

# KCA 110

Broadcast EFP Color Camera



**BOSCH**

# The Facts

The KCA 110 is a light broadcast color camera for shoulder or tripod operation employing new low output capacitance (LOC) 2/3" tubes for excellent picture quality.

By choosing the respective add on unit for the rear of the camera head together with the corresponding plug in modules for the optional base station the camera can be adapted to operate with a VTR cable, a multiwire camera cable or an optical fibre camera cable and base station. The camera operates on 12 volts from a battery belt, car battery, mains unit or alternatively from a battery pack which plugs neatly into the rear of the camera head in the EFP mode so that only one cable leaves the camera.

Lined up and ready for operation in seconds, the KCA 110 can handle any task whether feeding a portable VTR a few metres away or remote controlled from a base station through optical fibre from literally miles away.

The combination of good design and styling together with numerous automatic functions and easy to understand viewfinder status displays make the camera a pleasure to operate. For electronic journalism, outside broadcasts or studio productions – the KCA 110 has a lot to offer.

# Features

- New 2/3" low output capacitance diode gun Plumbicon® tubes
- New FET low noise preamplifiers
- New high transmission prism splitter
- Signal to noise ratio typically 55 dB (625 line)  
57 dB (525 line)
- High limiting resolution 750 lines (centre)
- Maximum sensitivity 40 lux/F 1.4 (18 dB)  
300 lux/F 1.4 ( 0 dB)
- Super stable low power circuitry
- Camera head weighs approx. 6 kg
- Magnesium alloy casing
- Fold down optics for easy service
- Rigid shock proof optical mount – extremely low microphony
- Titanium alloy quick change lens mount
- Laterally mounted PCBs
- Single cable connection to VTR or base station
- OPTICAL FIBRE, MULTIWIRES OR EFP operation
- 12 Volt supply from battery belt, battery pack, vehicle battery or mains unit
- ABC – automatic beam control
- Four position filter wheel plus separate lens cap
- Optics and filters are covered against dust
- Improved RF
- Bias light for low light levels
- Dynamic focus
- Flare compensation
- New shading correction for additive and multiplicative shading and edge correction
- Linear matrix
- Video amplification switch +9/+18 dB
- H and V contour correction with 2 delay lines, comb filter and level dependent coring
- Normal/low/high contrast switch
- Black stretch
- Automatic white balance
- Automatic black balance
- Automatic iris, integral, peak value or spot with smooth transition from manual to automatic operation
- Auto centering (option)
- Test switch for operation, color bars or saw tooth signal
- Intercom-microphone ON/OFF switch
- Full tally and 4 wire intercom
- 1.5" viewfinder with numerous easy to understand LED and alpha numeric indications
- Optional 6" studio/field viewfinder
- Alphanumeric information keyed into VF picture
- Full VTR control: Start, Stop, Forward, Rewind, Record, Play
- PAL, PAL-M, SECAM and NTSC
- Digital non volatile storage of automatic adjustment values

# Camera Head

## Fold down front

The optical block is attached to the camera front wall which hinges down for easy access so that the three  $\frac{2}{3}$ " pick up tubes can be easily changed. The tube FET preamplifiers are attached to the respective tube mounts for optimum signal to noise ratio. Pick up tube voltage supply and intermediate amplification are located on two fold out printed circuit boards flanking the prism.



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## Centre section

The basic camera head contains up to 11 laterally mounted printed circuit boards connected at right angles to a common printed connector board lying parallel to the camera axis. Their functions include signal processing, automatic functions, contour correction, coding, pulse generation, autocentering (optional), viewfinder signal delegation, character insertion and supply voltage generation.

## Add-on rear units

The basic camera head rear wall contains only a strip connector. Modular add on rear units are chosen according to the required operating mode, i. e. EFP, multiwire or optical fibre, and contain the relevant cable connections. A service add-on unit allows all possible head remote control functions to be checked as well as the entire audio system.



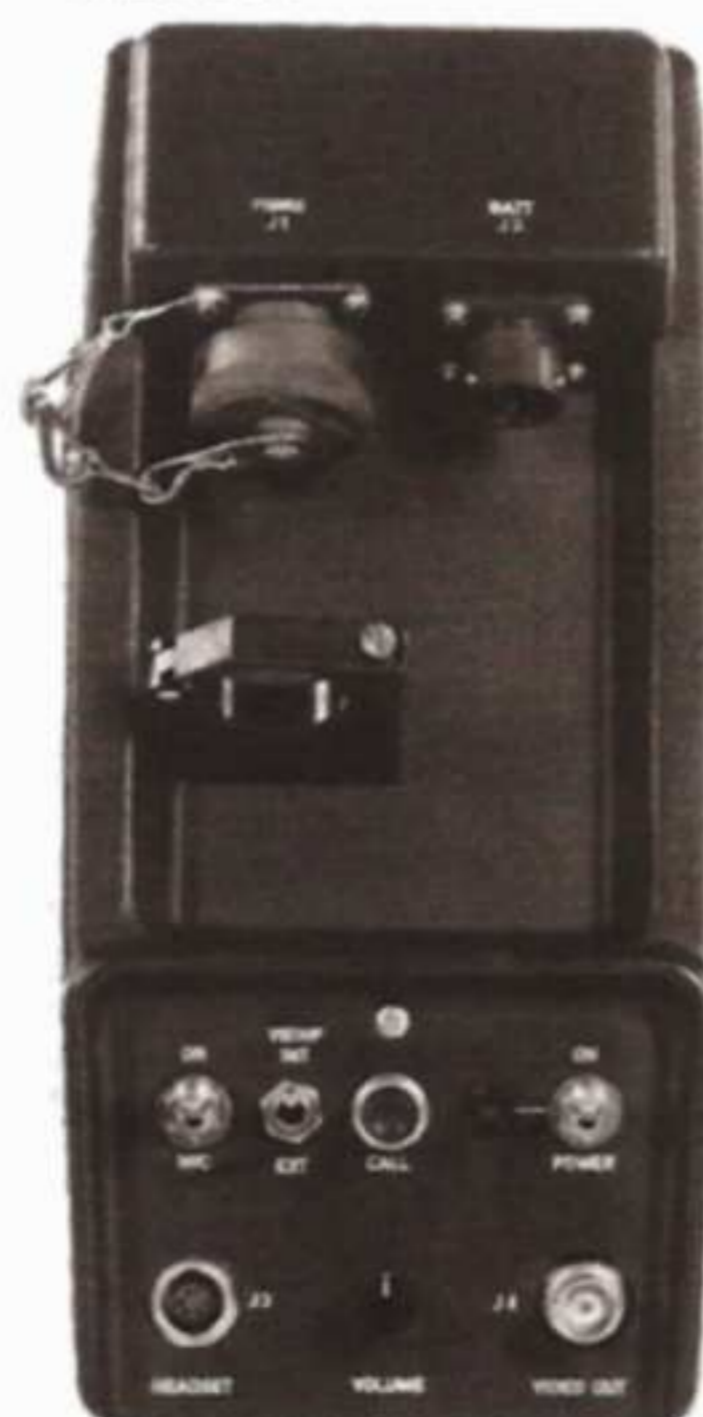
81/25251 R

81/25416 R



**EFP**  
The EFP unit contains the additional controls necessary for independent operation, such as R, B, G and -G signal selection, fuses and power switching, etc.

