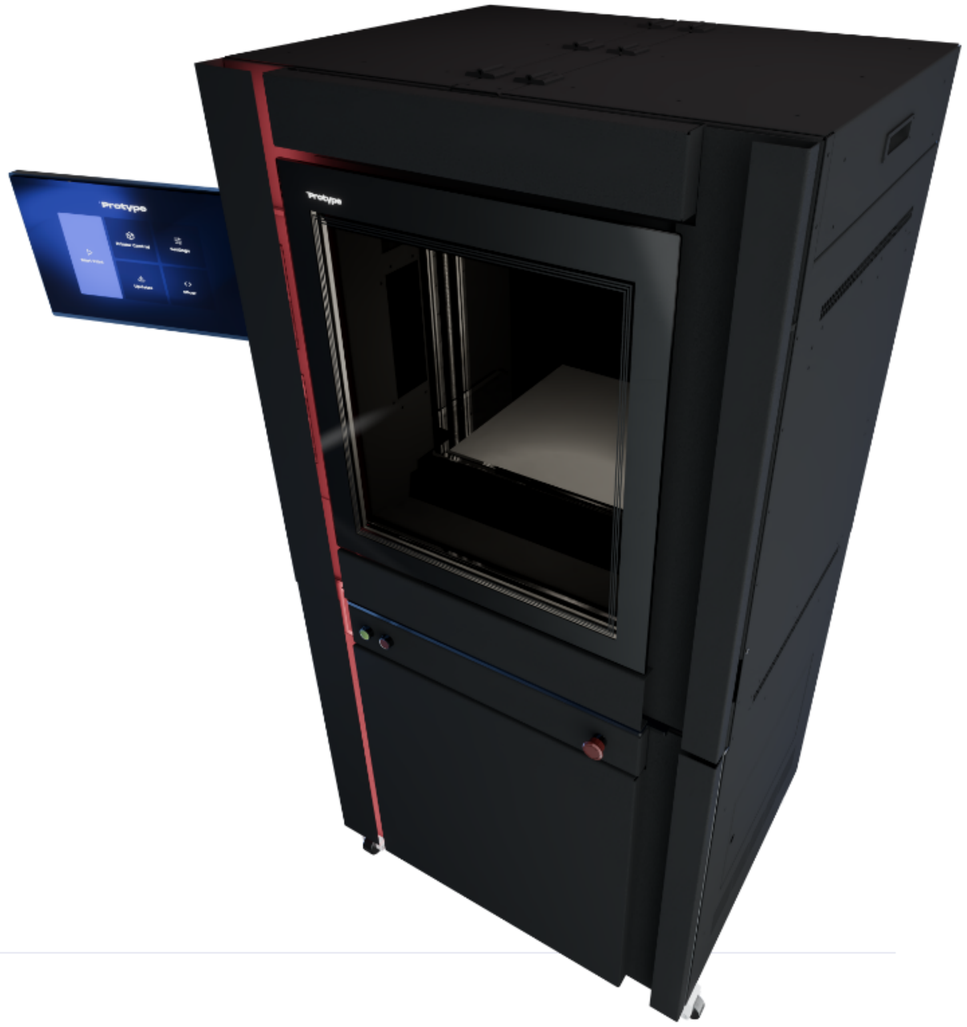
High-Temp · IDEX · PEEK / PEKK · 150°C

Protype CD400HT High-Temperature 3D Printing



High-temperature IDEX 3D printer with 2 extruders for printing PEEK, PEKK, ULTEM, and other super polymers. Chamber up to 150 °C, bed up to 250 °C — parts with mechanical properties rivaling metal.

350³
mm build volume

150°C
heated chamber

550°C
hotend

Commercial Proposal · 2026
protype.by

MARKET CHALLENGES

Factors Limiting Additive Manufacturing Efficiency

Material Limitations

Most 3D printers cannot print with PEEK, PEKK, or ULTEM — materials with heat resistance above 250 °C and strength comparable to metal.

