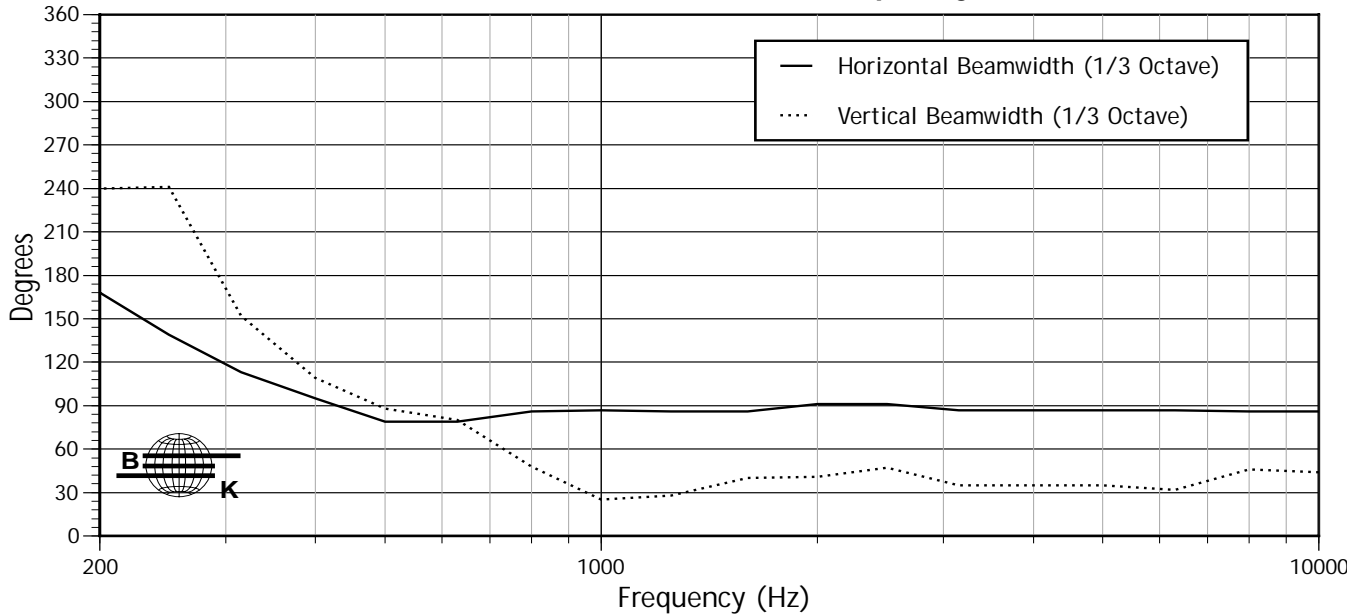




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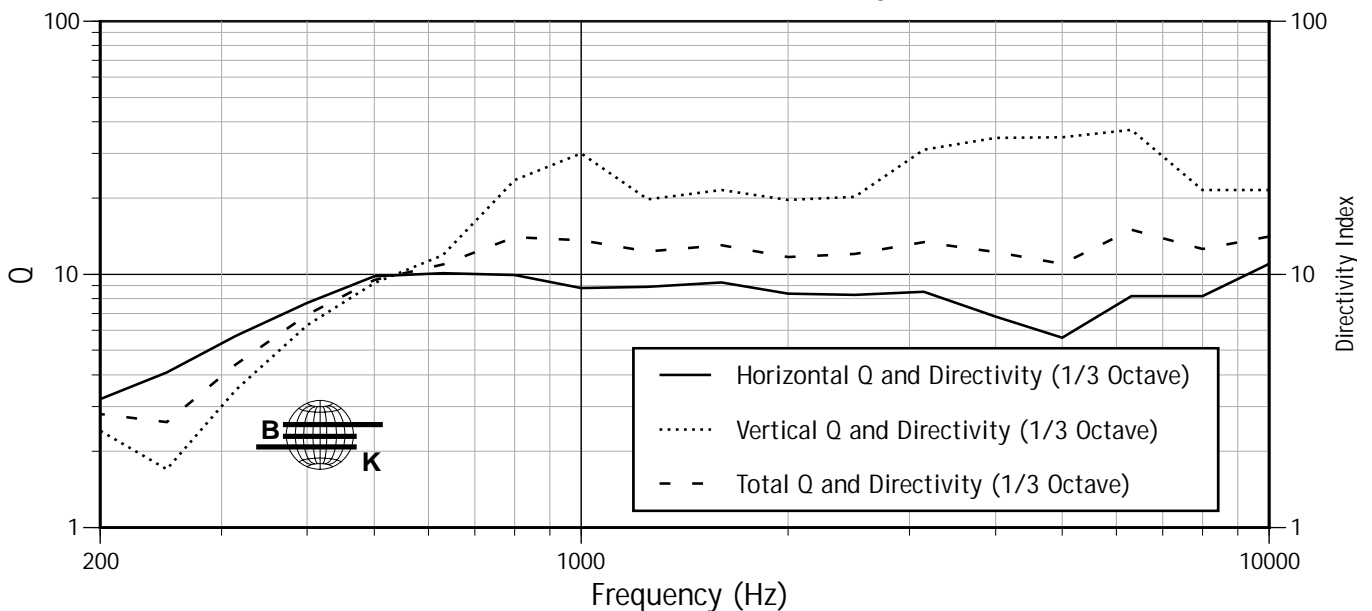
## BEAMWIDTH

### MQ1394 Beamwidth vs Frequency



## Q & DIRECTIVITY INDEX (DI)

### MQ1394 Q and Directivity

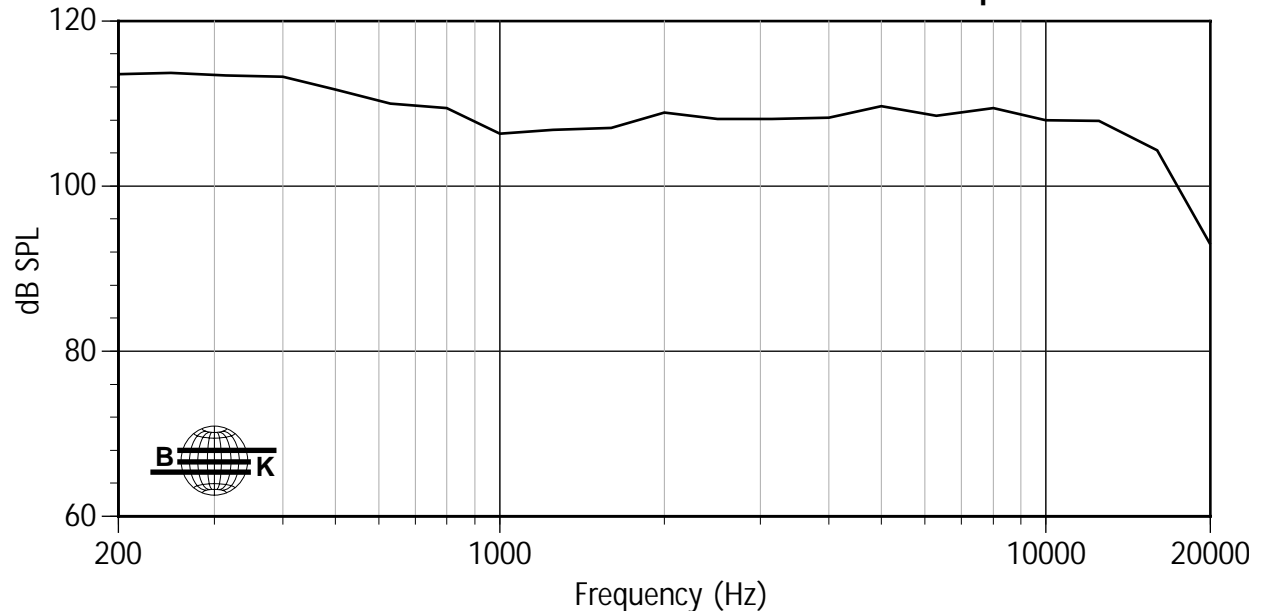




# PERFORMANCE SPECIFICATIONS MQ1394

## POWER RESPONSE

### MQ1394 Beamwidth Delimited Power Response





# PERFORMANCE SPECIFICATIONS MQ1394

## Q & DIRECTIVITY & BEAMWIDTH BY FREQUENCY

Frequency	Hor Beamwidth	Ver Beamwidth	Hor Q & Dir	Ver Q & Dir	Tot Q & Dir
100	104	360	5.3	5.4	5.4
125	132	126	4.3	4.4	4.4
160	159	145	3.5	3.4	3.4
200	168	240	3.2	2.4	2.8
250	139	241	4.1	1.7	2.6
315	113	152	5.7	3.5	4.4
400	95	109	7.7	6.3	6.9
500	79	88	9.8	9.2	9.5
630	79	80	10.1	11.9	10.9
800	86	48	9.9	23.6	14
1000	87	25	8.8	30	13.6
1250	86	28	8.9	19.8	12.3
1600	86	40	9.3	21.5	13
2000	91	41	8.4	19.7	11.7
2500	91	47	8.3	20.2	12
3150	87	35	8.5	31.1	13.4
4000	87	35	6.8	34.5	12.2
5000	87	35	5.6	34.7	11
6300	87	32	8.2	37.2	15
8000	86	46	8.2	21.5	12.6
10000	86	44	11	21.5	14.1
12500	78	40	15.1	27	19.2
16000	89	39	6.2	36.2	11.6
20000	63	37	20.1	19.6	19.4

