Panasonic Internal use by June 20th

2015 June Varicam version Up Detail

This is the explanation of new functions with June Version Up.

The firmware will be completed and uploaded to WEB site
on June 25, 2015.

2015 June Varicam version Up

No	Function	Model	Remarks
1	AU-VEXT1 Extension Unit support 5m	35/HS	
2	CODEX V-RAW recorder support	35	
3	Anamorphic Lens support De-squeezed image monitoring on EVF, VF out and MON out. It is also recorded on Sub Recorder.	35	
4	ProRes 4444 (HD) support on Main Recorder	35/HS	
5	Image Flip-Flop function on EVF, VF out and MON out. It is also recorded on Sub Recorder.	35	
6	Flexible ISO control ....ISO down from ISO5000 setting	35	
7	PreREC function in ProRes mode recording	35/HS	
8			
9			

Panasonic Internal use by June 20th

1	AU-VEXT1 Extension Unit support 5m	35/HS

AU-VCBL05

Cable

Connector	: Molex-48pin
Cable Diameter	: 12mm
Length	: 5m

Note : Long Cable is under study.

AU-VEXT1

Camera Side Module

Connector	: Molex-48pin
	: DC-IN XLR-4pin
	: DC-OUT LEMO 0E-2pin
	: Battery ANTON Blaket
Size	: W 121mm x H 143mm x L 73mm
Weight	: 1.0kg

Recorder Side Module

Connector	: Molex-48pin
Switch	: SIX USER BOTTOMS x1
Size	: W 106mm x H 143mm x L 61mm
Weight	: 0.7kg

Panasonic Internal use by June 20th

2	CODEX V-RAW recorder support	35

Codex V-RAW Recorder

KEY FEATURES
> Direct-attach to Panasonic VARICAM 35
> Uncompressed to 120fps
> Codex Capture Drive™ 2.0
> Industry Standard workflow
and support via Codex Vault Platform™

According to V-recorder launch timing, please refer to CODEX WEB site.

Interface	Direct Attach Module
Recording Media	Codex Capture Drive™ 2.0
Recording Formats	4K RAW, 4K UHDTV RAW, uncompressed 12-bit up to 30fps, 10-bit beyond 30fps up to 120fps
Control	Camera
Maximum Frame Rate	120fps uncompressed RAW
Metadata	Camera metadata only
Input voltage	10.5-34V DC
Power consumption	Maximum 40W (recorder only)
Operating Temperature	32°F to 113°F (0°C to 45°C)
Weight	3.3lbs (1.5Kg)
Dimensions (WxDxH)	5.3 x 5.7 x 6.5in (134 x 144 x 165mm)
Warranty	1 year limited warranty
Product Code	CDX-36050

For further information on the Codex V-RAW Recorder, please go to codex codexdigital.com/products/recorders/v-raw-recorder

Panasonic Internal use by June 20th

3	Anamorphic Lens support De-squeezed image monitoring on EVF, VF out and MON out. It is also recorded on Sub Recorder.	35

Points:

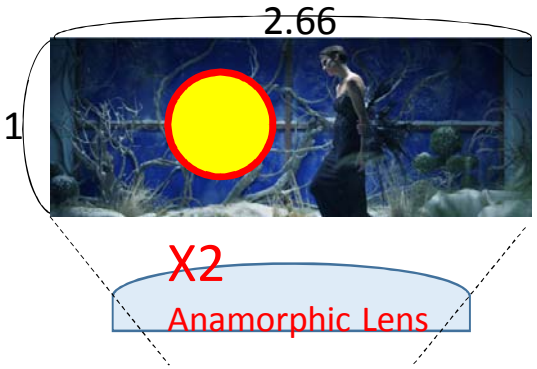
- The main signal recording area on the image sensor has not been changed.
  It means cut out operation is required at post production.
- When Anamorphic lens is mounted on VariCam 35, the recording signal in Sub recorder, and EVF, LCD Mon out can be de-squeezed.
- "Mag" mode is try to show the actual cinescope (2.39:1) area
- VF De-squeeze ON/OFF can be assigned to USER SW.

