SK-90

Self-contained Portable Color TV Camera



HITACHI
Hitachi Denshi, Ltd.

The SK-90 is a lightweight color TV camera that produces unusually sharp and crisp pictures. It enhances the visual appeal of commercials and adds a new dimension of reality to dramas, news and sports. The SK-90 may look like an ordinary camera on the outside, but inside its sturdy case there are two pace-making developments in TV technology—SATICON* tubes and an Automatic Beam Optimizer (ABO). These innovations create a difference in picture quality which is dramatic enough to attract new viewers and sponsors to your station.

The SK-90 is designed to give TV cameramen all the freedom and mobility they need to go out on location and shoot action features, without worrying about complex equipment, tripping over bulky cords, or staggering under heavy loads.

Weighing only 18 pounds, the camera sits balanced on the operator's shoulder. It requires no backpack, delivers a usable picture in 5 seconds and runs for over an hour on a rechargeable battery belt. Built to withstand temperatures from below zero to above 120°F, the SK-90 will work wherever you have the imagination and the physical courage to take it. And it is packed with automatic features so you don't have to be a technical wizard to use it with professional results.

* Trade Mark



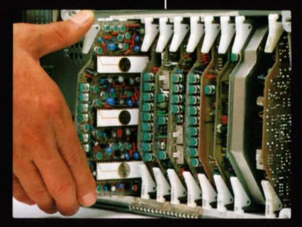
- Servo Zoom Lens (12 to 1)
  [Servo Zoom Lens (14 to 1) is also available]
- 1.5" Viewfinder with a magnifying eyepiece
- +6 dB, +12 dB High Gain Switch
- Auto White Balance Button



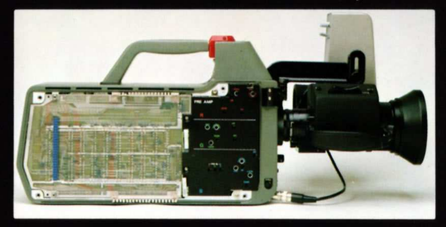
- 2/3" SATICON H8397A



- ABO Circuit



- Easy-to-maintain, plug-in type




HITACHI
SK-90 COLOR CAMERA









Features

Excellent Picture Quality

- Three 2/3-inch SATICON tubes (H8397A) and an extra-small, highly-efficient beam-splitting prism (F1.4) provide 500-line horizontal resolution and excellent signal-to-noise ratio.
- The Hitachi developed ABO (Automatic Beam Optimizer) greatly extends dynamic range and reduces comet-tailing.
- Built-in 2H contour enhancer with comb filter guarantees sharp, crisp pictures.
- Built-in linear matrix masking amplifier for high-fidelity color rendition.
- Standard encoder with switchable color bar generator produces full bandwidth signals

Automatic and Easy Operation

- Automatic white balance, built-in color and N/D filters, and automatic iris control by video level detection simplify camera operation under varying lighting conditions.
- In the manual iris mode the lens iris can be adjusted by observing picture waveforms superimposed on the viewfinder screen.
- Servo zoom lenses with automatic iris are provided. Conversion kit is available for studio use.
- Convenient quick-start circuit permits almost instantaneous operation (about 5 seconds) after switching-on.
- High gain switch offers both +6dB and +12dB operation for extremely low light conditions.
- Built-in sync generator can be locked to external black burst signal or NTSC/PAL color composite signal with built-in Genlock circuit.
- The camera maintains proper balance on the operator's shoulder, assuring less operator fatigue, and allowing greater concentration on production.

Adjustable Viewfinder

- 1.5-inch viewfinder with magnifying eyepiece assures precise framing and focusing.
- 1.5-inch electronic viewfinder may be positioned for individual cameraman's comfort with fully adjustable mechanism.
- LED (light-emitting diode) tally indicates "VTR Record" or "Battery Low Voltage." Switchable superimposed waveform shows white balance.
- Over modulation is indicated by tiger stripes in high level areas.

DCU (Digital Command Unit) and ROU (Remote Operation Unit)

- The camera with optional Multi-Adaptor can be remotely controlled from the DCU (option) at the base station. Signals can be transmitted via RG-11A/U coaxial cable or triaxial cable up to 3,000 feet.
- The ROU (with multi-conductor cable) is also available as an option. The cable can be extended up to 900 feet.