82/26196 R



**OPTICAL FIBRE**  
The laser-fibre unit contains laser transmitter and receiver boards for video and audio as well as audio and digital command signal preparation and modulation.

82/26195 R



**MULTIWIRE**  
The multiwire unit performs viewfinder return signal compensation and RGB modulation as well as audio transmission and digitalisation of commands. The Ka 64 multiwire cable and connectors are identical to those used with the KCP 40, KCP 60, KCU and KCK/KCK-R cameras.

81/25411 R



**SERVICE**  
The service add-on unit allows all possible head remote control functions to be checked as well as the entire audio system.

# The 1,5 inch Viewfinder

The freely adjustable 1,5" viewfinder contains many status displays to aid the correct operation of the camera. These consist of LEDs, alphanumeric and a switchable 1 MHz zebra stripe pattern to indicate overload (the overload point is adjustable).

## LEDs

Three light emitting diodes (red, green and yellow) are arranged next to the viewfinder screen.

The following status indications are displayed:

	Connected to base station		Connected to VTR	
	Continuous	Flashing	Continuous	Flashing
YELLOW	-	-	Stand by	Battery capacity too low
GREEN	ON	Call	Camerman operation	-
RED	ON AIR	Call	VTR in record mode	VTR trouble, end of tape or transitional phase in auto-assemble mode

## CHARACTER GENERATION

In the top right hand corner of the viewfinder screen a series of alphanumeric messages are mixed into the picture to indicate any deviation from the so called "normal" state. The "normal" state is defined as 0 dB amplification, filter 1 (3200 K) record mode and normal contrast. Thus for instance, the filter wheel position and/or the number of dBs gain is numerically displayed.

If the white balance button is pressed under filter conditions which do not allow white balance then a + or - will blink in the top right hand corner according to the direction in which the filter must be changed.

Focal length is displayed at the top of the screen for those lenses which give a voltage output proportional to their focal length.

A rectangular field of 2 % picture area is inserted into the viewfinder signal for automatic white balance.

## VTR Control

The hand grip contains a VTR START/STOP switch together with the external signal selector for the viewfinder.

The viewfinder displays the coder output signal directly in all VTR modes except PLAY. To check the cable and modulator/demodulator path the signal arriving at the VTR can be switched back to the viewfinder at the push of a button located at the lens.



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In the PLAY mode the viewfinder displays the VTR output signal, and can be switched to show the camera signal so that the cameraman can watch the actual scene without taking his eye away from the viewfinder, while searching for a particular tape position.

The viewfinder itself has two switches for VTR control on the front side above the eyepiece, facing the camera man. The left hand switch can place the VTR into FORWARD or REWIND and the right hand switch controls the PLAY and STOP modes.

## Base Station (Picture see page 6)

The total width of the base station is 8 units of construction type 60, i.e. about half of a 19" rack width.

The functions of the plug in modules are:

- Data transmitter and receiver for the transmission of operating commands
- Monitoring
- R G B demodulation
- Operating unit for data signal mixing and viewfinder signal change over
- Genlock comparator for synchronising camera SPG
- Voltage stabilising
- Power supply unit

## Control Panel

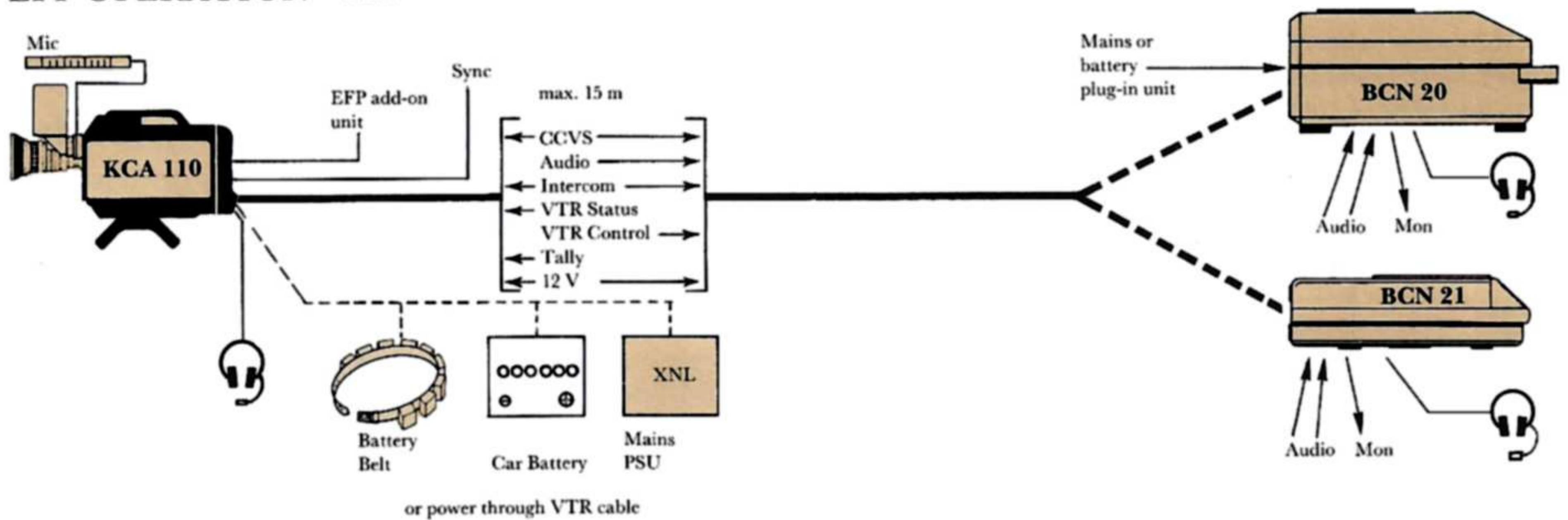
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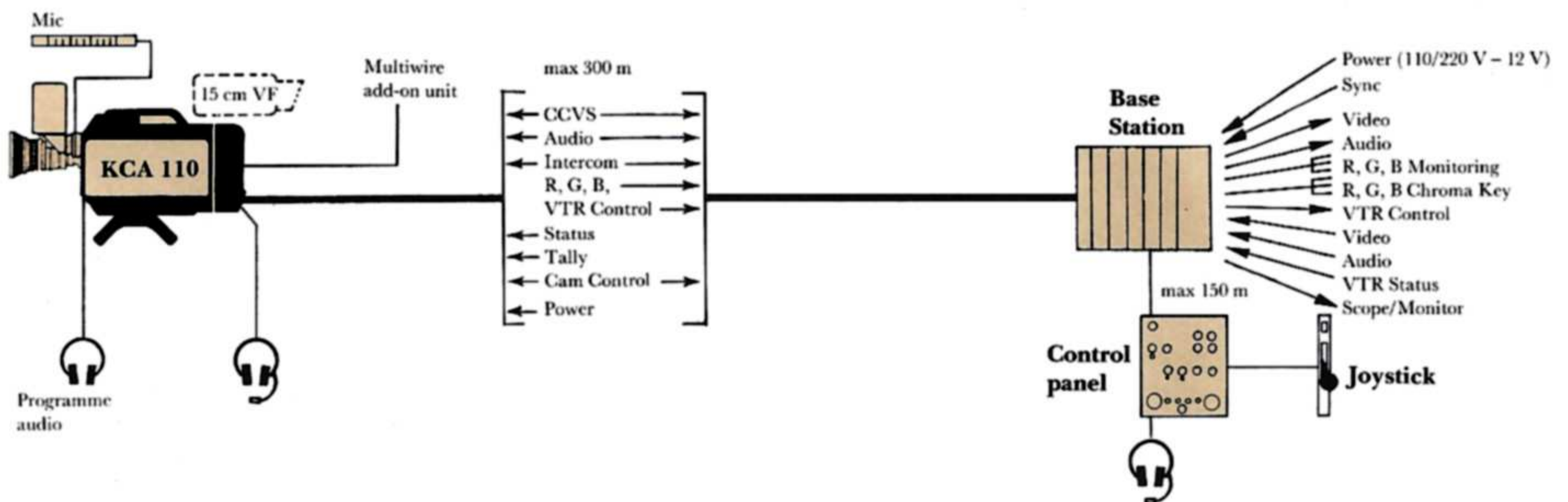
The control panel shown provides for all the operational adjustments and can be displaced up to 150 metres from the base station. Tally and intercom connectors are found on the rear side of the control panel together with the connection for the joystick operating unit.