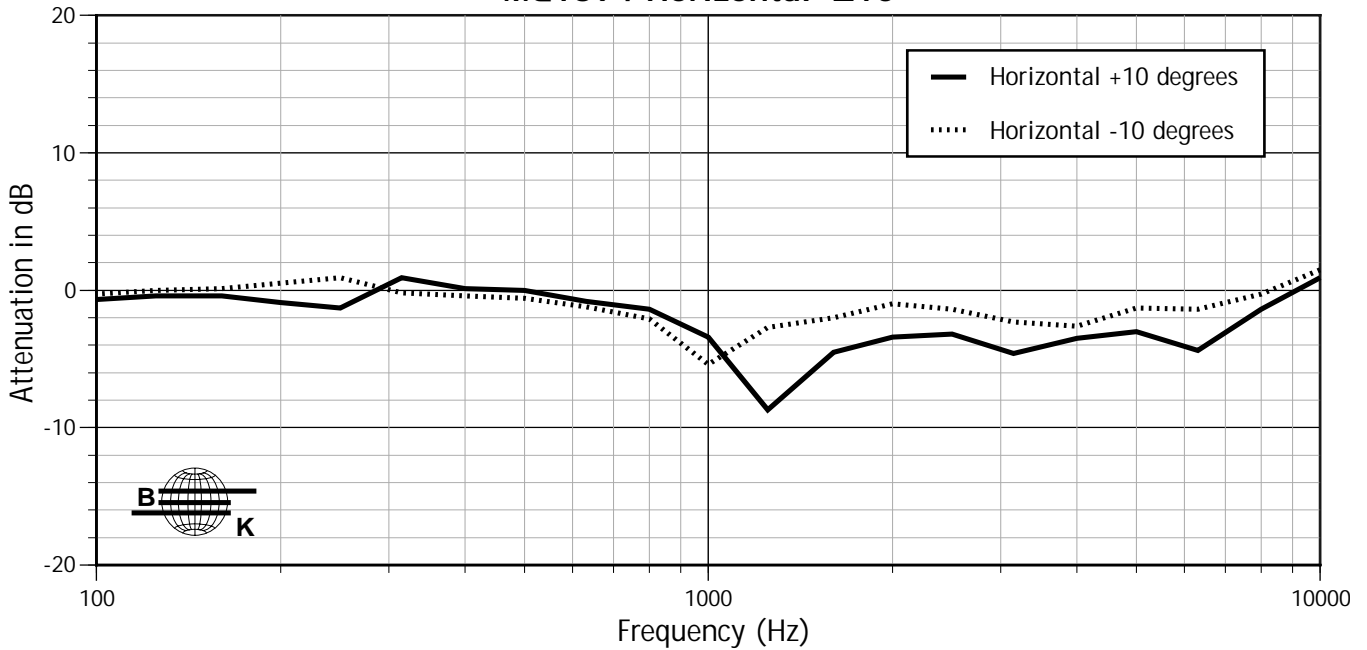


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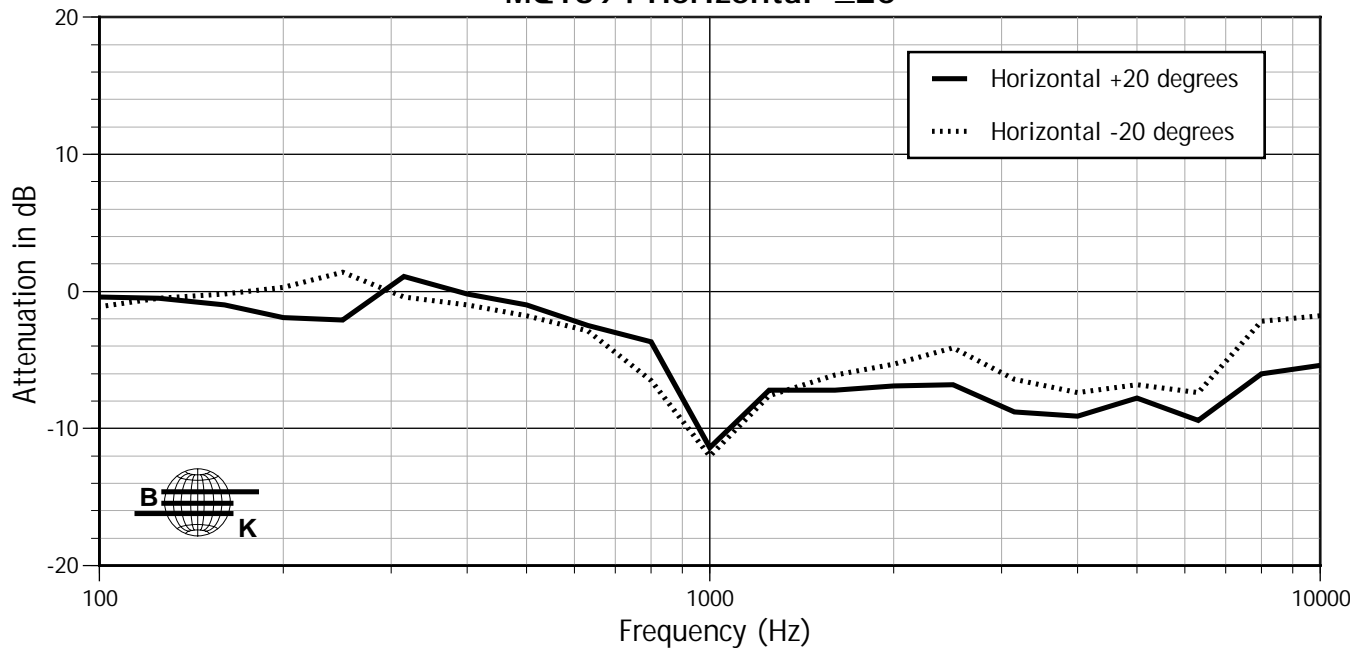
## HORIZONTAL OFF-AXIS RESPONSE

On-axis response normalized to 0 dB.