And More Features

- Low power consumption (only 35W) even when fully equipped.
- Continuous operation in excess of one hour may be achieved by using a battery belt. Flashing of LED Tally alerts the cameraman to low battery voltage.
- Built-in microphone amplifier accepts input level of −50 to −10dB.
- A trigger button is provided on the lens grip for remote control of a portable VTR.

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Suggested Composition

Component	Type	A	B	C	D	E
Camera Head w/SATICON Tubes	SK-90	○	○	○	○	○
1.5″ Viewfinder	VF-152	○	○	○	○	
Standard Accessories						
a. Shoulder Mount	SP-90	○	○	○	○	○
b. Extension Board	EB-90	○	○	○	○	○
c. Carrying Case	CL-90	○	○	○	○	○
d. Camera Cover	DC-90	○	○	○	○	○
e. Instruction Manual	IM-90	○	○	○	○	○
Zoom Lens	A12 x 9BRS-4A or A14 x 10BERS-3A	○	○	○	○	○
Lens Grip	SRD-51	△	△	△	△	
Battery Belt w/Battery		○	△	○		
Battery Charger		○	△	○		
AC Adaptor		△	△	△		△
Digital Command Unit and Multi-Adaptor				○	○	
Triaxial Adaptor					○	
Remote Operation Unit			○			○
Microphone, Sennheiser	MKH-416TU	△	△	△	△	
Studio Adaptor	SA-90					○
5″ Viewfinder	VF-501					○
Heating Cover	WC-90	△	△	△	△	
VTR Cable 5 m (15 feet)	C-501T2	○				
VTR Cable 15 m (50 feet)	C-152T2	△				
Camera Cable 30 m (100 feet)	C-302C3		△			△
Camera Cable 100 m (300 feet)	C-103C3		○			○
Triaxial Cable 200 m (600 feet)	C-203X1				○	
Triaxial Cable 400 m (1,200 feet)	C-403X1				△	
Coaxial Cable 200 m (600 feet)	C-203VD-MM			○		
Coaxial Cable 400 m (1,200 feet)	C-403VD-MM			△		

○ Components necessary for applications (A to E)
△ Available for special applications
A ENG Application
B EFP Application with ROU
C EFP Application with DCU via coaxial cable
D EFP Application with DCU via triaxial cable
E Studio Operation

