Type LDK 2

Economy
Studio quality
Self-contained camera
Wide application
Plumbicon* or vidicon camera tubes
Local or remote control
Optional accessories

The LDK 2 is an economic colour television camera providing studio-quality pictures. It is primarily designed for use in local and regional stations and commercial studios, but will also find application as announcer camera and caption scanning camera in the more sophisticated broadcast studios. The camera provides a standard PAL or NTSC coded composite colour signal as well as a set of RGB primary colour signals. It is a self-contained, partly modular design employing 1-inch Plumbicon or vidicon camera tubes and an electronic viewfinder with CRT of 7-inch screen diagonal. The camera lens can be selected from a range of four zoom lenses in versions with manual, motorized or servo control provisions. The LDK 2 camera equipment includes local and remote control panels, a 50-m camera cable (LDK 2/00 only), a set of camera indicating numbers and a service extender board.

Design details

The basic camera comprising the pick-up section and the video processing and deflection circuits, is designed to take modular encoder, genlock and operational control units, which plug into the camera rear. By simply exchanging modules, the camera can thus be equipped for PAL or NTSC operation, internal or external synchronization, and local or remote control. Of the four module positions, the double position at left is taken by either a local control module or a cable connector module for linking up with the remote control panel. The next position houses the encoder module, and the remaining two the genlock modules, one of which contains the subcarrier generator and the other the sync pulse generator. The camera cable has a diameter of 17-mm, a standard length of 50-m, an optional length of 15-m, and a maximum length of 300-m. It should be noted, however, that cable lengths exceeding 100-m, require additional cable correction provisions to be made.

* Registered Trade Mark for television camera tubes

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mounted as close as possible to the signal electrode of the tube, for minimum capacitance and for preventing the pick-up of spurious signals. A neutral density or colour correction filter can be inserted into a filter position between lens and prism.

The video processing and deflection circuits are mounted on hingeable printed boards, which provide full access to all circuit components as well as to the camera interior. The processing amplifier channels include dark-current compensation, linear matrixing (with bypass), gamma correction and horizontal contour correction (with bypass) stages. The linear matrix board is laid out in such a way that the matrix stage can be adapted to local studio requirements. The deflection circuits include an overscan selector, to facilitate camera line-up. The horizontal and vertical centring potentiometers are external controls on the camera.

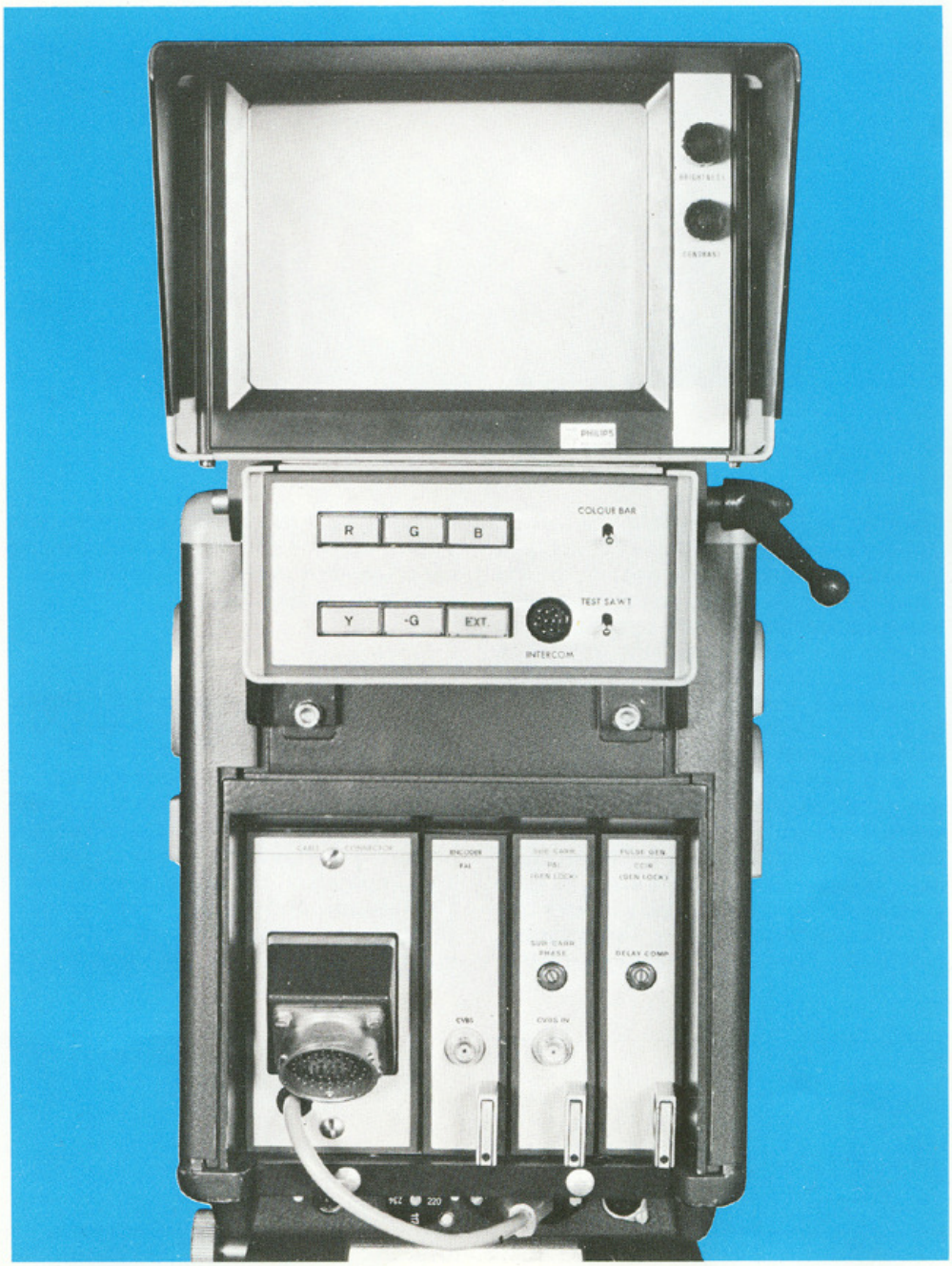
The standard remote control panel is equipped with faders for painting, black-level and iris adjustment. Also for painting purposes, the panel has +12 dB gain selectors. It further contains an automatic iris control selector, a mains on/off switch, an on-air tally lamp and an intercom headset jack. On the rear panel there are sockets for the R, G, B outputs, CVBS output, Reference Sync input, External Test Signal input, Mains input and Signalling input.

