

Parts	Amount	Exemplary seller	Euro (+VAT)
<b>Mechanics</b>			
Aluminum Profile 20x20L - 1N - I-Type Groove 5, 270 mm, machining both sides M5 (70502-Z)	2	dold-mechatronik.de	7.56
Aluminum Profile 20x20L - 1N - I-Type Groove 5, 215 mm, , machining both sides M5 (70502-Z)	3	dold-mechatronik.de	10.38
Aluminum Profile 20x20L - 1N - I-Type Groove 5, 210 mm, , machining both sides M5 (70502-Z)	2	dold-mechatronik.de	6.87
Aluminum Profile 20x20L - 2N-90° - I-Type Groove 5, 270 mm, machining both sides M5 (70526-Z)	2	dold-mechatronik.de	7.56
Aluminum Profile 20x20L - 2N-90° - I-Type Groove 5, 215 mm, machining both sides M5 (70526-Z)	2	dold-mechatronik.de	6.92
Aluminum Profile 20x20L - 2N-90° - I-Type Groove 5, 210 mm, machining both sides M5 (70526-Z)	4	dold-mechatronik.de	13.72
Aluminum Profile 20x20L I-Type Groove 5, 270 mm (62002-Z)	1	dold-mechatronik.de	1.61
Aluminum Profile 20x20L I-Type Groove 5, 210 mm (62002-Z)	1	dold-mechatronik.de	3.30
Corner angle 20 I-type groove 5 incl. Mounting kit and cover square (61418-BSAE)	8	dold-mechatronik.de	33.84
Angle 20 I-type groove 5 incl. Fastening set (F093W203N05S03-BS)	2	dold-mechatronik.de	3.12
Bright steel, round 8mm, 290 mm (C45+SL-h6-D8-Z)	2	dold-mechatronik.de	4.74
Bright steel, round 8mm, 205 mm (C45+SL-h6-D8-Z)	2	dold-mechatronik.de	3.60
Bright steel round 6mm, 78 mm (C45+SL-h6-D6-Z)	1	dold-mechatronik.de	0.94
Bright steel round 6mm, 93 mm (C45+SL-h6-D6-Z)	2	dold-mechatronik.de	2.09
drylin® R Lineargleitbuchse RJ4JP-01-08 / d1 = 8 / d2 = 15 / B = 24 (RJ4JP-01-08)	4	dold-mechatronik.de	11.73
Bearings with flange (Form F) GFM-0608-05 / Ø d1 (mm) = 6 mm / outer diameter d2 (mm) = 8mm / bearing length b1 (mm) = 5mm (GFM-0608-05)	6	dold-mechatronik.de	18.30
Miniature Ball Bearings 623 open 3x10x4 mm (623)	4	dold-mechatronik.de	2.89
DIN 912 screw with hexagon socket, stainless steel A2, M3X8 (VO) (DIN912-A2-M3X8-VO)	100	dold-mechatronik.de	5.88
DIN 912 screw with hexagon socket, stainless steel A2, M3X10 (VO) (DIN912-A2-M3X10-VO)	100	dold-mechatronik.de	5.88
DIN 912 screw with hexagon socket, stainless steel A2, M3x16 (VO) (DIN912-A2-M3X16-VO)	25	dold-mechatronik.de	2.52
DIN 912 screw with hexagon socket, stainless steel A2, M4X10 (VO) (DIN912-A2-M4X10-VO)	10	dold-mechatronik.de	1.76
DIN 912 screw with hexagon socket, stainless steel A2, M4X12 (VO) (DIN912-A2-M4X12-VO)	3	dold-mechatronik.de	2.65
DIN 912 screw with hexagon socket, stainless steel A2, M4X16 (VO) (DIN912-A2-M4X16-VO)	6	dold-mechatronik.de	1.47
DIN 7380 Flachrundschraube mit Innensechskant, 10.9, verzinkt M4x10 (DIN7380-4x10)	4	dold-mechatronik.de	1.08
DIN 7380 Flachrundschraube mit Innensechskant, 10.9, verzinkt M5x10 (DIN7380-5x10)	30	dold-mechatronik.de	5.80
DIN 7380 Flachrundschraube mit Innensechskant, 10.9, verzinkt M5x14 (DIN7380-5x14)	4	dold-mechatronik.de	1.18
DIN 7380 Flachrundschraube mit Innensechskant, 10.9, verzinkt M5x20 (DIN7380-5x20)	11	dold-mechatronik.de	4.16
DIN 934 Hexagon nut, .8, galvanized M3x0,5 (DIN934-M3)	15	dold-mechatronik.de	1.64
DIN 934 Hexagon nut, .8, galvanized M4x0.7 (DIN934-M4)	8	dold-mechatronik.de	0.94
DIN 934 Hexagon nut, .8, galvanized M5x0,8 (DIN934-M5)	3	dold-mechatronik.de	0.38
