L'Aura

Fabrication instructions

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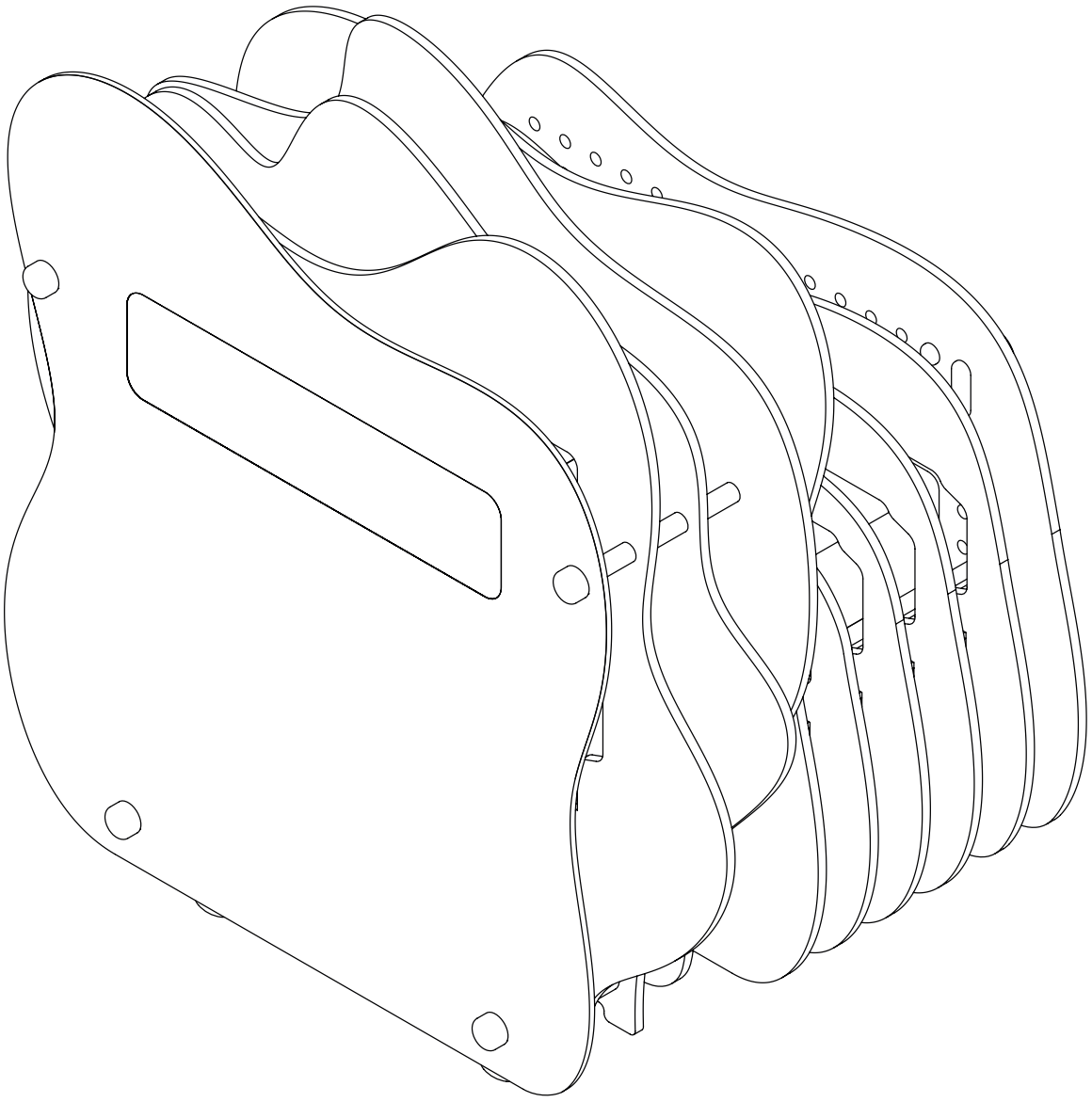


1. Basic infos

L'Aura is a transportable product-system, capable of transforming any room into a multi-sensory environment with a high level of immersion The product features a structure made of a series of panels: thanks to laser cutting, the panels are shaped both on the external perimeter and on the inside. The succession of cut panels generates compartments with strong and suitable supports to house technologies.

