



- ▶ A green triangle means the cue is **active**.
- || A pair of yellow bars means the cue is **paused**.
- ● A yellow disc means the cue is **loaded**. Loaded cues are ready to be started with a minimum of latency, although loading cues before starting them is usually unnecessary.
- ▽ A yellow slope means the cue has been stopped, but has an effect that is **ailing out**. This icon remains visible as long as the cue's effects are still producing audio, such as an echo, a reverberation, or a distortion effect. The length of this "tail" can be adjusted within the audio effect itself, although QLab also leaves the audio pathway open for some additional time afterwards, just to be completely sure that no effect gets cut off prematurely.
- ✕ A red X means the cue is **broken** and cannot be played. Hovering the mouse over the red X will show a tool tip with a brief explanation of the problem. You can also see a list all the broken cues in the workspace in the [Warnings tab of the Workspace Status window](#).
- ⚠ A yellow triangle with an ellipsis inside is a **non-breaking warning**, meaning there's something wrong with cue, but not in a way that is likely to interfere with a show. Cues with non-breaking warnings are also listed in the [Warnings tab of the Workspace Status window](#).
- ⌘ A red circle with a slash through it means that an **override** is suppressing the cue's output. You can learn more about overrides in the [Override Controls section of this manual](#).
- 🚩 A yellow flag means the cue has been **flagged**.
- ⚡ A yellow double-slope icon means the cue is currently **crossfading** with another cue. It's only used in conjunction with [a Group cue in playlist mode](#).
- (▶) A hollow green play triangle in parentheses means the cue is being **auditioned**.

CUE STATUS ICONS

- THE INSPECTOR
- THE TOOLBAR
- THE TOOLBOX
- LOAD TO TIME
- FIND
- ADDING, DELETING, AND MOVING CUES
- EDITING, COPYING, AND PASTING ANY CUE PROPERTIES USING THE MOUSE OR KEYBOARD

*EQUALLY IMPORTANT ARE THE THINGS WHICH ARE **NOT** DISABLED WHEN IN SHOW MODE:*

- QUITTING QLAB
- OPENING, CLOSING, AND SAVING WORKSPACES
- USING THE **ESCAPE** KEY
- EDITING CUE PROPERTIES USING APPLESCRIPT AND OSC
- VIEWING AND CHANGING WORKSPACE SETTINGS

SHOW MODE – WHAT’S DISABLED

Audio cues may target any file type supported by Core Audio, Apple's audio framework, but QLab recommends the following types:

- AIFF
- WAV
- CAF
- AAC
- MP4
- M4A

MP3 is *not* a recommended file type because of its inherent timing issues

AUDIO FILE TYPES

For moving images, QLab strongly recommends the following formats, listed in order of preference, for videos without transparency:

- ProRes 422 Proxy
- Hap Standard
- ProRes 422 LT
- Hap Q
- Photo-JPEG

For videos with transparency, also referred to as alpha channel support, we recommend:

- ProRes 4444
- Hap Alpha

VIDEO FILE TYPES

To Audition Go –

⇧ With Spacebar

To Audition Preview –

⇧ With V











AUDITIONING

- **All_off.** Stop all currently playing cues.
- **Standby+/-.** move the playhead to the next or previous cue.
- **Sequence+/-.** move the playhead to the next or previous cue sequence.
- **Reset.** If RESET is sent without a cue number, reset the workspace to the state it would be in when it is first opened. If RESET is sent with a cue number, stop that cue if it's playing, and revert any temporary changes made to it, such as with a target cue.
- **Go.** If GO is sent without a cue number, start the standing by cue and advance the playhead to the next cue or cue sequence, just as though the on-screen GO button was pressed. If GO is sent with a cue number, start that cue.
- **Stop.** If STOP is sent without a cue number, pause the currently selected cue(s). If STOP is sent with a cue number, pause that cue. We do not know why the MSC spec uses the word "STOP" to mean "pause", but it does, so this is what qlab does.
- **Resume.** If RESUME is sent without a cue number, resume all currently paused cues. If RESUME is sent with a cue number, resume that cue.
- **Load.** If LOAD is sent without a cue number, load the currently selected cue(s). If LOAD is sent with a cue number, load that cue.
- One *extremely* important thing to remember when using msc is that cue numbers in MSC, and in QLab, are *strings* not actual numbers. What that means is that you need to be sure to match the cue numbers exactly on both ends. 1, 01, 1.0, 1.00 are all the same *number*, but they're all different cue numbers!

