# VQPLA

## VideoQ Picture Levels Analyzer

*Training Presentation*

*September 2025*

**VQPLA** is one of **V**ideo**Q** **P**roductivity **T**ools modules

VQPT is a suite of software modules
for advanced video processing workflow

http://www.videoq.com/vqpt.html

www.videoq.com/vqpla.html

www.videoq.com

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# Who needs VQPLA

VideoQ VQPLA is a unique software tool which reads **media file** and generates machine-readable **JSON Report**.

Each VQPLA report contains comprehensive set of **objective data** describing the SDR/HDR video content **statistics** and **temporal behavior** in terms of its **colors** and **light levels**.

VQPLA Report includes large arrays aka '**timeline profiles**' of video frame critical Light Levels (LL):

- **FALL** (Frame Average Light Level)
- **CLL** (Content Light Level), *often defined as the current frame brightest pixel LL*

Thus, VQPLA provides **model data sets** for **AI analysis** of video content libraries, e.g. of digitized film and tape archives. VQPLA timeline profiles can be used as 'video DNA' for content tracking and recognition tasks.

VQPLA reports provide not only for **human operators decisions**, but also for **automated** post-processing, such as machine-learning, workflow orchestration and optimization

Results of VQPLA analysis form a firm ground for far-going technical and commercial decisions.

For **humans** VQPLA prints the results and plots the profiles on **PNG images**,
but **robots**, of course, prefer "raw" digital data in JSON format 

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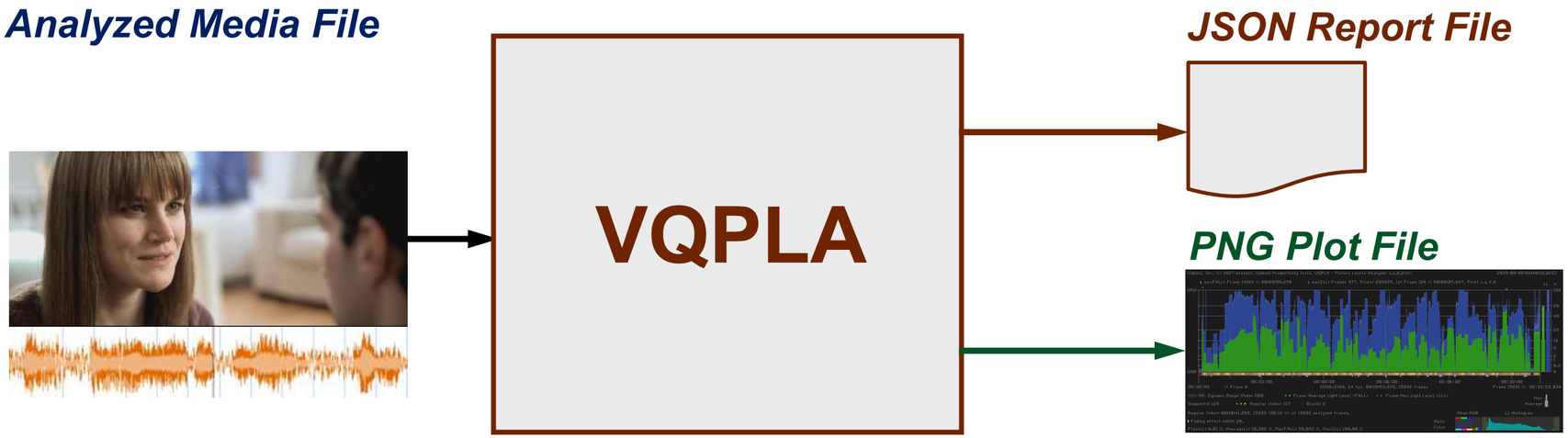
# VQPLA Workflow

VQPLA workflow is straight-forward and can be easily automated using common programming tools, e.g. BAT scripts.

Note that if the command line does not specify full path to the output JSON report, it is created automatically. Report is co-located with the input media file and the file name is auto-generated following the input file name. In any case the output plot file name *.PNG always follows the report file name *.JSON.

Multiple VQPLA instances may run simultaneously, analyzing several media files in parallel. The only limitation is host computer performance.

**V**ideo**Q** **P**icture **L**evels **A**nalyzer



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# VQPLA Usage Example

In partnership with Pacific Crest Labs VideoQ participated in production and measurements of HDR and SDR test clips used by the Consumer Technology Association and International Electrotechnical Commission for the determination of consumer displays power consumption, in particular with relation to USA Energy Stars program.


**VQPLA** reports played a pivotal role in the test procedures. VQPLA measured several parameters related to image brightness, colors intensity and expected display light output, such as **MaxRGB** = max(R,G,B) and **LOP** (Light Output Power).

The most informative was LOP parameter, which correlates well with the normalized power consumption of OLED displays. It also correlates (not so strongly) with the normalized power consumption of controlled dimming LCD displays. In case of non-adaptive backlit LCD displays LOP value varies, but display power consumption may remain constant.

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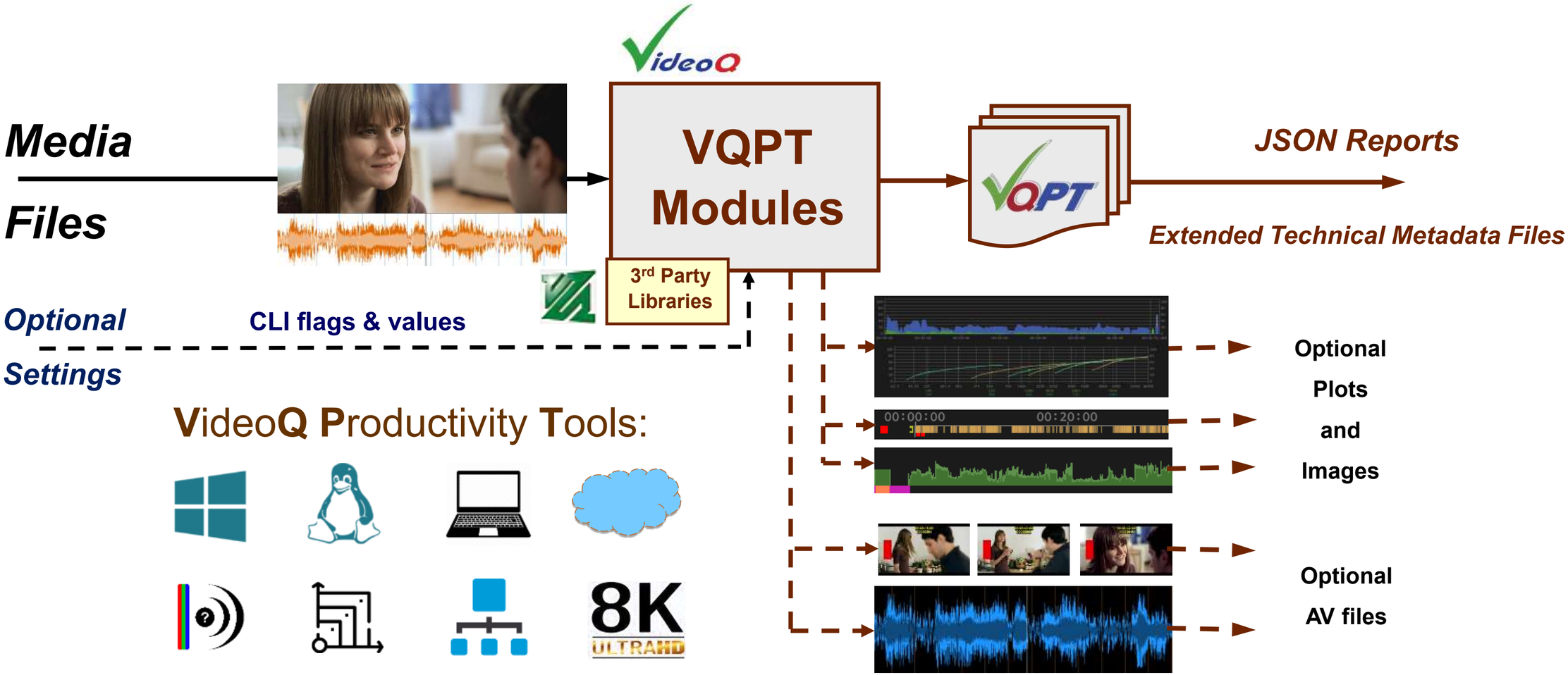
# VQPLA and VQPT Automated Workflow