The camera optional accessories include a camera wedge plate and an associated adaptor plate for mounting the camera on various types of friction heads.

The system-dependent encoder module is available in versions for operation in accordance with the PAL or NTSC system. The module is fitted with a front panel CVBS output socket.
Genlocking is to the studio reference signal, which may be a CVBS or 'colour black' signal. The reference signal can be applied to the remote control panel or, in case of local control, to the subcarrier generator module, which is fitted with a front panel input socket. No reference signal being applied, the camera generator system will be free-running.

The tiltable viewfinder and associated video switching and audio unit, which is mounted underneath the viewfinder, are easily removable by unscrewing a mounting bracket. The video switching and audio unit is equipped with R, G, B, Y, -G and EXT signal selectors for viewfinder display. The Y signal for viewfinder display is horizontal contour-corrected. The basic unit also has toggle switches for the selection of colour bar and sawtooth signals from generators in the camera. It is further fitted with an intercom headset jack. The colour bar and sawtooth signal selectors are repeated within the camera, to enable the selection of these signals in applications where no viewfinder and associated switching unit are employed. For applications where no remote control panel is employed, the camera also contains an input socket for an external test signal.

The camera pick-up section comprising the prismatic colour-splitting system and the three deflection coil assemblies with camera tubes, is incorporated into one machined, magnesium cast block, to ensure optimum registration accuracy and stability. The deflection coil triplets are computer-selected for close matching. The first signal pre-amplifier in each camera channel, a FET transistor, is



TECHNICAL DATA

Scanning systems
Version LDK 2/00 – CCIR/PAL, 625 lines, 50 fields/s
Version LDK 2/50 – EIA/NTSC, 525 lines, 60 fields/s

Power supply
110, 117, 220 and 234 V ±10%, by voltage selector; 50 or 60 Hz;
Power consumption 125 VA

Input signals
Reference signal, CVBS or 'colour black', 1 Vpp ±50%, positive going.
External viewfinder signal (VB), synchronous, 1 Vpp into 75 Ohm.

Output signals
Coded composite colour signal (CVBS), 1 Vpp into 75 Ohm.
R, G, B primary colour signals (VB), 0.7 Vpp into 75 Ohm (only available in the remote control mode).

Scene illumination
1250 lux (125 ft. cd.) for a signal-to-noise ratio of −43 dB in the CVBS output signal; lens iris f/2.8; reflection factor 60%; gamma correction 0.6; with linear matrixing; without horizontal contour correction; with 5 MHz bandpass filter; measured at 45% of nominal level.
250 lux (25 ft. cd.) for acceptable pictures, at lens iris f/2.8

Resolution
30% modulation depth at 5 MHz

Colour registration
Deviations of Red or Blue in any direction with respect to Green. In an ellipse with axes 0.9 of the picture height and width, deviations will be no more than the distance equal to a horizontal scanning time of 60 ns (optional 40 ns).
Within a circle of a diameter equal to the picture width, deviations will be no more than 80 ns.
Outside this circle, deviations will be no more than 150 ns (optional 80 ns).

