

RED Scarlet-W + Raven

https://www.youtube.com/watch?v=aa6ybhw_V2U

Camera Specific Features

RED identifies their camera bodies as “brains” The processing power and sensor size beneath the hood differentiates the models. While all the new DSMC2 bodies contain the Dragon sensor, the sensor size, max resolution, and data rates differ between them. There is NO image difference between the cameras at *common* resolution, compression, and settings.



The Scarlet-W features a 5K Dragon sensor that measures 25.6mm x 13.5mm with a max resolution of 5120 x 2700. It's a true Super 35 sized sensor



The Raven consists of a smaller cut of the Dragon sensor that measures 23.04mm x 10.8mm. It is slightly smaller than Academy 35 and very close to APS-C size. The Raven maxes out at 4.5K (4608 x 2161)

- Both cameras have 16.5 stops of Dynamic Range
- Both cameras shoots slow motion video with up to 300 FPS at a 2K resolution
- Both cameras can shoot simultaneous REDCODE RAW and Apple Pro-res recording
- Modularity (brains, lens mounts, in/out connectors etc are all sold separately so you can design the best package to suit your needs





BODY:

IN/OUTS, position of D-tap cable



Interface connections for power (DC IN), HDMI, 3G-SDI (HD-SDI), CTRL and SYNC ports (for Timecode and Genlock), as well as a 3.5mm microphone input and a 3.5mm line-level headphone out.

Audio

- Built in reference mics are located on front of camera
- headphone jack
- 3.5mm jack to sync with external recorder such as tascam or beachtek
- You will likely be recording audio separately with a Roland or Sound Devices recorder

STORAGE MEDIA/CODECS

RED cameras record onto SSD cards called RED mini mags and are **capable of recording in REDCODE RAW** (.R3D) Apple Pro res or Avid DNx HDR

WHAT IS REDCODE RAW?

REDCODE RAW (.R3D) is a proprietary file format that efficiently encodes measurements from a camera's digital sensor in a way that maximizes post-production capabilities.

REDCODE SETTINGS

REDCODE permits a wide range of compression settings to suit your particular storage and usage requirements. Settings are specified as file size ratios compared to an equivalent uncompressed data stream, with higher ratios denoting more compression.

Recording formats/recording times

Recording times will vary depending on settings such as resolution, frame rate and compression.

For example :

Shooting in 4K 16:9 with a frame rate of 24 fps with a compression of 5:1 you will get approximately 67 minutes of record time

If Shooting in 2.5K (WS) at 24fps with a compression rate of 5:1 you would get approximately 197 minutes of record time.

Shooting in 4K full frame RAW will get you 38 minutes or recording time.

RED has an online tool to help you calculate recording times here: <http://www.red.com/tools/recording-time>

Power On

There is an Auto Boot on Power Switch located on top of camera (identified by a white star). If the Auto Boot Toggle switch is set to On The camera turns on automatically when it is connected by the DC IN power.

- If you are powering the camera with a battery, please ensure the auto boot on power switch is off (identified by the black star). The camera will not not turn on automatically.

Fully press and hold the PWR/REC key for two (2) seconds to turn on/off. The system takes about 90 seconds to power on fully. If you have just turned off the camera please wait at least 3 seconds before powering back on.

auto-calibrate happens when camera is powering on. Please leave lens cap on while sensor is calibrating during start up.

