Cheatography

Photoshop Blending Modes: Math for GLSL Cheat Sheet

by Art Creative Coder (werewolfgsm) via cheatography.com/206662/cs/44194/

Darken Group

Blend Mode	Commutativity	Formula
Darken	commutative	min(Target, Blend)
Multiply	commutative	Target * Blend
Color Burn	non-commutative	1 - (1-Target) / Blend
Linear Burn	commutative	Target + Blend - 1

Lighten Group

Blend Mode	Commutativity	Formula
Lighten	commutative	max(Target, Blend)
Screen	commutative	1 - (1-Target) * (1-Blend)
Color Dodge	non-commutative	Target / (1-Blend)
Linear Dodge	commutative	Target + Blend

Contrast Group

Blend Mode	Commutativity	Formula
Overlay	non-commutative	(Blend > 0.5) ? (1 – (1-Target) / (2 * (Blend - 0.5))) (Blend <= 0.5) ? (Target / (1 - 2 * Blend))
Soft Light	non-commutative	(Blend > 0.5) ? (1 - (1 - Target) * (1 - (Blend - 0.5))) (Blend <= 0.5) ? (Target * (Blend + 0.5))
Hard Light	non-commutative	(Blend > 0.5) ? (1 - (1 - Target) * (1 - 2 * (Blend - 0.5))) (Blend <= 0.5) ? (Target * (2 * Blend))
Vivid Light	non-commutative	(Blend > 0.5) ? (1 - (1 - Target) / (2 * (Blend - 0.5))) (Blend <= 0.5) ? (Target / (1 - 2 * Blend))
Linear Light	non-commutative	(Blend > 0.5) ? (Target + 2 * (Blend - 0.5)) (Blend <= 0.5) ? (Target + 2 * Blend - 1)
Pin Light	non-commutative	(Blend > 0.5) ? (max(Target, 2 * (Blend - 0.5))) (Blend <= 0.5) ? (min(Target, 2 * Blend))

Inversion Group

Blend Mode	Commutativity	Formula
Difference	commutative	Target - Blend
Exclusion	commutative	0.5 - 2 * (Target-0.5) * (Blend-0.5)

Additional Information

Overlay: A combination of multiply and screen. Also the same as Hard Light commuted.
Soft Light: A combination of multiply and screen (The formula is only approximate).
Hard Light: A combination of multiply and screen. Also the same as Overlay commuted.
Vivid Light: A combination of color burn and color dodge.
Linear Light: A combination of linear burn and linear dodge.
Pin Light: A combination of darken and lighten.

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Published 21st August, 2024.
Last updated 22nd August, 2024.

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