

ScarEyeCam

Cinematic FPS Camera System

v1.0 | Fab Marketplace Plugin

Your game doesn't feel real because your camera isn't.

Official Documentation

Installation, setup, presets, events, functions, and complete property reference

Black Scar Studio

Unreal Engine 5.2 | 5.3 | 5.4 | 5.5 | 5.6 | 5.7

149 editable properties | 36 callable functions | 27 Blueprint events | 5 presets

Key Features

- 5 Camera Presets (Realistic, Cinematic, Horror, Arcade, Tactical)
- Shooter and Horror Mode System with smooth blending
- 149 Editable Blueprint Properties for total control
- 27 Blueprint Events for sound, VFX, UI, and gameplay hooks
- 36 Blueprint Callable Functions for runtime control
- Sensitivity Profile System (Low, Balanced, High, Custom)
- ADS (Aim Down Sights) with FOV spring and sway reduction
- Sprint reactions, fire recoil with barrel drop, explosion response
- Horror: heartbeat, panic, glitch, post-process, environmental triggers
- Fully Blueprint and C++ powered
- Plug-and-Play: add component, pick preset, press Play
- Zero snapping: internal rotation pipeline, spring-based physics
- Supports UE 5.2, 5.3, 5.4, 5.5, 5.6, 5.7

Who This Is For

- **FPS developers** who want realistic, weighted camera feel without months of engineering.
- **Horror creators** who want player discomfort, tension, and psychological dread baked into the camera.
- **Indie devs** who want AAA-level camera quality without complex setup or C++ knowledge.
- **Marketplace asset creators** who want a professional camera base to ship with their game templates.
- **Prototypers** who want instant physical camera feel. Add component, pick preset, press Play.

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1. What It Feels Like

Before reading any technical details, here is what each preset delivers. ScarEyeCam is not a list of features. It is a feeling.

Realistic	Smooth, grounded, believable. Feels like a real human carrying weight. Every step lands, every turn has momentum.
Cinematic	Heavy, slow, lingering. Every motion has purpose. Perfect for storytelling and walking simulators.
Horror	Unstable, breathing, unpredictable. You are not fully in control. The camera is alive and it is afraid.
Arcade	Fast, sharp, responsive. Zero delay, pure gameplay. The camera does exactly what you want, instantly.
Tactical	Tight, precise, controlled. Medium weight with surgical responsiveness. Built for competitive accuracy.

Before vs After

Without ScarEyeCam	With ScarEyeCam
Instant, robotic camera movement	Physical movement with weight and momentum
No weight or inertia on any action	Spring-based inertia on every rotation and offset
Landing feels like nothing happened	Landing drops the camera with spring-back weight
Firing a weapon is just a crosshair flash	Recoil kicks, barrel drops, camera settles with weight
No emotional response from camera	Dynamic breathing, panic, heartbeat, and instability
Every game feels the same	5 presets, 2 modes, 149 properties: your game, your feel

2. Plugin Installation

ScarEyeCam is distributed as an engine plugin through the Fab Marketplace. It installs directly into your Unreal Engine version and is available across all projects that use that engine version.

Step 1: Purchase and Install from Fab

1. **Open the Epic Games Launcher** and navigate to the Fab Marketplace, or visit fab.com directly in your browser.
2. **Find ScarEyeCam** by searching for "ScarEyeCam" in the marketplace search bar. Open the product page.
3. **Click Install to Engine.** Select the Unreal Engine version you want to install to (5.2, 5.3, 5.4, 5.5, 5.6, or 5.7). The plugin downloads and installs automatically.

TIP: ScarEyeCam supports UE 5.2 through 5.7. Install it to whichever engine version your project uses. You can install to multiple engine versions simultaneously.

