

Colorimetric and Resolution requirements of cameras

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ADDENDUM 13 : Menu settings for

Panasonic AK-HC900P and AK-HRP900C Varicam (720/4~60Hz proscan)

Many menu items have little or no effect on the image. Those that do so are highlighted. The full menus are given for completeness. Menus are accessed by pressing the “menu” button on the remote controller, and then using a rotary encoder exactly as in the Varicam camcorder.

There are two different versions of the menus, depending on the setting in Setting:Mode. This can be set for “Video” and “Film” menus. The content of these is subtly different; where an item exists only in “Film” or “Video” modes, it is marked as {F} or {C}. The “Video” mode (called “Cam” in the menus) is intended for use in situations where the camera is used as a television camera, “Film” menus are for those situations where the pictures are likely to be printed back to film, or used in exactly the same way as a film negative would be used for television. Many of the menu items are unchanged between these two sets.

There are two recommended settings here:

{v} conventional video use, but aiming to mimic film used on television, should match Sony HDW750 reasonably well for sensitivity, noise, dynamic range and colour performance

{w} film setting, aiming to mimic film on television, specifically set to match the equivalent setting for the 27F Varicam

BBC settings given in these tables are only intended as a starting point. This document is no substitute for the manual, the user is strongly advised to seek expert advice before embarking on any project with this camera. It is simple to use, but complex to set up.

NOTE: The use of “Black Stretch” (Setting:Mode) is intended to improve skin tones in well-lit environments, but it imparts some visible noise in dark areas. If this is a problem, then set “Black Stretch” to “OFF”, but under no circumstances set it negative because that will result in excessive black crushing and loss of detail.

The useful feature of the 27F, that of the gain switch storing many settings, is not available here. But the Super Gain settings do something very similar. These settings do not take advantage of that, should the need arise, a later revision may incorporate some settings for super gain.

Because of the short time available for testing this camera, not all items were fully assessed, the range and function of each control has been assumed to be the same as in the 27F. It is probably safe to make this assumption but there can be no guarantee without more prolonged investigation.

Film/Cam MAINTENANCE			<i>Routes to other menus</i>	
<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
BLACK SHADING				
PED,GAMMA,FLARE				
KNEE,WHITE CLIP				
R/B GAIN				
DTL				
GAIN,AUTO IRIS				
S.GAIN 1				
S.GAIN 2				
S.GAIN 3				
FRAME MODE				
COLOR CORRECTION 1				
COLOR CORRECTION 2				

Film/Cam MAINTENANCE :BLACK SHADING*Basic stuff*

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
DETECTION			Press Menu key to perform black shading correction	
CORRECT(DIG)	ON,OFF	ON	Takes about 90 seconds	

Film/Cam MAINTENANCE :PED,GAMMA,FLARE*Transfer curve*

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
M.PED			Indication of pedestal levels set in control panel	
R.PED				
B.PED				
M.GAMMA	0.35-0.75	0.45	Master gamma	0.45{v} 0.52{w}
R.GAMMA	-15~15	0		0
B.GAMMA	-15~15	0		0
R.FLARE	0~100		Set depending on lens, usual stuff	
G.FLARE	0~100			
B.FLARE	0~100			
GAMMA	OFF/ON	ON		
FLARE	OFF/ON	ON		ON
CINE GAMMA SEL[F]	FILM REC / VIDEO	VIDEO	Only in FILM MENU	VIDEO{w}
	REC[F]	REC[F]		
BLACK STR LVL{F}	0~30% [F]	0[F]	Only in FILM REC with Knee ON	0
DYNAMIC LVL{F}	200~500% [F]	200% [F]		

Film/Cam MAINTENANCE :KNEE,WHITE CLIP*Transfer curve*

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
M.KNEE POINT	80~107% [C]	65%	Master knee, disabled in FILM REC	85{v} 63{w}
R.KNEE POINT		0		
B.KNEE POINT	30~90% [F]	0	R/B deviations, disabled in FILM REC	0
M.KNEE SLOPE	1~99[C] 150~600% [F]	150%	Disabled in FILM REC	99{v} 350{w}
R.KNEE SLOPE		0		
B.KNEE SLOPE		0		
A.KNEE POINT		100%	Don't use auto knee, manual is better	95{v} 100{w}
A.KNEE SLOPE		0		
WHITE CLIP LVL		100%		109
KNEE	OFF,MANU,AUTO	ON		MANUAL
WHITE CLIP	ON,OFF	ON		ON

