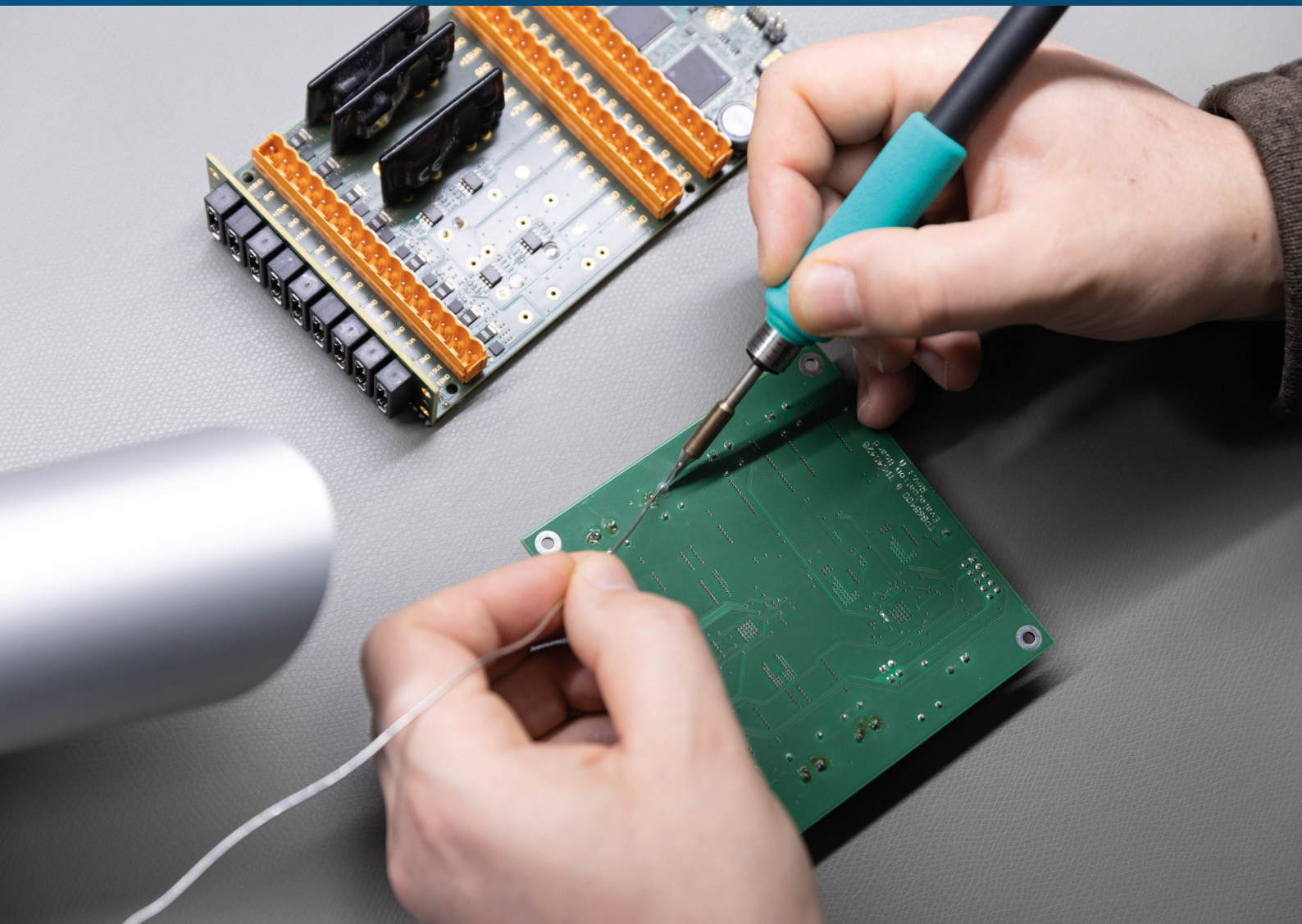


Equipment List

08/2023



DESY
INNOVATION
FACTORY

Makerspace

Operated by



START-UP LABS
BAHRENFELD

3D Printing Space

The DESY Makerspace carries 4 FDM (fused deposition modelling) 3D printers in its 3D Printing Space.

2 × Creality Ender 6

Features: single print core, upgraded with direct extruder, automatic bed levelling & web cam

Build volume: 250 × 250 × 400 mm³

XY resolution: ±0.1 mm

Layer height: 0.1 – 0.4 mm

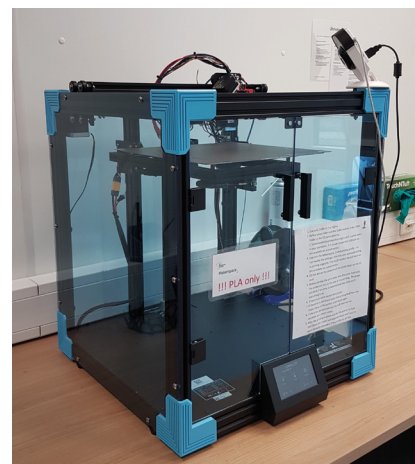
Printing material: PLA, TPU, Wood, Carbon fiber etc.