Optional *Accessories*

ROU



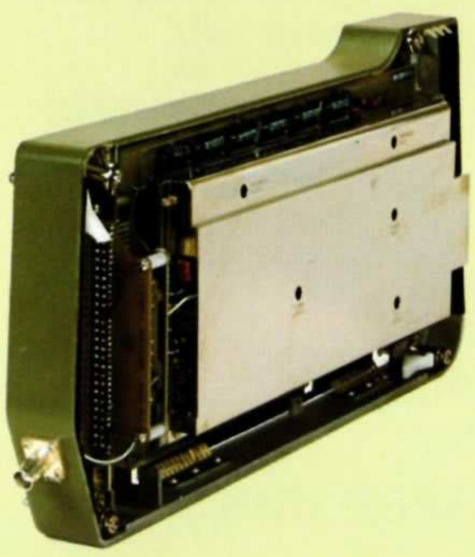
DCU

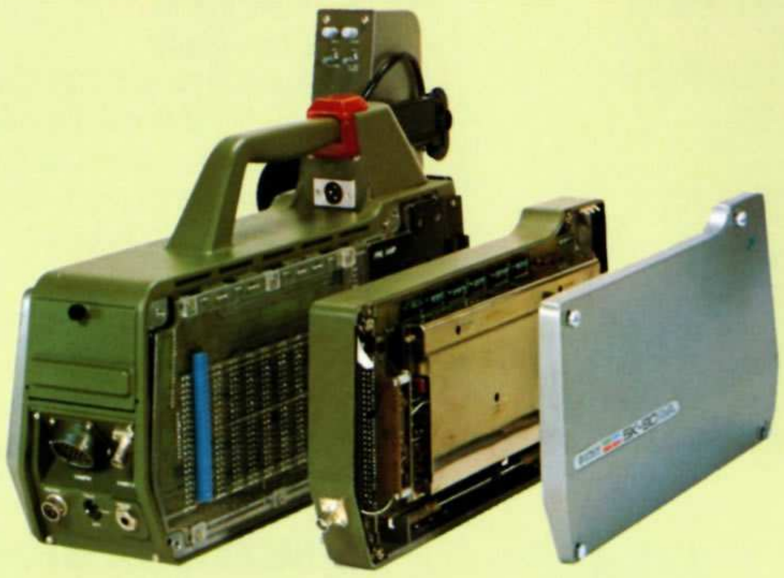


AC Adaptor



Multi-Adaptor







Triaxial Adaptor



Triaxial Adaptor



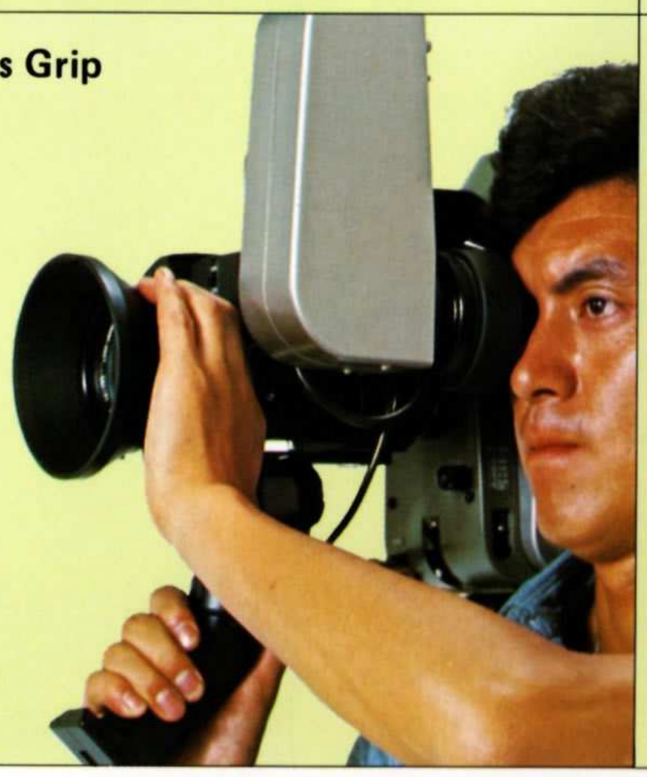
Battery Charger



Battery Belt



Lens Grip



Microphone



