Cella

the hexagonal hive

A hive shaped like a cell of the comb, with a window onto the colony, sensors powered by the sun and a tap for the harvest. Designed by Mielovia, in development.

IN DEVELOPMENT · DESIGN TARGETS

01

A cell of the comb

A regular hexagon in plan. Inside, a cassette of eight frames; in the corners, cork insulation, a honey duct and the cables.

02

A window onto the colony

One pane of tempered glass per module, behind an insulated shutter.

03

Sensors powered by the sun

A 10 W solar panel powers a scale and climate probes, read every 15 minutes.

04

A tap for the harvest

The honey module drains down a sealed duct to a tap in the base. In development.

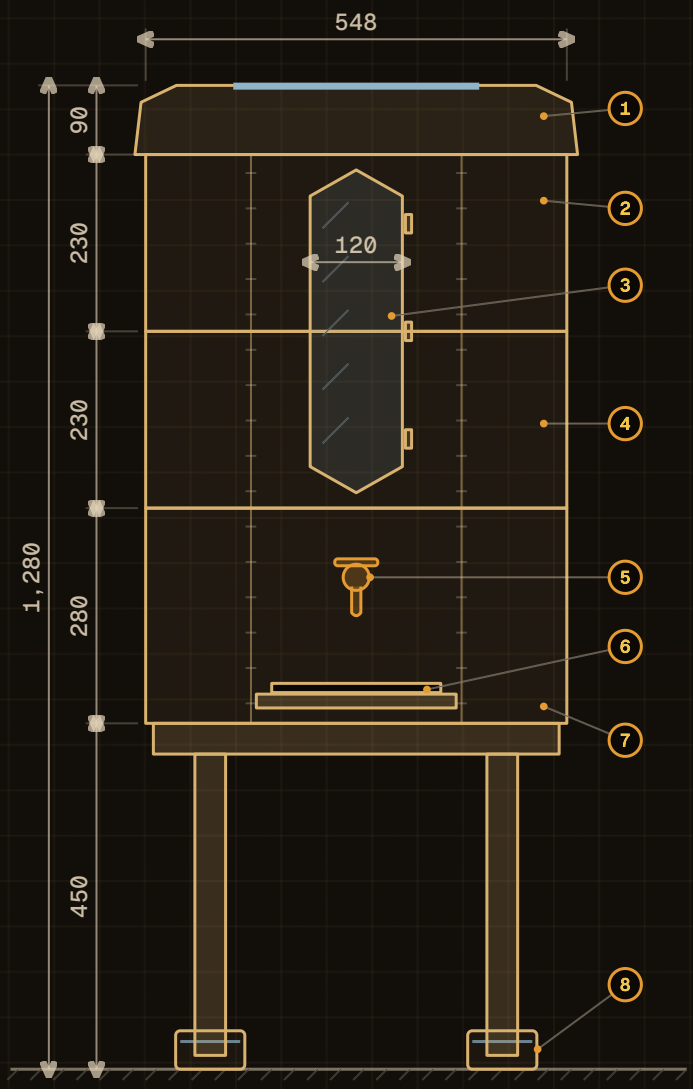


1. Roof and solar panel
2. Honey module
3. Observation window
4. Brood module
5. Harvest tap
6. Entrance and landing board
7. Base module
8. Stand and ant-guard cups

Plans

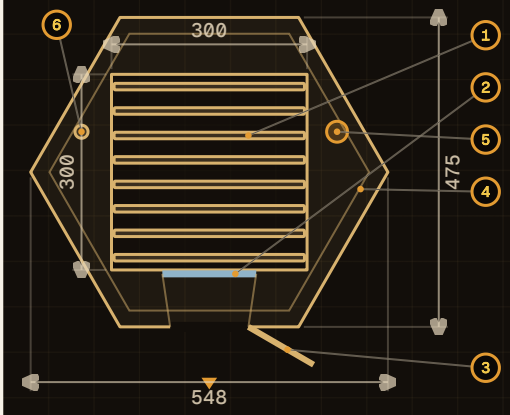
Design drawings · dimensions in millimetres

01 · FRONT ELEVATION



1. Roof: aluminium, 10 W solar panel, electronics
2. Honey module, 230 mm, 8 frames
3. Window 120 × 420 mm and shutter
4. Brood module, 230 mm, 8 frames
5. Harvest tap, food-grade
6. Entrance 220 × 12 mm, landing board
7. Base 280 mm: screened floor, tray, scale
8. Stand 450 mm, ant-guard cups

02 · PLAN SECTION A-A, BROOD MODULE



1. Frame cassette 300 × 300 mm, 8 frames at 37.5 mm
2. Glass pane
3. Window opening and shutter
4. Cork insulation in the corners
5. Honey duct Ø 32 mm
6. Cable duct