< MENU >
MENU => SYSTEM SETTING => ANAMORPHIC DESQUEEZE
SUB REC & MON OUT ON/"OFF"
VF & VF SDI ON/"OFF"
DESQUEEZE RATIO "1.3x" / 1.3xmag / 2.0x / 2.0xmag

Panasonic Internal use by June 20th

3	Anamorphic Lens support	35

4096 x 2160 mode



X2
Anamorphic
Lens

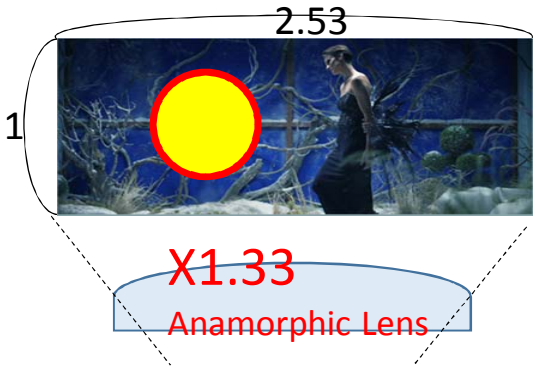
Squeezed
Image

De-Squeezed
Picture on VF
&
Mon OUT (1080/60i)
(Side crop)

Main
Recorder
Image 9

These areas are also
recorded.
But it might be out of
official lens image circle.

Sub Rec
Image
2048x1080



X1.33
Anamorphic
Lens

Squeezed
Image

De-Squeezed
Picture on VF
&
Mon OUT (1080/60i)
(Side crop)

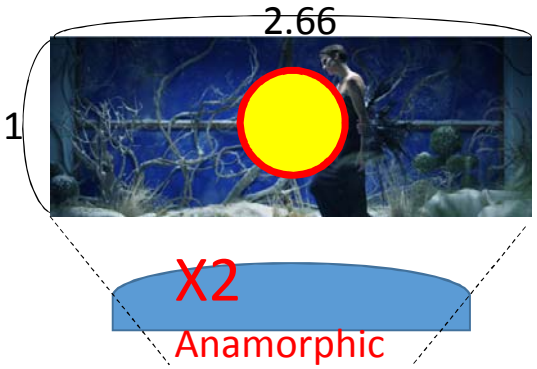
Main
Recorder
Image 9

Sub Rec
Image
2048x1080

Panasonic Internal use by June 20th

3 Anamorphic Lens support

3840 x 2160 mode

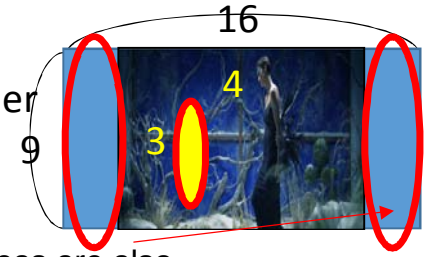


X2
Anamorphic
Lens

Squeezed Image

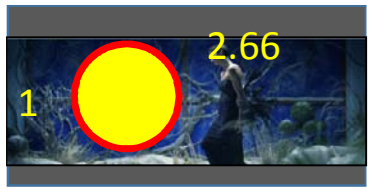
De-Squeezed Picture on VF
&
Mon OUT (1080/60i)

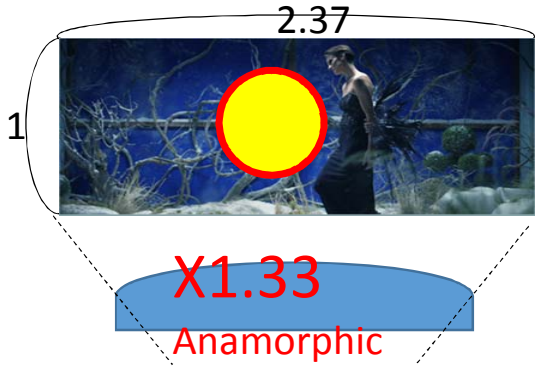
Main Recorder Image 9



These areas are also recorded.
But it might be out of official lens image circle.

