



FALSE COLOR

An exposure meter for DaVinci Resolve, measured in stops from your own middle grey, with the numbers printed on the picture.

VERSION	FORMAT	REQUIRES	LICENCE
1.0.0	Single .dctl file	DaVinci Resolve <i>Studio</i> 18 or newer	Free. No key, no account

Every pixel in the frame is converted to one number: how far it sits above or below middle grey, counted in photographic stops. That number picks a colour, and the colour is painted over the picture. Green means the pixel is at middle grey. Cold colours mean under. Warm colours mean over. Pink means clipped.

That is the whole idea. The rest of this manual is about making the number *true* - because a false colour map that measures the wrong thing is worse than no map at all.

The one rule. FALSE COLOR measures the signal handed to it, and nothing else. It cannot see your camera, your timeline, or your grade - a DCTL receives pixels, never metadata. So two things are on you: tell it which curve those pixels are carrying (INPUT GAMMA), and put it where you actually want to measure (its own node, at the end).

01 Install, in four steps

- 1 Put the file in the LUT folder.** On macOS that is `/Library/Application Support/Blackmagic Design/DaVinci Resolve/LUT/`. On Windows, `C:\ProgramData\Blackmagic Design\DaVinci Resolve\Support\LUT\`. A subfolder of your own is fine and keeps things tidy.
- 2 Refresh.** Project Settings → Colour Management → *Update Lists*. Or just restart Resolve.
- 3 Add it as an effect, not as a LUT.** In the Colour page, open the Effects library, find **ResolveFX Colour** → **DCTL**, and drag it onto a node. Then pick **RAIF_FALSE** from the DCTL List dropdown in the Inspector.
- 4 Give it its own node, last.** Add a serial node at the very end of the chain - after every grade, and after any Colour Space Transform or output transform. Toggle that node on and off to check exposure, and leave it off when you render.

If the controls seem to do nothing, it is almost always step 3. Right-clicking a node and choosing the .dctl from the *LUT* menu runs it with its factory defaults and shows you no controls at all - there is no Inspector panel for a LUT. You must add the ResolveFX DCTL effect. Quick test: set EXPOSURE OFFSET to `-6.0`. If the picture does not go violet, the file is loaded as a LUT.

If the colours look wrong for what you shot, it is step 4 or INPUT GAMMA. A node placed *before* your grade reports the untouched camera signal, so a face you just lifted two stops still reads dark. And log footage read as Rec.709 stretches into an impossible five-stop gap between a face and the wall behind it. Both are fixed on the next page.

02 The scale

Twelve bands. The middle one is middle grey, and it is the only green in the set - so a correctly exposed face, a grey card, or an 18% patch snaps to green and everything else falls away from it. Below grey the map runs cold; above it runs warm. The two ends are deliberately alarming.

COLOUR	STOPS FROM GREY	IRE	WHAT IT MEANS
	below -6.0	< 8.7	Noise floor. There is no picture down here, only grain.
	-6.0 to -4.0	8.7 - 15.4	Crushed. Detail exists on paper, not on a screen.
	-4.0 to -2.5	15.4 - 23.8	Deep shadow. Safe to sit here on purpose.
	-2.5 to -1.0	23.8 - 36.7	Shadow with texture. Dark skin often lands here.
	-1.0 to -0.2	36.7 - 46.2	Just under grey. A neutral grey-blue, so it reads as "nearly".
	-0.2 to +0.2	46.2 - 51.9	Middle grey. A grey card, and the anchor for everything else.
	+0.2 to +0.8	51.9 - 61.7	Just over grey. The upper half of most faces.
	+0.8 to +1.4	61.7 - 73.3	Bright skin, a lit shirt, a pale wall.
	+1.4 to +2.32	73.3 - 95.7	Highlight with detail. White fabric belongs here.
	+2.32 to +3.5	95.7 - 98.0*	Hot. Specular, practicals, sky.
	+3.5 to +4.8	98.0 - 100*	Nearly gone. Detail is thinning fast.
	above +4.8	100*	Clipped. Nothing to recover, ever.

* The last three IRE figures are capped. In stops, those bands reach roughly 134 and 196 IRE - values a Rec.709 signal has no room to carry. This is exactly why the stops scale is the more honest of the two, and why it is the default.

Stops or IRE - which to use

Stops is a camera measurement. It answers "how much light does this need", it is relative to *your* middle grey, and it keeps its meaning across log, linear and display footage. Use it while you are lighting or balancing exposure.