Insufficient Chamber Temperature

Super polymers require a chamber temperature of at least 120 °C. Passive heating cannot ensure stability — leading to delamination, warping, and defects.

Material Degradation During Drying

PEEK and PEKK require drying at 120-130 °C. Standard dryers cannot reach the required temperature or maintain proper humidity control.

High Barrier to Entry

High-temperature equipment starts at $150,000+. Closed systems add 10-20x material cost markup.

FLAGSHIP PRODUCT

Protype CD400HT — High-Temperature 3D Printer

IDEX with 2 extruders. Chamber up to 150 °C, bed up to 250 °C, hotend up to 550 °C. Print PEEK, PEKK, ULTEM without compromise.

Chamber up to 150 °C

Active chamber heating ensures stable PEEK crystallization and minimal internal stresses.

350 x 350 x 400 mm

Large-format super polymer parts in a single print cycle.

Bed up to 250 °C

Tempered glass with uniform heating. Excellent adhesion for PEEK, PEI, PC.

Open Materials

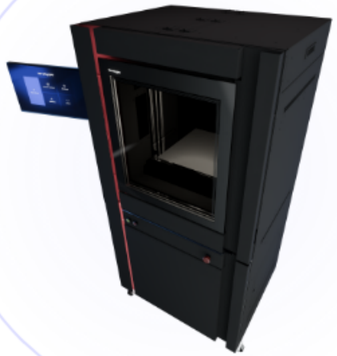
PEEK, PEKK, ULTEM, PEI, PA-CF, and more. No vendor lock-in for filament.

Active Thermal Chamber

Chamber up to 150 °C, bed up to 250 °C, hotend up to 550 °C. Full super polymer range.

Full Automation

Auto bed leveling, auto nozzle cleaning, built-in drying, and monitoring camera.