Sub Rec Image 1920x1080

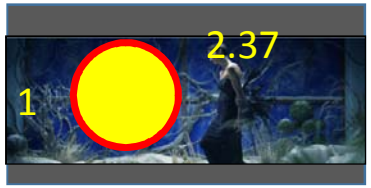




X1.33
Anamorphic
Lens

Squeezed Image

De-Squeezed Picture on VF
&
Mon OUT (1080/60i)

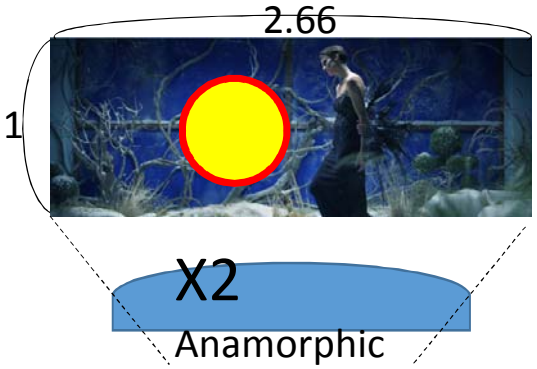


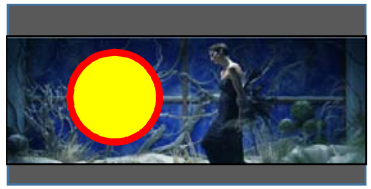
Main Recorder Image 9

Sub Rec Image 1920x1080

Panasonic Internal use by June 20th

3	Anamorphic Lens support	35

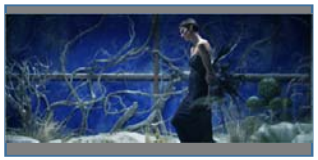




De-squeeze Mode (Viewing)

Normal De-Squeeze : the Full 2:66 : 1 area

Mag De Squeeze : the 2.39:1 area.



"Mag" mode is try to show the actual cinescope (2.39:1) area.

Panasonic Internal use by June 20th

3	Anamorphic Lens support	35

De-squeeze Specification

MAIN	De-squeeze Ratio	De-squeezed Aspect
17:9 (4096 or 2048)	2.0x	2.66 : 1
	2.0x mag	2.39 : 1
	1.33x	2.53 : 1
	1.33x mag	2.39 : 1
16:9 (3840 or 1920)	2.0x	2.66 : 1
	2.0x mag	2.39 : 1
	1.33x	2.37: 1
	1.33x mag	2.39 : 1

$$\frac{4096}{2160} \times 1.333 = 2.53$$

De-squeeze Option Selection

MAIN Pixel	VF & VS SDI	SUB REC & MON OUT
4096	ON/OFF	ON/OFF
3840	ON/OFF	ON/OFF
2048	ON/OFF	OFF
1920	ON/OFF	OFF

- To keep the aspect ratio of image on monitor, the horizontal and/or vertical black band may appear on the screen, depending on the mode.
- Surround View does NOT work.
- The normal picture (Not De squeezed) will be shown in Expand mode.
- WFM will show based on the De-squeezed picture
- De-squeezed is not applied in playback mode.
- De-squeezed picture in the SUB recorder will be shown as it is.

Panasonic Internal use by June 20th

3	Anamorphic Lens support	35

Shooting scene
2.0 x Squeeze

3840 x 2160 mode
2.0 X Lens

Ex.) Primo Lens
(Panavision)

VF & VF SDI
De-squeeze ON/OFF

Independent
setting

MAIN REC & SDI OUT

Always Squeezed
(No Des-squeeze)

These areas are also
recorded.
But it might be out of
official lens image circle.

