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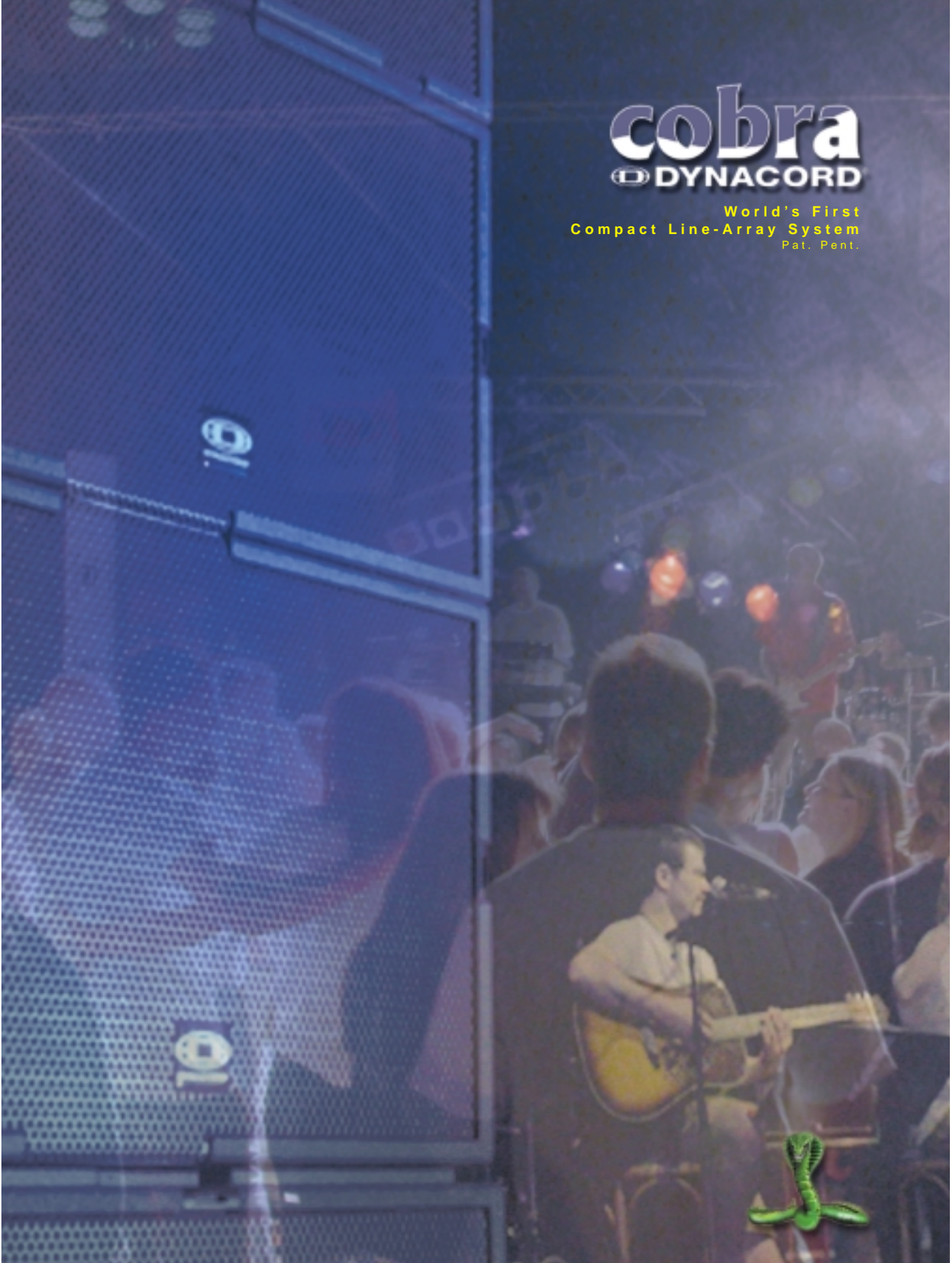


www.dynacord.com

cobra

DYNACORD

World's First
Compact Line-Array System
Pat. Pent.





- Groundstack or flying
- High SPL capability
- Line-Array Performance
- Easy Handling

cobra
DYNACORD

Philosophy

Line arrays have now become the preferred solution in the professional sound reinforcement business. Superior directivity over a larger frequency range, more consistent SPL projection across greater distances, and lower distortion through out the dynamic range are a few of the acoustical advantages gained over typical, horizontally arrayed speaker systems. As a result, line array systems are significantly well suited for providing a more consistent, higher level of fidelity amidst a greater majority of typical sound reinforcement applications.

