

AJ-PX270 SCENE FILE SETTINGS
PROFESSIONAL HANDBOOK

--- Table of contents ---

1. Selecting Scene File.....	3
1-1. Scene Files and their features.....	3
1-2. Table of Factory Default Settings	4
2. Expressing the texture of objects	6
2-1. Detail enhancement.....	6
2-2. Basic settings for Detail	8
2-3. Technical description : Detail	9
2-4. More advanced settings for Detail : Detail Coring, Skin Tone Detail	9
3. Expressing the gradation of a picture (Knee, Gamma).....	12
3-1. Knee adjustment.....	12
3-2. Technical description : Knee.....	13
3-3. White Clip	14
3-4. Gamma adjustment	15
3-5. Technical description : Gamma.....	18
3-6. DRS: Useful for shooting the scene with large contrast between bright and dark areas	19
4. Controlling the color (Chroma Level, Phase, Color Correction)	20
4-1. Adjustments of Chroma Level (color saturation) and Chroma Phase (hue)	20
4-2. Technical description: About color saturation and hue	22
4-3. Color correction	22
4-4. Using a preset color look : Matrix settings.....	23
4-5. Adjustment of color temperature 1: Color Temp adjustment	24
4-6. Adjustment of color temperature 2: R, B Gain control	25
5. Enhancing the level of expression for dark areas (Master Ped, RGB Black Control).....	26
5-1. Pedestal (Master Pedestal) adjustment	26
5-2. Technical description : About Pedestal	27
Appendix: Adjustable ranges of Scene File settings	28

1. Selecting Scene File

1-1. Scene Files and their features

In AJ-PX270, setting values for adjusting the image quality are preset in advance as Scene Files of six types. With Main Menu [SCENE FILE] → [FILE SELECT], Suitable Scene Files for recording conditions or operator's intended images can be called. Also, by assigning [SCENE FILE SEL] to one of the USER buttons, Scene files can rapidly recalled with it.

F1:	Suitable for normal recording. Gamma is "HD NORMAL" and the other parameters are factory default settings.
F2: FLUO.	Suitable for recording where the characteristics of fluorescent lamps are taken into consideration (e.g. shooting indoors). Most of the parameters are equal to Normal but the MATRIX is for fluorescent lighting. This is not particularly necessary under the fluorescent lighting close to the natural light. But it is suitable for the recording conditions under which the color reproduction is poor due to blue-intense fluorescent lamps.
F3: SPARK	Suitable for recording in SD resolution with richer color level and sharper contrast. The picture will be showy with vivid colors and give a bright impression.
F4: B-STR	Suitable for recording where the gradation is expanded on dark parts of the image (e.g. shooting a sunset scene). This is effective if being used when dark parts are difficult to see or both bright and dark scenes need to be seen in detail in shooting at sunset, in the theater or at a wedding.
F5: CINE V	Suitable for movie-like recording where importance is placed on contrast. This has the Gamma curve to make a movie-like picture using a video camera (V).
F6: CINE D	Suitable for movie-like recording where importance is placed on the Dynamic Range. This Gamma gives priority to the Dynamic (D) Range and maintains the gradation that ranges evenly from low to high level. If the post-production editing or the kinescope is planned, this can be selected because recording in this mode will make such post-processing easier and smoother. Also, it will create a unique atmosphere which is sometimes used as an effect.

* Even if the Scene File is changed, [SYSTEM MODE] will not be changed.

1-2. Table of Factory Default Settings

MENU		F1	F2 FLUO.	F3 SPARK	F4 B-STR	F5 CINE V	F6 CINE D
	VFR	OFF	OFF	OFF	OFF	OFF	OFF
	SYNC SCAN TYPE	sec	sec	sec	sec	sec	sec
	MASTER DTL	0	0	4	0	-8	-8
	DTL CORING	1	1	3	1	1	1
	SKIN TONE DTL A	OFF	OFF	OFF	OFF	OFF	OFF
	SKIN TONE DTL B	OFF	OFF	OFF	OFF	OFF	OFF
	SKIN TONE DTL C	OFF	OFF	OFF	OFF	OFF	OFF
	CHROMA LEVEL	0%	0%	0%	0%	-10%	-10%
	CHROMA PHASE	0	0	0	0	0	0
	COLOR TEMP Ach	3200K	3200K	3200K	3200K	3200K	3200K
	COLOR TEMP Bch	3200K	3200K	3200K	3200K	3200K	3200K
	MATRIX	NORM 1	FLUO.	NORM2	NORM1	CINE LIKE	CINE LIKE
	MASTER PED	16	16	16	16	16	16
	GAMMA MODE SEL	HD	HD	HD	HD	FILM LIKE3	FILM REC
	MASTER GAMMA	0.45	0.45	0.45	0.45	0.45	0.45
	F-REC DYNAMIC LVL	-	-	-	-	-	600%
	F-REC BLACK STR LVL	-	-	-	-	-	0%
	V-REC KNEE SLOPE	-	-	-	-	-	-
	V-REC KNEE POINT	-	-	-	-	-	-
	BLACK GAMMA	OFF	OFF	-4	6	OFF	OFF
	B.GAMMA RANGE	1	1	2	2	1	1
	KNEE MODE	AUTO	AUTO	AUTO	AUTO	AUTO	AUTO
	A.KNEE RESPONSE	4	4	4	4	4	4
	KNEE MASTER POINT	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%
	KNEE MASTER SLOPE	85	85	85	85	85	85
	KNEE MASTER SLOPE Rch	0	0	0	0	0	0
	KNEE MASTER SLOPE Bch	0	0	0	0	0	0
	HI-COLOR SW	ON	ON	ON	ON	ON	ON
	HI-COLOR LVL	32	32	32	32	32	32
	WHITE CLIP	ON	ON	ON	ON	ON	ON
	WHITE CLIP LVL	109%	109%	109%	109%	109%	109%
	Rch CLIP LVL	0	0	0	0	0	0
	Bch CLIP LVL	0	0	0	0	0	0
	DRS	OFF	OFF	OFF	OFF	OFF	OFF
	DRS EFFECT DEPTH	1	1	1	1	1	1

* Setting values of each Scene File can also be overwritten as you like and saved.

With Main Menu → [SCENE FILE] → [FILE SELECT], select one of Scene Files [F1] – [F6] and change any of [SCENE FILE] Menu items. The current values of selected Scene File will be overwritten.
Further, with [SCENE FILE] → [LOAD/SAVE/INITIALIZE], execute [SAVE].

The overwritten values of selected Scene File will be saved in the memory of the camera.
Moreover, Scene Files [F1:] – [F6:] can be saved all together in an SD memory card.
(With [CARD FUNCTIONS] → [SCENE FILE], execute [SAVE].)