### MQ1394 Horizontal $\pm 10^\circ$



### MQ1394 Horizontal $\pm 20^\circ$



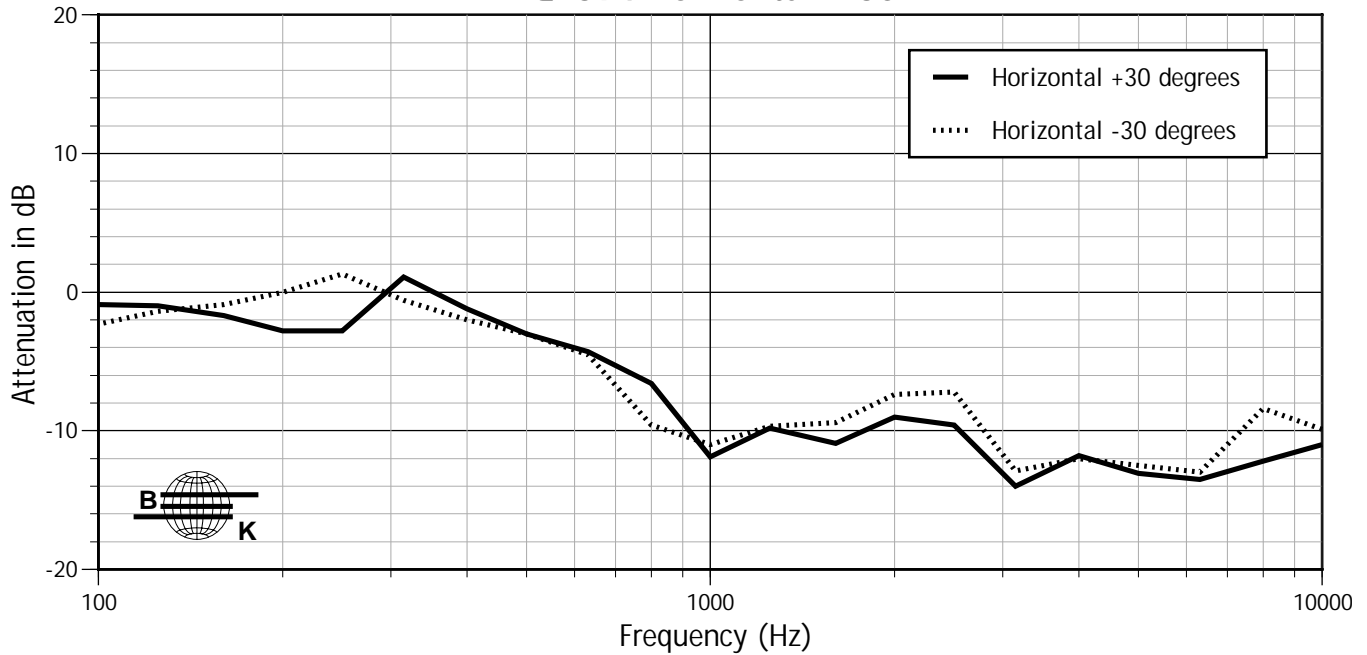


# PERFORMANCE SPECIFICATIONS MQ1394

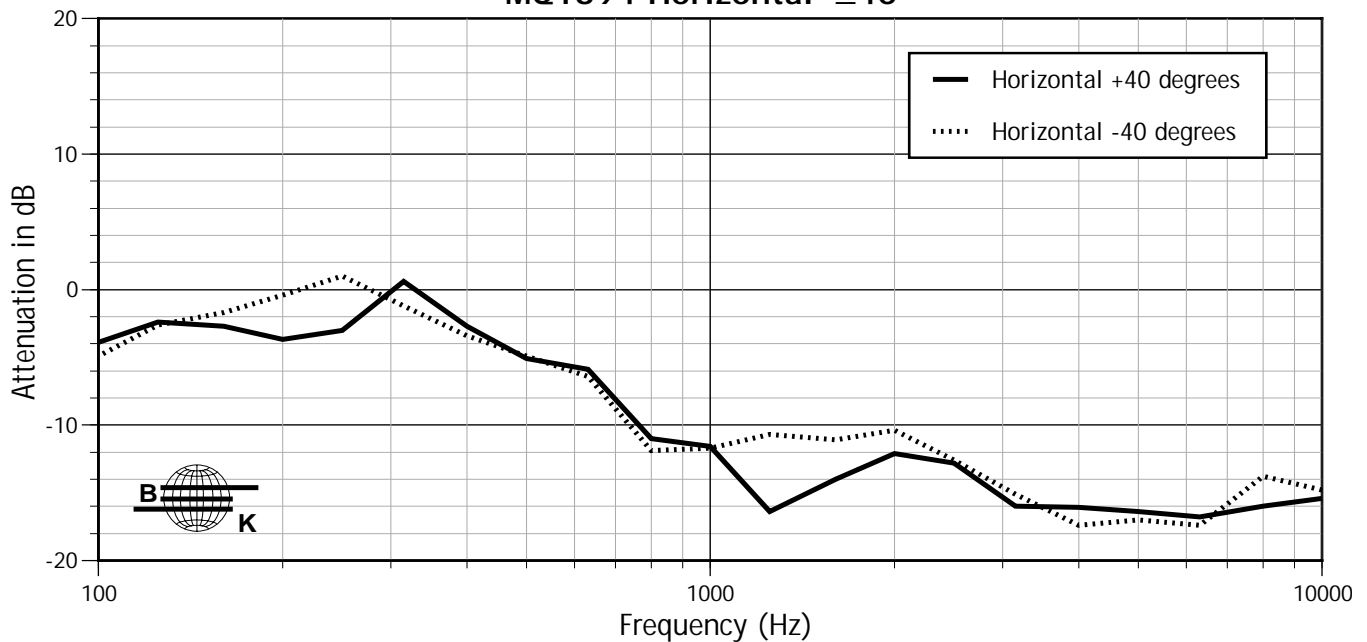
## VERTICAL OFF-AXIS RESPONSE

On-axis response normalized to 0 dB.

### MQ1394 Horizontal $\pm 30^\circ$



### MQ1394 Horizontal $\pm 40^\circ$





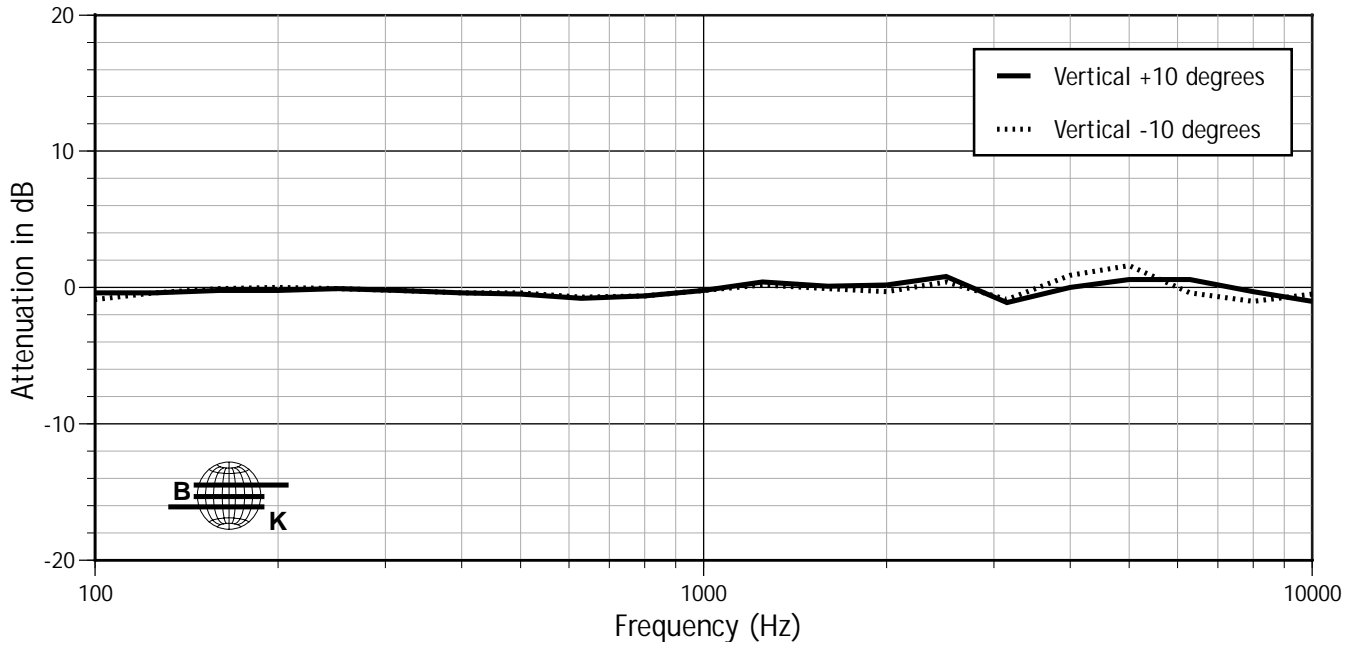


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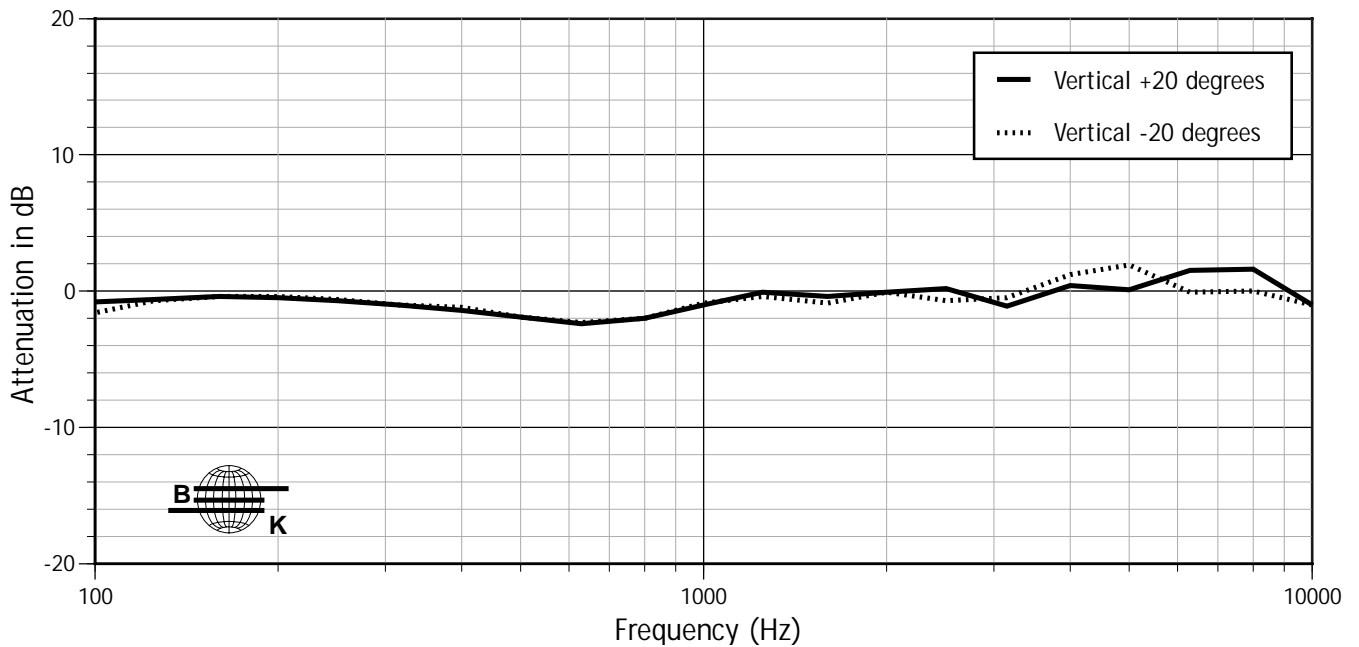
## VERTICAL OFF-AXIS RESPONSE

On-axis response normalized to 0 dB.