2. Bill of Materials

Component	Q.ty	Make/Buy	Notes	Link
Panel 1 plexi	1	Make	Lasercut 5mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Panel 2 wood	1	Make	Lasercut 8mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Panel 3 wood	1	Make	Lasercut 8mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Panel 4 wood	1	Make	Lasercut 8mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Panel 5 wood	1	Make	Lasercut 8mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Panel 6 wood	1	Make	Lasercut 8mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Panel 7 wood	1	Make	Lasercut 8mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Panel 8 wood	1	Make	Lasercut 8mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Panel 9 wood	1	Make	Lasercut 8mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Panel 10 wood	1	Make	Lasercut 8mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Adhesive film	1	Make	Cutter	https://prodotti.bricocenter.it/default/480310407-plastica-adesiva-bianco-opaco-67-5x200-cm.html
M10 threaded rod 488mm	2	Buy	Cut to length	https://www.leroymerlin.it/prodotti/ferramenta/tasselli-viti-bulloni-chiodi/barre-filettate/barra-filettata-suki-in-acciaio-m10-l-1000-mm-35737030.html
M10 threaded rod 233mm	2	Buy	Cut to length	https://www.leroymerlin.it/prodotti/ferramenta/tasselli-viti-bulloni-chiodi/barre-filettate/barra-filettata-suki-in-acciaio-m10-l-1000-mm-35737030.html
M10 threaded rod 287mm	2	Buy	Cut to length	https://www.leroymerlin.it/prodotti/ferramenta/tasselli-viti-bulloni-chiodi/barre-filettate/barra-filettata-suki-in-acciaio-m10-l-1000-mm-35737030.html
Spacer	32	Buy	Cut to length	https://prodotti.bricocenter.it/default/410005074-tubo-tondo-mm12x1-pvc-bianco-mt1-00.html
M10 nut	12	Buy		
Cover nut	12	Make	3D printing	https://drive.google.com/drive/folders/1WGFTlVP_UcB2k8iNjUXKhzHugRS0Fs-A?usp=sharing
Wheel traverse	2	Make	Benchtop machines	https://www.leroymerlin.it/prodotti/falegnameria/legno-da-costruzione-battiscopa-e-listelli/listelli-in-legno/listello-piallato-abete-2-m-x-45-mm-sp-25-mm-33001276.html

Component	Q.ty	Make/Buy	Notes	Link
50mm wheel with brake	2	Buy		https://www.leroymerlin.it/prodotti/ferramenta/ferramenta-per-mobili/ruote-per-mobili-e-per-carrelli/rotella-per-mobili-standers-in-acciaio-grigio-50-mm-82629504.html
50mm wheel	2	Buy		https://www.leroymerlin.it/prodotti/ferramenta/ferramenta-per-mobili/ruote-per-mobili-e-per-carrelli/rotella-per-mobili-standers-in-acciaio-grigio-50-0-mm-82629502.html
Upper shelf	1	Make	Lasercut 5mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Bottom shelf	1	Make	Lasercut 5mm	https://drive.google.com/drive/folders/1fOR89yzY_WS0yq8_budWy7mjAatWjTNQ?usp=sharing
Hole cover panel 5	2	Make	3D printing	https://drive.google.com/drive/folders/1WGFTlVP_UcB2k8iNjUXKhzHugRS0Fs-A?usp=sharing
RFID support	2	Make	3D printing	https://drive.google.com/drive/folders/1WGFTlVP_UcB2k8iNjUXKhzHugRS0Fs-A?usp=sharing
Led strip gutter	1	Buy	Cutting and gluing	https://www.leroymerlin.it/prodotti/illuminazione/illuminazione-led/strisce-e-tubi-led/profili-per-strisce-led/profilo-per-striscia-led-in-alluminio-2-mt-83810613.html
M4 x 12mm screw	10	Buy		
M4 nut	6	Buy		
M3 x 12mm screw	4	Buy		
M3 nut	4	Buy		
M5 x 10mm screw	1	Buy		
Optional pegboard components	vari	Make	3D printing	https://drive.google.com/drive/folders/1WGFTlVP_UcB2k8iNjUXKhzHugRS0Fs-A?usp=sharing

