



ARRI ALEXA Workshops: Camera Functionality



Part 1: The Gear



ALEXA Models - Present & Future

Original

Moving Forward

ALEXA

ALEXA

ALEXA M

ALEXA XT

ALEXA Plus

ALEXA XT M

ALEXA PLUS 4:3

ALEXA XT PLUS

ALEXA Studio

ALEXA XT Studio



Main Stats - original ALEXA

- S-35 Bayer-mask CMOS sensor
 - Fast rolling shutter for increased fill factor
 - Dual drivers on each photosite for ...
- 800 ISO, 14-stops Dynamic Range (+7/-7)
- 2880 x 1620 (2160 in 4x3)
 - Capturable resolution*
- 0.75 -- 60.000 fps
 - 60 - 120fps option*
- Output Options
 - ARRIRAW, Uncompressed HD, ProRes, DNxHD
- HD color viewfinder
- User-friendly interface
 - Like using an iPod!
 - Never more than three steps in Menu



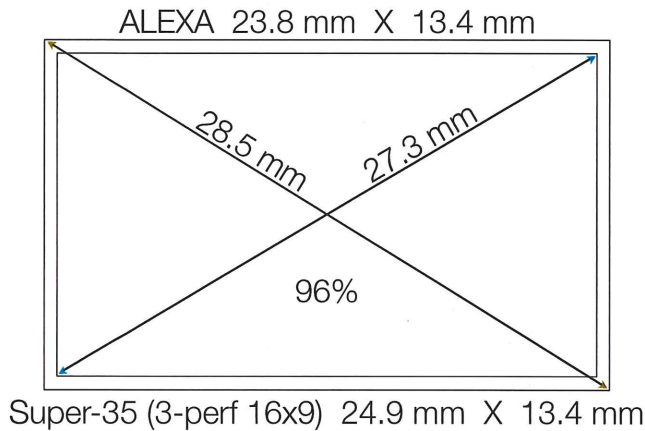
Main Stats - What's new with ALEXA XT

- 4:3 S-35 sensor
Extraction for anamorphic or 16:9 or any other proper 35mm frame
- Record all formats internally to new media
XR Capture Drives replace SxS
ARRIRAW, ProRes, DNxHD
- 0.75 - 120 fps
High speed recording included
120 fps even in ARRIRAW
- Behind-Lens IRND
8 strengths drop-in filters
- New PL Lens Mount
Less weight, LDS data contacts
- Improved EVF mount
- Quieter fan



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Sensor Size (16x9 HD)



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Sensor Sampling - Bigger & Smaller

Sensor Resolution	Image Area	Image Circle	Capture Format
2880 x 1620	23.76 x 13.365 mm	27.26 Ø	ARRIRAW 16:9, HD Output, ProRes 16:9 HD, DNxHD
2868 x 1612	23.661 x 13.229 mm	27.11 Ø	ProRes 16:9 2K
2880 x 2160	23.76 x 17.82 mm	29.70 Ø	ARRIRAW 4:3
2868 x 2150	23.661 x 17.738 mm	29.57 Ø	ProRes 2K 4:3

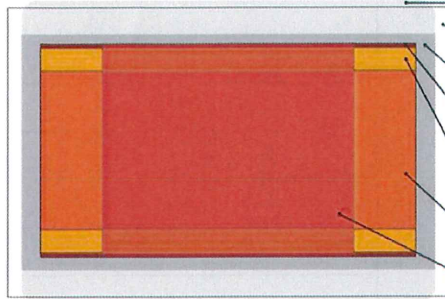
16:9 HD = 1920x1080, 2K = 2048 x 1152

4:3 2K = 2048 x 1536

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Active Image Area - 16x9 HD

Sensor Mode: 16:9, Recording Resolution: HD
ALEXA, ALEXA Plus, ALEXA Plus 4:3, ALEXA M and ALEXA Studio

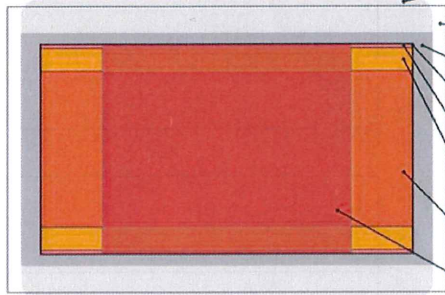


- Surround View Optical Viewfinder (Studio only, 1.38:1)
26.14 x 19.0 mm / 1.029 x 0.748", ø: 32.32 mm / 1.272"
- Sensor Size 3392 x 2200 Photosites (1.54:1)**
27.98 x 18.15 mm / 1.102 x 0.715", ø: 33.352 mm / 1.3123"
- Surround View EVF-1/MON OUT 3168 x 1782 Photosites (1.78:1)
26.14 x 14.70 mm / 1.029 x 0.579", ø: 29.99 mm / 1.181"
- ARRIRAW, ProRes HD, DNXHD, Frameline ARRI 1.78**
2880 x 1620 Photosites (1.78:1)
23.76 x 13.37 mm / 0.935 x 0.526", ø: 27.26 mm / 1.073"
- Frameline ARRI 1.85** 2880 x 1558 Photosites (1.85:1)
23.76 x 12.85 mm / 0.935 x 0.508", ø: 27.01 mm / 1.063"
- Frameline ARRI 2.39 Flat** 2880 x 1206 Photosites (2.39:1)
23.76 x 9.95 mm / 0.935 x 0.392", ø: 25.76 mm / 1.014"
- Frameline ARRI 2.39 Scope 2x** 1936 x 1620 Photosites (1.195:1)
15.97 x 13.37 mm / 0.629 x 0.526", ø: 20.83 mm / 0.820"