SUB REC & MON OUT
De-squeeze ON/OFF

Panasonic Internal use by June 20th

3	Anamorphic Lens support	35

Shooting scene
1.3 x Squeeze

3840 x 2160 mode
1.3 X Lens

Hawk 1.3x

VF & VF SDI De-squeeze ON/OFF

Independent
setting

MAIN REC & SDI OUT

Always Squeezed
(No Des-squeeze)

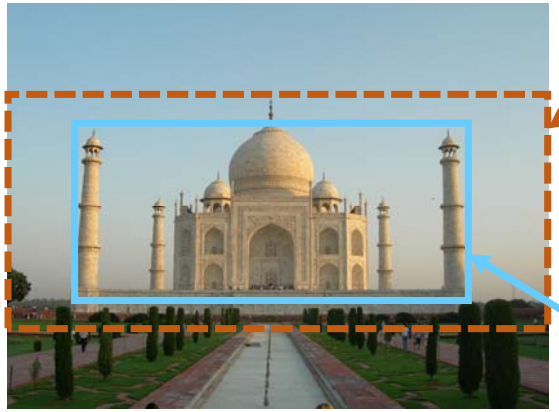
SUB REC & MON OUT
De-squeeze ON/OFF

Panasonic Internal use by June 20th

3	Anamorphic Lens support	35

Comparison with ALEXA Anamorphic system

In ALEXA, the vertical scan size has been changed with Anamorphic mode to cover the 4x3 area.
In Varicam 35, the vertical area has NOT been changed, so, the cover area is different.



ALEXA Anamorphic Lens Effective Area

Varicam Anamorphic Lens Effective Area

ALEXA

Normal 2880 x 1620 Shooting

4 x 3 Scan Area

Vertical Expand

2x Anamorphic Lens Effective Area

Varicam

Normal 3840 x 2160 Shooting

Center Cut

Panasonic Internal use by June 20th

4

ProRes 4444 (HD) support on Main Recorder

35/HS

Video Format		Compression Format			
Main / Sub	fps	VFR*1	Main recorder	Sub recorder *2	
4K / 2K	23.98, 24 25, 29.97	--	AVC-Intra 4K 4:4:4	AVC-Intra 2K 4:2:2	AVC-ProxyG3.5
		1 ~ 60(50)	AVC-Intra 4K 4:2:2		
		1 ~ 120(100)	AVC-Intra 4K-LT		
	50 59.94	1 ~ 60(50)	AVC-Intra 4K 4:2:2	AVC-Intra 2K 4:2:2	--
		1 ~ 120(100)	AVC-Intra 4K-LT		
UHD / HD	23.98 25, 29.97	--	AVC-Intra 4K 4:4:4	AVC-Intra100 AVC-LongG50/G25	AVC-ProxyG3.5
		1 ~ 60(50)	AVC-Intra 4K 4:2:2		
		1 ~ 120(100)	AVC-Intra 4K-LT		
	50 59.94	1 ~ 60(50)	AVC-Intra 4K 4:2:2	AVC-Intra100 AVC-LongG25	--
		1 ~ 120(100)	AVC-Intra 4K-LT		
2K / 2K	23.98, 24 25, 29.97	--	AVC-Intra 2K 4:4:4	AVC-Intra 2K 4:2:2	AVC-ProxyG3.5
		1 ~ 120(100)	AVC-Intra 2K 4:2:2		
	50, 59.94	1 ~ 120(100)	AVC-Intra 2K 4:2:2	AVC-Intra 2K 4:2:2	--
HD / HD	23.98 25, 29.97	--	AVC-Intra 4:4:4	AVC-Intra100 AVC-LongG50/G25	AVC-ProxyG3.5
		--	AVC-Intra 200		
		1 ~ 120(100)	AVC-Intra 100		
		1 ~ 120(100)	ProRes HQ /		
		1-30 (25)	ProRes 4444	AVC-Intra100 AVC-LongG50/G25	AVC-ProxyG3.5
		30-60 (25-50)	ProRes 4444	AVC-Intra100 AVC-LongG50/G25	AVC-ProxyG3.5
	50 59.94	1 ~ 120(100)	AVC-Intra 100	AVC-Intra100 AVC-LongG25	--
		1 ~ 120(100)	ProRes HQ		

Newly added.