Step 2: Enable the Plugin in Your Project

4. **Open your game project** in Unreal Editor using the engine version you installed the plugin to.
5. **Go to Edit > Plugins.** This opens the Plugins browser window.
6. **Search for "ScarEyeCam".** It will appear under the Camera category or you can find it by typing in the search bar.
7. **Click the Enable checkbox.** A checkmark appears next to the plugin name.
8. **Restart the editor when prompted.** The editor will close and reopen. This is required for the plugin module to load.

After restart, ScarEyeCam is fully installed. The "ScarEyeCam Component" now appears in the Add Component menu of any Character Blueprint. No C++ code required. No project settings to change. No Build.cs modifications needed.

Verifying Installation

To confirm the plugin is active:

1. **Open any Character Blueprint.**

2. Click Add Component.
3. Search for "**ScarEyeCam**". If "ScarEyeCam Component" appears in the list, installation is complete.

TIP: If the component does not appear, verify the plugin is enabled in Edit > Plugins and that you restarted the editor after enabling it.

3. Adding ScarEyeCam to Your Character

Once the plugin is installed and enabled, adding the camera system to your game takes under one minute.

1. Add ScarEyeCam Component to your Character Blueprint
2. Select a Preset in the Details panel
3. Press Play

That's it.

No Blueprint wiring. No timelines. No C++ code. The camera works immediately.

Detailed Walkthrough

1. **Open your Character Blueprint.** This is the Blueprint that inherits from ACharacter (e.g., BP_FirstPersonCharacter in the first-person template).
2. **Click + Add in the Components panel.** Search for "ScarEyeCam Component" and add it. It appears under your root component.
3. **Select the ScarEyeCam component.** The Details panel on the right shows all ScarEyeCam properties organized by category.
4. **Under ScarEyeCam > Presets,** set Camera Preset to your desired feel: Realistic, Cinematic, Horror, Arcade, or Tactical.
5. **Under ScarEyeCam > Mode,** check either Enable Shooter Mode or Enable Horror Mode. Modes are mutually exclusive.
6. **Compile, Save, and press Play.** Walk, sprint, jump, and turn. The camera responds with physical weight immediately.

TIP: The component auto-detects your CameraComponent. If you have multiple cameras (e.g., a weapon camera), assign the correct one to Target Camera in the Details panel under ScarEyeCam.

TIP: Leave both Shooter and Horror mode unchecked to get neutral spring smoothing without mode-specific effects. Useful for testing or custom setups.

First Time User Quick Start

Add component. Set preset to **Realistic**. Enable **Shooter Mode**. Compile. Press Play.

You now have a fully responsive FPS camera with physical weight, sprint reactions, landing impacts, strafe tilt, and recoil support. Customize from there.

4. Camera Presets

Presets are one-click camera personalities that adjust six global pipeline controls simultaneously. Select in the Details panel under ScarEyeCam > Presets, or call `ApplyPreset()` from any Blueprint at runtime.

Preset	Smoothness	Weight	Response	Impact	Inertia	FOV
Realistic	1.0	1.0	1.0	1.0	1.0	90
Cinematic	1.6	1.5	0.7	0.8	1.4	85
Horror	1.3	1.3	0.6	0.7	1.6	80
Arcade	0.6	0.5	1.5	1.3	0.4	95
Tactical	0.9	0.8	1.2	1.0	0.7	88

TIP: Presets are starting points. After applying one, tweak individual values in the Details panel. Changes persist until another preset is applied.

TIP: Call `ApplyPreset()` at runtime to change feel during gameplay (e.g., Cinematic for cutscenes, Tactical for combat).

5. Sensitivity Profiles

Control how player input translates to camera movement. Independent of presets. Editable under ScarEyeCam > Sensitivity in the Details panel.

Property	Default	Range	Description
LookSensitivity	1.0	0.1 - 5.0	Rotation spring speed multiplier
AimSensitivity	0.6	0.1 - 3.0	Multiplies LookSensitivity during ADS
Acceleration	0.0	0.0 - 1.0	Input curve. 0=linear, 1=max acceleration

Built-in profiles: **Low** (0.6/0.4/0), **Balanced** (1.0/0.6/0), **High** (1.8/0.8/0.3). Retrieve with `GetDefaultSensitivityProfile("High")`.

