MCP SERVER | NO CODE | CLOUD HOSTED

Flash Power Calculator MCP for AI Agents

Get precise studio lighting and motion freeze math for your next shoot.

Flash Power Calculator MCP. This tool handles all the complex math for photography lighting so you don't have to. You can calculate the correct aperture, flash power levels, and motion freeze potential instantly. It takes the guesswork out of your setup, ensuring you know exactly how much light you're throwing before you click the shutter. Perfect for studio, sports, and event photography.

B Quality Score 85/100

photography | flash | exposure | aperture | iso

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.

Flash Power Calculator MCP

0 tools available
Cloud-hosted on Vinkius

You're on a shoot and need to know exactly how much power to put into your flash to hit a specific exposure without blowing out the highlights. Instead of pulling out a calculator or guessing based on experience, this MCP does the heavy lifting. It handles the physics of light for you. You can figure out the right aperture for a specific distance and ISO, or find the exact power fraction needed for a multi-flash setup. It even helps you double-check if your flash duration is fast enough to freeze a moving subject. It's a huge time-saver when you're trying to nail a complex studio setup or a fast-paced sports shot. Having this in your toolkit means you spend less time on math and more time actually taking the photo. It's one of the practical utilities you'll find in the Vinkius catalog to keep your production moving.

Core Capabilities

01 — Find the right aperture

Calculate the correct f-stop for your shot based on distance and ISO.

02 — Determine flash power

Get the exact power fraction needed for a specific exposure setting.

03 — Calculate total light

Combine the Guide Numbers of multiple flashes into one total output value.

04 — Check motion freeze

Verify if your flash duration is fast enough to stop a moving subject.

05 — Predict battery life

Estimate battery performance based on your specific flash settings.

One Click on Vinkius — From Prompt to Execution

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

01 Tell your agent the distance, ISO, and desired aperture for your shot.

02 The MCP processes the light physics and exposure math behind the scenes.

03 You get the exact power fraction or aperture needed to hit your goal.

The bottom line is you get precise lighting math without doing the manual calculations yourself.

Built For

This is for photographers who deal with complex lighting setups, high-speed sports, or studio work where eyeballing it isn't an option.

Studio Photographer

Setting up complex multi-light rigs for high-end portraits and ensuring every light hits the subject perfectly.

Sports Photographer

Calculating motion freeze for fast-moving athletes in different environments to ensure sharp action shots.

Event Photographer

Quickly adjusting flash power for varying room sizes and distances during live events.

What Changes When You Connect

01 Stop guessing your flash power. Use `calculate_power_fraction` to get the exact setting for your shot every time. This saves you from the trial and error of moving lights and guessing at power levels, letting you hit your desired exposure on the first try.

02 Nail your aperture instantly. `calculate_required_t_stop` gives you the right f-stop for any distance or ISO. You don't have to do the mental math while you're trying to compose a shot, so you can stay focused on your subject.

03 Simplify multi-light setups. Use `calculate_aggregate_gn` to see how many lights you actually need. It combines the Guide Numbers of your entire rig into one value, making it much easier to plan complex studio environments without over-lighting.

04 Prevent blurry shots. `analyze_motion_freeze` confirms your flash is fast enough for the action. If you're shooting high-speed sports, this tool tells you exactly if your gear can handle the speed of the subject to keep the image sharp.

05 Save time on set. Get instant answers so you can keep shooting instead of crunching numbers. Every time you ask your agent for a calculation, you're cutting down on the time spent on technical setup and increasing your time behind the lens.

Real-World Applications

Checking motion blur on a sprinter

A sports photographer isn't sure if their flash is fast enough to freeze a sprinter. They ask the agent to check the motion freeze for a 2m/s speed, and it confirms the flash duration.

Planning a 10-meter studio rig

A studio pro needs to light a 10-meter wide scene with 4 flashes. They use the aggregate GN tool to figure out the total light output for the entire rig.

Finding the right aperture for a portrait

A portrait photographer is unsure of the aperture for a specific distance. They provide the ISO and distance to get the exact T-stop needed for a soft background.

Hitting a specific exposure on a 3m distance

Trying to hit a specific exposure on a 3m distance with a GN 36 flash. The agent uses `calculate_power_fraction` to tell them to use 1/2 power for the perfect look.

Patterns to Avoid

Guessing flash power by feeling

✗ AVOID

Setting the flash to 1/16 and hoping for the best.

✓ INSTEAD

Use `calculate_power_fraction` to get the exact setting based on your distance and ISO.

Forgetting to account for multi-light totals

✗ AVOID

Adding lights until the room is bright enough.

✓ INSTEAD

Use `calculate_aggregate_gn` to see the combined output of your entire rig.

Not checking motion blur

✗ AVOID

Taking a shot of a car and getting a blurry mess.

