KEF Museum
1960s

Carlton

CARLTON (1967-69)

The Carlton, released in 1967, was born out of KEF's considerable experience in the design and manufacture of broadcast monitor systems for professional sound, film and television studios.

Tests indicated that the most critical range in a loudspeaker extended from 250 to 4000Hz, where the ear can detect very small changes level as well as quite small amounts of colouration. Key to this new system, therefore, was the M65 midrange unit, a highly sophisticated design based on a 2.5 inch hemispherical diaphragm made initially of aluminium and later changed to 'Acoustilene' (plastiflex doped bextrene). Driven at its outer edge by a 2.5" diameter voice coil working in a powerful magnetic field, the unit was highly sensitive, and some idea of its construction can be gained from the weight of the magnet structure, which was 6.5 lbs. The rear of the diaphragm was loaded by a 33" long pipe, damped with a density-tapered plug of long fibre wool. To ensure adequate power handling the voice coil former was made of aluminium with heavy copper wire encapsulated in resin.

The smooth transparency of this new mid-range unit was at once apparent. Alliance with the new T27 tweeter extended the range right up to 30kHz without directional effects and provided fatigue free reproduction of a standard far beyond that of any other loudspeaker of the time.

The woofer used to complete the system was an updated version of the well-known B1814 with its massive rectangular flat-fronted diaphragm of aluminium-skinned polystyrene, working in a highly damped and rigidly-braced, enclosed cabinet.

Fussy styling was deemed inappropriate with such a large enclosure, the simple design relying on first class cabinet work and carefully selected veneers of Teak, Rosewood (Palisander) or Walnut with a bronze grille.

Specification	Carlton
System type	Three-way, floor standing
Enclosure type	Closed box
Size	36 x 17 x 14 inches (915 x 432 x 356 mm)
Weight	85 lb (38.6 kg)
Input impedance	4-8 ohms
Maximum input power	25W rms, 50W peak
System resonance	45Hz
Frequency range	20-30,000Hz
Input connections	Bulgin P.74 plug.
System	A6048
Drive units	B1814 bass unit (A6179), M65 Midrange unit (A6432), T27 tweeter (A6430)
Crossover	A6407

KEF

Cresta KEF's latest super compact 2 way system

The design of very small high quality loudspeakers involves a difficult compromise between power handling capacity, sensitivity, low frequency limit and the internal volume of the box. These factors are interrelated but conflict with each other. Sensitivity cannot be sacrificed because this kind of speaker perhaps more than any other, must be capable of operation with small power amplifiers. At the same time, its use should not be precluded with higher powered amplifiers. The main factor is the size of the box which if too small will impair the bass. The volume of the new KEF CRESTA has been carefully chosen with regard for acoustical performance rather than spectacular miniaturisation. Its appearance has also been deftly styled to give it a smart, crisp look without being garish.

The two units which drive this outstanding speaker are entirely new designs, both containing fresh technical features. The 5″ diameter low frequency unit employs an Acoustilene* diaphragm which gives a smoothness of response unobtainable with paper diaphragms. It is also fitted with a neoprene surround and nylon rear suspension, permitting very large linear excursions, necessary when handling high power.

The HF unit employs a $\frac{3}{4}$″ diameter hemispherical Melinex diaphragm which not only gives exceptionally smooth response from 1 kHz to 30 kHz, but also has a very broad polar radiator pattern. The reproduction from this system is therefore not at all directional, giving wonderfully sweet and realistic string tone and notably sharp stereo images.