Conventional line arrays today are large, heavy, expensive, and extremely costly to outfit and operate. Thus, they are typically constrained to a smaller range of applications, where a higher standard of audio quality takes precedent over cost. Despite their advantage in sound quality, conventional line arrays are seldom selected for all but the largest, most costly considerable applications.

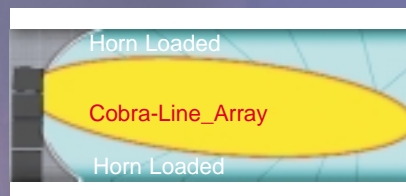
Enter the DYNACORD COBRA compact line array systems, COBRA 2 and COBRA 4. Simply stated, the DYNACORD COBRA systems harness the greatest acoustical advantages of line array philosophy to deliver an exceptional level of fidelity, and useability. All this designed in a remarkably compact, cost effective, easy to handle package that has yet to be equaled, less even approached.

The extremely wide horizontal and shallow vertical directivity of the DYNACORD COBRA compact line array systems provide coverage to large audience areas unscathed by the typical destructive, acoustical interference that is unavoidable with typical, horizontally arrayed speaker systems. This level of controlled directivity offers many advantages. The lack of unwanted energy from the sides and rear of the array allows for easier placement, lower stage noise, and astounding levels of gain before feedback. The loss of energy towards unwanted reflective surfaces is avoided, eliminating most interference from the surrounding environment. Additionally, it provides a greater majority of output focused in the useable plane, resulting in higher efficiency.

Horizontal Pattern



Vertical Pattern



System Components

Every aspect of a COBRA system has been designed to ensure maximum ease of handling, reliability, and audio fidelity.

All Cobra system speaker cabinets are equipped with heavy-duty castors for easy transport, a latching front cover for protection in transit, and specific component thermal protection known as VOICE COIL TRACKING PROTECTION. This circuit monitors the thermal behavior of each specific component and allows for accurate protection with virtually no acoustic interference.

Each COBRA system includes prewired, and programmed amplifier racks. Each rack contains a DYNACORD DSP-244, two DYNACORD L-2400 Precision Series amplifiers and a connector panel for input and output signal. The DSP-244 is optimized for each specific COBRA system to ensure proper phase response, time alignment, crossover, system equalization.



COBRA-TOP - 600 watts RMS / 200 watts cont.program/ 8 ohms
Passive 3-way fullrange / mid-high component of the COBRA-2 system. Integrated fly track.
Equipped with a 15" Electro-Voice DL15Y speaker for the low frequency range, a coaxially arranged midrange line array consisting of four C 8 conical MF horns and a DH 2T titanium driver with a CD horn for the high frequency range.

COBRA-Top



COBRA-SUB - 600 watts RMS / 1200 watts cont.program/ 8 ohms
Bass-reflex subwoofer component of the COBRA-2 system loaded with Electro-Voice X 180 B driver. Integrated fly track.

COBRA-Sub



COBRA-4 FAR - 800 watts / 400 watts / 400 watts cont.program/ 8 ohms per way
Active 3-way farfield mid-high component in the COBRA-4 system. Integrated fly track.
Identically equipped in the low- and medium-frequency ranges to the COBRA-4 TOP but with an additional HF line array consisting of three Electro-Voice DH2T titanium drivers on an 5° HF waveguide horn.

COBRA-4 Far



System Components



COBRA-4 Top

COBRA-4 TOP - 800 watts / 400 watts / 200 watts cont.program/ 8 ohms per way

Active 3-way nearfield mid-high component in the COBRA-4 system. Integrated fly track. Equipped with a 15" Electro-Voice DL15Y speaker for the low frequency range, a coaxially arranged midrange line array consisting of four C 8 conical MF horns and a DH 2T titanium driver with a CD horn for the high frequency range.



COBRA PWH

COBRA PWH - 600 watts RMS / 1200 watts cont.program/ 8 ohms

Planar waveguide horn subwoofer with Electro-Voice 18" EVX 180 B driver for especially powerful and penetrating bass reproduction in the COBRA-2 and COBRA-4 systems.

CSR-12 - 2x 1200 watts / 4 ohms SUB and 2x 1200 watts / 4 ohms TOP

Ready-cabled 12 U stereo amp rack with pre-programmed DSP 244 controller, two L2400 power amps for the sub and mid-high ranges as well as the CP-44 connector panel for the LF controller, the speaker system cabling and the AC connection.