How to restore scene files to default settings

With [SCENE FILE] → [LOAD/SAVE/INITIALIZE], select [INITIALIZE].

2. Expressing the texture of objects

2-1. Detail enhancement

When expressing the outline or surface texture of an object, faint reflection of light may be intensified or, to the contrary, the picture may look blurred. This is a phenomenon caused by the strength / weakness of Detail signal to intensify the video signal for the object's outline. Adjustment of Detail signal can make the object's luster or texture look more natural.

MASTER DTL: +31



MASTER DTL: -31



For AJ-PX270 camera, the adjustment of Detail is usually made by setting MASTER DETAIL (intensity of the effect) and DETAIL CORING. DETAIL CORING is a function to set the level of signal (including noise) which suppresses the Detail effect.

For further information, please refer to “2-4. More advanced settings for Detail”.

On the other hand, as an advanced setting, DETAIL (both horizontal and vertical directions) and V DETAIL (vertical direction) are mainly used. Within a certain range of levels of outline signal, the adjustment can be made balancing the horizontal and vertical effects against each other.

If the setting value is set to a positive value, which is greater than the center value “0” (zero), that is, if the Detail level is increased, the edges of video signal will be intensified horizontally and vertically and the picture will look sharper with an enhanced outline of an object. To the contrary, if it is set to a negative value, that is, if the Detail level is decreased, the outline enhancement will be suppressed and the picture will look softer.

After the Detail is adjusted, if there is a noticeable difference in sense of resolution between the horizontal and vertical directions, use V DETAIL to make adjustments to the vertical Detail only.



2-2. Basic settings for Detail

General Settings: Main Menu → [SCENE FILE] (Factory default settings underlined)

[MASTER DTL] -31 --- 0 --- 31

Adjusts the level of overall Detail effect.

[DTL CORING] 0 --- 1 --- 60

Sets the level of signal (including noise) that suppresses the Detail effect.

More Detailed Settings: Main Menu → [SCENE FILE] → [DETAIL SETTING]

[DETAIL] ON / OFF

Selects whether to add the Detail or not.

[V.DTL LEVEL] -7 --- 0 --- 7

Sets the intensity of Detail level in the vertical direction.

[H.DTL FREQ.] -7 --- 0 --- 7

Sets the thickness of Detail in the horizontal direction.

[V.DTL FREQ.] 0 --- 1 --- 2

Sets the thickness of Detail in the vertical direction.

[LEVEL DEPEND.] -7 --- 0 --- 7

When the Detail of luminance signal is intensified, the Details of darker areas are compressed.
If this setting value is larger, the Details of brighter areas will also be compressed.

[KNEE APELVL] 0 --- 2 --- 5

Sets the Detail level of high-luminance areas (very bright areas).

[DTL GAIN (+)] -31 --- 0 --- 31

Sets the Detail level in the positive (brightening) direction separately.

[DTL GAIN (-)] -31 --- 0 --- 31

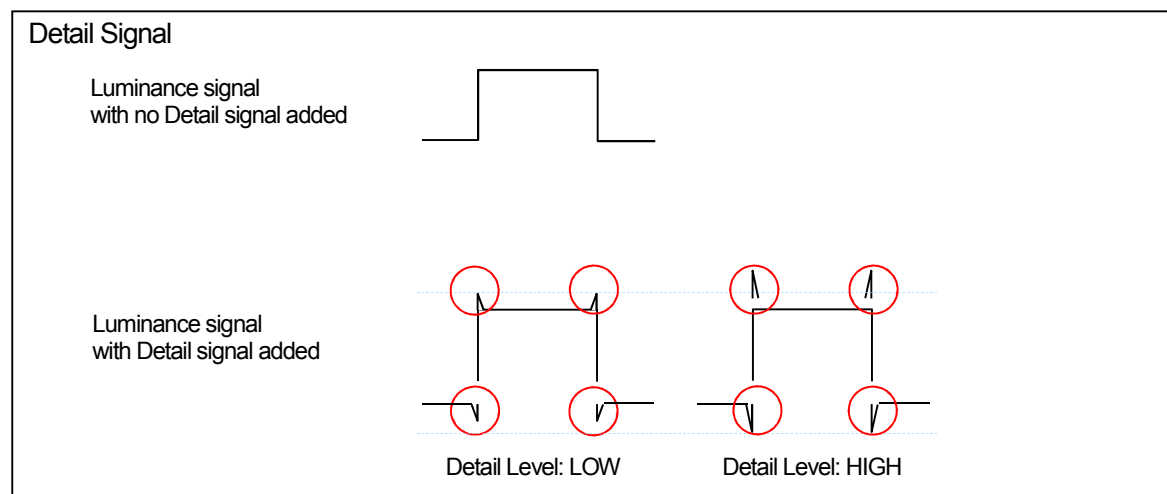
Sets the Detail level in the negative (darkening) direction separately.

2-3. Technical description : Detail

This is an outline signal which is added to a video signal.

If the Detail level is increased, the edges of video signal will be intensified and outlines in the picture will look sharper.

If the Detail level is decreased, the edges of video signal will be weakened and the picture will look softer with its outline enhancement suppressed.



2-4. More advanced settings for Detail : Detail Coring, Skin Tone Detail

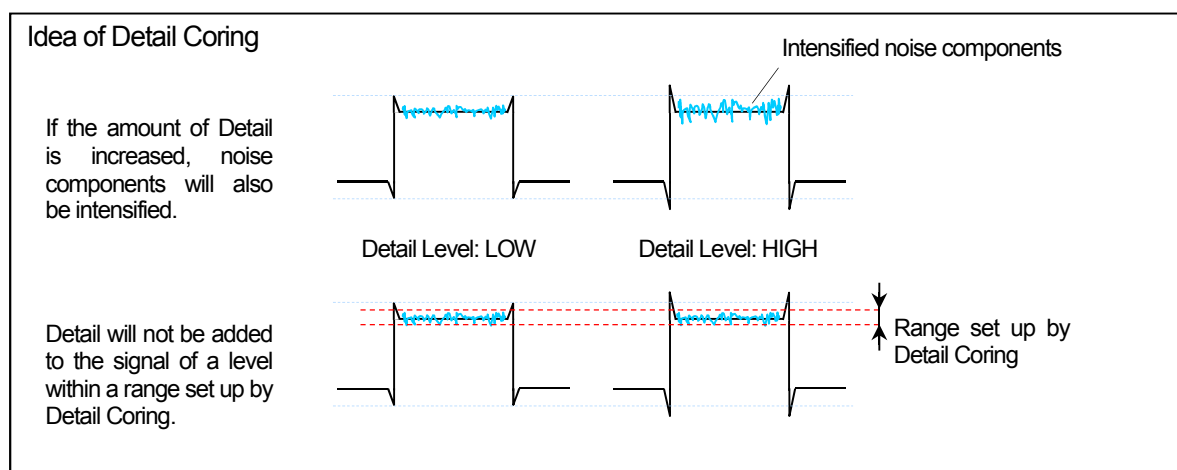
Detail Coring

Outline compensation can be performed by adjusting the Detail, and enhanced outlines enable clear representation of images. But at the same time it may make a whole picture look coarse. This is because added Detail signal will also work on low-level signals including noise.