Applications

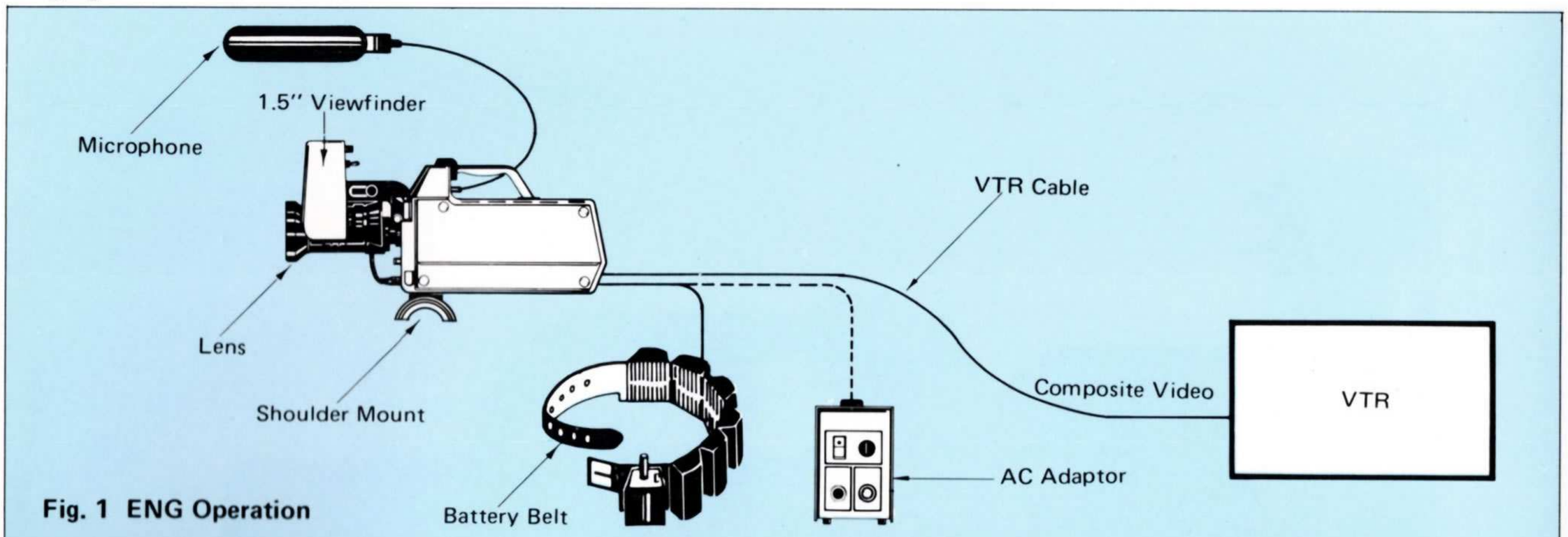


Fig. 1 ENG Operation

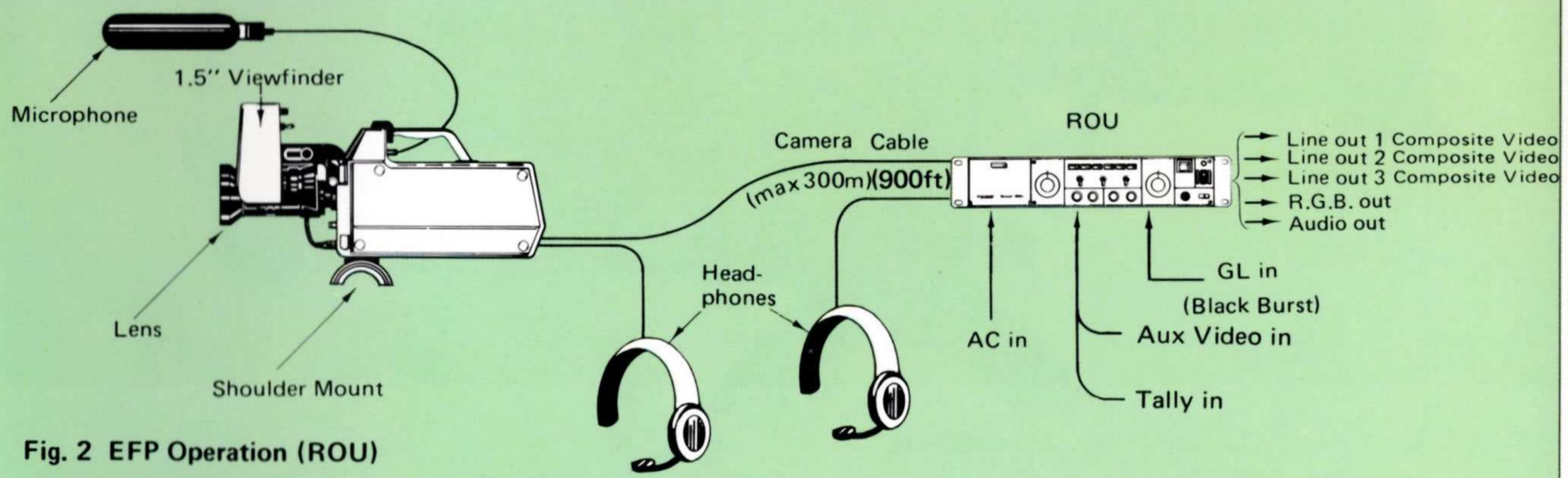


Fig. 2 EFP Operation (ROU)

*When the length of the cable exceeds 100m(300ft), Battery Belt or AC Adaptor must be used at the head, or a separate power source must be provided at the ROU.