6. Mode System

Two exclusive modes. Enabling one automatically disables the other. Toggle in the Details panel or call `SetShooterMode()/SetHorrorMode()` at runtime.

Shooter Mode

Aggressive, clean, heavy impact. All horror systems are hard-gated off in code, not just via settings.

- **Sprint reactions:** Camera punches forward on sprint entry, lurches on stop. Roll sway during sprint.
- **Fire reactions:** Recoil kick with barrel-weight drop. Each shot feels heavy.
- **Strafe tilt:** Camera rolls during lateral movement.
- **ADS:** FOV narrows, sway reduces, rotation tightens for precision.

Horror Mode

Unstable, psychological, alive. Player never feels fully in control.

- **Heartbeat:** Physical camera pulse at panic-driven BPM with FOV micro-pulse.
- **Glitch:** 5 types: RotationJump, Jitter, MicroFreeze, PositionOffset, FreezeFrame.
- **Post-Process:** Vignette, chromatic aberration, desaturation, motion blur, exposure flicker.
- **Panic:** Builds while moving, decays when still. Drives ALL horror systems.
- **Horror Triggers:** 9 types via `TriggerHorrorEvent()`: Jumpscare, Whisper, Hallucination, Darkness, ChaseStart, ChaseEnd, EntityNearby, EnvironmentShift, Custom.

Master Switches

- **bEnableCameraSystem:** Global on/off. When false, entire system disabled.
- **bEnableSmoothing:** When false, spring smoothing bypassed. Useful for A/B comparison.

7. All Blueprint Callable Functions

Call these from any Blueprint that has a reference to the ScarEyeCam component. Drag from the component pin in the Event Graph and search.

Presets + Sensitivity

Function	What It Does
ApplyPreset(Preset)	Apply camera personality preset
ApplySensitivityProfile(Profile)	Apply sensitivity profile
GetDefaultSensitivityProfile(Name)	Get built-in: Low/Balanced/High

Mode Control

Function	What It Does
SetShooterMode(bool)	Enable/disable Shooter mode
SetHorrorMode(bool)	Enable/disable Horror mode

Combat

Function	What It Does
AddRecoil(Pitch, Yaw)	Simple recoil kick
AddDirectionalRecoil(P, Y, R, Push)	Full recoil with roll + pushback
TriggerExplosionReaction(Loc, R, I)	Directional explosion push
EnterADS()	Enter aim-down-sights
ExitADS()	Exit aim-down-sights

Horror

Function	What It Does
TriggerHorrorEvent(Type, Intensity)	Trigger typed horror event (9 types)
TriggerScare(Intensity)	Quick jumpscare shortcut
SetPanicLevel(0-1)	Manually override panic level

Camera Control

Function	What It Does
SetTargetFOV(float)	Override FOV manually
ClearFOVOverride()	Return to automatic FOV

Function	What It Does
PlayCameraShake(Class, Scale)	Play UE CameraShake on top
ResetCamera()	Reset all springs (call on respawn)

Lean

Function	What It Does
LeanLeft(0-1)	Drive lean left (call each tick)
LeanRight(0-1)	Drive lean right (call each tick)
SetLeanInput(-1 to +1)	Combined lean axis
StopLean()	Return to center lean

System Toggles (15 functions)

Every subsystem togglable at runtime. Springs reset cleanly when disabled:

```
SetHeadBobEnabled | SetBreathingEnabled | SetMicroMovementEnabled
SetLagEnabled | SetTiltEnabled | SetDynamicFOVEnabled | SetInertiaEnabled
SetAccelerationEnabled | SetProceduralShakeEnabled | SetBodycamEnabled
SetChaosEnabled | SetHeartbeatEnabled | SetGlitchEnabled
SetPostProcessEnabled | SetLeanEnabled
```

8. All 27 Blueprint Events

BlueprintImplementableEvent functions. Override them in your Character Blueprint Event Graph to trigger sound, VFX, UI, or gameplay logic. They fire automatically.