Newly added.

Panasonic Internal use by June 20th

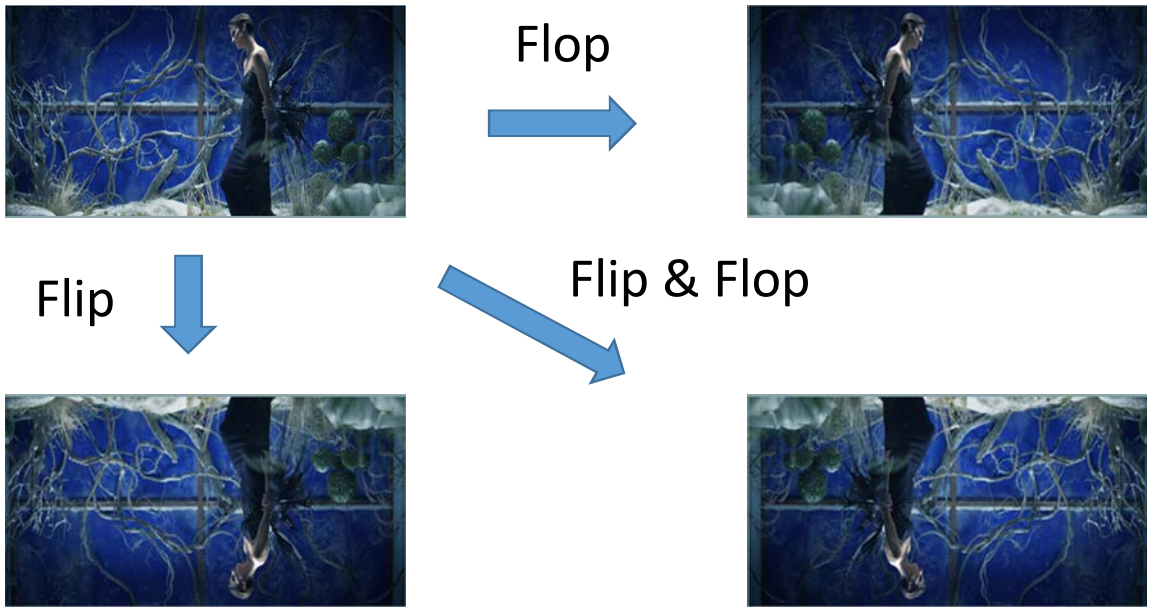
5	Image Flip-Flop function on EVF, VF out and MON out. It is also recorded on Sub Recorder.	35

・SYSTEM SETTINGS — **FLIP-FLOP MODE**

SUB REC & MON OUT : ON / OFF

VF & VF SDI : ON / OFF

FLIP-FLOP SELECT : FLIP / FLOP / FLIP+FLOP



Panasonic Internal use by June 20th

6	Flexible ISO control ....ISO down from ISO5000 setting	35

ISO level can set based on ISO800 or ISO5000
For example. ISO 4000 can set by gain up from ISO800
or by gain down from ISO5000.