# Configurations

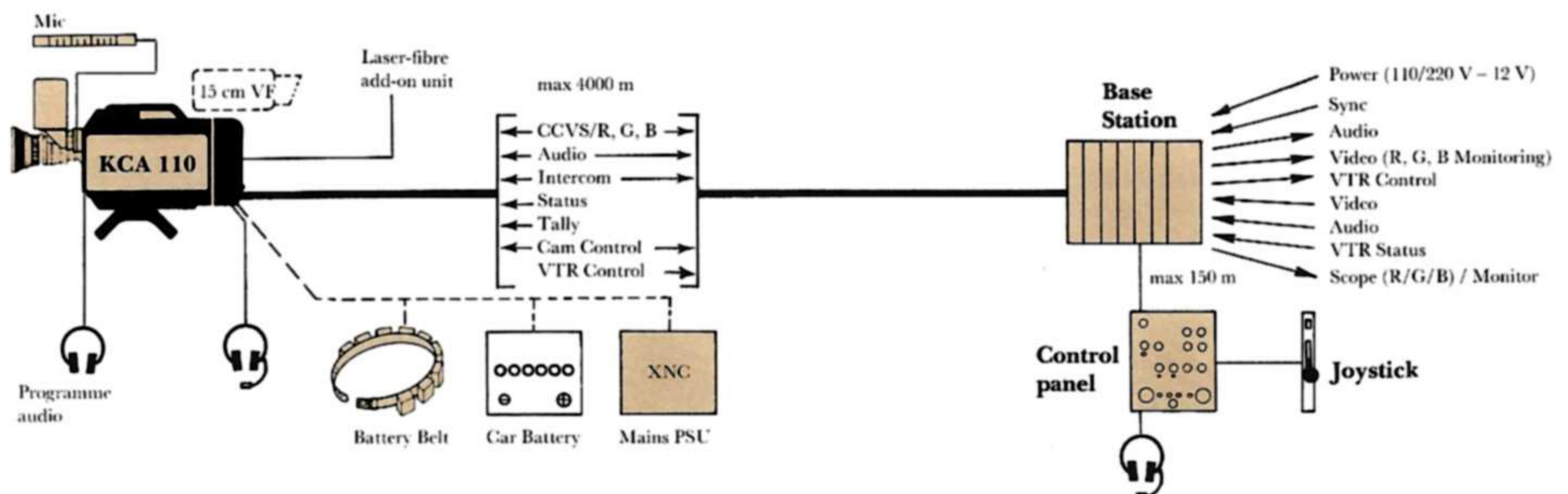
## EFP OPERATION 82/26297



## BASE STATION OPERATION with Multiwire Cable 82/26299



## BASE STATION OPERATION with Optical Fibre Cable 82/26301



# Advantages of Fibre Optics

## Why use fibre optic cable?

The recent widespread interest in optical fibre as an extremely wideband low loss data transmission medium has led to mature products and vastly reduced prices.

## Mechanical advantages

The following table shows a relative comparison of the important physical parameters of fibre optic, multiwire and coax cable of comparable robustness as used for the medium to long range transmission of video, audio and camera control signals.

Camera cable type	Fibre Optic	Mutiwire Ka 64	Triax Cable
Outer diameter	5 mm	13 mm	13 mm
Weight	20 kg/km	220 kg/km	250 kg/km
Min bending radius	50 mm	160 mm	130 mm
Max range	4 km	ca. 0,5 km	1,5 km

In addition to its lower weight, higher range and superior handling properties the optical cable is extremely robust and can be left exposed, driven over by heavy vehicles, or hung between masts or buildings.

## Electrical advantages

The optical fibre cable does not need any cable equalisation, is completely free of RF pick up and does not radiate. Numerous systems can thus be operated side by side without mutual interference, and the camera and base

station are electrically insulated from one another avoiding potential differences and hum loops.

In many applications the optical fibre cable also provides an attractive alternative to microwave links as line of sight is not necessary and no frequency channel allocations are required. This can be of considerable advantages at sports events where extensive media coverage causes channel congestion.