Detail Coring function can adjust the range of adding the Detail signal and reduce the noise caused by adjusting the Detail.

Noise is a low-level signal. So, when the Detail Coring is set to a higher level than noise signals, the Detail signal will work only on high-brightness signals to be intensified, not on the noise. By this adjustment, the outline of an object will be enhanced and its texture will look the same while the increase of coarseness on the whole picture is suppressed.

In some cases, this adjustment of Detail range by Detail Coring is effective to reduce the noise that has become noticeable due to GAMMA setting. Moreover, with the Skin Detail turned ON, graininess of human skin color can be lowered and, also in representing the images of people, it is possible to make the texture look natural depending on the situation.



Skin Tone Detail

When there is grainy noise on human skin color areas, Skin Detail function can decrease the Detail of those areas to lower their graininess.

However, depending on the situation, setting the Skin Detail or Detail Coring may even affect natural light and shade, which characterize the human skin or the texture of an object, and, as a result, the natural representation may become impossible. So it needs to be checked every time this adjustment is made.

General Settings: Main Menu → [SCENE FILE] (Factory default settings underlined)

[SKIN TONE DTL A], [SKIN TONE DTL B], [SKIN TONE DTL C]: **ON / OFF** for each

Select the type of skin color on which the Skin Tone Detail works. These three settings can be set either separately or in combination.

[SKIN TONE ZEBRA]: **ON / OFF**

Displays the zebra pattern on a selected skin color area. This zebra pattern indicates an area selected by [SKIN TONE DTL SETTING].

More Advanced Settings: Main Menu → [SCENE FILE] → [SKIN TONE DTL SETTING]

[DETECT TABLE] **A / B / C**

Selects the skin color table of the object to apply the Skin Tone table to.

[SKIN TONE GET]

Acquires the color information of [A], [B] or [C] selected in [DETECT TABLE] from the area around the center marker.

By executing this menu, the data from [I CENTER] to [Q PHASE] are acquired automatically.

[SKIN DTL EFFECT] **0 --- 16 --- 31**

Sets the effect level of Skin Tone Detail.

* Data acquired by [SKIN TONE GET]

When the color composition of video signal (R/G/B) is converted to color difference signal (R-Y/B-Y), it can be represented as the figure below. On this diagram, using the axes across Red-Cyan and Green-Magenta phases (I axis and Q axis, respectively), set the following areas to apply Skin Tone.

[I CENTER] 0 --- 35 --- 255

Sets the center position on the I axis (the area to apply Skin Tone).

[I WIDTH] 0 --- 55 --- 255

Sets the area width to apply Skin Tone along the I axis with [I CENTER] as the center.

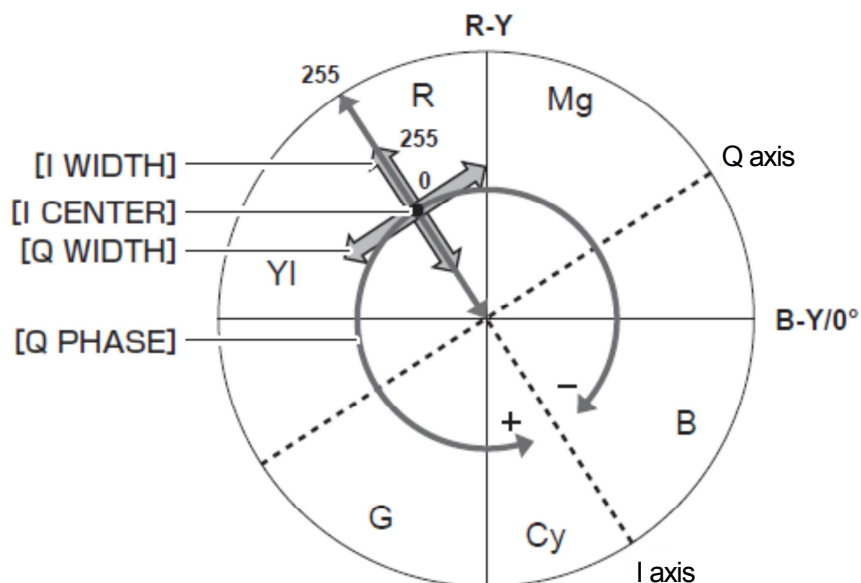
[Q WIDTH] 0 --- 10 --- 90

Sets the area width to apply Skin Tone along the Q axis with [I CENTER] as the center.

[Q PHASE] -180 --- 0 --- 179

Sets the area phase to apply Skin Tone with the Q axis as a reference.

If some areas on the background, etc. are close to skin-colored, they will also look smoother after this function is used. When the brightness is not enough, the effect may not be easily recognized. Also, if people are filmed in a reduced size, their faces may be blurred.



3. Expressing the gradation of a picture (Knee, Gamma)

3-1. Knee adjustment

Due to the sunny weather or the lighting, “blown-out highlights” sometimes occur, where bright areas look completely white.

This is a phenomenon caused by the luminance signals that are out of the camera’s Dynamic Range (processing range). In order to put such high-brightness input signals within the Dynamic Range, Knee function can be used to compress the gradation. However, the color gradation is also compressed at the same time by this function. So, depending on the scene, the color may become lighter. In that case, setting [KNEE MASTER SLOPE Rch] and [KNEE MASTER SLOPE Bch] will enable the adjustment of color.

