Ikegami

Unicam HD

Multi-format CMOS Camera System
HDK-99 HDK-73 HC-HD300

16-bit Full Digital HDTV Camera System
HDK-790GX HDK-79GX

3G 16-bit Full Digital HDTV Camera System
HDK-970A HDK-97A

Common features :

Unicam HD

- Multi-format CMOS Camera System HDK-99 HDK-73 HD-HC300
- 3G 16-bit Full Digital HDTV Camera System HDK-970A HDK-97A
- 16-bit Full Digital HDTV Camera System HDK-790GX HDK-79GX

Ikegami is a leading supplier of high quality professional broadcast cameras.

More than 38-bit internal Digital Video Processing Technology

Ikegami's advanced imaging and digital processing technology brings out the maximum benefit of high level quantization. It is possible to maximize performance of sensors in combination with various lenses while maintaining rich information volume with high speed processing. Smooth and more natural gradation expression, and vivid and clear coloring are presented.

Dockalable Configuration

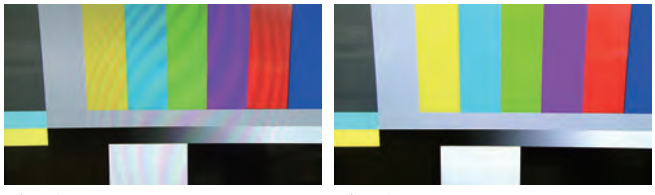
Follows the high operability of the Unicam series for broadcasting Dockable Camera. Docking to fiber adapters according to operation mode is possible for Flexible and economical operations.

Moire Reduction Filter (Factory Option) *1

An Anti-Moire Optical Low-Pass Filter can be fitted in the filter wheel to reduce unwanted moire video patterns when shooting a large LED screen, etc.

*1 Except HC-HD300

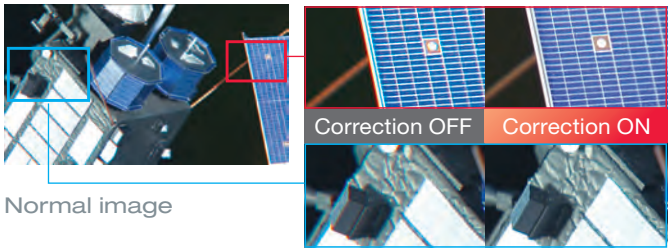
* If this optional filter is ordered, one of the filters must be replaced.



Filter OFF　　Filter ON

Lens chromatic aberration correction function

Acquires correction data from the corresponding lens and automatically corrects lens chromatic aberration based on lens zoom, focus, and iris position information.



Normal image

Variable ECC (Electric Color Compensation)

Variably changeable between 2,000k to 20,000k.

SE-H750 System Expander

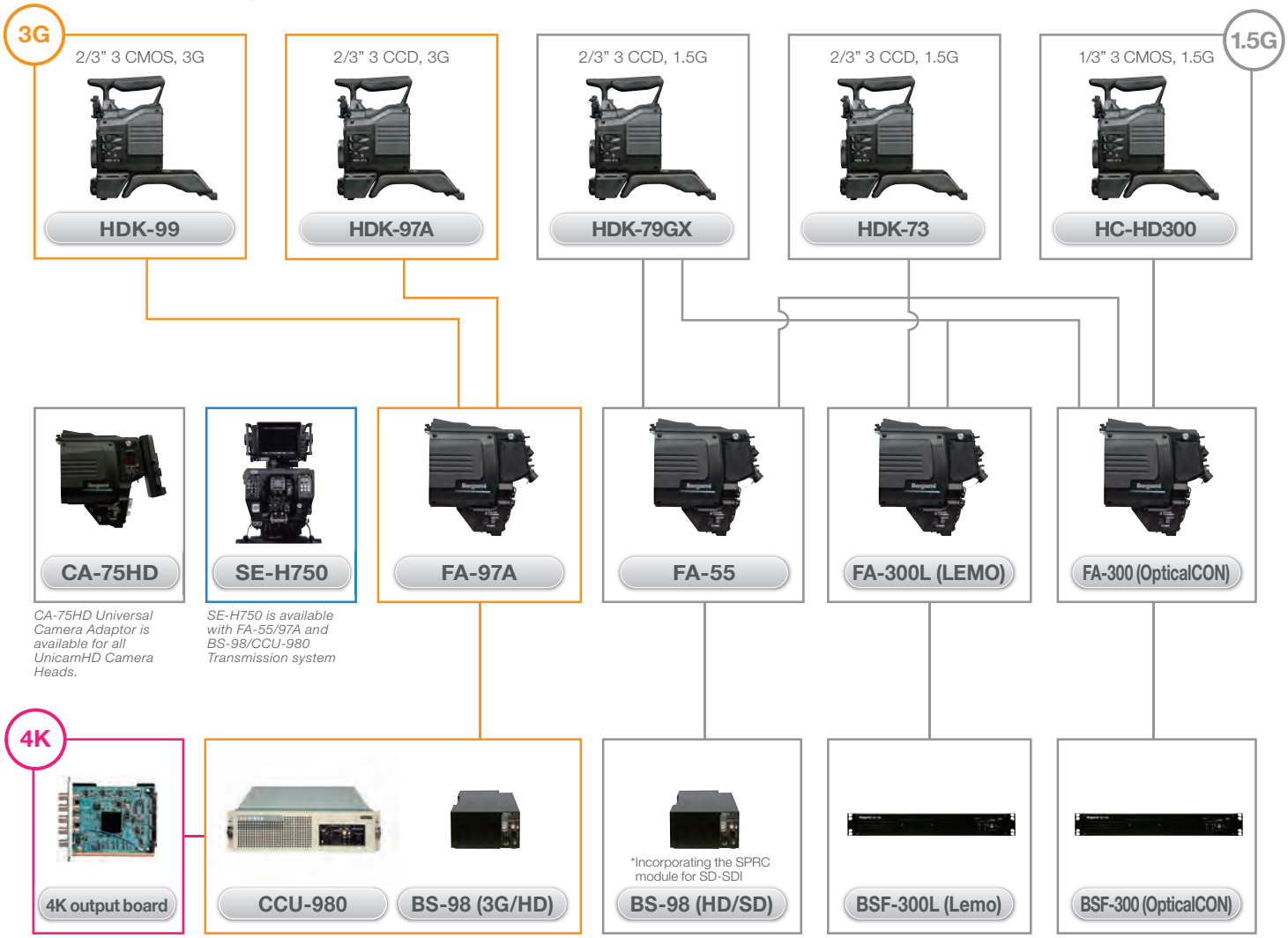
The SE-H750 system expander supports operation with large lenses and studio viewfinder for sports and other applications.