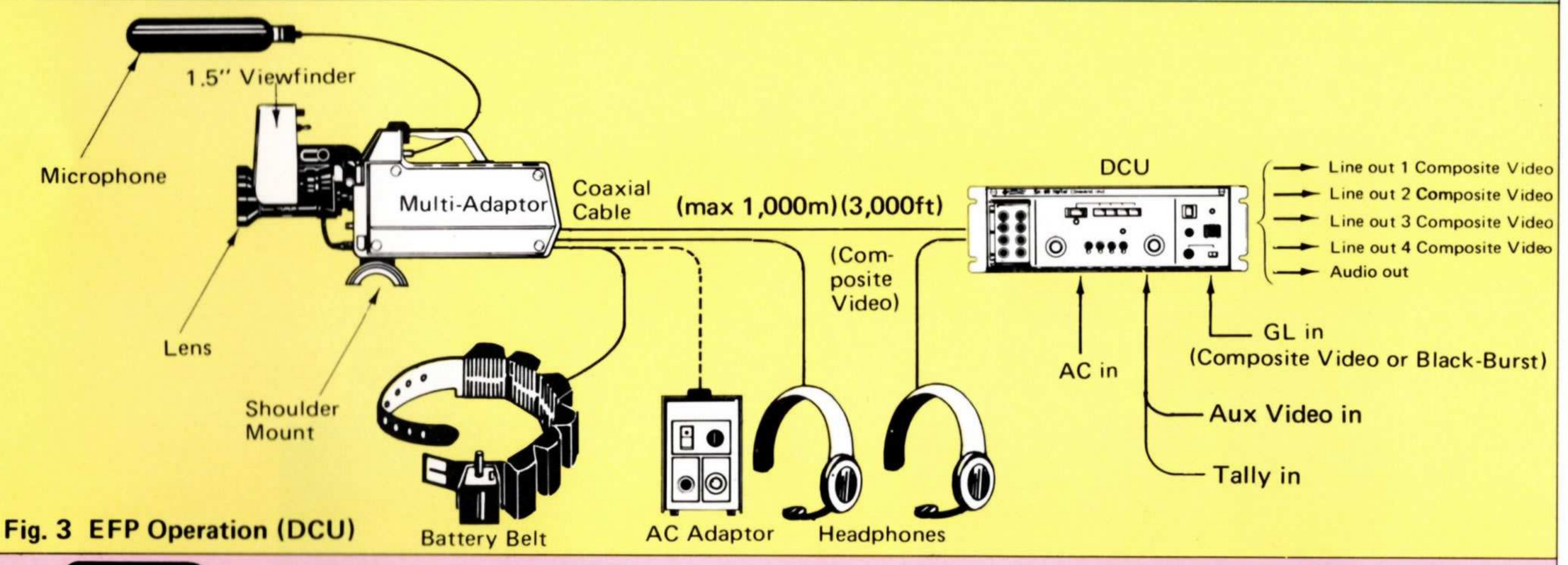


Fig. 3 EFP Operation (DCU)

