

Our **BCD**, **BCH** and **VBC series** of passive, biconical-dipole antennas are an excellent choice for the generating and measuring of electric fields. The compact size and broadband characteristics of these antennas, make them ideal for use in shielded rooms and anechoic chambers. Each biconical contains a broadband balun to match the characteristic impedance of the antenna to an unbalanced 50-ohm output.

The **BCD-235** is suitable for measuring radiated emissions as per FCC, EN/CISPR, SAE, MIL-STD and Tempest requirements. The **BCD-235** may be supplied with collapsible elements for ease of transport and storage. The elements and the pedestal are made of aluminum to provide a durable, light-weight, corrosion-resistant antenna. These antennas are designed primarily for indoor use and can be used outdoors in favorable weather. Our patented design (US Patent No: 5,367,312) extends the maximum performance range of **BCD** and **BCH series** antennas up to 350 MHz.

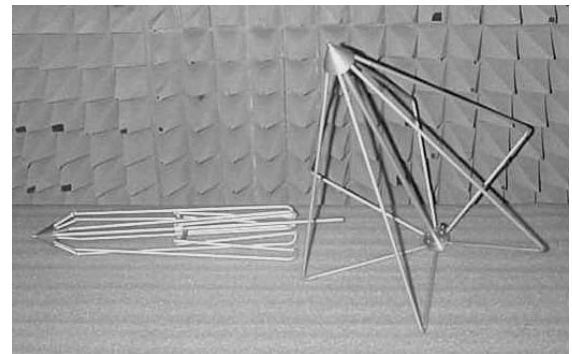


BCD-235/B

The new **BCD-330** is a biconical antenna that has excellent phase balance ($180 \pm 2^\circ$) and amplitude balance (± 0.2 dB); thus, it can be used as a standard antenna. The antenna is manufactured in a highly controlled environment and antenna factor response of **BCD-330** can be theoretically calculated from the measured response of the balun only. Therefore, the **BCD-330** is an ideal alternative to standard tuned dipole antennas.

ú ú ú **INDIVIDUALLY CALIBRATED** ú ú ú

	BCD-235/B*	BCD-330
FREQUENCY	20 - 350 MHz	20 - 300 MHz
POLARIZATION	Linear/Adjustable	Linear/Adjustable
IMPEDANCE	50 ohms	50 ohms
VSWR (TYP.)	2.0 : 1	2.5 : 1
CONT. POWER	1 W	1 kW
PEAK POWER	N/A	2 kW
CONNECTOR	BNC Female	N Female
LENGTH	54"	53"
ELEMENT DIA.	19.5"	21"
WEIGHT (LBS/KG)	5 / 2.3	7 / 3.2
CONSTRUCTION	Rigid	Rigid



BCD-235C ELEMENTS

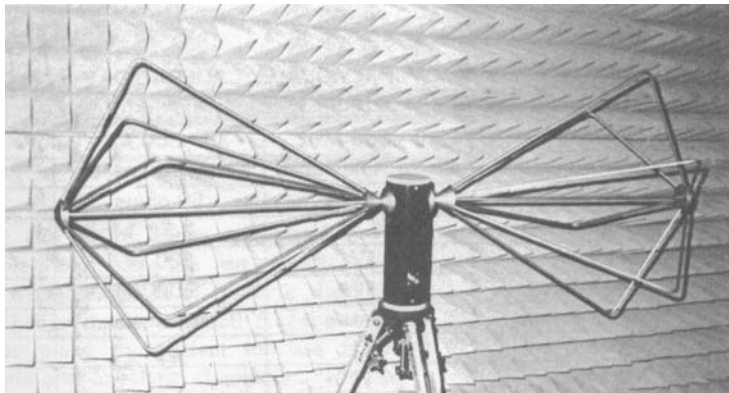
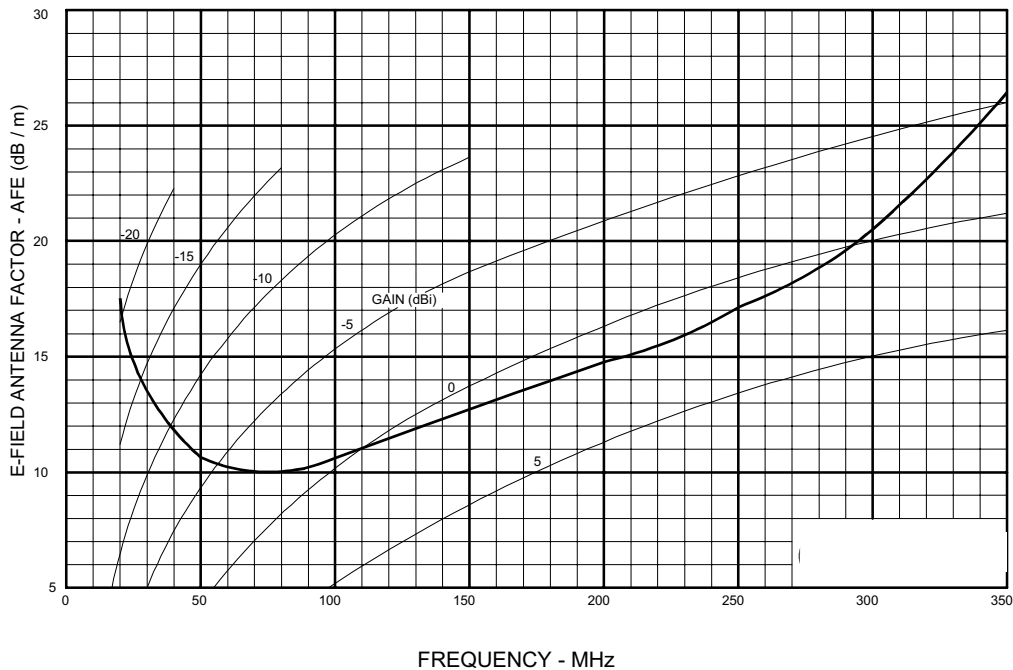
***BCD-235/C** with collapsible elements