### MQ1394 Vertical $\pm 10^\circ$



### MQ1394 Vertical $\pm 20^\circ$



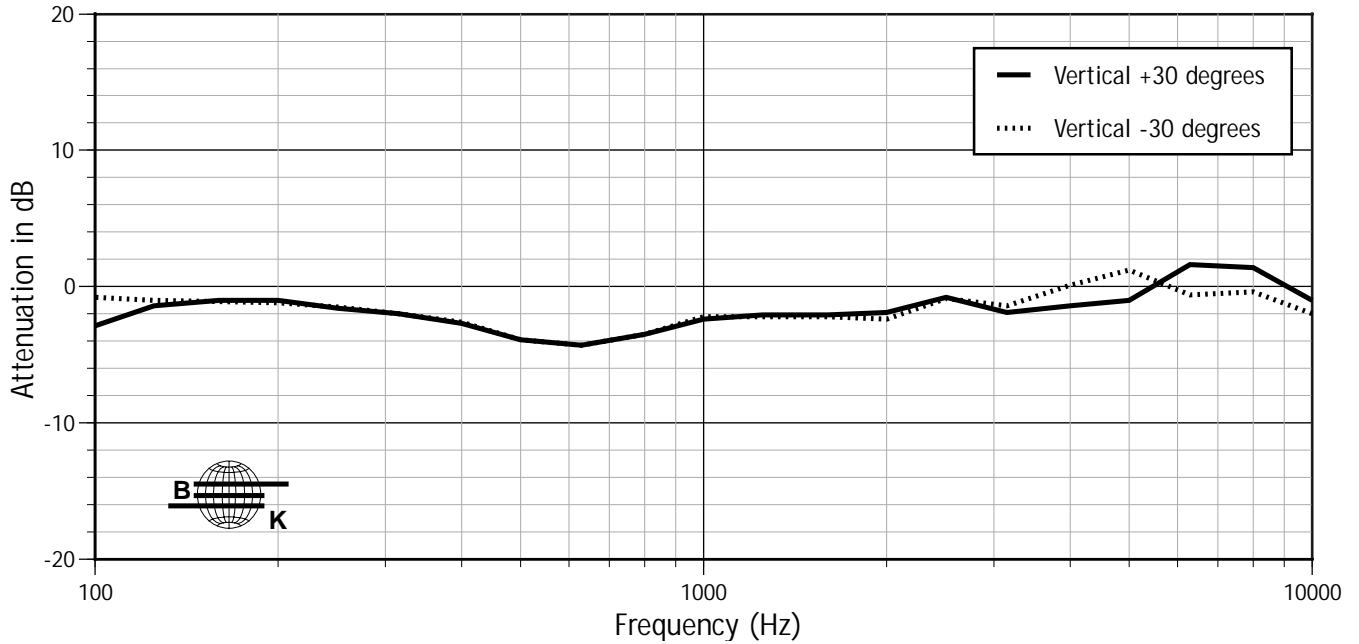


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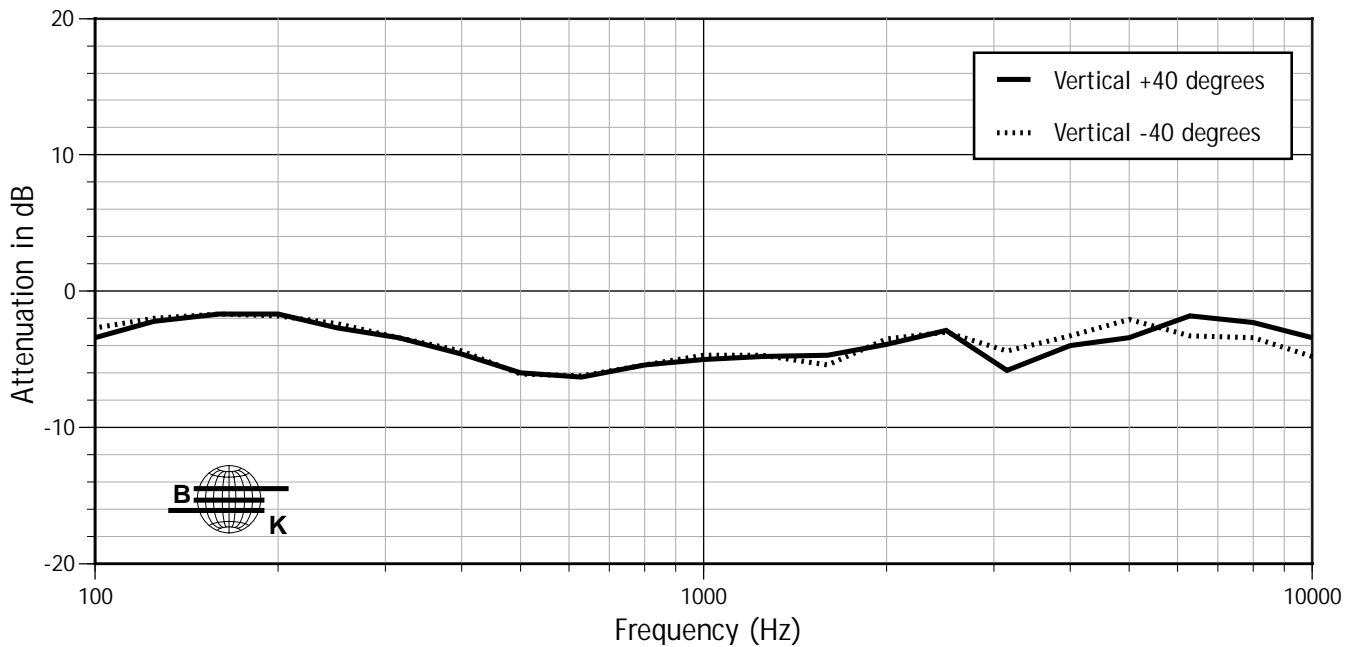
## VERTICAL OFF-AXIS RESPONSE

On-axis response normalized to 0 dB.

### MQ1394 Vertical $\pm 30^\circ$

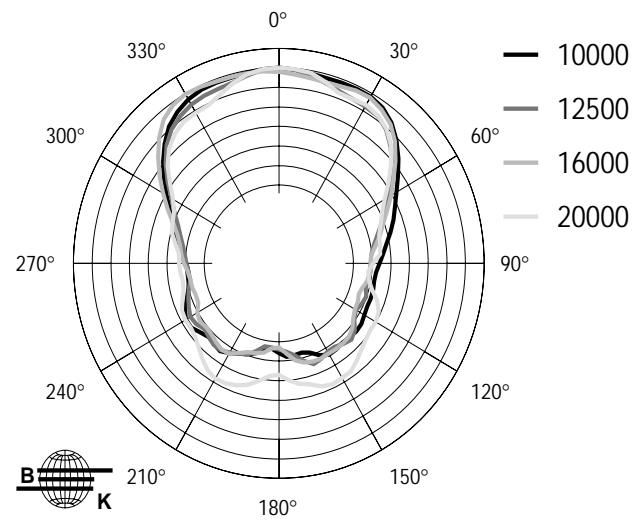
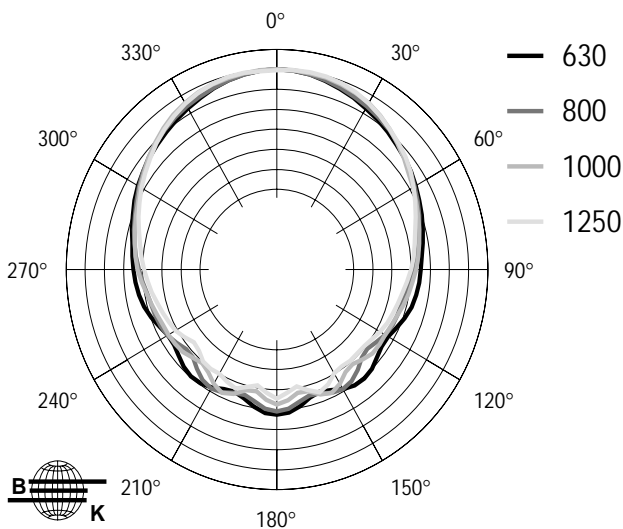
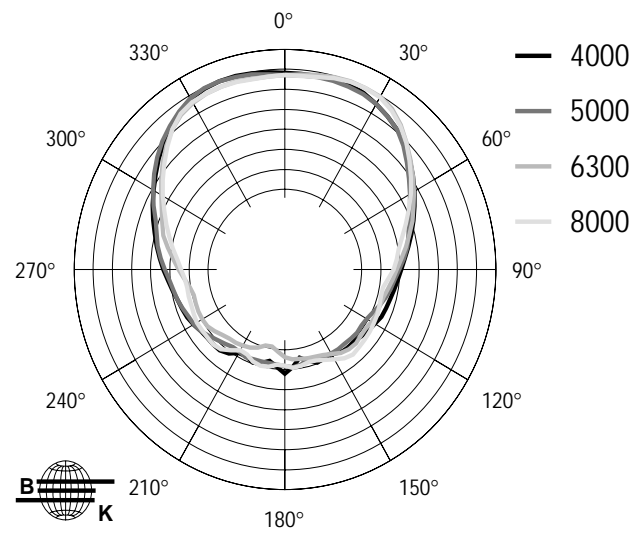
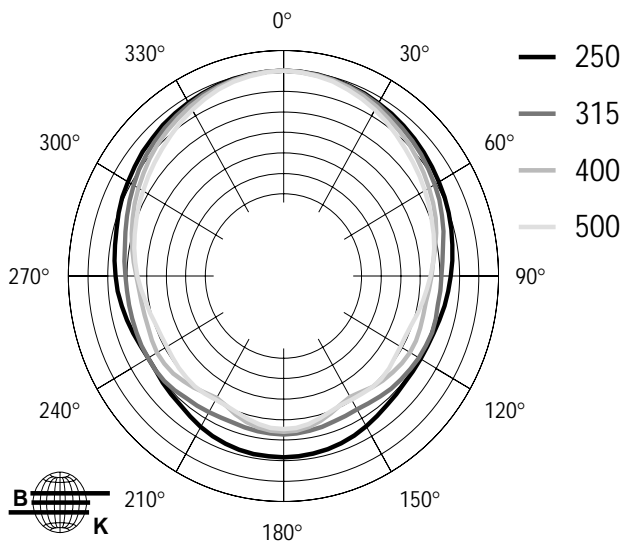
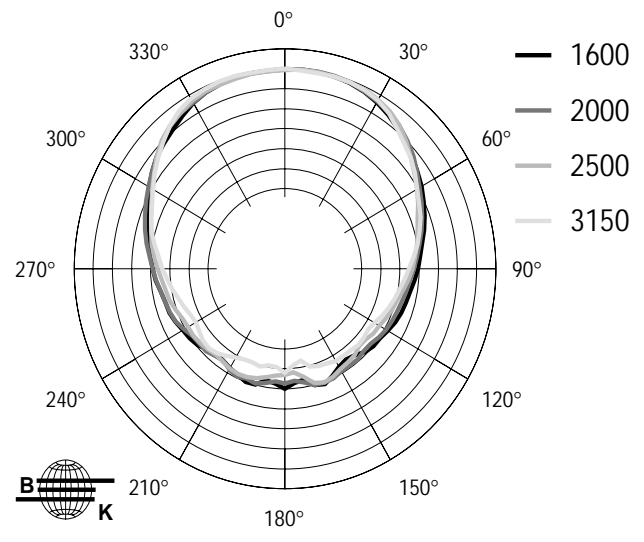
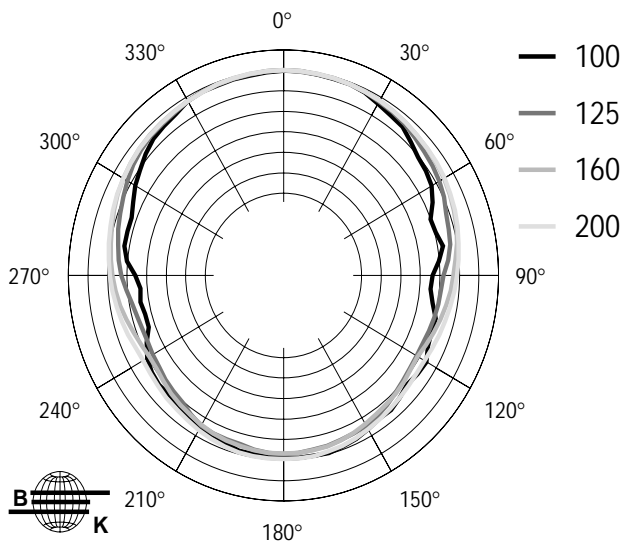