✓ INSTEAD

Run `analyze_motion_freeze` to see if your flash duration actually beats the subject's speed.

The Right Fit

Use this if you need precise math for studio lighting, sports photography, or complex flash setups. It's for people who want to know exactly what settings to dial in before they click the shutter. Don't use it if you just need a basic how to use a camera guide. If you're just doing simple, single-source natural light photography, you won't need these calculations. This is a technical tool for light physics and exposure accuracy.

Flash Power Calculator for Precise Studio Lighting Math

Setting up a studio shoot is usually a mess of trial and error. You move a light, see the result, adjust the power, and repeat until you're tired. You're constantly checking your light meter or doing

This MCP changes that. You just tell your agent the distance and the look you want. It handles the physics and gives you the exact power fraction

mental math to figure out how much power a 300W flash will actually throw at a subject 5 meters away. It's tedious and kills your creative flow.

and aperture. You get a perfect setup on the first try.

Flash Power Calculator for Accurate Motion Freeze Calculations

High-speed photography is a gamble. You might have a flash fast enough to freeze a bird in flight, or you might end up with a blurry mess because the duration wasn't quite enough. Manually calculating the math for velocity versus flash duration while you're on location is nearly impossible.

You can now ask your agent to run the numbers for you. It checks the math against the speed of the subject and your flash specs to tell you exactly what to expect. You can shoot with confidence.

See It in Action

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

U What aperture do I need for a GN 100 flash at ISO 400 and 5 meters away?

Based on your setup, here is the recommended setting:

- **Aperture**: f/8
- **Distance**: 5 meters
- **ISO**: 400
- **Flash**: GN 100

This will give you a balanced exposure for that distance.

U What power fraction is needed for a GN 36 flash at ISO 100, distance 3m, and f/5.6?

For those specific settings, you'll want to set your flash to:

- **Power Fraction**: 1/2
- **Distance**: 3m
- **Aperture**: f/5.6
- **ISO**: 100

This should hit your target exposure perfectly.

U Will a flash duration of 0.0001s freeze a subject moving at 2m/s across a 0.01m frame area?

Yes, the motion will be frozen.

- **Flash Duration**: 0.0001s
- **Subject Speed**: 2m/s
- **Result**: **Frozen**

Your flash is fast enough to capture the subject clearly at that speed.

Frequently Asked Questions

01 **How does the Flash Power Calculator help with studio lighting?**

It gives you the exact power settings and aperture you need for any distance. You can stop guessing and start getting perfect exposures on the first try.

02 **Can I use the Flash Power Calculator for sports photography?**

Yes, it's perfect for that. You can check if your flash is fast enough to freeze a moving subject based on their speed and your gear's specs.

03 **How do I calculate the total power of multiple flashes?**

You can use the aggregate tool to combine the Guide Numbers of your entire lighting rig. It tells you the total light output so you don't over-light your scene.

04 **Will the Flash Power Calculator tell me if my photo will be blurry?**

Yes, it analyzes your flash duration against the subject's speed. It tells you clearly if the motion will be frozen or if you need a faster flash.

05 **Does this tool work for different ISO settings?**

It does. You can input any ISO value along with your distance to get the correct aperture for your specific shot.

06 **What is the best way to use the Flash Power Calculator for a complex shoot?**

Tell your agent the distance, ISO, and the flash you're using. It will provide the power fraction and aperture needed to hit your target exposure.

07 **How do I calculate the required aperture?**

Use the `calculate_required_t_stop` tool by providing your flash's guide number, current ISO, and distance to the subject. Tools available: `your_tool_name`.

08 **Can I calculate power for multiple flashes?**

Yes, the `calculate_aggregate_gn` tool allows you to input an array of guide numbers to find the total effective guide number.

09 **How can I check if my subject will be blurry?**

Use the `analyze_motion_freeze` tool with your flash duration, subject speed, and size in frame to see if the motion is frozen.

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 `"flash-power-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

Flash Power 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

INDEPENDENT PLATFORM DISCLAIMER

Vinkius is an independent platform and is not affiliated with, endorsed by, sponsored by, verified by, or otherwise authorized by Flash Power Calculator. All third-party trademarks, logos, and brand names are the property of their respective owners. Their use in this document is strictly for informational purposes to identify service compatibility and interoperability.

DOCUMENT INFORMATION

Generated	July 2026
MCP Server	Flash Power Calculator MCP
Server ID	`019f3776-57ff-7076-ba1e-27704731af71`
Platform	Vinkius Cloud for AI Agents
Endpoint	`https://edge.vinkius.com/{token}/mcp`

LICENSE & USAGE

This document is generated automatically by the Vinkius PDF Engine. Content reflects the MCP server configuration at the time of generation and may change as updates are deployed. For the most current information, visit vinkius.com/mcp/flash-power-calculator.