**V**ideo**Q** **P**icture **L**evels **A**nalyzer
is one of **VQPT** suite program modules used for AV Content Tests and Processing



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# VQPLA Features 1

- VQPLA software tool can be used for production, post-production and distribution applications.
- VQPLA is a portable Windows/Linux CLI program for on premises and cloud computing.

  *Portable here means that VQPLA does not require installation of any additional software.*
- It reads SDR/HDR media file and measures each video frame and global parameters.
- VQPLA detects **edit cut** and **cross-fade** points, i.e. boundaries of **video segments**, and calculates **timeline profiles** of FALL and CLL **light levels** (LL).
- VQPLA sorts detected **video segments** by **types**:

  ***Regular Video***, ***Black***, ***Credits On Black***, ***Test Pattern***
- Finally, VQPLA creates **Report** in machine-readable **JSON** format suitable for **large databases** and **Plot** image in **PNG** format suitable for **human operator**.

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# VQPLA Features 2

1. VQPLA **Report** in JSON format includes general info header, input file media info, and test conditions sections, as well as the comprehensive set of measured/detected parameters:

- **Video Data Levels Statistics**:
  Average YUV and RGB Video Data Levels, Color Palette Type, Video Data Volume, Chroma Data Volume, U Data Volume, V Data Volume, 8 bit Histograms, 5 Statistical Quantiles (min, lower, median, upper, max).
- **Light Levels (LL) Statistics:**
  Floor LL, Average LL, MaxFALL, and MaxCLL values, *measured on **regular video** type frames*.
- VQPLA Report includes **FALL** and **CLL timeline profiles** data arrays at 1 frame interval.

2. VQPLA **Plot** image shows **FALL** and **CLL timeline profiles**, **level statistics bargraphs**, **segment types statistics** and **segments boundaries** (edit cuts and cross-fade edits) timeline positions, as well as other useful markers and values.

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# Input Media File Formats and Parameters

- VQPLA reads media file, containing one or several video stream(s)
- Currently supported input **media file** extensions:
  - AVI, M2V, M2TS, MKV, MOV, MP4, MPG, MXF, TS, WEBM (with or without audio stream)
- VQPLA can open **numbered image file sequences** with the following extensions:
  - BMP, DPX, EXR, JP2K, JP2, JPEG, JPG, PNG, TIF, TIFF, WEBP
- All video codecs supported by ffmpeg 
- Any duration longer than 4s
- Any bit depth from 8b to 16b per component
- Any frame size and frame rate
- Any bitrate

*Note that if the media file contains **several video streams** VQPLA will analyze only the **first one**.*

***Other stream types** (audio, data, text, etc.) can be present, but are skipped.*

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# Usage Info Helper

Launching VQPLA executable without any parameters, brings up the following help message:

**vqpla [-noplot] [-notlp] [-r float] [-DRMS] [-SRMS] -i inFilePath [-o] or [-o outFilePath]**

Order of flags and parameters is mandatory and cannot be changed

[-noplot] option disables .PNG Plot File output (not recommended)

[-notlp] option disables Timeline Profile section within JSON Report file (not recommended)

[-r FrameRate] option: set default frame rate, e.g. -r 23.976; applied only in absence of file metadata

[-DRMS] option: Dynamic Range Mode Switch

-DRMS = -sdr : Standard Dynamic Range Mode (default)

-DRMS = -pq : HDR-PQ Mode (PQ = Perceptual Quantizer)

-DRMS = -hlg : HDR-HLG Mode (HLG = Hybrid Log Gamma)

if [-DRMS] is not present, Dynamic Range Mode = AUTO (using file metadata, default = SDR)

[-SRMS] option: Signal Range Mode Switch:

-SRMS = -nr : Narrow (aka Broadcast) Y,R,G,B Range is used, e.g. 8 bit levels from 16 to 235

-SRMS = -fr : Full (aka CG) Y,R,G,B Range is used, e.g. 8 bit levels from 0 to 255

if [-SRMS] is not present, Signal Range mode = AUTO (using file metadata and YUV/RGB color space info)

inFilePath: Path\FileName.Ext, for sequences: 1st measured frame file name, e.g. ABC001234.TIFF

[-o outFilePath] option specifies full Path\FileName.Ext

If [-o] is present but outFilePath omitted, outFilePath = inFilePath.vqpla.json

Optional Plot File Path always follows outFile Path (*.png matching *.json)

If Path\FileName contains spaces or special characters use double quotes

Report and Log files are in multi-lingual UTF-8 encoding format

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# JSON Report Structure 1

## Top Level Report Structure

| Name | Value |
|---|---|
| (0) **"header"**: {} (17) | |
| (0) **"inputMediaFileInfo"**: {} (2) | |
| (0) **"testConditions"**: {} (17) | |
| (0) **"segments"**: {} (4) | |
| (0) **"videoLevelsStatistics"**: {} (14) | |
| (0) **"lightLevelsStatistics"**: {} (13) | |
| (0) **"timelineProfiles"**: {} (5) | |