Active Image Area - 16x9 2K

Sensor Mode: 16:9, Recording Resolution: 2K
ALEXA, ALEXA Plus, ALEXA Plus 4:3, ALEXA M and ALEXA Studio

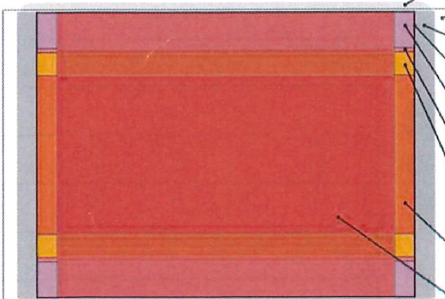


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26.14 x 19.0 mm / 1.029 x 0.748", ø: 32.32 mm / 1.272"
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27.98 x 18.15 mm / 1.102 x 0.715", ø: 33.352 mm / 1.3123"
- Surround View EVF-1/MON OUT 3168 x 1782 Photosites (1.78:1)
26.14 x 14.70 mm / 1.029 x 0.579", ø: 29.99 mm / 1.181"
- ARRIRAW 2880 x 1620 Photosites (1.78:1)**
23.76 x 13.37 mm / 0.935 x 0.526", ø: 27.26 mm / 1.073"
- ProRes 2K, Frameline ARRI 1.78** 2868 x 1612 Photosites (1.78:1)
23.66 x 13.30 mm / 0.931 x 0.524", ø: 27.14 mm / 1.069"
- Frameline ARRI 1.85** 2868 x 1550 Photosites (1.85:1)
23.66 x 12.79 mm / 0.931 x 0.504", ø: 26.90 mm / 1.059"
- Frameline ARRI 2.39 Flat** 2868 x 1200 Photosites (2.39:1)
23.66 x 9.90 mm / 0.931 x 0.390", ø: 25.65 mm / 1.009"
- Frameline ARRI 2.39 Scope 2x** 1926 x 1612 Photosites (1.195:1)
15.89 x 13.30 mm / 0.626 x 0.524", ø: 20.72 mm / 0.816"

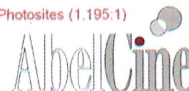


Active Image Area - 4x3

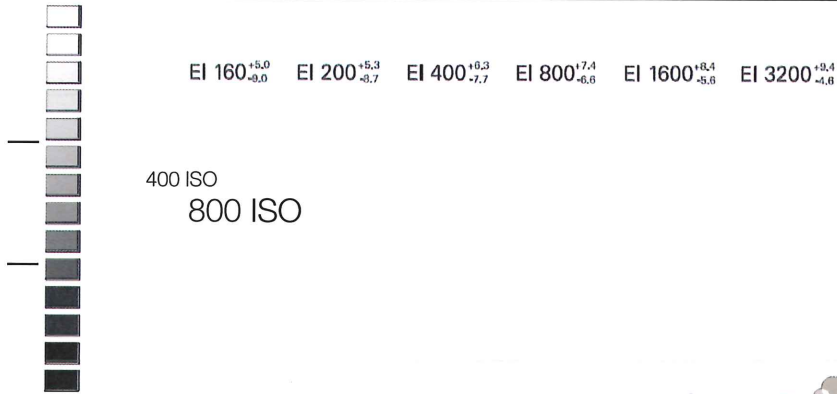
Sensor Mode: 4:3, Recording Resolution: 2K
ALEXA Plus 4:3, ALEXA M and ALEXA Studio



- Surround View Optical Viewfinder (Studio only, 1.38:1)
26.14 x 19.0 mm / 1.029 x 0.748", ø: 32.32 mm / 1.272"
- Sensor Size 3392 x 2200 Photosites (1.54:1)**
27.98 x 18.15 mm / 1.102 x 0.715", ø: 33.352 mm / 1.3123"
- Surround View EVF-1/MON OUT 3168 x 2160 Photosites (1.47:1)
26.14 x 17.82 mm / 1.029 x 0.702", ø: 31.64 mm / 1.246"
- ARRIRAW 2880 x 2160 Photosites (1.33:1)**
23.76 x 17.82 mm / 0.935 x 0.702", ø: 29.70 mm / 1.169"
- ProRes 2K, Frameline ARRI 1.33** 2868 x 2150 Photosites (1.33:1)
23.66 x 17.74 mm / 0.931 x 0.698", ø: 29.57 mm / 1.164"
- Frameline ARRI 1.78** 2868 x 1612 Photosites (1.78:1)
23.66 x 13.30 mm / 0.931 x 0.524", ø: 27.14 mm / 1.069"
- Frameline ARRI 1.85** 2868 x 1550 Photosites (1.85:1)
23.66 x 12.79 mm / 0.931 x 0.504", ø: 26.90 mm / 1.059"
- Frameline ARRI 2.39 Flat** 2868 x 1200 Photosites (2.39:1)
23.66 x 9.90 mm / 0.931 x 0.390", ø: 25.65 mm / 1.009"
- Frameline ARRI 2.39 Scope 2x** 2570 x 2150 Photosites (1.195:1)