150°C
Heated Chamber

550°C
Hotend

MATERIALS

Compatible with High-Temperature Polymers

Materials that require a chamber temperature of 90 °C+ and hotend of 400 °C+

300°C 350°C 400°C 450°C

PEEK
up to 420°C
Aerospace, medical, petrochemical

PEEK CF
up to 420°C
Ultra-light structural parts

PEEK GF
up to 420°C
Chemical-resistant parts, pumps

PEKK
up to 400°C
Aerospace, automotive

ULTEM 9085
up to 380°C
Aviation, FST certification

ULTEM 1010
up to 380°C
Autoclave sterilization, medical

PEI 9085
up to 380°C
Electronics, transportation

PSU
up to 370°C
Filters, membranes, medical

PA6 CF30
up to 300°C
Heavy-duty tooling

› Also prints all CD400-compatible materials

COMPARISON

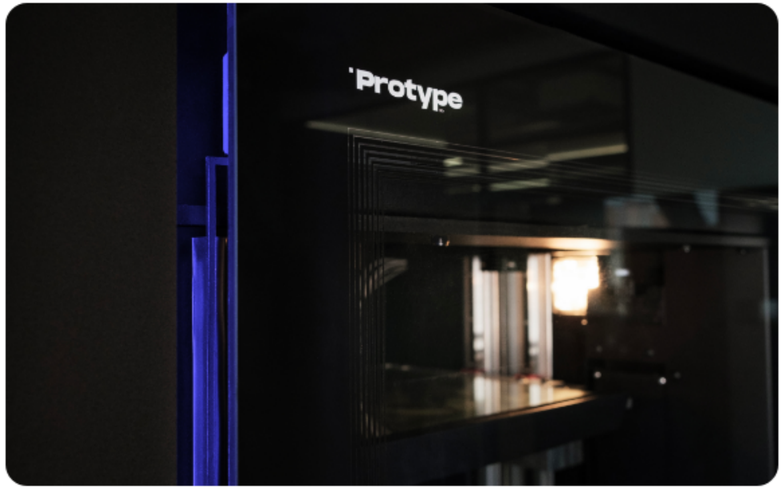
CD400 vs CD400HT

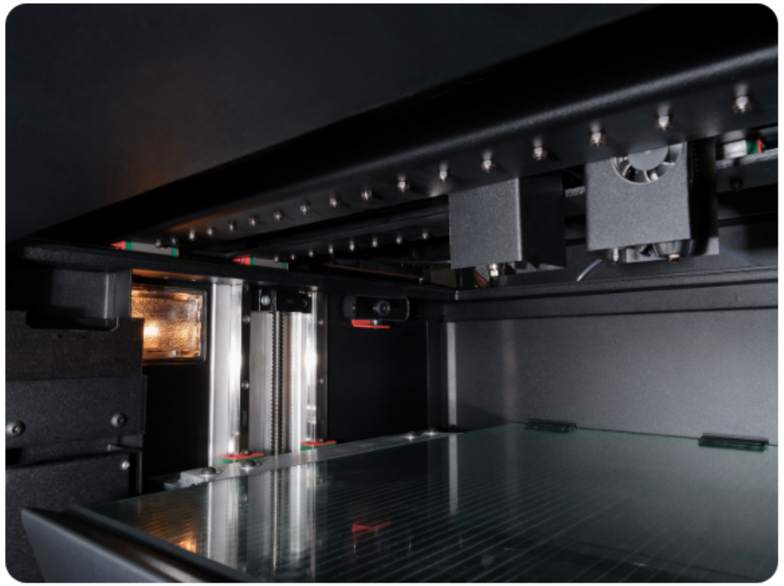
PARAMETER	CD400	CD400HT
Build Volume	400×400×400 mm	**350×350×400 mm**
Chamber Temperature	up to 90°C	**up to 150°C**
Bed Temperature	up to 150°C	**up to 250°C**
Hotend Temperature	up to 550°C	up to 550°C
IDEX	**Yes (Copy/Mirror)**	**Yes (Copy/Mirror)**
Auto Spool Change	4×3 kg	2×3 kg
Drying	2×up to 80°C	**2×up to 130°C**
Super Polymers	—	**PEEK, PEKK, ULTEM**
Price	**from $39,000**	**from $55,500**

CD400HT — a high-temperature IDEX printer for producing PEEK and PEKK parts with heat resistance up to 250 °C and strength on par with aluminum. **CD400** — an IDEX printer for serial production with engineering plastics and maximum throughput.