### MQ1394 Vertical $\pm 40^\circ$





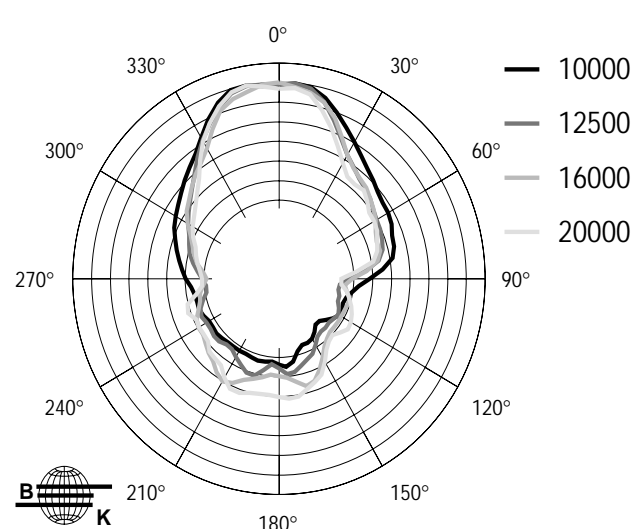
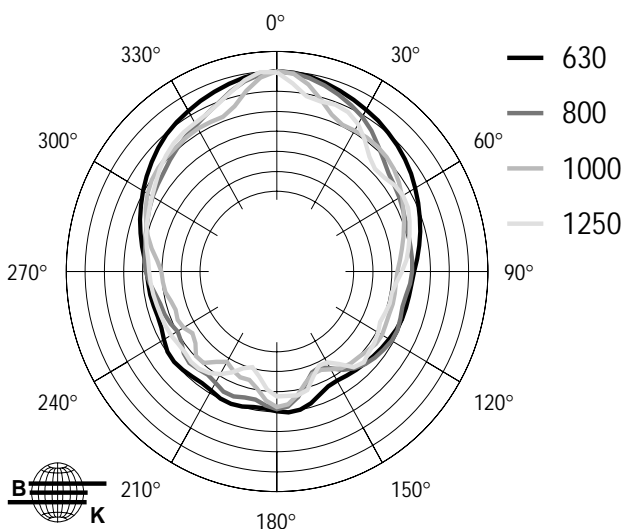
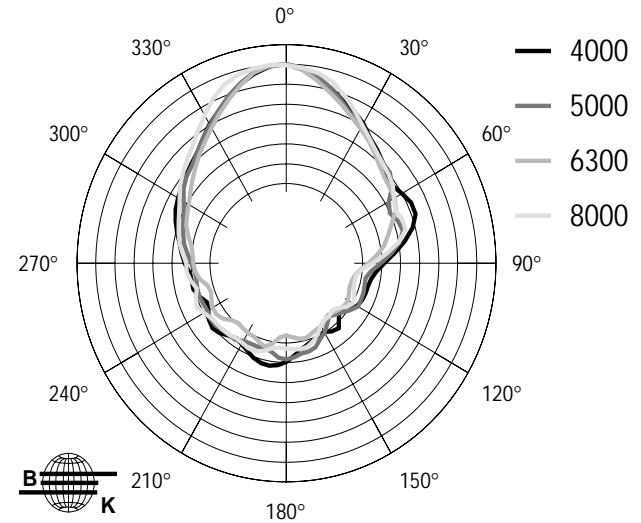
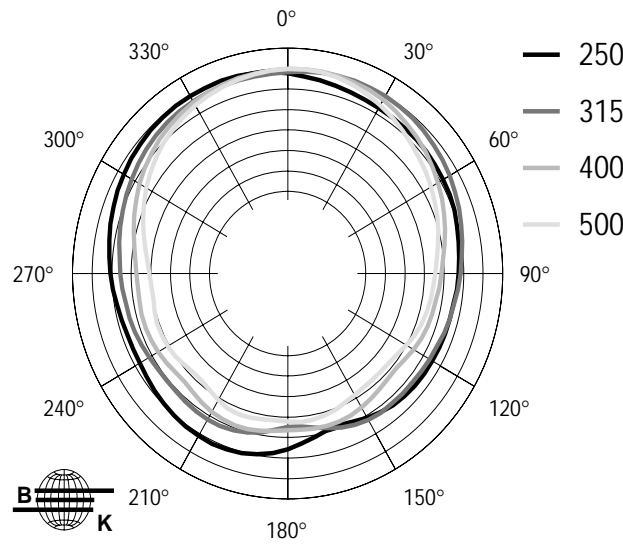
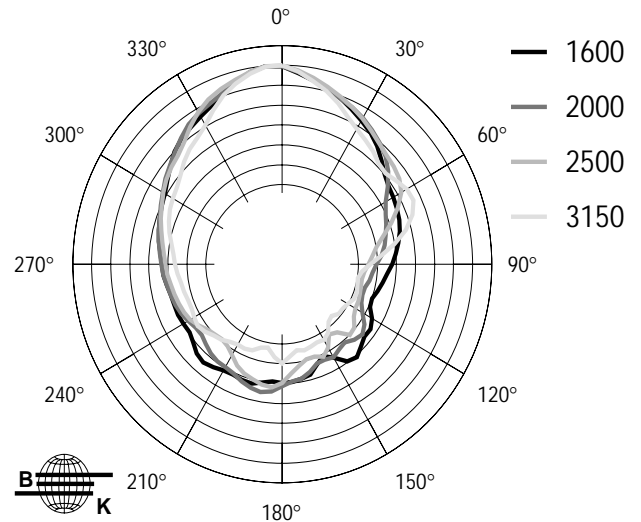
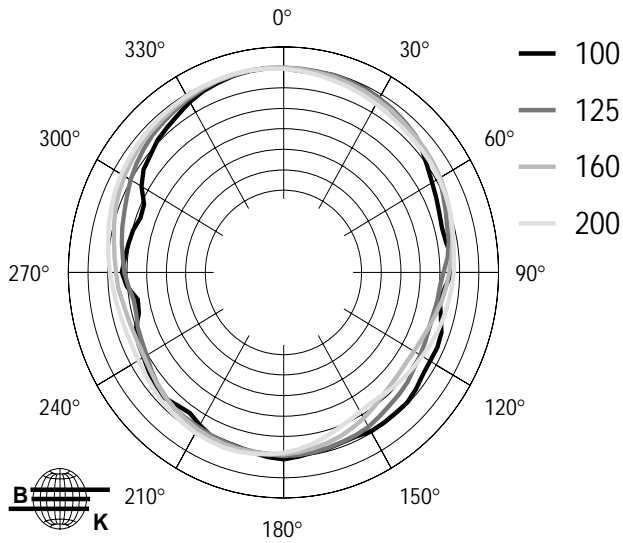
# HORIZONTAL 1/3 OCTAVE POLAR DATA MQ1394



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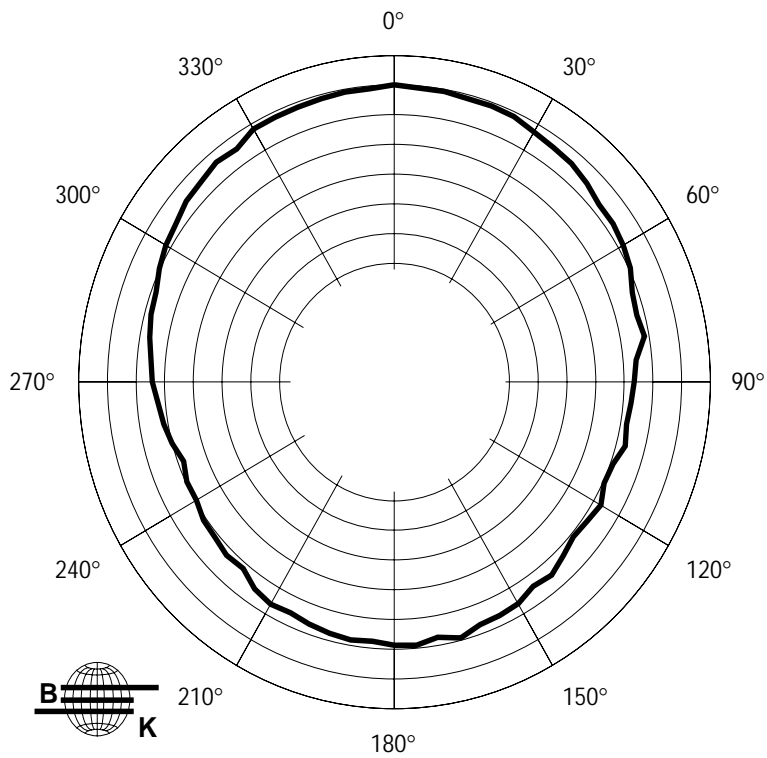
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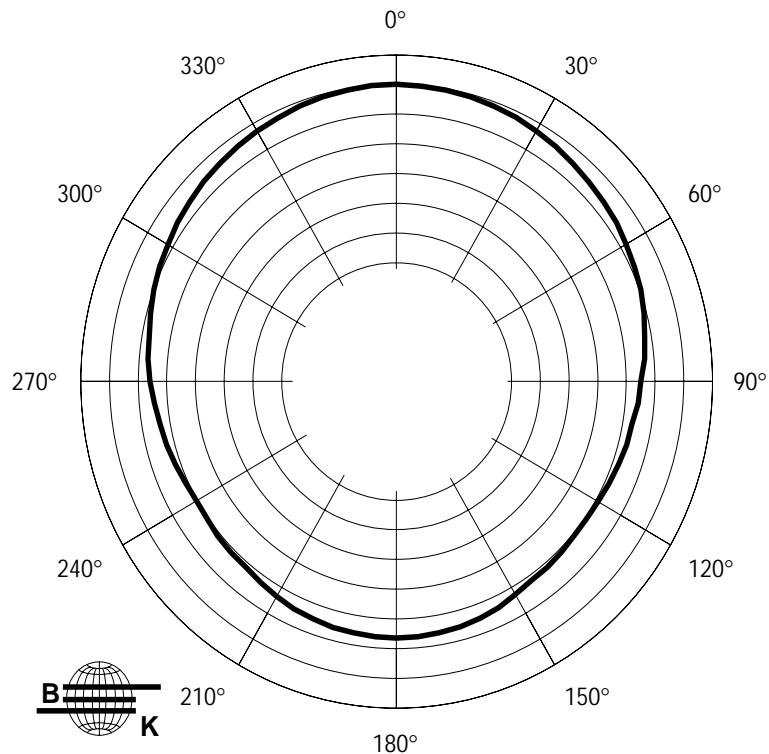