## Fibre optic transmission principle

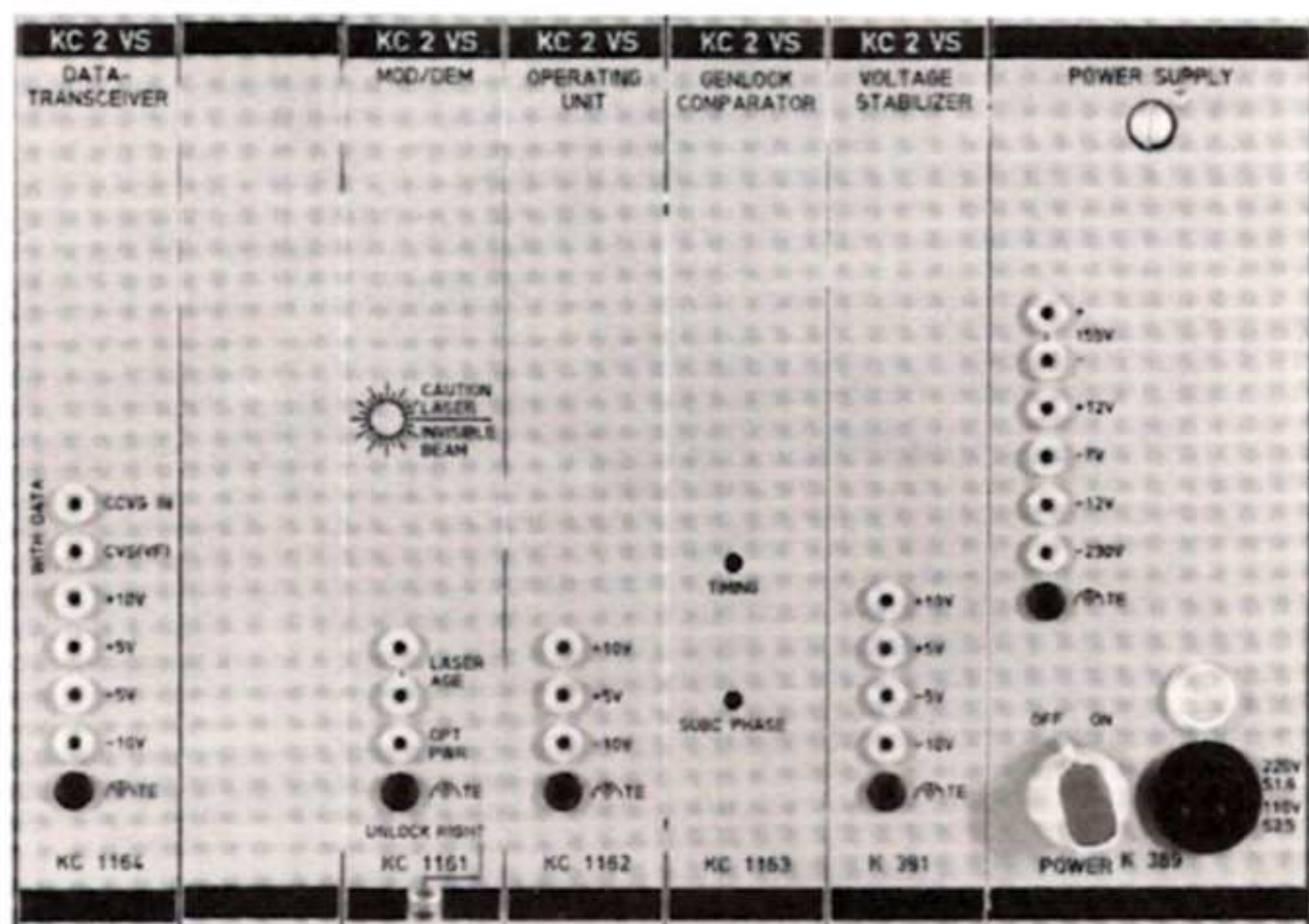
The camera cable consists of two low loss graded index glass fibres within a protective plastic sleeving.

A laser transceiver is present at both camera and base station.

The composite color video signal is fed to a pulse frequency modulator after camera commands and status indications have been added in digital form to the vertical blanking interval. Two subcarriers at 11 MHz and 12 MHz are FM modulated with the audio and intercom signals and are fed to the pulse frequency modulator together with the video signal.

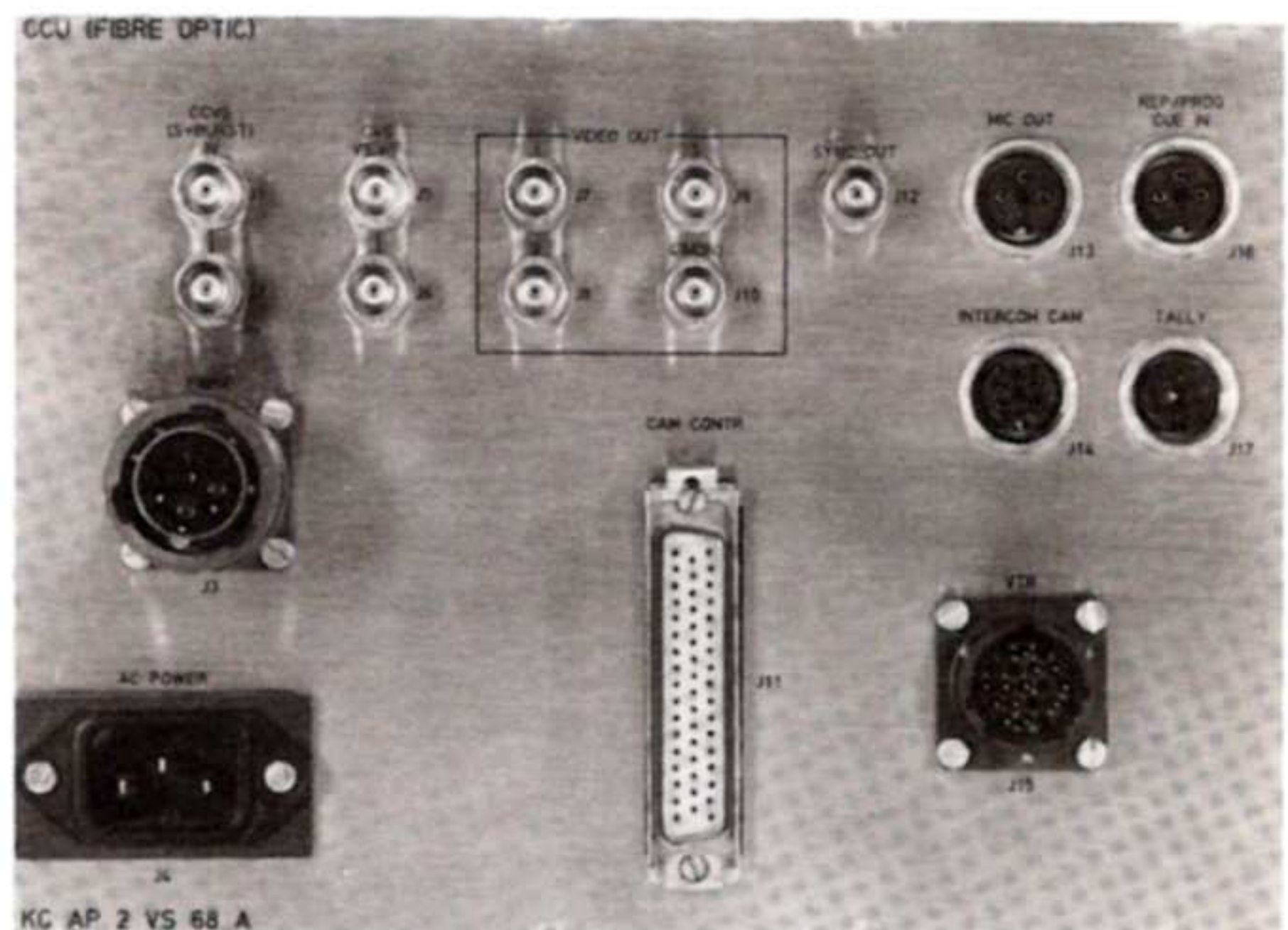
The resulting pulse train is used to drive the laser, the pulse repetition frequency for video black being 25 MHz.

