JVC
PROFESSIONAL

3-CCD COLOUR VIDEO CAMERA

KY-F58E

3-CCD colour video camera with independent head and control unit, C-type lens mount and built-in frame store provides a flexible, high-resolution, digital image capture system

Compact Image-Gathering Solution for Industrial, Research, Microscopy and Computer Graphics Applications

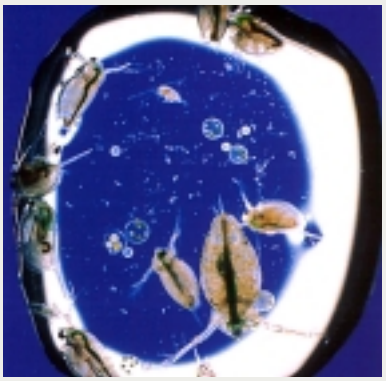
The astonishing KY-F58E comes packed with innovations and features. It delivers 700 lines of horizontal resolution together with highly accurate colour reproduction under a wide spectrum of light conditions. The ultra-compact KY-F58E also offers exceptional flexibility. It has an independent head and camera control unit which can be linked by a cable up to 25 meters long, opening up a wide range of application possibilities. And, with its built-in RS-232C port, the KY-F58E can be controlled by a computer for industrial and laboratory roles ranging from image processing and microscopic examinations to remote image gathering. The KY-F58E — compact, versatile and feature-rich.

Camera Head (Actual size)

Camera Control Unit

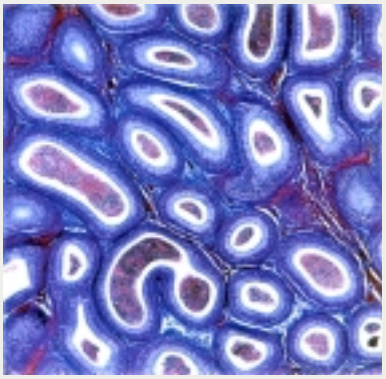
Powerful Optical Inspection Tool

Supported by powerful features such as Auto Iris, Flash Sync, variable speed electronic shutter, and Digital Frame Memory, the KY-F58E is an exceptionally powerful tool offering optimum performance for a wide range of observation tasks requiring high image quality. It is also flexible and can be controlled directly by a computer via its RS-232C port. This further broadens its possible use in optical inspection roles.



Capturing High-Quality Microscopic Pictures

The KY-F58E, which features Full Auto Video Level function, can be connected to a microscope via a standard C-mount microscope adapter. Add a display monitor and you have a comprehensive microscopic image gathering system offering high resolution and excellent colour reproduction. Among the many features which make the KY-F58E ideal for microscope applications is its Fluorescence mode. When activated, the KY-F58E stores images in its CCD, which makes it possible to shoot static images for long periods with sensitivity increased 400 times and down to 0.04 lux.



Imaging Creation with Computer Graphics

The KY-F58E opens up a host of applications in the rapidly expanding computer graphics field. Users benefit from special features such as Scene File, RS-232C interface, and Flash Sync. Among the wide array of video outputs available are composite video, Y/C, component, and RGB signals. The RGB output supports computer graphics, motion analysis, and other imaging applications, making the pocket-sized, yet powerful KY-F58E an essential image gathering device for creators of computer generated artwork. Moreover, the high-resolution mode is ideal for shooting small print and densely detailed graphics.

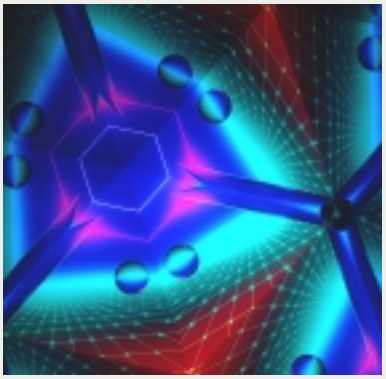
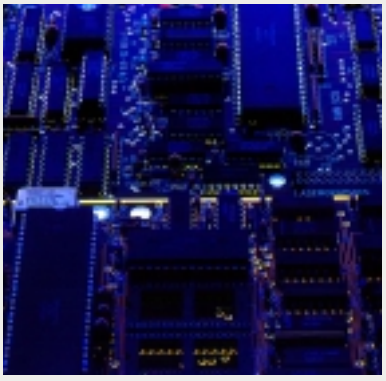


Image Processing in Industrial Fields

Applications in an industrial environment are almost limitless. Whether as part of a remote camera system, a presentation system, or a quality control system on the factory floor, the KY-F58E packs the performance and the features required to excel in any application. These include Random Trigger, HV sync, and sync on RGB output. Its potential is also sharply increased by the availability of system-expanding peripherals. For example, the KY-F58E is C-mount compatible, so users can mount a variety of optical C-mount adapters and high-quality C-mount lenses. The range of video outputs allows direct connection to most image processing hardware systems available today.