How to use any event: Open your Character Event Graph. Right-click, search the event name (e.g. "OnCameraRecoil"). Select it. A red event node appears with output pins. Connect to your logic (Play Sound, Spawn Emitter, etc.).

Impact + Movement

Event	When It Fires	Parameters
OnCameraImpact	Any significant impact	float Intensity
OnCameraShake	Procedural shake active	float Intensity
OnCameraLand	Landing from fall	float ImpactStrength
OnCameraLanded	Landing (legacy)	(none)
OnCameraJumped	Character jumps	(none)
OnCameraMove	Player moving above threshold	float Speed
OnCameraIdle	Player still for delay	(none)
OnFootstep	Each footstep	bool blsLeftFoot

Shooter

Event	When It Fires	Parameters
OnCameraRecoil	Weapon recoil applied	float Intensity
OnFireReaction	Post-recoil barrel drop	float Intensity
OnSprintStart	Sprint begins	float EntrySpeed
OnSprintEnd	Sprint ends	(none)
OnSprintFootstep	Heavy sprint step	bool, float Int
OnADSEnter	Entered ADS	(none)
OnADSExit	Exited ADS	(none)

Horror

Event	When It Fires	Parameters
OnCameraGlitch	Any glitch fires	(none)
OnGlitch	Glitch with type data	EScarGlitchType
OnHeartbeatPulse	Each heartbeat	(none)

Event	When It Fires	Parameters
OnHeartbeat	Heartbeat with BPM	float CurrentBPM
OnPanicThreshold	Panic crosses 0.3/0.6/0.9	float PanicLevel
OnHorrorTrigger	Horror event triggered	Type, float Int

Mode + System

Event	When It Fires	Parameters
OnCameraModeChanged	Mode switched	bool blsHorror
OnModeBlendComplete	Blend finished	bool blsHorror
OnPresetApplied	Preset changed	EScarEyeCamPreset
OnLeanStart	Lean begins	float Direction
OnLeanEnd	Lean returns to center	(none)
OnLeanBlocked	Lean blocked by wall	(none)

9. Blueprint Workflow Examples

Weapon Fire + Sound + Barrel Smoke

- On Fire input, call AddRecoil(3.5, 0.8) on your ScarEyeCam component
- Override OnCameraRecoil in Event Graph. Connect to Play Sound 2D. Wire Intensity to Volume Multiplier
- Override OnFireReaction. Spawn Emitter at weapon muzzle for barrel smoke

Horror Jumpscare from a Trigger Volume

- In your Level Blueprint, on Overlap Begin, get the player's ScarEyeCam component
- Call TriggerHorrorEvent(Jumpscare, 1.0)
- In your Character Blueprint, override OnHorrorTrigger. Branch on Type == Jumpscare
- On True: Play scare sound + flash a white UMG widget overlay (fade out over 0.2s)

Sprint Sounds with Foot Intensity

- Override OnSprintStart. Start a looping heavy-breathing audio component
- Override OnSprintFootstep. Play heavy boot impact. Wire Intensity to Volume. Use bIsLeftFoot to alternate variations
- Override OnSprintEnd. Fade out the breathing loop over 1 second

Dynamic Horror Music from Panic Level

- Override OnPanicThreshold. Branch on PanicLevel:
- 0.3: Fade in tension music layer. 0.6: Add distortion. 0.9: Full chase music
- Override OnCameraIdle. Fade all layers back to ambient over 5 seconds

ADS UI (Scope Overlay)

- Override OnADSEnter. Set crosshair widget to Hidden. Enable scope overlay widget
- Override OnADSExit. Show crosshair. Disable scope overlay

Cutscene Feel Switch

- At cutscene start, call ApplyPreset(Cinematic). Camera becomes heavy and cinematic
- At cutscene end, call ApplyPreset(Tactical) to return to gameplay feel
- Override OnPresetApplied to crossfade audio mix to match the new preset

10. All Editable Properties

You do not need to touch most of these. Presets handle everything. These exist for advanced customization when you need precise control over specific behaviors.