After transmission through the optical fibre cable the signal is detected by an avalanche photo diode then pre-amplified and demodulated into its respective video, audio, intercom and command components.



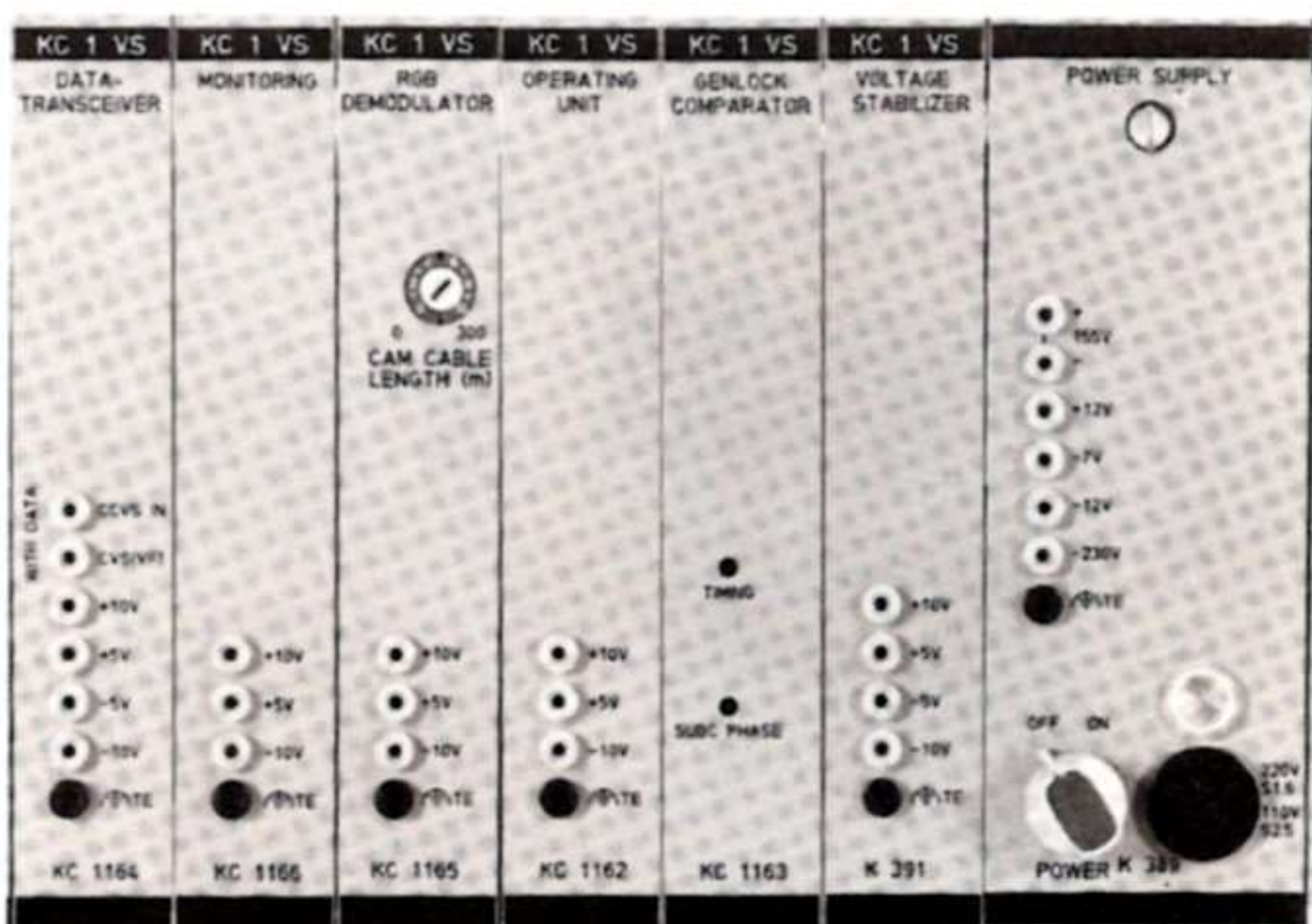
Base Station (Optical Fibre Cable)