Dynamic Range



Signal Record Options - original ALEXA

- ARRIRAW
12-bit Uncompressed RAW File
2880x1620 10G/min

- Uncompressed HD
10-bit 4:4:4 or 4:2:2 video
1920x1080 10G/min

external



- ProRes / DNxHD
12-bit comp. 4444 2G/min
10-bit comp. 422HQ (220mb) 1.3G/min
1920x1080 (2K = 10% more)

internal



32G SxS Pro card records 15min of 4444 (40fps max), 21min of 422HQ @ 24fps
64G SxS Pro card doubles record time, records 4444 up to 60fps, allows 120fps option



Signal Record Options - ALEXA XT

Records everything internally to 512G XR Capture Drives

- ARRIRAW
12-bit Uncompressed RAW File
2880x1620 10G/min

- ProRes
12-bit compressed ProRes 4444 2G/min
10-bit compressed ProRes 422 HQ 1.3G/min
1920x1080 (2K = 10% more)

- DNxHD
10-bit compressed DNxHD 220 1.3G/min



Or send Uncompressed HD out (444 or 422)



Record Capabilities - ALEXA XT

Records everything internally to 512G XR Capture Drives

Framerates

ARRIRAW 16:9 up to 120fps
 ARRIRAW 4:3 up to 96fps
 ProRes 16:9 up to 120fps
 DNxHD 16:9 up to 120fps



Mag Capacity (512G)

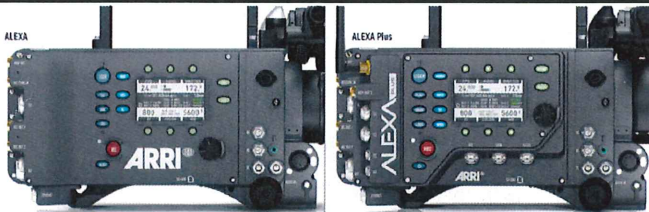
ARRIRAW 16:9	24fps = 50 min	120fps = 10 min
ProRes4444 16:9 HD	24fps = 120 min	120fps = 24 min
ProRes422HQ 16:9 HD	24fps = 180 min	120fps = 36 min
DNxHD 220 16:9 HD	24fps = 180 min	120fps = 36 min



Tour of the Menus



ALEXA Plus Features



- Lens Data (LDS) NOW INCLUDED IN ALL ALEXA XT CAMERAS
- Integrated wireless lens control receiver (ARRI & CMotion compatible)
- Additional monitoring and R/S ports
- Camera telemetry data (roll, pitch, yaw)



ALEXA Plus 4:3 Features



- Full 4:3 sensor mode NOW INCLUDED IN ALL ALEXA XT CAMERAS
- Otherwise exact same thing as ALEXA Plus
- Moving forward, replaced by ALEXA XT Plus



ALEXA Studio Features



- Optical viewfinder
- Spinning mirror shutter (eliminates any rolling shutter artifact)
- 4x3 S-35 (silent aperture) sensor for full anamorphic lens coverage
- Internal ND filter
- Includes anamorphic monitoring & high speed options
(NOW INCLUDED IN ALL ALEXA XT CAMERAS)



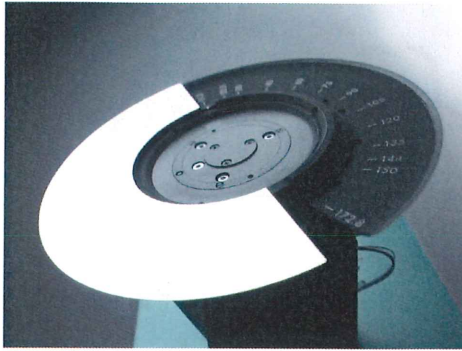
Optical Viewfinder

- What the lens sees
- Natural motion, color & contrast
- No power required
- Critical focus judgement
- Framelock & basic indicators
- 435 & ARRICAM compatibility
- 2x or 1.3x anamorphic compatible
- EVF option