Main

Property	Type	Default	Description
bEnableCameraSystem	bool	true	Global on/off
bEnableSmoothing	bool	true	Toggle spring smoothing

Presets

Property	Type	Default	Description
ActivePreset	enum	Realistic	Camera personality

Mode

Property	Type	Default	Description
bEnableShooterMode	bool	false	Shooter mode
bEnableHorrorMode	bool	false	Horror mode
ModeBlendDuration	float	1.0	Blend time (s)

Pipeline

Property	Type	Default	Description
GlobalSmoothness	float	1.0	Damping multiplier
GlobalResponsiveness	float	1.0	Stiffness multiplier
SoftLimitStrength	float	0.30	Rotation limit softness
LeanEaseStrength	float	0.65	Lean input easing

Motion + Inertia

Property	Type	Default	Description
GlobalWeight	float	1.0	Camera mass feel
RotationResponsiveness	float	1.0	Rotation speed
InertiaStrength	float	1.0	Input-to-lag ratio

Impact

Property	Type	Default	Description
ImpactIntensity	float	1.0	Master impact scale (0-5)
ImpactRecoverySpeed	float	1.0	Impact settle speed
ImpactEventThreshold	float	0.5	Min magnitude for event
bStepMotionEnabled	bool	true	Footstep head bob
LandingImpactIntensity	float	4.5	Landing drop strength
LandingMaxImpact	float	12.0	Max landing clamp
JumpImpactIntensity	float	1.8	Jump camera kick

Shooter

Property	Type	Default	Description
bTiltEnabled	bool	true	Strafe tilt
bProceduralShakeEnabled	bool	true	Speed-driven shake
bBodycamEnabled	bool	true	Off-center mount
bDynamicFOVEnabled	bool	true	Movement FOV
RecoilSpringStiffness	float	280	Recoil recovery speed
IdleFOV / WalkFOV / SprintFOV	float	90/90/95	FOV per state
SprintSpeedThreshold	float	420	Sprint activation

ADS

Property	Type	Default	Description
ADSFOV	float	65.0	ADS field of view
ADSFOVSpeed	float	12.0	FOV transition speed
ADSStabilization	float	0.6	Sway reduction (0-1)

Lean

Property	Type	Default	Description
bLeanEnabled	bool	true	Toggle lean
LeanMaxAngle	float	8.0	Max roll (deg)
LeanMaxOffset	float	18.0	Max lateral offset (cm)
LeanForwardOffset	float	3.5	Forward shift (cm)

Horror

Property	Type	Default	Description
bBreathingEnabled	bool	true	Breathing oscillation
bChaosEnabled	bool	true	Random micro-jolts
bHeartbeatEnabled	bool	true	Heartbeat pulse
bGlitchEnabled	bool	true	Camera glitches
bPostProcessEnabled	bool	true	Horror post-process
PanicBuildRate	float	0.12	Panic build speed
PanicDecayRate	float	0.05	Panic decay speed
MaxVignetteIntensity	float	0.65	Max vignette
MaxChromaticAberration	float	3.5	Max chromatic aberration
MinColorSaturation	float	0.65	Min saturation

Events Config

Property	Type	Default	Description
MoveEventSpeedThreshold	float	50.0	Min speed for OnCameraMove
IdleEventDelay	float	1.5	Idle delay (s)

11. Per-Mode Settings Reference

Each mode has its own FScarModeParams struct visible under ScarEyeCam > Shooter / Horror. Values blend smoothly during mode transitions.