IRE is a signal measurement. It answers "where does this sit in the broadcast range", it maps onto a waveform monitor, and it is what a QC report speaks. Use it while you are checking delivery.

They are two rulers laid along the same picture. Switching between them with the SCALE control changes nothing about the image - only the band edges, and the numbers printed along the bar.

03 Every control, in plain words

Twenty controls, in four groups. The first group decides whether the reading is true. The rest decide how you look at it.

Reading the signal

INPUT COLOR SPACE 16 options

The gamut the pixels arriving at this node are in.

SET IT TO the gamut *at this node*. A wrong gamut shows as tones that read correctly but colour that is over- or under-saturated.

Choices: ARRI Wide Gamut 3 · ARRI Wide Gamut 4 · ACES AP0 · ACES AP1 · Blackmagic Wide Gamut Gen 5 · DaVinci Wide Gamut · Panasonic V-Gamut · REDWideGamutRGB · Sony S-Gamut3 · Sony S-Gamut3.Cine · Fujifilm F-Gamut · Rec.709 · Rec.2020 · P3-D65 · P3-D60 · P3-DCI.

INPUT GAMMA 16 options

The transfer curve those pixels are carrying, so FALSE COLOR can undo it before measuring. Get this wrong and every reading is wrong. It ships set to *Gamma 2.4*, with INPUT COLOR SPACE on *Rec.709* — a node at the end of the chain, after any transform, reading what the display is being sent.

There is no *Use timeline* entry, and there cannot be one. Resolve's Colour Space Transform can offer that because it is a ResolveFX plugin with access to the project's colour management; a DCTL is handed pixels and its own control values and nothing else. Both controls carry a tooltip saying where to look instead — Project Settings > Color Management.

SET IT TO the curve of the signal *at this node*, which is not always what you shot. After a Colour Space Transform to Rec.709, choose *Gamma 2.4* — with *Rec.709* above it — even on ARRI footage. On a raw log node with no transform in front of it, choose the camera's own log. If you are not sure, step through the options and watch the picture: the right one is the one where a face lands within a stop of grey and the shadows stop pretending to be six stops down.

Choices: ARRI LogC3 · ARRI LogC4 · ACEScc · ACESct · Blackmagic Film Gen 5 · DaVinci Intermediate · Panasonic V-Log · RED Log3G10 · Sony S-Log3 · Fujifilm F-Log · Rec.709 · sRGB · Gamma 2.2 · Gamma 2.4 · Gamma 2.6 · Linear.

Why two controls. They are set independently, exactly as in Resolve's own Color Space Transform, because a gamut and a transfer curve are separate facts about a file and footage routinely carries one without the other: V-Log already converted to Rec.709 primaries, LogC3 sitting in DaVinci Wide Gamut. Neither of those has a name on a single paired list. Note also that *Rec.709* in the gamma list is the BT.709 camera curve, not the 2.4 display curve — for a node after a CST to a Rec.709 display space you want *Gamma 2.4*.

SCALE 2 options

Whether the twelve bands are cut in stops from middle grey, or in IRE percent. See the previous page.

SET IT TO stops while lighting, IRE while delivering.

MIDDLE GREY 0.01 – 1.0, default 0.18

The linear value that counts as zero stops - the point the green band sits on. Everything else is measured as a ratio to this.

SET IT TO 0.18 and leave it, unless your house uses a different anchor. Some pipelines call middle grey 0.20; a few ACES workflows prefer 0.10. Changing it slides the whole scale, so change it once for a show rather than per shot.

EXPOSURE OFFSET -6 to +6 stops, default 0

Shifts the measurement, not the picture. At +1 the map shows you what the frame would read if you opened up one stop.

SET IT TO zero for an honest reading. Use it as a question: "if I add a stop, does the face reach green and does the window still clip?" Answer it before you move a light, not after.

Looking at it

PALETTE 4 options

Which set of colours the twelve bands are painted in.

RAIF 12 BAND - the default, and the table on the previous page. Cold below grey, warm above, grey the only green. Built so you can name a band from across the room.

CLASSIC 12 BAND - the familiar arrangement, for anyone who has been reading a monitor's false colour for years and does not want to relearn it.

MONO PLUS EXTREMES - the picture stays a greyscale picture, and only the clipped, crushed and middle-grey pixels are painted. The one to use when you need to see the *shot* and the exposure at the same time.

