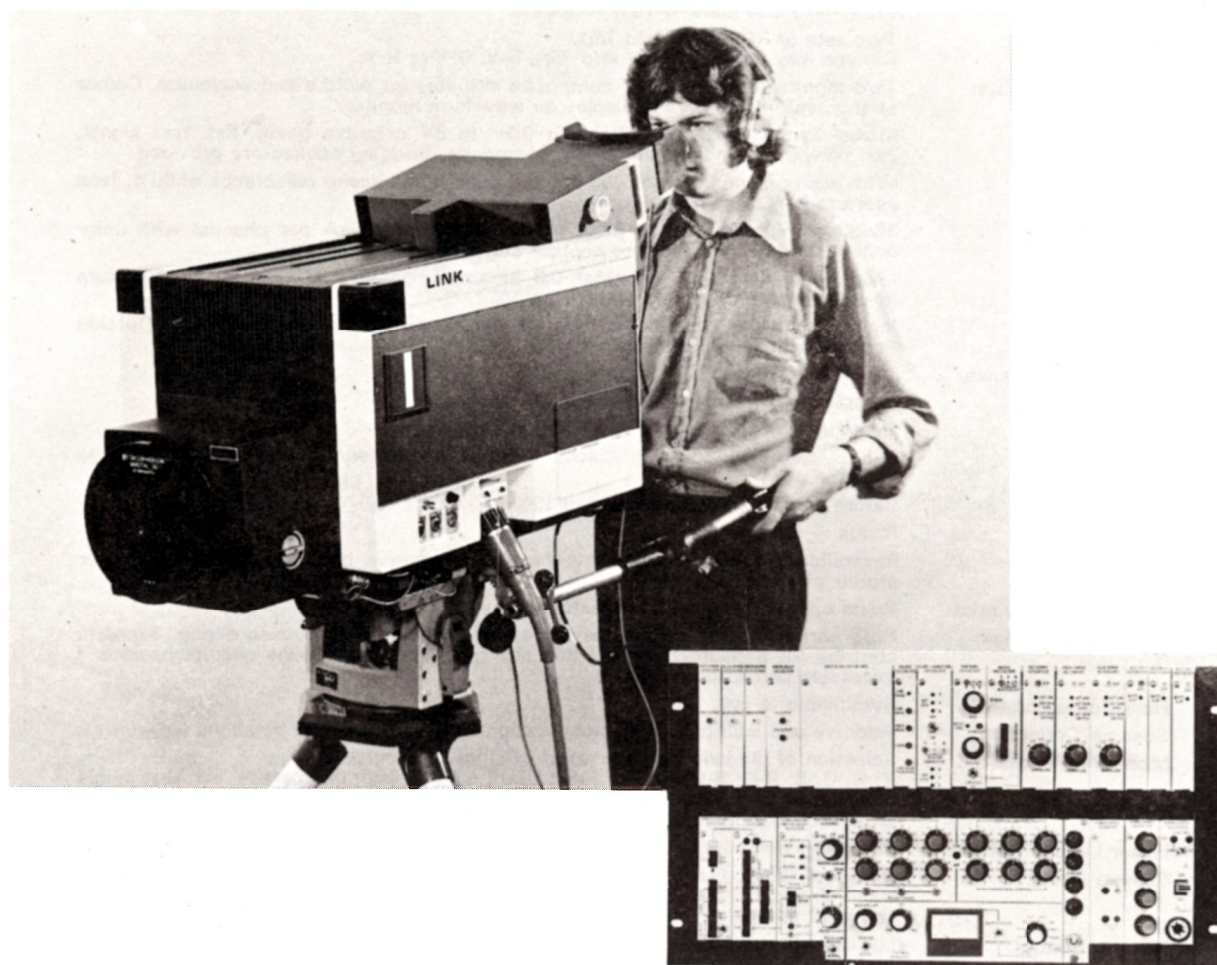


STUDIO/O.B. COLOUR CAMERA Type 110



The type 110 is a broadcast quality 3 tube colour camera suitable for both studio and outside broadcast use. The camera uses three of the latest high performance lead oxide camera tubes including extended red type, with anti-comet tail and light bias facilities. These facilities ensure that the camera is free from coloured lag and can also handle overload signals of at least five lens stops without producing highlight comet tails during camera panning. The optical splitter block is of a new high efficiency design and is essentially free of coloured shading. The colorimetric tolerances have been held to a very high degree of $\pm 5\text{nm}$ on cross-overs. The camera uses a carefully engineered plug-in lens package, a wide range of packages being available from a number of lens manufacturers to suit all requirements for studio and outside broadcast use.

The 7" tiltable and removable viewfinder has a $\pm 60^\circ$ tilt range and is positioned over the lens axis to minimise parallax errors.

The camera electronics employ many original techniques to achieve a level of stability that eliminates the need for automatic registration or set up circuitry. The camera has built in comprehensive monitoring facilities for fast and accurate line up, enabling the camera to be rapidly colour balanced under changing light conditions. A plug-in matrix is used to optimise the colorimetry for studio or natural lighting.

Comprehensive communications facilities are included in the camera with outputs at the camera head for the cameraman, floor manager, tracker, etc. Also two programme microphone channels are provided from the camera head to the CCU (option) together with a spare vision tie line in the opposite direction for feeding commentators' monitors, etc.