## Header Section

| Name | Value |
|---|---|
| (0) **"header"**: {} (17) | |
| 1."operatingSystem" | "Windows" |
| 1."programShortName" | "VQPLA" |
| 1."programName" | "Picture Levels Analyzer" |
| 1."version" | "1.2.2" |
| 1."copyright" | "VideoQ, Inc. (c) 2017-present" |
| 1."license" | "DEMO License to Gencom Technologies. License validity: 25Sep2025" |
| 1."reportDateTimeUTC" | "2025-08-06T00:21:51.746Z" |
| 1."reportDateTimeLocal" | "2025-08-06T01:21:51.746" |
| 1."localTimeZone" | "UTC+00:00, GMT Daylight Time" |
| 1."elapsedTime_ms" | "240371" |
| 1."elapsedTime_TC1000" | "00:04:00.371" |
| 1."applicationFolder" | "c:\- - Work_CLion_Projects\VQPLA\cmake-build-release\" |
| 1."launchedFromFolder" | "c:\- - Work_CLion_Projects\VQPLA\cmake-build-release\" |
| 1."inputMediaFileName" | "D:\V\Mexicana.mp4" |
| 1."reportFileNameMode" | "Specified in command line" |
| 1."reportFileName" | "Mexicana.mp4.vqpla.json" |
| 1."plotFileName" | "Mexicana.mp4.vqpla.png" |
| (0) **"inputMediaFileInfo"**: {} (2) | |

## InputMediaFileInfo > GeneralFileInfo Section

| | |
|---|---|
| (0) **"inputMediaFileInfo"**: {} (2) | |
| (1) **"generalFileInfo"**: {} (26) | |
| 2."mediaContentType" | "singleVideoFile" |
| 2."fileFullPath" | "D:\V\Mexicana.mp4" |
| 2."fileFolder" | "D:\V\" |
| 2."fileName" | "Mexicana" |
| 2."fileExtension" | "mp4" |
| 2."title" | "na" |
| 2."containerStreamID" | "0" |
| 2."encodedDateTimeUTC" | "na" |
| 2."taggedDateTimeUTC" | "na" |
| 2."lastModificationDateTimeUTC" | "2016-05-04T07:13:20Z" |
| 2."lastModificationDateTimeLocal" | "2016-05-04T08:13:20" |
| 2."writtenDateTimeUTC" | "2024-07-13T00:37:41Z" |
| 2."writtenDateTimeLocal" | "2024-07-13T01:37:41" |
| 2."countOfVideoStreams" | "1" |
| 2."countOfAudioStreams" | "1" |
| 2."countOfImages" | "0" |
| 2."countOfTexts" | "0" |
| 2."containerFormat" | "MPEG-4" |
| 2."containerCodecID" | "isom" |
| 2."fileSize_byte" | "41856374" |
| 2."fileDuration_ms" | "415123" |
| 2."fileDuration_TC1000" | "00:06:55.123" |
| 2."fileOverallBitRateMode" | "VBR" |
| 2."containerHeaderSize_byte" | "235625" |
| 2."containerFooterSize_byte" | "0" |
| 2."essenceDataSize_byte" | "41620749" |
| (1) **"videoStream"**: {} (44) | |

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# JSON Report Structure 2

## InputMediaFileInfo >VideoStream Section

- (0) **"inputMediaFileInfo":** {} (2)
  - (1) **"generalFileInfo":** {} (26)
  - (1) **"videoStream":** {} (44)

| | |
|---|---|
| 2."title" | |
| 2."streamID" | "1" |
| 2."encodedDateTimeUTC" | |
| 2."taggedDateTimeUTC" | |
| 2."streamDuration_ms" | "415080" |
| 2."streamDuration_TC1000" | "00:06:55.080" |
| 2."streamDuration_NDFTC" | "00:06:55:02" |
| 2."streamDuration_DFTC" | |
| 2."streamStart_TC1000" | |
| 2."framesCount" | "10377" |
| 2."frameRateMode" | "Constant" |
| 2."frameRate" | "25.000" |
| 2."scanType" | "Progressive" |
| 2."scanOrder" | |
| 2."originalScanOrder" | |
| 2."frameWidth" | "960" |
| 2."frameHeight" | "540" |
| 2."colorSpace" | "YUV" |
| 2."colorMatrix" | |
| 2."colorPrimaries" | |
| 2."colorRange" | |
| 2."transferCharacterstics" | |
| 2."pixelDataFormat" | "yuv420p" |
| 2."chromaSubsampling" | "4:2:0" |
| 2."bitsPerComponent" | "8" |
| 2."streamSize_byte" | "34978735" |
| 2."bitRateMode" | "VBR" |
| 2."averageBitRate_bps" | "674159" |
| 2."bitRateMaximum_bps" | "3160000" |
| 2."codecID" | "avc1" |
| 2."codecCC" | |
| 2."codecInfo" | "Advanced Video Coding" |
| 2."encodingFormat" | "AVC" |
| 2."encodingFormatVersion" | |
| 2."encodingFormatCommercialNa | "AVC" |
| 2."encodingProfile" | "Main@L3" |
| 2."encodingGOP" | "M=1, N=50" |
| 2."encodingReferenceFrames" | "4" |
| 2."encodingCABAC" | "Yes" |
| 2."exposureIndexISO" | |
| 2."masteringDisplayColorPrimaries | |
| 2."maxMasteringDisplayLightLevel | |
| 2."maxFrameAverageLightLevel_nt | |
| 2."maxContentLightLevel_nt" | |

## TestConditions Section

- (1) **"videoStream":** {} (44)
- (0) **"testConditions":** {} (17)

| | |
|---|---|
| 1."samplingIntervalSelection" | "Default" |
| 1."samplingInterval_frames" | "1" |
| 1."samplesCount" | "10377" |
| 1."firstAnalyzedFrameNumber" | "0" |
| 1."firstAnalyzedFrameTC1000" | "00:00:00.000" |
| 1."lastAnalyzedFrameNumber" | "10376" |
| 1."lastAnalyzedFrameTC1000" | "00:06:55.040" |
| 1."colorSpace" | "YUV" |
| 1."colorMatrixSelection" | "Auto" |
| 1."colorMatrixSelected" | "BT.709" |
| 1."videoDataRangeSelection" | "Auto" |
| 1."videodataRange" | "Narrow" |
| 1."dynamicRangeModeSelection" | "Auto" |
| 1."dynamicRangeModeSelected" | "SDR" |
| 1." targetDeviceMaxBrightness_nit" | "100" |
| 1."includeTimeLineProfileData" | "YES" |
| 1."createPlotFile" | "YES" |

- (0) **"segments":** {} (4)

## Segments Section

- (0) **"testConditions":** {} (17)
- (0) **"segments":** {} (4)
  - 1."segmentsCount" "92"
  - (1) **"segmentsByType":** {} (4)
    - (2) **"Regular":** {} (2)
    - (2) **"Black_Frame":** {} (2)
    - (2) **"Credits_On_Black":** {} (2)
    - (2) **"Test_Pattern":** {} (2)
  - (1) **"segmentsByNumber":** {} (92)
  - (1) **"fadingEdits":** {} (2)
- (0) **"videoLevelsStatistics":** {} (14)