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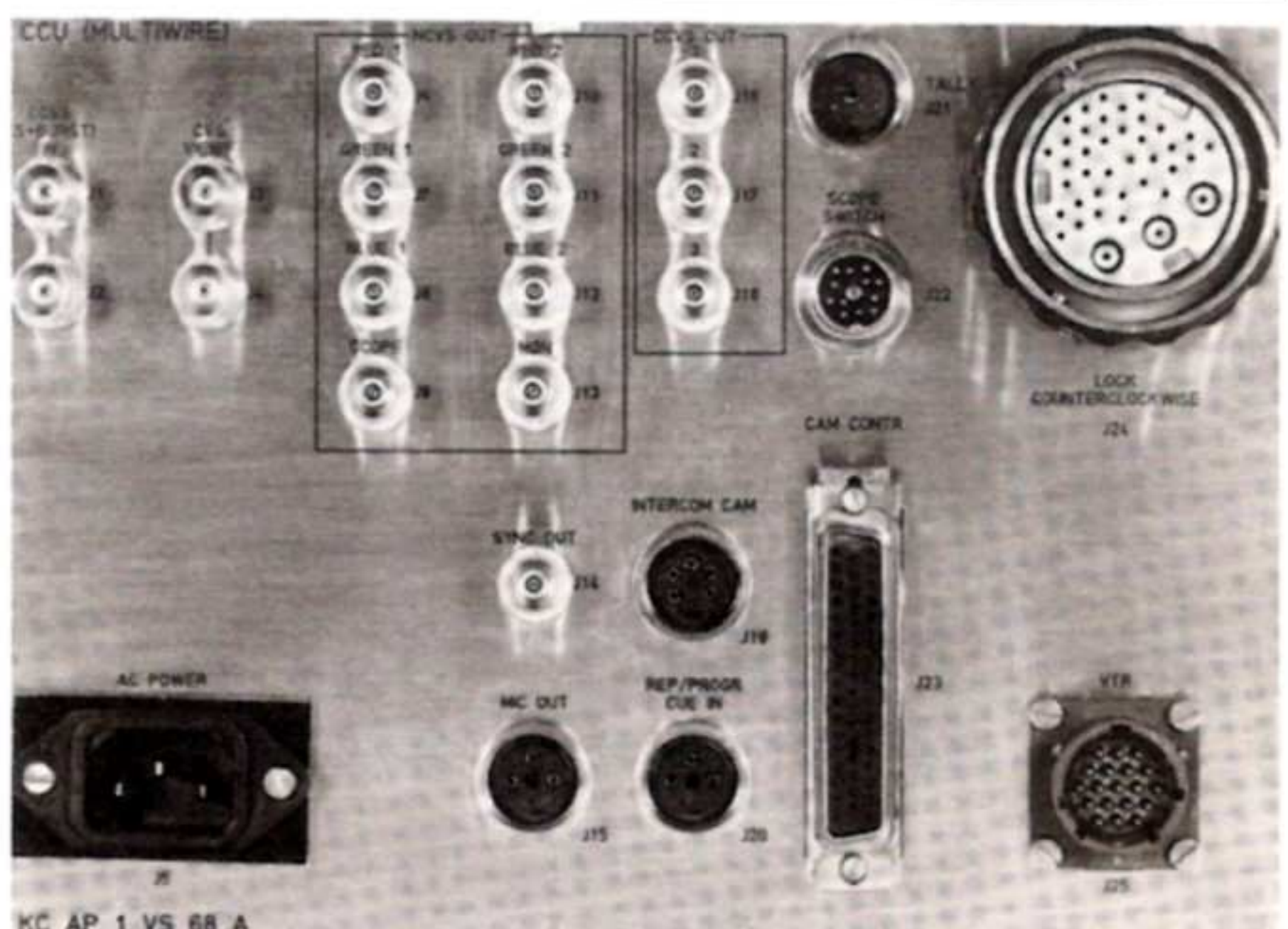
Rear view

82/26194



Base Station (Multiwire Cable)

82/26190



Rear view

82/26193

# Order Information

Doc Number	Unit Type - Description	Order Number
<b>KCA 110 Color Camera Chain</b>		
Compact Camera, complete, PAL consisting of: camera head (PAL and SECAM version incl. genlock), 1,5" viewfinder, add-on unit E, set of pick-up tubes 2/3" Plumbicon (XQ 2427), tube drive 1, lens: Fujinon 12 times, iris: servo; focus: manual, zoom: servo (rocker switch), VTR connection cable (15 m), battery belt, mains power supply and charger, shoulder pad, carrying case and standard accessories		
K-101.00.01	KCA 110, PAL	0 114 050 000
K-101.00.02	KCA 110, NTSC	0 114 060 000
K-101.00.03	KCA 110, SECAM	0 114 070 000
K-101.00.04	KCA 110, PAL-M	0 114 080 000
K-102.01.01	KC A PO PK 9 B Camera head PAL (incl. genlock) without viewfinder and tubes	0 105 990 000
K-102.01.02	KC A N5 PK 9 B Camera head NTSC without viewfinder and tubes	0 106 000 000
K-102.01.03	KC A S6 PK 9 B Camera head SECAM (incl. genlock) without viewfinder and tubes	0 106 010 000
K-102.01.04	KC A P5 PK 9 B Camera head PAL-M without viewfinder and tubes	0 106 020 000
K-102.02.01	K 3 BB 9 A 1,5" viewfinder	0 113 760 000
K-102.02.02	K 15 BB 9 B 6" viewfinder	0 113 870 000
K-102.03	KC 1261 Tube drive 1 for diode-gun tubes	0 105 870 200
K-102.04	XQ 3427 RGB Set of pick-up tubes 2/3" Plumbicon	0 923 190 000
K-102.05.01	TV 44.03 Lens Schneider 14 times M/S	3 160 613 014
K-102.05.02	TV 44.03 Lens Schneider 14 times S/S	3 160 613 018
K-102.05.03	J 13x9 B IE Typ 2 Lens Canon 13x9 M/S	3 160 622 001
K-102.05.04	A 12x9 KRM-1 Lens Fujion 12 times M/S	3 160 620 005
K-102.05.05	A 14 x 9.5 KERM-2 Lens Fujion 14 times M/S	3 160 620 008
K-102.05.06	A 17 x 9 KERM-1 Lens Fujion 17 times M/S	3 160 620 009
K-102.05.08	15 x 9 D Lens Angenieux 15 times M/S	3 160 616 001
K-102.05.99	Accessories for lenses	on request
K-102.06	Carrying case	2 105 870 120
K-102.07	KC 1200 Standard accessories, camera, consisting of: head set, adapter, dust cover and small accessories	0 105 930 200
K-102.08.01	KC 1130 Add-on unit E for EFP operation for external power supply	0 105 872 800
K-102.08.07	KC 1141 Add-on unit L for fibre optic cable operation	0 105 873 100
K-102.08.08	KC 1149 Add-on unit M for multiwire cable operation	0 105 874 200
K-102.08.91	KC 1171.01 Service add-on unit PAL	0 105 878 200
K-102.08.92	KC 1171.02 Service add-on unit NTSC	0 105 878 300
K-102.08.93	KC 1171.03 Service add-on unit SECAM	0 105 878 400
K-102.08.94	KC 1171.04 Service add-on unit PAL-M	0 105 878 500
K-102.09.15	X NB 9 001 Battery belt for add-on units E, L	0 673 400 000
K-102.09.25	X NL 9 001 Mains power supply and charger for add-on units E, L	0 673 320 000
K-102.09.26	2 M KV 319 Connection cable between power supply unit, charger and camera	0 797 750 100
K-102.09.35	8 M KV 288 Car adapter cable for add-on units E, L	0 797 300 100
K-102.09.91	X LA 9 001 Adapter for charging internal battery X 183 from mains power supply and charger	0 673 550 000
K-104	15 M KV 254 VTR connection cable (15 m)	0 796 800 100
K-105.00.01	Shoulder pad with locking plate (Sachtler)	2 105 870 070
K-105.00.02	Shoulder pad with 2/3" fixing	2 105 870 071
K-105.00.03	Vinten Typ 204 shoulder pedestal	3 160 691 010
K-105.00.04	Sachtler Typ C shoulder pedestal	3 160 691 011
K-106.00.11	KC 1262 Auto-centering	on request
K-106.00.21	Test plate	on request
K-108	Filter turret compl. with star light filter	2 105 870 102
<b>Operation with Base Station</b>		
K-110.01.01	KC 1 VS 68 A Base station for multiwire cable operation	0 113 750 000
K-110.01.02	KC 2 VS 68 A Base station for fibre optic cable operation	0 113 860 000
K-110.02.01	KC 1201 Standard accessories for multiwire	0 105 930 300
K-110.02.02	KC 1202 Standard accessories for fibre optic	0 105 930 400
K-110.03.01	KC 1162.01 Operation unit, 625 lines	0 113 860 300
K-110.03.02	KC 1162.02 Operation unit, 525 lines	0 113 860 900
K-110.04.01	KC 1163.01 Genlock comparator PAL	0 113 860 400
K-110.04.02	KC 1163.02 Genlock comparator NTSC	0 113 860 500
K-110.04.03	KC 1163.03 Genlock comparator SECAM	0 113 860 600
K-110.04.04	KC 1163.04 Genlock comparator PAL-M	0 113 860 700
K-110.05.01	K 389 Power supply (110-220 V)	0 113 750 100
K-110.05.02	K 390 Power supply (12 V)	0 113 750 900