GALLERY

CD400HT — High-Temperature 3D Printing

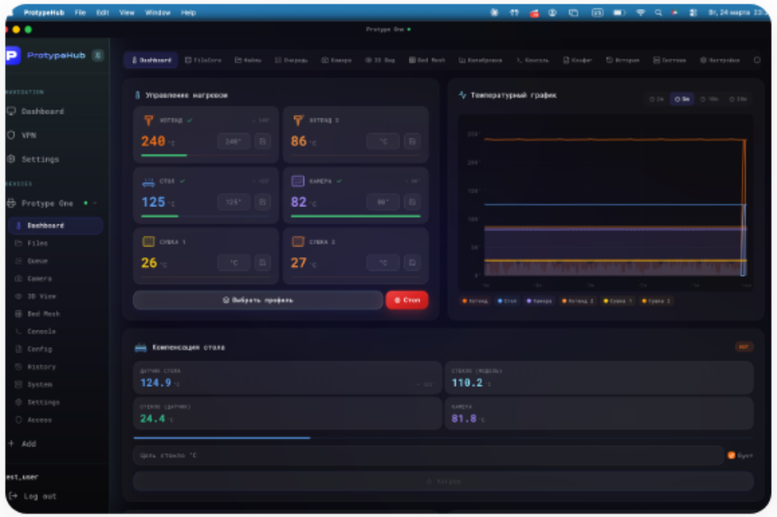




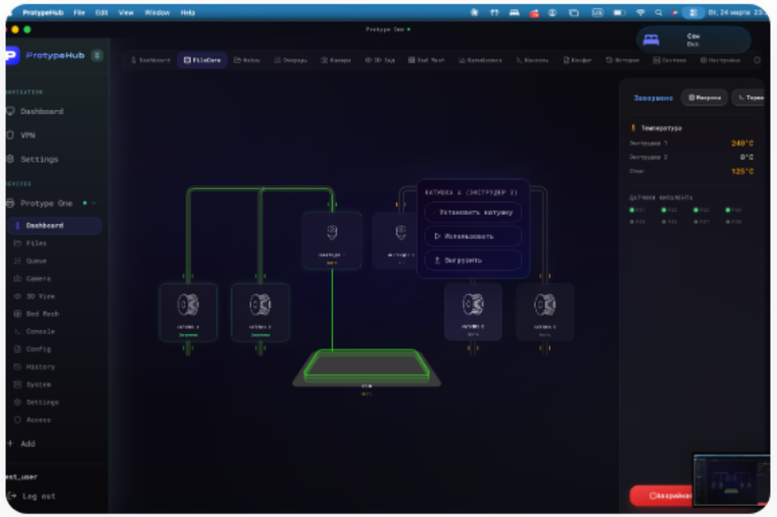
REMOTE MANAGEMENT

Manage Your Fleet from Phone or Desktop

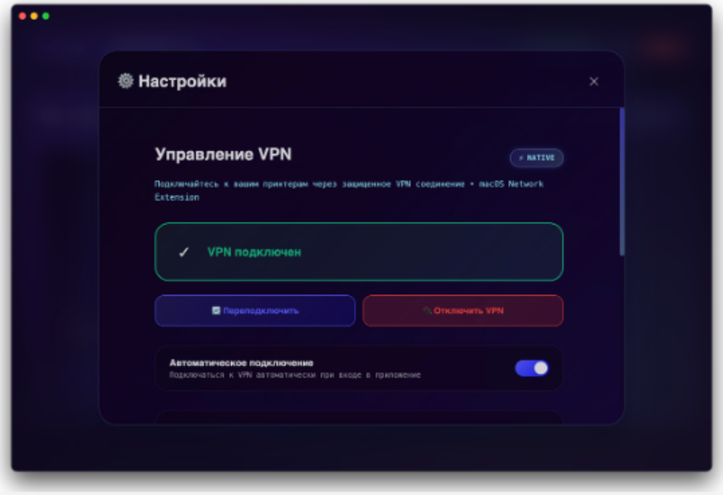
Protype Hub — a unified application for monitoring and managing all your printers. Works via secure VPN from anywhere in the world.



Dashboard — temperatures, print status, real-time graphs



FilaCore — spool management, auto change, filament remaining



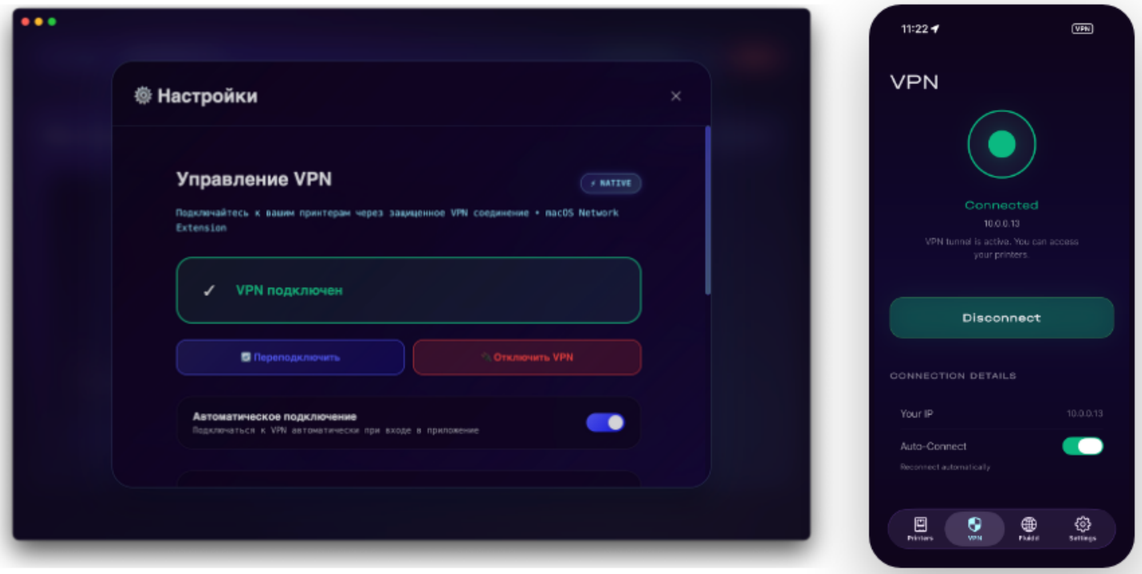
VPN — secure access without static IP, one-click connection