Digital Extender *2

The built-in digital extender expands the center of picture. The expansion can be selected as 1.5X, 2X, 3X, 4X (4 steps) by the camera menu.

*2 Except HDK-73/HC-HD300

Connection Diagram



Focus Assist Function

The Quick EZ Focus Assist function is a newly incorporated useful tool, providing very distinct enhancement to the viewfinder signal to enable the camera operator to make critical focus adjustment. The size of area, area color, edge color, and display time on the viewfinder are adjustable in the camera menu.

Normal Viewfinder Image

*Serial data communication type lens is required.

trigger

Assist Area (sample setting 1)

Assistant widely, monochrome in the area, image level 60%, edicolor to monochrome, make the edge signal enhanced.

Assist Area (sample setting 2)

Display with edge color (wider assist area, monochrome in area, 60% video level, set to edge color cyan)

Assist Area (sample setting 3)

Assist area, display with image level set to 100% (color in assist area, area size, image level 100%, edge color set to green)

3G 3-CMOS Full Digital HDTV Camera System

HDK-99

2.6 Mega pixel high performance CMOS sensors

4K HDR

(with 4K output board and BS-98/CCU-980)

HDK-99 with SE-H750

Newly Developed High Performance 2.6 Mega pixel 2/3-inch CMOS Sensors

The HDK-99 utilizes three 2/3-inch 2.6 mega pixel CMOS sensors, each capable of capturing full HD 1920 x 1080 resolution images with a dynamic range of 600% in normal mode and an extremely wide 1200% in HLG mode, and giving you an excellent sensitivity of F11 (60Hz) / F12 (50Hz), high signal-to-noise ratio and modulation depth.

Multi-format

The camera supports various HDTV formats of 1080p (59.94/50Hz), 1080i (119.88/100Hz), 1080p (29.97/25Hz) and 720p (59.94/50Hz), achieving flexible picture representation.

Supports high-band 3G-SDI (1080p 59.94/50Hz) video output

The camera supports 3G-SDI 1080p (59.94/50Hz) wide-band video output as a standard feature for higher picture quality. The single and dual link output is available with CCU-980/BS-98 camera control unit/base station supporting 3G-SDI signal.

4K ready

4K

Slot in BS-98 and CCU-980: Optional board provides 4K output from a 2K source.

HDR (High Dynamic Range)

HDR

The camera provides an HLG (Hybrid Log Gamma) mode, conforming to ITU-R BT.2100 which is an international standard for HDR. It is now possible to expand the range represented from dark to bright, providing superb bright pictures with High Dynamic Range, and also achieves rich colors with wide color gumut. HLG and various kinds of gamma curve can be flexibly set by users.

Next Generation High Speed Video Processor, AXII

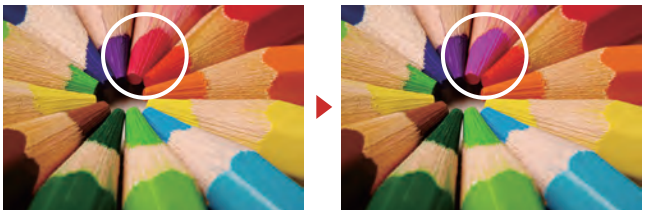
Ikegami has developed a new processing engine, AXII, for our next generation HD, 4K, and 8K cameras. This ASIC can perform high speed processing of super high resolution video signals in various formats and frame rates. The HDK-99 utilizes this new processor, making it possible to deliver high quality, high reliability and low power consumption. The camera is also capabile of 16-axis color correction and an improved focus assist function.

2 times slo-motion (1080i 119.88/100Hz)

Switchable for live and slo-motion picture with one camera. It is possible to get a slo-motion picrure without changing the camera positon. (Option)

16-Axis Color Correction

The color correction function enables precise color adjustment for all occasions. 16 axes of the color gamut can be fine tuned in both hue and saturation. This function works in real time and is extremely beneficial for live multi-camera applications.



Original

Corrected by color correction

Moire Reduction Filter (Factory Option)

An Anti-Moire Optical Low-Pass Filter can be fitted in the filter wheel to reduce unwanted moire video patterns when shooting a large LED screen, etc.

* If this optional filter is ordered, one of the filters must be replaced.

■ 3-CMOS Full Digital HDTV Camera System

HDK-73

2.6 Mega pixel high performance CMOS sensors

HDR

HDK-73

Newly Developed High Performance 2.6 Mega pixel 2/3-inch CMOS Sensors

The HDK-73 utilizes three 2/3-inch 2.6 mega pixel CMOS sensors, each capable of capturing full HD 1920 x 1080 resolution images with a dynamic range of 600% in normal mode and an extremely wide 1200% in HLG mode, and giving you an excellent sensitivity of F12 (60Hz) / F13 (50Hz) and high signal-to-noise ratio.

Native Multi-format

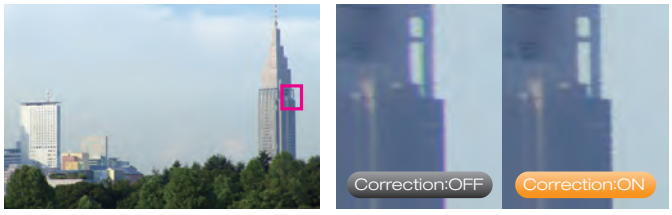
The CMOS sensors support progressive and interlace readout, natively supporting 1080i/59.94 and 1080i/50, as well as 720p/59.94 and 720p/50 HDTV formats.

Advanced Full Digital DSP

This camera is designed from the start base on End-to-End Digital made possible by using CMOS sensors, and includes the benefits of high bit quantization. Especially for the dark areas of the picture, the higher gradation for gamma and other circuits improves the reproduction, providing for more natural color in the shadow areas of the picture. Up to 38-bits are used within the DSP.

