MCP SERVER | NO CODE | CLOUD HOSTED

Yarn Length Calculator MCP for AI Agents

Precision Yarn Estimation for Knitting and Crochet Patterns

The Yarn Length Calculator estimates exactly how much yarn you need for any knitting or crochet project. Input your gauge, pattern dimensions, and weight type, and this MCP handles the complex math, giving you precise yardage totals. It’s a precision tool that eliminates guesswork, whether you're calculating one small patch or mapping out an entire multi-color garment.

A+ Quality Score 100/100

knitting | crochet | yarn | estimation | crafting

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vinkius.com/mcp/yarn-length-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.

Yarn Length Calculator MCP

3 tools available
Cloud-hosted on Vinkius

Stop guessing how much yarn you need for your next project. This connector helps knitters and crocheters calculate the exact amount of material required by analyzing key variables like gauge, specific pattern multiples, and overall dimensions. You simply feed in the details—the weight category, the size, and the stitch count—and it handles the complex mathematics. Need to break down a huge garment into separate color sections? Use this MCP's summary tools to aggregate multiple segments into one total report. It supports every yarn weight, from delicate lace to heavy super bulky materials. Because Vinkius hosts over 4,000 specialized connectors, you can connect your preferred AI client and get this utility alongside hundreds of other industry-specific tools, all in one place.

Core Capabilities

01 — Calculate usage for a single color segment

Determines the precise yarn length needed when working on one distinct piece or section.

02 — Summarize multiple-color projects

Aggregates yarn requirements across several different colored segments to provide a total project yardage estimate.

03 — Reference the full yarn weight catalog

Retrieves constant data for various yarn weights, allowing you to use accurate conversion factors in your calculations.

One Click on Vinkius — From Prompt to Execution

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

01 Specify the project details: provide the dimensions (e.g., 20cm x 20cm), the gauge measurements, and the yarn weight category.

02 Run the calculation using the appropriate tool—either for a single segment or for summarizing multiple color sections.

03 Receive an immediate report detailing the exact required yardage in meters or yards.

The bottom line is that you get an accurate, calculated measurement of yarn needed, eliminating manual math and guesswork entirely.

Built For

This MCP is for fiber artists, independent crafters, and small-batch product designers. If your work involves complex color changes or large, structured garments, you need this tool to stop running out of yarn halfway through a project.

Pattern Designer

Uses the full catalog to ensure that pattern requirements are feasible and don't call for impossible amounts of yarn.

Independent Knitter/Crocheter

Calculates total yardage needed before purchasing materials, saving money by avoiding over-buying or running short on color changes.

Fiber Arts Educator

Demonstrates accurate material estimation to students and clients, providing precise figures for class projects.

What Changes When You Connect

01 Know exactly how much yarn you need. By using `calculate_single_segment_usage`, you get the precise length needed for any individual patch or piece, eliminating guesswork.

02 Handle complex designs easily. The ability to aggregate multiple color segments via `calculate_multi_color_project_summary` means one total number for a huge garment project.

03 Use reliable constants. You can access the full yarn weight data set using `get_yarn_weight_catalog`, ensuring your calculations use industry-standard metrics.

04 Stop wasting money on overstocking. Precise estimates mean you only buy what's needed, saving cash and minimizing waste.

05 Supports every material type. Whether it's fingering weight or super bulky yarn, the MCP handles all major yarn categories accurately.

Real-World Applications

A multi-color baby blanket project

A crafter needs to know the total yarn for a 4-section blanket using blue (10×10cm) and white (15×15cm) segments. They use `calculate_multi_color_project_summary` to get one consolidated number, confirming they have enough material before starting.

Estimating a single sleeve pattern

A designer needs the yarn for just one patterned sleeve that is worsted weight. They use `calculate_single_segment_usage` and input the gauge, receiving an immediate metric of required length.

Checking material viability

A user wants to know what weights are available for their project plan. They call `get_yarn_weight_catalog` first to check constants like lace or super bulky before running any calculations.

Comparing yarn weight needs

They need to estimate two different parts of a garment: one in sport weight and another in worsted weight. They run separate single segment usage checks for each material type to compare consumption rates accurately.

Patterns to Avoid

Using vague measurements

✗ AVOID

Typing 'How much yarn do I need?' without providing the gauge or dimensions.

✓ INSTEAD

Always provide specific data points. For example, run `calculate_single_segment_usage` by giving the exact length and stitch density needed for the piece.

Ignoring color changes

✗ AVOID

Calculating yarn need only for one solid section when the garment has multiple colors.

✓ INSTEAD

Use `calculate_multi_color_project_summary`. This tool aggregates all segments, giving you a true total project requirement.