Property	Shooter Default	Horror Default
StepVerticalImpulse	32.0 (strong punch)	18.0 (soft, heavy)
StepSpringStiffness	140.0 (fast snap-back)	55.0 (slow, lingering)
BreathingIntensityV	0.15 (minimal)	0.60 (very visible)
InertiaInputScale	0.09 (responsive)	0.24 (24% lag)
RotationSpringStiffness	32.0 (tight)	5.0 (dreamy)
HeartbeatBPM	0.0 (disabled)	68.0 (resting rate)
GlitchChance	0.0 (none)	0.12 (12% per check)
PostProcessIntensity	0.0 (clean)	1.0 (full horror)
SprintEntryPitch	2.2 (strong punch)	0.8 (weak, panicked)
FireDropIntensity	0.5 (noticeable)	0.15 (minimal)
LeanJitterScale	0.0 (none)	0.45 (camera trembles)

Full FScarModeParams struct contains 40+ properties covering step motion, breathing, inertia, rotation, tilt, acceleration, shake, bodycam, chaos, focus drift, micro movement, heartbeat, glitch, post-process, lean, sprint, and fire reaction.

12. Read-Only State Variables

Use Get nodes in Blueprint to read these for UI, animation, AI, or gameplay logic. Updated every frame.

Variable	Type	What It Tells You
ActiveMode	enum	Current mode: None, Shooter, or Horror
ModeBlendAlpha	float	Blend progress (0=Shooter, 1=Horror)
CurrentLeanOutput	float	-1=full left, 0=center, +1=full right
bIsADS	bool	True while aiming down sights
CurrentSpeed	float	Horizontal speed (cm/s)
bIsSprinting	bool	True when above sprint threshold
bIsMoving	bool	True when speed > 10 cm/s
bIsInAir	bool	True when falling/jumping
CurrentPanicLevel	float	Panic 0-1 (Horror only)
CurrentHeartbeatBPM	float	Current BPM (Horror only)

13. Tuning Cheatsheet

"Camera feels too floaty"

Increase GlobalResponsiveness (1.3). Decrease GlobalSmoothness (0.7). Decrease InertiaStrength (0.5).

"Camera feels too stiff"

Increase GlobalSmoothness (1.4). Increase GlobalWeight (1.3). Increase InertiaStrength (1.2).

"Impacts not heavy enough"

Increase ImpactIntensity (1.5-2.0). Decrease ImpactRecoverySpeed (0.7).

"Impacts too violent"

Decrease ImpactIntensity (0.5). Increase ImpactRecoverySpeed (1.5).

"Horror not scary enough"

Increase PanicBuildRate (0.3). Increase MaxChromaticAberration (6.0). Decrease HorrorSettings.RotationSpringStiffness (3.0).

"ADS too loose / too tight"

Adjust ADSStabilization (0-1). Lower for natural sway, higher for laser-steady.

14. Use Cases, Limitations, and Performance

Where to Use ScarEyeCam

- Bodycam shooters (Bodycam, Super People style)
- Tactical FPS (Ready or Not, Ground Branch style)
- Horror exploration (Outlast, Amnesia, P.T. style)
- Walking simulators and narrative adventures
- Story-driven cinematic projects
- Any first-person game that needs physical camera feel

Not Designed For

- Static cameras or security camera systems
- RTS, top-down, or isometric games
- Projects without a player-controlled first-person camera

Honest positioning. We would rather you know exactly what this does than oversell it.

Performance

ScarEyeCam runs entirely on the game thread with zero allocations per frame. All systems are spring-based math with no traces, no line checks, and no collision queries. Subsystems toggled off consume zero CPU. Tested at 120+ FPS on mid-range hardware with all systems active.

Supported Platforms

Win64, Mac, Linux, Android, iOS. The plugin uses only core engine APIs (no platform-specific code) and compiles on all platforms supported by UE 5.2 through 5.7.

ScarEyeCam is not about moving a camera.

It is about making players feel like they are inside your world.

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