CONTINUOUS SPECTRUM - no bands at all, a smooth ramp. Bands turn a gentle falloff into steps; this shows the true shape of a gradient, and it is the right choice for judging a wall wash or a sky.

OPACITY 0 - 1, default 1

Blends the map back towards the original picture.

SET IT TO 1 to read exposure, 0 to check you are on the right shot, and about 0.7 when you want to see which object a band belongs to.

ISOLATE BAND 0 - 12, default 0

0 shows all bands. Any other number paints only that one band and leaves the rest of the frame as a plain picture.

SET IT TO 6 to find everything sitting just above grey, or 12 to hunt for the clipped pixels alone. Band numbers run 1 to 12 top to bottom of the table on the previous page - so 6 is the green middle-grey band.

SHOW SCALE on / off, default on

Draws the band ladder along the edge of the frame, so you can name a colour without memorising the table.

TURN IT OFF for a screen grab, or when the bar covers something you need to see.

SCALE NUMBERS on / off, default on

Prints the actual value at each band edge on the ladder - stops or IRE, whichever SCALE is set to. This is real text drawn into the frame, not a legend you have to look up elsewhere.

LEAVE IT ON. It is the difference between "that is the orange one" and "that is +2.4 stops".

BYPASS on / off, default off

Passes the picture through untouched, controls and all still loaded.

USE IT to flick between map and picture without disabling the node and losing your place.

Finding specific problems

SKIN GUIDE on / off, default off

Marks pixels that are both skin-coloured *and* sitting at the level you nominate. It gates on hue as well as brightness, so a grey card at the same exposure as a face is not flagged - only the face is.

TURN IT ON when the job is a person. It answers the only exposure question that matters on most sets, directly.

SKIN TARGET STOPS -2 to +4, default +1.0

Where you want skin to sit, relative to middle grey.

SET IT TO around +1.0 for bright, evenly lit skin; +0.3 to +0.7 for a naturalistic look; below zero for dark skin or a low-key scene. There is no correct value - there is the value your show has agreed on. Pick it once, then match every shot to it.

SKIN WINDOW STOPS 0.05 to 2.0, default 0.5

How much slack the target gets. 0.5 means half a stop either side counts as a hit.

SET IT TO 0.5 for normal work, 0.15 when matching two cameras to each other, and 1.0 when you only want to know roughly where a face landed.

SKIN HUE TOLERANCE 0.4 to 2.0, default 1.0

How wide the definition of "skin-coloured" is.

RAISE IT if a face is not being picked up - heavy tungsten, strong makeup, and very dark or very pale skin all sit further from the centre of the range. **LOWER IT** if wood, brick or a tan jacket keeps getting flagged along with the actor.

PER CHANNEL CLIP on / off, default off

Marks pixels where an individual colour channel has hit the ceiling, and shows you *which* one went. A red neon sign clips red long before the picture looks bright, and luminance alone will never tell you.

TURN IT ON for anything saturated: practicals, neon, blue sky, skin under a hard warm key. This is the failure a luminance meter is blind to.

CLIP LEVEL 0.5 to 1.2, default 0.999

The value a channel has to reach to count as clipped.

SET IT TO 0.999 for a hard digital ceiling. Lower it to around 0.95 to catch pixels that are close to gone, or if your camera's sensor rolls off early.

The reference patch

REFERENCE PATCH 4 options

Draws a known value into the frame and then measures it along with everything else. **Grey patch** lays in a single true middle grey. **Five stop ladder** lays in -2, -1, 0, +1, +2 stops as steps. **Surround border** frames the picture in middle grey, which stops a bright or dark surround from fooling your eye.

USE THE LADDER to see, in the frame you are working on, exactly what one stop looks like in this palette - then compare the face to it by eye. **USE THE SURROUND** when you are grading a dark scene on a bright desktop.

PATCH SIZE · PATCH POSITION X · PATCH POSITION Y defaults 0.12, 0.12, 0.14

How big the patch is, and where it sits, as a fraction of the frame.

MOVE IT next to the thing you are judging. A grey reference on the far side of the frame is much harder to compare against than one sitting beside the face.

The patch is a reference, not a detector. It is written through whichever curve INPUT GAMMA names and then read back through the same one, so it round-trips and lands on green no matter what you have selected. A green patch is not proof that INPUT GAMMA is right. To check that, watch the picture, not the patch.

04 Four recipes

ON SET, OR IN A FIRST PASS

Is this face exposed?

The fastest honest answer. The skin guide gates on hue as well as level, so the grey card in the actor's hand will not answer for them.