SECURITY

ProtypeVPN — Secure Remote Access System

An encrypted channel for equipment management without compromising your corporate network.

- ✓ **Plug & Play** — connect the printer to power, and it just works
- ✓ **Remote Control** — from the office, home, or another facility
- ✓ **Network Protected** — your corporate network remains fully isolated
- ✓ **Rapid Scaling** — add new printers in minutes
- ✓ **Unified Access** — scale your fleet across locations with a single entry point
- ✓ **Invisible from the Internet** — all traffic is end-to-end encrypted



ProtypeVPN provides a secure way to manage production without violating your company's security policies. Suitable for defense sector and air-gapped networks.

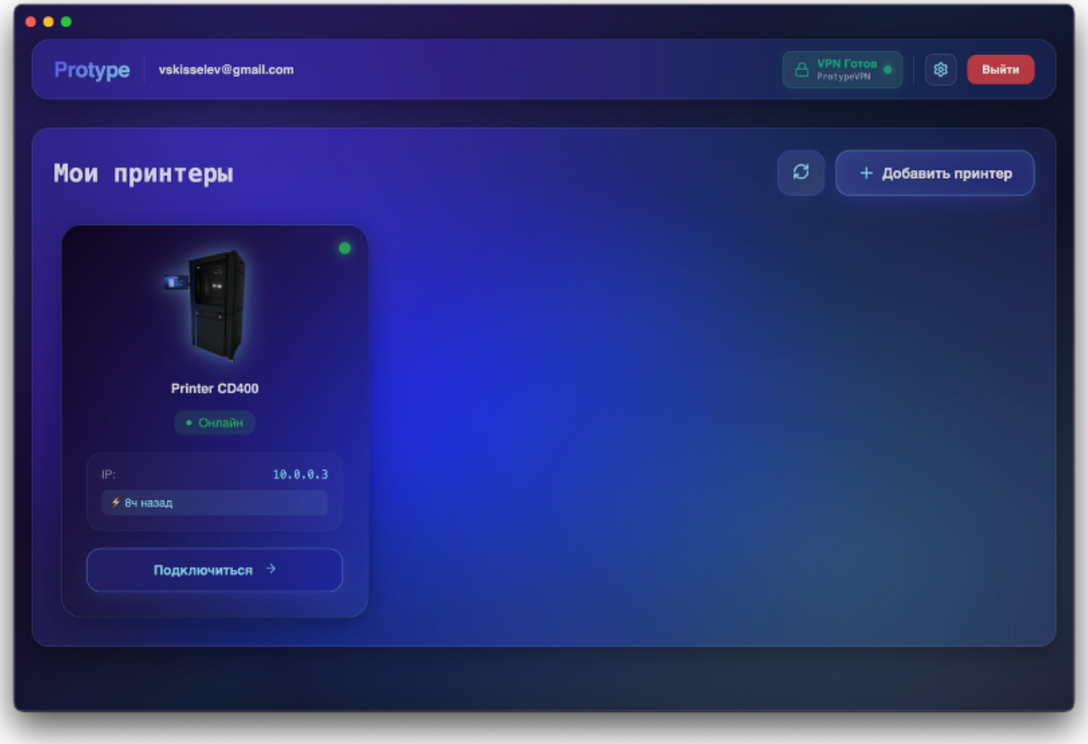
FLEET MANAGEMENT

Protype Hub: All Printers in One Window

Desktop application for macOS / Windows / Linux. No cloud, no open external ports.