Tecnologia	Q.tà	Make/Buy	Note	Link
Projector	1-2	Buy	Xiaomi Mi laser	https://it.banggood.com/Xiaomi-Mi-4K-UHD-Laser-Projector-150in-16GB-eMMC-5G-WiFi-Dolby-DTS-Android-TV-9_0-ALPD-3_0-1300lm-Laser-Smart-TV-Global-Version-p-1717994.html?cur_warehouse=CZ&rmmds=search
RGB led strip	1	Buy	Philips Hue	https://www.philips-hue.com/it-it/p/hue-white-and-color-ambiance-lightstrip-plus-v4---base-da-2-metri/8718699703424#overview
Depth-color sensor	1	Buy	Orbbec Astra S	https://shop.orbbec3d.com/Astra-S
RFID	1	Buy		https://www.amazon.it/dp/B01LSZMREW/ref=twister_B07K1JPYZX?_encoding=UTF8&psc=1
Mini PC	1	Buy	Fanpeec	https://amzn.to/36u1uPx
PC switch	1	Buy		https://amzn.to/3LCP0Eb
External plug	1	Buy		https://www.amazon.it/Poly-Pool-PP6095X-Evolution-Pluristandard/dp/B085FLQVH2
Power strip	1	Buy		https://www.amazon.it/Electraline-62019-Multipresa-polivalenti-bivalenti/dp/B00IF984TM
Spiral cable	1	Buy		https://www.amazon.it/gp/product/B00UTGLQGM
HDMI caple	2	Buy		https://www.amazon.it/gp/product/B00NEN5D0W
DP-HDMI adapter	1	Buy		https://www.amazon.it/gp/product/B010SDZZ80
HDMI 90° adapter	1	Buy		https://amzn.to/3tLclNE

3. Technologies and tools

- Laser cutting and roller varnishing for the main structure (white matte varnish for wood)
- Hand cutting with cutter for the adhesive film
- 3D printing for add-ons and nut covers
- Band saw and drill for the wheel traverse
- Metal hacksaw and glue for the led gutter
- Screwdriver for assembly

4. Instructions

Step 01 - preparation of material and custom components

Before starting the assembly all the components have to be prepared, in particular the laser cuts and 3D prints have to be sent to a service with the appropriate machinery. For the adaptation of standard components (cut to size, drilling, hand cutting) you can rely on laboratories or fablab in the area or carry them out independently, check the availability of all the tools mentioned above.

- Download the dxf files, have the panels laser cut and labeled (labels should be placed on the circular incisions)
- Download stl files and have the parts 3D printed
- Download the guides for the standard components to be customized: cutting of adhesive film, cutting to length of threaded rods, cutting to length of spacers, cutting and drilling of beams, 45° cutting and gluing of channels.

Step 02 - structure assembly

As an aid to assembly you can also watch the video “structure assembly”.

- To be guided on the order and orientation of the panels follow the directions on the labels (Figure 1)
- Insert the threaded rods (488mm in the bottom holes and 233mm in the top holes) in the first panel and start locking it with the nuts creating a limit switch. Proceed with the assembly by laying the panel down
- Insert 4 spacers and then the next panel (Figure 1)
- Repeat the operation for all panels, inserting also the other 2 threaded rods to panel 5 (Figure 2)
- Please note, between panels 2-3 and 9-10 the lower spacers must be replaced with the wheel joists (Figure 3).