INPUT COLOR SPACE / GAMMA	the space at this node
SCALE	Stops from middle grey
SKIN GUIDE	on
SKIN TARGET STOPS	+1.0, or your show's number
SKIN WINDOW STOPS	0.5
OPACITY	0.8

MATCHING TWO CAMERAS, OR TWO TAKES

Are these the same exposure?

Narrow the window until the marking becomes fussy, then tune until both shots behave identically. Half a stop of drift that survives a wide window shows up immediately at 0.15.

SKIN GUIDE	on
SKIN WINDOW STOPS	0.15
REFERENCE PATCH	Five stop ladder
PATCH POSITION	beside the face
PALETTE	Raif 12 band

PRACTICALS, NEON, SKY, WINDOW

What is actually clipped?

Mono keeps the shot readable so you can tell *which object* went, while the per-channel marking tells you which record went - the failure that a luminance reading cannot see at all.

PALETTE	Mono plus extremes
PER CHANNEL CLIP	on
CLIP LEVEL	0.999, or 0.95 to catch near misses
ISOLATE BAND	12, to see only the clipped pixels

Is this falloff smooth?

Twelve bands turn a smooth gradient into stairs, which is useful for reading levels and useless for reading shape. The continuous palette shows the real curve of the falloff, including the band you would otherwise never notice.

PALETTE	Continuous spectrum
SHOW SCALE	on
SCALE NUMBERS	on
REFERENCE PATCH	Surround border

05 How it compares

Resolve ships a false colour of its own, and Time in Pixels' Nobe plugin is the best-known third-party one. Both are good. They are built around a different question, though: *where does this signal sit in the broadcast range*. FALSE COLOR is built around *how much light does this need*, which is the question you can act on with a light in your hand.

	FALSE COLOR	RESOLVE BUILT-IN	NOBE
Scale in stops from middle grey	yes	IRE	IRE
Your own middle grey as the anchor	yes	–	–
Values printed on the map itself	yes	–	–
Preview a change before you make it	yes	–	–
Input curve you select, not infer	9 curves	via placement	via placement
True 18% grey written into the frame	yes	–	–
Five-stop reference ladder in frame	yes	–	–
Skin marking gated on hue, not just level	yes	–	–
Per-channel clip, showing which channel	yes	–	–
Isolate a single band	yes	–	–
Mid-grey surround border	yes	–	–
Camera and monitor brand emulations	–	some	many
Floating window on a second monitor	–	–	yes
Works in the free Resolve	–	yes	–
Price	Free	included	paid

Compared against what each tool documents publicly at the time of writing. Features change - check theirs before you decide. Nobe is a trademark of Time in Pixels; DaVinci Resolve of Blackmagic Design. Neither is affiliated with this tool.

What that buys you, in one paragraph

A monitor emulation tells you what an ARRI viewfinder would have shown. That is genuinely useful when you are matching a look someone approved on set. But it will not tell you how far a face is from where you want it, and it will not answer the question you ask twenty times a day: *how much more light*. FALSE COLOR reads in stops, against a grey point you set, with the numbers on the screen and a real reference laid into the frame - and it marks skin by hue rather than guessing from brightness. Everything on that list is aimed at one thing: turning a colour into a decision you can act on without leaving the picture.

06 What it will not do

A DCTL is a shader. It runs once per pixel, on the GPU, with no memory of any other pixel and no access to anything outside the frame. That is a real ceiling, and it is more honest to draw it here than to let you find it later.

No percentages or counts	It cannot tell you "8% of this frame is clipped". Counting pixels requires reading the whole frame, and a shader sees one pixel at a time.
No spot meter	There is no readout under the cursor. A DCTL receives no mouse position. Use the reference ladder and compare by eye.
No second window	It paints into the frame it is given. It cannot open a floating panel on another monitor - a shader has no window.
No automatic colour space	There is no metadata at a node, only pixels. INPUT COLOR SPACE and INPUT GAMMA have to be controls, and they have to be right.
No verified brand emulations	Band edges matching a specific camera or monitor are not claimed, because they have not been measured against the hardware. Values that are published can be entered by hand with MIDDLE GREY and SCALE.
No key, which is why it is free	A DCTL cannot read a machine id, phone home, or store anything. Rather than sell a text file on the honour system and pretend there is a lock on it, FALSE COLOR is simply free.
Studio only	The free Resolve does not run DCTLs at all. This is Blackmagic's line, not ours.