Film/Cam MAINTENANCE :R/B GAIN*Colour balance*

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
R.GAIN			Probably reflects settings on control panel	
B.GAIN				

Film/Cam MAINTENANCE :DTL*Detail enhancement*

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
DTL	ON,OFF	ON		ON
TOTAL DTL LVL		0	Horizontal and vertical together	4{v} 5{w}
H DTL LVL		11		Horizontal only
CRISP		2	Clips low detail, noise saving	1{v} 2{w}
LVL DEPENDENT		2		
PEAK FREQUENCY	0~31	10		31
KNEE APERTURE	ON,OFF	OFF	Adds detail back in knee region	ON
KNEE APA LVL		10		
SLIM DTL	ON,OFF	OFF		OFF
DTL(+)		0	Separate controls for + and - going edges	0
DTL(-)		0		
DTL CLIP		0		0
DTL SOURCE		(B+G)/2		(R+G)/2

Film/Cam MAINTENANCE :GAIN,AUTO IRIS

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
LOW GAIN	-6~18dB		Only gain is set, unlike the 27F.	-6{v} -3{w}
MID GAIN	-6~18dB		Button on controller cycles these	-3{v} 0{w}
HIGH GAIN	-6~18dB		and Supergain settings	0{v} -3{w}
A.IRIS LEVEL	0~100	50	Aim point and peak/mean ratio,	100
A.IRIS PEAK/AVE	0~100	50	set to work only on peak white	100
A.IRIS WINDOW	NORM1,NORM2, CENTER	NORM1	Most of pic, most except top strip, centre area	NORM1
IRIS MODE	CAM/LENS	LENS	Auto iris control at camera or lens	
IRIS GAIN		6		

Film/Cam MAINTENANCE :S.GAIN1,2 and 3
Super gain setting

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
TOTAL GAIN			Indication of total gain, no control	
ANA GAIN	0~36dB	9	Analogue extra gain	
PIX MIX		6	Gain by adding pixels horizontally	
V MIX	OFF,6dB,12dB,15dB,2	6	And vertically	
FRAME MIX[C]	0dB	6	And frame-to-frame[C]	
H DTL LVL		11	Same detail controls as for normal	
CRISP		2	use, not set	
LVL DEPENDENT		2		
PEAK FREQUENCY		10		
M.GAMMA		0.55		
M.PED OFFSET		0	Black level offsets to fight noise	
R.PED OFFSET		0		
B.PED OFFSET		0		

Film/Cam MAINTENANCE :FRAME MODE
Varicam stuff

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
SCAN REVERSE	ON,OFF	OFF	Inverts picture for lens adaptors	OFF
FRAME RATE RANGE[F]	60-6,60-4[F]	60-6[F]	Camera rate, Film menu only, not	60-4[F]
FRAME RATE[F]	60-4	60	in Camera mode	25[F]

Film/Cam MAINTENANCE :MATRIX
Colour stuff

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Matrix Table	A,B	A	Two user tweakable matrices	
Matrix R-G	-31~31	0	Settings for matrix A	0{v} +7{w}
Matrix R-B	-31~31	0		0{v} +17{w}
Matrix G-R	-31~31	0		0{v} +7{w}
Matrix G-B	-31~31	0		0{v} -6{w}
Matrix B-R	-31~31	0		0{v} -6{w}
Matrix B-G	-31~31	0		0{v} 0{w}
Matrix R-G	-31~31	0	Settings for matrix B	0{v} +9{w}
Matrix R-B	-31~31	0		0{v} +7{w}
Matrix G-R	-31~31	0		0{v} +16{w}
Matrix G-B	-31~31	0		0{v} +12{w}
Matrix B-R	-31~31	0		0{v} 0{w}
Matrix B-G	-31~31	0		0{v} 0{w}