MSC

DMX DONGLES

- ENTTEC DMX USB PRO
- ENTTEC DMX USB PRO MK2
- DMXKING ULTRADMX MICRO
- DMXKING ULTRADMX RDM PRO
- DMXKING ULTRADMX2 PRO
- YARILO DMX PRO

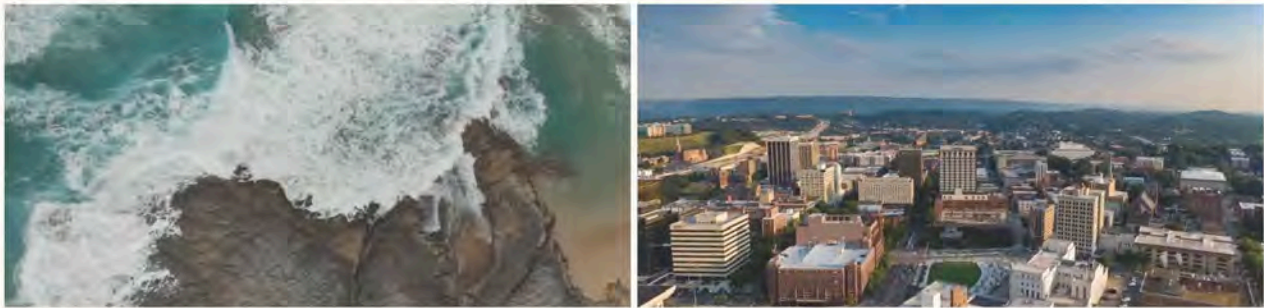
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Blend Modes

In all of these examples, QLab is playing the ocean beach video on layer 1 at full opacity, and the aerial city video on layer 2 at full opacity. For each demonstration video, the blend mode was changed for the aerial city video on layer 2.

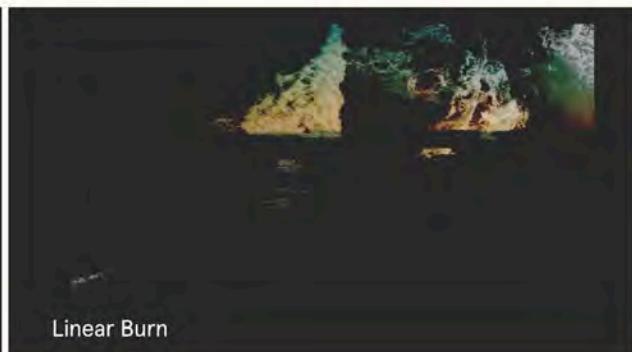
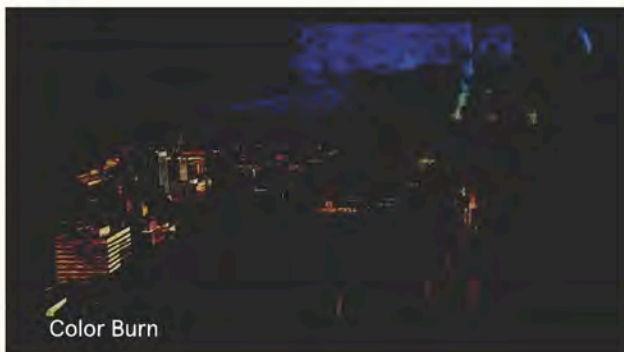
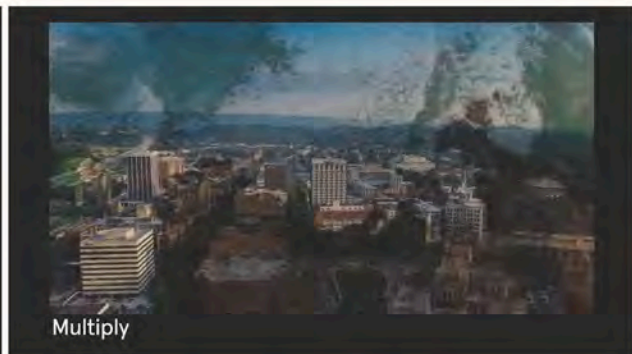
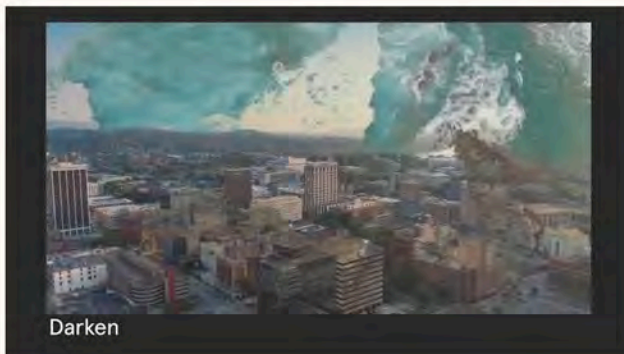
To keep the load time for this page reasonable, these videos are downsampled, compressed, and reduced to 15 frames per second. As a result, subtle differences between various blend modes have been slightly obscured. These samples should be used as a reference only, not as a definitive analysis.