Innovative Features Deliver Power and Flexibility

■High-Performance CCD

The KY-F58E packs three high-density 1/3 inch Interline Transfer CCDs with 440,000 pixels each. Featuring advanced high-precision bonding technology and innovative electronics, the CCDs deliver 700 lines of horizontal resolution and an S/N ratio of 57 dB. Add the latest micro lens technology and the CCDs achieve a remarkable sensitivity of F5.6 at 2000 lux, 0 dB gain. All this means top-quality, high-resolution pictures with every detail captured under a wide range of operating conditions.

■C-Mount Compatibility

The KY-F58E features an innovative prism-mode C-mount, which results in a remarkably compact and versatile camera. The C-mount adopts the universal lens specification used as a standard by leading manufacturers of optical instruments and film cameras. The length of the optical path had previously made it difficult to find a compact C-mount solution for three-CCD cameras. However, JVC found a way using highly refractive optical glass and cutting-edge optical technologies. The result is a mount that ensures the KY-F58E remains an exceptionally compact camera, yet can accept high-quality C-mount lenses such as JVC's T14x5.5MDU motorised zoom lens.

■Lens Control Terminal

The intelligent Lens Control function is only available with JVC cameras. The KY-F58E can control Zoom, Focus and Auto Iris adjustment of optical servo-operated zoom lens.

■Full Auto Video Level Function

When you turn on the Full Auto Video Level mode, Auto Iris, Extended Electronic Iris, and ALC are activated to automatically adjust brightness level, even if the lens does not have an Auto Iris function.

■Long Umbilical Cable (Max. 25 m) option

The KY-F58E comes standard with 5 m of umbilical cable linking camera head and camera control unit. This length can be extended to 25 meters for flexible installation with no loss of picture quality.

■Set-up Menu

The operator can control all camera functions using the six buttons on the Camera Control Unit. With the Set-up Menu Function it takes just seconds to set the five menu categories — Video Level, White Balance, Freeze, Process, and Total Setting.

■Scene File Function (4 x 4 for 16 scenes)

The Scene File function eliminates the need to make adjustments for commonly-used image-capturing tasks and simplifies operation. The KY-F58E has a memory for up to 16 operator settings. Four of these scene files are available, each with four sub-files, which can be set and recalled when required for a particular application.

■Digital Frame Memory

The KY-F58E features a built-in frame store, letting you capture and freeze a single image. Frame or Field Mode is selectable.

■Random Trigger

Activate the Random Trigger and the KY-F58E captures images in response to a randomly timed external trigger signal. Consequently, when the camera, with its built-in high-speed shutter, is connected to a sensor, it can capture an image of a specific moving item in the camera's Frame Store, even on a fast-moving production line.

■Slow Shutter (Slow Shutter Mode)

Designed for applications such as fluorescence microscopy, the Slow Shutter mode lets the KY-F58E store images in the CCD, which makes it possible to shoot static images for long periods with sensitivity increased 400 times, down to 0.04 lux.

■Flash Sync (Flash Mode)

The KY-F58E has a handy Flash Sync Mode. When activated it lets operators synchronise camera operation with a strobe, which is useful for freezing the movements of equipment in operation and moving production lines for trouble-shooting and inspections.

■Field Mode (Normal Mode)

The Field Mode is ideal for shooting moving objects. In the Field Mode, charges combined from adjacent lines are integrated over one field at 1/50 second, sharply reducing picture lag.