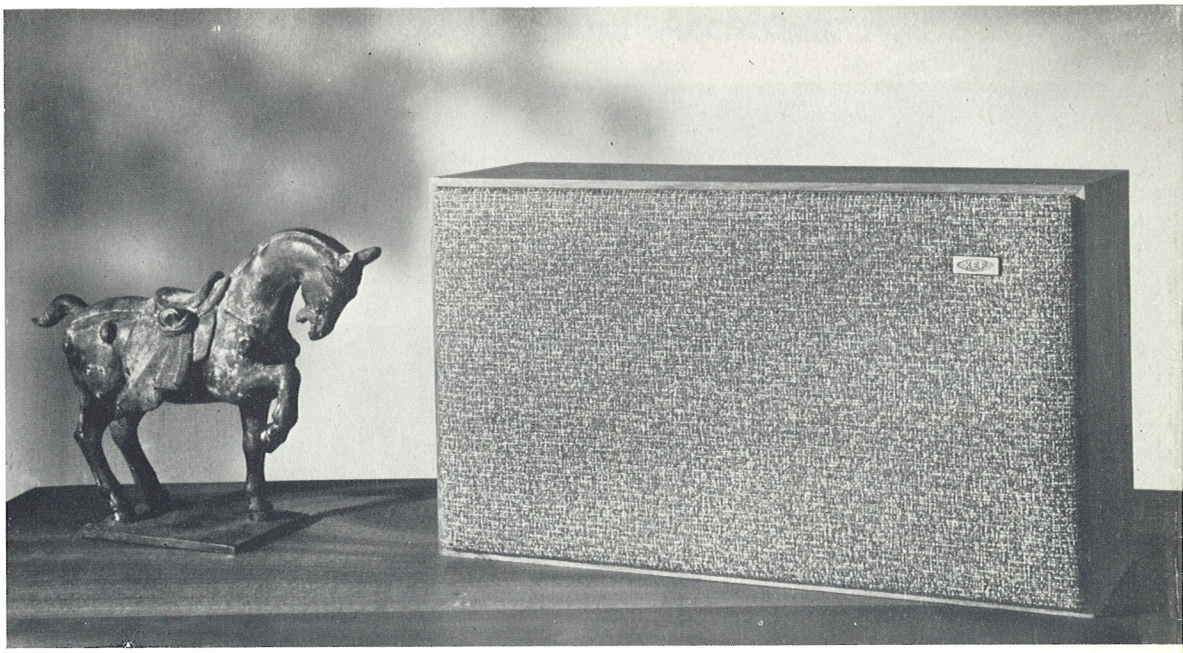
The KEF CRESTA makes a significant step forward in that it not only covers the full frequency range with low distortion but that it achieves a new standard of clarity and musicality in a diminutive cabinet.

* A new diaphragm material developed by KEF. It gives a response far superior to paper and remains unaffected by atmospheric conditions.

SPECIFICATIONS:

Dimensions:	13″ × 9″ × 7″ 33 × 23 × 18 cm.	**System resonance:**	59 Hz.	Fitted with LF unit type B110 and HF unit type T27 with 4 kHz dividing network.
Weight:	14½ lb. 6.6 kg.	**Input connections:**	Terminals	
Impedance:	4 - 8 ohms.	**Internal volume:**	8.6 litres	Cabinet finished in selected walnut or teak veneer and woven brown grille.
Max input:	15 watts r.m.s. 30 watts music	**Frequency range:**	50 - 30,000 Hz.	

N.B. The CRESTA is produced with 4 to 8 ohms impedance to suit all transistorised amplifiers. It can also be operated with the majority of 15 ohm valve amplifiers.



Celeste Mk. 2

KEF produced the first ultra compact high fidelity speaker system in 1962 and the original Celeste has since had many imitators, but no equals. Thousands of Celestes are in use all over the world and its superb qualities have been praised by musicians, Hi-Fi enthusiasts and audio technicians of many lands.

The outstanding features of the Celeste are very smooth frequency response and wide treble dispersion, which set it apart from all other speakers of comparable size and price.

Two separate units are used to cover the entire frequency range. Both are of unique design and are responsible for the outstanding performance of the Celeste. The bass unit is the B.139 which is fitted with a flat, rectangular diaphragm moulded from thick plastic foam. It is stiffened by aluminium skins to provide an extraordinarily rigid structure which completely avoids all trace of 'break up' over the working range. A full description of the B.139 appears towards the end of this leaflet.

Frequencies above 1,000 c/s are separated by a printed circuit crossover network and channelled to a T.15 high frequency radiator which reproduces strings and other sounds with great delicacy.