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# JSON Report Structure 3

## Segments >SegmentsByType  Section

```
(0) "segments": {} (4)
    1."segmentsCount"                          "92"
  (1) "segmentsByType": {} (4)
    (2) "Regular": {} (2)
        3."segmentsOfTheTypeCount"             "92"
        3."durationOfTheType_TC1000"           "00:07:00.520"
    (2) "Black_Frame": {} (2)
        3."segmentsOfTheTypeCount"             "0"
        3."durationOfTheType_TC1000"           "00:00:00.000"
    (2) "Credits_On_Black": {} (2)
    (2) "Test_Pattern": {} (2)
  (1) "segmentsByNumber": {} (92)
  (1) "fadingEdits": {} (2)
```

## Segments >SegmentsByNumber  Section

```
(1) "segmentsByNumber": {} (92)
  (2) "1": {} (9)
      3."type"                                 "Regular"
      3."duration_ms"                          "360"
      3."duration_TC1000"                      "00:00:00.360"
      3."firstFrame"                           "0"
      3."lastFrame"                            "8"
      3."firstFrame_ms"                        "0"
      3."lastFrame_ms"                         "320"
      3."firstFrame_TC1000"                    "00:00:00.000"
      3."lastFrame_TC1000"                     "00:00:00.320"
  (2) "2": {} (9)
      3."type"                                 "Regular"
      3."duration_ms"                          "17720"
      3."duration_TC1000"                      "00:00:17.720"
      3."firstFrame"                           "9"
      3."lastFrame"                            "451"
      3."firstFrame_ms"                        "360"
      3."lastFrame_ms"                         "18040"
      3."firstFrame_TC1000"                    "00:00:00.360"
      3."lastFrame_TC1000"                     "00:00:18.040"
  (2) "3": {} (9)
  (2) "4": {} (9)
```

## Segments > FadingEdits Section

```
(1) "fadingEdits": {} (2)
    2."fadingEditsCount"                       "2"
  (2) "fadingEditsByNumber": {} (2)
    (3) "1": {} (9)
        4."type"                               "Fade-In"
        4."duration_ms"                        "520"
        4."duration_TC1000"                    "00:00:00.520"
        4."firstFrame"                         "10"
        4."lastFrame"                          "22"
        4."firstFrame_ms"                      "400"
        4."lastFrame_ms"                       "880"
        4."firstFrame_TC1000"                  "00:00:00.400"
        4."lastFrame_TC1000"                   "00:00:00.880"
    (3) "2": {} (9)
        4."type"                               "Fade-Out"
        4."duration_ms"                        "2200"
        4."duration_TC1000"                    "00:00:02.200"
        4."firstFrame"                         "10317"
        4."lastFrame"                          "10371"
        4."firstFrame_ms"                      "412680"
        4."lastFrame_ms"                       "414840"
        4."firstFrame_TC1000"                  "00:06:52.680"
        4."lastFrame_TC1000"                   "00:06:54.840"
```

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# JSON Report Structure 4

## VideoLevelsStatistics Section

- (0) **"videoLevelsStatistics":** {} (14)
  - 1."paletteType" "Multicolor"
  - 1."videoDataVolume_pct" "100.20"
  - 1."chromaDataVolume_pct" "36.935"
  - 1."chromaVolumeU_pct" "31.696"
  - 1."chromaVolumeV_pct" "41.518"
  - 1."averageU_pct" "-4.824"
  - 1."averageV_pct" "5.0197"
  - 1."averageY_pct" "40.119"
  - 1."averageR_pct" "47.784"
  - 1."averageG_pct" "38.470"
  - 1."averageB_pct" "30.978"
  - (1) **"dataLevels_8b":** {} (7)
    - (2) **"Y":** {} (5)
      - 3."minLevel_8b" "0"
      - 3."lowerLevel_8b" "18"
      - 3."medianLevel_8b" "104"
      - 3."upperLevel_8b" "235"
      - 3."maxLevel_8b" "255"
    - (2) **"U":** {} (5)
    - (2) **"V":** {} (5)
    - (2) **"R":** {} (5)
    - (2) **"G":** {} (5)
    - (2) **"B":** {} (5)
    - (2) **"maxRGB":** {} (5)
  - (1) **"dataLevels_pct":** {} (7)
    - (2) **"Y":** {} (5)
    - (2) **"U":** {} (5)
    - (2) **"V":** {} (5)
    - (2) **"R":** {} (5)
    - (2) **"G":** {} (5)
    - (2) **"B":** {} (5)
    - (2) **"maxRGB":** {} (5)
  - (1) **"dataHistograms_pct_x1000":** {} (

## VideoLevelsStatistics > DataHistograms Section

- (1) **"dataHistograms_pct_x1000":** {} (
  - (2) **"Y":** [] (256)
  - (2) **"U":** [] (256)
  - (2) **"V":** [] (256)
  - (2) **"R":** [] (256)
  - (2) **"G":** [] (256)
  - (2) **"B":** [] (256)
  - (2) **"maxRGB":** [] (256)
    - 3. 0 0
    - 3. 1 0
    - 3. 2 0
    - 3. 3 0
    - 3. 4 0
    - 3. 5 0
    - 3. 6 0
    - 3. 7 0
    - 3. 8 0
    - 3. 9 0
    - 3. 10 0
    - 3. 11 0
    - 3. 12 0
    - 3. 13 0
    - 3. 14 0
    - 3. 15 1
    - 3. 16 701
    - 3. 17 89
    - 3. 18 52
    - 3. 19 255
    - 3. 20 435
    - 3. 21 494
    - 3. 22 377
    - 3. 23 306
    - 3. 24 343

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# JSON Report Structure 5

This section contains important data set providing not only for **human operator decisions**, but also for **automated post-processing**, such as machine-learning, workflow orchestration and optimization.

Results of such analysis form a firm ground for far-going technical and commercial decisions.