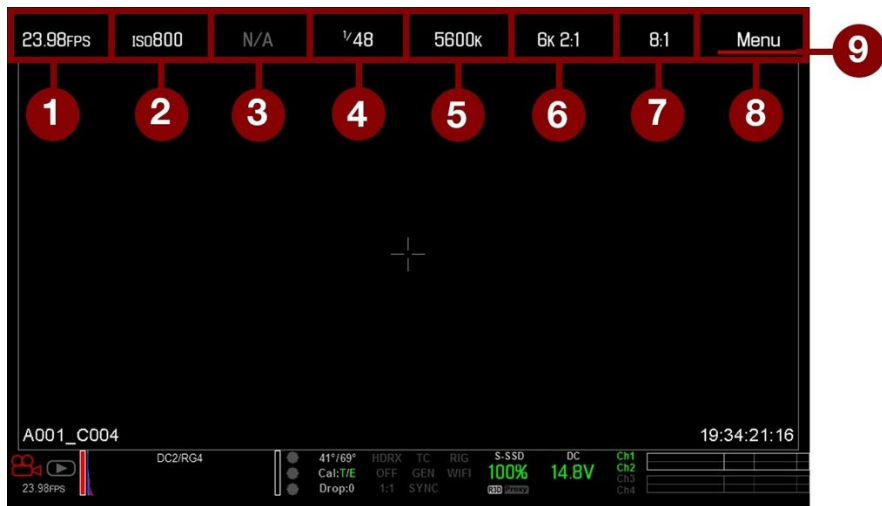
When the camera is powered on, if you fully press and then release the PWR/REC key it will toggle record start/stop – this can be problematic if you press this button for too long it will power down. For this reason we recommend using the second record button which is located on the front left hand side of the camera Button.

****1 and 2 on top/bottom of record button at front are programmable buttons****

Menu Functions

Touchscreen makes it easy to navigate

To enter advanced settings for each selection press and hold down point on touch screen until new menu opens up (eg selecting advanced on frame rate is the equivalent to Menu>Settings>Project>Frame Rate



The area up top is called the upper status row or "basic menu" it displays basic project parameters such as frame rate, aperture, ISO, shutter speed etc.

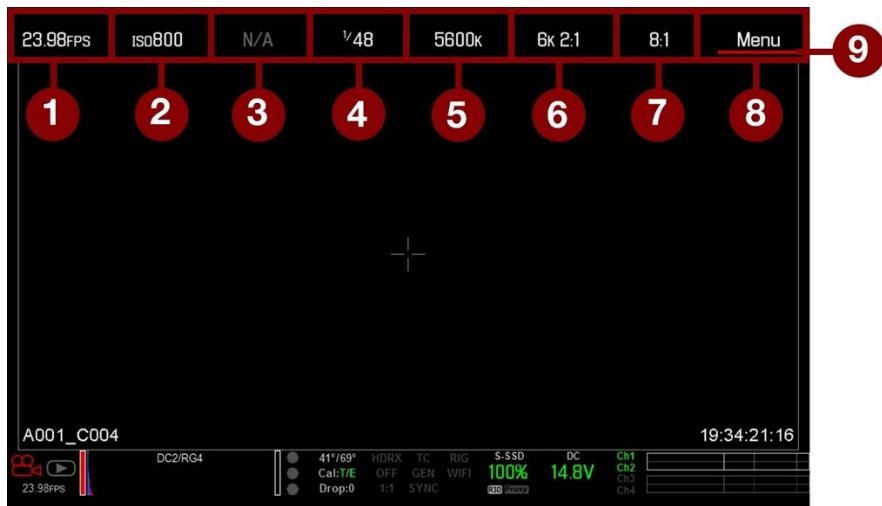
1) Frame rate: This will vary according to the resolution –

2) ISO: Red has a native ISO of 800 – it is recommended to shoot with ISO 800 whenever possible

3) Shutter Speed: shutter speed should be twice the frame rate so if you are shooting at 24fps shutter speed should be 1/48

4) White Balance: is selectable and you will see the difference between settings in real time. There is also an auto white balance button option you can access through the main menu

5) Resolution and aspect ratio: technically the camera can shoot in 5K but only at 12fps but if you shoot in 2K you can have a frame rate of all the way to 75 fps. You will notice that when you change resolutions the camera crops (eg from 5K to 2K) that is because the camera is using less of the sensor so it zooms in to enlarge that portion of the sensor and fill the frame so you may need to use a wider lense if you are shooting in lower resolutions



6) Compression:

Select the target REDCODE compression ratio for your project.

If the camera is able to achieve the target compression ratio, the compression ratio displays in white. If the camera is unable to achieve the target compression ratio, the compression ratio displays in yellow, and the camera uses the next possible compression ratio.