Lens chromatic aberration correction function

Acquires correction data from the corresponding lens and automatically corrects lens chromatic aberration based on lens zoom, focus, and iris position information.



Two HD-SDI Outputs from the Camera Head

Two HD-SDI output signals (1.5G) are selectable between Camera, VF, RET and MON (monitor) for external monitoring at the camera head.

Quick EZ Focus Assist Function

The Quick EZ Focus Assist function is a newly incorporated useful tool, providing very distinct enhancement to the viewfinder signal to enable the camera operator to make critical focus adjustment. The size of area, area color, edge color, and display time on the viewfinder are adjustable in the camera menu.

Focus Assist: ON

RET and QTV Channels

The featured base stations for the HDK-73 support four channels of return video (RET), two each for SDI and VBS. The selected channel can be output at the camera as an HD-SDI signal (upconverted if input in SDTV) and used to feed a talent monitor or other purpose. In addition there is a separate prompter channel (QTV) with SDTV input at the base station and SD output at the camera.

Advanced Digital Detail

Both horizontal and vertical Detail Correction circuits for red, green and blue signals are independently and digitally processed. You can obtain the full resolution of a high quality picture with extremely low noise, even under low-light shooting conditions.

Dockable Camera Body

With a docking style camera body, either an FA(Fiber adapter) or CA (Camera adapter) can be mounted without any external cables depending on the use. A new lower profile and lower weight improve the manuverability for shoulder use.

Moire Reduction Filter (Factory Option)

An Anti-Moire Optical Low-Pass Filter can be fitted in the filter wheel to reduce unwanted moire video patterns when shooting a large LED screen, etc.

* If this optional filter is ordered, one of the filters must be replaced.

HDR (High Dynamic Range)

The camera provides an HDR function with its HLG (Hybrid Log Gamma) curve. It is now possible to shoot a scene with high dynamic range without lossing gradation in the highlights.

Standard Gamma

HDR imHybrid Log Gamma with HDR monitorage

3G 16-bit Full Digital HDTV Camera System

HDK-970A HDK-97A

4K HDR

(with 4K output board and BS-98/CCU-980)

High Performance 2.3 Mega pixel progressive sensors

Three 2/3-inch 2.3 Mega pixel 1080 progressive CCDs are employed to support not only the usual 1080i (59.94/50Hz) 4:2:2, 720p (59.94/50Hz) 4:2:2 1.5G formats, but also 3G formats such as 1080p (59.94/50Hz) 4:2:2 and 1080i (59.94/50Hz) 4:4:4. Furthermore, 1080i (119.88/100Hz), 1080p (29.97/25Hz) are available as an option. The HDK-97AP adds support for the 1080p (23.98Hz) format.

Next Generation High Speed Video Processor, AXII

Ikegami has developed a new processing engine, AXII, for our next generation HD, 4K, and 8K cameras. This ASIC can perform high speed processing of super high resolution video signals in various formats and frame rates. The HDK-970A/97A utilizes this new processor, making it possible to deliver high quality, high reliability and low power consumption. The camera is also capabile of 16-axis color correction and an improved focus assist function.

Supports high-band 3G-SDI (1080p 59.94/50Hz) video output

The camera supports 3G-SDI 1080p (59.94/50Hz) wide-band video output as a standard feature for higher picture quality. The single and dual link output is available with CCU-970/BS-97 camera control unit/base station supporting 3G-SDI signal.

Supports custom gamma

Various kinds of gamma curve can be flexibly set by users.

Multi-format

The camera supports various HDTV formats of 1080p (59.94/50Hz), 1080i (59.94/50Hz 4:2:2, 4:4:4), 1080i (119.88/100Hz), 1080p (29.97/25Hz) and 720p (59.94/50Hz), achieving flexible picture representation.

*50Hz frmats and 1080i (119.88/100Hz), 1080p (29.97/25Hz), 1080p (23.98Hz) are option.

2 times slo-motion (1080i 119.88/100Hz)

Switchable for live and slo-motion picture with one camera. It is possible to get a slo-motion picrure without changing the camera positon. (Option)

16-bit full digital

Integrating Ikegami's advanced picture processing technology and digital processing technology maximizes the effect of 16-bit A/D conversion, increasing gradation in dark areas where the processing is perfromed for more natual reproduction of dark colors.

16-bit Full Digital HDTV Camera Sysem

HDK-790GX HDK-79GX

4K

(with 4K output board and BS-98/CCU-980 on 1080/29.97 PsF format)

The HDK-790GX and HDK-79GX are high quality multi-purpose high end camera models, can be used for studio, as well as, field applications.

2/3-inch 2.3 Mega pixel AIT CCDs

Three 2/3-inch 2.3 Mega pixel AIT CCDs are employed to achieve 1000 TVL horizontal resolution with high signal to noise ratio of 61dB at F10 (1080/59.94i) or F11 (1080/50i) sensitivity.

Built-in Triple Layer Filter (ND/EFF/ECC)

The triple layer filter system can be remotely controlled from OCP/MCP. The three layers are ND (100%, 25%, 6.2%, 1.6%), EFFECT (Clear, Cross, Snow, Fog) and Electronic Color Compensation (ECC: 3,200K/4,300K/5,600K/6,300K/8,000K). In addition, there is Variable Color Temp. function that enables the camera operator to continuously vary the color temperature from 2,000k to 20,000k for easy and precise adjustment.

2 Channels QTV

Two channels of QTV output (VBS) are available at the camera for prompter and external monitoring purposes. The AUX OUT (VBS) connector can be assigned to QTV-1, QTV-2, or Main video by menu.(FA-55)

* 2 channels QTV is standard. (FA-55) * 2 channels QTV is option in 50Hz. (FA-97A)

* BS/CCU should support 2 channels of QTV.

Digital Extender

There is the selection of x1.5, x2, x3, x4 digital extender available to enlarge the image at the center of shot without any loss in image sensitivity.

HD SDI Trunk

When the camera is operating with FA-97A fiber adaptor and CCU-980, the system allows 3G (1.5G x2) transmission from the camera head to the CCU, and a second 1.5G video can be transmitted to the CCU as a video trunk channel. For POV or 3D applications, this will reduce the cables which need to be run.

