SONY

SDR Preview for HDR Quick Start Guide

Easily shoot HDR and SDR content with highest quality.

This feature is designed to make it easy to simultaneously shoot high quality HDR (High Dynamic Range) and SDR (Standard Dynamic Range) content with the applicable professional camcorders *1.

While demand for HDR content continues to grow, SDR remains extremely important for many mainstream applications. SDR Preview for HDR makes it possible to maintain picture quality for both HDR and SDR in a single shoot.

SDR Preview for HDR is based on “SR Live for HDR” – an advanced workflow developed by Sony to enable a single live production crew to produce highest quality HDR/SDR content. Its extensive technical research and real-world operation have contributed to SDR Preview.

*1 Applicable camcorders as of Jan 2022

PXW-FX9 (with firmware V3.0 or higher)
ILME-FX6 (with firmware V2.0 or higher)
PXW-Z280 (with firmware V4.0 or higher)
PXW-Z190 (with firmware V4.0 or higher)

SDR Preview for HDR Operation

When shooting HDR content with SDR Preview, both the EVF (Electronic Viewfinder) and LCD screen display imagery processed by SDR Preview. This means that the camera operator can use the camera – especially exposure - with the same approach they're familiar with for SDR. In addition, if they adjust the brightness of the image when in SDR emulation, the SDR gain dB is recorded into the metadata so it can be used in post-production for producing the SDR content.

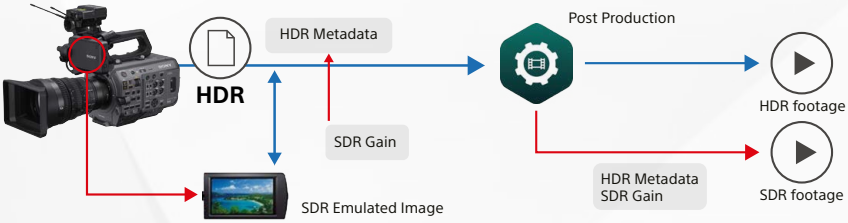
One of the most important issues with shooting HDR content is setting the correct exposure - this can take time and new techniques to fully master. SDR Preview addresses this issue by making it easy to shoot HDR while using familiar SDR approach.

Although only HDR clips are actually recorded to media, SDR content is easily converted from the HDR content using SR Live Metadata in post-production with free Sony Catalyst software.

* Please refer to High Dynamic Range explained - Pro.Sony/HDR

The advantages of SDR Preview:

- You can shoot HDR with SDR camera operation while viewing SDR image
- You can get SDR videos converted from HDR clips with SR Live Metadata



- The camera operation with SDR Preview determines the exposure for SDR.
- The exposure of SDR and “SDR Gain” determine the exposure for HDR.
- “SDR Gain” – a menu setting – adjusts the differential gain between HDR exposure and SDR exposure.

If you are not familiar with HDR shooting, SONY recommends deciding the SDR Gain by referring to below.

Reference for SDR Gain

Below images are for illustrative purposes only and were not shot with SDR Preview.

A very bright scene: **SDR Gain -9dB**

A scene with moderate brightness: **SDR Gain -6dB**

A not-bright scene or darker scene: **SDR Gain -4dB**

A dark scene or outside in the evening or at night: **SDR Gain -2dB**

The basic concept of SDR Gain is the following:

- if you want to emphasize the brightness of the scene, you should lower the SDR Gain. -> HDR becomes brighter.
- if you want to emphasize the darkness of the scene, you should raise the SDR Gain. -> HDR becomes darker.

The relation between SDR Gain and exposure for HDR shooting is illustrated by below diagram.

SDR Gain and Exposure for HDR Video

After becoming familiar with SDR Gain adjustment for HDR contents creation, you can use SDR Gain for HDR image expression.

PXW-FX9 (with firmware V3.0 or higher)

The basic menu settings for HDR shooting with SDR Preview:

Menu			Value
Project	Base Setting	Shooting Mode	HDR
	HDR Setting	VF SDR Preview	On
		SDR Gain	-6dB (modify to fit the scene)
Paint	HDR Paint Setting	HLG Look	Live
Monitoring	Gamma Display Assist	Setting	On

Additionally, if you want to adjust the colour reproduction:

Menu			Value
Paint	Matrix	Setting	On or Off (select as it is for SDR)
		Adaptive Matrix	Off (effective if; Paint > Matrix > Setting: On)
		Preset Matrix	On (effective if; Paint > Matrix > Setting: On)
		Preset Select	BT.709 (effective if; Paint > Matrix > Setting: On)
		(the other Matrix settings): (modify if needed)	
	Multi Matrix	(all Matrix settings): (modify if needed)	

ILME-FX6 (with firmware V2.0 or higher)

The basic menu settings for HDR shooting with SDR Preview

Menu			Value
Project	Base Setting	Shooting Mode	Custom
		Target Display	HDR (HLG)
	HDR Setting	VF SDR Preview	On
		SDR Gain	-6dB (modify to fit the scene)
Paint	Base Look	Select	HLG Live
Monitoring	Gamma Display Assist	Setting	On

PXW-Z280 or PXW-190 (with firmware V4.0 or higher)

The basic menu settings for HDR shooting with SDR Preview:

Menu			Value
Project	HDR Paint Setting	HLG Look	Live
LCD/VF	Gamma Display Assist	Setting	On
System	Base Setting	Shooting Mode	HDR
	HDR Setting	Rec/Out	HDR(HLG) or HDR (S-Log3)
		LCD/VF SDR Preview	On
		SDR Gain	-6db (modify to fit the scene)

Additionally, if you want to adjust the colour reproduction:

Menu			Value
Paint	Matrix	Setting	On or Off (select as it is for SDR)
		Adaptive Matrix	Off (effective if; Paint > Matrix > Setting: On)
		Preset Matrix	On (effective if; Paint > Matrix > Setting: On)
		Preset Select	ITU-709 (effective if; Paint > Matrix > Setting: On)
		(the other Matrix settings)	(modify if needed)
	Multi Matrix	(all Multi Matrix settings)	(modify if needed)

Notes

- SDR Preview is designed for [HDR (HLG), Live Look] and [HDR(S-Log3)].
- The colour gamut of the HDR (HLG or S-Log3) is BT.2020. Its colour reproduction characteristics are converted to BT.2020 from BT.709 that is created by the matrix menu settings for SDR video.
- The Zebra settings (MENU > LCD/VF > Zebra) should be adjusted for the internal recording video, applicable only for PXW-Z280 and Z190.

SDR Preview is a simplified application of "SR Live for HDR" technology for camcorders. HDR video shot with SDR Preview can be used as an "SR Live for HDR" videos.

Regarding "SR Live for HDR", please refer to Pro.Sony/HDR