MCP SERVER | NO CODE | CLOUD HOSTED

Fabric Yardage Calculator MCP for AI Agents

Calculating Textile Requirements for Custom Garments and Home Goods

The Fabric Yardage Calculator MCP estimates exact fabric requirements for almost any textile project. It handles complex calculations—like determining yardage for custom patterns or full-sized curtains—and accounts for real-world variables such as nap direction and varying fabric widths (45" to 150cm). Use it to stop overbuying material and guarantee you have the precise amount of cloth needed.

A+ Quality Score 100/100

sewing | fabric | calculation | textile | crafting

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vinkius.com/mcp/fabric-yardage-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.

Fabric Yardage Calculator MCP

3 tools available
Cloud-hosted on Vinkius

Need to know exactly how much fabric you need before starting a big project? This MCP connects your AI agent to an engine built for textile math. You can calculate required yardage for everything from custom-cut garments to large items like quilts or drapery panels, all while respecting real-world constraints like the direction of the fabric nap. It estimates lengths for specific pattern pieces using `calculate_custom_layout`, and also provides quick size checks with `lookup_garment_yardage`. For non-clothing projects, you can calculate needs for curtains (including fullness) or quilts using `calculate_project_fabric`. Because this MCP supports multiple widths—45", 5/4", 60", 110cm, and 150cm—it keeps your calculations accurate whether you're working on a small craft piece or a commercial run. You can find Vinkius at the top of the catalog to connect this MCP with all your other tools.

Core Capabilities

01 — Calculate custom pattern layout

Determine the total linear length required for specific, user-defined pattern pieces while accounting for nap direction.

02 — Estimate standard garment yardage

Retrieve quick, estimated fabric lengths needed for common clothing sizes from XS up to 5XL.

03 — Determine large project material needs

Calculate the necessary fabric length for non-clothing items like curtains or quilts, handling fullness ratios.

One Click on Vinkius — From Prompt to Execution

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

01 Specify your required pattern pieces and the type of layout (one-way or two-way nap) using `calculate_custom_layout`.

02 If it's a standard item, use `lookup_garment_yardage` to get an estimate for common sizes. For big projects like curtains, input dimensions and fullness into `calculate_project_fabric`.

03 The MCP runs the math against your chosen fabric widths (e.g., 60" or 150cm) and returns the total required linear yardage.

The bottom line is, you input the project specifics—sizes, patterns, dimensions—and it outputs a single, accurate number for how much fabric to buy.

Built For

Crafters and small-batch manufacturers need this. If your job involves cutting textiles, you know the pain: buying too little material or wasting time recalculating measurements by hand. This MCP gives you precision for everything from custom clothing lines to home goods.

Pattern Maker

Calculates total fabric consumption for new garment patterns, ensuring the chosen layout works with specific nap directions.

Interior Designer / Drapery Specialist

Determines accurate yardage for custom window treatments or large decorative quilts, factoring in fullness and room dimensions.

Small-Batch Apparel Entrepreneur

Quickly checks material requirements for standard clothing sizes (XS to 5XL) without needing a physical sample pattern.

What Changes When You Connect

01 Avoid costly material waste. By using `calculate_custom_layout`, you get the minimum required length for your pattern pieces, eliminating excess buying.

02 Handle diverse projects with one tool. Whether it's curtains or quilts, `calculate_project_fabric` handles the specific math for non-garment items like fullness.

03 Instant size checks. Need a quick estimate for T-shirts? `lookup_garment_yardage` provides immediate yardage figures for standard sizes (XS–5XL).

04 Adapt to fabric type. The MCP supports multiple widths, including 45", 60", and 150cm, so your math always matches the material you're buying.

05 Speed up iteration. Instead of manually mapping pattern pieces, let your agent run complex calculations instantly, letting you focus on design.

Real-World Applications

Figuring out fabric for a new jacket line

A small brand owner asks their agent to calculate the yardage needed for a blazer pattern (multiple pieces) using 60" fabric and specifying one-way nap. The agent calls `calculate_custom_layout` and returns the precise total length, ensuring they don't order too much.

Designing custom window treatments

An interior designer needs to calculate material for curtains (50" wide, 80" long) with a 2.0 fullness ratio. The agent uses `calculate_project_fabric` and reports the exact yardage needed and the number of panels required.

Quilting project planning

A crafter wants to know how much fabric is needed for a large quilt using 110cm wide material. The agent invokes `calculate_project_fabric` and gives the necessary yardage, preventing a mid-project supply run.

Quick sizing check for pop-up shop

A vendor needs to estimate fabric amounts for 30 different sizes of basic t-shirts. The agent uses `lookup_garment_yardage` and instantly gets the required yardage estimates, saving hours of manual calculation.

Patterns to Avoid

Using simple area math

✗ AVOID

The user assumes they just need (length * width) / 36. This ignores pattern layout complexity, nap direction, and required fullness ratios.

✓ INSTEAD

Use `calculate_custom_layout` when dealing with specific pieces because it correctly maps the linear requirements based on actual fabric constraints. For curtains, always use `calculate_project_fabric`.

