

# PHILIPS



## Portable Colour Camera



*The Philips LDK 11 is designed for both electronic news gathering and commercial production providing full broadcast quality performance in field as well as studio applications.*

The LDK 11 portable camera has been designed to provide a high degree of operational flexibility and excellent performance characteristics to achieve fully professional results in a wide variety of television broadcast applications.

The camera utilises three new  $\frac{2}{3}$  in Plumbicon pickup tubes and a beam split prism to provide high quality pictures compatible in colorimetry with the broad range of Philips cameras currently in widespread use in the world.

The system design permits operation of the camera as a fully self-contained lightweight portable camera for news or production applications, or as a cable connected remote controlled camera when integrated with additional cameras in a multi-camera studio or field pickup.

As a self-contained camera, great attention has been paid to operational features which

permit the cameraman to have access to all significant controls required in operating with an associated tape recorder or microwave link.

In all modes of operation, the camera system can be genlocked to an external signal either at the backpack or the remote control unit and provides a contour-enhanced and fully processed encoded colour signal at the backpack. Built in features of automatic control of exposure and colour balance can be readily selected for those demanding applications where manual control is neither practical nor desired.

Consideration has been given throughout toward achievement of a ruggedised reliable system designed for superior and stable performance under a wide range of operational requirements.

## Type LDK 11

Lightweight, compact, rugged camera head and backpack.

Beam splitting prism block.

Three  $\frac{2}{3}$  in. Plumbicons.\*

Fully processed and contour enhanced encoded signal from backpack.

Built-in sync. generator genlock capability.

Two commentator microphone channels.

Ready access to all operational controls.

Battery or a.c. powered.

Remote control of VTR (start/stop).

Built-in VTR playback monitoring capability.

Auto white balance.

Auto iris.

Bias light.

Remote controlled portable capability.

Tripod mounting facilities for field or studio use.

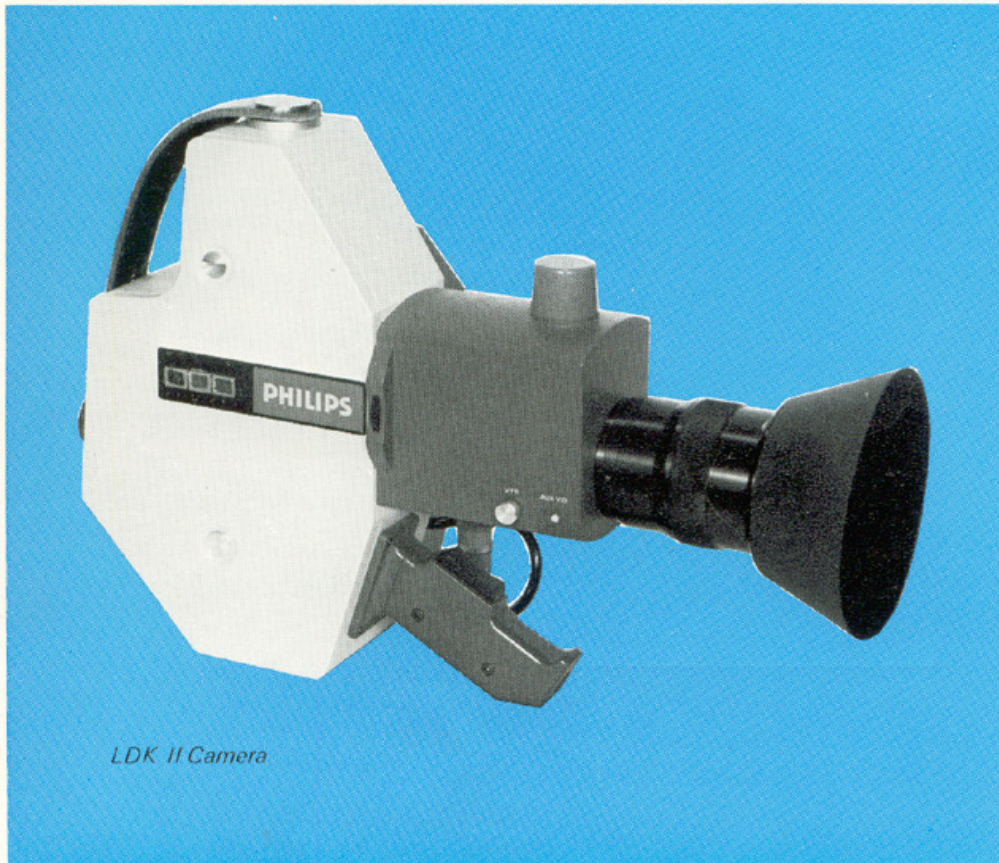
Professional quality and highly stabilised performance.