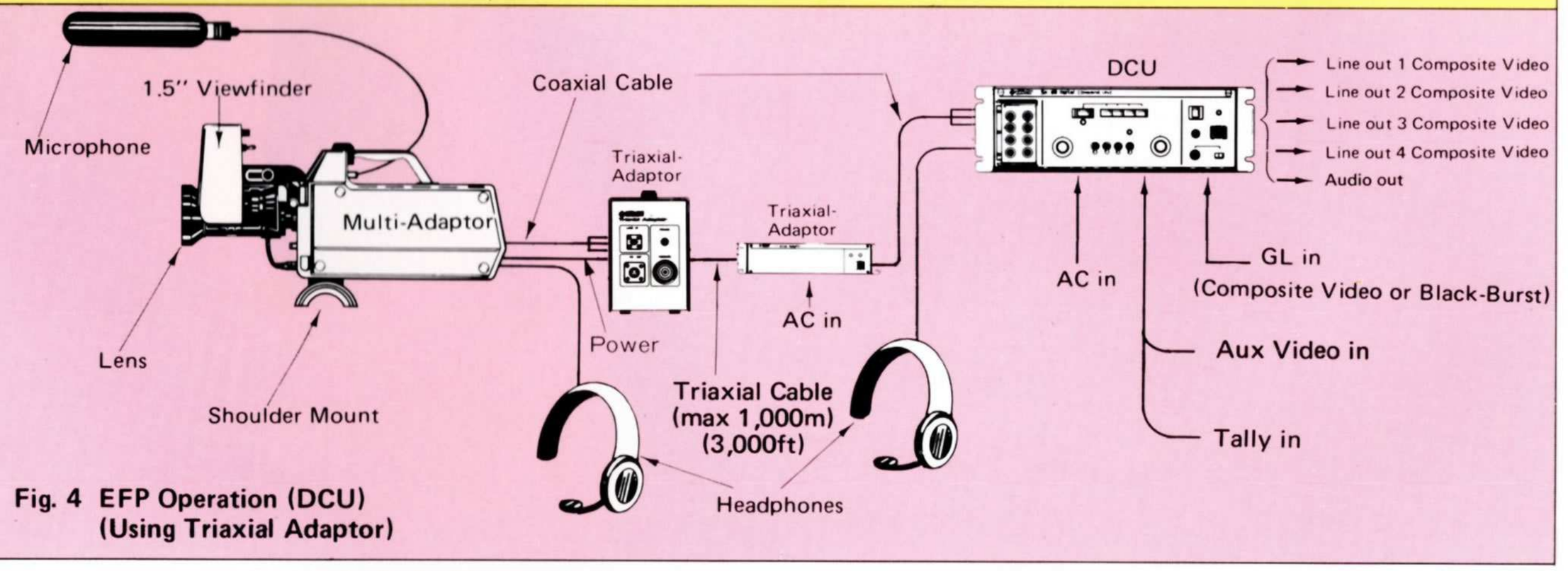
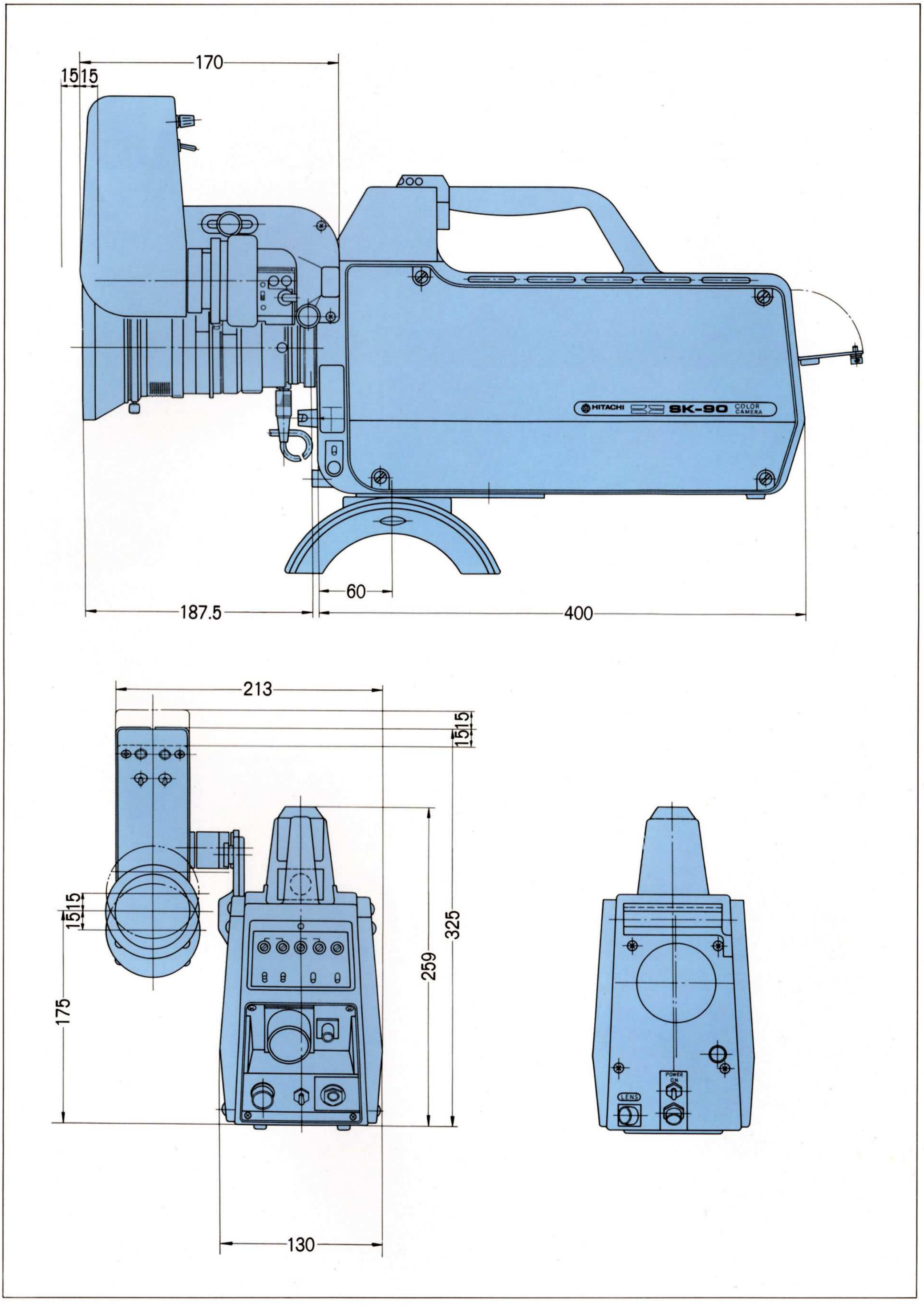