CSR-4 - 4x 1200 watts / 4 ohms für SUB, LOW, MID und HIGH

Ready-cabled 12 U mono amp rack with programmed DSP 244 controller, two L2400 power amps for the sub-, low-, mid- and high-frequency ranges as well as the CP-84 connector panel for the LF controller, the speaker system cabling and the AC connection.

Rigging for COBRA Systems

TC-04 2" truss clamp with an M12 ring nut to attach the CSST COBRA rigging wire.

CSST rigging wire with snap-hook and double stud for hanging the top COBRA cabinet.

CSSM connecting wire with double studs each side for connecting the cabinets to one another.

WS-04 & WS-08 adjuster-belt for determining the angle of tilt of the entire 'wing' (4m and 8m).

CSW-25

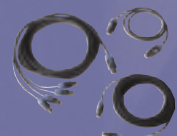
Wedge set consisting of two 2.5° wedges that can be placed at the front or back of the cabinets to aim the array components at the listening areas.

Voice Coil Tracking Protection

All channels (Sub, Low, Mid, and High) of COBRA system components employ fully electronic protection circuitry to provide the highest dynamic range possible. This voice coil tracking protection allows driving the cabinets using power amps that provide extreme power output capacity of up to 1200 watts into 8 ohms, per audio channel..

CP-44 und CP-84

CP-44 and CP-84 stereo connection panel with XLR-NF controller, loudspeaker system connection sockets (COBRA-2: CP-44 and COBRA-4: CP-84) as well as 16A CEE mains connector.



cobra-2

COBRA-2 SYSTEM

The COBRA - 2 System is designed to provide high quality sound reinforcement for events in small to medium sized applications covering distances up to 120 ft. The COBRA -2 system basic configuration produces a maximum SPL of 137 dB L + 137 dB R in the mid-high frequency range and 141 dB in the bass.

In it's basic configuration, the COBRA - 2 system consists of 4 COBRA TOP mid-high enclosures, 4 COBRA SUB subwoofers, a pre-wired CSR 12 amplifier rack with necessary speaker cables and a pair of 2.5° tilt boards that can be arranged up or down, under the COBRA TOPs for optimal vertical coverage and aiming.

If required, up to 6 COBRA TOPs and 6 COBRA SUBs can be safely driven from the amp rack included. There is also space in the amp rack to allow for a 3rd amplifier for any reason an application might require (sub extension, separate front-/side-fill or monitor).



COBRA
DYNACORD

cobra-2

The largest sensible configuration of the COBRA – 2 system would consist of one full COBRA – 2 system arrayed per side (4 TOPs and 4-6 SUBS per side). For especially powerful and penetrating extended bass reproduction COBRA – 2 can be enhanced utilizing the PWH bass horns, suitable for a wide range of music and venues. Up to 4 PWH subwoofers may be driven from the amp rack included.

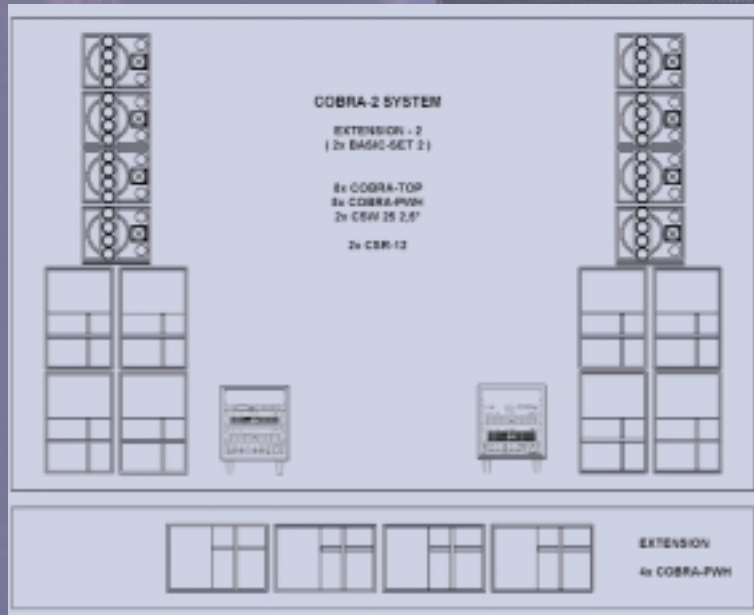
Since doubling the number of COBRA TOP enclosures halves their vertical radiation angle, special attention must be paid to the way they are aligned - regardless of whether they are flown or stacked.

A COBRA TOP has a coverage pattern of $120^{\circ} \times 30^{\circ}$, horizontal and vertical. Two TOPs stacked have a coverage pattern of $120^{\circ} \times 15^{\circ}$. Three COBRA TOPs stacked have a coverage pattern of $120^{\circ} \times 11.25^{\circ}$, and four TOPs $120^{\circ} \times 7.5^{\circ}$.