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BRIEF SPECIFICATION

| | |
|-------------------------|---|
| System: | 625 or 525 lines. PAL, NTSC or SECAM coders available. |
| Pick-up Tubes: | Three 25mm Lead Oxide Vidicon tubes, incorporating Anti-Comet Tail guns and light bias. Philips type XQ1080 series or equivalent. |
| Power Input: | 115V $\pm 10\%$ or 230V $\pm 10\%$ — 300VA. |
| Channel Outputs: | Two sets of RGB, 0.7V into 75 Ω . Chroma Key output of 0.7V into 75 Ω , B-Y, G-Y or R-Y. |
| Monitoring Outputs: | Two monitor outputs of 1V composite into 75 Ω for picture and waveform. Colour step waveform for parade display on waveform monitor. |
| Channel Inputs: | Mixed Syncs and Mixed Blanking 0.5V to 6V negative going. Ext. test signal, Ext. viewfinder and tie line all 1V composite. Bridging connectors provided. |
| Sensitivity: | With scene illumination of 750 lux and peak white scene reflectance of 60%, lens aperture is f/2.8 at normal gain. |
| Signal/Noise: | 48dB unweighted w.r.t. a peak signal current of 300nA per channel with unity gamma, and linear matrix, no contour correction. |
| Geometry: | Inside a circle having diameter 0.8 picture height, better than 0.5% of picture height. Outside this circle better than 1%. |
| Registration: | Inside a circle of diameter 0.9 picture height, deviations less than 40nS. Outside this circle deviations less than 100nS. |
| Frequency Response: | ± 0.5 dB to 5MHz. |
| Gamma Laws: | Switchable 0.4, 0.5, 0.6 and unity. |
| Master Gain: | Switchable at CCU from 0 to +12dB in 3dB steps. |
| Colour Balance: | ± 8 dB, allowing 6dB for colour temperature variations and ± 2 dB for tube variations. |
| Master Lift: | Before gamma correction, range +10% to —30%. |
| Individual Lifts: | Range $\pm 5\%$. |
| Linear Matrix: | Reversible plug-in module provides two alternative coefficients for daylight or studio conditions. |
| Taking Characteristics: | Prism optical crossovers are matched to within 5nm. |
| Contour Correction: | Both horizontal and vertical. Level dependent circuits with noise coring. Separate controls for horizontal/vertical mix and gain. Anti black edge circuits operate if excessive correction is used. |
| Flare Correction: | Switchable in-out. |
| Shading Correction: | Additive and multiplicative compensation with sawtooth and parabolic waveforms. |
| Monitoring Facilities: | Selection of the following signals at CCU input or output: Y; R; G; B; R-G; B-G; R/G or B/G; CLUE on at $\frac{1}{4}$ field; line parade, ext. test minus green, local sawtooth injected at CCU input or head amp input. Bridging out of green facilities provided. |
| Linear Looped Output: | 1.0V, 75 Ω non-comp., clamped R, G and B signals looped through at rear of CCU. |
| Camera Cable: | Diameter 13mm. F and G 753-5, or BICC 5677, or equivalent. Max. length usable is 800m. F and G 753-6 (7mm) max. length 100m. Auto length correction. No volts above 12 on cable with head disconnected. |
| Remote Control: | Lift and Iris and colour balance. |
| Standby Facilities: | Switch at CCU turns off tubes only. |
| Communications: | 4 circuits provided to the head and one to the CCU. Cameraman's and spare headset outlets provided at the head, together with two headphone sockets. Full communications facilities on multiway socket for tracker, etc. Communications interface with channel at zero level, balanced. Call keys at the camera which may be operated from the Pan Bar, and Call Camera key at the CCU. |
| Programme Microphones: | Two Programme Microphone circuits provided between camera and CCU, with individual gain control facilities. Input—60dB, balanced, low impedance. Output—zero level, balanced. |
| Camera Rig Facility: | Switch on camera head allows only comms to the CCU and utility mains socket to be powered. |
| Filter Wheel: | Takes up to six filters, controlled from CCU. Visual indication of filter position at camera. |
| Centre of Gravity: | Thumbwheel adjustment provided at camera rear. |
| Viewfinder: | 7" tube, with integral implosion guard. Tilttable $\pm 60^\circ$, rotateable 90° for camera line-up. Highlight brightness 2000 lm/m ² . Detachable and can be operated up to 3 metres from the camera. Normal/mix/ext. switch provided. Can be remotely operated from Pan Bar. Electronic zoom angle indicator. On-air and zoom available, lights visible inside viewing hood. |
| On-Air Lamps: | Dual recessed at camera front, also in viewfinder hood, CCU, OCP, colour balance and tracker output. |
| Auxiliary Video: | An output of viewfinder provided at camera head. A second video link is provided from CCU to camera head for commentator's monitor, Autocue, etc. |
| Environment: | Camera will operate between —10°C and +40°C up to 95% RH. Negligible drift will occur for variations of $\pm 10^\circ\text{C}$ within this temperature range. |
| Lenses: | A full range of lenses will operate with the camera including Rank Taylor Hobson, Angenieux, Schneider and Cannon. |

The above specification may be changed if requested to suit individual requirements.