Advanced features made possible with digital technology

Advanced features such as Master Gain Control, Variable Color Temp., Custom Gamma functions are incorporated.

Affordable 3-CMOS Full Digital HDTV Camera System

HC-HD300

It emulates the features which are valued in the broadcasting industry around the world. Even though the price is lowered, the care toward its expression as a camera is not lowered. That is the concept of HC-HD300. In addition to the characteristic advanced functionality of "Ikegami", we newly developed a 2.2 million pixel 1/3 type progressive 3CMOS to optimize image processing. We have realized the high resolution of S/N 58dB and the high sensitivity of F10/2000lx.

High Performance Full HD 1/3-inch CMOS Sensors

The HC-HD300 utilize three 1/3-inch 2.5 megapixel CMOS sensors, each capable of capturing full HD 1920 x 1080 resolution images and a wide dynamic range of more than 600%, and giving you an excellent sensitivity of F10 (60Hz) / F11 (50Hz) and high signal-to-noise ratio.

Quick EZ Focus Assist function

The Quick EZ Focus Assist function is a newly incorporated useful tool, providing very distinct enhancement to the viewfinder signal to enable the camera operator to make critical focus adjustment. The size of area, area color, edge color, and display time on the viewfinder are adjustable in the camera menu.

Multi-Video Format

For High Definition, 1080/59.94i and 1080/50i as well as 720/59.94p and 720/50p are natively supported. In addition, Standard Definition, which is 480/59.94i (NTSC) and 576/50i (PAL), is also supported.

Super Dynamic Compression (KNEE)

Built-in advanced digital KNEE function compresses high-light signals without changing the hue. It gives you more saturation and a naturally high-lighted picture rather than washing out the color.

Lens Aberration Correction function

The Lens Aberration Correction function is newly incorporated for minimizing the blur and colored edges caused mainly by lens chromatic aberration.

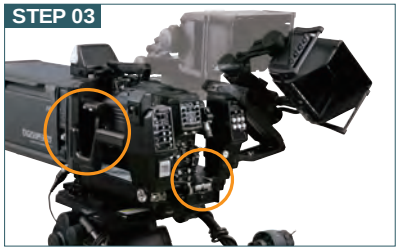
System Expander

SE-H750

The SE-H750 System Expander enables the use of the large viewfinder and full studio lenses with the HDK-79GX, HDK-99/73, HDK-97A/97AP converting the portable camera into a full facility studio camera. Installation of the camera into the SE-H750 is very easy, and conversion back to portable configuration is quick for maximum operating flexibility. * FA-300/L & BSF-300/L do not support SE-H750 system expander.

Unlock and slide viewfinder

Mount camera



Lock two parts

Completed

3G Fiber Base Station and Camera Adaptor

FA-97A / BS-98 / CCU-980 Hybrid 2K/4K

4K 4K ready

The BS-98 and CCU-980 are new rack-mountable fiber transmission units for UnicamHD series cameras. High quality 4K ultra HD and 3G/HD-SDI output are supplied simultaneously when connected with a UnicamHD camera, such as an HDK-99 or HDK-97A (with FA-97A). It includes so called Super Resolution with non-linear processing, a new technology to reconstruct high resolution signals that is not possible in conventional HD processing! The CCU-980 is a full rack size camera control unit and the BS-98 is a half rack size base station. They support not only Ikegami's conventional one-by-one ICCP control or Arcnet based network control systems, but also an Ethernet based control system, allowing customers to choose the camera control system based on their needs.

FA-97A

CCU-980

BS-98

4K Output Board for BS-98 / CCU-980 (Option)

4K Output Board

Slot in BS-98 and CCU-980: This board provides 4K output from a 2K source. It replaces the V OUT board of an Ikegami base station or camera control unit. Existing BS-98 or CCU-980 models can be upgraded without needing modification.

3G Transmission System

The fiber transmission system utilizes 3G in both directions, camera head to CCU and CCU to camera head, supporting dual rate formats such as 1080/59.94p, 4:4:4 formats, and 2x high speed slo-motion.

4 Return Video Input

Standard configuration includes 4 inputs for HD RET. Camera operator selects the RET input to be sent to the camera.
If required, a Frame Sync function can be selected for the RET video minimizing lock up disturbance (supports only 2 RET SDI input mode).

BS-98 Board Cofiguration

BS-98 board configuration	Model	4K	3G/HD	SD
4K type (option)	BS-98 (3G/HD) + 4K Output	○	○	
3G/HD type	BS-98 (3G/HD)		○	
HD/SD type (option)	BS-98 (3G/HD/SD)		○	○

2 Channels QTV

Two channels of QTV output (VBS) are available at the camera for prompter and external monitoring purposes.
* 2 channels QTV is not available operating at 720P/50Hz.
* 2 channels QTV output is a factory option for FA-97A and unavailable for FA-55.

HD-SDI QTV

One channel of HD-SDI is sent from CCU to camera head for an external purpose such as a vanity monitor for the talent to see the program video in HDTV. This channel is independent of RET video.

HD-SDI Trunk

When the camera is operating in a conventional 1.5G format, a second 1.5G video from an external source can be transmitted to the CCU as a video trunk channel. For POV or 3D applications this will reduce the cables which need to be run.

Simulcast Output

Simultaneous output of high quality 4K and 3G-SDI/HD-SDI is available when 4K output board is implemented (option). If BS-98 is HD/SD type (option), simultaneous output of 3G/HD-SDI/SD-SDI is available. (3G format Dual-link output is also available.)

HDTV Fiber Transmission Unit

FA-300 / BSF-300

- Fiber Based Remote System for affordable and flexible integration
- SMPTE-type: Broadcast standard SMPTE connector (FA-300L, BSF-300L)
- Neutrik-type: Excellent dust and dirt protection for using OpticalCON DUO connector (FA-300, BSF-300)

FA-300 Fiber Adaptor/ BSF-300 Base Station

The lightweight and compact size (1.5 RU) BSF-300 is easily integrated into any studio, mobile truck, or portable flypack. When you use a hybrid fiber cable, the base station provides power to the fiber adaptor and the camera itself. Maximum length in powered system using hybrid fiber cable is up to 350m (1148ft) with VFL201A. (If VFL-P700, it is 250m (820ft))

PSU-300 Power Supply Extension Unit

It supplies power to the fiber adaptor and camera head via a hybrid cable, and extends the overall cable length to make the system flexible.