BCH series antennas offer broadband capability for radiated immunity testing per SAE, MIL-STD and IEC 1000-4-3 requirements. These antennas can handle input power levels up to 2 kW. Optional extended elements help generate higher fields at lower frequencies with less power (Model **BCH-2030/AM**).

The **BCH-3010** is designed to handle extremely high input power (up to 10 kW) and is larger in size relative to our model **BCH-2030**. For generating a uniform field within a 3 dB variation over a typical test area of 5m x 3.4m², the **BCH-3010** should be at least 5m from the equipment under test. **ARA TECH** can supply the simulated field distribution data at various frequencies and both polarizations. The **BCH-3010** can generate fields up to 100 V/M, at 30 MHz, at distances up to 5 meters.

Model **AS-220/T** wheeled pedestal is recommended for use with the **BCH-3010**. The pedestal is used for moving the antenna and adjusting the polarization during testing.

BCD - 235/B AND BCH - 2030/A - Typical Electric Field Antenna Factor



BCH-2030/A

	BCH-2030/A	BCH-3010
FREQUENCY	20-300 MHz	30-100 MHz
POLARIZATION	Linear/Adjustable	Linear/Adjustable
IMPEDANCE	50 ohms	50 ohms
VSWR (TYPICAL)	2.5 : 1	2.5 : 1
CONT. POWER	1 kW	10 kW
PEAK POWER	2 kW	10 kW
CONNECTOR	N Female	EIA 1 – 5/8"
LENGTH	53"	120"
ELEMENT DIAMETER	21"	40"
WEIGHT (LBS/KG)	7 / 3.2	20/10

The **VBC-210** Vertical Biconical antenna is intended for all-weather applications. When used for receive only, it is preferable to include the optional low noise amplifier. The **VBC-210** is offered as a transmit antenna for susceptibility testing. It has significantly better antenna factors than our biconical antenna **BCH-2030**, for use below 50 MHz. An optional cross arm mounting adapter allows the **VBC-210** to be mounted from the center to manually adjust polarization.

The **VBC-311/HP** is ideally suited for generating uniform and high fields over a large test area. This antenna can handle up to 10 kW input power and can be used for both horizontal and vertical polarizations. At the low end of the band, the **VBC-311/HP** is capable of generating up to 100 V/M at distances up to 5 meters. The fields generated are uniform within 3 dB over an area of 5 x 2.5m².



VBC-210/C

VBC antennas are well isolated from the base, resulting in a predictable elevation pattern and reduction in common mode interference. **VBC series** antennas are designed to withstand laminar wind flow velocities in excess of 100 miles per hour. Antenna elements are removable for ease of transport and storage.

Model **AS-220/T** wheeled pedestal is recommended for use with the **VBC-311/HP**. The pedestal is used for moving and tilting the antenna, as well as adjusting the polarization. The pedestal operates with our controller, **ACU-2/5F**.