# HORIZONTAL OCTAVE POLAR DATA MQ1394

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## MQ1394 250 Hz Horizontal Octave Polar Data

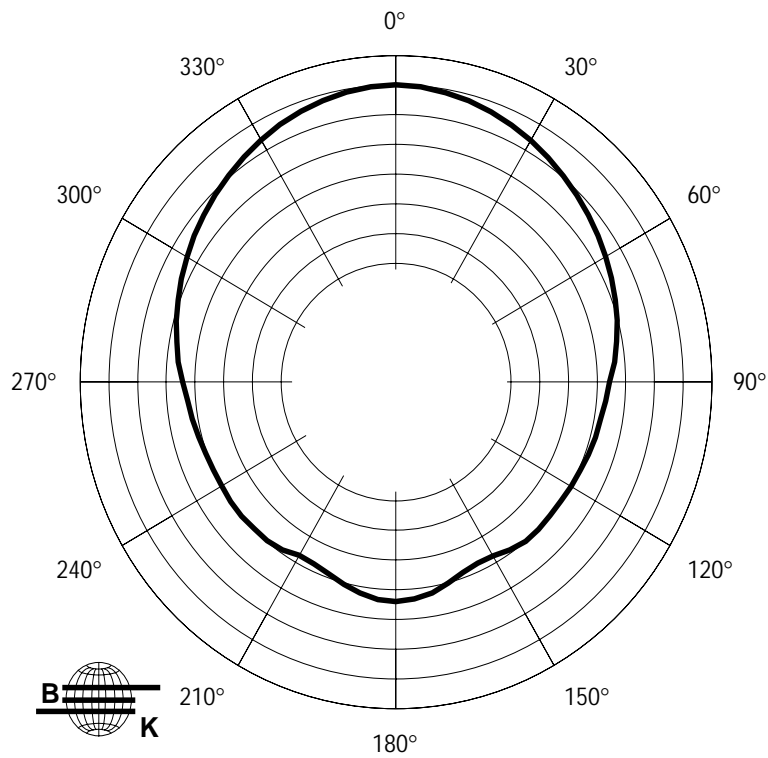


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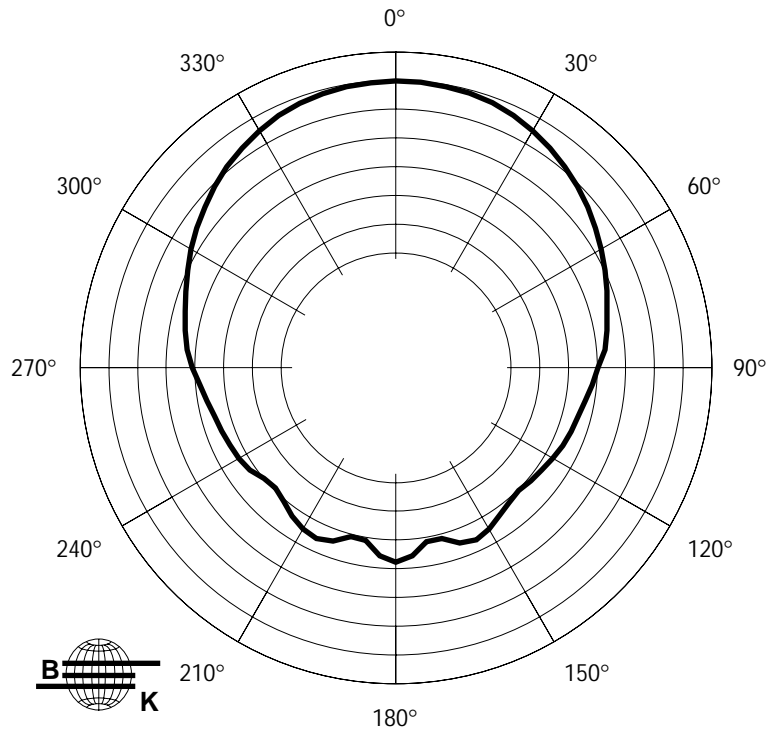


# HORIZONTAL OCTAVE POLAR DATA MQ1394

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## MQ1394 1000 Hz Horizontal Octave Polar Data

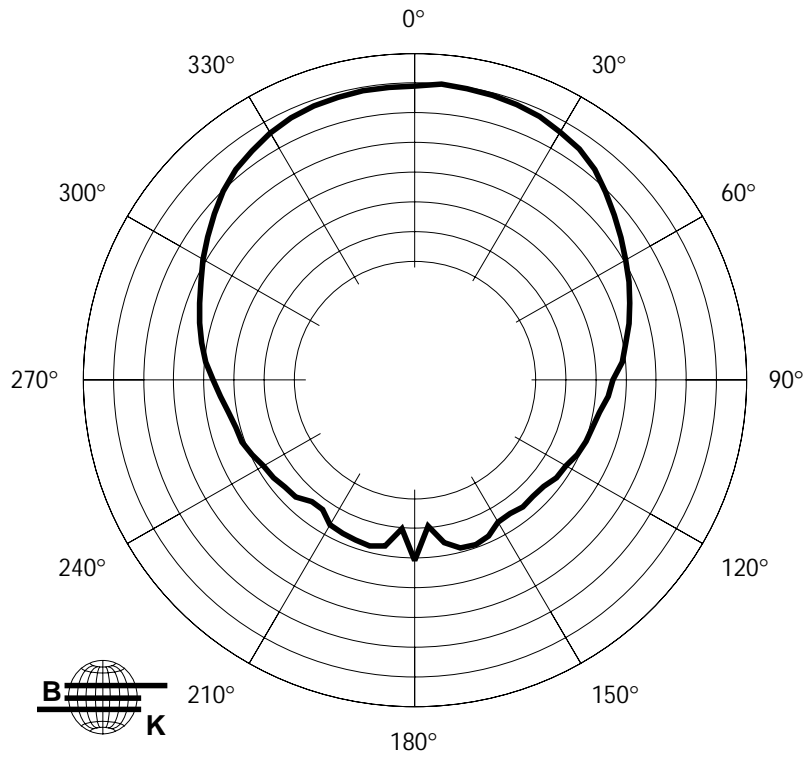


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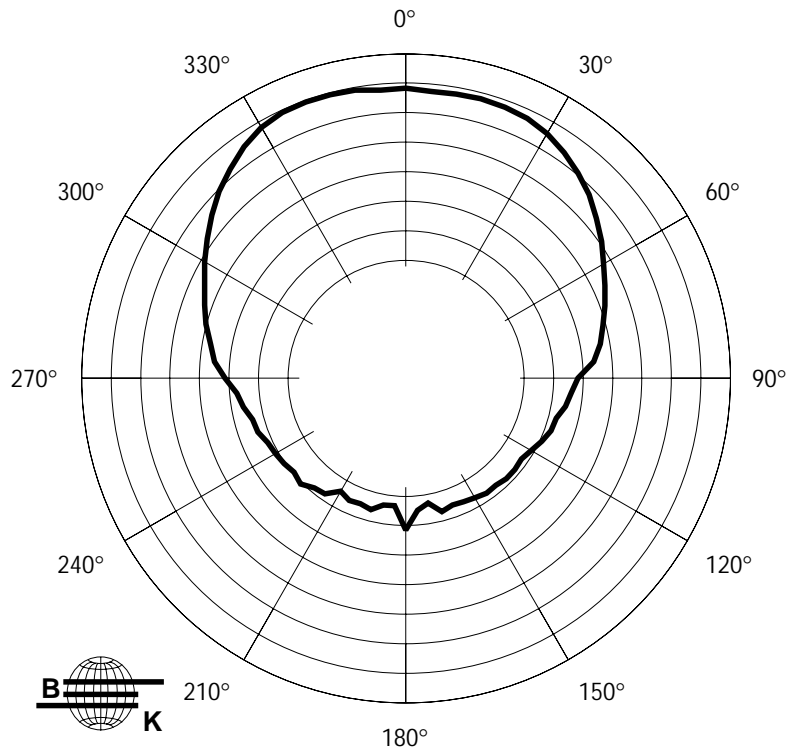