CAMERA SETTINGS － EI

ISO SELECT ：**NATIVE ONLY / 800 BASE / 5000 BASE**

800 BASE ISO **200 - 4000** **Default 800**（High Speed OFF）、
200 - 2000 **Default 400**（HighSpeed ON）

5000 BASE ISO **1250 - 12800** **Default 5000**（High Speed OFF）、
1250 - 6400 **Default 2500**（HighSpeed ON）

ISO(ALL) **200 - 12800**（High Speed OFF）、

NATIVE ISO Setting has not been changed.
800/5000（High Speed OFF), 400/2500（High Speed ON）

Panasonic Internal use by June 20th

6	Flexible ISO control ....ISO down from ISO5000 setting	35

ISO	HIGH SPEED OFF			ON			
	"NATIVE"	"ISO"		"NATIVE"	"ISO"		
		800BASE	5000BASE		ALL	800BASE	5000BASE
200		○※				○※	
250		○※				○※	
320		○※				○※	
400		○※		○		○	
500		○※				○	
640		○※				○	
800	○	○				○	
1000		○				○	
1250		○	○※			○	○※
1600		○	○※			○	○※
2000		○	○※			○	○※
2500		○	○※	○			○
3200		○	○※				○
4000		○	○※				○
5000	○		○				○
6400			○				○
8000			○				
10000			○				
12800			○				

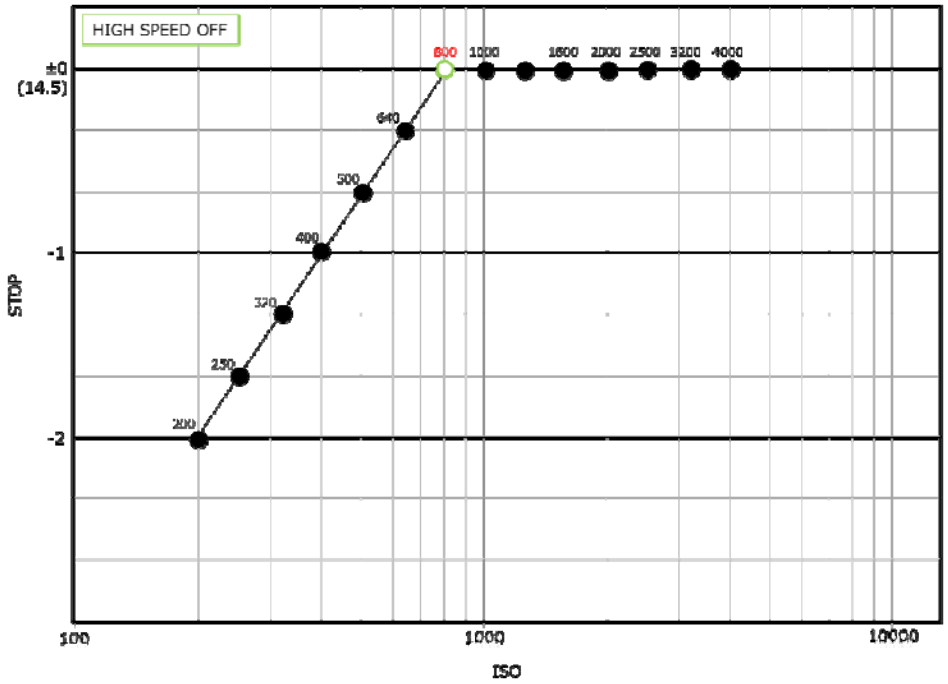
"ISO All" selection has been removed.