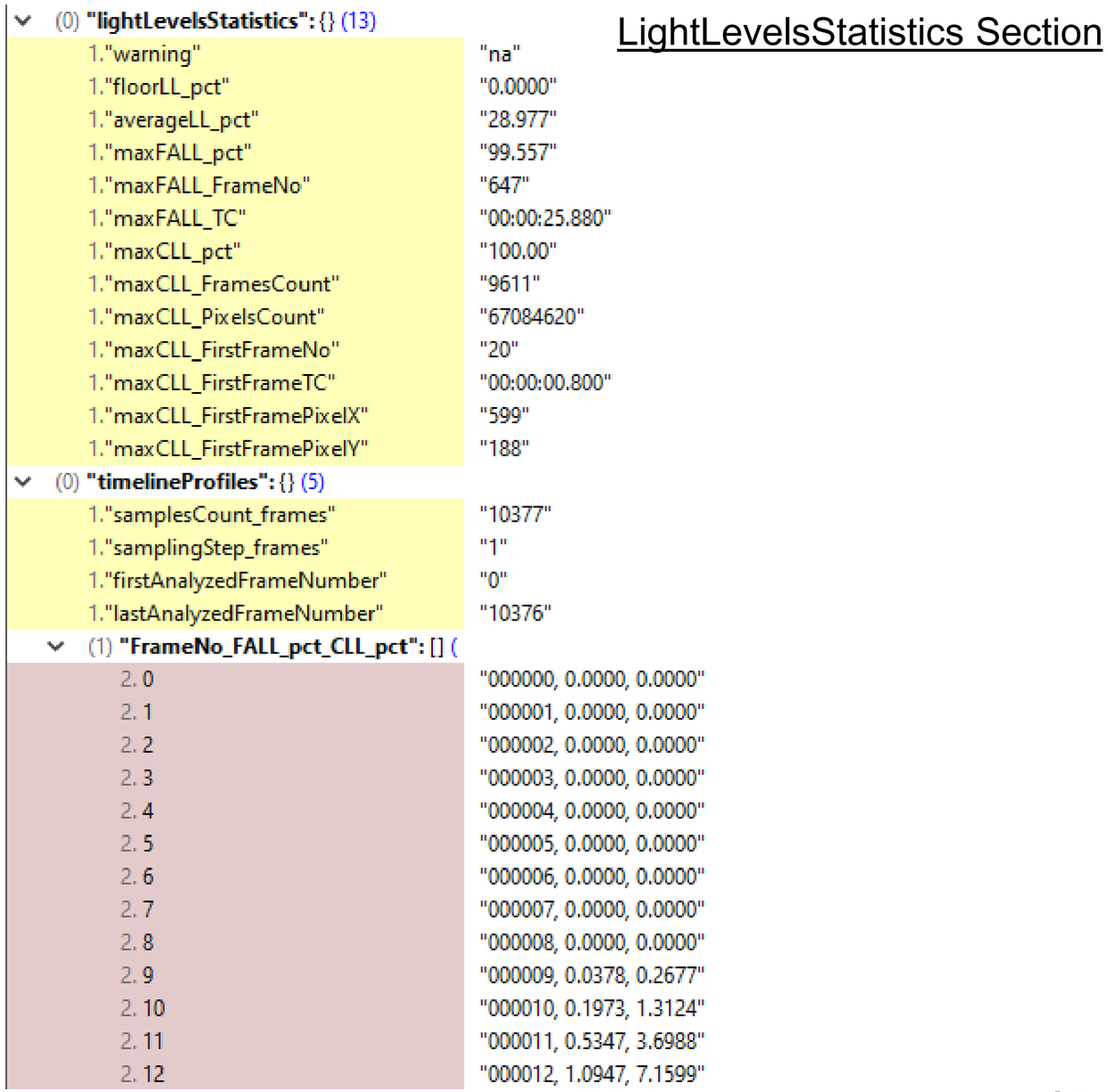
Note the large (in this example - 10376 video frames) '**timeline profiles**' array of critical Light Levels in %:

- **FALL** (**F**rame **A**verage **L**ight **L**evel)
- **CLL** (**C**ontent **L**ight **L**evel)
  *defined as the current frame brightest pixel LL*

**FALL timeline profile** is especially valuable, because it is very robust. Profile 'shape' remains invariable after video frame size and frame rate conversion, as well as after application of various video compression codecs.

This makes FALL profile very useful for **AI content recognition** processes, aka 'video DNA' tests.

LightLevelsStatistics Section



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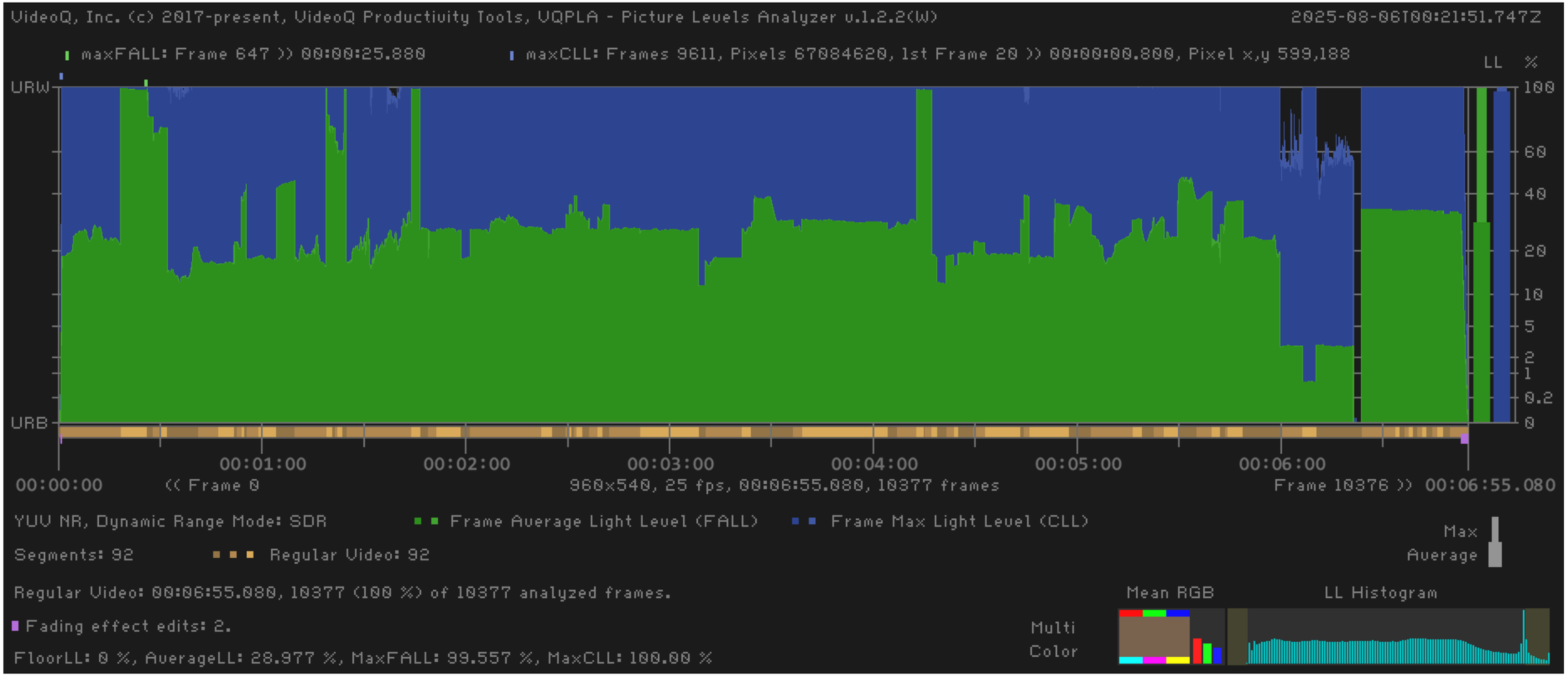
# Plot Example 1 – Professional Clip Checked

- Professional 6 min long clip containing 92 sharp edit cut segments, very short Fade-In edit at start, and Fade-Out at the end.
- **Well balanced full contrast video stream** – more or less uniform **FALL profile**, **CLL values** mostly close to 100%.
- Average Color is warm reddish-yellowish Gray, **Floor LL = 0**, LL histogram is **spread over the valid range**.
- Sharp peak on the histogram right side may indicate some **presence of CG content**. *See next slides for more details*.