**Fig. 4 EFP Operation (DCU)
(Using Triaxial Adaptor)**

Dimensions

Unit: mm



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Specifications (Available on NTSC and PAL-B)

CAMERA

1. Pick-up tubes: Three 2/3-inch SATICON tubes (H8397A)
2. Scan standard: 525/60 fields/s (NTSC)
   625/50 fields/s (PAL)
3. Optical system: Dichroic prism with built-in bias light
4. Genlock signal: Black burst
   Sync 0.3Vp-p ±3dB
   Burst 0.3Vp-p ±3dB
   or NTSC (PAL) color composite
   Video 0 to 1Vp-p
   Sync 0.3Vp-p ±3dB
   Burst 0.3Vp-p ±3dB
5. Output signal: Line: NTSC (PAL) color composite 1.0Vp-p
   Mon: Selectable
   1) B/W (R, G, B, R-G, B-G) 1.0Vp-p
   2) NTSC (PAL) color composite 1.0Vp-p
6. Viewfinder: 1.5- or 5-inch CRT
7. Power requirement: Battey +12V DC (35W) or
   100/117V AC ±10%, 50/60Hz (NTSC)
   117/220/240V AC ±10%, 50/60Hz (PAL)
8. Ambient conditions:
   Operating temperature:
   -20 to +50°C (-4 to +122°F)
   Stability: Specifications are satisfied over variations of ±10°C (±18°F) from the set-up temperature
   Relative humidity: 35 to 90%
9. Dimensions:

	Height	Width	Depth
(mm)	185	130	400
(in.)	7.3	5.1	15.7

10. Weight: 8.5 kg (18.7 lb.) including 1.5-inch viewfinder, but excluding lens, microphone, and shoulder mount.
11. Sensitivity: F2.8 125 fc (on reflectance of 60%)
12. Signal-to-noise ratio:
    More than 51dB NTSC, more than 49dB PAL (at Y-channel output, and G-channel signal current of 200 nA, Gamma OFF, Contour OFF)
13. Horizontal resolution: 500 lines at center
    (Luminance) 400 lines at corners
    Using Hitachi SATICON's, the nominal amplitude response is 45% at 5MHz, measured at a signal current of 200nA, without contours.
14. Registration accuracy:
    (1) Zone 1 Within center circle of diameter equal to 80% picture height . . . Less than 0.1%
    (2) Zone 2 Within center circle of diameter equal to picture height . . . Less than 0.2%
    (3) Zone 3 Elsewhere . . . Less than 0.4%
15. Geometric distortion:
    (1) Zone 2 . . . Less than 1%
    (2) Zone 3 . . . Less than 1.5%

DIGITAL COMMAND UNIT (DCU)

Maximum Cable Length
1,000 m (3,000 feet) with RG-11A/U coaxial cable

Control Items

1. Iris
2. Master Pedestal
3. Red Pedestal
4. Blue Pedestal
5. Red Gain
6. Blue Gain
7. Red-Horizontal Centering
8. Red-Vertical Centering
9. Blue-Horizontal Centering
10. Blue-Vertical Centering
11. Bar/Cam Select
12. Detail, ON-OFF
13. Genlock, ON-OFF
14. Tally, ON-OFF
15. Monitor Select: R, G, B, R-G, B-G, and NTSC (PAL) color composite
16. Camera Call
17. Cable Compensation

Dimensions

	Height	Width	Depth
(mm)	149	482	370
(in.)	5.9	19	14.6

Weight 18 kg (39.6 lb.) Approx.

REMOTE OPERATION UNIT (ROU)

Maximum Cable Length
300 m (900 feet)

Control Items

1. Iris
2. Master Pedestal
3. Red Pedestal
4. Blue Pedestal
5. Red Gain (Painting)
6. Blue Gain (Painting)
7. Red-Horizontal Centering
8. Red-Vertical Centering
9. Blue-Horizontal Centering
10. Blue-Vertical Centering
11. Bar/Cam Select
12. Cable Compensation

Dimensions

	Height	Width	Depth
(mm)	88	482	377.5
(in.)	3.5	19	14.9

Weight 11 kg (24.2 lb.) Approx.

Specifications are subject to change without notice.

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