* SMPTE connector is not available for PSU-300.

Note: SE-H750 System Expander is NOT applicable to FA-300 due to power limitation.

Camera Adaptor

CA-75HD

Camera adapter for Unicam series HD camera. Attaching this adapter makes stand-alone operation possible, such as wireless transmission units or ENG-style with portable video recorders.

Rating	
Power Requirement	DC12V 10W max.
Power Consumptiom	Approx. 10W (max.)
Dimension	160 x 235 x 240 (mm)
Weight	2.0kg
Input signals	
Return	HD-SDI RET in BNC x 1
External sync.	GenLock in BNC x 1 (BB or 3 state SYNC)
Audio	AUDIO IN XLR 3pin x 2
Remote control	Remote 8pin
Output signals	
HDTV	HDSDI out x 2.
Audio	Embeded audio CH 1/2.

Viewfinders

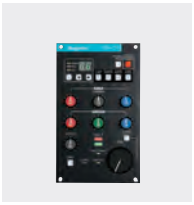
2-inch color viewfinder
VFL201A

7-inch LCD viewfinder
VFL701A

7-inch color viewfinder
VFL-P700
(Europe, Asia model)

7-inch color viewfinder
VF700WA
(US model)

Operation Control Panel / Master Control Panel



RM-51A

OCP-10

OCP-100

OCP-300

MCP-300

Camera Select Unit

CSU-110 (2U)

Network Hub

BSH-300 (1.5U)

Virtual Control Panel
VCP

VCP is an application software which provides camera control from a Windows PC (Windows7/Windows10).

Remote operational control for up to 5 system cameras

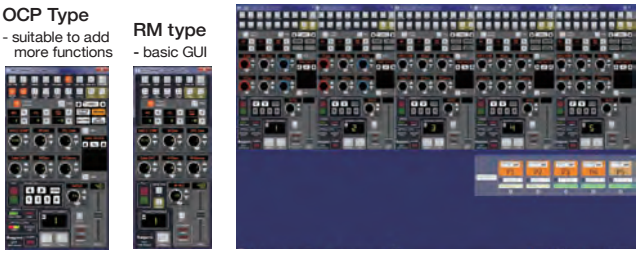
Up to 5 virtual panels can be displayed on the PC.

User Customization

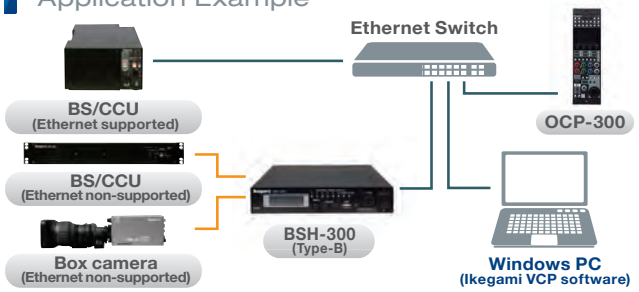
Functions can be assigned to on/off switches and variable controls on the panel.

Expanded functions by license

There are expandable camera control functions as an option in VCP.



Application Example



Virtual Master Panel
VMP

VMP is an application software which provides camera control, maintenance and centralized management for system cameras from a Windows PC (Windows7/Windows10).

* Supported devices : CCU-430/CCU-980/BS-98/OCP-300/MCP-300

File Management

User can manage camera files on the PC.

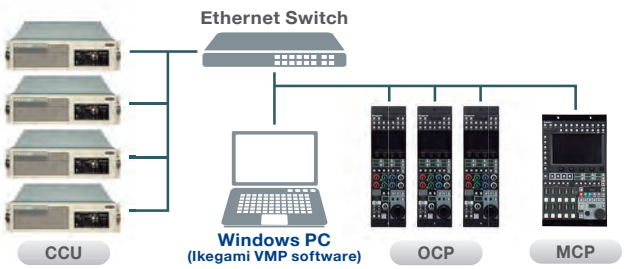
Camera Information Monitoring

Monitoring of Camera Status, Diagnostics, and Optical Level is available.