1,280 mm
HEIGHT ON ITS STAND

548 mm
ACROSS CORNERS

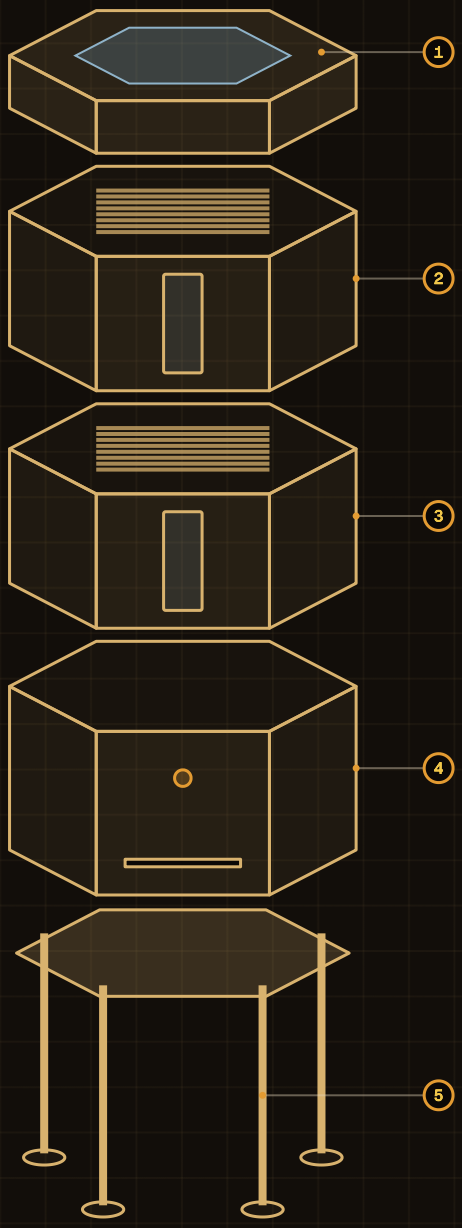
8 + 8
FRAMES, BROOD AND HONEY

10 W
SOLAR PANEL

Plans

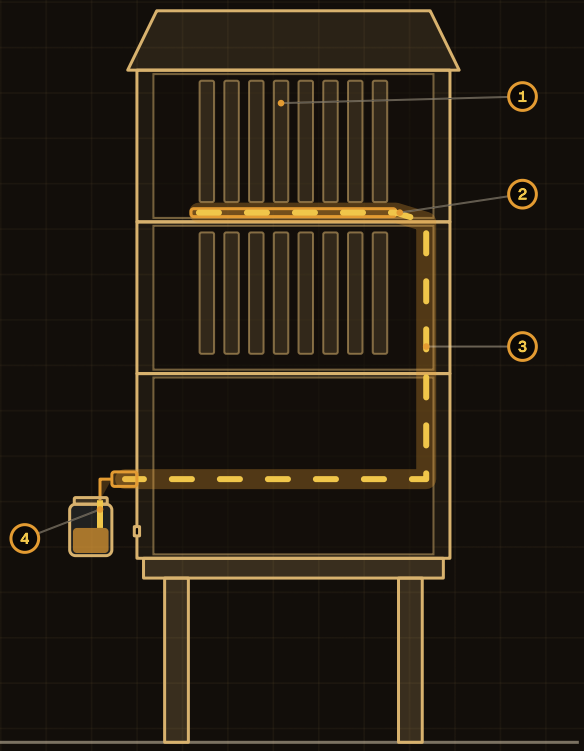
Design drawings · dimensions in millimetres

03 · EXPLODED VIEW



1 Roof
2 Honey module
3 Brood module
4 Base module
5 Stand

04 · HONEY PATH



1 The harvest key opens the honey frames
2 Honey runs into a trough
3 Down the sealed duct, outside the bees' space
4 The tap fills the jar

From the comb to the jar

01 **Install**
Stand level, feet in cups of water; base, brood module, colony.

02 **Follow**
Weight, temperature and humidity in the app, without opening.

03 **Add the honey module**
When the colony is strong and the flowers in bloom.

04 **Check**
Capped frames through the window; water content at most 20 % (EU rules, most honeys).

05 **Fill the jar**
Turn the harvest key and open the tap.

Specifications

Design targets for Cella; they may change before production.

DIMENSIONS

Height on its stand	1,280 mm
Height without stand	830 mm
Across corners / flats	548 / 475 mm
Weight, empty	About 32 kg, with roof and stand, without frames

MODULES

Roof	90 mm, ventilated, solar panel, electronics bay
Honey module	230 mm, 8 frames, observation pane; draining frames in the harvest version
Brood module	230 mm, 8 frames, observation pane
Base module	280 mm, entrance 220 × 12 mm with reducer, screened floor and tray, scale, tap
Stand	450 mm, adjustable feet, 4 ant-guard cups

FRAMES

Per module	8 frames of 300 × 200 mm, the same in every module
Spacing	37.5 mm
Honey per honey module	About 12 kg

MATERIALS

Body	Thermally modified Nordic pine, 18 mm, dovetailed corners
Insulation	Natural cork in the corner chambers, 25 mm walls
Finish	Linseed oil and beeswax outside, raw wood inside
Window	4 mm tempered glass, insulated pine shutter
Roof and stand	Powder-coated aluminium; powder-coated steel; stainless fixings

SENSORS AND ENERGY

Scale	4 load cells, 0 to 150 kg, 50 g steps
Climate	Temperature and humidity: brood, honey module, outside
Movement	Accelerometer: alert if the hive is moved or tipped
Readings	Every 15 minutes, app and web dashboard
Radio	LoRaWAN 868 MHz or LTE-M; Bluetooth for set-up
Energy	10 W solar panel, 77 Wh LiFePO4 battery, about 10 days without sun

HARVEST

Honey path	Draining frames, trough, sealed stainless duct Ø 32 mm
Tap	Food-grade, brass finish, at jar height

STATUS

Development	In development; design targets
Price	On request

QUOTES AND PARTNERSHIPS

Price on request. Beekeepers, estates and distributors: ask for a quote on mielovia.com, in the Innovation room.

Cella is a design by Mielovia, in development. The pictures are illustrations; the specifications are design targets and may change. Version 1.0 · October 2026.