MCP SERVER | NO CODE | CLOUD HOSTED

Exposure Triangle Calculator MCP for AI Agents

Get precise camera settings and ND filter adjustments for any lighting scenario.

Exposure Triangle Calculator. This MCP handles the technical math for photography, including missing exposure parameters, ND filter adjustments, and film reciprocity corrections. It lets your agent calculate exact camera settings so you can focus on the shot instead of the math. Whether you're shooting digital or film, it ensures your exposure is spot on every time.

A+ Quality Score 100/100

photography | exposure | aperture | shutter-speed | iso | nd-filter

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vinkius.com/mcp/exposure-triangle-calculator

SCAN TO VIEW

The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

> *The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*
>
> — Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

```
https://edge.vinkius.com/{token}/mcp
```

Claude · Cursor · VS Code · Windsurf · Grok · Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1) Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

> Get started at **cloud.vinkius.com** — connect your AI agent in under 60 seconds.

Exposure Triangle Calculator MCP

4 tools available
Cloud-hosted on Vinkius

You're out in the field and the light is changing faster than you can react. Instead of pulling out a calculator or guessing your next move, you can let your agent handle the math. This MCP takes your known variables and gives you the exact settings you need to keep your exposure consistent. It handles the standard exposure triangle, but it also digs into the specifics like ND filter compensation and film reciprocity. If you're shooting analog, it takes the headache out of long exposure adjustments. It's a handy part of the Vinkius catalog that turns your AI client into a reliable lighting assistant. You just tell it what gear you have and what the scene looks like, and it hands you the numbers. No more squinting at charts or worrying about losing a stop. You get your settings and get back to your work. It helps you navigate complex lighting environments without the mental fatigue of constant calculations. It's about getting the right shot without the math getting in the way. You can move from a bright studio to a dimly lit room and know your f-stop and shutter speed are perfectly paired. It takes the guesswork out of your kit. When you're trying to hit a specific look, you don't have to worry about the technicalities of the exposure triangle. Your agent handles the numbers, and you handle the art. This makes your workflow much smoother because you aren't stopping to do math in the middle of a creative moment. It's about staying in your flow.

Core Capabilities

01 — Calculate missing exposure variables

Find the correct ISO, Aperture, or Shutter Speed when you only have two of the three values.

02 — Adjust for ND filters

Get the exact camera settings needed to compensate for specific Neutral Density filter strengths.

03 — Solve film reciprocity failure

Calculate the necessary shutter speed adjustments for analog film photography.

04 — Generate exposure variations

See different aperture and shutter speed combinations that maintain the same exposure value.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/exposure-triangle-calculator** — connect your AI agent in three steps.

01 Provide your agent with your current known camera settings and the lighting conditions.

02 Tell your agent which parameter you want to change or which filter you are adding.

03 Receive a list of precise, corrected settings for your next shot.

The bottom line is you get the right camera settings for any lighting scenario without doing the manual math.

Built For

This is for photographers who want to stop doing mental math in the middle of a shoot. It's perfect for anyone who needs to swap gear quickly or manage complex lighting setups without losing their creative flow.

Professional Photographer

Uses this to quickly calculate new settings when moving from bright sunlight to deep shade.

Analog Film Photographer

Uses this to calculate reciprocity failure adjustments for long exposure film shots.

Studio Lighting Technician

Uses this to determine aperture and shutter speed pairings for different studio lights.

Photography Student

Uses this to verify their understanding of the exposure triangle and lighting math.

What Changes When You Connect

01 Stop guessing your shutter speed by using calculate_missing_parameter to find the exact number for any light.

02 Get instant results for ND filters with apply_nd_compensation so you don't have to memorize stop values.

03 Fix film reciprocity issues on the fly with get_film_correction to keep your analog shots consistent.

04 Explore creative depth of field options with generate_exposure_variations to see different lens and shutter combos.

05 Keep your exposure consistent across different camera bodies and lenses without doing manual math.

06 Speed up your setup when moving from bright sunlight to shade by asking your agent for the new numbers.

Real-World Applications

Finding shutter speed in the sun

You have ISO 400 and f/5.6. Ask your agent to use calculate_missing_parameter to find the correct shutter speed for a bright day.

Adding an ND filter on the fly

You're at f/8 and 1/60s but just put on an ND8 filter. Ask your agent to use apply_nd_compensation to find your new settings.

Exploring creative depth of field

You want f/4 at 1/100s but want a different look. Ask your agent to use generate_exposure_variations to see other options.

Calculating film reciprocity

You're shooting 35mm film and need to know how much to slow down the shutter. Ask your agent to use get_film_correction.

Patterns to Avoid

Doing manual math

✗ AVOID

Trying to calculate stops in your head and getting the shutter speed wrong.

✓ INSTEAD

Use calculate_missing_parameter to get the exact number every time.

Forgetting ND stops

✗ AVOID

Putting on a filter and forgetting how many stops it actually takes off.

✓ INSTEAD

Use apply_nd_compensation to be sure of your new settings.