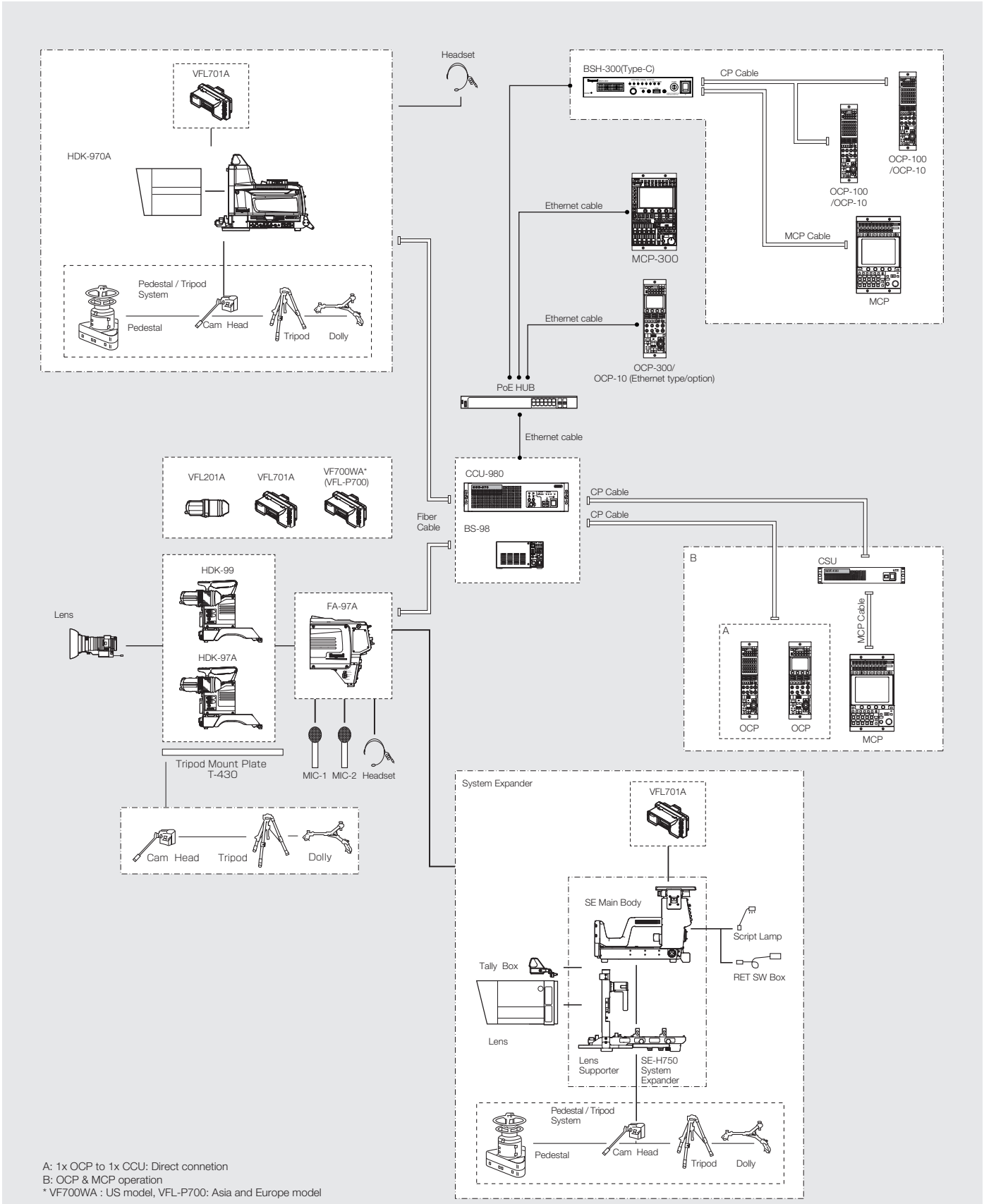
Panel Assignment

Panel assignment can be easily switched using a matrix table.

Application Example

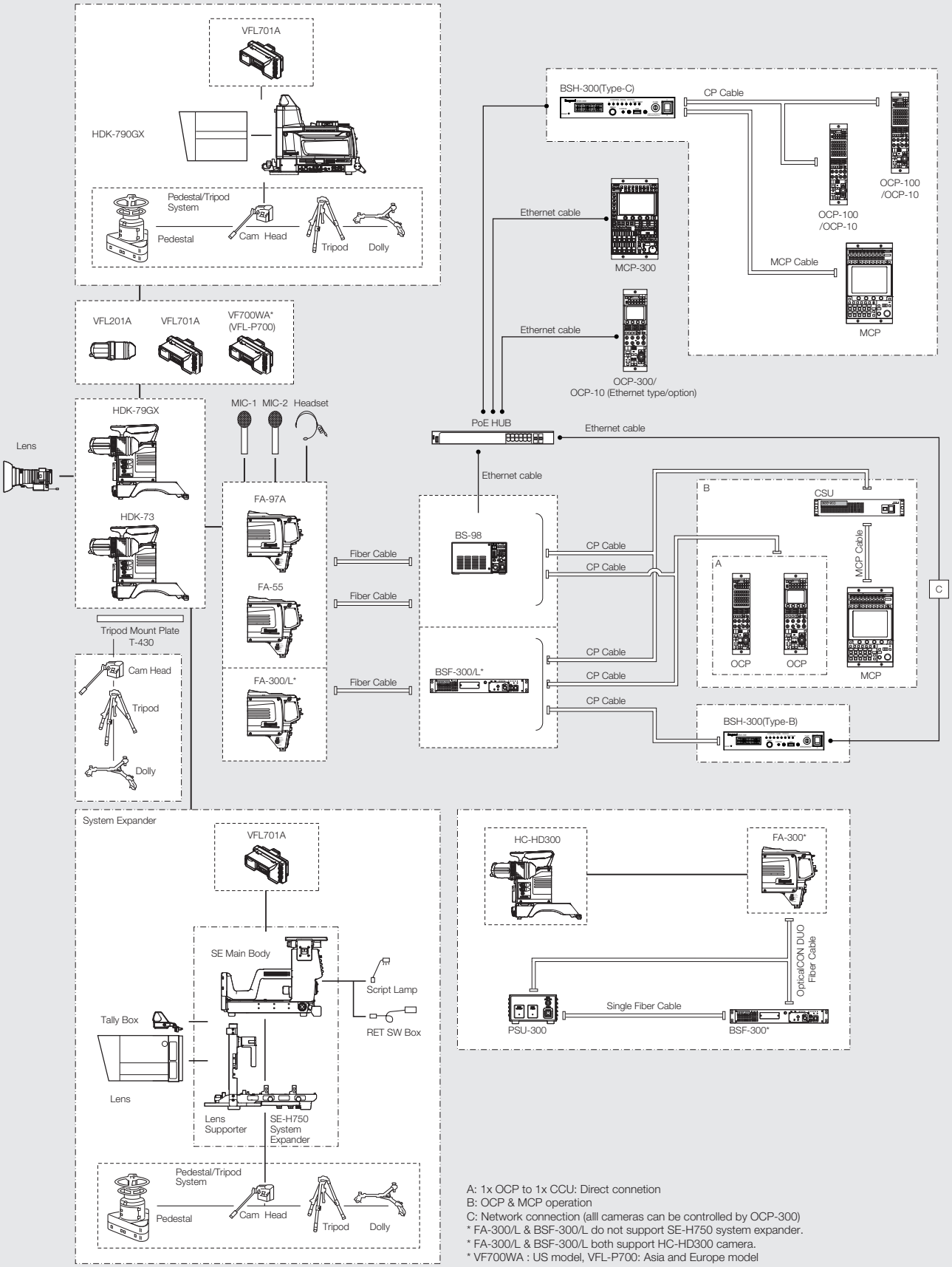


HDK-99 HDK-970A HDK-97A Connection Diagram



A: 1x OCP to 1x CCU: Direct connetion
B: OCP & MCP operation
* VF700WA : US model, VFL-P700: Asia and Europe model

