

nanoFlash

What Makes It Unique?



nanoFlash



- A mature Video Recorder with professional features
- An extremely versatile recorder; MOV, MXF, MPG
- The nanoFlash is frequently enhanced, with free firmware updates, features based on users' input.
- All normal frame rates plus "True" frame rates
1080p23.976, 24, 25, 29.97, 30
1080i50, 59.94, 60
- No 1080p50, 59.94, 60, not possible on single HD-SDI
- 720p50, 59.94, 60
- 720p23.976, 24, 25, 29.97, 30 (No playback in nano)

Codec Quality



- Uses Sony XDCam 4:2:2 codec module
Same as used in Sony PDW-700 and PDW-F800
- Exceptionally high quality, low-noise codec, 8-Bit
- Lower noise, and more efficient than Apple ProRes
- Extensive Bit-Rates and Quality Options
SD: 3, 4, 5, 6, 7, 8, 9, IMX 30, IMX 40 and IMX 50
HD 4:2:0 : 18, 35 Mbps (8, 9, and 10 coming soon)
HD 4:2:2 Long-GOP: 50, 80, 100, 140, 180 Mbps
HD 4:2:2 I-Frame Only: 100, 140, 180, 220, 280 Mbps
(I-Frame Only 100 Mbps not recommended)
HD 4:2:2 Long-GOP 100 Mbps highly recommended

Bit-Rates



- The nanoFlash records at the selected Bit-Rate, regardless of the frame rate.
- 220 Mbps is always 220 Mbps in the nanoFlash
- This goes a long way to explain why the nanoFlash images are of such high quality.
- Another reason is that, when using an 8-Bit Camera, recording to 8-Bit instead of 10-Bit, is more efficient
- Apple ProRes would need to record at 275 Mbps 10-Bit to match 220 Mbps 8-Bit Recording
- Compare 1080p24: 8-Bit 140 Mbps ~ ProRes HQ 10-Bit

Effective Bit-Rates



- Apple ProRes HQ versus nanoFlash 220 Mbps

Target Bit-Rates:	Apple ProRes HQ	nanoFlash
1080p24.....	<u>176 Mbps</u>	<u>220 Mbps</u>
1080p25,50i.....	184 Mbps	220 Mbps
1080p30,60i.....	220 Mbps	220 Mbps
720p24.....	<u>88 Mbps</u>	<u>220 Mbps</u>
720p25.....	92 Mbps	220 Mbps
720p30.....	110 Mbps	220 Mbps
720p50.....	184 Mbps	220 Mbps
720p60.....	220 Mbps	220 Mbps

Codec Comparisons



- The Sony XDCam 4:2:2 codec is widely supported.
- The nanoFlash files drag and drop onto ProRes timelines, if desired. Many NLE's are supported
- Codec Noise (Based on our internal tests)
 - Sony XDCam Codec Lowest in Noise
 - True Apple ProRes Higher in Noise
 - Other ProRes Codecs Even Higher in Noise
 - (Please run your own tests for confirmation)
- Long-GOP/I-Frame Only, “.MOV” / “MFX” / MPG

Sony F3 + nanoFlash



- Sony F3 + nanoFlash = Stunning Images
- Sony F3 = Exceptionally Low Noise Camera
- Sony F3 + nanoFlash: Codec does not have to compress the noise, thus producing Stunning Images
- Only 8-Bit, but very low noise codec excels
- Perform your own tests!
- Do not use nanoFlash to record S-Log, use Cinegammas instead of S-Log.
- Gemini 4:4:4 is an ideal recorder for the Sony F3

Key Features



- Smallest, Lightest, Lowest Power, Pro Recorder
- Easiest to mount on a camera
- Very Rugged, Silent, No Fan
 - Works at 99,200 feet, over 30,000 meters, -59C, -75F
 - Works in very high ambient temps, 80C
Works at internal temp of 100C, fails at 105C
 - Withstands serious vibrations in helicopters
- Small 4 ounce battery will power it for about 3 hours
- 6 to 19 Volt DC Power accepted, less than 6 watts
- Low cost of ownership (Batteries, Mounts, Cards)
- Uses low cost CompactFlash cards, not 600x cards!

Professional Features



- 3:2 Pulldown Removal, 2:2 Pulldown Removal
- On-Screen Tally, E to E Direct, Timecode Embedding
- Records true progressive from Progressive Segmented Frame (Most cameras output PSF)
- Pre-Record Buffer
- Time-Lapse
- Over and Under-Cranking
- Loop Recording
- Loop Playback, Cue to Frame on Playback
- Many Triggering Options

Audio / Timecode



- HD-SDI Audio is normally used
Supports up to 8 Channels
- Analog Audio input is via Stereo 3.5mm mini-jack
One Channel Balanced, Mic/Line, 24 Bit/48K
Two Channel Unbalanced, Mic/Line, 24-Bit/48K
Perfect for recording “Tape Out” from a mixer
- Stereo Headphone/Line Level Output, 3.5mm
- On Screen Audio Level Meters for two channels
- Embedded Timecode, Internal Timecode, Jam-sync
- LTC timecode Input via Hirose Connector

Recording Times



- Automatically Spans Cards (Advances to next card)
(Starts recording on next card when one fills up)
- Work with 128 GB Cards
- Uses 133x to 600xPlus cards, but 600x cards not required. Wide range of qualified cards
- Up to 10 Hours 40 Minutes at Broadcast Quality
(50 Mbps, Long-GOP Sony XDCam 4:4:4 Footage)
- Up to 2 Hours at 280 Mbps!
- Can Record for Days in SD Mode!
- Supports “Hot Swapping”

Applications



- Record from HDMI or HD/SD-SDI cameras
- Extends the life of tape based cameras
- HDX900 is greatly enhanced by the nanoFlash
- Used by NBC-Universal with F35 on Steadicam
- Great for Trade Shows, simple, excellent quality playback (used by Canon for their trade shows)
- Used by Indie Filmmakers, Production Companies, and others that want the ultimate in image quality
- Columbia Pictures, Battle: Los Angeles, nanoFlash used for all action shots (Major Hollywood Film)

Size

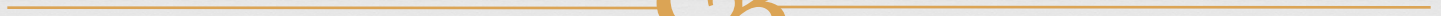


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- Convergent Design provides live, knowledgeable support 24/7, every day of the year
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- We listen and try to implement customer's requests
- Mature Product; the features necessary to do professional work have already been implemented
- Field Proven: Over 4000 in the field, most used for professional applications
- Not Version 1.0!

Questions



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