SPECIFICATION:

Size:	18″ × 10¾″ × 6″ 46 cm. × 27 cm. × 17 cm.
Weight:	21 lb. 9.5 kg.
Impedence:	8 - 16 ohms.
Max. Input:	15 watts r.m.s. 30 watts peak
System resonance:	80 Hz.
Frequency range:	50 - 20,000 Hz.
Input connections:	Terminals

Fitted with separate B.139 Mk. 2 woofer, T.15 Mk. 2 tweeter and printed circuit crossover network.

Finished in super grade hardwood veneer with a choice of oiled American walnut or teak, with coffee fleck Vynair grille.

The styling is commendably modern without seeming austere.

It blends unobtrusively with furnishings both classical and modern.

Concord

The Concord employs two loudspeaker units of very advanced design, skilfully blended with a sophisticated printed circuit network to give smooth coverage of the entire audio range. The bass reproduction is quite astonishing from such a small enclosure. Organ pedal notes and the bass instruments of the orchestra are brought out with amazing clarity and weight, so that the Concord can be compared with larger and much more expensive systems.

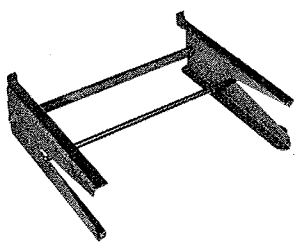
It is well known that clean reproduction of the higher frequencies, free from stridency, is very difficult to achieve and KEF were pioneers in the search for smooth treble with the famous T.15 tweeter. The Mk.2 version of this unit, used in the Concord, is notable for its remarkable musical quality, reproducing massed violins and soprano voices with beguiling translucency. Great care has also been taken to obtain correct tonal balance and at every stage in development the Concord has been compared with high grade monitor speakers used by broadcasting and recording organisations. This guarantees that with the Concord you hear your records as they were intended to sound, free from exaggerated presence effects and other defects of balance.

Many otherwise fine loudspeakers are ruined by their grille fabrics, which upset the frequency response and introduce objectionable colouration. In other cases the appearance is spoiled by the obtrusion of the "works", which are easily seen through the grille. KEF have researched this interesting problem, resulting in the very attractive front design for the Concord. This double layered construction employs a special kind of foam material produced to a precise specification, in conjunction with a highly decorative and durable anodised aluminium mesh. This combination introduces no detectable colouration, and at the same time remains visually opaque.

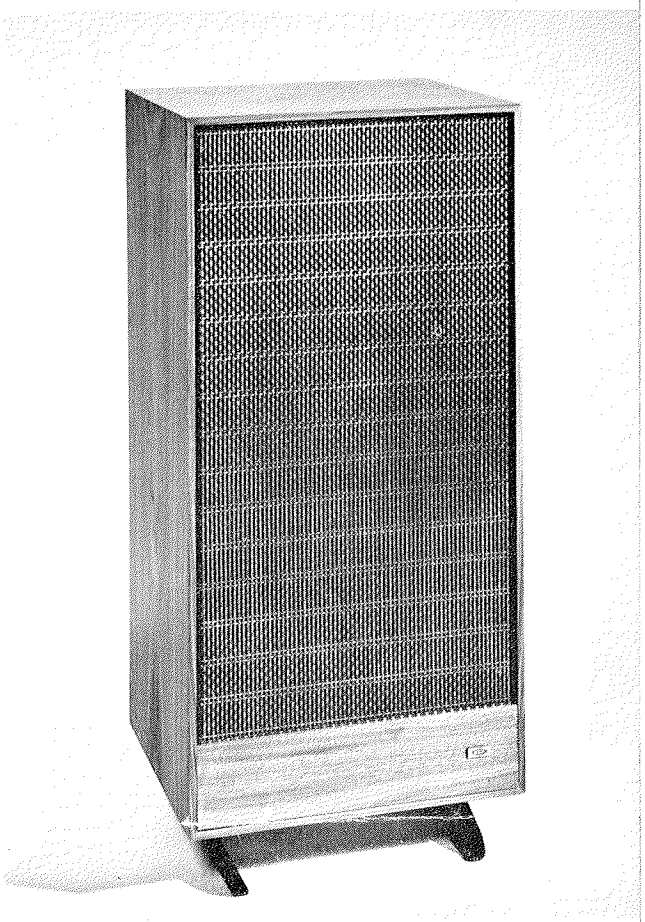
SPECIFICATION:

Size:	24″ × 15″ × 9⅞″ 61 cm. × 38 cm. × 25 cm.	**Max. input:**	15 watts r.m.s. 30 watts music
Weight:	37 lb. 17kg.	**System resonance:**	45 Hz.
Impedance:	8 - 16 ohms.	**Frequency range:**	30 - 20,000 Hz.
		Input connections:	Terminals

Fitted with B.139 Mk.2, T.15 Mk.2 and printed circuit crossover network. Finished in selected hardwood veneers with a choice of French Walnut or Burma Teak, Lustre black metal grille and trim bars.



The Concord is shown above resting on a KEF adjustable Floor stand. This useful accessory will improve the appearance of most floor mounted cabinets and can be adjusted to tilt the speaker backwards when listening at close range.



Carlton

a superb full sized three way system containing many new features

Our experience in manufacturing monitor systems for professional sound, film and television studios shows that the ear can appreciate extremely small discrepancies in mid-band reproduction. Tests indicate that the most critical range extends from 250 Hz to 4,000 Hz. Over these four octaves the ear can detect differences of less than 1 dB between two loudspeakers as well as quite small amounts of colouration. The majority of two unit systems produced today, as well as many three unit systems, have their crossover point often very close to the limit of one or both units and it is very difficult indeed to control the response in the overlap region. Other problems are created by the sudden change of directivity in passing from a large diaphragm to a small one, phase shift caused by the crossover network and irregular polar pattern due to spaced units radiating in unison in the crossover region.

These faults can be avoided by using a single wide range unit, but results are then marred by Doppler distortion at low frequencies and a polar pattern which is too sharp, at high frequencies.

The ideal solution is to cover the band from 250 Hz to 4,000 Hz with a single unit having a diaphragm small enough not to become unduly directional at the higher frequency, using in addition a woofer and super tweeter to complete the range.

M65 MID RANGE UNIT

The starting point for the KEF CARLTON was a new mid-range unit of fundamentally different design. This utilises a 2½" diameter hemispherical diaphragm made from Acoustilene* driven at its outer edge by a 2½" diameter voice coil working in a powerful magnetic field. The unit is highly sensitive and some idea of its construction is gained from the weight of the magnet structure, which is 6½ lb.

The rear of the diaphragm is loaded by a 33" long pipe damped with a density tapered resistive plug of long fibre wool.

This unit must be capable of handling most of the music power contained in the programme signal, special precautions have been taken against thermal failure by using an aluminium voice coil former and heavy copper voice coil, encapsulated in epoxy resin.

The smooth transparency of this mid-range unit is at once apparent. Alliance with the new T27 tweeter extends the range right up to 30 kHz without directional effects and provides realistic, fatigue free reproduction of a standard far beyond that reached by any other loudspeaker. The woofer used to complete the system is an updated version of the well known B1814 with a massive rectangular flat fronted diaphragm. This works in a highly damped and rigidly braced enclosed cabinet. With such a relatively large enclosure it was felt that fussy styling would be inapropriate. The simple design relies for its effect on first class cabinet work and carefully selected veneers.

Every CARLTON is carefully tested and individually auditioned to ensure agreement with a master sample.

N B Low impedance to give optimum results from all transistorised amplifiers.

SPECIFICATION:

Dimensions:	36" × 17" × 14"
	92 cm. × 43 cm. × 35 cm.
Weight:	85 lb. 38 kg.
Impedance:	4 - 8 ohms.
Max. input:	25 watts r.m.s. 50 watts music
System resonance:	45 Hz.
Frequency range:	20 - 30,000 Hz.
Input connections:	Bulgin P.74 plug

*Acoustilene - a KEF development.

Cabinet finished in selected teak, rose-wood, (palisander) or walnut with bronze grille.