Interface: SD card, Wi-Fi

Compatible data formats: STL, 3MF, AMF, OBJ, Gcode

Slicing software: Creality slicer, Cura

Manufacturer webpage: <https://www.creality.com/products/ender-6-3d-printer>



1 × Bambu Lab X1 Carbon Combo

Features: single extruder, web cam, air filter, material station for automated filament exchange, automatic bed levelling, automatic layer and spaghetti recognition

Build volume: 256 × 256 × 256 mm³

Max. speed: 500 mm/s

Printing material: PLA, PETG, TPU, ABS, ASA, PET, PA, PC, Carbon/
Glass Fiber Reinforced Polymer

Interface: Micro SD

Slicing software: Bambu Studio

Manufacturer webpage: <https://bambulab.com/en/x1>

1 × Ultimaker S5 - Professional Bundle

Features: dual extruder, web cam, air filter, material station for automated filament exchange, automatic bed levelling

Build volume: 330 × 240 × 300 mm³

XYZ resolution: 6.9, 6.9, 2.5 μm

Layer resolution: 200 – 20 μm (with 0.4 mm standard nozzle)

Printing material: PLA, TPU, PVA, ABS, CPE, Nylon etc.

Interface: USB 3.0

File types: STL, OBJ, X3D, 3MF, BMP, GIF, JPG, PNG

Slicing software: Cura

Manufacturer webpage: <https://ultimaker.com/learn/the-ultimaker-s5-is-here/>



Mechanics Space

At DESY Makerspace's mechanics space, tools for standard subtractive manufacturing techniques like milling, drilling, turning and grinding, and sawing are available for crafting metal and 3D-printed polymer parts.



OPTIsaw S 150G metal band saw

Saw band speed(s): 20 - 65 m/min

Cutting angle: 0 - 60°

Saw band width: 12.7 mm

Feed: manual

Cutting range 0° round (full material): 150 mm

Cutting range 0° quadratic (full material): 160 mm

Manufacturer webpage: <https://www.stuermer-machines.com/metalworking/metalworking-machines-metal-band-saws/optisaw-s-150g-3300150/>

OPTiturn TU 2004V modeling lathe

Longitudinal feed range: 0.1 - 0.2 mm/rev

Speed range: 150 - 2500 min⁻¹

Spindle cone: MK3

Tailstock chuck: MK2

Tailstock quill stroke: 65 mm

Travel upper slide: 55mm

Travel cross slide: 75 mm

Travel carriage saddle: 300 mm

Manufacturer webpage: <https://www.stuermer-maschinen.de/metallbearbeitung/metallbearbeitungsmaschinen-drehmaschinen-konventionell/optiturn-tu-2004v-3420310/>



OPTImill MH 25SV 3-axes milling machine

Features: stepless speed control, easy tool change due to quick tool clamping system

Drill-mill head tilt range: ± 45°

Drilling/milling output: 50 mm (max. size milling head), 25 mm (max. size shaft milling cutter)

Vertical spindle speed range: 200 - 400 min⁻¹

Vertical spindle reach: 185 mm

Vertical spindle normal operation: 1.5 kW

Vertical spindle drive motor torque: 10 Nm

Feed motor torque X,Y axis: 2.2 Nm

Feed motor torque Z axis: 4.2 Nm

Travel range X-axis: 400 mm manual, 380 mm automatic

Travel range Y-axis: 210 mm manual, 130 mm automatic

Travel range Z-axis: 270 mm manual, 190 mm automatic

Manufacturer webpage: <https://www.stuermer-machines.com/metalworking/metalworking-machines-milling-machines-conventional/optimill-mh-25sv-3338160/>



Triton TSPST450 oscillating spindle & belt sander

No load speed: spindle 2000 rpm / Belt 480 m/min

Oscillations per minute 58 opm

Power: 450 W

Manufacturer webpage: <https://www.tritontools.com/en-GB/Product/Bench%20Top/Bench%20Top/TSPST450>

Small Mechanical Devices and Tools:



LEINEN-JUNIOR bench vice with 125 mm jaw width



Bosch GAS 18V-10 L Professional cordless dust extractor: <https://www.bosch-professional.com/gb/en/products/gas-18v-10-l-06019C6302920>



Dremel 3000-1/25 multifunction tool: <https://www.dremel.com/de/de/p/dremel-3000-f0133000jp>



Bosch GSS 160-1A Professional orbital sander: <https://www.bosch-professional.com/gb/en/products/gss-160-multi-06012A2370>



Bosch GSR 18V-60C Professional cordless drill driver: <https://www.bosch-professional.com/gb/en/products/gsr-18v-60-c-06019G1102>



Festo compressor for Meclab® (5562-75): https://labvolt.festo.com/solutions/2_electronics/22-5562-75_compressor_for_meclab



Tool trolley equipped with screwdrivers, files, jaw spanners etc.