KNEE MASTER POINT: 70%



KNEE MASTER POINT: 93%



KNEE MASTER POINT: 107%

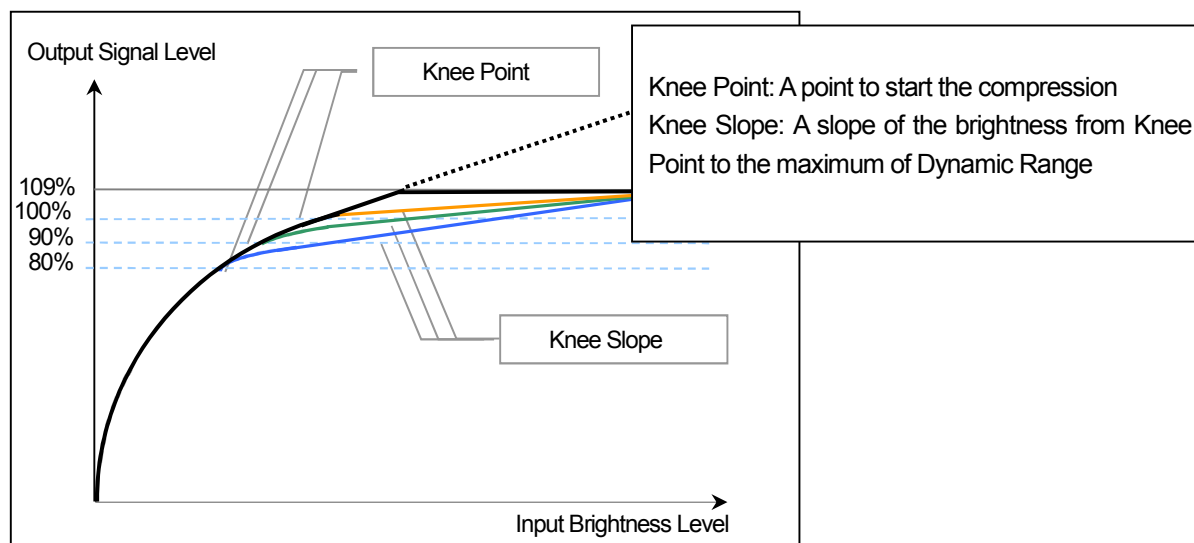


3-2. Technical description : Knee

Knee is a function to compress the luminance signal of a certain level or higher so that it can be output at a level of about less than 109% (white clip) in order to put the brightness of an object within the Dynamic Range.

Knee Point is a setting about which level to start the compression from. It is said that the brightness of human skin is about 85%, so professional video cameras are designed so that their settings can be set for the brightness of the same level as human skin or higher. That is, without affecting much the gradation expression of human skin, the gradation of brighter areas like clouds in the sky can be expressed well by using Knee.

Knee Slope indicates how much to be compressed, which means a slope of the brightness curve from Knee Point to the maximum of Dynamic Range. Generally, when a scene includes high-brightness areas, the Knee Point is set to a lower value to prevent blown-out highlights. On the other hand, when a scene does not include such areas, the Knee Point is set to a higher value to prevent the gradation of middle-brightness areas from being compressed.



This is an example for explanation only and may be different from actual measurements.

Adjustment Items for Knee: Main Menu → [SCENE FILE] → [KNEE SETTING] (Factory default settings underlined)

[A.KNEE RESPONSE] 1 --- 4 --- 8

Sets the response speed. A smaller setting value allows a faster response speed. (* Enabled when KNEE MODE is AUTO)

[KNEE MASTER POINT] 70.0% --- 93.0% --- 107.0%

Sets the position of Knee Point in units of 0.5%. (* Enabled when KNEE MODE is MANUAL)

[KNEE MASTER SLOPE] 0 --- 85 --- 99

Sets the slope of Knee. (* Enabled when KNEE MODE is MANUAL)

[KNEE MASTER SLOPE Rch] -31 --- 0 --- 31

Sets the Knee slope of Rch. (* Enabled when KNEE MODE is MANUAL)

[KNEE MASTER SLOPE Bch] -31 --- 0 --- 31

Sets the Knee slope of Bch. (* Enabled when KNEE MODE is MANUAL)

3-3. White Clip

Adjustment Items for White Clip:

Main Menu → [SCENE FILE] → [WHITE CLIP SETTING] (Factory default settings underlined)

[WHITE CLIP LVL] 90% --- 109% Sets the White Clip level.

[Rch CLIP LVL] -31 --- 0 --- 31 Sets the clip level of Rch against White Clip.

[Bch CLIP LVL] -31 --- 0 --- 31 Sets the clip level of Bch against White Clip.

3-4. Gamma adjustment

There are cases where the color and contrast, which look natural to the eye, are not fully reproduced on the picture. An effective way for these cases is to adjust the gradation of output signal. Select a suitable Gamma curve according to the scene. AJ-PX270 offers seven types of Gamma curves.

(Main Menu → [SCENE FILE] → [GAMMA MODE SEL])

HD:

This is a video Gamma characteristic for HD (High Definition).

This Gamma complies with the standards defined by ARIB, EBU, SMPTE, etc. Use this for the purpose of normal HD shooting.

SD:

Gain is increased for dark areas more than HD Gamma.

This Gamma curve can be used for shooting in SD mode, or for HD shooting that needs the same Gamma as used in SD shooting.

FILM LIKE 1:

Compared with HD Gamma, this has the characteristics by which the gradation of the highlights can be reproduced better. Using this Gamma curve which gently slopes for the low-brightness area makes the picture look calm. Contrast becomes sharper and the gradation expression of the middle- and high-brightness areas (face, etc.) is extended.

FILM LIKE 2:

Compared with FILM LIKE 1, this has the characteristics by which the gradation of the highlights can be reproduced better.

FILM LIKE 3:

Compared with FILM LIKE 2, this has the characteristics by which the gradation of the highlights can be reproduced better.

FILM-REC:

Film-use cine Gamma characteristics.

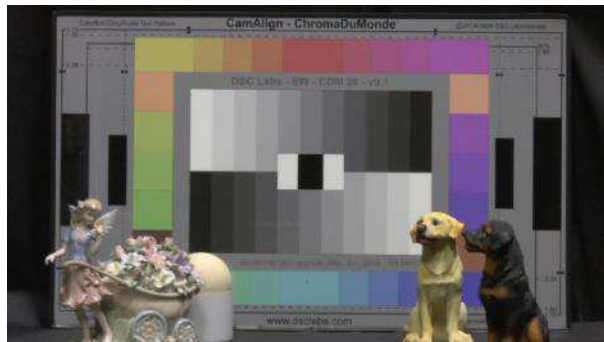
This Gamma gives priority to the Dynamic Range and maintains the gradation that ranges evenly from low to high level. It creates a unique atmosphere which is sometimes used as an effect.

VIDEO-REC:

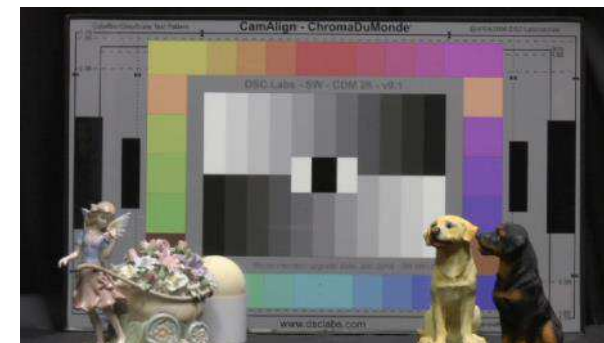
Video-use cine Gamma characteristics.

