

AMPEX

The BC-230 Color Studio Camera

The High Quality —
High Stability Camera



A high quality, lightweight, color Plumbicon* tube camera that sets new standards for long-term stability.

FEATURES INCLUDE:

- Superb color—as low as 25 foot-candles.
- Crisp resolution.
- 1000-hour stability.
- Unique, precise construction. Rugged, clean lines.
- Small size and light weight.
- Demountable optics and yokes.
- Plug-in circuit boards.
- Simple RGB system.
- Optimized aperture correction.
- 10-step staircase plus sine² pulse and bar.
- Variable masking for flesh tone.
- No linearity controls required.

PICTURE QUALITY

The BC-230 produces superb color. It conforms consistently to NTSC or PAL standards, whether in remote or studio use. Its new three-tube Plumbicon camera design produces brilliantly sharp color pictures. The simplified, compact optical and color separation system is designed for maximum light efficiency. Excellent sensitivity and low lag result in a brilliant color picture with as little as 25 foot-candles scene illumination.

The BC-230 uses a ten to one, F/1.7 zoom lens. The new high-brightness viewfinder provides the cameraman with a clear, sharp view. The six inch kinescope screen provides 150 foot lamberts and is precisely matched to camera blanking. The camera gives 100 per cent amplitude response at 400 TV lines resolution (NTSC) and a signal-to-noise ratio of 45 db. This

is accomplished through the use of simplified optics and color matrixing of an RGB system. New techniques of aperture correction in all three color channels give optimum horizontal and vertical detail. The camera also gives excellent rendering of specular highlights.

STABILITY

Precision construction and advanced electronic design result in the excellent stability of the BC-230. Warmup is faster than with other Plumbicon cameras. Stabilized operating temperature is reached in less than 5 minutes. Horizontal and vertical centering stability is maintained through ambient temperature changes of $\pm 10^{\circ}\text{C}$. Adjustment of individual focus, x and y alignment, height, width, and skew are relegated to a 1000 hour maintenance panel and are stable over the entire range of -15°C to $+45^{\circ}\text{C}$. This unique stability results from the sophisticated regulation of all currents and voltages associated with the sensing tubes and an entirely new technique of deflection yoke mounting. Precision die buttons and eccentrics provide unusual flexibility in adjusting the yokes to a webbed machined central casting.

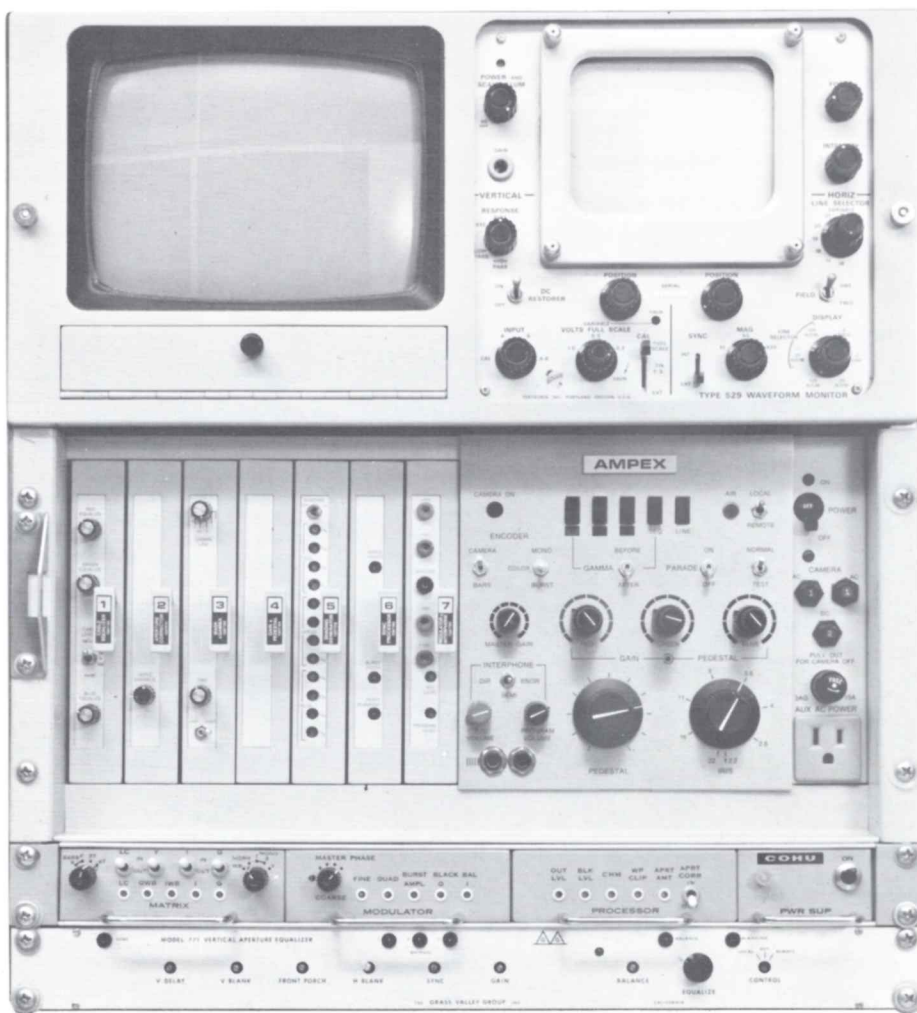
RELIABILITY

The BC-230 is extremely reliable under all conditions, whether in remote or studio use, for station, network or production company. All head components are ruggedly mounted to eliminate malfunction in hard day-to-day use. Yoke assemblies and dichroic optics are easily demountable for cleaning and adjustment. Plug-in boards, with many test points, are easily replaceable.