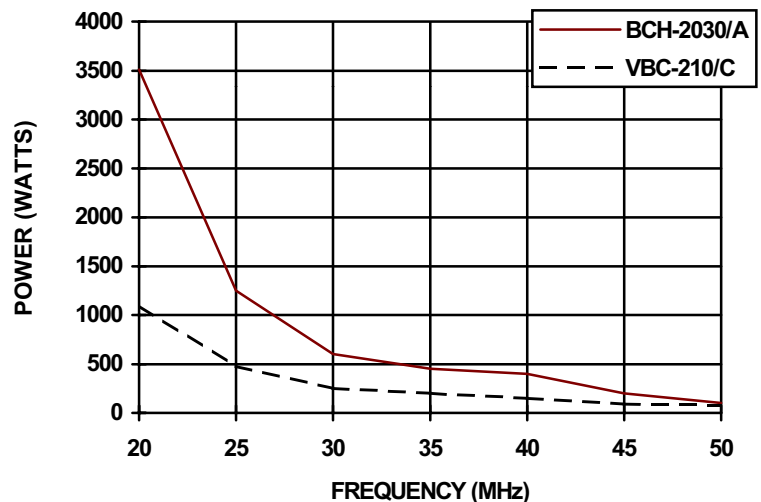
A cross arm mounting adapter may be used for adjusting polarization manually.

SPECIFICATIONS

	VBC-210	VBC-311/HP
FREQUENCY	20 – 1000 MHz	30 – 110 MHz
POLARIZATION	Vertical	Linear, Adjustable
IMPEDANCE	50 ohms	50 Ohms
VSWR (TYPICAL)	2.5 : 1	3 : 1 average
CONTINUOUS POWER	500 W	10 kW
PEAK POWER	500 W	10 kW
CONNECTOR	N Female	EIA-1 5/8"
LENGTH	10 ft overall	10'
ELEMENT DIAMETER	6 ft	4'
WEIGHT (LBS/KG)	22.5 / 10	30/15
CONSTRUCTION	Removable Elements	Removable Elements

VBC-210 Typical Antenna Factor		
Frequency (MHz)	AFE (dB m ⁻¹)	Gain (dBi)
20	11.74	-15.50
25	9.98	-11.80
30	8.76	-9.00
50	5.00	-0.80
60	5.66	0.12
70	7.12	0.00
80	8.36	-0.08
90	9.55	-0.25
100	10.22	0.00
150	13.74	0.00
200	15.24	1.00
250	14.48	3.70
300	17.06	2.70
400	19.3	2.97
500	24.1	0.11
600	24.8	0.99
700	26.3	0.83
850	27.1	1.72
1000	28.2	2.03

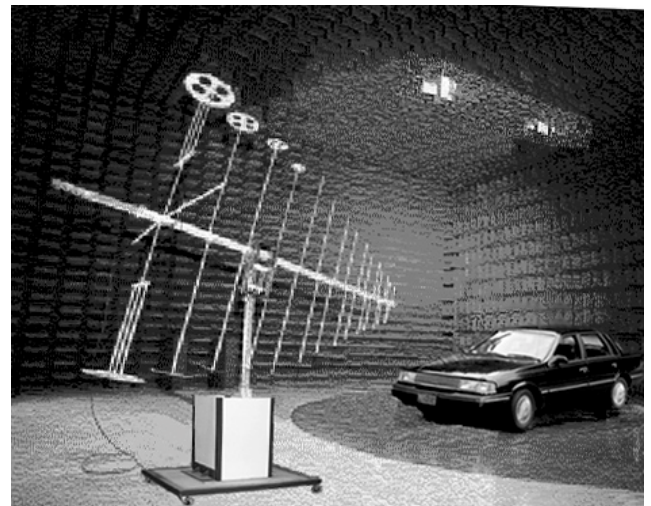
VBC-210/C vs. BCH-2030/A - Typical power requirements for a field strength of 10 V/m at 3 meter spacing



The **AS-220/T** Wheeled Pedestal provides a convenient solution for mobility and manageability in large EMC test chambers. It is designed for use with large antennas (such as the **LPD-220/A5** and **BCH-3010**) and offers pneumatic polarization and tilt functions. It is especially useful in testing large EUTs such as automotive susceptibility testing.

Antenna mounting is by means of an easy-to-use clamping mechanism, which provides quick assembly and disassembly when needed. The wheeled base allows for easy movement for optimum illumination of the test area.

Standard height to the antenna mount is 90". Height adjustment from 65" to 90" is available as an option. Both height and tilt may be mechanized as well. Mechanized control can be achieved with one of our digital controllers, the **HD-202** or **HD-2002**, described on page 61.



AS-220/T

When used with the digital controllers, remote control from a PC is possible via an IEEE compatible interface. Fiber optic interface lines provide reduced radiated sources within the test area.

The entire **AS-200/T** is constructed of durable dielectric materials throughout (Models with mechanized height and tilt have no metal above 1 meter).