This is a Gamma curve to make a movie-like picture using a video camera. It creates a picture where more importance is placed on contrast than in normal video mode recording.

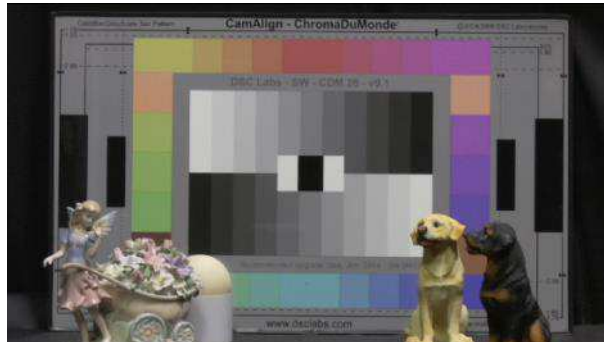
GAMMA: HD



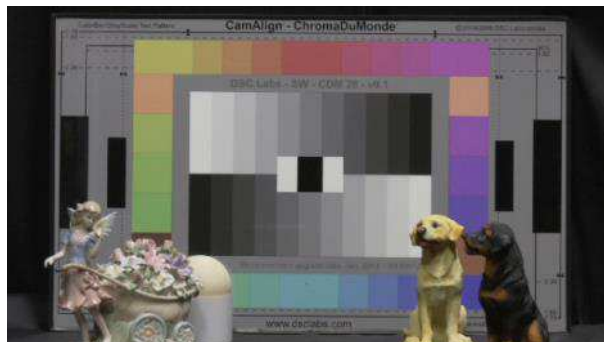
GAMMA: SD



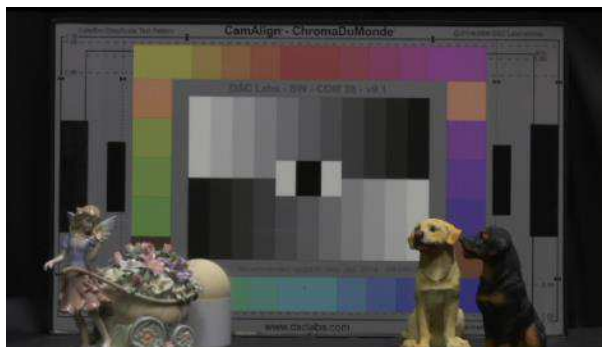
GAMMA: FILM LIKE1



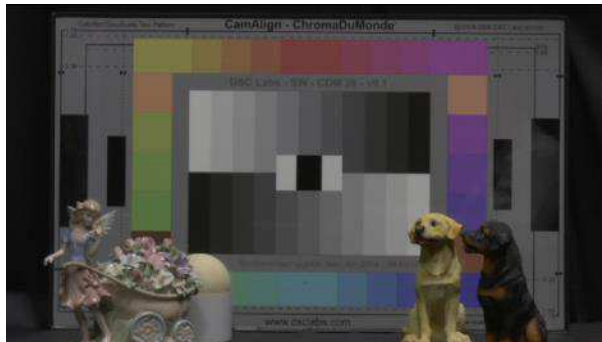
GAMMA: FILM LIKE2



GAMMA: FILM LIKE3



GAMMA: FILM -REC

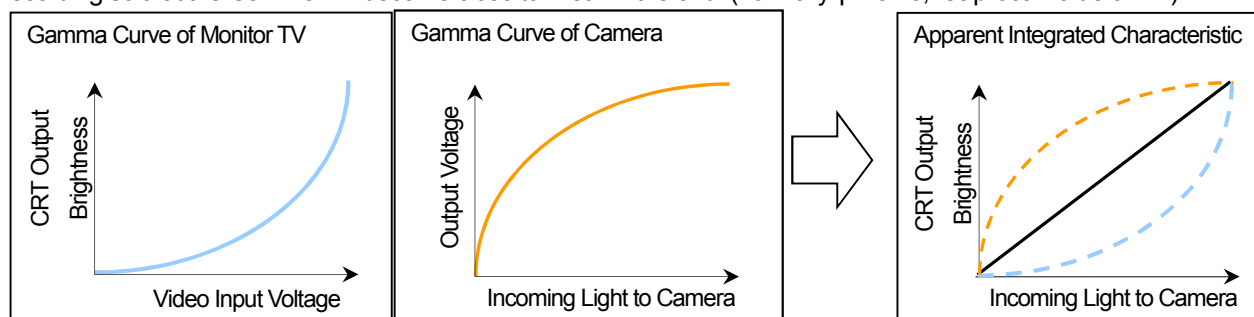


GAMMA: VIDEO-REC



3-5. Technical description : Gamma

Gamma is a value that indicates the relationship between the levels of input and output signals of the camera or monitor TV. Generally, it is said that linear Gamma ($\gamma = 1$) represents the image reproduction closest to the one seen by the eye. However, the monitor TV has the Gamma characteristics that make the output level of its signal higher and higher as the input level increases. ($\gamma = \text{approx. } 2.2$) So the camera corrects its Gamma and performs the recording so that the Gamma will become close to linear in the end. (normally $\gamma = 0.45$, reciprocal value of 2.2)



This is an example for explanation only and may be different from actual measurements.

The picture's total atmosphere can be changed by this Gamma correction. So this function can be used for a more active picture-making, e.g. film-like coloring.

Adjustment Items for Gamma: Main Menu → [SCENE FILE] → [GAMMA SETTING]
(Factory default settings underlined)

[MASTER GAMMA] 0.30 --- 0.45 --- 0.75

Sets the Master Gamma in units of 0.01.

When [FILM-REC] is selected in [GAMMA MODE SEL],

[F-REC DYNAMIC LVL] 200% , 300% , 400% , 500% , 600%

Sets the Dynamic Range.

[F-REC BLACKSTR LVL] 0% --- 30%

Sets the Black Stretch.

When [VIDEO-REC] is selected in [GAMMA MODE SEL],

[V-REC KNEE SLOPE] 150% , 200% --- 500%

Sets the Knee Slope.

[V-REC KNEE POINT] 30% --- 107%

Sets the Knee Point.