BC-230



*TM N. V. Philips



EASE OF OPERATION

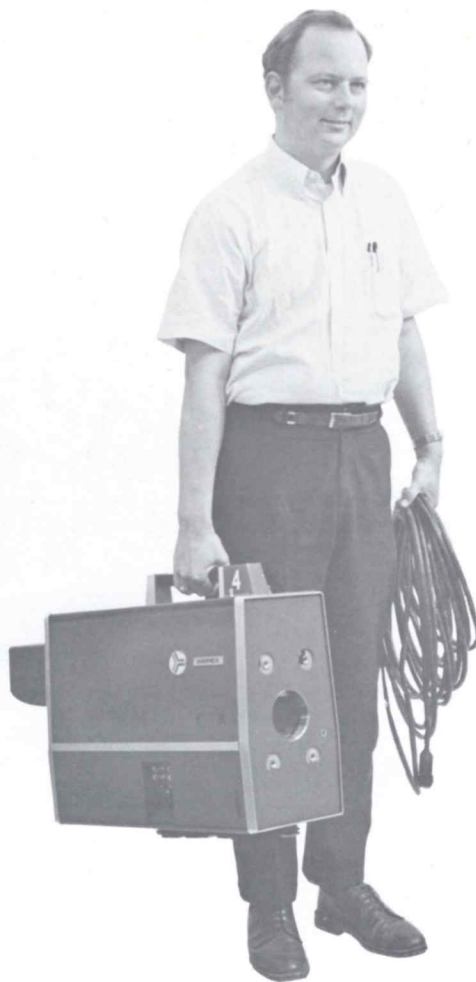
Many features of the BC-230 free the cameraman to concentrate on making quality pictures. He can monitor the entire camera head and camera control unit with push-button ease. A color masking system provides a full range of flesh tint adjustment without affecting the grey scale. To set up the BC-230, the operator switches in a staircase test signal. This 10-step signal provides an electronic grey scale for camera setup, plus sine² pulse and bar signal, to allow instant check of system bandwidth and cable equalization. Use of pulse and bar technique plus push-button monitoring give more complete frequency response information, pinpointing a change in bandwidth at any point in the system.

The K factor can be read out directly on a waveform monitor graticule. Gamma is switchable in six discrete steps without affecting precise tracking in all three color channels. Four shading controls per channel eliminate problems in matching Plumbicons by providing a full range of adjustment for initial setup.



FLEXIBILITY

The small size and light weight of the BC-230 make this camera one of the most versatile and maneuverable broadcast Plumbicon color cameras available today. The camera head is only 23 inches long, 17 inches high, and 9½ inches wide. The camera cable measures 0.47 inch in diameter and weighs only 324 pounds per 2400 feet, including connectors. The same length of conventional camera cable weighs 2400 pounds and is four times as bulky. This reduced size is possible because the cable contains three coaxial cables, two twisted pairs, and only 10 other small gauge wires. The Camera Control Unit takes only 21 inches of rack space. In addition, the camera is equipped with a convenient carrying handle for greater portability and is well protected for use under adverse weather conditions. There are no cable connectors or other projections on the bottom of the camera that might be damaged in transportation or field setup.



BC-230

SPECIFICATIONS*

Scans

EIA 525/60 fields/s
CCIR 625/50 fields/s

Color Standards NTSC or PAL

Power Requirements

Voltage 95-120 60 cycle or
190-250 50 cycle

Inputs

Negative composite sync and sub-carrier.

Outputs

Composite video 1V pk-pk 75 Ω
NTSC or PAL.

Registration Accuracy

Zone 1 (circle equal to 0.8 picture height) 0.1%
Zone 2 (circle equal to picture width) 0.2%
Zone 3 (elsewhere) 0.4%

Geometry

Less than 2.0% from true position anywhere in picture area.

Resolution

Green channel at 400 lines P/H; amplitude response 100% with aperture correction.

Sensitivity/Signal-to-Noise

A 45-dB signal-to-noise ratio in encoded luminance channel (measured with 0.5 gamma at 50% peak white, no aperture correction and a 5-MHz bandwidth) will be achieved under the following conditions:

Iris f4 (equivalent depth of field of an I.O. at f10) 140 foot-candles, 3200° K, illumination incident on a 60% reflective white
or
full aperture f1.7 at 25 foot-candles incident

Environmental

Temperature range Camera
-15°C to +45°C. CCU 0°C to +45°C.
Stability H & V centering
requires no adjustment with ambient

change $\pm 10^\circ$ C. All other controls stable over the entire temperature range.

Mechanical

1. Camera

- Camera head: L-23 inches, W-9.5 inches, H-17 inches, Wt-70 lbs.
- Viewfinder: L-9 inches, W-8 inches, H-8 inches, Wt-10 lbs.
- Lens: (Angénieux 10:1 fl. 7 zoom lens), Wt-34 lbs.

2. CCU

- CCU Electronics and PSU 19-inch rack mount, 8¾-inch high, Wt-45 lbs.
- Encoder 19-inch rack mount, 1¾-inch high, Wt-14 lbs.
- Enhancer 19-inch rack mount, 1¾-inch high, Wt-7 lbs.
- Picture and Waveform Monitor 19-inch rack mount, 8¾-inch high, Wt-55 lbs.

*Subject to change without notice.

AMPEX

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