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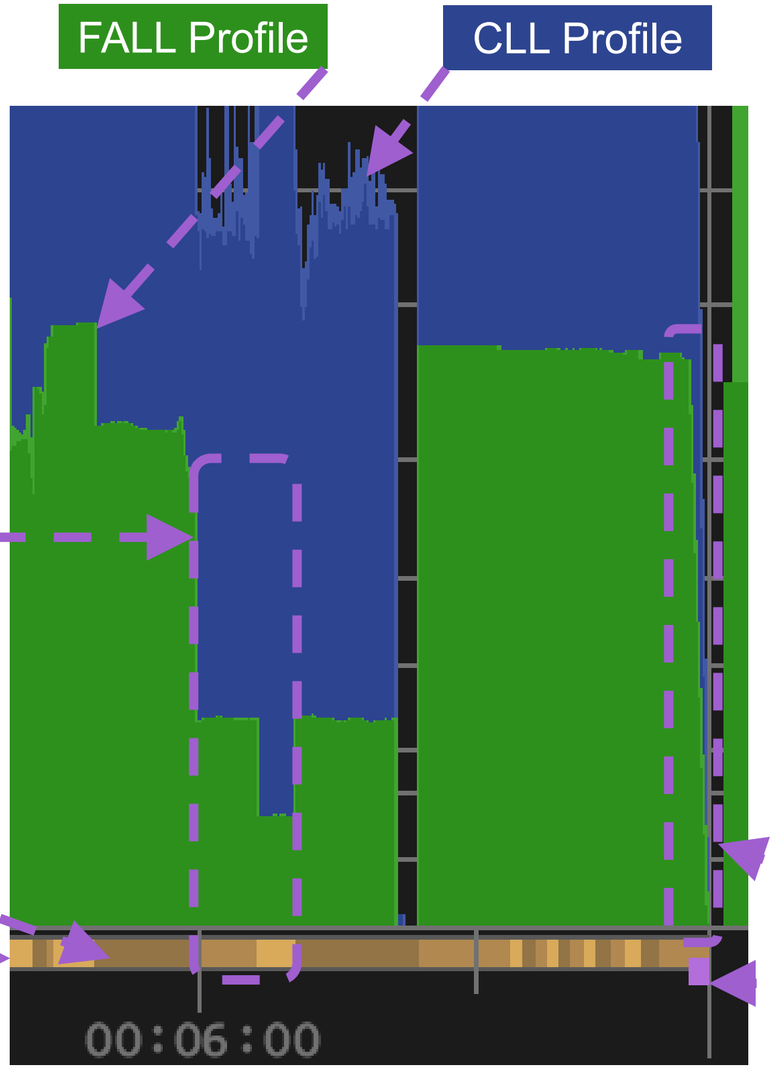
# VQPLA Plot Image Details Explained 1

‘Linear’ LL proportional to MaxRGB (V) data

Special Segment Type Color Codes:

- **Black**
- **Credits on Black**
- **Test Pattern**
- **Fade Edits**




Detected Hard Cut Edits (Segments)

Regular Video Segments Color Codes

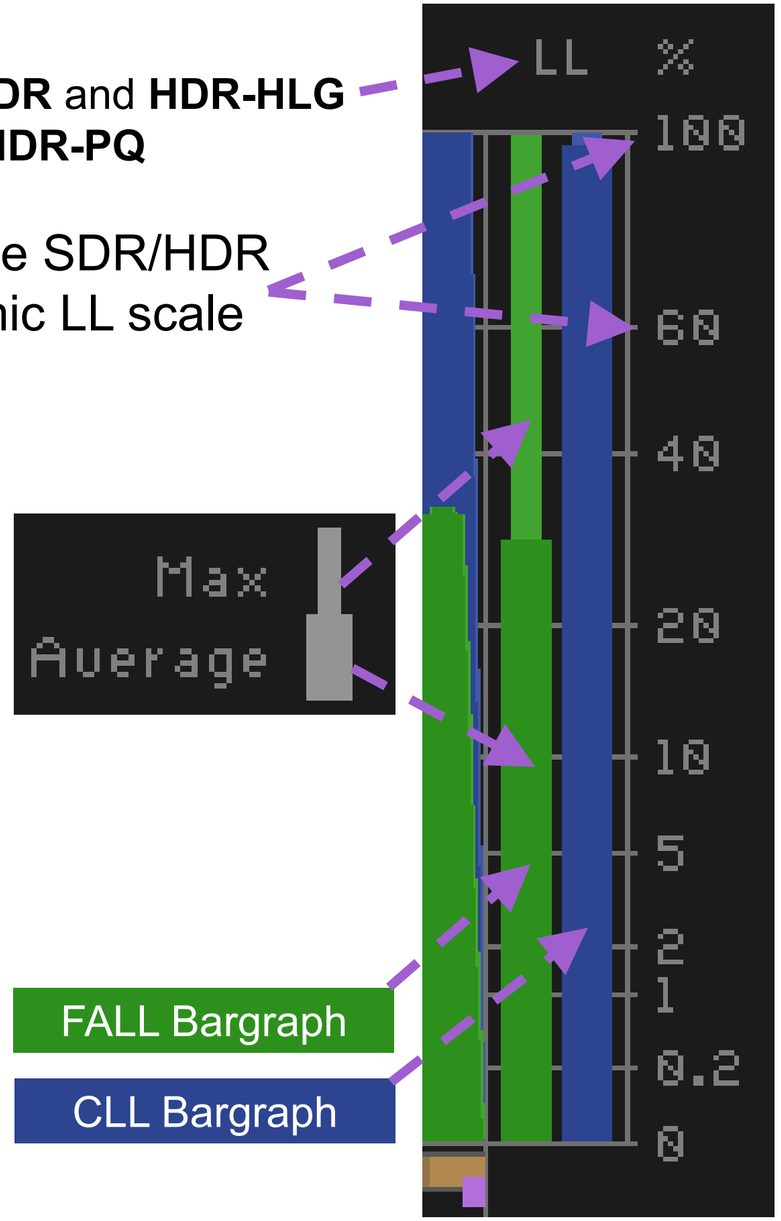
Segments Band

Fade Edit Marker

TC1000 Timecode

**LL %** for **SDR** and **HDR-HLG**
**LL nit** for **HDR-PQ**

Switchable SDR/HDR Logarithmic LL scale



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# VQPLA Plot Image Details Explained 2