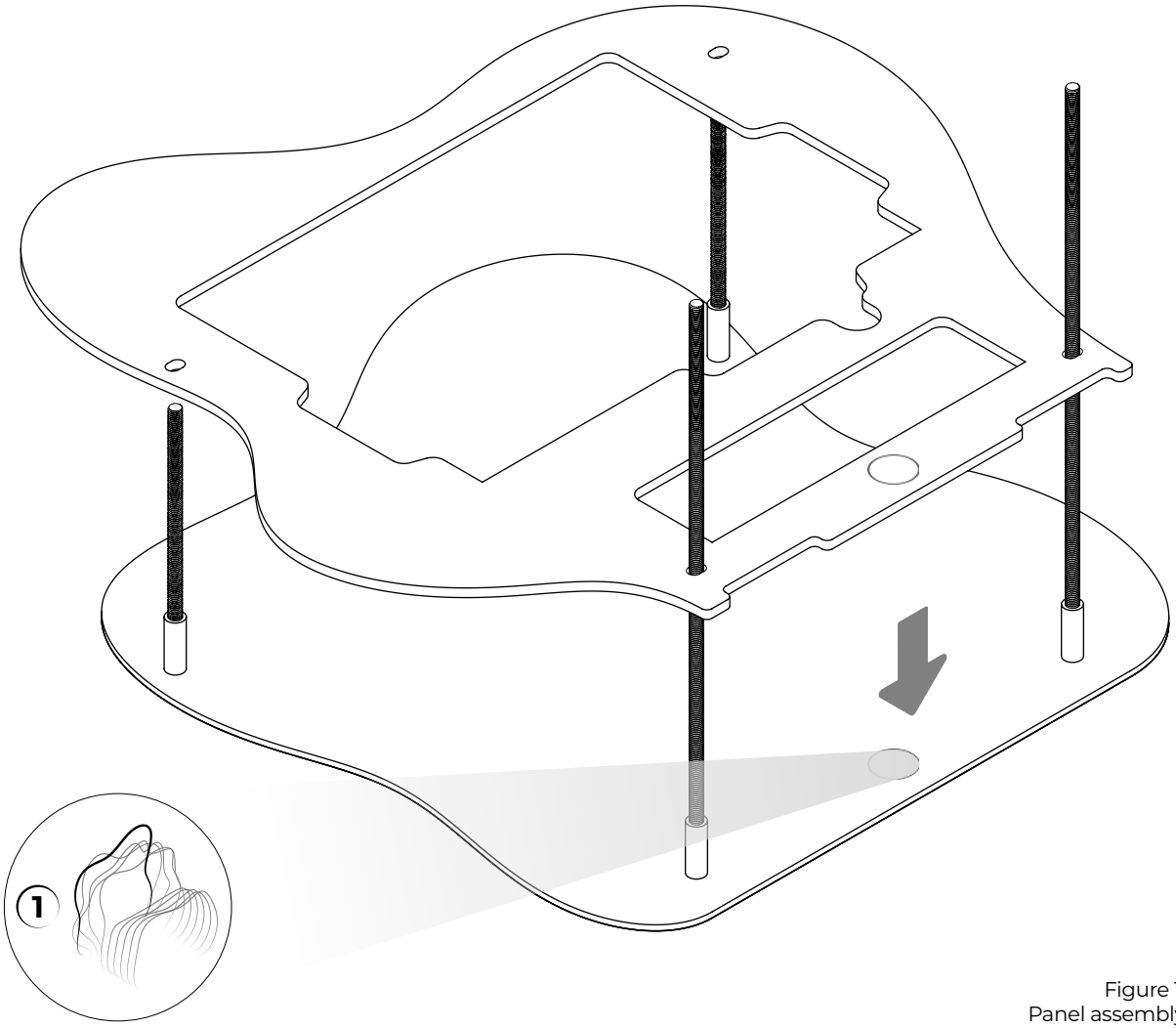


Figure 1.
Panel assembly

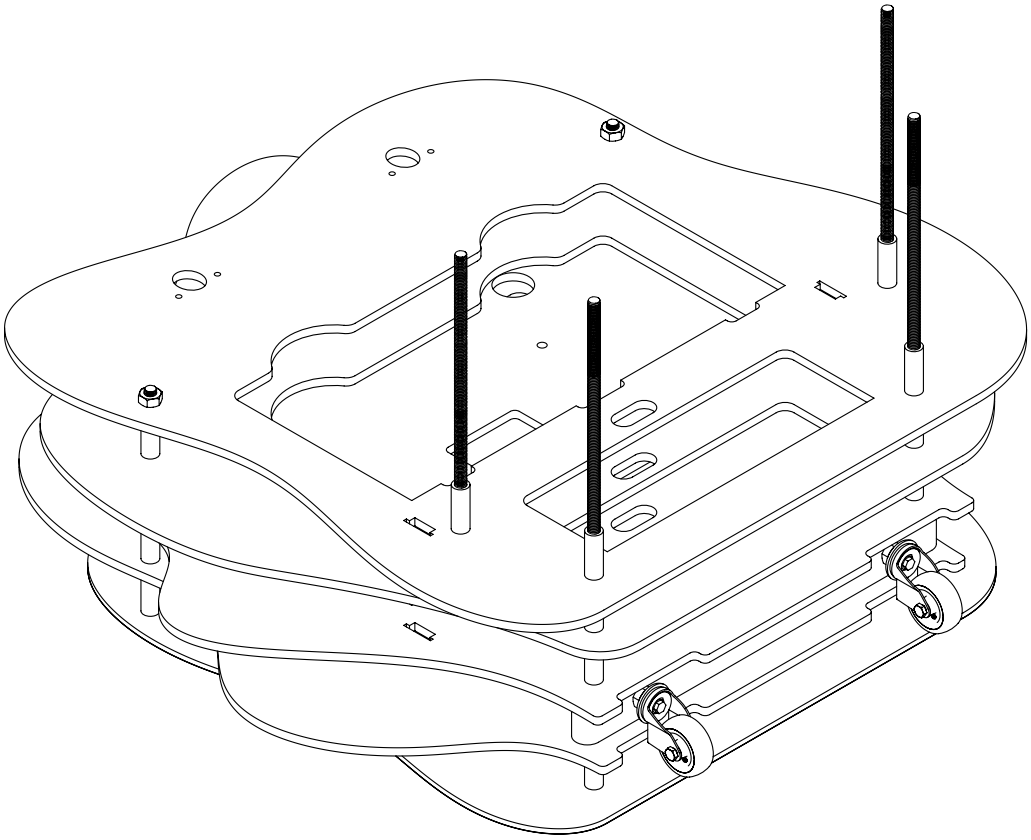


Figure 2.
Fifth panel

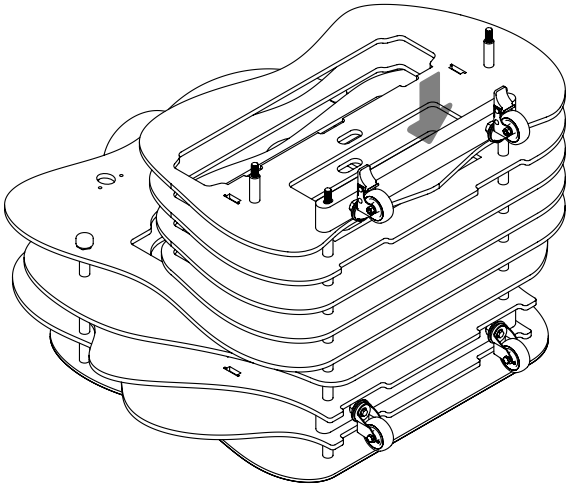


Figure 3.
Joist insertion

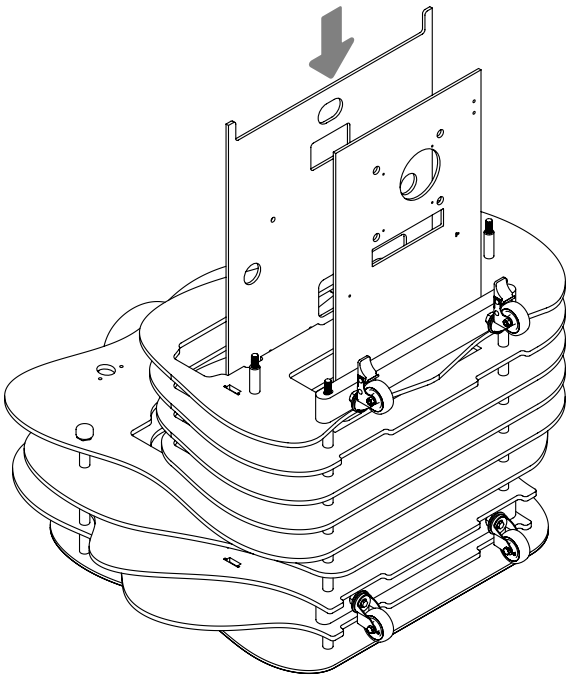


Figure 4.