\* Registered Trade Mark for television camera tubes.

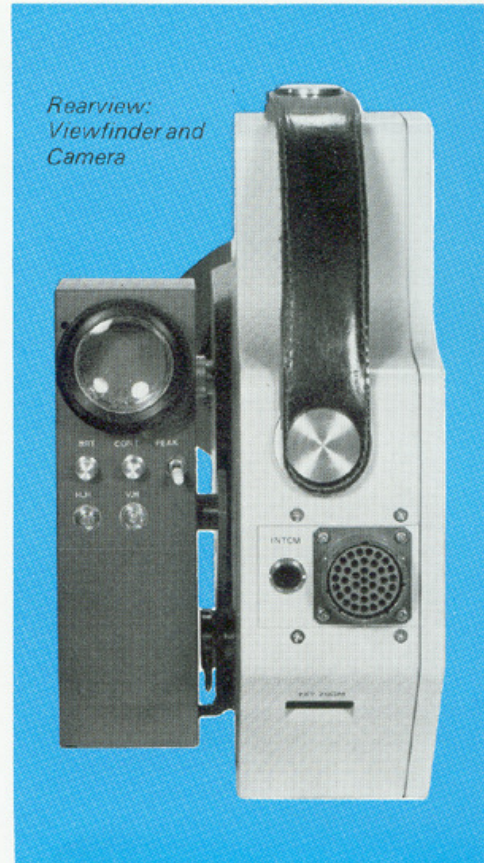


# PYE TVT





*LDK II Camera*



*Rearview:  
Viewfinder and  
Camera*

### The Camera

The compact camera head is contained in an aluminium housing with ready access to all components for ease of maintenance or alignment. The prism optical assembly, Plumbicons, yokes, and lens are mechanically integrated to insure a very high degree of optical stability even under abusive conditions. The camera employs the new  $\frac{3}{4}$  in Plumbicon tube type XQ1427 with prism characteristics selected for optimum colorimetry and sensitivity. Integral bias light is provided to minimise lag under low light level conditions. The lightweight camera head/lens assembly was designed to be easily handled by the cameraman and contains readily accessible controls for: motorised zoom and servo iris; auto/manual exposure; auto/manual white balance; VTR start/stop; external viewfinder video monitoring; and a four-position filter wheel control.

Basic lens selection options include a 9.5–95 mm (50°–5.2°) and a wide angle lens of 8.5–85 mm (55°–6°) as well as a C mount adaptor for use of standard 16 mm cine lenses. External control of zoom angle is also optionally available for tripod mount applications.

For those occasions where maximum freedom of movement of the cameraman is desired, the camera can be operated up to 100 m from the associated backpack without deterioration of performance characteristics.

### Electronic viewfinder

The high brightness 1½ in electronic viewfinder is mounted to the side of the camera on a moveable bracket which permits the viewfinder to be adjusted to the optimum position for the individual cameraman. The viewfinder is equipped with switchable peaking to facilitate focus and has internal indication of tally, camera call, low battery voltage and VTR run status. An optional large screen viewfinder (5 in) is available for tripod mounted applications.



*Remote Control Unit  
and Backpack*



### **Backpack**

The lightweight backpack has been engineered to contain all video processing circuitry (including contour enhancement) required to provide a high quality encoded colour signal output directly at the backpack.

The external backpack controls are protected from weather and mechanical abuse, and are positioned to give the camera operator, when wearing the backpack, immediate and easy access to occasionally required operational controls such as: System On/Off; Colour Bars On/Off; Video Gain Switching; Master Black; and Intercom Level. Additionally, the backpack provides all normally required functions for full production control of camera performance.

The backpack contains provisions for connection of two commentator microphones and a composite interface connector to connect all necessary signals to the remote control unit or an associated VTR. Provisions are also included for ready connection of an external monitor (switchable to various signals in the video processing path), and external inputs, such as external viewfinder video and genlock reference signals.