Assuming weight constants

✗ AVOID

Using an old or incorrect yardage-per-stitch constant for a specific yarn type.

✓ INSTEAD

First, call `get_yarn_weight_catalog` to ensure your calculation uses the most current and accurate consumption data available.

The Right Fit

Use this MCP if you have complex fiber arts projects involving multiple colors or distinct segments. You need precise, mathematically verified yardage estimates for knitting or crochet pattern development. It's ideal when you must calculate total requirements across various yarn weights.

Don't use it if you are just making a simple swatch to check color pairing; basic measuring tools work fine then. Also, don’t rely on this MCP if your project size changes frequently without new input; the tool only calculates based on data provided.

If your primary need is managing inventory across different yarn types, you might look at a dedicated supply chain tracking system instead of relying solely on the calculation tools here.

Yarn Length Calculator: Solving Complex Crochet Yardage Estimates

Before this MCP, calculating total yardage was a nightmare. You had to manually track gauge changes, segment boundaries, and yarn weight constants across multiple tabs in pattern books. If you missed one color or used an outdated conversion rate for super bulky yarn, your entire project plan failed.

Now, just input the dimensions and run the summary tool. The MCP handles all the cross-referencing of gauges and weights instantly. You get a single, accurate total requirement that tells you exactly how much material to buy.

Yarn Length Calculator: Managing Single Pattern Segment Requirements

Previously, figuring out the yarn for just one tricky section—say a color-blocked cuff or a pattern repeat—required pulling up separate guides and doing individual math. This meant constant context switching and high risk of human error.

The MCP isolates that calculation perfectly. You use `calculate_single_segment_usage` to nail down the exact material for that one piece, letting you build your project plan step by step with total confidence.

3 Yarn Length Calculation Tools for Fiber Arts Crafting

These tools let you precisely calculate material usage, summarize multi-color projects, or retrieve accurate yarn weight constants for your craft designs.

#	TOOL	DESCRIPTION
01	`calculate_multi_color_project_summary`	Aggregates the yarn requirements needed across multiple color segments into a single total report.
02	`calculate_single_segment_usage`	Calculates the specific amount of yarn required for one individual piece or section.
03	`get_yarn_weight_catalog`	Provides a comprehensive list and data points for different yarn weight categories, useful for accurate constant lookups.

See It in Action

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

U I need total yarn for a throw blanket. It's 150×200cm and uses four different colors: red (30×40), blue (30×40), green (30×40), and yellow (30×40).

Here is the total project breakdown based on your dimensions and sport weight yarn:

SEGMENT COLOR	SIZE (CM)	USAGE ESTIMATE
Red	30 × 40	25.1 meters
Blue	30 × 40	25.1 meters
Green	30 × 40	25.1 meters
Yellow	30 × 40	25.1 meters

Total Project Requirement: 100.4 meters.

U What yarn weight constants do I need for lace, fingering, and worsted yarn?

Yarn Weight Consumption Constants:

- **Lace:** 0.05 yardage per stitch constant.
- **Fingering:** 0.06 yardage per stitch constant.
- **Worsted:** 0.12 yardage per stitch constant.

These constants ensure your calculations are based on current industry standards for accurate planning.

U I'm doing a garment with a main body (sport weight) and matching cuffs (lace weight). What do I need?

Calculation Summary:

- **Body Segment Estimate:** 68.2 meters of sport weight yarn.
- **Cuff Segment Estimate:** 14.5 meters of lace weight yarn.

Total Estimated Yarn: 82.7 meters. Remember to always check the full catalog for updated constants.

Frequently Asked Questions

01 **How do I use the Yarn Length Calculator MCP when my project has many color changes?**

You must use the multi-color summary feature. This tool takes all your individual segment dimensions and gauges, then adds up the total required yarn in a single report. It eliminates manual addition errors.

02 **Is this MCP good for figuring out if I have enough yarn for one small piece?**

Yes, it's perfect for that. Use the function designed for individual segments; you input the size and gauge of just that part to get a precise length estimate.

03 **Can the Yarn Length Calculator handle different yarn weights like lace and super bulky?**

Absolutely. The MCP supports all major fiber categories, from delicate lace up through super bulky materials, ensuring your constants are accurate regardless of the weight you use.

04 **What information do I need to provide for the Yarn Length Calculator MCP?**

You need three things: the dimensions (length and width), the gauge (stitches/rows per measurement), and the yarn weight category. The more detail you give, the better the calculation.

05 **Does this MCP just calculate meters or does it support yards too?**

It handles both metric and imperial units for your calculations. You can specify whether you need the final measurement reported in meters or yards to suit your preference.

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 `"yarn-length-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

Yarn Length 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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