■High Resolution Mode (Frame Mode)

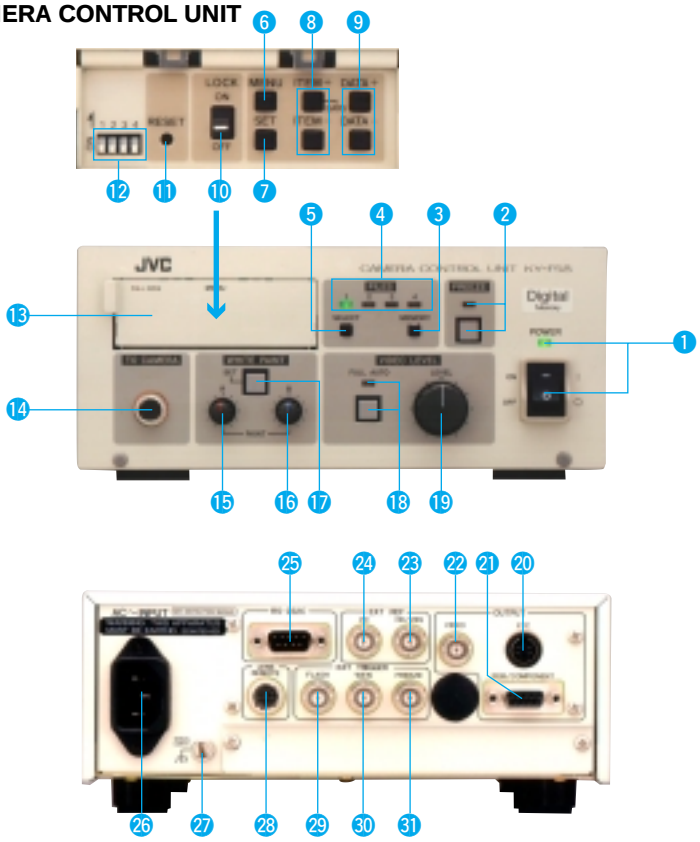
For capturing higher quality still images, the High Resolution Mode integrates charges from each horizontal pixel line for 1/30 second, which provides higher vertical resolution than that available in the Field Mode.

■RS-232C Control Port

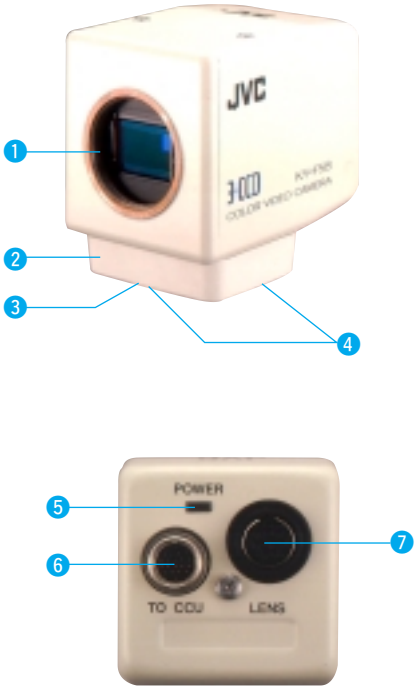
The camera features an RS-232C interface, opening up the possibility to be controlled by a personal or laptop computer. The port can also be used to control a motorised zoom lens.

Nomenclature and Functions of Major Parts

CAMERA CONTROL UNIT



CAMERA HEAD



CAMERA CONTROL [PANEL SIDE]

1. [POWER] Power switch and its LED
2. [FREEZE] Freeze button and its LED
3. [MEMORY] Memory button
4. [FILES] File selected LEDs
5. [SELECT] Select button
6. [MENU] Menu button
7. [SET] Set button
8. [ITEM+ (BARS), ITEM-] Item buttons
9. [DATA, DATA-] Data buttons
10. [LOCK] Operation lock switch
11. [RESET] Reset button
12. Set-up switch
13. COVER
14. [TO CAMERA] Camera connector
15. [PAINT R] Paint R volume
16. [PAINT B] Paint B volume
17. [WHITE BALANCE SET]
18. [VIDEO LEVEL FULL AUTO] Full auto button (ALC and EEI) and its LED
19. [LEVEL] Video level adjustment volume
20. [Y/C OUTPUT] Y/C output signal connector (4 pin)
21. [RGB/COMPONENT] RGB/Component output connector (9 Pin)
22. [VIDEO] Video output connector (BNC)
23. [HD/VBS] HD/VBS synchronised input signal connector (BNC)
24. [VD] VD sync input signal connector (BNC)
25. [RS-232C] Communication port (D-Sub 9Pin, MALE)
26. [AC INPUT] AC Power connector
27. [SIGNAL EARTH] Signal ground terminal
28. [LENS REMOTE] Lens remote control connector
29. [FLASH] Flash signal output connector (BNC)
30. [WEN] Write enable signal output connector (BNC)
31. [FREEZE] Freeze input connector