Indication of internal d.c. voltage status is also provided on an externally visible meter.

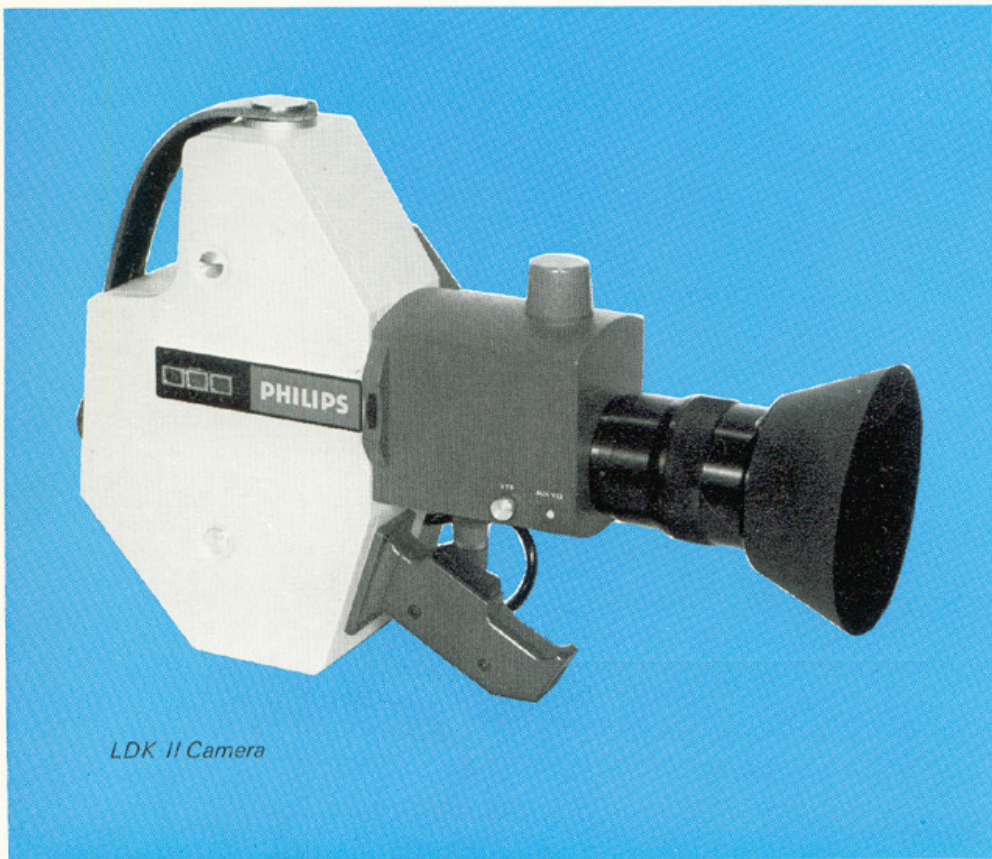
All circuitry is modular and easily serviceable with immediate access to controls required for occasional system check or alignment.

### **Power source**

Mating power packs are available to attach to the backpack to permit operation from locally available a.c. power or from self-contained batteries. The a.c. pack can be supplied for operation on nominal 110 V or 220 V, 50/60 Hz power sources. Since the basic power requirements are  $\pm 12$  V, the camera can also be powered by external standard automotive batteries for extended production requirements.

In the remote control mode of operation, power is normally supplied from the remote control unit but can be supplied locally if desired.





