CutOptim

ENGINE API · MARKER MODE · LIVE TODAY

# Garment Marker Nesting API

Laying pattern pieces on a roll so the marker is as short as possible is marker mode of the CutOptim Engine API, at POST /v1/optimize/nest. Your PLM, ERP or cutting-room software sends the pieces and the roll width as JSON and gets back the marker: every placement and the length it needs — for apparel, upholstery, leather and technical textiles.

| Roll | Length | 0 / 180° | Live |
|---|---|---|---|
| STOCK: { W, ROLL: TRUE } | METRICS.LENGTH — THE MARKER | GRAIN AND NAP KEPT PER PIECE | LBF SYNC · MAX ASYNC SEARCH |

**Live today.** The same true-shape nesting engine over HTTP, so a cutting room can plan and cost a marker without a desktop CAD seat.

## Why cutting rooms need it

Fabric is the largest cost in a cut order, and the marker decides how much of it is used. Pieces are irregular, so a bounding-box layout throws away the air inside every curve; true-shape nesting interlocks the real outlines.

Searching the shortest marker by hand — try a length, nest, shorten, nest again — costs a run per guess. Marker mode takes the roll width and returns the length directly, one call per marker.

## What you send, what comes back

Send each piece as a polygon (or an SVG / DXF file) with a quantity and its allowed rotations, plus ONE stock row: the roll width with `roll: true` and no length. `minSeparation` and `edgeClearance` set the spacing between pieces and from the selvedge.

Back comes one sheet as wide as the roll whose `h` is the marker length (also `metrics.length`), every placement as a rotation and an x/y, and your `meta` on each piece. `maxLength` caps the marker; pieces that do not fit come back in `unplaced`.

**POST /v1/optimize/nest**

```
{
  "parts": [
    { "name": "front",
      "polygon": [[0,0],[520,0],[560,720],[20,740]],
      "qty": 2, "allowedRotations": [0, 180] },
    { "name": "sleeve",
      "polygon": [[0,0],[460,0],[400,580],[60,580]],
      "qty": 4, "allowedRotations": [0, 180] }
  ],
  "stock": [{ "w": 1585, "roll": true }],
  "options": { "minSeparation": 4 }
}
```

**200 OK**

```
{
  "engine": "lbf",
  "metrics": {
    "sheetCount": 1,
    "placed": 6, "total": 6,
    "length": /* the marker length */
  },
  "sheets": [ /* w = 1585, h = length,
                 placements */ ]
}
```

Free: `POST /v1/validate/nest` checks a job with no key and no quota. `engine: "max"` runs asynchronously and spends a time budget searching for a shorter marker — never a longer one.

## Why build on this engine

**Deterministic — reproducible for costing and audits.** A pinned seed makes the same request return the same marker, so a fabric quote can be reproduced for a repeat order and diffed in tests.

**TRUE-SHAPE**

Pattern pieces as real outlines, interlocked along the roll — not bounding boxes.

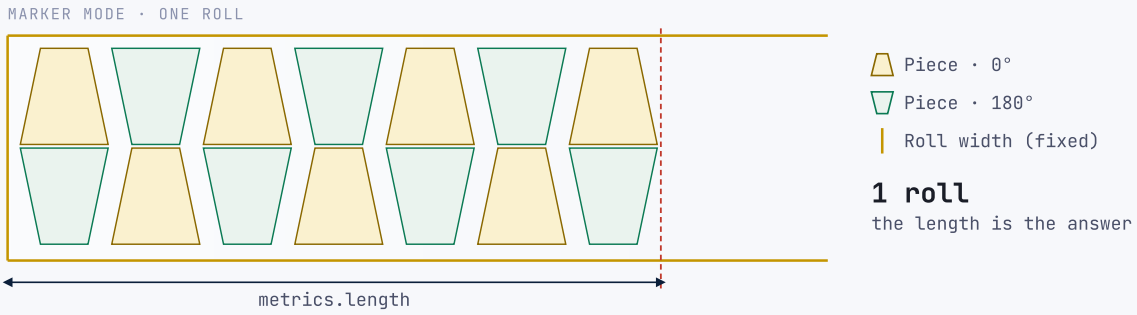
**GRAIN & NAP**

Per-piece allowed rotations: [0, 180] keeps the grain line, one angle fixes the piece.

**TWO ENGINES**

lbf answers at once for costing; max searches for a shorter marker for the cut order.

## What the marker looks like




**One marker, schematic.** Pattern pieces interlock along a roll of fixed width; the API returns one sheet as wide as the roll, and its length is the marker length (`metrics.length`). `allowedRotations: [0, 180]` keeps every piece on the grain line.

## Integrate in three steps

1. **Validate for free** — `POST /v1/validate/nest` confirms your payload with no key and no quota.
2. **Create a free test key** in your dashboard (never billed) and build against it; start the 14-day Studio trial when you go live.
3. **Call optimize** and read the plan straight into your ERP, quote or machine file.

## Pricing

**STUDIO**

**€49** /month

**3,000 requests** / month · 14-day trial

**SCALE**

**€149** /month

**10,000 requests** / month

- → Every request counts the same, **nesting included**. Hard cap, no overage; email at 90% and 100%.
- → Switch plans on the dashboard · billed in EUR · larger volume? Tell us your numbers.

## See the marker on your pieces

Send us a sample of your pattern pieces and roll width and we'll return the marker the API produces on your own data. Or start the 14-day trial and call it today.

**support@cutoptim.com** · cutoptim.com/engine/garment-marker-nesting

SCAN TO OPEN
cutoptim.com/engine/garment-marker-nesting