Inserting shelves

- Insert the inner shelves (Figure 4)
- Close the structure with the last panel by tightening the last nuts
- Stand the structure upright and place it on the wheels, at this point tighten the nuts two by two until it is solid and cover with the nut covers (Figure 5).
- At this point the structure will be sealed and even sliding the two outermost panels for the insertion of technologies there will be no solidity problems.

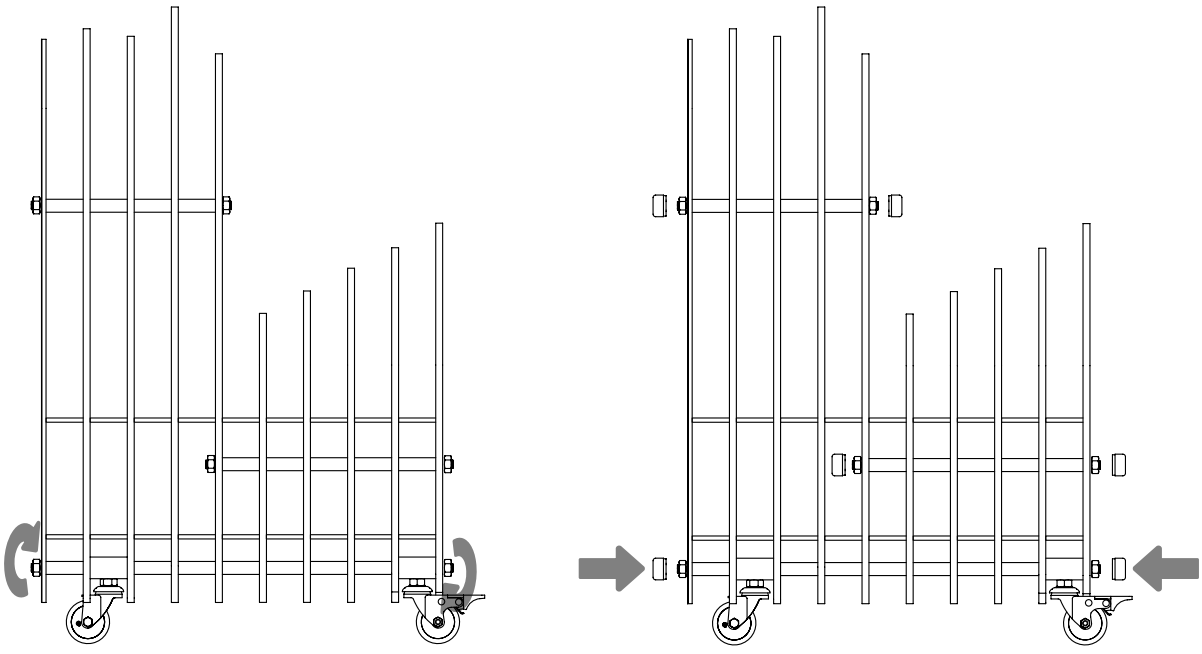
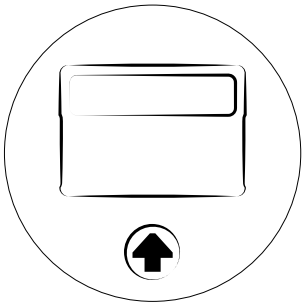