Portable Celeste

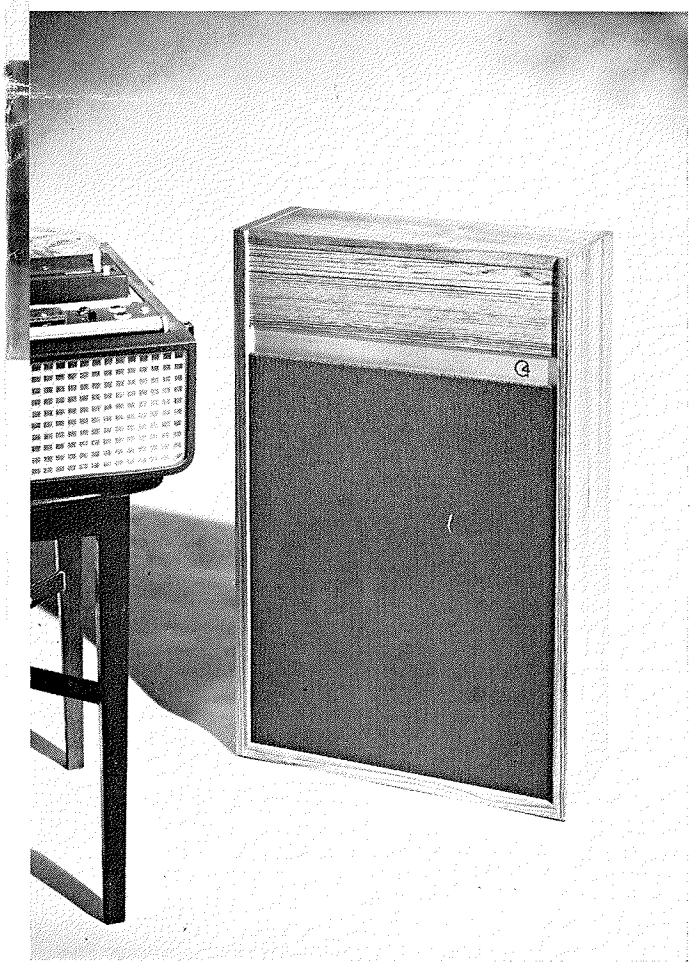
The PORTABLE CELESTE is an industrial/professional 2 way speaker housed in a rugged enclosure fitted with collapsible carrying handle and anodised metal grille. It is suitable for high quality reproduction of sound in schools and institutions and for use as a portable monitor speaker. Many Portable Celestes are used by Radio Television Francais in outside broadcast equipment, and by famous recording companies for their outside work.

SPECIFICATION:

Size:	20″ x 12¾″ x 7¾″.
	50 cm. x 32 cm. x 20 cm.
Weight:	26¾ lb. 13 kg.
Impedance:	8-16 ohms.
Max input:	15 watts r.m.s. 30 watts peak.
System resonance:	65 Hz.
Frequency range:	40 - 20,000 Hz.
Input connections:	Bulgin P. 74 (Cannon XLR.3 available at extra cost)

Fitted with separate B.139 Mk.2 woofer, T.15 Mk.2 tweeter and printed circuit crossover network.

Finished in grey scuff-proof rexine.



Cantata

This model was originally designed for the Group 4 integrated High Fidelity Equipment and is now available separately. It represents the ultimate in slimline speakers both sonically and visually.

Interior arrangements are similar to those of the Celeste, employing the B.139 and T.15 units with printed circuit crossover network. The somewhat larger enclosure gives a noticeable improvement in bass response and as one would expect, the middle and high frequencies maintain that delicate transparency which is the hallmark of KEF speakers.

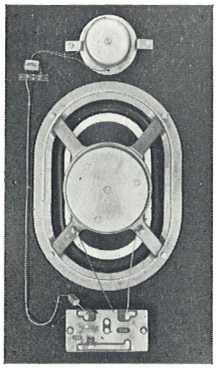
The cabinet is strikingly different from the usual run of 'little boxes' and its appearance matches the fine performance.

SPECIFICATION:

Size:	24″ x 16″ x 6″.
	61 cm. x 41 cm. x 15 cm
Weight:	27¾ lb. 12.5 kg.
Impedance:	8-16 ohms.
Max input:	15 watts r.m.s.
	30 watts peak.
System resonance:	60 Hz.
Frequency range:	40 - 20,000 Hz.
Input connections:	Terminals.