CAMERA HEAD

1. Lens mount
2. Camera mount bracket
3. 1/4 inch screw hole for camera mounting to a tripod
4. The provided fixing screws for camera mounting bracket (two of M2.6 x 6 mm)
5. [POWER] Power supply LED
6. [TO CCU] CCU connector
7. [LENS] Lens connector

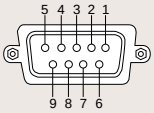
*❷ ❸ ❹ are attached accessories

⑦Lens connector
(8-pin, female)

(Viewed from front)

Pin No.	Signal
1	Iris mode select
2	GND
3	Iris control
4	+15V DC
5	Servo select
6	Zoom control
7	Focus control
8	Y

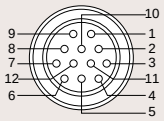
㉑R/G/B signal output connector
(D-SUB 9-pin, female)



(Viewed from front)

Pin No.	RGB	Component
1	GND	
2	GND	
3	Red	R-Y
4	Green	Y
5	Blue	B-Y
6	Composite video	
7	Composite sync	
8	GND	
9	GND	

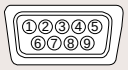
㉘Lens remote control connector
(12-pin, female)



(Viewed from front)

Pin No.	Signal
1	Servo select (F)
2	Servo select (Z)
3	GND
4	Iris C/L
5	Iris CTL
6	+12V DC
7	COM
8	Focus CTL
9	Zoom CTL
10	Servo select (I)
11	COM (+V)
12	COM (-V)

㉕RS-232C connector
(D-SUB 9-pin, male)



(Viewed from front)

Pin No.	Signal	Pin No.	Signal
1	NC	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	NC
5	GND		

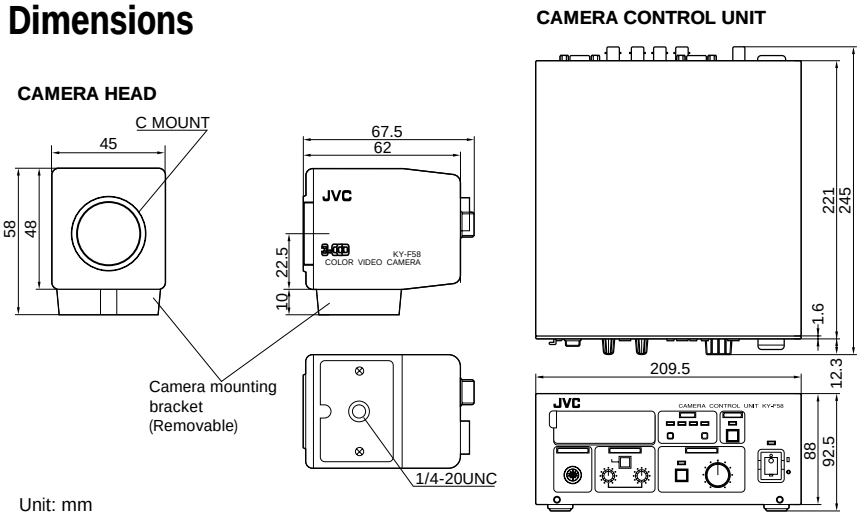
Specifications

Image device:1/3-inch, interline-transfer CCD x 3
Effective picture element: 752 (H) x 582 (V), 440,000 pixels
Colour separation system: F1.4 prism
Lens mount: C-mount (FB: 17.526 mm)
Signal system: PAL
External sync system: VBS (with colour lock) HD/VD (without colour lock)
Contour correction system: H-both effective, V-signal effective
Standard cable length: 5 m
Max. cable length: 25 m (operation only guaranteed)
Registration: 0.05% (except lens)
Sensitivity: F5.6, 2000 lux, 100%
Minimum required illumination: 16 lux (calculated value 100%), 0.04 lux (slowest shutter speed)
Gain: 0 - 18 dB
Electronic shutter: 1/50, 1/100, 1/250, 1/500, 1/1000, 1/2000, variable scan
Iris area: Selectable
Scene file: 16 types, max.
S/N ratio: 57 dB (TYP)
Video signal output: Composite, Y/C, RGB, Component
Horizontal resolution: 700 TVL
Power supply: AC 230V ~, 50/60Hz
Weight: Camera head 170 g, CCU 2.7 kg