Sliding block M5 with web I-type groove 5 (61333-1)	37	dold-mechatronik.de	14.92
Sliding block M4 with web I-type groove 5 (61326-1)	2	dold-mechatronik.de	1.09
Sliding block M3 with web I-type groove 5 (61319-1)	25	dold-mechatronik.de	10.08
DIN 7991 countersunk allen, 8.8, galvanized M3x10 (DIN7991-3x10)	4	dold-mechatronik.de	1.08
SoftFinish® hex ball head screwdriver. 367SF 2,5x100 (A-W26305)	1	dold-mechatronik.de	4.32
SoftFinish® hex ball head screwdriver. 367SF 3,0x100 (A-W26328)	1	dold-mechatronik.de	4.32
Wiha Allen key Series 369T, hexagonal ball head with short legs matt chrome, 1.5 mm (W369T015), 2.0 mm (W369T020)	1	dold-mechatronik.de	1.33
Wiha Allen key Series 369T, hexagonal ball head with short legs matt chrome, 1.5 mm (W369T015), 2.0 mm (W369T020)	1	dold-mechatronik.de	1.33
Wiha SoftFinish® screwdriver series 302, slot, 2.5x75	1	dold-mechatronik.de	3.20

<b>Parts for movements</b>			
Pololu Stepper Motor Nema 14 Bipolar 200 Steps/Rev 35x36mm 2.7V 1A/Phase (Pololu No. 1209)	2	www.pololu.com, www.exp-tech.de/en	50.82
Motor driver heatsinks	5	Amazon	1.50
Stepper motor driver Stepsticks A4988, black edition (Pololu No. 2981)	4	www.pololu.com, www.exp-tech.de/en	62.40
3D Printer Mechanical Limit Switch, MakerBot 4 pins, with cables	2	Amazon	1.85
3D Printer Optical Limit Switch 32x10 mm, with cables	2	Amazon	2.26
Stepper motor Nema 17 with integrated lead screw (Tr8x8, 300 mm), MK3 stepper motor Z-axis Right	1	www.prusa3D.com	32.68
Trapezoidal leadscrew nut - TR 8x8, POM, Prusa Trapezoid nut (i3, MK4) (1 needed)	1	www.prusa3D.com	5.86
Timing belt 2GT Y-axis MK3S, 650 mm	1	www.prusa3D.com	4.87
Timing belt 2GT X-axis MINI	1	www.prusa3D.com	3.35
Timing pulley T16-2GT	2	www.prusa3D.com	5.18
Linear stepper motor ACT 16HSL3404 (new ACT product number: 39BYGHL)	2	act-motor.com, Amazon	28.87
Round magnets, Ø 8 mm x 3 mm	18	Amazon, supermagnete.de	5.58
Cube magnets, neodymium, 5 mm	16	Amazon, supermagnete.de	4.32
<b>Multifunctional plateholder</b>			
Aluminum plate, 100 x 95 x 2 mm	1	xometry.eu/en/	5.90
TRU COMPONENTS Polymide heating foil, 12 V/DC, 48 W, 60 mm x 60 mm	1	conrad.de	7.13
NTC Thermistor, 100 kΩ, DigiKey No. 495-2143-ND	1	Digikey	3.00
Cable male to wire lead 5 positions, 1.64', DigiKey No. 839-10-04495-ND	1	Digikey	10.04
Cable Assembly 1.64' (500.00mm), 5 positions female to wire, Digikey No. WM21514-ND	1	Digikey	5.53
60-mm bubble spirit level	1	Amazon	5.50
<b>Backlight plateholder</b>			
Inspired LED 12V-MB-CW-12M, cool white, cut tape, DigiKey No. 1647-12V-MB-CW-12MCT-ND	8	Digikey	2.56
Cable male to wire lead 5 positions, 1.64', DigiKey No. 839-10-04495-ND	1	Digikey	10.04
Plexiglas Satinice CLEAR 0D010 DF, 200 x 100 x 3 mm	1	www.plexiglas-shop.com	10.30
Plexiglas LED CLEAR 0E010 SM for edge lighting, 200 x 100 x 4 mm	1	www.plexiglas-shop.com	10.30
<b>Panels - Alupanel aluminum brushed 3 mm</b>			
10.2 cm x 21.0 cm (sides front), upload dxf file	2	www.kunststoffplattenonline.de	10.00
14.8 cm x 21.0 cm (sides back), upload dxf file	2	www.kunststoffplattenonline.de	10.00
21.5 cm x 19.0 cm (back), upload dxf file	1	www.kunststoffplattenonline.de	5.41