Notice:

An all-inclusive COBRA CD-ROM is available, Part No. 163040. DSP and other downloads are available at www.dynacord.com



cobra-4

COBRA-4 SYSTEM

The active 4-way COBRA-4 SYSTEM allows for the same reliability and ease of operation as the COBRA 2, yet is capable to project across distances up to 250 ft for several thousand people, depending on environmental and musical factors. With a FOH distance of 100 feet, the COBRA 4 produces average SPL levels of 110dB in the mid-high range and 120 dB in the bass range.

The COBRA 4 system includes four COBRA-4 TOP, two COBRA-4 FAR, eight COBRA PWH, two pre-wired CSR 4 amp racks, all necessary speaker cables, and four 2.5° tilt boards.



COBRA-4
© DYNACORD

cobra-4

To achieve necessary long throw distances, a COBRA 4 FAR is positioned at the top of the line array. The low and mid frequency components arrangement in the FAR are identical to the COBRA 4 TOP, however three EV DH2T compression drivers loaded into a 5°-HF-waveguide are used to further project the high frequency range with a dispersion of 90° x 5°.

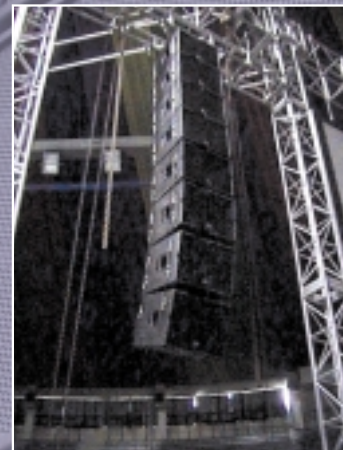
Additional COBRA 4 FARs may be used to supplement COBRA 4 in applications requiring extended coverage.

The COBRA PWH is a patented, horn-loaded subwoofer design delivering improved directivity, and maximum efficiency creating a bass response tailored for sound reinforcement applications requiring maximum bass impact.



The illustration shows a medium-sized COBRA-4 configuration for typical medium-sized open-air events in a city.

It consists of a COBRA-4 system and additional PWH bass horns as well as two line-arrays each consisting of four flown COBRA-4 FAR and 1 - 2 COBRA-4 TOP cabinets. The lowest of the COBRA-4 TOPs (nearfield) and the COBRA-4 FAR adjacent have each been tilted 5° downwards, whilst the highest three COBRA-4 FARs hang in a straight line. Using the adjuster-belt, the central axis of these three COBRA-4 FARs is aimed at the most distant third of the area to be covered. For particularly wide (> 15m) applications, it makes sense to place additional COBRA-4 TOPs on top of the stacked COBRA PWH bass array, to cover the area directly in front of the stage.