Figure 5.
Structure closure

Step 03 - components housing

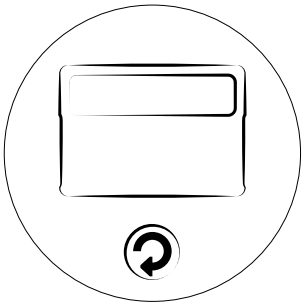
Projectors

- Follow the indications on the labels: the horizontal projector is to be fixed on the back side and the vertical one on the front side



Horizontal projector
insert and slide

Vertical projector
screw on back



- Open the structure from panel 10 and slide the projector and fit it into the slots, for additional security you can also screw it with 2 M4 screws (Figure 6)

- Open the structure from panel 1 to fix the vertical projector: fit it in the slots and screw it on the back with 2 M4 screws (Figure 7)

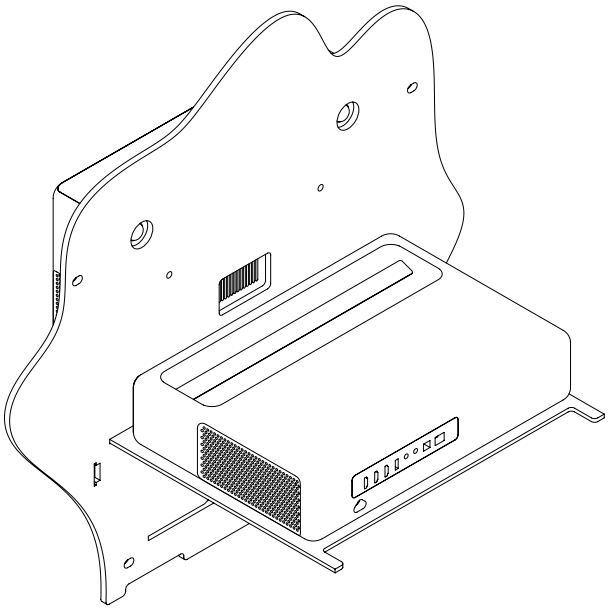


Figure 6.
Horizontal projector insertion

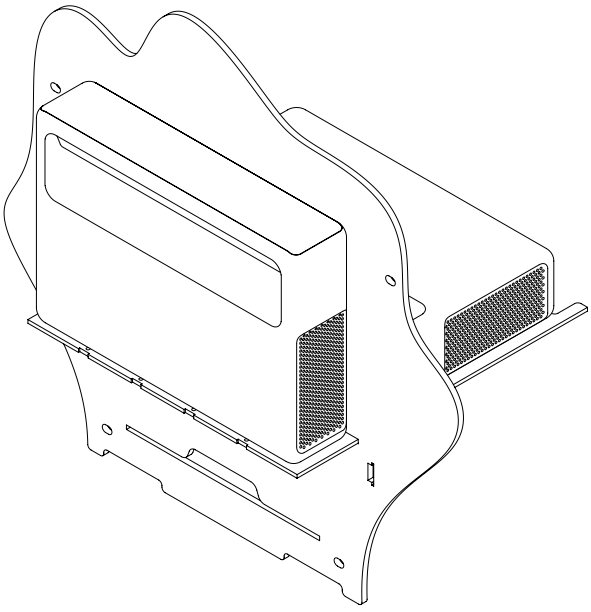