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## MQ1394 2000 Hz Horizontal Octave Polar Data



## MQ1394 4000 Hz Horizontal Octave Polar Data

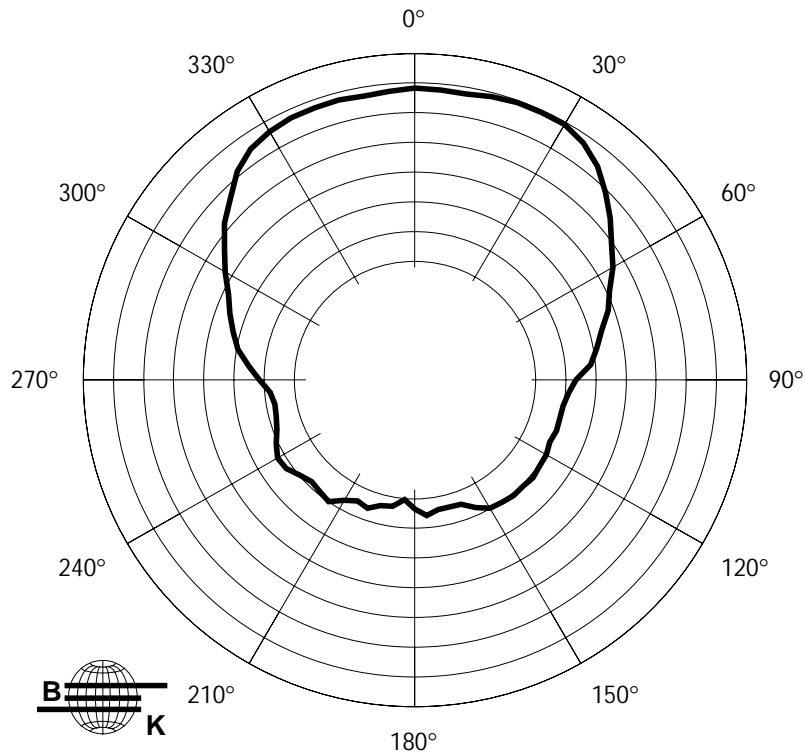


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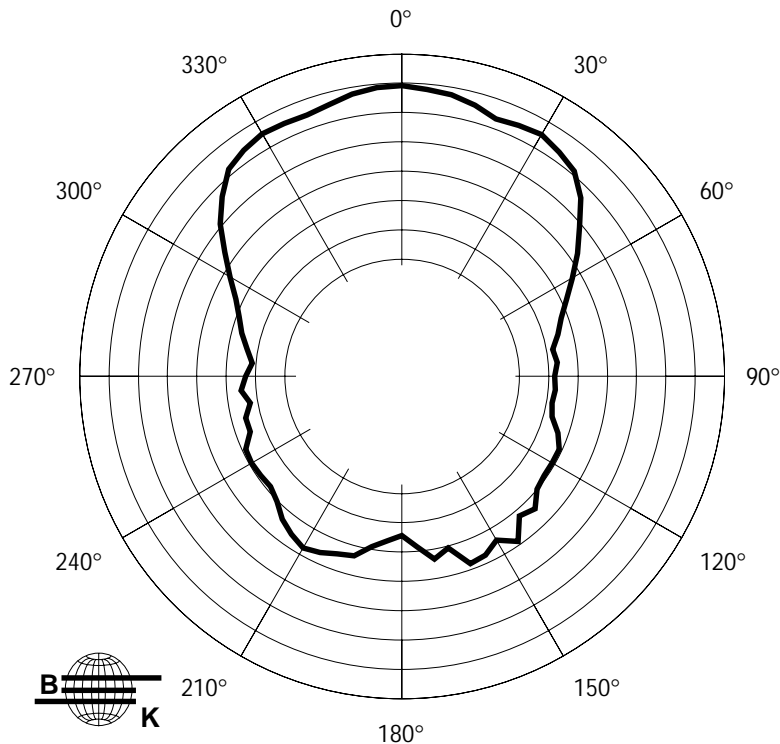


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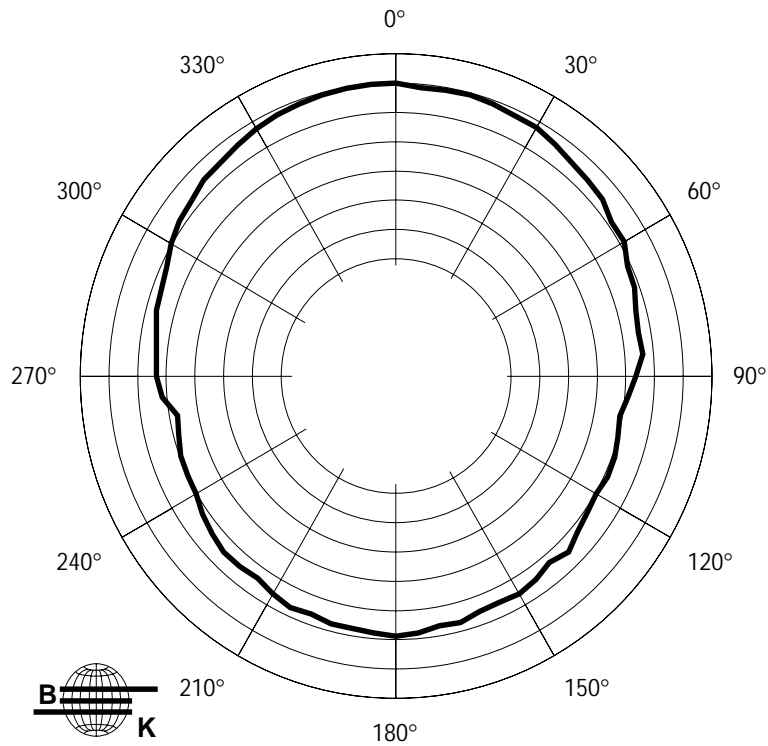
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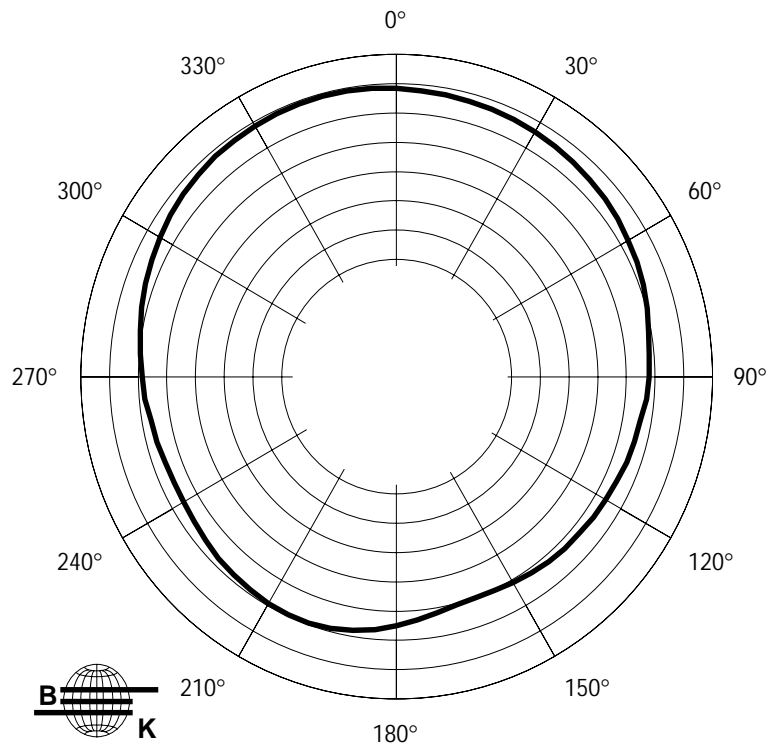


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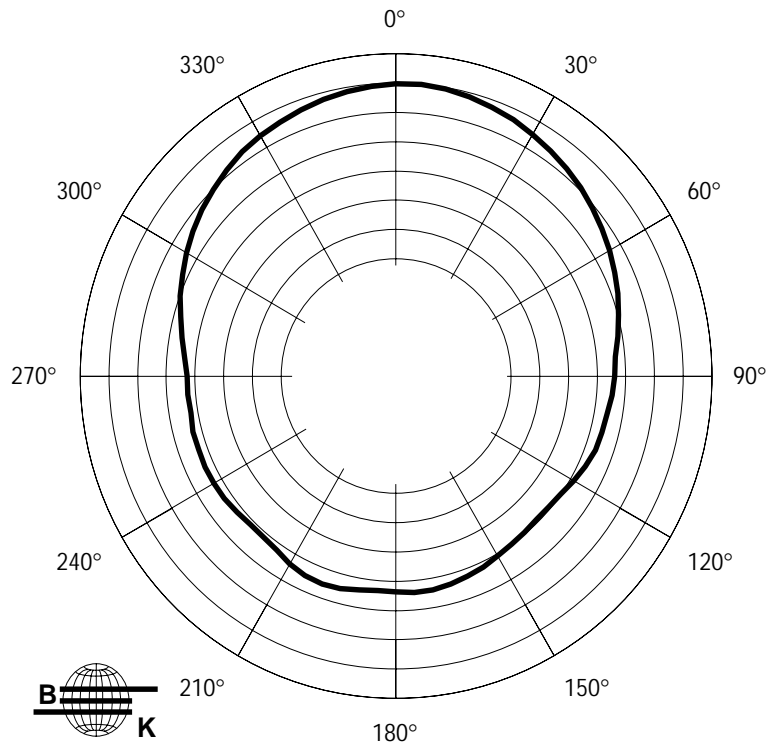