Ignoring reciprocity

✗ AVOID

Getting blurry long exposures on film because you didn't adjust the shutter speed.

✓ INSTEAD

Use get_film_correction to get the right adjustment for your specific film.

The Right Fit

Use this MCP if you need to perform technical calculations for photography, such as finding missing exposure variables, calculating ND filter adjustments, or solving for film reciprocity. It is a math utility designed for precision. Don't use it if you need a light meter to measure actual light levels, if you want to edit photos, or if you need hardware control for your camera. This tool provides numbers, not image processing or physical hardware interaction. If you just need to know if a scene is 'bright' or 'dark', a light meter is a better tool. If you need to know the exact f-stop for a specific look, this MCP is the right choice.

Exposure Triangle Calculator for Photography Math

Most photographers have to do a lot of mental math when they change gear or move into

This MCP takes that math off your plate. You just tell your agent what you have and what you want

different light. You might have to check your manual, pull out a phone calculator, or just guess and hope for the best. It's a constant distraction when you're trying to stay in the zone.

to do. It gives you the exact settings immediately so you can get back to taking the shot.

Exposure Triangle Calculator for Analog Film Settings

Analog photography adds another layer of complexity with reciprocity failure. Figuring out exactly how much to slow down your shutter speed based on your film type and exposure time can be a headache.

This tool automates that calculation perfectly. You get the right numbers for your specific film without having to look up charts or do long division in the middle of a shoot.

Exposure Triangle Calculator 4-Tool Photography Suite

Calculate missing exposure parameters, ND filter adjustments, and film reciprocity corrections using your AI agent.

#	TOOL	DESCRIPTION
01	`generate_exposure_variations`	Shows you different aperture and shutter speed combos that keep your exposure the same. It helps you find the best depth of field for your shot.
02	`get_film_correction`	Calculates the shutter speed change needed for film reciprocity failure. This is a must for analog photographers doing long exposures.
03	`calculate_missing_parameter`	Finds the missing variable like ISO or Shutter Speed when you only know two of them. This is useful for quickly adjusting your camera to new lighting.
04	`apply_nd_compensation`	Tells you exactly how to adjust your settings when you put an ND filter on your lens. It removes the need to memorize stop values for different filters.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U I'm using ISO 400 and f/5.6. What should my shutter speed be for a sunny day?

To maintain a standard exposure in bright sunlight with those settings, your shutter speed should be:

1/250s

This keeps your exposure balanced while allowing for a nice depth of field.

U I'm adding an ND8 filter to my current settings of f/8 and 1/60s. What are my new settings?

Since an ND8 filter reduces light by 3 stops, you need to compensate. Your new adjusted settings should be:

- **Aperture:** f/5.6
- **Shutter Speed:** 1/15s

This keeps your exposure consistent with the filter applied.

U Show me different aperture and shutter speed options for f/4 at 1/100s.

Here are some combinations that maintain the same exposure value:

- **f/2.8** at **1/200s**
- **f/5.6** at **1/50s**
- **f/8** at **1/25s**

These options let you choose your preferred depth of field.

Frequently Asked Questions

01 **How does the Exposure Triangle Calculator help with ND filters?**

It tells you exactly how to adjust your aperture and shutter speed when you add a filter. You don't have to memorize stop values; just tell your agent what filter you're using.

02 **Can I use the Exposure Triangle Calculator for analog film?**

Yes. It includes a specific feature to handle film reciprocity failure, which is essential for getting correct shutter speeds on film during long exposures.

03 **How do I find my shutter speed with this MCP?**

Just tell your agent your current ISO and Aperture. It will calculate the correct shutter speed for you instantly.

04 **What are exposure variations?**

These are different combinations of aperture and shutter speed that result in the same exposure. It helps you pick the best look for your shot.

05 **Does it work for different ISO settings?**

Yes, it works with any ISO. You can tell your agent what ISO you want to use, and it will figure out the matching aperture and shutter speed.

06 **How does it handle film reciprocity?**

It calculates the necessary shutter speed adjustments based on your film type and exposure time, taking the guesswork out of analog photography math.

07 **How do I find the correct shutter speed if I know my aperture and ISO?**

You can use the `calculate_missing_parameter` tool. Simply provide your current aperture and ISO, and it will calculate the required shutter speed to maintain the same exposure.

08 **Does this tool account for ND filters?**

Yes, the `apply_nd_compensation` tool allows you to input your base aperture and shutter speed along with an ND filter factor (like 'ND8') to calculate the necessary adjustments.

09 **Can I use this for analog film photography?**

Absolutely. The `get_film_correction` tool specifically calculates the shutter speed extension needed to compensate for reciprocity failure in different film types.

Go Live in 60 Seconds

Get your connection token from **cloud.vinkius.com**, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add `"exposure-triangle-calculator": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → Add endpoint URL
ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

- Ask ChatGPT
- Ask Claude
- Ask Perplexity
- Ask Gemini
- Ask Grok

READY TO CONNECT

Exposure Triangle Calculator is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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Endpoint	`https://edge.vinkius.com/{token}/mcp`

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