CutOptim

ENGINE API · WOOD · LIVE TODAY

Timber & Structural Wood Cutting API

Cutting joists, rafters, studs and battens to length is a 1D problem with one extra rule plain linear cutting ignores — the cross-section must match. The same engine that powers the CutOptim app solves it over HTTP at POST /v1/optimize/wood. Send the cut list and the stock as JSON; get back the plan, matched and solved per cross-section, with the bar count and the yield.

15–30%	Wood	Section	Live
STOCK WASTED, IN-ORDER CUTTING	POST /V1/OPTIMIZE/WOOD	CROSS-SECTION MATCHED	SAME ENGINE AS THE APP

Live today — not a pre-release. A distinct mode, not a wrapper over /1d: it does the cross-section matching and returns the whole job in one call.

Why carpenters and timber merchants need it

Structural timber is bought in long lengths and cut to many parts, and cutting in list order wastes a published **15–30% of the stock**. A cross-section-aware optimizer rearranges the cuts within each section to cut that sharply.

Inside an estimating, ERP or point-of-sale workflow the API does it **on every job automatically** — a builder's merchant can price a cutting service straight from the order.

What you send, what comes back

Send each part and stock row with two cross-section sides (`sw`, `sh`, either order) and a length. The engine partitions the job by cross-section, solves each section on its own, and returns `sections[]` — each with its own rods, totals and cut plan — plus job-wide metrics. Demand whose cross-section has no stock is reported in `unmatched`, a missing-material report kept distinct from a did-not-fit one.

POST /v1/optimize/wood

```
{
  "parts": [
    { "name": "Stud", "sw": 50, "sh": 100,
      "length": 2400, "qty": 12 },
    { "name": "Noggin", "sw": 50, "sh": 100,
      "length": 600, "qty": 24 },
    { "name": "Beam", "sw": 50, "sh": 150,
      "length": 3200, "qty": 6 }
  ],
  "stock": [
    { "sw": 50, "sh": 100, "length": 4800, "qty": 30 },
    { "sw": 50, "sh": 150, "length": 4800, "qty": 20 }
  ],
  "options": { "kerf": 3 }
}
```

200 OK

```
{
  "engineVersion": "1.0.0+8682",
  "metrics": {
    "sectionCount": 2,
    "rodCount": 7, "yieldPct": 91.2
  },
  "sections": [
    { "section": "50x100", "rods": [ … ] },
    { "section": "50x150", "rods": [ … ] }
  ]
}
```

Free: `POST /v1/validate/wood` checks a job with no key and no quota. The reported off-cut is the usable remainder — the freeing kerf is already deducted, per bar.

Why build on this engine

Deterministic — reproducible for quotes and audits. The same request always returns the same cut plan. A cutting quote built from an API call is reproducible for an audit or a repeat order, and results can be cached and diffed in tests — the property a quoting workflow needs.

CROSS-SECTION AWARE

A 50×150 part is only cut from 50×150 stock; each section is matched and solved on its own.

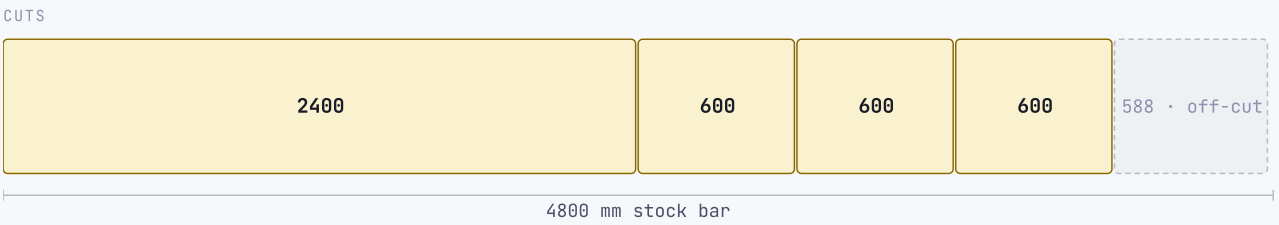
ONE CALL, WHOLE JOB

sections[] carries per-section rods, totals and cut plan, plus job-wide metrics — no fan-out.

META PASSTHROUGH

An article number or order line on each part comes back on every placed cut, so the plan reconciles.

What the plan looks like



One 4800 mm 50×100 bar from the 50×100 section — a stud, three noggins and the usable 588 mm off-cut. Timber is matched by cross-section: a 50×150 part is solved on its own bars, never mixed with 50×100.

Integrate in three steps

1. **Validate for free** — `POST /v1/validate/wood` confirms your payload with no key and no quota.
2. **Get a sandbox key** in the dashboard and start the 14-day trial.
3. **Call optimize** and read the plan straight into your ERP, quote or machine file.

Pricing

€49 /month

- → **10,000 requests / month** — hard cap, no overage, no surprise bill.
- → **14-day trial** · billed in EUR.
- → Higher volume or separate staging keys? Tell us your numbers.

Try it on your cut list

Send us a sample timber cut list and we'll return the plan the API produces on your own stock. Or start the 14-day trial and call it today.

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SCAN TO OPEN
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