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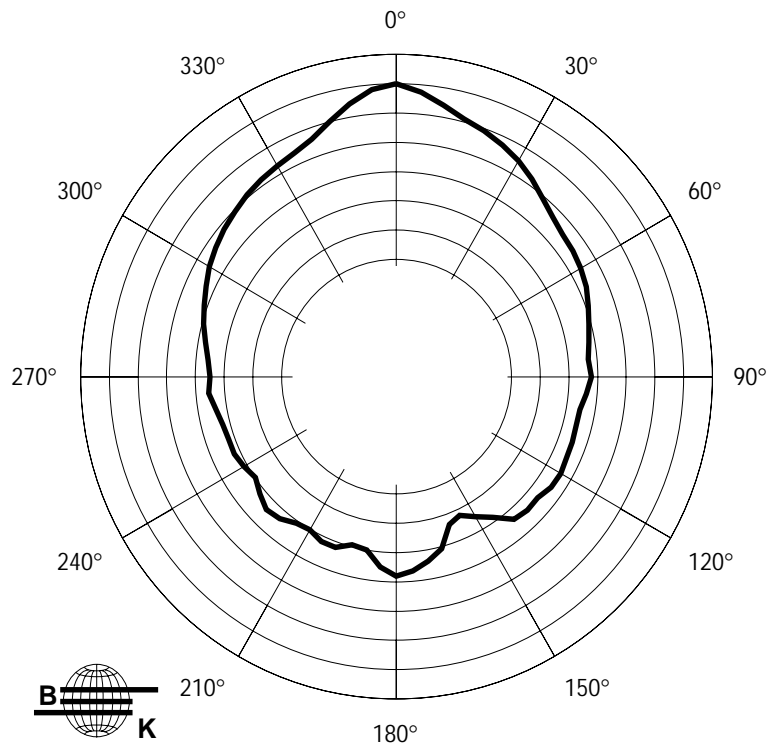


# VERTICAL OCTAVE POLAR DATA MQ1394

## MQ1394 500 Hz Vertical Octave Polar Data



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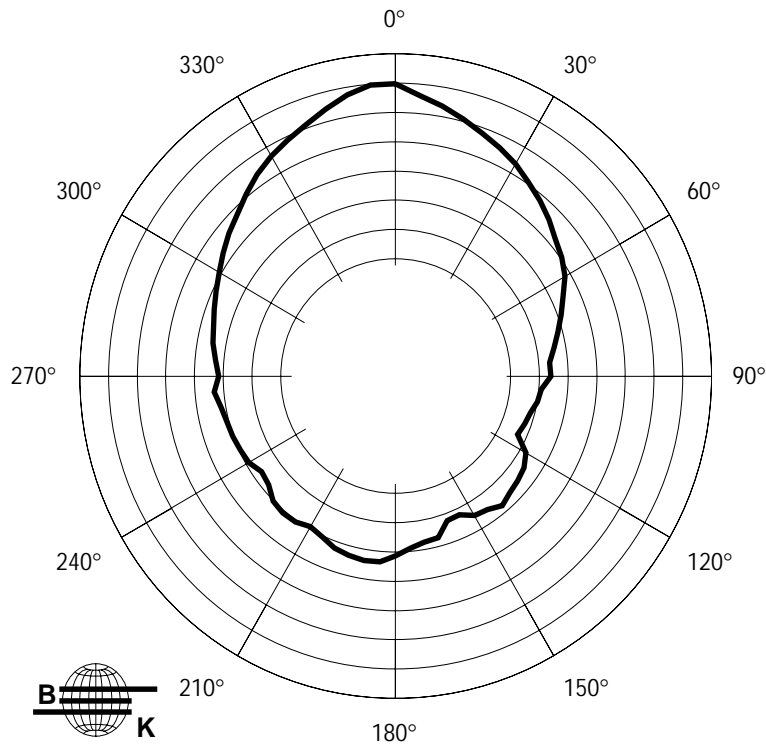


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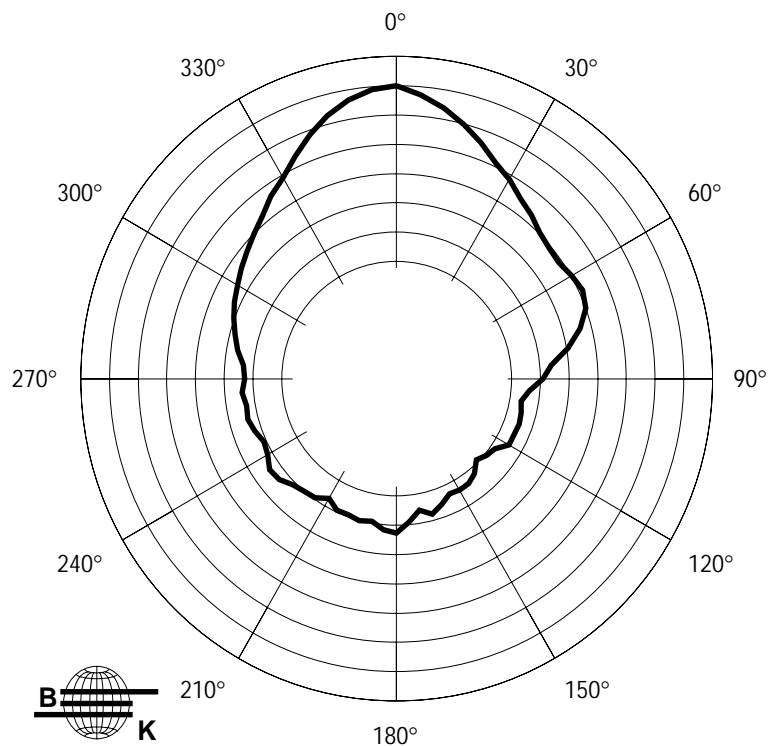


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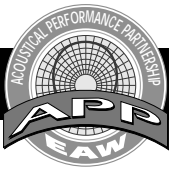
## MQ1394 2000 Hz Vertical Octave Polar Data



## MQ1394 4000 Hz Vertical Octave Polar Data

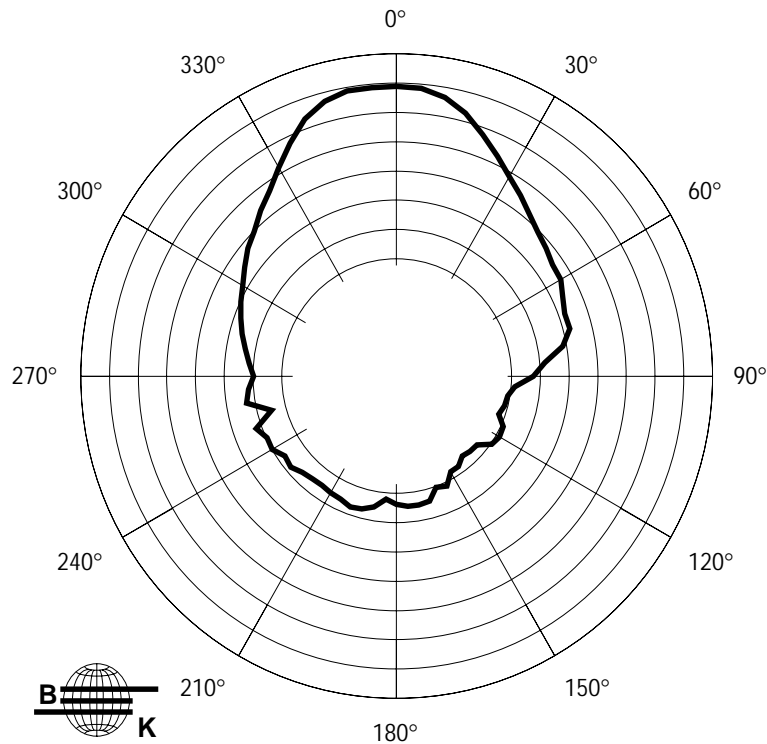


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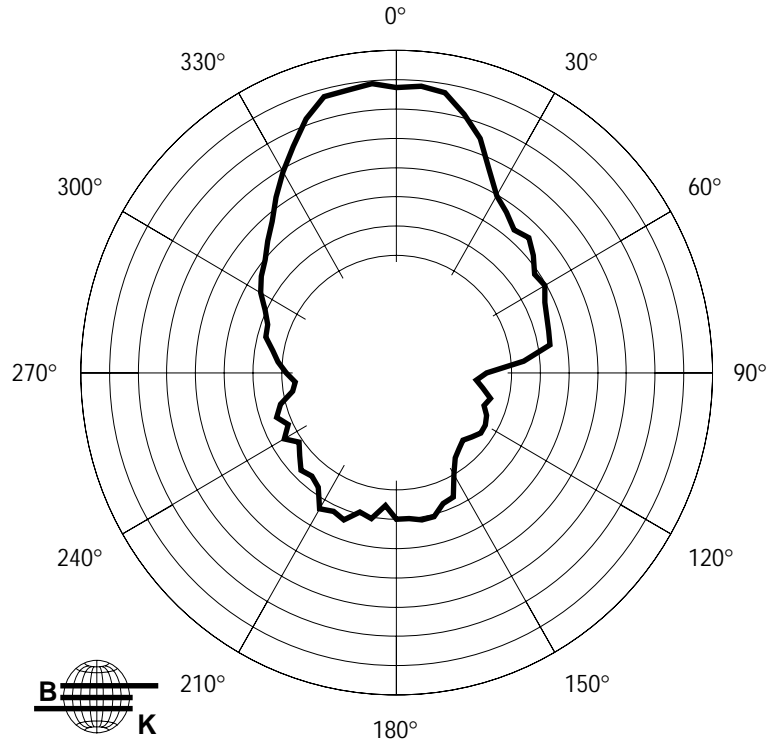


# VERTICAL OCTAVE POLAR DATA MQ1394

## MQ1394 8000 Hz Vertical Octave Polar Data



## MQ1394 16000 Hz Vertical Octave Polar Data



6 db/div.

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