Doc Number	Unit Type - Description	Order Number
K-110.06.10	KC 1149 Add-on unit M for multiwire cable	0 105 875 000
K-110.06.20	KC 1141 Add-on unit L for fibre optic cable	0 105 874 200
K-110.06.21	X NB 9 001 Battery belt	0 673 400 000
K-110.06.23	8 M KV 288 Car adapter cable	0 797 300 100
K-110.06.25	X NL 9 001 Mains power supply and charger	0 673 320 000
K-110.06.26	2 M KV 319 Connection cable between power supply unit, charger and camera.	0 797 750 100
<b>Fibre Optic Cable</b>		
(max. 4 km) for cable with 6 dB/km attenuation		
K-110.07.15	L-KAB T-413-2 Fibre optic cable. Includes connections and fitting of connectors.	0 921 710 000
K-110.07.16	T-413-2 Cable for L-KAB T-413-2. The length in metres is determined by the quantity declaration.	5 136 250 002
K-110.07.25	KA 64 Multiwire cable (max. 30 m). Includes connections and fitting of connectors.	0 791 100 000
K-110.07.26	753-5/1 Cable for Ka 64. The length in metres is determined by the quantity declaration.	5 136 201 009
K-110.08.11	G RK 60 DIN Plug-in unit support for 2 x KC.VS 68 A	2 520 670 200
K-110.08.12	G RK 60 ZOLL Plug-in unit support for 2 x KC.VS 68 A	2 520 670 201
K-110.08.13	G RK 69 A Plug-in unit case for 2 x KC.VS 68 A	0 536 820 000
K-110.08.21	G RK 616 S 2 DIN Plug-in unit support for DIN cabinet. mounting: base station left/control unit right	2 520 670 056
K-110.08.22	G RK 616 S 2 ZOLL Plug-in unit support for 19" rack. mounting: base station left/control unit right	2 520 670 057
K-110.08.23	G RK 616 S 2 UEW Plug-in unit support for OB van mounting: base station left/control unit right	2 520 670 055
K-110.08.31	G RK 616 S 1 DIN Plug-in unit support for DIN cabinet mounting: base station right/control unit left	2 520 670 053
K-110.08.32	G RK 616 S 1 ZOLL Plug-in unit support for 19" rack mounting: base station right/control unit left	2 520 670 054
K-110.08.33	G RK 616 S 1 UEW Plug-in unit support for OB van mounting: base station right/control unit left	2 520 670 052
K-110.08.34	G RK 69 C 2 Plug-in unit case	0 536 780 000
K-110.09.10	KC VS 554 A Control unit, modular version	0 281 650 000
K-110.09.20	KCBH VS 968 A Control unit, rack version	0 281 660 000
K-110.09.21	Mounting frame, DIN cabinet, for 2 control units	2 281 660 001
K-110.09.22	Mounting frame, 19"/OB van rack, for 2 control units	2 281 660 004
K-110.09.41	KV 79/3 Connection cable (max. 150m). Includes connections and fitting of connectors.	0 793 340 000
K-110.09.51	52 x 18 x 0.1 Cable for Kv 79/3. The length in metres is determined by the quantity declaration.	5 136 301 010
K-110.09.91	KC VS 515 K 1 Joystick, modular version	0 281 210 000
K-110.09.92	KV 77/3 Connection cable. Includes connections and fitting of connectors.	0 794 980 000
K-110.09.93	16 x 18 x 0.1 Cable for Kv 77/3. The length in metres is determined by the quantity declaration.	5 136 301 003
K-112.00.01	Viewfinder hood for 6" viewfinder, short	2 105 860 098
K-112.00.02	Viewfinder hood for 6" viewfinder, long	2 105 860 096
K-115	Z KC 9 018 Spare parts kit components	0 806 390 000
K-115.91	Spare set, extension	0 806 390 100
	Spare set, extension base station	
K-116.01	Z KC 9 020 Spare part kit p.c. boards (not depending on standard)	0 806 820 000
K-116.02.01	Spare set, extension PAL	0 806 820 100
K-116.02.02	Spare set, extension NTSC	0 806 820 200
K-116.02.03	Spare set, extension SECAM	0 806 820 300
K-116.02.04	Spare set, extension PAL-M	0 806 820 400
K-116.92	KC 1138 Sync comparator for Genlock	0 105 873 600
K-116.93.02	KC 1139.02 Burst comparator NTSC	0 105 873 800
K-116.93.03	KC 1139.02 Ident comparator SECAM	0 105 873 900
K-116.93.04	KC 1139.04 Burst comparator PAL-M	0 105 874 000
K-116.94.01	Extension set, multiwire - p.c. boards from camera head only -	0 806 820 500
K-116.94.02	Extension set, fibre optic	0 806 820 600
K-117	O PP 9L Test projector (incl. test slides)	2 736 670 000
K-119	T XM 9 A Simulator for 2/3" Plumbicon	0 828 830 000
K-121.01.01	Microphone support for MD 441 U	2 105 870 104
K-121.01.02	Microphone support for MKH 416 TU 3	2 105 870 060
K-121.02.01	MD 441 U Dynamic microphone	0 922 450 000
K-121.02.02	MKH 416 TU 3 Condenser microphone	0 922 460 000
K-121.03.11	KV 306 Microphone cable. Includes connections and fitting of connectors.	0 797 530 000
K-121.03.21	2 x 0.22 QMM Cable for Kv 306 The length in metres is determined by the quantity declaration.	5 000 384 300
K-122	Weather cover for EFP operation	2 105 870 110
K-125.00.01	Test plate set, complete, incl. neutral wedge-, grid-, wobble and cross-hatch test, Siemens-star.	2 015 630 010
K-125.00.02	Test plate	2 015 630 032