Electronics Space

The DESY Makerspace's electronics space is equipped with ESD safe floors and working surfaces. Various soldering stations, as well as analytical instruments for electronic signal measurements and visual inspections are available for the users.



2 × Elabo Primus One work table

Dimensions: 1800 × 800 × 750 mm (B × T × H)

Features: ESD safe, retractable desk grommet with 50 mm brush liner for optimum cable management, welded steel frame for improved mechanical stability
Illumination: LED (40 W, dimmable)

Manufacturer webpage: <https://www.elabo.com/workstation-solutions/training-systems/products/detail/primus-one/>



2 × JBC CD-2BQF soldering station

Features: ESD safe

Peak power (tool): 130 W

Selectable temperature: 90 – 450 °C

Idle temperature stability (still air): ± 1.5 °C

Temperature accuracy: ± 3 %

Tip-to-ground resistance: < 2 ohms

Manufacturer webpage: <https://www.jbctools.com/cd-2bqf-general-purposes-station-product-1832.html>



1 × TOOLCRAFT TPS-800 hot air soldering station

Features: LCD display

Max. air volume: 120 l/min

Max. power: 1000 W

Temperature range: 100 – 480 °C

Supplier webpage: <https://www.conrad.com/p/toolcraft-tps-800-hot-air-soldering-digital-1000-w-100-480-c-1933086>

Weller Zero Smog 4V Kit 2 funnel fume extraction unit

Features: ESD safe

Compact filter: Particle filter H13, broadband gas filter (50% activated carbon + 50% Chemisorb)

Max. blower vacuum: 3800 Pa

Max. capacity: 1-4 workstations

Power: 275 VA

Manufacturer webpage: <https://www.weller-tools.com/mea/gb/filtration/products/solder-fumes/zero-smog-4v-kit-2-funnel>





Zeiss STEMI 305 trino stereo microscope

Features: compact manual stereo microscope with C-mount, 0.75 objective lens, almost vertical illumination, polarizer & analyzer

Zoom: 5:1

Viewing angle: 45° (fixed)

Resolution: 200 lp/mm (basic optics)

Max. working distance: 128 mm (with 0.75 objective lens)

Field of view: 38,3 – 7,7 mm (with 0.75 objective lens); 28,8 – 5,8 mm (basic optics)

Magnification: 6x – 30x (with 0.75 objective lens); 28,8 – 5,8 mm (basic optics); 8x – 40x (basic optics)

Manufacturer webpage: <https://www.zeiss.com/microscopy/en/products/light-microscopes/stereo-and-zoom-microscopes/ste-mi-305.html#/selectTypes>



Rigol MSO5104

Analog bandwidth: 100 MHz

No. of channels: 4

Real-time sample rate: up to 8 GSa/s

Memory depth: up to 200 Mpts

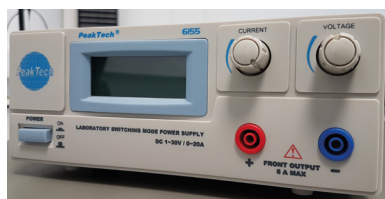
High waveform capture rate: over 500.000 wfm/s

Manufacturer webpage: <https://rigolshop.eu/product-oscilloscope-mso5000-mso5104.html>

Small Electrical Devices:



R&S® HMP2020 power supply: https://www.rohde-schwarz.com/us/products/test-and-measurement/dc-power-supplies/rs-hmp2000-power-supply-series_63493-43468.html



PeakTech® P 6155 laboratory switching mode power supply: <https://www.peaktech.de/uk/PeakTech-P-6155-Laboratory-Switching-Mode-Power-Supply/P-6155>



PeakTech® P 6227 DC power supply: <https://www.peaktech.de/uk/PeakTech-P-6227-DC-power-supply-0-60-V-0-6-A-with-2-x-USB/P-6227>



PeakTech® P 2240 isolating transformer: <https://www.peaktech.de/uk/PeakTech-P-2240-Isolating-transformer-230-V-500-W./P-2240>



2 × Uni-T® UT161B true RMS digital multimeters: <https://meters.uni-trend.com/product/ut161-series/>



BOSCH GHG 23-66 Professional heat gun: <https://www.bosch-professional.com/middle-east/en/products/ghg-23-66-06012A6371>

Offices

The DESY Makerspace offers 2 single offices and 2 co-working spaces, providing overall space for 10 people. The offices are fully equipped with height-adjustable desks, office chairs, white boards, and lockers. Each workspace provides a monitor, a mouse, a keyboard, and a USB-C hub. The whole DESY Makerspace provides access to Wi-Fi and broadband internet connection.



Operated by  START-UP LABS
BAHRENFELD

Contact:
makerspace@desy.de

Booking:
<https://slb.hamburg>



Makerspace 

— INNOVATION &
TECHNOLOGY
TRANSFER —