- ✓ **Centralized Management** — all printers in a single interface
- ✓ **Job Submission** — upload and print in just a few clicks
- ✓ **Real-Time Monitoring** — status, queue, print history
- ✓ **Camera & Alerts** — 24/7 monitoring from anywhere

0	3 OS
Cloud Dependencies	macOS, Windows, Linux



SOFTWARE

ProtypeOS — Proprietary Operating System

Unified interface on a 22" touchscreen for complete print control.

Built-in Slicer

Prepare models and launch prints directly from the printer.

Material Profiles

Pre-configured settings for ABS, PA, PC, TPU, and more.

Queue & Log

Job scheduling and complete print history.

Remote Access

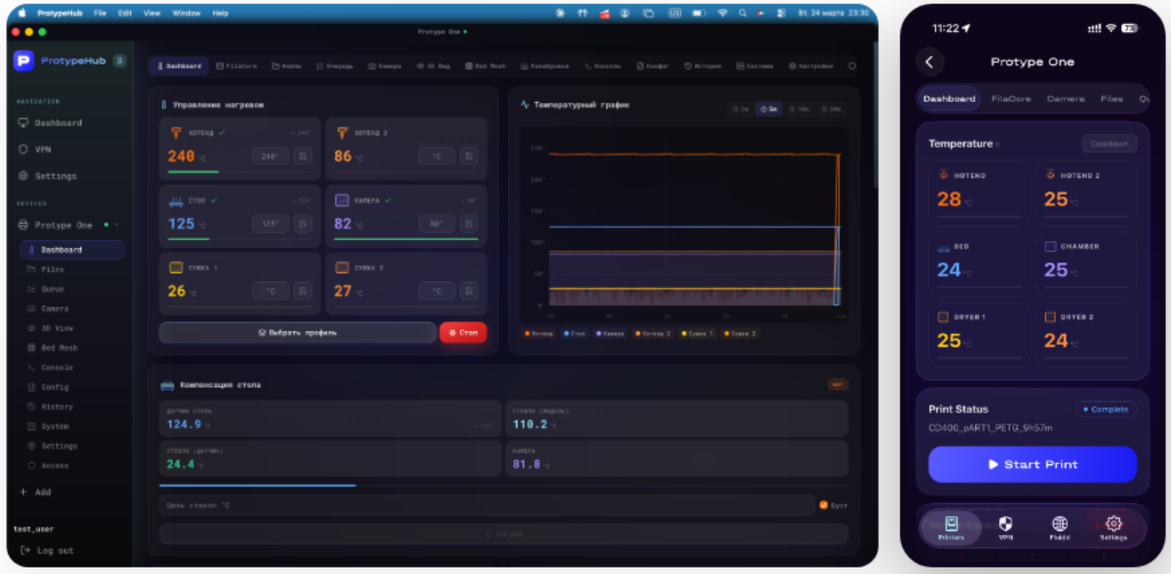
LAN/Wi-Fi — upload models without USB drives.

Roles & Permissions

Operator, engineer, supervisor.