Ignoring nap direction

✗ AVOID

Calculating a pattern piece length assuming the material can be laid any way, resulting in misaligned prints or poor drape.

✓ INSTEAD

Always specify one-way or two-way nap when using `calculate_custom_layout`. This forces the calculation to respect the fabric's grain.

Mixing up project types

✗ AVOID

Using garment formulas for curtains, which will vastly underestimate the required material due to failing to account for fullness.

✓ INSTEAD

If you are working on anything other than a standard shirt or pants size, always use `calculate_project_fabric`. Don't rely on `lookup_garment_yardage`.

The Right Fit

Use this MCP if your project requires textile calculations that account for material physics—nap direction, fullness ratios, or non-standard layouts. For instance, when calculating a custom blazer pattern (use `calculate_custom_layout`) or curtains (use `calculate_project_fabric`). Don't use it if you simply need to count how many pieces of fabric you have; that's inventory management. Also, don't rely on this for material cost estimates alone—it only gives yardage. If you just need a rough idea and aren't doing custom patterns, checking standard sizes via `lookup_garment_yardage` is fast. But if the piece is complex, stick to the specific calculation tools.

Fabric Yardage Calculator MCP for AI Agents: Solving Complex Pattern Layouts

Today, figuring out fabric needs involves a mess of measuring tapes, pattern guides, and cross-referencing width limitations. You calculate piece by piece, constantly worrying if the nap direction will ruin your print or if you've accounted for enough fullness in the curtains. It's slow, tedious work that makes mistakes costly.

With this MCP, you feed the agent the dimensions and constraints—the pattern pieces, the desired width, the required fullness—and it handles all the complex math. You get one definitive number: the total linear yardage needed. No more guesswork.

Fabric Yardage Calculator MCP for AI Agents: Mastering Garment Sizing and Projects

Manual sizing requires keeping multiple charts open, switching between garment types (like shirts vs. jackets), and guessing the best yardage to order. For home goods, you have to manually factor in fullness percentages for every single window treatment.

This MCP standardizes that process. It offers both quick size checks using `lookup_garment_yardage` *and* specialized calculations like `calculate_project_fabric`, so whether it's apparel or decor, the calculation is accurate and immediate.

3 Tools for Advanced Textile Calculations and Pattern Layout

Use these tools to calculate everything from garment sizes to massive curtain panels, ensuring you always order the right amount of fabric.

#	TOOL	DESCRIPTION
01	`calculate_custom_layout`	Calculates the total linear fabric length needed for specific, custom-cut pattern pieces, supporting one-way or two-way nap direction.
02	`calculate_project_fabric`	Determines fabric needs for non-garment projects like curtains and quilts by accounting for fullness and dimensions.
03	`lookup_garment_yardage`	Retrieves quick, estimated yardage amounts from a database for standard clothing sizes ranging from XS to 5XL.

See It in Action

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

U I need fabric for a custom layout with two pieces: 10×20 inches and 15×30 inches. I'm using 45 inch material with one-way nap.

Pattern Layout Analysis

- **Material:** 45" wide
- **Nap Direction:** One-Way
- **Total Length Required:** 0.83 yards (76 inches)
- **Efficiency Score:** 75%

This calculation confirms the minimal length you need to cut both pieces while respecting the nap direction.

U How much fabric do I need for a curtain that is 50 inches wide and 80 inches long, assuming 2.0 fullness?

Curtain Yardage Estimate

Based on your dimensions (50" W x 80" L) and the required 2.0 fullness:

- **Total Fabric Needed:** 4.44 yards (4.06 meters)
- **Required Panels:** 2 panels

Please remember this estimate is based on standard construction.

U What yardage do I need for a T-shirt in size Large using 60 inch fabric?

For a size L T-Shirt on 60" fabric, you will need approximately **0.75 yards** (0.68 meters). This estimate accounts for standard pattern cutting methods.

Frequently Asked Questions

01 **How does the Fabric Yardage Calculator MCP handle different widths of material?**

The MCP supports a variety of common fabric widths, including 45", 60", and 150cm. You simply input your chosen width during the calculation process to get accurate results for that specific material.

02 **Can I use this MCP to calculate yardage for curtains?**

Yes, absolutely. Use the dedicated `calculate_project_fabric` tool. You provide the dimensions and the fullness ratio, and it calculates exactly how much fabric you need, making sure you don't short yourself on material.

03 **Is this MCP just for T-shirts and standard clothing sizes?**

No. While `lookup_garment_yardage` handles standard apparel, the calculator is also built for large projects like quilts or drapery using the `calculate_project_fabric` tool.

04 **Does Fabric Yardage Calculator MCP account for print direction?**

Yes. When calculating custom pieces with `calculate_custom_layout`, you specify whether the fabric has a one-way or two-way nap, ensuring your pattern respects the printing grain.

05 **What if my project is neither clothes nor curtains? Can I still use Fabric Yardage Calculator MCP?**

The `calculate_project_fabric` tool handles general large textile projects. As long as you can define dimensions and a fullness factor, the MCP can help estimate your material needs.

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 `"fabric-yardage-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

Fabric Yardage 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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