Figure 7.
Vertical projector insertion

Other components

- Fix the PC with the appropriate attachments compatible with the vesa mount measurements (Figure 8)
- Fix the power strip with two M3 screws at the ends (Figure 8)
- Screw the depth-color sensor on the base with an M5 screw (Figure 8)
- Attach the RFID with the appropriate 3D printed screwed brackets
- Slide the channel into the slots until it reaches the end of its travel (Figure 9)
- Finally attach the socket and switch and make cable connections (Figure 10)

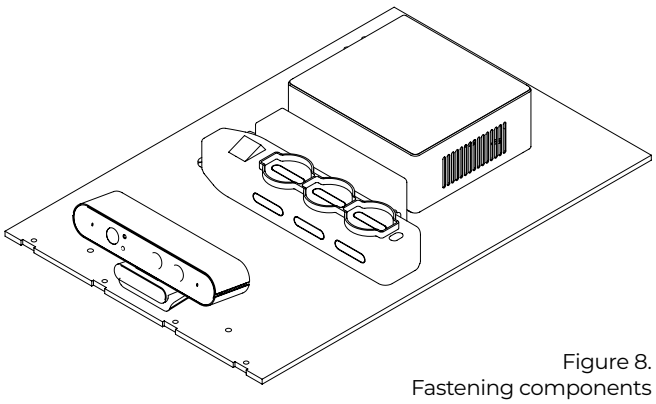


Figure 8.
Fastening components

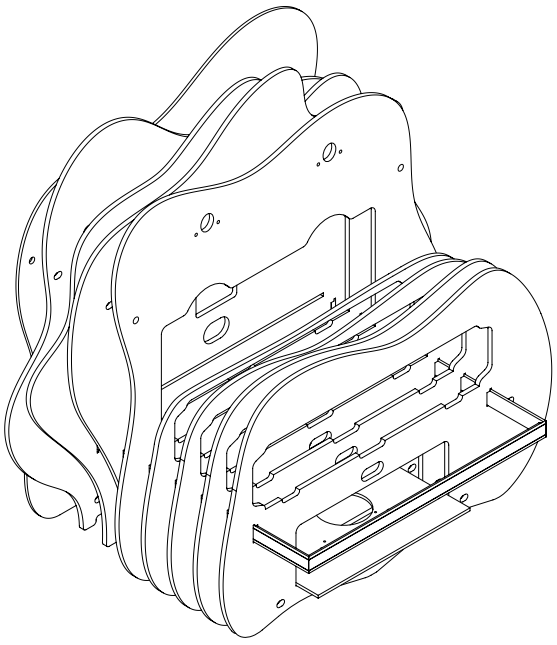


Figure 9.
Gutter insertion

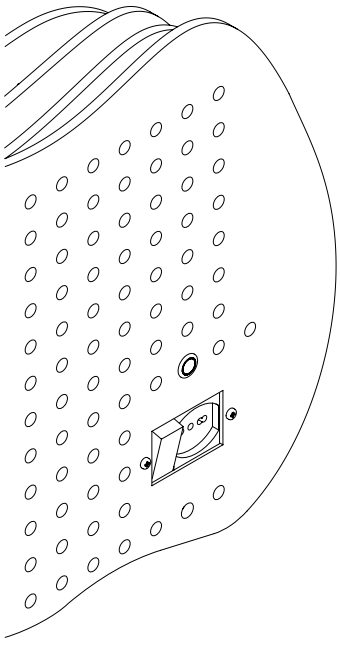


Figure 10.
Socket and switch fixing