Accessories:
Camera mounting bracket x 1
Camera cable (5 m) x 1
AC cable (2 m) x 1

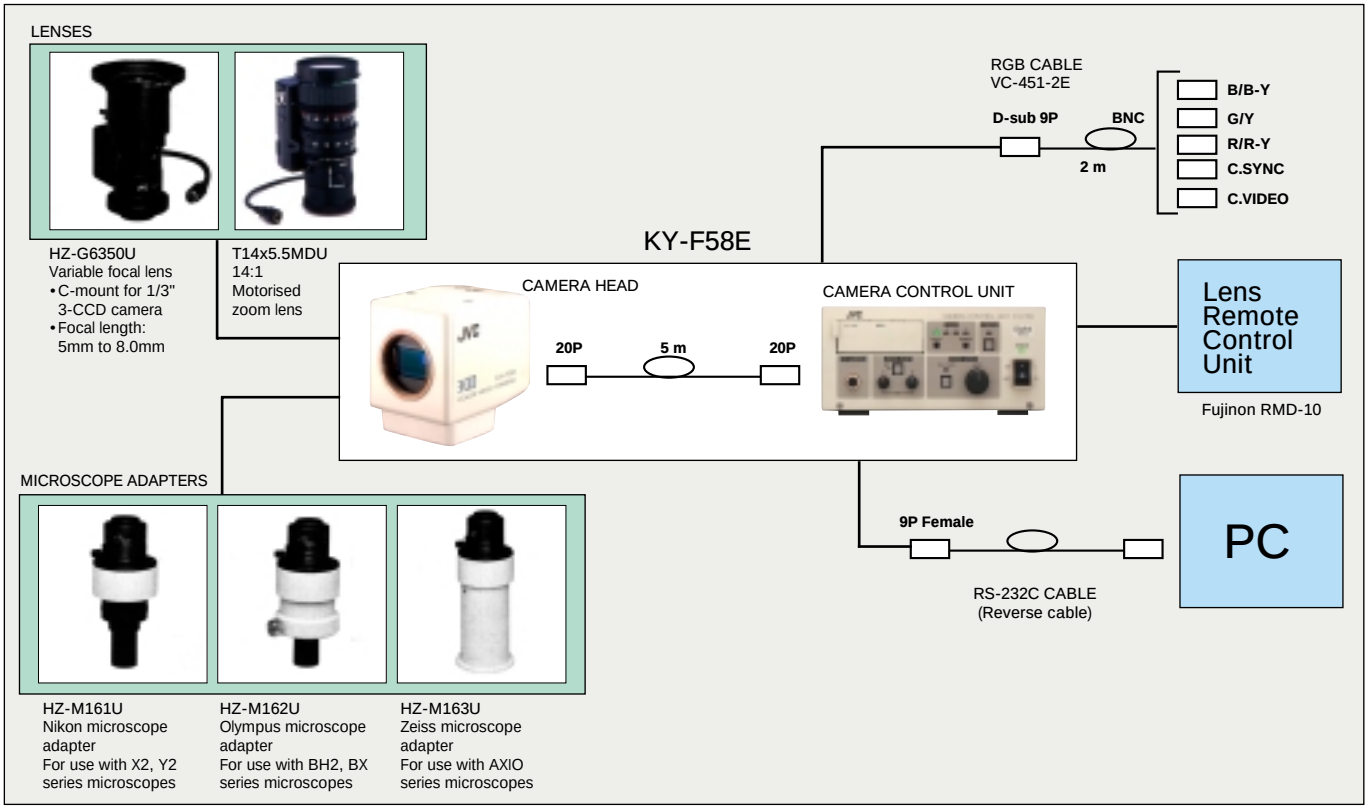
Optional accessories:
Cables: VC-P805U (5 m cable)
VC-P810U (10m cable)
Lenses, adapters

Dimensions



Unit: mm

System Configuration



Design and specifications subject to change without notice.

JVC
VICTOR COMPANY OF JAPAN, LIMITED

DISTRIBUTED BY

Certificate No. EC96J1049
ISO9001/No. FM26586

■ The Hachioji Plant of Victor Company of Japan, Ltd., has received ISO14001 Certification under the global standard for environmental management.

Printed in Japan
KCN-1760
CEKYF58EKN9810