Modifications reserved

# KCA 110

## Broadcast EFP Color Camera

### Technical Specifications

#### Video Characteristics

<b>Color standards</b>	PAL, NTSC, SECAM, PAL-M	<b>Raster Geometry**</b> (Excluding distortion due to lenses)	Zone 1 : ± 0,5 % Zone 2, 3 : ± 1,0 %
<b>Tubes (R, G, B)</b>	3 x 2/3" Plumbicon* LOC-diode gun	<b>Registration Accuracy**</b> (Excluding distortion due to lenses)	Zone 1 : ≤ 40 n sec Zone 2 : ≤ 80 n sec Zone 3 : ≤ 160 n sec
<b>Signal to Noise Ratio*</b> typical γ = 1, unweighted R + S Method, Without aperture correction Green channel signal current 200 nA	55 dB (PAL, SECAM) 57 dB (NTSC, PAL-M)	<b>Gain Control</b> (Switchable)	0, + 9, + 18 dB
<b>Resolution</b> Depth of Modulation when transmitting a 5 MHz pattern (400 lines)	G ≥ 40 % Limiting resolution in centre 750 lines	<b>Frequency Response</b>	± 0,5 dB up to 5 MHz
<b>Sensitivity*</b> Reflection coefficient for white = 70 % Color Temperature 3200 K Gain Control 0 dB Green channel signal current 200 nA	1250 Lux F 2,8	<b>Pulse Response</b>	50 Hz ≤ 2 % 15 kHz ≤ 1 % 250 kHz ≤ 1 %
<b>Max. Sensitivity*</b> Color temperature 3200 K	300 Lux F 1,4 (0 dB) 40 Lux F 1,4 (+ 18 dB)	<b>Differential Gain</b> (without contour correction)	≥ 0,95
<b>Max. Aperture</b> Camera Input	1 : 1,4	*Lining up a camera with higher signal currents will result in increased S/N ratio and reduced sensitivity. Sensitivity variations may be caused by lens and tube tolerances. **Zone 1 : Circle 0,8 picture height Zone 2 : Circle of picture width Zone 3 : Residual picture outside Zone 2	

#### Direct Access to Signal In- and Outputs

INPUTS	CAMERA HEAD			BASE STATION	
	EFP	MULTIWIRE	LASER-FIBRE	MULTIWIRE	LASER-FIBRE
CCVS ext. VF signal	-	-	-	1 V <sub>pp</sub> /75 Ω loop	1 V <sub>pp</sub> /75 Ω loop
CCVS genlock ref.	1 V <sub>pp</sub> /75 Ω	-	-	1 V <sub>pp</sub> /75 Ω loop	1 V <sub>pp</sub> /75 Ω loop
Audio	Dyn./Cond.Mic. / 600 Ω -60/-40 dBm	Dyn./Cond.Mic. / 600 Ω -60/-40 dBm	Dyn./Cond.Mic. / 600 Ω -60/-40 dBm	Prog. + 6 dBm / 600 Ω	Prog. + 6 dBm / 600 Ω
Intercom with headset amp.	- 10 dBm/600 Ω	- 10 dBm/600 Ω	- 10 dBm/600 Ω	- 10 dBm/600 Ω	- 10 dBm/600 Ω
DC Power	11 - 15 V	-	11 - 15 V	11 - 15 V	11 - 15 V
AC Power	-	-	-	110/117/230 V ~ + 5 % - 10 %	110/117/230 V ~ + 5 % - 10 %
<b>OUTPUTS</b>					
CCVS	1 V <sub>pp</sub> / 75 Ω	1 V <sub>pp</sub> / 75 Ω	1 V <sub>pp</sub> / 75 Ω	(x 3) 1 V <sub>pp</sub> / 75 Ω	(x 4) 1 V <sub>pp</sub> / 75 Ω or
RGB (-G) Monitor	alt. 1 V <sub>pp</sub> / 75 Ω	-	alt. 1 V <sub>pp</sub> / 75 Ω	0,7 V <sub>pp</sub> / 75 Ω	0,7 V <sub>pp</sub> / 75 Ω
RGB Scope	-	-	-	0,7 V <sub>pp</sub> / 75 Ω	-
R, G, B (non composite)	-	-	-	(x 2) 0,7 V <sub>pp</sub> / 75 Ω	-
SYNC	-	-	-	- 4 V <sub>pp</sub> / 75 Ω	- 4 V <sub>pp</sub> / 75 Ω
Audio	Prog. - 10 dBm / 600 Ω	Prog. - 10 dBm / 600 Ω	Prog. - 10 dBm / 600 Ω <sup>9</sup>	Mic. + 6 dBm / 600 Ω	Mic. + 6 dBm / 600 Ω
Intercom	+ 6 dBm / 600 Ω	+ 6 dBm / 600 Ω	+ 6 dBm / 600 Ω	+ 6 dBm / 600 Ω	+ 6 dBm / 600 Ω
VTR-Connector	Yes	-	-	Yes	Yes

#### General

<b>Power Supply (EFP)</b> Voltage	11 . . . 15 V	<b>Dimensions</b> Camera (without lens and viewfinder)	Height (mm)	Width (mm)	Length (mm)	Weight
Power Consumption Cam. head approx. 29 W, 1.5" Viewfinder approx. 3 W			ca. 274	114	375	ca. 6,3 kg
<b>Ambient Operating Temperature Range</b> (cam head)	- 25°C to 45°C (- 25°C to 40°C for Optical unit)					

#### Modifications reserved

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