COLORFRONT ENGINE SDK

Colorfront Engine is now available as a simple to integrate, lightweight C++ SDK on Windows, OSX, iOS and Linux.

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WHAT IS COLORFRONT ENGINE™

State of the art color processing engine mapping various input formats including camera original (scene referred) and graded (display referred) images to a wide range of SDR and HDR output formats at user definable brightness levels and gamuts, while maintaining the creative intent. The various production proven functions of the SDK offer unique tools designed for specific color processing problems. This processing pipeline brings true plug and play simplicity to today's complex multi-source multi-deliverable production needs.

HPA AWARDS 2017

2017 HPA Engineering Excellence Award Winner

1 { Input Formats }

Camera original Log files of all major manufacturers as well as the latest mezzanine, broadcast and cinema formats are supported. Input images are mapped, if applicable reverse tone-mapped into the common internal processing color space.

2 { Perceptual processing }

Internal perceptual processing engine offers physically accurate adjustment of exposure, saturation, color temperature and tint. Internal high quality floating point processing is non-destructive and deals with extreme colors near or above the gamut boundaries well.

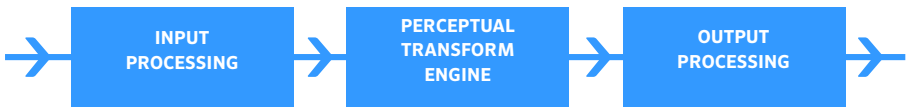
3 { Look Module }

Scene referred inputs are mapped to the final output by applying a user configurable look. A library of looks include ones that resemble film, high quality broadcast or the latest Hollywood cinema look. The Colorfront master look specifically has been designed to produce a modern, colorful output with perfect skin-tones, neutral grey axis and proper handling of out-of-gamut colors. For broadcast applications, such as sport events, a less dramatic version is also available. These looks can also be mixed to produce the desired output.

4 { Output }

When generating the final output both the container color space and the display capabilities can be defined: variable nit level to adopt to any peak brightness and flexible gamut constraint (Rec2020, P3 or Rec709). Compensation for ambient surround brightness is also available. Color and relative contrast perception tracks perfectly across different outputs.

SLOG3 SGAMUT3
SLOG3 SGAMUT3 CINE
SLOG3 BT 2020
LOGC
LOG
REDLOG3 G10
CANON LOG2
CANON LOG3
HDR10
HLG
BT 709
P3D65 HDR
P3DCI GAMMA 2.6
XYZ GAMMA 2.6
ACES CCT



HDR10
HDR10 CLAMP 100
HLG
HLG CLAMP 100
SLOG3 SGAMUT 3
SLOG3 BT 2020
BT 709
LOGC
P3DCI GAMMA 2.6
XYZ GAMMA 2.6

USE CASES

{ Mapping Any Nit Level to Any Nit Level }

Peak brightness of both the input and the output can be defined while the perceptual processing engine guarantees the creative intent is maintained across all nit-levels. This allows single master workflows to be implemented with deliveries ranging from SDR to HDR.

{ SDR to HDR }

Generating HDR10 or HLG output from SDR sources has never been easier. Use cases include integrating SDR content or graphics into HDR shows or remastering existing SDR content into HDR.

{ HDR to SDR }

Remapping images to more narrow dynamic ranges while preserving the original look is the essence of converting HDR masters of any form into standard gamma encoded broadcast or cinema deliverables.

{ Processing Camera Original Files }

The SDK supports all the native log color spaces of high end cameras from Sony, ARRI, Canon, Panasonic and RED, and with it's advanced look module it wakes up with beautiful images without need of manual color correction to achieve a pleasing and technically correct look. This is a good base for a colorist to immediate start grading or go straight to delivery.

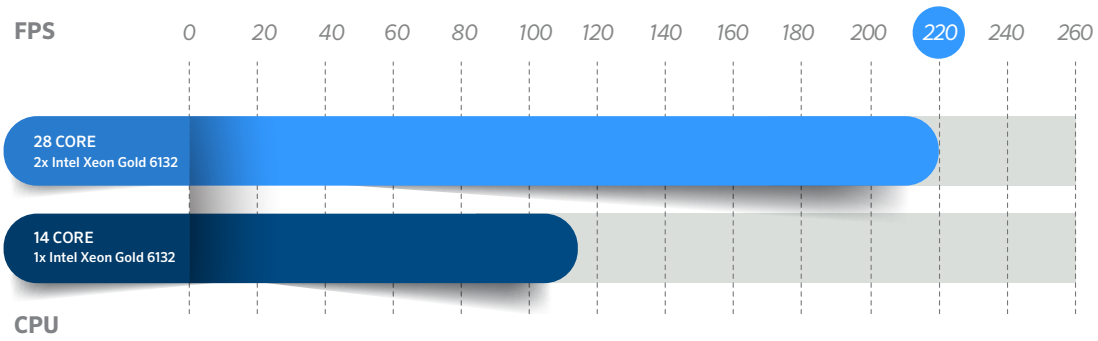
{ Support of Future Display Technologies }

As the range of available projection and display technologies increase, it has been a challenge to deliver HDR content to meet the specification of individual displays. With Colorfront Engine one can specify the input and output peak brightness and color gamut, regardless of working with an SDR or an HDR input.

{ Software Development Kit }

Colorfront Engine is now available as a simple to integrate, lightweight C++ SDK on Windows, OSX , iOS and Linux. Depending on the intended use-case the host application may expose a limited set of parameters, or the full range of controls. The highly optimized 32-bit floating point processing engine to minimize processing cycles can be easily multi-threaded.

Colorfront Engine™ SDK Speed Chart with UHD 16bit images



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