Full name of the program

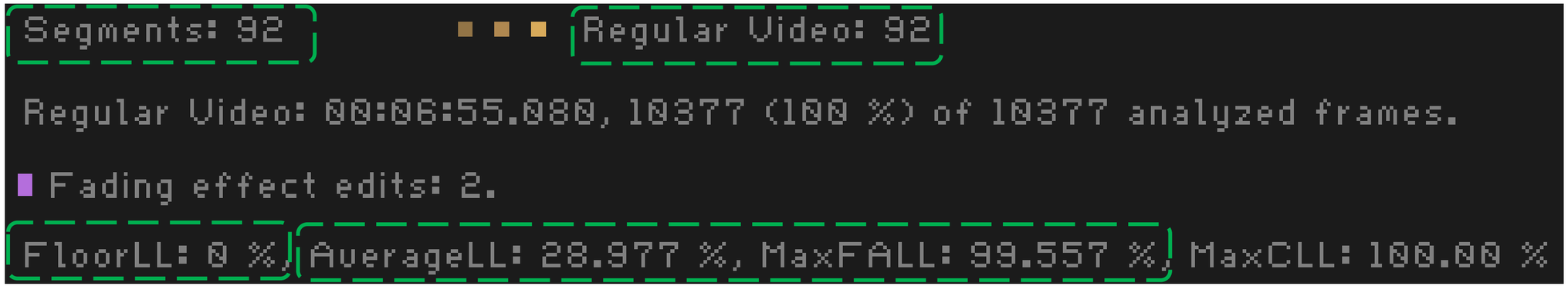
Program version

Windows OS v.1.2.2(W)

Linux OS v.1.2.2(L)

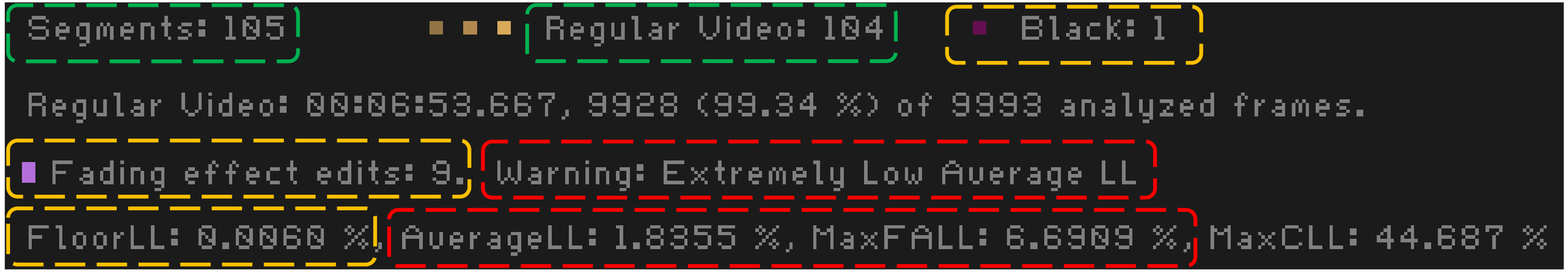
**UTC Time Stamp** of VQPLA PNG creation

Example A: Everything looks normal, - good video material.




**Summary of the most important analysis results**

Example B:
- Presence of **Black Segment** and multiple **Fading Edits** may indicate video of ***scanned old archive film***
- **Special Warning** is due to ***extremely low*** **Average LL** and **MaxFALL** values; also **Floor LL** is slightly elevated.



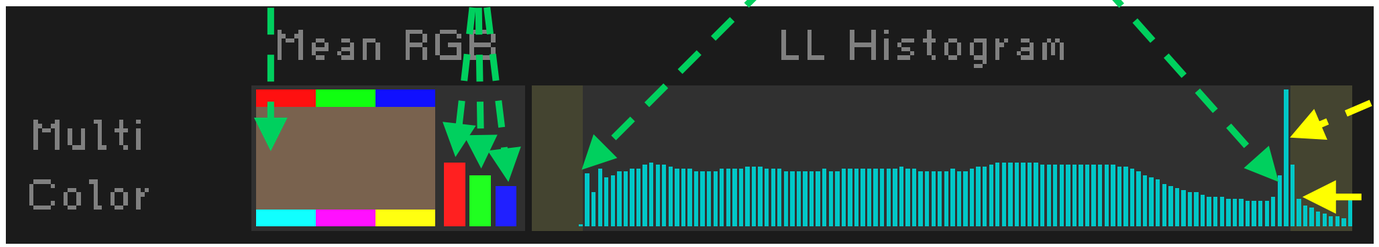

**Summary of the most important analysis results**

# VQPLA Plot Image Details Explained 3

Example A

Average Color is good, warm reddish-yellowish Gray

LL histogram is well spread over the valid Narrow Range

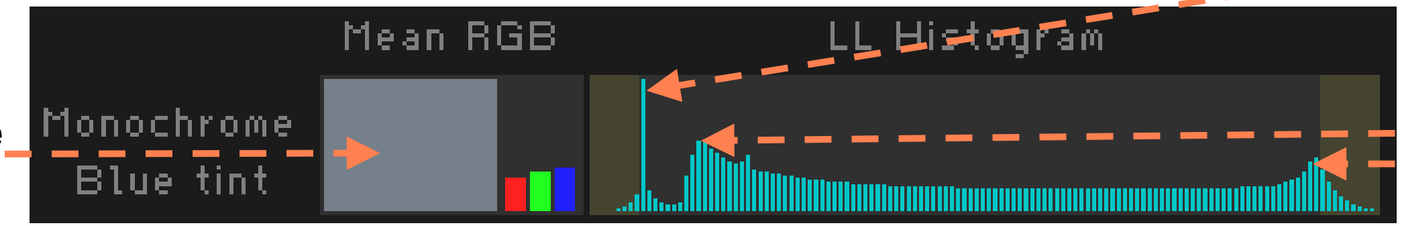



Detected Palette Type: **Multi-color**

***Histogram peak at the right NR** limit may indicate some presence of **CG content**.*

***Out of range energy** is present, but it is rather low, indicating mild **white crash** issues.*

Example B



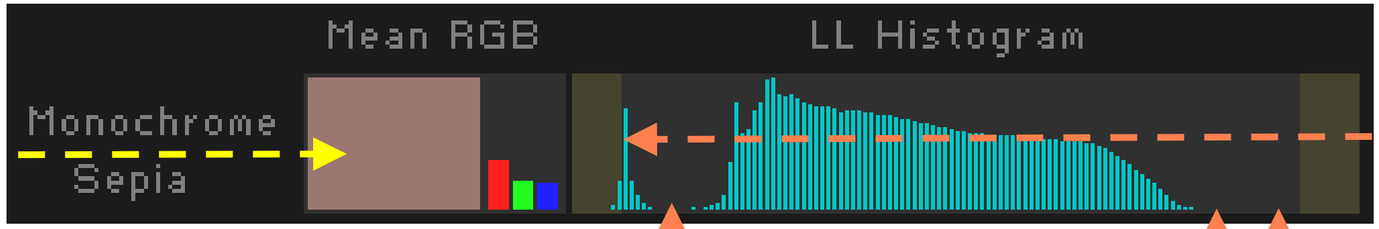

Detected Palette Type: **Monochrome Blue Tint**

***Separate peak at the left NR** limit indicates **black bands**, i.e. active image is smaller than video frame size.*

*Increased probabilities of the **LL near the histogram limits** indicates strong **black crash** and **white crash** issues, probably due to the multiple re-prints of the old film.*