Panasonic Internal use by June 20th

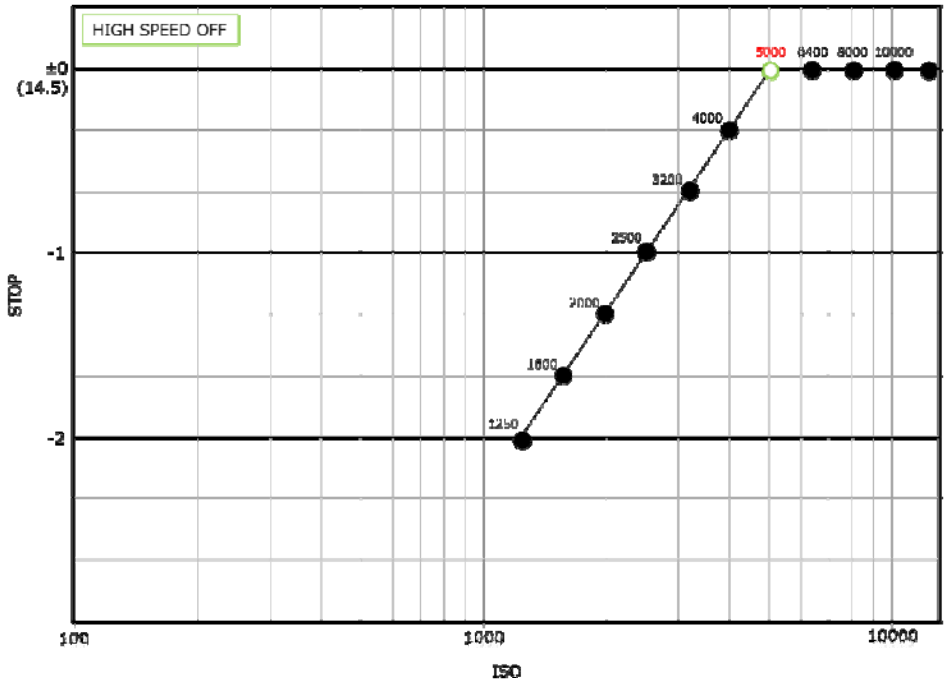
6	Flexible ISO control ....ISO down from ISO5000 setting	35