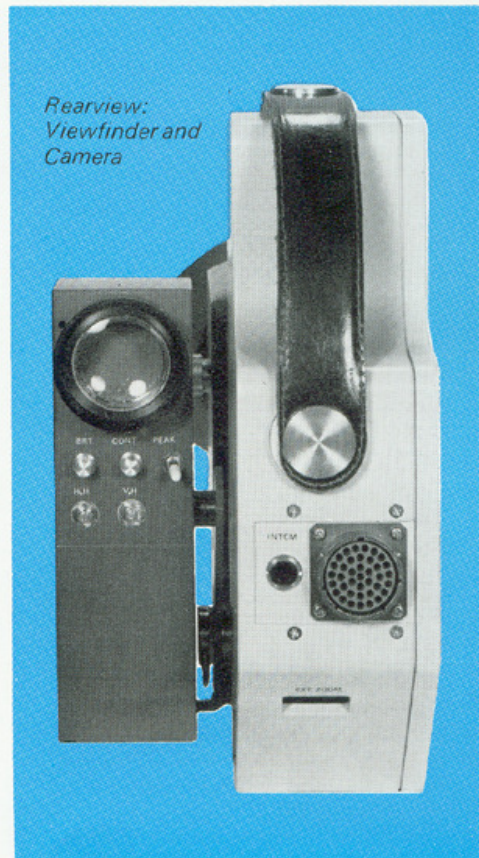
*LDK II Camera*

### The Camera

The compact camera head is contained in an aluminium housing with ready access to all components for ease of maintenance or alignment. The prism optical assembly, Plumbicons, yokes, and lens are mechanically integrated to insure a very high degree of optical stability even under abusive conditions. The camera employs the new  $\frac{3}{4}$  in Plumbicon tube type XQ1427 with prism characteristics selected for optimum colorimetry and sensitivity. Integral bias light is provided to minimise lag under low light level conditions. The lightweight camera head/lens assembly was designed to be easily handled by the cameraman and contains readily accessible controls for: motorised zoom and servo iris; auto/manual exposure; auto/manual white balance; VTR start/stop; external viewfinder video monitoring; and a four-position filter wheel control.

Basic lens selection options include a 9.5-95 mm (50°-5.2°) and a wide angle lens of 8.5-85 mm (55°-6°) as well as a C mount adaptor for use of standard 16 mm cine lenses. External control of zoom angle is also optionally available for tripod mount applications.

For those occasions where maximum freedom of movement of the cameraman is desired, the camera can be operated up to 100 m from the associated backpack without deterioration of performance characteristics.

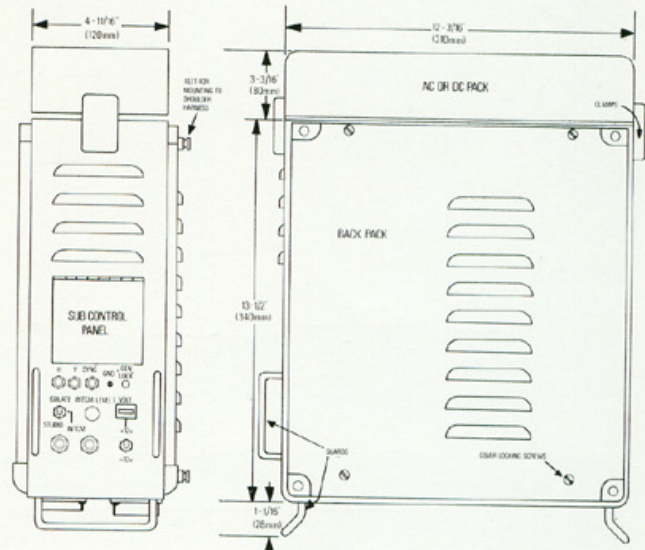
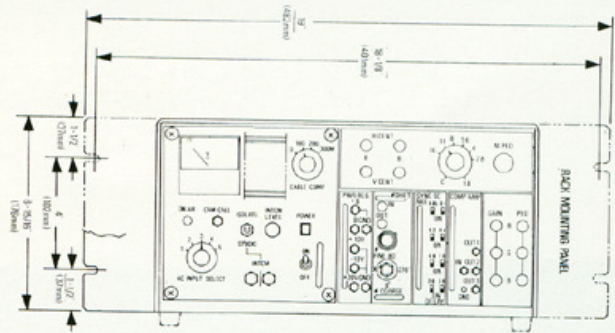
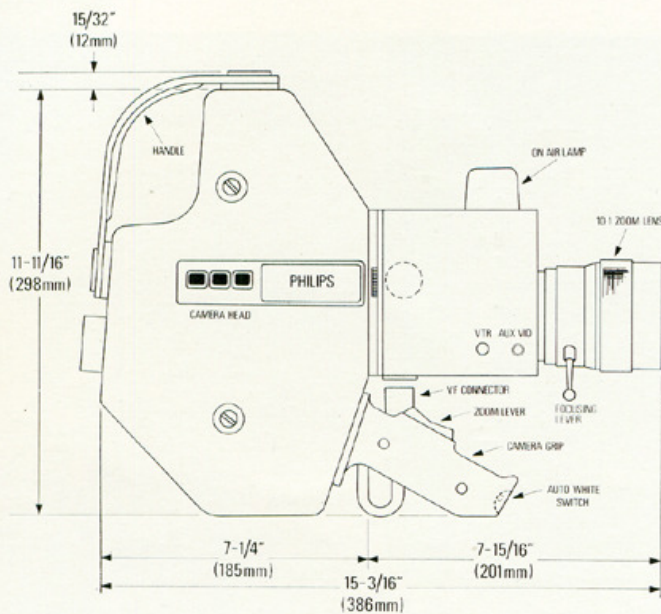