*Typical for **legacy nitrate films***

Example C




Detected Palette Type: **Monochrome Sepia**

***Peak at the left NR limit** is not very strong, which means that **black bands** are not very wide, i.e. active image is more or less fitting video frame size.*

*Absence of LL in large intervals between histogram and valid range limits indicates strong **contrast loss** issues, - active image black level lifted up, white level reduced.*

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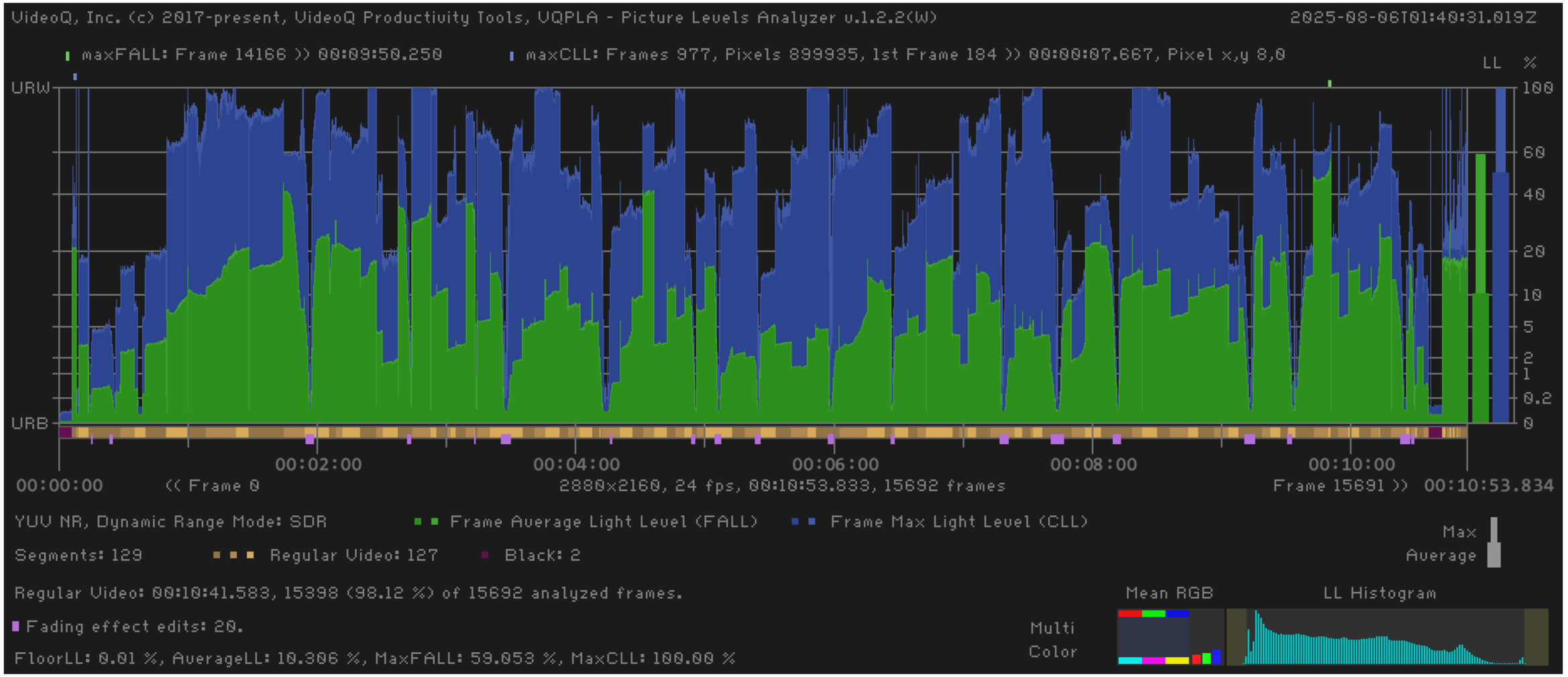
# Plot Example 2 – Digitized Feature Film

- Low-budget feature film, 16mm color MAG. Within its 11 min duration VQPLA detected 129 sharp edit cuts and 20 fade edits.
- FALL profile is non-uniform and rather dark, **Average LL = 10.3%**, **MaxFALL = 59%**, but **MaxCLL = 100%**.
- Average Color is dark blueish Gray, **Floor LL = 0.01 %**, **LL histogram biased towards low levels**.



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# Plot Example 3 – Digitized Documentary Film

- Cultural heritage documentary film, 16mm color. Within its 6 min duration VQPLA detected 105 edit cuts and 9 fade edits.
- VQPLA added **Warning**: "*Extremely Low Average LL*". **Average LL = 1.83%, MaxFALL = 6.69%, MaxCLL = 44.7%.**
- Average Color is very dark Gray, **Floor LL = 0.01 %, LL histogram strongly biased towards low levels**.

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# Plot Example 4 – VQCB HDR-PQ Test Pattern

- 20s long VQCB test sequence consists of three segments:
  "**0**" 0s..10s Text Box with QR Code, "**1**" 10s..18s: ITU BT.2111 HDR-PQ Color Bars Test, "**2**" 18s..20s: Count-down on Black.
- Reference **CLL** values (plotted in blue) are: **1knit** (segment 0), **10knit** (segment 1), **200nit** (segment 2)
- These 3 reference LL values correspond to 3 reference RGB data levels: **75%**, **100%**, and **58%** (HDR **Unified Reference White**)




VQPLA detected
3 Segment Types:

**0 = Regular Video**

**1 = Test Pattern**

**2 = Credits on Black**


3 color coded segment band sections

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# About VideoQ

## Customers & Partners


## Company History

- Founded in 2005
- Formed by an Engineering Awards winning team sharing between them decades of global video technology.
- VideoQ is a renown player in calibration and benchmarking of Video Processors, Transcoders and Displays, providing tools and technologies instantly revealing artifacts, problems and deficiencies, thus raising the bar in productivity and video quality experience.
- VideoQ products and services cover all aspects of video processing and quality assurance - from visual picture quality estimation and quality control to fully automated processing, utilizing advanced VideoQ algorithms and robotic video quality analyzers, including latest UHD and HDR developments.

## Operations

- Headquarters in CA, USA
- Software developers in Silicon Valley and worldwide
- Distributors and partners in several countries
- Sales & support offices in USA, UK