HDK-73 HC-HD300 HDK-790GX HDK-79GX Connection Diagram



A: 1x OCP to 1x CCU: Direct connetion
B: OCP & MCP operation
C: Network connection (alll cameras can be controlled by OCP-300)
* FA-300/L & BSF-300/L do not support SE-H750 system expander.
* FA-300/L & BSF-300/L both support HC-HD300 camera.
* VF700WA : US model, VFL-P700: Asia and Europe model

Unicam HD Camera Specifications

		HDK-99	HDK-970A	HDK-97A	HDK-790GX	HDK-79GX	HDK-73	HC-HD300
Image Sensors		2/3-inch 2.6 million pixel 3CMOS	2/3-inch 2.3 million pixel Progressive CCD Sensors		2/3-inch 2.3 million pixel AIT CCD Sensors		2/3-inch 2.6 million pixel 3CMOS	1/3-inch 2.5 million pixel 3CMOS
Optical System		RGB F1.4						1/3-inch RGB prism
Ratings	Sensitivity	F11 (1080/59.94i)/ F12 (1080/50i) at 2,000 lux	F10 (1080/59.94i)/ F11 (1080/50i) at 2,000 lux				F12 (1080/59.94i)/ F13 (1080/50i) at 2,000 lux	F10 (1080/59.94i)/ F11 (1080/50i) typical at 2,000 lux
	S/N		62 dB HDTV		60 dB HDTV			58 dB typical
	Modulation Depth	60% or more	50% or more				60% or more	55% typ.
	Limitng Resolution	1,000 TV ch or more						
Dimensions	With FA Exclude VF	W138.5xH270x D337 mm	W315xH328.5x D398 mm	W138.5xH270x D337 mm	W315xH328.5x D398 mm	W138.5xH270xD337 mm		
Weight	With FA Exclude VF	4.9 kg (approx.)	24 kg (approx.)	5.1 kg (approx.)	24 kg (approx.)	4.6 kg (approx.)	4.6 kg (approx.)	4.5 kg (approx.)
Operating Condition	Ambient Temperature	-20°C – +45°C						
	Relative Humidiity	30% – 90%: Non-condensing						
Operating Voltage	DC input (Into FA)	+11 – +16 V DC	AC100/110/117/ 220/240 V ± 10%	+11 – +16 V DC	AC100/110/117/ 220/240 V ± 10%	+11 – +16 V DC		
ND Filter	1	CAP			100%			
	2	100%			25%			
	3	25%			6.20%			
	4	6.20%			1.60%			
	5	1.60%			CAP		–	
CC/Effect Filter	A	CROSS			(I) CLEAR		–	
	B	3,200 K			(II) CROSS		–	
	C	4,300 K			(III) SNOW		–	
	D	6,300 K			(IV) FOGGY		–	
	E	8,000 K			(V) CLEAR		–	
Color temperature Filter (ECC)	A	–			3,200 K			
	B	–			4,300 K			
	C	–			5,600 K	6,300 K		
	D	–			6,300 K	8,000 K		
	E	–			8,000 K	–		
	5600 K	○			–			
	Variable	○ (2,000 K – 20,000 K)						–
	Smooth step ECC	–			○ (0.3 sec – 2 sec)			–
Scanning System Format	1080p (59.94/50 Hz)	○			–			
	1080i (119.88/100 Hz)	△	△		–			
	1080i (59.94/50 Hz) RGB4:4:4	–	○		–			
	1080i (59.94/50 Hz)				○			
	720p (59.94/50 Hz)	○			–		○	
	1080p (29.97/25 Hz)	○			–			
	1080PsF (29.97/25 Hz)	–	○				–	
	1080p (23.98 Hz)	○	–					
	1080PsF (23.98 Hz)	–						
	1080pd (23.98 Hz)	–						
Gain	-6, +18 dB	○	△		○			
	-3, +3, +6, +9, +12 dB	○						
Smooth Gain Up		○	–		○			–
Lens Aberration Correction		○						
Focus Assist		○						
Auto Setup	Full, Level, Quick	○					–	
	AWB, ABB	○						
Custom Gamma		○ (Hybrid Log-Gamma)	○		easy mode only		○ (Hybrid Log-Gamma)	–
CCD accumulation		–			○		–	
Digital Extender		○ (1.5X, 2X, 3X, 4X)					–	
SD card slot		○						