SPECIFICATIONS

SYSTEMS	COBRA-2 SYSTEM		COBRA-4 SYSTEM		
TYPE	COBRA-SUB	COBRA-TOP	COBRA-PWH	COBRA-4-TOP	COBRA-4-FAR
ORDER No	112 868	112 869	112 895	112 898	112 897
CABINET	SUBWOOFER	MID-HIGH CAB.	SUBWOOFER	MID-HIGH CAB.	MID-HIGH CAB.
CABINET TYPE	VENTED	PASSIVE 3-WAY	HORN LOADED	ACTIVE 3-WAY	ACTIVE 3-WAY
IMPEDANCE	8 OHMS	8 OHMS	8 OHMS	-----	-----
LO-MID-HIGH	-----	-----	-----	8 - 8 - 8 OHMS	8 - 8 - 8 OHMS
RATED POWER RMS	600 WATTS	600 WATTS	600 WATTS	-----	-----
LO-MID-HIGH (WATTS)	-----	-----	-----	400 - 200 - 100	400 - 200 - 200
PROGRAM POWER	1200 WATTS	1200 WATTS	1200 WATTS	-----	-----
LO-MID-HIGH (WATTS)	-----	-----	-----	800 - 400 - 200	800 - 400 - 400
SPL 1 WATT / 1 M	98 dB	100 dB	101 dB	100 dB	100 dB
max. SPL / 1 M	129 dB	131 dB	132 dB	131 dB	131 dB
FREQ. RANGE (-10dB)	38Hz - 300Hz	50Hz - 15kHz	38Hz - 160Hz	50Hz - 15kHz	50Hz - 15kHz
DISP. ANGLE 1kHz (-6dB)	-----	H 120° x V 30°	-----	H 120° x V 30°	H 120° x V 30°
DISP. ANGLE 10kHz (-6dB)	-----	H 90° x V 40°	-----	H 90° x V 40°	H 90° x V 5°
INT. PASS. X-OVER	-----	700Hz - 4kHz	-----	-----	-----
REC. ACTIVE X-OVER	124 Hz	124 Hz	124 Hz	124Hz-700Hz-4kHz	124Hz-700Hz-4kHz
VOICE COIL PROT.	SUB	LOW-MID-HIGH	SUB	LOW-MID-HIGH	LOW-MID-HIGH
COMPONENTS HIGH	-----	DH 2T / HPT 94	-----	DH 2T / HPT 94	DH2T LINE ARRAY
ORDER #	-----	355 391 / 367 979	-----	355 391 / 367 979	3x 355 391
COMPONENTS MID	-----	C8 LINE ARRAY	-----	C8 LINE ARRAY	C8 LINE ARRAY
ORDER #	-----	4x 361 376	-----	4x 361 376	4x 361 376
COMPONENTS LOW	-----	DL 15 Y	-----	DL 15 Y	DL 15 Y
ORDER #	-----	361 142	-----	361 142	361 142
COMPONENTS SUB	EVX 180 B	-----	EVX 180 B	-----	-----
ORDER #	349 397	-----	349 397	-----	-----
CONNECTORS FR	-----	4-pole 1+/-	-----	-----	-----
CONN. HIGH	-----	-----	-----	8-pole 4+/-	8-pole 4+/-
CONN. MID	-----	"SYSTEM" 4-pole 2+/-	-----	8-pole 3+/-	8-pole 3+/-
CONN. LOW	-----	-----	-----	8-pole 2+/-	8-pole 2+/-
CONN. SUB	4-pole 1+/-	-----	4+8-pole 1+/-	-----	-----
DIMENSIONS mm (WxHxD)	600 x 615 x 717	600 x 485 x 717	615 x 910 x 823	600 x 485 x 717	600 x 485 x 717
WEIGHT	58,0 kg	55,0 kg	72,0 kg	51,0 kg	60,0 kg
CABINET	18 mm	18 mm	18 mm	18 mm	18 mm
STYLE	BIRCH PLYWOOD	BIRCH PLYWOOD	BIRCH PLYWOOD	BIRCH PLYWOOD	BIRCH PLYWOOD
OUTFIT	BLACK	BLACK	BLACK	BLACK	BLACK
COATING	POLYURETHANE	POLYURETHANE	POLYURETHANE	POLYURETHANE	POLYURETHANE
STEEL GRILLE	POWDER COATED	POWDER COATED	POWDER COATED	POWDER COATED	POWDER COATED
HANDLES	2 pcs.	2 pcs.	6 pcs.	2 pcs.	2 pcs.
CASTORS	4x 100mm	4x 100mm	4x 100mm	4x 100mm	4x 100mm
WARRANTY	36 MONTH	36 MONTH	36 MONTH	36 MONTH	36 MONTH

Testimony

Chuck Walthall (Walthall Associates USA)

*"The Cobra's high-fidelity purity and sonic output is very neutral and transparent from such a compact system, The vocal articulation and high-fidelity impact is likened to a large scale system with massive amplification. The package is perfectly fitted for small to medium PA applications and the "plug & play" simplicity is second to none. **One of the most important considerations for any sound reinforcement crew is setup time and the Cobra redefines plug & play in the audio industry, thus greatly reducing operating costs by freeing up staff to work on the projects"**.*

Christopher Holder (Audio Technology AUSTRALIA)

"For example, we were taking out a 6-tonne truck and now we're travelling with a 4-tonne truck – and it's only two-thirds full. With Cobra we can travel with less crew, get the gear in and out more quickly and have better sound. So it just wins in all departments...

.....It's completely stable top to bottom and at all levels – from idling to flat out. There's also a warmth that comes with the three-way driver configuration. If you go from a horn to an 8- or 12-inch, I don't think you get that amazing clarity in the vocal range that Cobra's midrange drivers offer".

SONAR 2002 (Barcelona SPAIN)

During the three days of Festival was arranged the COBRA-System sound for LAB space, where was combined several performance of House, techno and chill-out music. Dynacord received from all the Sonar staff the congratulations, for the result and coverage of Festival. Mr. Pedri, the engineer of Festival, said:" It's great, the sound is like Hi-fi, unbelievable. It's really clear wherever you go from all the audience areas. It's just Fantastic".