Logging

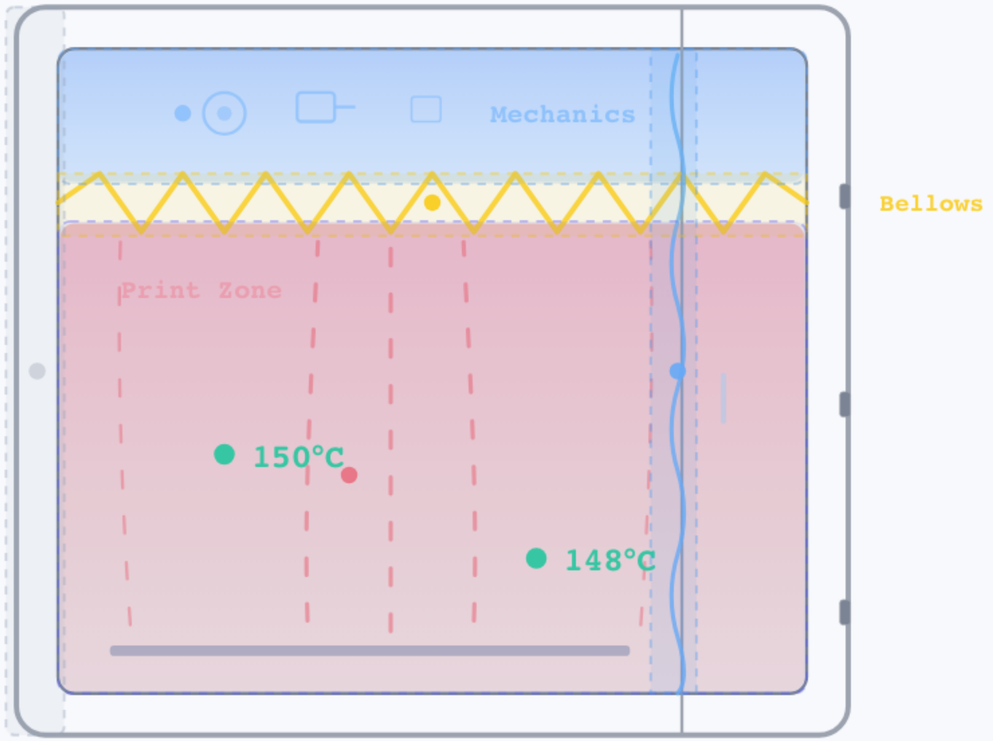
Full traceability for every printed part.



CD400HT THERMAL CHAMBER

Enclosed Thermal Chamber for Stable Printing

For ABS, Nylon, PC, and ASA, a stable chamber temperature means no warping and predictable part geometry.



Enclosed Design with Convection

up to 150 °C

Active heating maintains stable temperature and minimizes the impact of the external environment.

Heat-Resistant Components & Seals

no degradation

Engineered for continuous operation at chamber temperatures up to 150 °C without wear.

Body Thermal Insulation

efficient

Reduces heat loss through chamber walls and doors, maintaining a stable thermal regime.

Bed up to 250 °C

tempered glass

Auto leveling, uniform heating up to 250 °C — perfect adhesion for PEEK and PEKK.

SPECIFICATIONS

Full Technical Specifications

EXTRUDER & PRINTING

Hotend Temperature	up to 550°C
Nozzle Diameter	0.3–1.2 mm
Print Speed	up to 300 mm/s
Volumetric Flow Rate	up to 60 mm³/s
XY/Z Accuracy	5 µm / 2 µm
Layer Height	0.05–0.75 mm

CHAMBER & BED

Build Volume	350×350×400 mm
Chamber Temperature	up to 150°C
Bed Temperature	up to 250°C
Bed Surface	Tempered Glass
Auto Leveling	Yes

EXTRUDER & AUTOMATION

Extruder	2× IDEX HT
Max Temperature	550°C
Auto Spool Change	2×3 kg
Auto Nozzle Cleaning	Yes
Autonomous Operation	up to 10+ days
Monitoring Camera	Built-in

DRYING

Drying Chambers	2×up to 130°C
Humidity Sensor	Yes
Active Ventilation	Yes

COMPATIBLE MATERIALS

Standard	ABS, PET-G, HIPS, TPU
Engineering	PA-6, PA-12, PC, ASA
Composite	PA-CF, ABS-CF, CARBEX
Super Polymers	PEEK, PEKK, PEI, ULTEM

CONTROLS & DIMENSIONS

Display	22" Touchscreen HMI
ProtypeOS	LAN, Wi-Fi, VPN
Dimensions	1900×770×1020 mm
Weight / Power	420 kg / 5500 W
Warranty	12 months

PLACEMENT

Installation Requirements

No special conditions needed: we reduced the footprint while preserving the full build volume.