Spinning Mirror Shutter

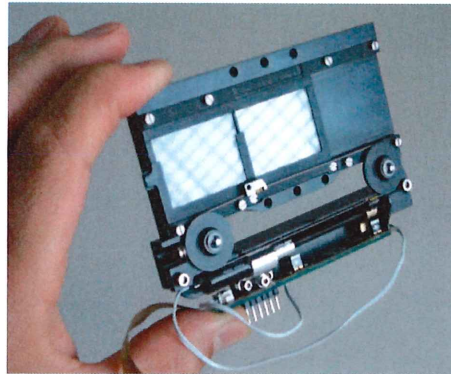
- Sends image to optical viewfinder
- 11.2 - 180 degrees
- Easy switch to electronic shutter
- Eliminates Rolling Shutter artifact
 - Reset cycles while shutter blocks sensor
 - Effective Global Shutter readout



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Internal ND Filter (ALEXA Studio only)

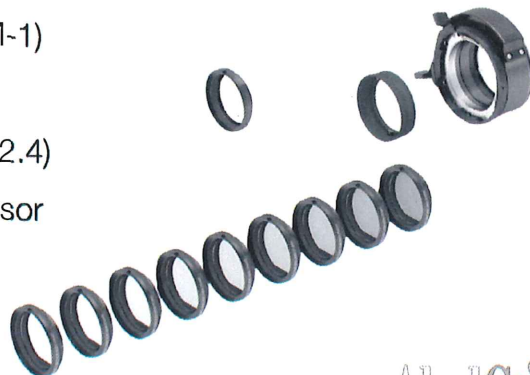
- Clear & ND1.3 (4 1/3 stops)
- Darkens sensor, not viewfinder
- Blocks IR pollution (1/2 strength)
- Control from EI menu
- Internally sealed



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Behind-The-Lens ND Filters

- In-camera Filter Module (IFM-1)
- For ALEXA XT cameras
- Eight strengths (ND .3 - ND 2.4)
- IR absorptive for ALEXA sensor



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ALEXA M Features



- Split sensor head from camera body
- EVF and some powered accessories can mount to the sensor head
- Functions similar to ALEXA Plus 4:3
- Designed for stereo imaging and remote work



Kitting (Standard Accessories)

- BP-12 (19mm Studio), BP-13 (15mm Studio)
- Adapter for older bridges
- Adapter for video baseplates
- Viewfinder w/extension, mount, short & long cables
- Top handle, extension
- AC power supply



ARRI ALEXA Accessories

- RCU-4
- ALURA 18-85 T2.8
- ALURA 45-250 T2.8
- ALURA 15.5-45 T2.8
- ALURA 30-80 T2.8
- ARRI wireless lens control system



AbelCine ALEXA Accessories

- HDx35 B4/PL Optical Adapter - ADAPTS ENG LENSES
- UniBob Universal Power Breakout Box
- Universal Juicebox



600W
POWER
UP TO
24V
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Third Party Accessories - current ALEXAs

- Codex OnBoard M or S Recorder
- S.two OB-1 Recorder
- Astrodesign HR-7502-A Recorder
- Convergent Design Gemini 4:4:4 Recorder
- cineFlow cineTake Recorder



External ARRIRAW
recorders will no
longer function with
ALEXA XT cameras!!

- C-Motion lens control system

- Nexto 2525-UDF

- 5x5

DOWNLOAD
STATION

- AA BATT
- FAST

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Third Party Accessories - ALEXA XT

- Codex Vault
- Codex Capture Drive Transfer Station
- Codex Capture Drive Dock (USB 3.0)
- C-Motion lens control system
- Nexto 2525-UDF

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ARRI ALEXA Workshops: Camera Functionality



Part 2:
Image Control



HD Video Signals

- REC709 - STANDARD FOR MONITORS HAS LIMITED RANGE
- LOG-C - USE THIS
MOST OPTIONS IN POST



Log-C v. REC709



Log-C

- Full Dynamic Range of the sensor
- Wide color gamut (Film Matrix off)
- ARRISCANned film match (Film Matrix on)



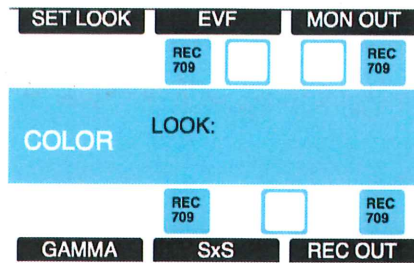
REC709

- Less than eights stops of Dynamic Range
- Broadcast-legal color gamut
- WYSIWYG



LUTs and LOOKs

- ARRI LUT Generator
- ARRI LOOK Files



Monitoring & Exposure Techniques

- Frameline Generator
- Image Zoom
- False Color Mode
- Waveforms 101
- Framegrabs

What	Signal Level	Color	Color
White clipping	100% - 99%	red	
Just below white clipping	99% - 97%	Yellow	
One stop over medium gray (Caucasian skin)	56% - 52%	pink	
18% medium gray	42% - 38%	green	
Just above black clipping	4.0% - 2.5%	blue	
Black clipping	2.5% - 0.0%	purple	