Registration drift
Deviations of Red or Blue in any direction with respect to Green. Variations of the ambient temperature of the camera of no more than 10°C within the ambient temperature range of 0 to +45°C will not cause mutual picture shifts larger than 100 ns.
A maximum change of 0.5 Gauss in the strength of the external magnetic field will not cause a registration drift greater than 60 ns in the ellipse (see colour registration).

Geometry error
Maximum 1% within the circle with diameter equal to the picture height. Maximum 2% outside this circle.

Gain control
From the remote control panel, in each channel 2 dB continuously adjustable by faders, +12 dB switchable, and 10 dB adjustable by screwdriver preset controls.
By internal preset controls in the camera, a further control range of 15 dB in the Red and Blue channels.

Frequency response
±1 dB up to 5 MHz,
−4 dB at 7 MHz; measured at the encoder CVBS output, without horizontal contour correction, without notch filter.

Contour correction
A horizontal contour correction signal derived from the linear Green signal, is added to the Y-signal in the encoder and the Y-signal for display on the camera viewfinder.
Correction signal level adjustable to 70% of the nominal output signal. Maximum correction at 2.9 MHz.

Gamma correction
Correction factor 0.6 (adjustable between 0.4 and 0.65). Matching of Red and Blue with respect to Green 2% of the nominal output signal.

Black-level adjustment
Master control from +30% to −45% of the nominal output signal.
Individual control from +10% to −10% of the nominal output signal.

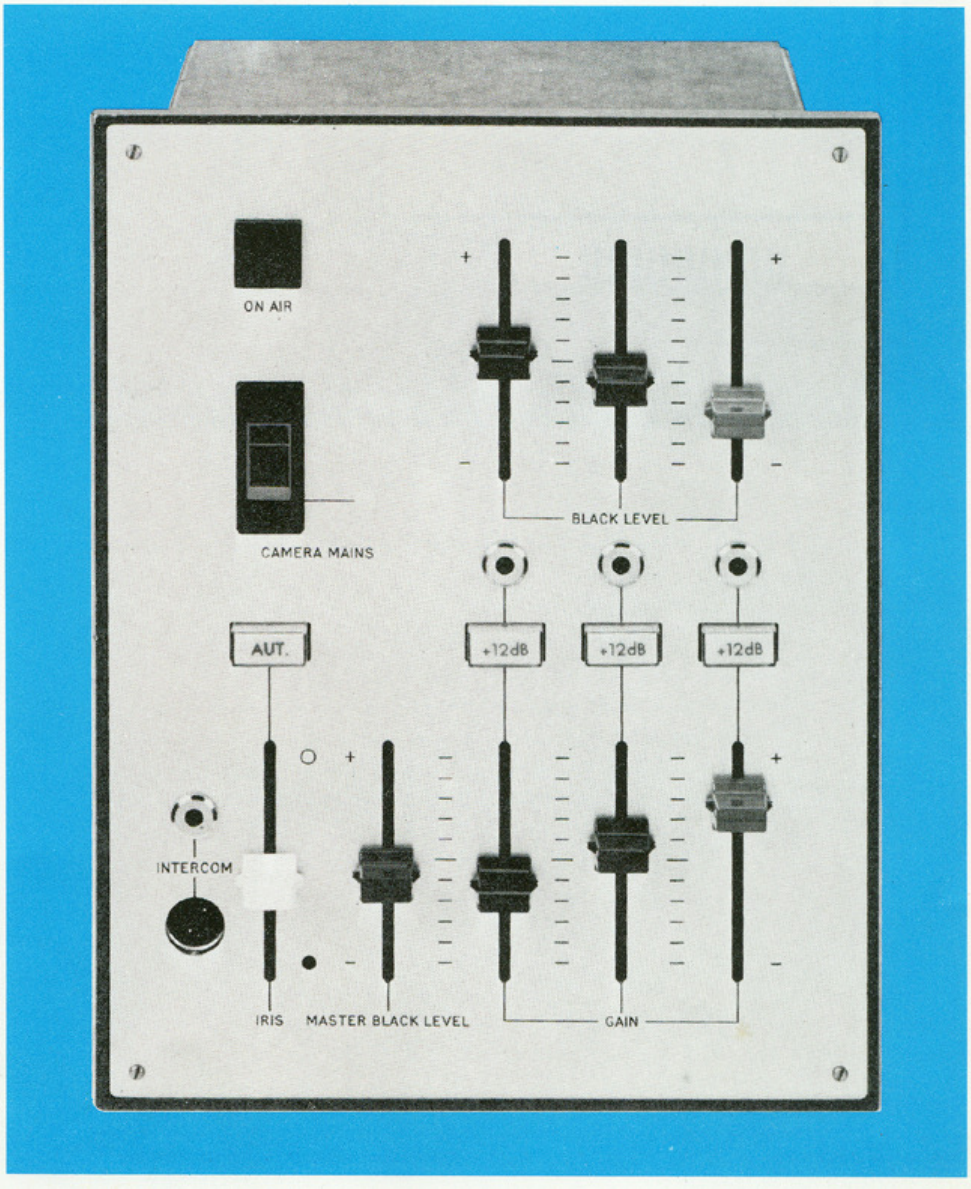
White clipping
In each channel, at 105% of the nominal output signal level.