Floor

Level and stable surface. Doorway clearance ≥ 80 cm (dimensions: 1,900 x 770 x 1,020 mm).

Electrical

220 V, 50 Hz; dedicated grounded line; peak power up to 5.5 kW; separate outlet for the dryer.

EMI / Interference

Keep high-power devices and cables at least 1-2 m away to avoid electromagnetic interference.

Access & Climate

Approx. 50 cm clearance around the unit for maintenance; standard room ventilation is sufficient.

The printer fits easily in an office and can be transported in a standard elevator

ECONOMICS

3D Production ROI

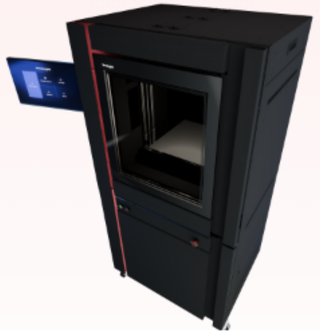
High-temperature 3D printing enables replacing metal parts with PEEK/PEKK, reducing weight by 40-60% and cost by an order of magnitude.

6-12	40-60%	250°C	10x
months payback period	weight reduction vs metal	part heat resistance	cheaper than metal casting

CD400HT prints PEEK and PEKK parts with mechanical properties comparable to aluminum, at 40-60% less weight. Open materials reduce filament costs by 5-10x compared to closed systems.

PRODUCT LINE

Configurations & Pricing



CD400HT

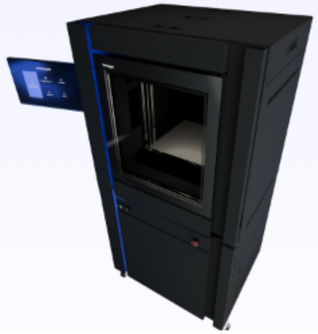
High-Temp

High-temperature 3D printer for PEEK, PEKK, ULTEM.

- 2× IDEX extruders up to 550 °C
- Chamber up to 150 °C, bed up to 250 °C
- Build volume 350 x 350 x 400 mm
- Drying up to 130 °C

from

$55,500



CD400

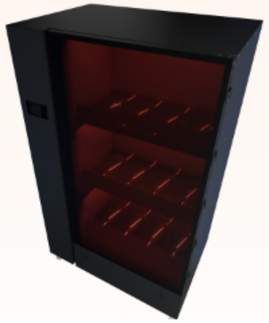
IDEX

Industrial IDEX 3D printer for serial production with composites.

- Build volume 400 x 400 x 400 mm
- IDEX + Copy/Mirror
- Hotend up to 550 °C, chamber 90 °C
- Auto spool change 4 x 3 kg
- ProtypeOS + 22" touchscreen

from

$39,000



FILO

Dryer

Industrial filament drying cabinet.

- Up to 12 spools x 3 kg
- Temperature up to 130 °C
- Closed-loop with desiccant
- Connects up to 3 printers

from

$9,100

Ecosystem Approach: all three products work as a unified system. FILO feeds dry material into the CD400/CD400HT; ProtypeOS provides centralized management.

Protype

What's Next?

1

Calculate Your Savings

We analyze your tasks and select the optimal equipment configuration.

2

Install & Train

A Protype engineer visits your site, installs the equipment, and trains your team.

3

Ongoing Support

Technical support, software updates, service, and warranty up to 36 months.

Get in Touch

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