ARRI ALEXA Workshops: Camera Functionality



Hands On:
Test Shooting



ALEXA

* CAN ONLY USE 4G SD CITED *
HARDWARE
LIMITATI

BACKFOCUS

4:3 SENSOR ALEXA READS OUT 16x9

DUST - CLOSE IRIS DOWN POINT TOWARD
SOMETHING WHITE, WILL SEE
DUST SPECS

- WILL SHOW DUST THAT MAY NOT SHOW
UP BY EYE

SHIMS - BACKFOCUS, GENERALLY SHOULDN'T
NEED TO MESS WITH

SENSOR IS MOUNTED TO PL MOUNT
TO ~~ACCOM~~ ACCOMMODATE FLEX

AUDIO IN - LINE IN ONLY

CAN USE SPL3 GRIP + ~~PL~~ PLUG

24V 3 PIN FISHER

CRYSTAL WILL HOLD TC SYNC FOR 8 HOURS

- WILL LOOSE TC AFTER A MINUTE OR TWO IF BATT REMOVED
- POWER 24V CAMERA
UPCONVERTS 14V BATT TO 24V
- MONITOR SHOULD HAVE LOOP-THRU BECAUSE OF ONLY 1 OUTPUT ON CAMERA
- ETHERNET - CAN USE TO ACCESS MENUS VIA COMPUTER + CONTROL A LITTLE BIT
 - HOOK UP + USE BROWSER TO ACCESS CAMERA SETTINGS
 - CAN UPDATE FIRMWARE
- OUTPUTS - CAN USE EXT RECORDERS
CAN USE AS ARRI RAW OUTPUT
CAN BE HD UNCOMPRESSED OR ARRI RAW
- SYNC IN - NOT IMPLEMENTED, CAN'T GEN W

H: - SPEED^{IS} OPTION - HAVE TO LICENSE
GOES TO 120 FPS
- OURS DOES 60

SXS LITE INDICATES CARD TO RECORD TO

- USE BUTTON TO SWITCH
- DOES NOT SWITCH CARDS AUTOMATICALLY

4:4:4 PRO-RES - 28 MIN ON 64G CARD

PRO-RES PROXY (BLU-RAY QUALITY) 200 MIN

64G HI-SPEED CARD 1000 MB./SEC

EYEPiece - DO NOT EXPOSE TO FULL SUN

MAYBE ABLE TO USE 535 EYECUP

- CAN HOT PLUG VF

LOMO PLATE - UNDERSLUNG OR STEADYCAM

DOWNLOAD POCKET GUIDE

ALL ALEXA HAVE SAME SENSOR

2880 x 1620 → USES FULL CHIP + DOWNSAMP

FOR DESIRED RES

- C 800 ASA EQUAL AMOUNT OF

HIGHLIGHT + SHADOW DETAIL

800 IS IN THE MIDDLE

- 14 STOP RANGE (LATITUDE)

- 800 7.4 STOP UP + 6.6 DOWN

REC SETTING

- MAY NOT NEED IR FOR ND9 + BELOW

ABOVE ND9 IR IS RECOMMENDED

W/O IR COLORS MAY BE EFFECTED.

LOOK AT MATERIALS

- DIFF'T MATERIALS + COLORS REFLECT IR DIFF

- MAYBE CASES WHERE IR IS NEEDED

FOR ND3-9 RANGE.

S < S REC - LOG C - ALWAYS USE THIS
DCIP3 - PROJECTOR?

REC 709 - MONITOR STND
8 - STOPS

- RECORD IN LOG C

- USE REC 709 FOR MONITOR OUTPUT

10 OR 12 BIT REC REGARDLESS OF SETT

★ LOGC GIVES YOU MORE TO WORK WITH

PRORES 4-4-4 LOGC 12 BIT REC STND

ARRI RAW IS OVERKILL FOR US, WILL BE
HARD TO WORK WITH

WEBSITE - LOOK GENERATOR - CAN
PLUG IN INFO + WILL MAKE LUT
TO CONVERT TO APPROP. PROGRAM

★ ALWAYS USE 'LEGAL' NOT 'EXTENDED'




- CAN USE 'LOOK' TAB TO MAKE LOOK FILE FOR USE ON CAMERA

- CAN LOAD LOOK TO MONITOR OUT
LOOK ONLY WORKS W/ REC 709
CAN NOT APPLY TO LOGC

* - IF REC IN REC 709, CAN APPLY
LOOK FILE WHICH WILL DESTRUCTIVELY
REC LOOK TO REC 709 FOOTAGE

- LOOK FILE IS NOT A LUT BUT
CAN BE CONVERTED + USED ON
PRO RES FOOTAGE

- LOOK INFO IS EMBEDDED IN FILE HEADER,
CAN BE EXTRACTED + MADE INTO LUT

- NEED SOFTWARE FOR THIS  SILVER STACK
IS AN EXAMPLE.

WHAT IS RAW VS LOG-C

ALEXA HAS CMOS SENSOR. ANY SENSOR JUST PICKS UP BRIGHTNESS DIFF'T. FILTERED THRU RGB FILTER THIS IS THE RAW DATA. JUST REC EACH PIXEL INFO.