ISO Setting and Latitude : High Speed OFF

ISO 800 base



ISO 5000 base

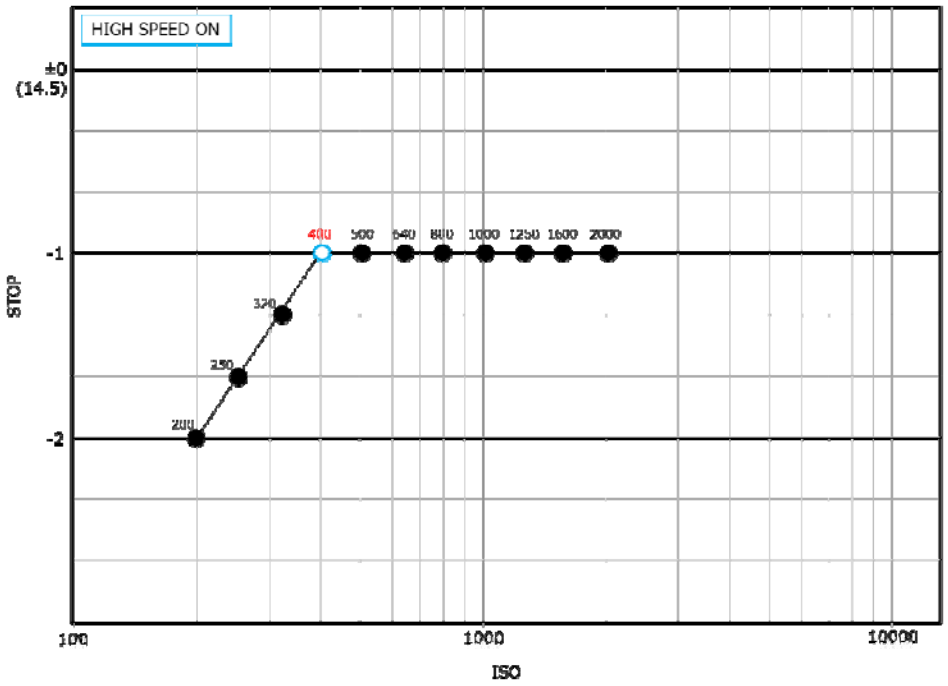


Panasonic Internal use by June 20th

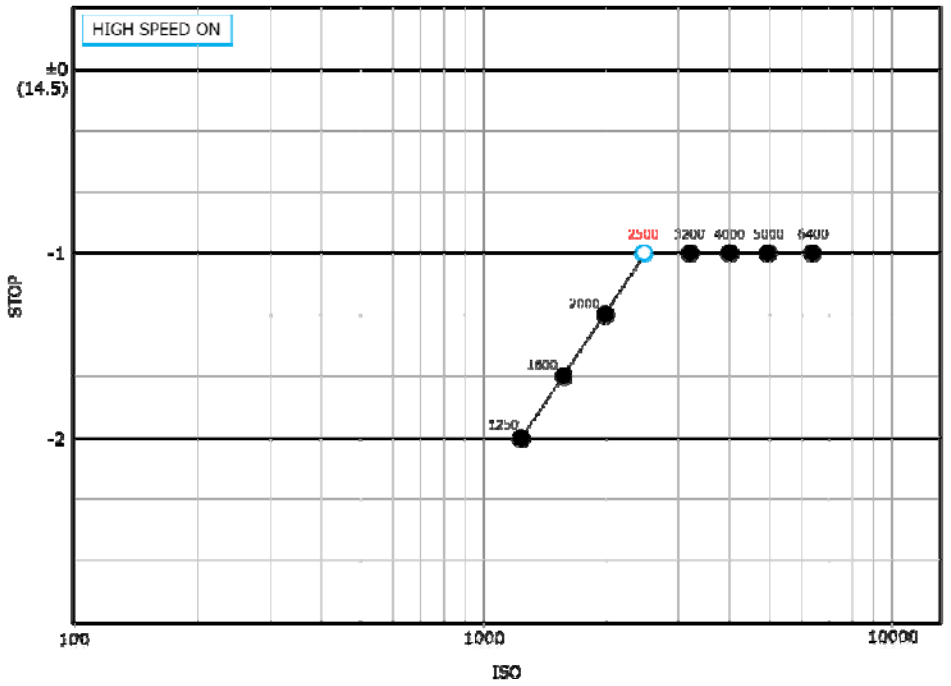
6	Flexible ISO control ....ISO down from ISO5000 setting	35

ISO Setting and Latitude : High Speed ON

ISO 800 base



ISO 5000 base



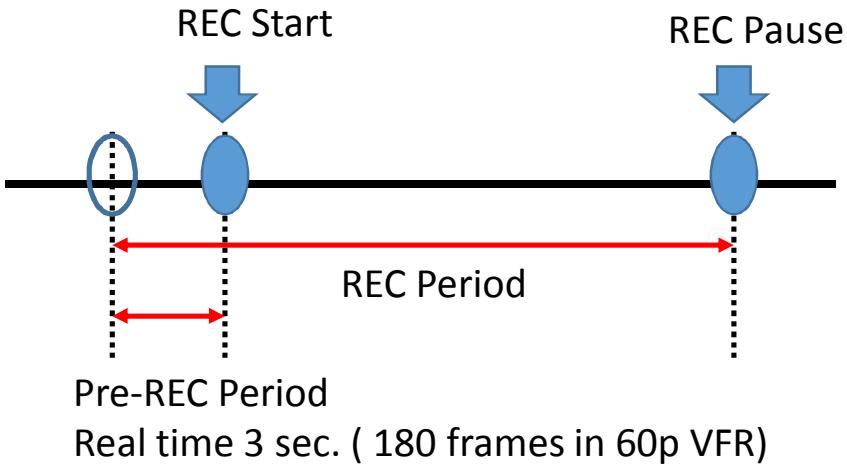
Panasonic Internal use by June 20th

7	PreREC function in ProRes mode recording	35/HS

Interval Rec / One Shot Rec / Pre Rec function are supported.
Pre REC time is 3 sec (actual time).

PRE REC does NOT work in following mode

1) V-RAW recording
2) AVC-LongG Recording in SUB recorder
3) Proxy recording is ON
~~4) ProRes Recording~~
5) In INTERVAL or ONE SHOT REC mode
6) ProRes HQ High Speed Mode (60-120)
7) ProRes 4444 High Speed Mode (30-60)



Now it is work in ProRes mode (HQ & 4444)