Fitted with B.139 Mk.2 bass unit, T.15 Mk.2 HF radiator and printed circuit crossover network.
Finished in selected Teak veneer with brushed antique silver trim and lustre black grille fabric.

Components for the Home Constructor and Architect . . . . .



There are some applications for which the standard range of KEF cabinet models are unsuitable and in these cases our complete baffle assembly is a good solution. The baffle is fitted with units and crossover network, wired and tested ready for installation in a cabinet, cupboard or architectural recess. Design leaflets giving all the necessary constructional information are available on request.

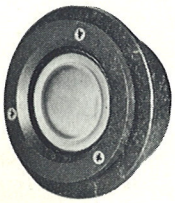
K2 BAFFLE.

This is the two-speaker assembly used in the Concord. It is an ideal low-cost system giving superb results in enclosures of modest size. Fitted with B.139 and T.15 Mk.2 units and DN7 crossover network.

SPECIFICATION:

Size:	22½″ x 13½″ x 4″. 57 cm. x 34 cm. x 10 cm.
Weight:	20 lb. 9 kg.
Impedance:	8 - 16 ohms.
Max input:	15 watts r.m.s. 30 watts peak.
Frequency range:	30 - 20,000 Hz.

T15 Mk.2. TWEETER

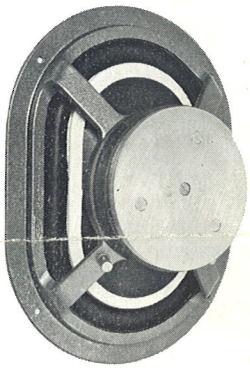


A wide range, low distortion high frequency radiator; fitted with exclusive hemispherical diaphragm made from aluminised Melinex, giving wonderfully smooth response to beyond 20,000 c/s with very wide dispersion of the higher frequencies. The Mk.2 version has an improved acoustical circuit which ensures level response in the critical frequency range below 4 kHz.

SPECIFICATION:

Size:	3¾″ dia. x 1⅞″ deep.
Weight:	2 lb. 1 kg.
Impedance:	15 ohms.
Max input:	6 watts continuous r.m.s. above 1 kHz 15 watts. music rating.
Flux density:	12,000 oersted.
Total flux:	43,000 maxwells.
Frequency range:	800 - 20,000 Hz.
Fundamental resonance:	550 Hz

B139 Mk.2. WOOFER



One of the most highly developed bass drivers in the world, the B.139 is an ideal unit for compact systems. The aluminium stressed plastic diaphragm of the B.139 gives complete freedom from transient distortion and break-up. The special shape of the diaphragm is designed to give very wide dispersion up to 1,000 c/s where the off-axis response is only 1 dB down at 45°.

SPECIFICATION:

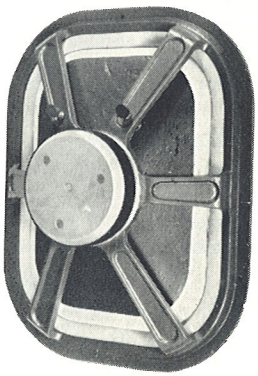
Size:	13″ x 9½″ x 3″.
Weight:	14 lb. 6.4 kg.
Impedance:	15 ohms.
Max input:	15 watts r.m.s.
Flux density:	10,500 oersted.
Total flux:	137,000 maxwells.
Frequency range:	30 - 1,000 Hz.
Fundamental resonance:	25 Hz.

B1814 WOOFER.

The B.1814 is one of the largest diaphragms in the world and it has over twice the area of the 12″ round unit. When properly baffled, it is capable of superb low frequency reproduction, and is therefor of special interest to organ enthusiasts.

SPECIFICATION:

Size:	18″ x 14″ x 4⅝″.
Weight:	16 lb. 7.3 kg.
Impedance:	15 ohms.
Max input:	25 watts.
Flux density:	12,700 oersted.
Total flux:	165,000 maxwells.
Frequency range:	20 - 1,000 Hz.
Fundamental resonance:	20 Hz.



KEF electronics limited TOVIL, MAIDSTONE, KENT.

Telegrams: **KEF, Maidstone.** *Telephone*: **Maidstone 58361.** *Telex*: **96197**

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