★ DIGITAL FACTS BOOK ★
BIBLE OF DIGITAL INFO

MENUB > REC OUT > (FPS sets sensor FPS)
IT WILL ONLY ALLOW OUTPUT THE SAME AS SENSOR. ONLY NEED FOR EXT REC WHICH WILL NOT TAKE ODD FRAMERATES

★ GENERALLY LEAVE OFF

VARIFLAG - SAY YOU WANT TO SHOOT 6FPS BUT EXTERNAL REC MAY NOT UNDERSTAND REDUCE DATA RATE. VARIFLAG WILL FLAG FOOTAGE SO REC WILL PROCESS CORRECTLY. WILL NOT USE W/ 5KS -

1.5G SL upto 30 FPS 422

1.5G DL upto 60 FPS 422

ANY
REC OUT IS HD 10 BIT

PRO RES IS 4444 IS 12 BIT

OTHER PRO RES IS ALL 10 BIT

BUT ALL ARE MORE COMPRESSED THAN
REC OUT.

4444 IS ALPHA CHANNEL

DL IS DUAL LINK USING 2 CABLES
TO SAME REC FOR HIGH DATA RATE.
NEED A REC CAPABLE OF THIS

ALEXA TECH 6-13-13

ORIG LINE UP

ORIG ALEXA CALLED EVO

M - MODULAR FOR JIBS, STEADICAM, ~~ETC~~ ETC

PLUS - LENS DATA, LENS HOOK UPS, EXTRA MONITOR

PLUS 4:3 - USES ENTIRE SENSOR, COULD DO ANAMORPHIC

STUDIO - 4:3 FULL, OPTICAL VF + MIRROR SHUTTER

ALL ORIGINAL ALEXAS ARE CROPPED 4:3 SENSOR
CROPPED TO 16x9

NEW LINE UP (NOT OUT YET)

CAN UPGRADE OLD CAM TO XT EXCEPT FOR ^{SENSOR} 16x9 CAM

ALEXA - SAME

XT - PROPRIETARY MEMORY CARD, LENS PINS,

XTM - MODULAR

XT PLUS -

XT STUDIO

ALL XT GO TO 120 FPS

MOST COMMON IS BASE ALEXA

PHOTOSITE = PIXEL

S-35 BAYER-MASK CMOS SENSOR - DUAL DRIVERS
- EACH PHOTOSITE

800 ISO 14.5 STOPS DYNAMIC +7/-7

2880 x 1620 (2160 in 4:3)

75-60, FPS (60-120 OPTION)

OUTPUT - ARRIRAW, UNCOMP HD, PRORES
DN x HD

HD VF

MENU (LIKE, POD, NEVER MORE THAN 3 STEPS)

DOES HAVE ROLLING SHUTTER

- CASCADES OR ROLLS ACROSS THE SCREEN
- GLOBAL SHUTTER TAKES IMAGE ALL AT ONCE, HAS TO HAVE A DRIVER FOR EACH 'PHOTOSITE' REALLY IMPOSSIBLE TO DO W/ THAT MANY PIXELS. WILL ALSO REDUCE SENSITIVITY (FILL FACTOR)

SCANS ACROSS → IMAGE

DUAL DRIVERS UNIQUE TO ARRI - ONE IS TWEAKED FOR HIGH LEVELS, ONE FOR LOW
ALLOWS 14 STOPS

1

SOME REFER TO ARR1 AS 3K BECAUSE OF LOOK AROUND ON VF. ANYTHING OUTSIDE RETICLE IS NEVER REC.

99% OF ALEXA SHOOTING IS PRO RES OR DN+L PRO RES IS PROB MOST PREVENT
REC RIGHT TO S+S

ONE OF BEST VF OUT THERE.

XT UPDATES

- 4:3 S-35 SENSOR - ANAMORPHIC OR 16+
- REC ALL FORMATS TO INTERNAL XR CAPTURE DRIVE
REPLACES S+S 512G XR DRIVE ~ \$4000
- XR NEEDS EXT READER \$3000 - \$12000
- ALL DO 120fps EVEN IN ARRIRAW
- 8 BEHIND LENS IRND FILTERS.
- NEW LIGHTER PL MOUNT, DATA PINS
- FAN QUIETER.

ALEXA 23.8mm x 13.4
S-35

71

SxS - ALEXA CAN ONLY USE
SxS PRO CARDS

- CANNOT USE CHEAPER CARDS SxS-1
OR NEW SxS PRO PLUS

- DISCONTINUING SxS PRO, SO
WILL HAVE TO UPGRADE CAMERA SOON,
OR REC TO EXT MEDIA.

ISO DOES NOT CHANGE, SENSOR DOES NOT CHANGE
MODE, ISO IS RELATIVE, JUST HOW MUCH
NOISE YOU'RE OK WITH.