[BLACK GAMMA] (Depressing) -8 --- OFF --- 8 (Expanding)

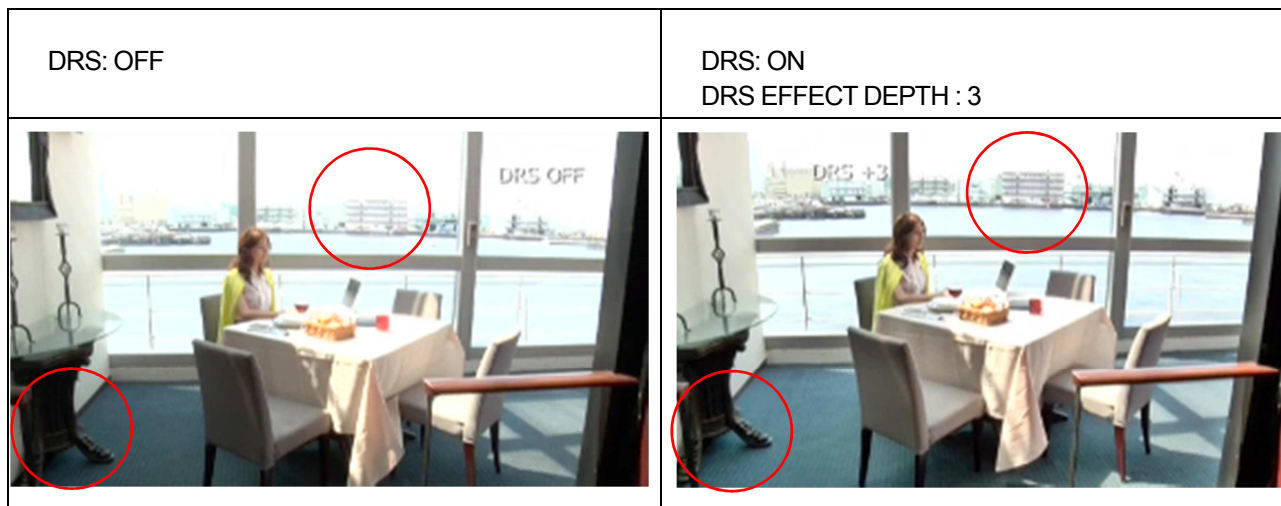
Sets the depression and expansion of Gamma curve for dark areas.

[B.GAMMA RANGE] 1 / 2 / 3

Sets the maximum level of compression / expansion. 1 (approx. 20%), 2 (approx. 30%), 3 (approx. 40%)

3-6. DRS: Useful for shooting the scene with large contrast between bright and dark areas

By starting up DRS (Dynamic Range Stretcher) function, the Gamma curve and Knee Slope are estimated according to the signal level of each pixel and adjusted in real time. This allows both dark and bright areas to maintain the high level of gradation expression and can minimize not only crushed blacks and blown-out highlights but also hue compression.



Setting and Adjustment items for DRS: Main Menu → [SCENE FILE]
(Factory default settings underlined)

[DRS] OFF / ON

Enables / disables the Dynamic Range Stretcher function.

[DRS EFFECT DEPTH] 1 / 2 / 3

Sets the compression level of high-brightness areas by Dynamic Range Stretcher function.

Compressing the video signal level of high-brightness area, which is so bright that it would be represented as blown-out highlights in normal recording, enables the Dynamic Range to be expanded. A larger setting value has more effect of DRS (compression level of high-brightness area) to make the Dynamic Range wider in appearance. However, if this level is higher, the noise on dark areas may also be intensified. In addition, depending on the scene, its picture may look unnatural. So it needs to be checked every time this adjustment is made. Also, when there is an extremely dark or bright area, or when the brightness is not enough, the effect may not be easily recognized.

4. Controlling the color (Chroma Level, Phase, Color Correction)

4-1. Adjustments of Chroma Level (color saturation) and Chroma Phase (hue)

Adjustment items for Chroma Level and Phase: Main Menu → [SCENE FILE]

(Factory default settings underlined)

[CHROMA LEVEL] OFF -- -99% --- 0% --- 40%

Sets the Chroma Level of Pr and Pb signals. On the vector scope, the distance from the center (no color) will increase / decrease as a whole picture.

[CHROMA PHASE] -31 --- 0 --- 31

Finely adjusts the Chroma Phase of Pr and Pb signals. On the vector scope, the plotted lines for a whole picture rotate clockwise or counterclockwise.

Example of Chroma Level adjustment Color saturation is varied.

CHROMA LEVEL: +60



CHROMA LEVEL: -60



Example of chroma phase adjustment Color phase (tint) is varied.

CHROMA PHASE: +31



CHROMA PHASE: 0



CHROMA PHASE: -31



4-2. Technical description: About color saturation and hue

The relation of Red, Green and Blue to each other is typically represented in the form of a circle. Adjustment of Chroma Level (color saturation) is to adjust the amplitude of chrominance signal at each point without changing the phase.

Adjustment of Chroma Phase (hue) is to rotate the whole circle to some degree.

Example of colors indicated on vector scope

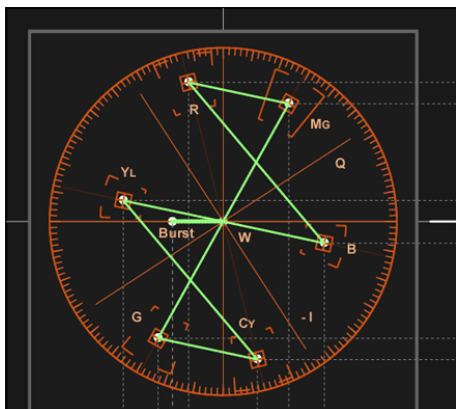
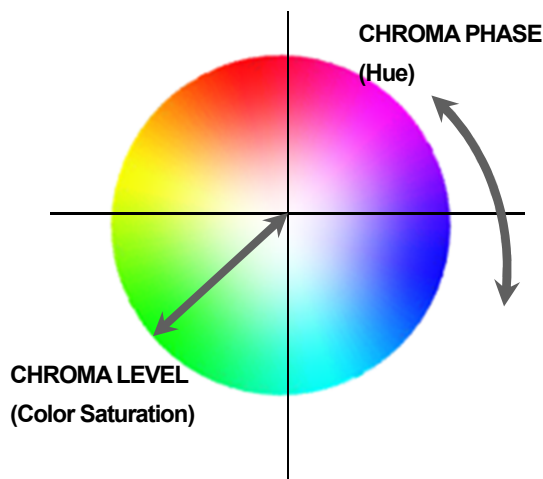


Illustration of CHROMA LEVEL and CHROMA PHASE



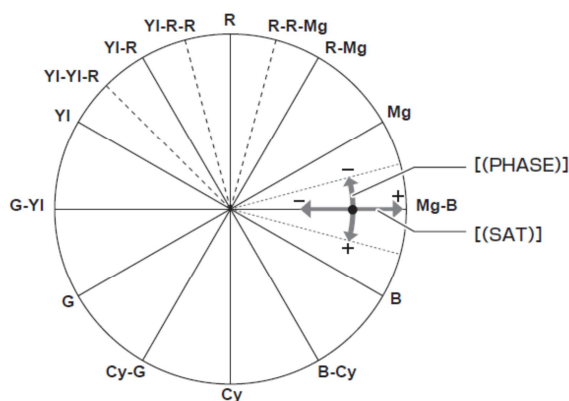
4-3. Color correction

In addition to Chroma Level and Phase adjustments to a whole picture, AJ-PX270 has the Color Correction function to vary the level and phase of each of particular twelve colors without affecting the others as little as possible.