The current compression ratio is automatically recalculated when changes are made to the project resolution, aspect ratio, anamorphic setting, frame rate, HDRX® mode, media, or the target REDCODE compression ratio.

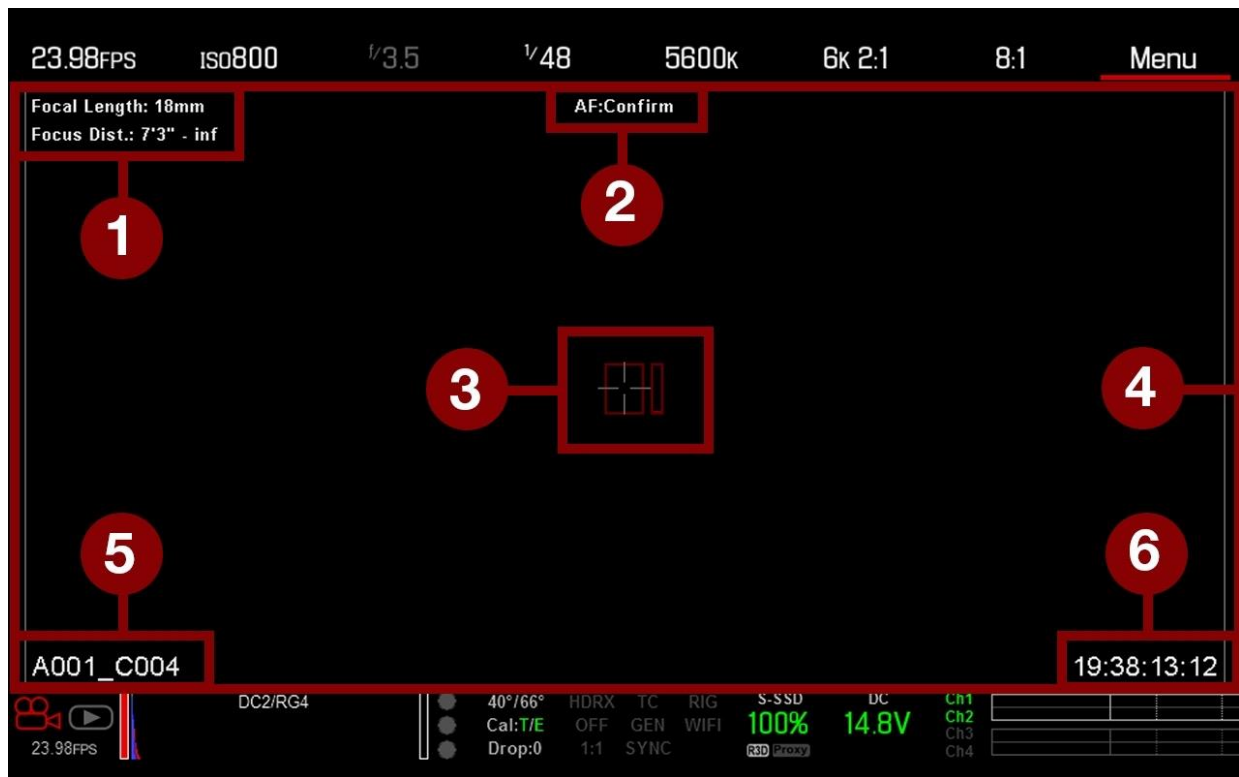
The RECODE compression affects the overall quality of the footage. A lower compression (for example: 2:1) increases the quality of the footage, while a higher compression (for example: 22:1) lowers the quality.

REDCODE range is 2:1 to 22:1. Default is 8:1.