800 IS SWEET SPOT, A LOT OF PEOPLE
WILL RATE AT 400 - LITTLE LESS NOISE

GOING TO 160 WILL GIVE CONTRASTY LOOK

REC 709 STANDARD CAN HANDLE 2 STOPS
OVER

ALEXA DEALS W/ DYNAMIC RANGE DIFFT
THAN OTHERS. ALL CAMERAS DEAL
WITH IT DIFF'T. ARRRI MORE
FILM-LIKE. A LOT OF CAM
WILL GIVE YOU 7 STOPS +/-
(FOR EXAMPLE) NO MATTER WHAT
150

ARRIRAW - 12 BIT UNCOMP RAW
RIGHT OFF SENSOR 2880 x 1620
- 10 G/MIN

UNCOMP HD - 10 BIT 4:4:4 OR 4:2:2
1920 x 1080 10 G/MIN

FOR ORIG ALEXA HAVE TO DO EXT REC
CODEX IS MOST COMMON

PRO RES - DN x HD

12 BIT COMP 4444 ~~2.6 G/MIN~~ 2 G/MIN

★ 10 BIT COMP 422HQ (220Mbps) 1.3 G/MIN

1920 x 1080 (2K = 10% MORE DATA RATE)

★ MOST COMMON

32G 5x5 PRO CARD - 15 MIN 4444 40fps

21 MIN 422HQ @ 24fps

64G 5x5 PRO^{PRO} DOUBLES REC TIME

- REC 4444 UP TO 60fps

- ALLOWS 120fps

64G 5x5 PRO HAS HIGHER DATA RATE

★ CAMERA WILL PROTECT YOU, TELLS YOU IF CARD CAN'T HANDLE ★

XT CAM

- CAN NOT SEND ARRI RAW OUT OF CAM
ONLY INTERNAL

XR BAY HAS 5x5 ADAPTER. HAS EXACT ABILITIES OF

MOST OF TIME YOU WILL SHOT 23.97

THEY STILL WANT THAT FOR BROADCAST

CAN SCREW YOURSELF VERY EASILY W/ FPS

- IF YOU CHANGE FPS FOR SENSOR
BUT DON'T SET PROJECT, REC OUT
ETC THE SAME, IT WILL DISABLE
AUDIO

AUDIO- LINE IN ONLY

VIDEO FEED 3

SxS

VF

SDI OUT

MON ~~VIDEO~~ OUT

THESE CAN ALL BE SET
TO DIFF'T FPS, ETC
CAN GET CONFUSING

~~IN GENERAL YOU WANT TO~~

SENSOR

PROJ

THESE HAVE TO MATCH
OR AUDIO WILL BE DISABLED

REC OUT

MON OUT

THESE CAN BE DIFF'T

SO SET PROJ FPS + LEAVE IT. CHANGING
SENSOR FPS WILL CAUSE PLAYBACK TO BE
SLO-MO, ETC.

REC TO SxS

- DOES NOT SPAN CARDS. STOPS AT END
OF CARD #1

- DUAL REC WILL REC SAME FOOTAGE TO
BOTH CARDS.

-ALEXA + S < S ROCK SOLID - NEVER CORRUPTS
MITCH ONLY GOT CORRUPTION BY PULLING
CARD OUT DURING REC + ONLY LOST 2 FRAMES

FALSE COLOUR MODE - EXPOSURE
GUIDE.

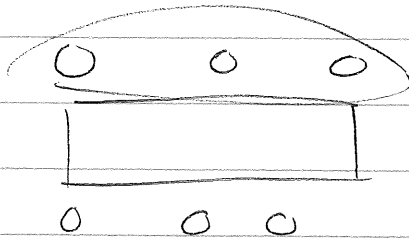
SYSTEM

→ ~~HA~~ SENSOR TEMP - HIGH HUMIDITY
RUNS SENSOR HOTTER TO BURN
OFF MOISTURE

POWER

- WILL AUTO SWITCH TO HIGHER VOLTAGE
- HAS CAPACITOR TO STORE POWER FOR PROPER
SHUTDOWN + FILE CLOSING

172.8° SHUTTER 24fps CAN SHOOT ANYWHERE
IN WORLD + GET NO FLICKER.



USER BUTTONS
ARE DUPLICATED
ON USER SIDE

TRAINING ON WEBSITE

EXPO + EVENTS → FILTERS + DIGITAL CINE

FORMAT ND ~~AND~~ EXTENDED FILTERS VERY
GOOD

IR COMES FROM WHEN IT'S HOT + EFFECTS
COLOR, ND IR FILTER OUT IR.

ISSUE WITH CMOS. CCD DID NOT HAVE
PROBLEM. DOES NOT EFFECT FILM.

ABEL HAS SMALL \$250 POWER SUPPLY
FOR ALEX.

HXTON WILL LAST ~ 2 HOUR
BATT

LOOK FILES - APPLIES ^{PACT} SETTINGS TO IMAGE
- BUILT IN ARRI LCC - NOT QUITE LOG C
IN BETWEEN - GOOD FOR MON OUT
SO IT DOESN'T LOOK WASHED OUT

LUT GENERATOR - TAKES LOOK UP FILES + MAKES
LUT FOR TARGET POST SYSTEM.