Adjustment items for Color Correction: Main Menu → [SCENE FILE] → [COLOR CORRECTION SETTING]
(Factory default settings underlined>

[R] / [R-R-Mg] / [R-Mg] / [Mg] / [Mg-B] / [B] / [B-Cy] / [Cy] / [Cy-G] / [G] / [G-YI] / [YI] / [YI-YI-R] / [YI-R] / [YI-R-R]

Sets the saturation and phase of a color. This has an effect individually on fifteen color axes (twelve tones + three skin tones) of a picture. And it can be set for an individual hue.



[(PHASE)] -63 --- 0 --- 63

Changes the phase. Positive values are for rotating in clockwise direction and negative values for in counterclockwise direction.

[(SAT)] -63 --- 0 --- 63





Changes the saturation (level of chroma, the degree to which a color is pure).

4-4. Using a preset color look : Matrix settings

For more active changes of coloring, the color look can be selected from the preset Matrix Table.

Calling of Matrix settings: Main Menu → [SCENE FILE] → [MATRIX] (Factory default settings underlined)

[MATRIX] NORM 1 / NORM 2 / FLUO / CINELIKE

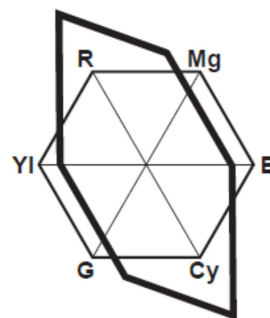
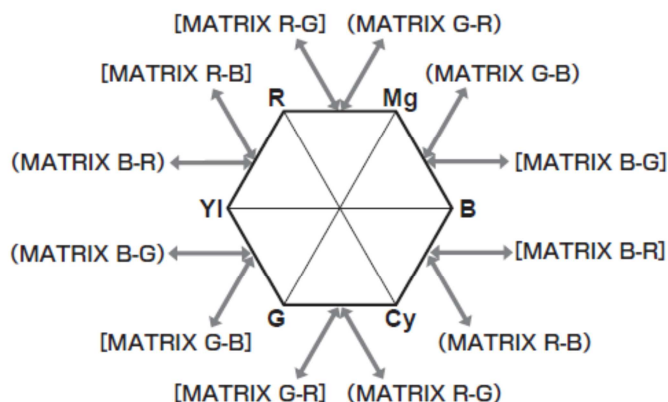
	<p>NORM1</p> <p>This expresses the colors suitable for shooting in the open air or under the halogen lamp.</p> <p>Generally, this color look is preferred in NTSC areas such as Japan and North America.</p>
	<p>NORM2</p> <p>This enables the coloring suitable for shooting in the open air or under the halogen lamp.</p> <p>And it has richer color saturation than NORM1.</p> <p>Generally, this color look is preferred in PAL areas such as Europe.</p>
	<p>FLUO</p> <p>This expresses the colors suitable for shooting indoors under the fluorescent lamp.</p> <p>This is suitable for shooting in the condition of poor color-reproduction under the bluish light from fluorescent lamp.</p>
	<p>CINELIKE</p> <p>This expresses the colors suitable for shooting a movie-like picture.</p> <p>When you have selected the Gamma, select and use this Matrix setting.</p>

Adjustment items for Matrix: Main Menu → [SCENE FILE] → [MATRIX SETTING]

(Factory default settings underlined)

[MATRIX R-G] [MATRIX R-B] [MATRIX G-R] [MATRIX G-B] [MATRIX B-R] [MATRIX B-G]

-63 · · · 0 · · · 63



EX)
[MATRIX R-G] adjusted in positive direction
and [MATRIX B-G] in negative direction

4-5. Adjustment of color temperature 1: Color Temp adjustment

On the channel for White Balance (Ach / Bch), fine adjustments can be made after the White Balance adjustment. Use this, for example, when you want to adjust the White Balance as you prefer. When the White Balance position (WHITE BAL) switch is at the or <A> position, this adjustment is enabled.

Example of video effects created by intentionally changed White Balance:



Scene like "early morning" acquired by increase of blue



Scene like "sunset" acquired by increase of red

Adjustment Items for Color Temp: Main Menu → [SCENE FILE] → [COLOR TEMP A/B SETTING]
(Factory default settings underlined)

[COLOR TEMP] 2000K --- 3200K --- 15000K

Changes the color temperature by changing the output balance between Rch and Bch.

[R Gain] -400 --- 0 --- 400

Changes the color on Rch axis by changing the output of Rch.

[B Gain] -400 --- 0 --- 400

Changes the color on Bch axis by changing the output of Bch.

[G AXIS] -400 --- 0 --- 400

Changes the color on G axis by changing the output of Rch and Bch.

4-6. Adjustment of color temperature 2: R, B Gain control

This is a function to increase / decrease the intensity of red and blue colors.

When the White Balance position (WHITE BAL) switch is at the , <A> or <PRST> position, this adjustment is enabled. It will not work when Auto Tracking White Balance is activated.

Adjustment Items on R, B Gain Control: Main Menu → [SCENE FILE] → [RB GAIN CONTROL SETTING]
(Factory default setting underlined)

When <WHITE BAL> switch is at the <PRST> position;

[RGAIN AWB PRE] -200 --- 0 --- 200

Sets the settings so that the intensity of red color will be increased / decreased.

[B GAIN AWB PRE] -200 --- 0 --- 200

Sets the settings so that the intensity of blue color will be increased / decreased.

When <WHITE BAL> switch is at the <A> or position;

[RGAIN AWB A (or B)] -200 --- 0 --- 200

Sets the settings so that the intensity of red color will be increased / decreased.

[B GAIN AWB A (or B)] -200 --- 0 --- 200

Sets the settings so that the intensity of blue color will be increased / decreased.

[AWB A GAIN OFFSET]

Sets whether to keep the values set for [R GAIN AWB A] and [B GAIN AWB A] or reset them if Auto White Balance is executed while the <WHITE BAL> switch is at the <A> position.