*Rearview:  
Viewfinder and  
Camera*

### Electronic viewfinder

The high brightness 1½ in electronic viewfinder is mounted to the side of the camera on a moveable bracket which permits the viewfinder to be adjusted to the optimum position for the individual cameraman. The viewfinder is equipped with switchable peaking to facilitate focus and has internal indication of tally, camera call, low battery voltage and VTR run status. An optional large screen viewfinder (5 in) is available for tripod mounted applications.





## TECHNICAL DATA

### System

NTSC - 525 lines/60 Fields.  
PAL - 625 lines/50 Fields.

### Power Supply

+12; -12 Volts; 2.3A  
or 90-130 V, 180-260 V, 50/60 Hz.

### Input Signals

Sync and Subcarrier or Standard  
Black Burst Signal 1 V p.p.  
External Viewfinder Video - 1 V p.p.  
Comp.  
Microphone Input (2) - 600 Ohms.  
Record Signal Tally.

### Output Signals: Backpack

Encoded Video - 1.0 V p.p.  
Switchable Video Monitor Channel - 1 V  
p.p. Comp.  
Microphone Audio (2) - 20 dBm.  
VTR Start/Stop.  
A.C. Outlet.

### Output Signals: Control Unit

3X Encoded Video - 1 V p.p.  
Microphone Audio (2) - 20 dBm.

### Scene Illumination

1750 Lux (175 ft cd) for a signal to noise ratio of at least 48 dB in the Y channel; lens iris f/4.0; reflection factor 60%; with gamma, contours, and aperture correction off; measured at 40% of peak white.

### Sensitivity

With the lens fully opened to f/1.8 the specified signal/noise figure will be met with a scene illumination of 350 Lux (35 ft cd). A switchable electrical gain control permits full video level to be achieved to 88 Lux (8.8 ft cd) without circuit readjustment.

### Resolution

In the Y channel, min. 500 TV lines at centre of picture.

### Colour Registration

Deviations of red and blue with respect to green:  
Zone I (80% picture height circle) 40 nanosecs.  
Zone II (circle of picture width) 80 nanosecs.  
Zone III (rest of picture area) 160 nanosecs.

### Geometric Distortion

Less than 1.5% of picture height at any point in picture area, excluding lens errors.

### Filter Wheel

4 positions: Clear; Colour No. 85; No. 85 plus 0.6 N.D.; No. 85 plus 1.2 N.D.

### Gamma Correction

Switchable Gamma: 0.35 and 0.45 and Linear.

### Intercom

Conforming to the US standard 2 wire system.

### Test Signals

Internal Colour Bars and test Sawtooth Generator.

### Warm Up and Stability

Picture quality will be acceptable after a 2 minute warm-up period and will meet full performance specifications within 10 minutes down to -10°C (excluding batteries). Specified performance will be met over a minimum temperature range of ±10°C from set up temperature.

### Operational Ambient Temperature Range

(Excluding Batteries) -20°C to +45°C.

### Camera to Backpack Cable

Full performance specification to 100 m. (No readjustment required when cable length changed.)

### Backpack to Optional Control Unit

Full performance specification to 300 m.

### Weights

Camera Head including Viewfinder and 10:1 Lens	6.4 kg
Backpack	7.2 kg
Battery Pack (sil. cad. 2 hrs)	3.1 kg
Control Box/Power Supply	14.2 kg
A.C. Pack	1.9 kg

*Specifications subject to change without notice*