LOAD LUT, APPLIES LOOK FILE TO FOOTAGE

ACES - ATTEMPT AT STANDARDISING LUT,
LOOK UP, ETC

- LOG C IS ARRI'S FORMULA BUT LOTS OF OTHERS ARE SIMILAR..
- RAW IS RAW
- LOG C IS NEXT BEST THING TO GIVE YOU MOST OPTIONS IN POST
- A COMMON SETUP MIGHT BE
 - USE LOOK GENERATOR TO ~~BE~~ GET YOUR LOOK CLOSE
 - LOAD LOOK IN CAM
 - REC LOG-C TO S&S
 - USE LOOK FOR MON OUT + ~~TO~~ AS A FULL

24

~~GENERATED~~ @

FOR POST USE LOOK TO GENERATE LUT FOR POST.

POST

PRO RES EASIEST TO WORK WITH

- 3 SENSOR CAM - PRISM w/ SENSOR FOR EACH COLOR
SENSOR IS BAW LIGHT SENSING DEVICE.
- BAYER MASK SENSOR - NO PRISM
 - ON 1 SENSOR (B+W)
 - COLOR FILTER OVER SENSOR THAT FILTERS EACH ~~COLOR~~ PIXEL
- PRETTY MUCH EVERYTHING FROM PHONES TO ALEXA USE THIS

COLOR SPACE

- COLOR MODEL (RGB, CMYK, ETC)
- COLOR GAMUT

~~POPULAR SPACES~~

REC709 - GAMUT FOR HD TV - WHAT HD TV CAN DISPLAY. USED FOR TV, BROADCAST, BLU RAY, ETC

- THE STANDARD
- LIMITED COLOR GAMUT + DYNAMIC RANGE
- FILM HAS MUCH LARGER GAMUT

* LOG-C HAS MUCH LARGER GAMUT

- VIDEO DATA STORED IN LOG FORMAT CORRESPONDS TO FILM NEGATIVE

(LOG-CINEON - CINEON WAS KODAK FILM SCAN)

- MAXIMIZES DYNAMIC RANGE

REC709 - 8 STOPS DYNAMIC RANGE

- CAMERA LOOK FILE IS LIKE SCENE FILE

- LOOK IS IN CAMERA

- ~~LUT~~ LUT IS FOR EXTERNAL USE.

- CAN SEND LOOK TO MON OUT, EVF +
REC LOG-C

- OR REC + BURN IN THE LOOK.

- CAN PLAYBACK LOG-C W/ LOOK APPLIED
ON CAMERA

-

WHEN MAKING LOOK ON COMPUTER KEEP IN
MIND THAT IT'S ONLY AS GOOD AS
MONITOR SETUP.

- HAVE TO USE DPX FILE FOR LOOK
PROGRAM

- PRINTERLIGHTS - RGB COLOR WHEEL

- COLOR DECISION - STANDARD 3 WHEEL
COLOR CORRECTION

CAN NOT USE SDHC CARDS

PUT LOOK FILE IN PROPER DIR
ON SD CARD

ON CAMERA IN COLOR MENU REC 709
MUST BE ACTIVATED TO APPLY
LOOK.

HOME DISPLAY WON'T INDICATE
THAT A LOOK IS APPLIED TO
S x S

LIVE GRADE BY ~~PALE FORT~~ POMFORT

- USE BLACKMAGIC KDLINK PRO
 - CAN SAVE LOOKS TO IT
 - + WILL LOAD ^{VIA} USB
- USE A LOOK BOX FOR MONITOR
- CAN USE LOG C FROM CAM
 - + INTERACTIVELY APPLY + GENERATE LOOKS

LUT GENERATOR - ONLINE ONLY

ASC CDL IS STANDARD WORKFLOW

① POST

COPY ENTIRE CARD TO OWN FOLDER

SHOTPUT PRO - WILL MAKE MULTIPLE COPIES
TO DIFF'T DRIVES

POMFORT SILVERSTACK SET

AVID USE AVID MEDIA ACCESS

MC 6

LUT BUDDY - FCP 7

APPLY LUT TO CLIPS OR TIMELINE

ARC WILL ONLY OUTPUT ~~DPX~~ ^{DPX}, TIF,
JPG, NO PROGRESS, H264, ETC.

- WILL HAVE TO HAVE SOMETHING LIKE
DAVINCI TO EVEN MBS W/ RAW
RESOLVE

CAN IMPORT ARRIRAW INTO FCP 7
BUT IT'S PAINFUL TO EDIT.

NOT PRACTICAL

- USE GLUE TOOLS TO IMPORT
- NO FCP X

ARRIRAW

~~XXXXXXXXXX~~

NICK SHAW PLUGIN
ANTLERPOST.COM

THESE ALLOW CUTTING W/ TEMP LOOK

→ GLUE TOOLS LOG C PRORES PLUGIN

ARRIRAW

- SENSOR GATHERS LUMINANCE ONLY

→ BAYER •

→ ARI FILE, EACH FILE IS A FRAME.

- FILES ARE ABOUT 7MB EACH

ARC - ARRIRAW CONVERTOR

IF USING LOOK ON SET IT WILL BE
SAVED IN METADATA, SO CAN PULL
IT UP FROM THAT - THIS MAY ONLY
BE USEFUL FOR ARC