Film/Cam MAINTENANCE :COLOR CORRECTION1
More colour stuff

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
R (Sat)	-63~63	0	Adjusts colour	+30{v} -20{w}
R (Phase)	-63~63	0	in 45 degree	0{v} +8{w}
Mg (Sat)	-63~63	0	segments,	+30{v} +35{w}
Mg (Phase)	-63~63	0	tweaks	0{v} 0{w}
B (Sat)	-63~63	0	saturation	+30{v} -29{w}
B (Phase)	-63~63	0	and hue.	0{v} +13{w}
Cy (Sat)	-63~63	0	These	+30{v} +15{w}
Cy (Phase)	-63~63	0	segments	0{v} -4{w}
G (Sat)	-63~63	0	interleave	+30{v} +13{w}
G (Phase)	-63~63	0	those	0{v} -10{w}
Y1 (Sat)	-63~63	0	in	+30{v} -27{w}
Y1 (Phase)	-63~63	0	Color Correction 2.	0{v} -29{w}

Film/Cam MAINTENANCE :COLOR CORRECTION2
More colour stuff

Item	Range	Factory	description	BBC
R-Mg (Sat)	-63~63	0	Adjusts colour	+30{v} -5{w}
R-Mg (Phase)	-63~63	0	in 45 degree	0{v} -25{w}
Mg-B (Sat)	-63~63	0	segments,	+30{v} 0{w}
Mg-B (Phase)	-63~63	0	tweaks	0{v} 0{w}
B-Cy (Sat)	-63~63	0	saturation	+30{v} 0{w}
B-Cy (Phase)	-63~63	0	and hue.	0{v} 0{w}
Cy-G (Sat)	-63~63	0	These	+30{v} 0{w}
Cy-G (Phase)	-63~63	0	segments	0{v} 0{w}
G-Yl (Sat)	-63~63	0	interleave	+30{v} 0{w}
G-Yl (Phase)	-63~63	0	those	0{v} 0{w}
Yl-R (Sat)	-63~63	0	in	+30{v} 0{w}
Yl-R (Phase)	-63~63	0	Color Correction 1.	0{v} 0{w}

Film/Cam SETTING
Route to other menus

Item	Range	Factory	description	BBC
MODE				
SHUTTER				
H.PHASE				

Film/Cam SETTING :MODE
Basic settings

Item	Range	Factory	description	BBC
BLACK STRETCH	-3,-2,-1,OFF,1,2,3	OFF	Same as 27F	+2{v} OFF{w}
D5600K [F]	ON,OFF	OFF	Default colour balance, D65/P3100	OFF
ANLG OUTPOUT SEL	YPbPr,RGB	YPbPr	Control panel outputs	YPbPr
OUTPUT SYNC SEL	ON,OFF	OFF	Syncs on Y or G	ON
CABKLE COMPE		0m	Video cable equalisation	0
SUPER GAIN	ON,OFF	OFF	Doesn't seem to work	OFF
CAM ID Mode	OFF,ON,BAR	OFF	Cam ID shown on Bars	BAR
CAM ID POSi	0,1,2,3	0	Where ID is shown on screen	0
MATRIX TABLE	OFF,A,B	OFF	Colour matrix	OFF{v} A{w}
COLOR CORRECT	ON,OFF	OFF		ON
STATUS	ON,OFF	ON	Shows ABB/AWB working	ON
MENU SEL	VIDEO/FILM	VIDEO	Changes menu contents	VIDEO{v} FILM{w}
SYSTEM FREQ	59.94,60	60	Power OFF then ON to activate	60

Film/Cam SETTING :SHUTTER
Basic settings

Item	Range	Factory	description	BBC
SHUTTER MODE	OFF,ON,SYNCHRO	OFF		ON
SHUTTER SPEED	1/100,1/120,1/250,1/500,1/1000,1/2000{C} 1/100,1/120,1/250,1/500,1/1000,1/2000,180deg,172.8deg,144deg,120deg,90deg,45deg{F}	1/100	Degree settings available only in Film menu	
SYNCHRO SCAN	1/44.7~1/7500[C] 3deg~350deg[F]	239.3		

Film/Cam SETTING :H.PHASE
Basic settings

Item	Range	Factory	description	BBC
H.PHASE COARSE		7		7
H.PHASE FINE		32		32

Film/Cam CAM ID
Camera name

Item	Range	Factory	description	BBC
ID		0	Enter camera ID, only if CAM ID Mode is ON in SETTING:MODE	

Film/Cam FILE MENU
Setup files

Item	Range	Factory	description	BBC
FILE			Report current file name	
SAVE FILE?			Enter file name, up to five?	
SAVE			And save it	