[AWB B GAIN OFFSET]

Sets whether to keep the values set for [R GAIN AWB B] and [B GAIN AWB B] or reset them if Auto White Balance is executed while the <WHITE BAL> switch is at the position.

5. Enhancing the level of expression for dark areas (Master Ped, RGB Black Control)

5-1. Pedestal (Master Pedestal) adjustment

Regarding the video signal, the reference of luminance signal is Black, which is called Master Pedestal. Adjusting the lower limit of this pedestal level allows not only the level of black floating but also the brightness balance of a whole picture to be set.

What is called “sharper” or “softer look” is largely related to the adjustments of outline and gradation.

	Outline	Gradation	
	DTL	Gamma	Master Pedestal
+ Sharper Look	+ Signal edge is enhanced.	LOW B PRESS Slope for darker area is gentle. (Gradation is suppressed.)	— Darker area is made sharper.
— Softer Look	— Signal edge is weakened.	HIGH CINELIKE Slope for darker area is steep.	+ Contrast is reduced.



MASTER PED : -200
By decreasing the Master Pedestal level, the picture becomes sharper with its contrast enhanced.



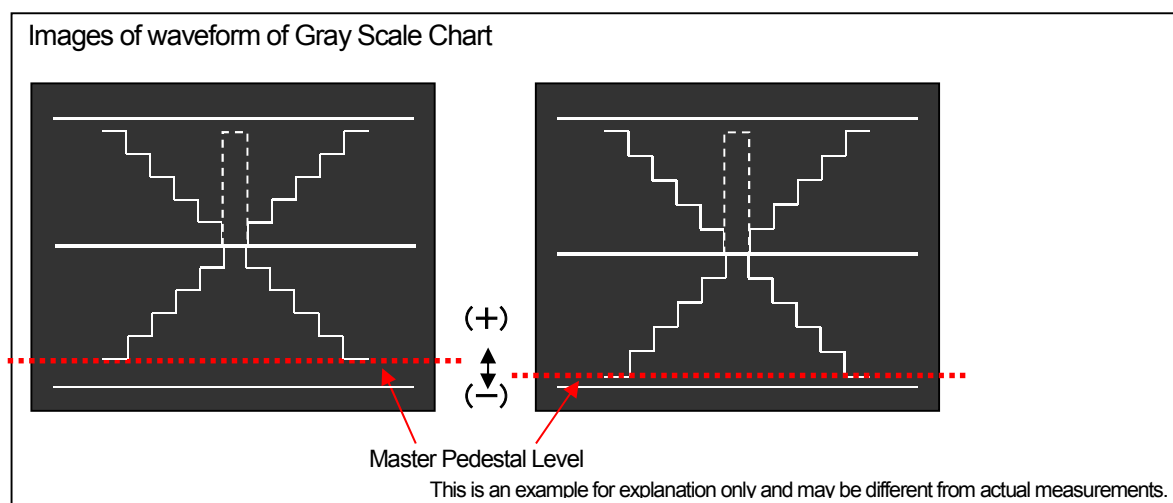
MASTER PED : +16
This is normal setting (factory default).



MASTER PED : +200
Increasing the Master Pedestal level can produce a misty effect, especially around darker areas.

5-2. Technical description : About Pedestal

Master Pedestal (or Master Black, etc.) is for the adjustment of black level as the reference of a picture. This adjustment has a significant influence, so it is ideal to check the picture using the waveform monitor or higher definition TV monitor.



Adjustment Items for Pedestal: Main Menu → [SCENE FILE]

(Factory default settings underlined)

[MASTER PED] -200 --- 16 --- 200

Sets the reference black level. RGB changes according to this setting. Positive values for making black color darker and negative for making it less dark.

[HI-COLOR SW] ON / OFF

Turns [ON] / [OFF] the mode to expand the color Dynamic Range.

[HI-COLOR LVL] 1 --- 32

Selects the level of the mode to expand the color Dynamic Range.

Adjustment Items for Pedestal: Main Menu □ [SCENE FILE] □ [RGB BLACK CONTROL SETTING]

(Factory default settings underlined)

[R PED] -100 --- 0 --- 100

Sets the pedestal level of Rch.

[G PED] -100 --- 0 --- 100

Sets the pedestal level of Gch.

[B PED] -100 --- 0 --- 100

Sets the pedestal level of Bch.

[PEDESTAL OFFSET] ON / OFF

Sets whether to keep each of the values set for [R PED], [G PED] and [B PED] or reset them if Auto Black Balance adjustment is executed.

Appendix: Adjustable ranges of Scene File settings

Gradation adjustment related

Item			Adjustable Range
MASTER PED			-200 to 200
GAMMA MODE SEL			HD /SD /FILMLIKE1 /FILMLIKE2 /FILMLIKE3 /FILM-REC /VIDEO-REC
	MASTER GAMMA		0.30 to 0.75
	FILM-REC	F-REC DYNAMIC LVL	200%/ 300%/ 400%/ 500%/ 600%
		F-REC BLACK STR LVL	0% to 30%
	VIDEO-REC	V-REC KNEE SLOPE	150%, 200% to 500%
		V-REC KNEE POINT	30% to 107%
	BLACK GAMMA		-8 to -1, OFF, 1 to 8
	B. GAMMA RANGE		1 (20%) / 2 (30%) / 3 (40%)
KNEE SETTEING / KNEE MODE			AUTO / MANUAL / OFF
	AUTO	A.KNEE RESPONSE	1 to 8
	MANUAL	KNEE MASTER POINT	70.0% to 107.0%
		KNEE MASTER SLOPE	0 to 99
		KNEE MASTER SLOPE Rch	-31 to 31
		KNEE MASTER SLOPE Bch	-31 to 31
HI-COLOR SW			ON / OFF
HI-COLOR LVL			1 to 32
WHITE CLIP SETTING / WHITE CLIP			ON / OFF
	WHITE CLIP LVL		90% to 109%
	Rch CLIP LVL		-31 to 31
	Bch CLIP LVL		-31 to 31
DRS			ON / OFF
DRS EFFECT DEPTH			1 / 2 / 3

Color adjustment related

Item		Adjustable Range
COLOR TEMP Ach,Bch SETTING	COLOR TEMP	2000K to 15000K
	R Gain	-400 to 400
	B Gain	-400 to 400
	G AXIS	-400 to 400
CHROMA LEVEL		-99% to 40% / OFF
CHROMA PHASE		-31 to 31
MATRIX		NORM 1 / NORM 2 / FLUO / CINELIKE
COLOR CORRECTION SETTING		

Detail adjustment related

Item	Adjustable Range
MASTER DTL	-31 to +31
DTL CORING	0 to 60
DETAIL SETTING / DETAIL	ON / OFF
SKIN TONE DTL A,B,C	ON / OFF