Original Videos



Darkening Blends

- **Darken** creates pixels made of the darkest value from each channel of each source pixel.
- **Multiply** creates pixels by multiplying the channel values from each source pixel together.
- **Color Burn** inverts the background, divides that by the foreground, then inverts the result. The darker the background is, the more its color is visible in the result.
- **Linear Burn** adds the two layers then subtracts 1 from the result.



Lightening Blends

- **Lighten** creates pixels made of the brightest value from each channel of each source pixel.
- **Screen** inverts both images, multiplies them, then inverts the result.
- **Color Dodge** divides the background by an inverted foreground, lightening the background according to the brightness of the foreground. The brighter the foreground is, the more its color is visible in the result.
- **Linear Dodge** adds channel values from both layers. This decreases contrast.



Lighten



Screen



Color Dodge



Linear Dodge

Contrast Blends

- **Overlay** is a combination of *Multiply* and *Screen*; background values above 0.5 lighten the foreground, background values below 0.5 darken the foreground, and background values of exactly 0.5 have no effect.
- **Soft Light** is also a combination of *Multiply* and *Screen*, namely a linear interpolation between the two. It can be thought of as a lightening effect similar to *Overlay* but using different math and therefore having a different gamma curve.
- **Hard Light** is also a combination of *Multiply* and *Screen* and is the inverse of *Overlay*; foreground values above 0.5 lighten the background, foreground values below 0.5 darken the background, and foreground values of exactly 0.5 have no effect.
- **Pin Light** is effectively a combination of *Darken* and *Lighten*, darkening values below 0.5 and lightening values above 0.5. The result is a reduction in mid-tones and a dramatic increase in contrast.



Overlay



Soft Light



Hard Light



Pin Light

Arithmetic Blends

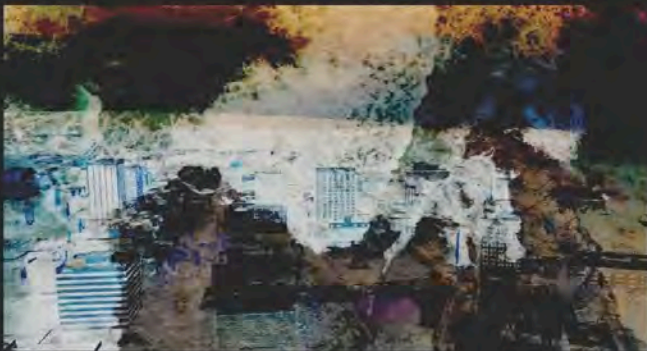
- **Difference** calculates pixels as the absolute value of background minus foreground. Shadows on the foreground have little to no effect while mid-tones and highlights have a darkening effect.
- **Exclusion** is similar to *Difference*, but with lower contrast; shadows have little to no effect, mid-tones pull the resulting pixels towards neutral gray, and highlights darken.
- **Subtract** simply subtracts the foreground from the background, with a lower limit of 0 for any value. The brighter a pixel is on the foreground, the darker it will be in the blended image. Dark pixels on the foreground have minimal effect.
- **Divide** divides the foreground by the background, which has the opposite effect of *Subtract*; dark pixels in the foreground will brighten the blended image while bright pixels in the foreground have a minimal effect.