7) Menu: there are various settings in here including where you will format your card – I will go over some initial set up configurations with you found in this menu a bit later

8) Focus: Auto or manual focus can be set on the lens itself - there are further functions related to focus in menu> settings> focus

9) Media- we recommend formatting the card in the camera (I will show you how later). Playback is also in the menu tab so you can review your clips here – you can also power down the camera in and check battery life in Power



Live Action Area

- 1) Lens Information
- 2) AF Status
- 3) Center Crosshair and Spot Focus Guide
- 4) Frame Guides
- 5) Clip Filename
- 6) Timecode Value



The bottom row is referred to as the Lower status Row. It provides access to key system information and camera values (from left to right)

1) Playback button

Camera Mode - Swipe up to toggle Motion/Stills/Playback modes- tap to enter playback mode

2)Histogram

Histogram; tap to open the Tools menu

The Histograme is used for measuring exposure. The goal posts on either sides will show a red stop light to indicate when we are losing information. So when the goal posts go red we know that we are losing image data

3) System Status Indicators Tap to open the system status menu Camera sensor and core temperature

Temperatures are indicated beside the histogram: sensor temperature and core temperature (L to R) green T and E = temperature or exposure

4) Media Status You will see how much space is left on card in SSD

5) Power Indicator how much battery life or DC power

6) Audio levels There is no internal microphone in the camera so to record audio you will need to use an external recorder- if you did hook one up you would see the levels indicated on the meters on right hand side

Initial Camera Set up

All Reset

Go to Menu >Settings >Maintenance >Restore System>Reset Defaults

Project Settings

Menu>Settings>Project

(Set up your frame rate and project time base (project time base is the rate your project will play back at)

1) Menu>Settings>Project>Format

(Here you will set resolution, aspect ratio. Based on what you selected it will show you the dimensions of the file on the bottom left hand corner.

) Menu>Settings>Project>Exposure –

gives you shutter angle or fraction that you can dial in here

CHOOSE CODEC:

17) Menu>Settings>Recording>Codec – start by selecting the recording format you want R3D or R3D and prores or just prores. Once you select the recording format it will tell you what compression ratios are available to you in that setting. You can change the resolution in this menu as well as the codec. In the bottom corner you will see the dimensions

COLOR SPACE + GAMMA CURVE

2) Menu>Image>Image Pipeline> Options

With these cameras the only mode option in camera is LegacyAffect how digital values are translated into visible tones.

You then select the Color space and Gamma Curve here in this tab. Your instructors will go more into details on what settings to select here but I just want to show you where you make the selections

I do want to point out though that in practice, gamma can be specified both in-camera and from within REDCINE-X.

In either case, the setting is embedded as metadata and does not affect the recorded data until the R3D[®] file gets converted into another format. So If newer gamma curves are released, these R3D files can therefore be re-developed using the most recent color science in post.

FORMAT MEDIA:

16) Media>Device – Under the media menu is where you can see what type of storage media (SSD) you have installed . You can format it here and eject it – it is all pretty self explanatory.

SET UP EXTERNAL MONITORS

9) Menu>Monitoring>Monitors

Here you will find tools for setting up and monitoring your display outputs whether you want to have frame guides on your screen or which kind of looks you want to have sent to your different outputs. You can control your SDI and HDMI outputs here as well as the RED LCD and ECVF outputs as well. So you can choose different LUTS to apply to your different monitors .

On topic of monitors I wanted to point out buttons on the side fo the LCD monitor/touch panel.

Button one magnify for focus

Button two produces false color – a tool for setting exposure

Up and down arrows adjust brightness of screen (does not affect recorded image)

ASSIGNABLE BUTTONS

8) Menu>Settings>Set up>Keys

here you can assign smart keys so you can control many of the common settings that you will be adjusting from the different hotkeys on your monitor or camera body

SET UP METADATA

1) Menu>Settings>Project> Slate>

This tab allows you to set up information like scene number, location etc essentially the metadata that will be attached to your files

1) Menu>Settings>Project> Slate>Project

Here you can put in your production director, DOP etc

1) Menu>Settings>Project> Slate>Camera

Here you can set up your camera ID if you are using multiple cameras you can differentiate which shot came from which camera

Accessories/Rigs

Each support system has been approved to handle the weight of each specific camera configuration. Compatible models are indicated on equipment list

- Follow Focus
- Tripods
- Monitors - HDMI and SDI out
- Matte Box

Additional Resources

Manual:

SCARLET-W

http://docs.red.com/955-0116_v7.0/REV-H/PDF/955-0116_v7.0%20Rev-H%20%20%20RED%20PS%2C%20WEAPON-SCARLET-W%20Operation%20Guide.pdf

RED RAVEN

<https://www.manualslib.com/manual/1061552/Red-Raven.html#manual>

RED's online training resources

<http://www.red.com/learn>

* Among other things there are tools on this site to help you calculate crop factor, recording time, depth of field, exposure etc <http://www.red.com/tools/recording-time>

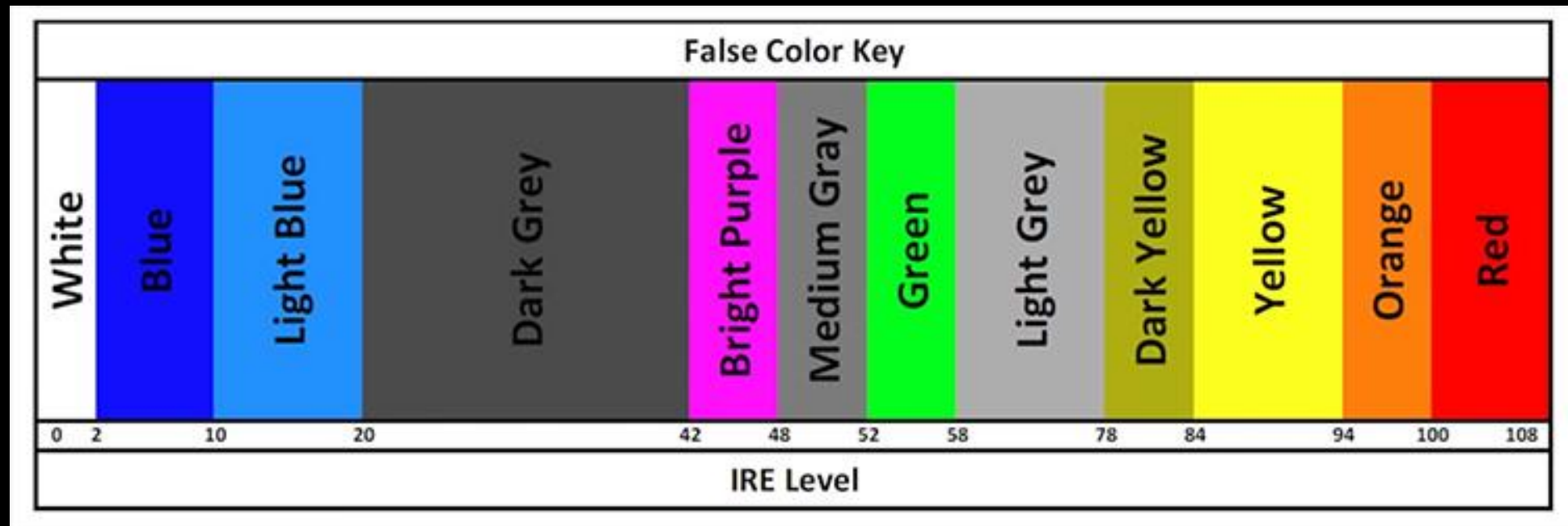
REDCINE-X PRO: RED's proprietary NLE. Download REDCINE-X PRO from

<https://www.red.com/downloads?category=Software&release=final>

Bookings

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Exposure ; on side of monitor press 2 button brings up false color (helps determine brightness values) , open aperture (feed more light) find middle grey (50 IRE)- green purple (0-10%) or red 3 colors represent IRE scale 0-100 (0 is black and 100 is clipped white) expose to the right or use histogram leaning to the right



The key to exposing quickly and accurately using false color is to focus on skin tones first. Typically, skin tones should fall in the 70 IRE range, which will appear as light grey. Once you set your exposure so that your talent's skin tone appears grey, you know the image is well exposed — at least as far as the talent is concerned. From there, you can simply scan the frame for any areas that are over or underexposed and make lighting or framing adjustments accordingly.