○ : standard
△ : option

Unicam HD CCU/BS Specifications

		CCU-980	BS-98	BSF-300/L
Input Signals				
External Sync Signal		REF: Tri-level SYNC/BB x 2 (Loop thru) SUB REF: 10 Field ID 75 ohm Single end BNC x 2 (Loop thru) (HDTV/SDTV auto detect)		BNC type, 1 ch (HDTV/SDTV auto detect) HD: PS(1 Vp-p) or Tri-Sync Signal (0.6 Vp-p±6 dB) 75 ohm bridged SD: VBS (1 Vp-p) or BBS 75 ohm bridged
Return Video Signal	3G/HDTV	3G-SDI/HD-SDI/SD-SDI 4 ch (Auto detect) Loop thru		—
	SDTV			VBS 75 ohm Single End, BNC type 2 ch (SDI/VBS selectable)
	HDTV/SDTV			75 ohm Single End, BNC type 2 ch (SDI/VBS selectable)
Q-TV Signal	HDTV	HD-SDI 1 ch (Asynchronous Embedded Audio 4 ch)		—
	SDTV	VBS 2 ch		VBS 1 Vp-p 75 ohm Single End, BNC type 1 ch
Output Signals				
Main Video Signal	3G/HDTV	3G-SDI/HD-SDI 2 ch, 2 ea 3G-SDI/HD-SDI/SD-SDI 1 ch 2 outputs * 3G format DUAL-LINK output available (Select by menu)		—
	SDTV			VBS 1.0 Vp-p 75 ohm BNC type 2 ch
	HDTV/SDTV	—		HD-SDI (SMPTE 292M)/SD-SDI (SMPTE 259M), 75 ohm BNC type 4 ch (HD-SDI/SD-SDI selectable)
	4K	4K optional board 1920 x 1080 Progressive Square Division 3G/HD-SDI 75 ohm (BNC) x 4		—
WFM Signal	HDTV/SDTV	3G-SDI/HD-SDI/SD-SDI 1 ch 1 output (PM or WFM selectable)		Serial Digital 75 ohm BNC type 1 ch (HD-SDI/SD-SDI selectable)
PM Signal	3G/HDTV	3G-SDI/HD-SDI/SD-SDI BNC 1 ch 1 output		—
	HDTV/SDTV			Serial Digital 75 ohm BNC type 1 ch (HD-SDI/SD-SDI selectable)
	SDTV			VBS 1.0 Vp-p 75 ohm BNC type 1 ch
Trunk Signal	HDTV	HD-SDI BNC 1 ch		—
Sync Signal		75 ohm Single end analog 1 ch 1 output HDTV: Tri-Sync (0.6 Vp-p) /SDTV: HV (2 Vp-p) (Select by menu)		
Mic		0 dBs Low output 2 ch 2 outputs		0 dBs/+4 dBs Low 2 ch
Digital Audio		Digital BNC 1 ch 1 output 48 KHz Sampling, 24 bit Pro, 2 ch pair (AES3 compliant)		—
Communication/Control Signal				
Intercom	ENG/PROD (2 ch)	4-Wire or Clearcom or RTS		
	4-wire	0 dBm 600 ohm 2 ch		
	Clearcom	-15 dBs 200 ohm 2 ch		
	RTS	0 dBm 200 ohm 2 ch		
Program Sound Input		0 dBs 600 ohm/10k ohm switchable 3 ch		0 dBs standard 600 ohm/10k ohm 2 ch -20 dBs/0 dB/+4 dBs selectable
Tally	Input	R/G/Y 3 ch Contact (MAKE) / Power (POWER) selectable		Contact R/G
	Output	R/G/Y 3 ch OPEN (OFF) /GND (ON) 50 mA (max)		R/G 2 ch OPEN (OFF) / GND (ON) 50 mA (max)
Remote control	Arcnet BNC	BNC 1 ch		—
	Ethernet RJ-45	RJ-45 1 ch		—
	OCP CP Connector	ICCP 1 ch		
	MCP CP Connector	ICCP 1 ch		
Data Trunk (Option for camera side)		Data Trunk 1/Data Trunk 2 RS-422 2 ch		RS-422 1 ch
General				
Operating Voltage		AC100/110/117/220/240 V±10%		AC100 V to 240 V±10%
Power Consumption		Approx. 110 VA (CCU only) 400 VA or less (incl power for camera with cable loss)	Approx. 80 VA (BS only) 150 VA or less (incl power for camera with cable loss)	Approx. 55 VA (BSF-300 only)
Ambient Temperature		Operating temperature 0°C – +45°C Storage temperature -30°C – +60°C	Operating temperature 0°C – +40°C Storage temperature -30°C – +60°C	
Relative Humidity		30% – 90% (Non-condensing)		
Dimensions		W483 x H133 x D454 mm	W218.6 x H125 x D457 mm	W483 x H66.4 x D405 mm
Weight		28 kg (Approx.)	9 kg (Approx.)	7 kg (Approx.)

Unicam HD FA Specifications

	HDK-970A	HDK-790GX	FA-97A	FA-55	FA-300/L
Input Signals					
External Sync Signal	Sync. 0.6 Vp-p ± 6 dB 75 ohm BNC 1 ch				
Audio Signal	-60 dB +4 dB (Variable) /-20 dB (Fixed) XLR 2 ch (600 ohm balanced)				
Intercam Signal	XLR Type or 110 Type 2 ch				
Trunk Signal HDTV	HD-SDI BNC 1 ch (1.5G format only)		HD-SDI BNC 1 ch (Option) (1.5G format only)	—	
Output Signals					
3G-SDI/HD-SDI Signal	3G-SDI/HD-SDI BNC 1 ch	HD-SDI BNC 1 ch	3G-SDI/HD-SDI BNC 1 ch	HD-SDI BNC 1 ch	
Analog Video Signal	MONI-OUT/SYNC-OUT/QTV-OUT (Select by menu + Switch) BNC 1 ch, MONI: Y singal, SYNC: 0.6 Vp-p (Tri-level sync signal) QTV: VBS 1 ch		G, B, R 0-Sub SE 1 ch (For System Expander)	G, B, R D-Sub SE 1 ch (For System Expander) HD Y or VBS output (MON Out Terminal) VBS Output (AUX OUT Terminal) (Select by menu)	HD Y or VBS output VBS Output (AUX OUT Terminal)
Q-TV Signal HDTV	HD-SDI BNC 1 ch (option for CCU-970)			—	
Q-TV Signal SDTV	VBS 1 ch		VBS 1 ch (2 ch: option)	VBS 1 ch (AUX OUT: Select by menu)	
Monitor Output	HD-SDI VF/RET/ MON/HD-QTV (Select by menu) BNC 1 ch	HD-SDI VF/RET/ MON/HD-QTV (Select by menu) BNC 1 ch (HD-QTV: option)	HD-SDI VF/RET/ MON/HD-QTV (Select by menu) BNC 1 ch	MAIN VF/RET/HD-SDI (Select by menu) BNC 1 ch, RET video HD SDI 4:1:1	MAIN VF/RET/HD-SDI (Select by menu) BNC 1 ch, RET video HD SDI
DC Output	—			+12 VDC 500 mA (max), 4-pin type 1 ch	

Unicam HD CCU/BS Specifications

		CCU-980	BS-98	BSF-300/L
Scanning System	1080p (59.94/50 Hz)	○		—
	1080i (119.88/100 Hz)	○		—
	1080i (59.94/50 Hz) RGB 4:4:4	○		—
	1080i (59.94/50 Hz)		○	
	720p (59.94/50 Hz)		○	
	1080p (29.97/25 Hz)	○		—
	1080PsF (29.97/25 Hz)	○		—
	1080p (23.98 Hz)	○		—
	1080PsF (23.98 Hz)	○		—
	1080pd (23.98 Hz)	○		—
Max. Cable Distance		3,000 m	2,000 m	350 m (with 2" viewfinder) 250 m (with 7" viewfinder)

Unicam HD

Design and specifications are subject to change without notice.

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