Difference



Exclusion



Subtract



Divide

Component Blends

- **Hue** combines the brightness and saturation of the background with the hue of the foreground.
- **Saturation** combines the brightness and hue of the background with the saturation of the foreground.
- **Color** combines the brightness of the background with the hue and saturation of the foreground.
- **Luminosity** combines the hue and saturation of the background with the brightness of the foreground.



Hue



Saturation



Color



Luminosity

Compositing Blends

- **Addition Compositing** is similar to *Linear Dodge* but skews towards a brighter result.
- **Maximum Compositing** is similar to both *Linear Dodge* and *Addition Compositing*, with an amount of contrast that is in between the two.
- **Source Atop Compositing** uses foreground pixels only, but displays them only where the background has pixels as well. This lets you use the background cue as a key and the foreground cue as a fill. The example videos here are poorly suited to demonstrate this effect since they are the same shape.



Addition Compositing



Maximum Compositing



Source Atop Compositing

QLab 5 Features by License Type

QLab 5 is a free program, with additional optional features that can be unlocked by purchasing and installing a license. This chart shows which of the major features are enabled by each type of license.

Demo Mode

You can experiment with the advanced features of QLab 5 for free by choosing *Start Demo Mode...* from the **QLab** menu. This will create a new workspace in demo mode. While demo mode is active, all of QLab's licensed features are available, but copying cues and settings into the demo workspace is disabled.

Demo mode will expire after 60 minutes. After demo mode expires, or after the workspace is saved, closed, and reopened, licensed features will once again require a license.

Features

Feature	Free	Audio	Video	Lighting
Audio features				
Channels of audio output	2	64	2	2
Channels of audio per file	2	24	2	2
Audio waveform view	✓	✓	✓	✓
Unlimited slices per Audio or Video cue	✓	✓	✓	✓
Sample-accurate playback sync	✓	✓	✓	✓
Audio fades	✓	✓	✓	✓
Audio playback rate fading		✓		
Edit audio output patch routing		✓		
Edit audio output patch channel names		✓		
Audio effects on cues		✓		
Audio effects on cue outputs		✓		
Audio effects on device outputs		✓		
Audio effects fading		✓		
Mic cues		✓		

Video features				
Single-output video stages	1	1	unlimited	1
Multi-output video stages	0	0	unlimited	0
1000 video layers	✓	✓	✓	✓
Full-stage Video cues	✓	✓	✓	✓
Custom geometry Video cues			✓	
Video fades			✓	
Video playback rate fading			✓	
Masking & edge blending			✓	
Video output warping & keystone correction			✓	
Video effects			✓	
Per-cue blend modes			✓	
Syphon input & output			✓	
NDI input & output			✓	
Blackmagic device input & output			✓	
Camera cues			✓	
Text cues			✓	

Lighting features

Patchable DMX addresses	16	16	16	unlimited
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Addressable universes	unlimited	unlimited	unlimited	unlimited
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RGB+ and CMY graphical color picker	✓	✓	✓	✓
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Build your own instrument definitions	✓	✓	✓	✓
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Networking & Show Control features

Remote control via OSC, MIDI, MSC, iOS app	✓	✓	✓	✓
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Act as Collaboration Primary	✓	✓	✓	✓
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Act as Collaboration Remote	✓	✓	✓	✓
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Network cues		✓	✓	✓
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MIDI cues		✓	✓	✓
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MIDI File cues		✓	✓	✓
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Timecode cues		✓	✓	✓
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Timecode triggers		✓	✓	✓
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Workflow & programming features				
Unlimited cue lists	✓	✓	✓	✓
Unlimited cue cards	✓	✓	✓	✓
Live fade previews	✓	✓	✓	✓
Pause cues		✓	✓	✓
De-amp cues		✓	✓	✓
Target cues		✓	✓	✓
Arm & Disarm cues		~✓	~✓	~✓
Script cues		✓	✓	✓
Workspace settings import & export		✓	✓	✓