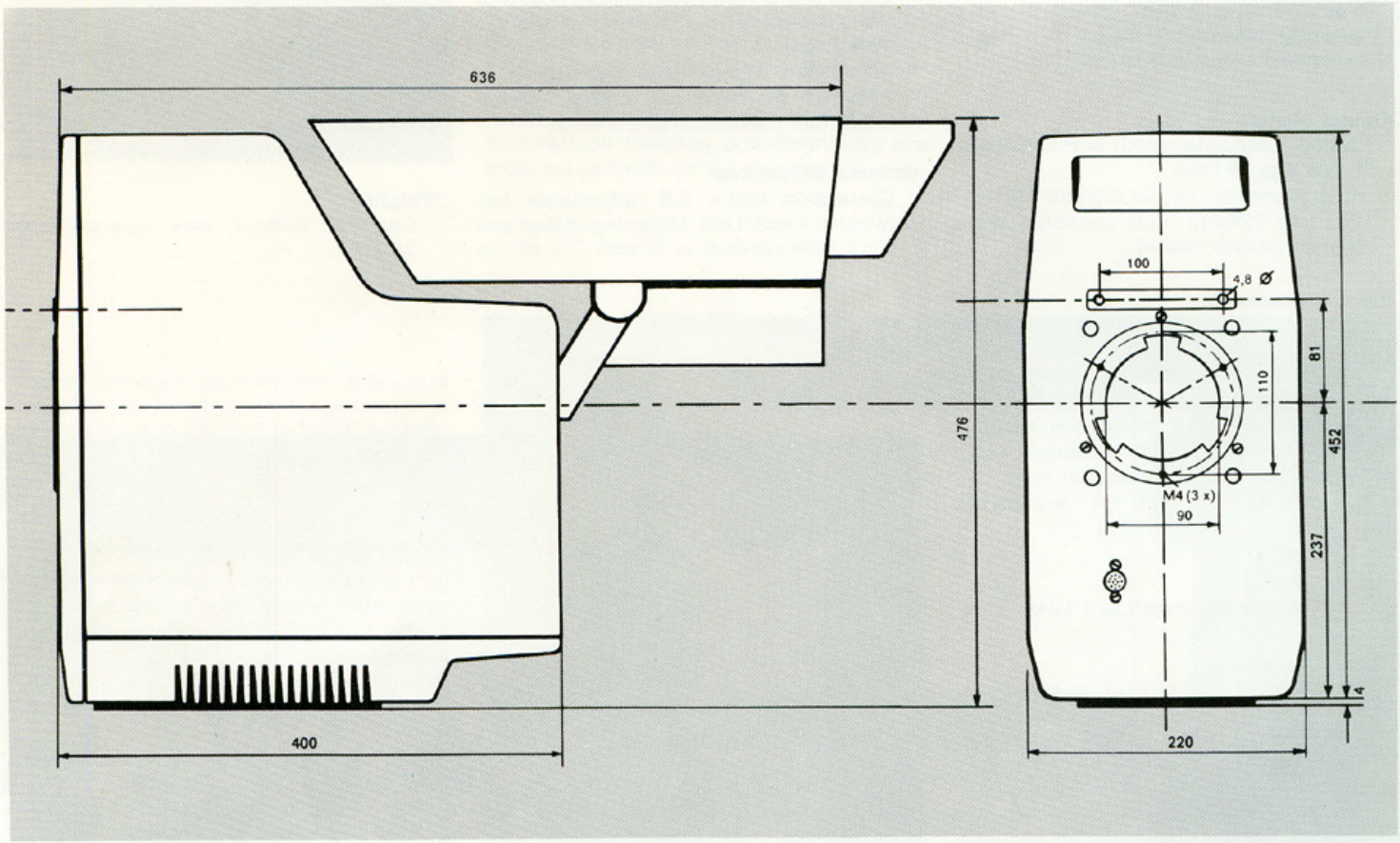
Automatic iris control
Acting on the peak or average value of the largest of the three colour signals (adjustable to any value in between).

Permissible ambient temperature
from 0 to +45°C; tropicalized design.

Dimensions
See dimensional sketches.

Weight
Camera without lens approximately 25 kg.





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