10.2 cm x 21.5 cm (top front), upload dxf file	1	www.kunststoffplattenonline.de	5.00
21.5 cm x 19.0 cm (front), upload dxf file	1	www.kunststoffplattenonline.de	5.40
Bottom plate, upload dxf file	1	www.kunststoffplattenonline.de	11.76
<b>Raspberry Pi</b>			
Raspberry Pi 4 Model B, 4 GB SDRAM (8 or 4 GB??)	1	www.rasppishop.de	51.68
Raspberry Pi 4 heat sinks	1	www.rasppishop.de	3.10
SanDisk Ultra A1 microSD 64GB	1	www.rasppishop.de	5.22
Raspberry Pi HDMI cable, 2 m	1	www.rasppishop.de	3.03
Raspberry Pi 12 MP HQ Camera	1	www.rasppishop.de	47.82
Wide Angle Lens for Raspberry Pi HQ Camera	1	www.rasppishop.de	25.13
Camera cable 500 mm	1	www.rasppishop.de	2.90
UPERFECT Portable Monitor, 15.6 Inch, 5 V	1	Amazon	126.04
Wireless keyboard and mouse, Logitech MK220	1	Amazon	25.97

<b>Wires</b>				
Premium Jumper Wires, 30 cm, black, pack of 10, Pololu item #: 1840	2	www.pololu.com, www.exp-tech.de/en	3.00	
Premium Jumper Wires, 30 cm, blue, pack of 10, Pololu item #: 1846	1	www.pololu.com, www.exp-tech.de/en	3.00	
Premium Jumper Wires, 30 cm, red, pack of 10, Pololu item #: 1842	2	www.pololu.com, www.exp-tech.de/en	3.00	
Premium Jumper Wires, 30 cm, green, pack of 10, Pololu item #: 1845	1	www.pololu.com, www.exp-tech.de/en	3.00	
0.1" (2.54mm) Crimp Connector Housing: 1x12-Pin, pack of 5, Pololu item #: 1919	1	www.pololu.com, www.exp-tech.de/en	2.45	
<b>Fluidic parts</b>				
Force Sensor FX29K0-100A-0010-L	1	DigiKey	40.50	
LFR Series solenoid valve 3-way, FFKM, Manifold Mount ( LFRA1252370D)	1	www.theleeco.com/products/	224.08	
062 Female MINSTAC – Female Luer Lock Adapter, PEEK ( TMDA3203950Z)	1	www.theleeco.com/products/	18.95	
125/156 Female MINSTAC – Male Luer Lock Adapter, PEEK (TMRA9503950Z)	1	www.theleeco.com/products/	22.37	
Safety Screen - 062 MINSTAC, 12 µm, PEEK ( INMX0350000A)	4	www.theleeco.com/products/	190.51	
Torque Wrench ( TTTA3201243A)	1	www.theleeco.com/products/	29.43	
VHS Series solenoid valve, FFKM (INX0514100A)	1	www.theleeco.com/products/	417.78	
Micropump LPL2, 50 µL, 12V, EPDM ( LPLX0509650B)	1	www.theleeco.com/products/	167.41	
062 Female MINSTAC – Female Luer Lock Adapter, PEEK ( TMRA3202950Z)	2	www.theleeco.com/products/	37.91	
062 Male MINSTAC – Female Luer Lock Adapter, PEEK ( TMRA3201950Z)	1	www.theleeco.com/products/	18.95	
062 MINSTAC nozzle with jeweled orifice, orifice ID 0.002" (0.05 mm) (INZA4620928T)	1	www.theleeco.com/products/	48.16	
062 MINSTAC nozzle with jeweled orifice, orifice ID 0.003" (0.08 mm) (INZA4630912T)	1	www.theleeco.com/products/	48.16	
062 MINSTAC airless atomizing nozzle (IAZA1200167K)	1	www.theleeco.com/products/	60.14	
PTFE tubing, 2 fittings 062 MINSTAC, ID 0.8 mm, L 20 cm (TUTC3216920L)	1	www.theleeco.com/products/	34.50	
PTFE tubing, 2 fittings 062 MINSTAC, ID 0.8 mm, L 15 cm (TUTC3216915L)	3	www.theleeco.com/products/	102.60	
M3 Pan Head Machine Screw Phillips Drive Nylon	1	Digikey	0.25	
Hotend PTFE tube	1	www.prusa3D.com	2.58	
<b>LED illumination</b>				
PCB for UV 265 nm LEDs	2	ibr-leiterplatten.de	6.40	
PCB for UV 365 nm LEDs	2	ibr-leiterplatten.de	8.00	
UV 265 nm LED PKC-H10-F35, 18 mW, SMD3535	4	www.lasercomponents.com/de-en/	13.28	
UV 365 nm LED, Inolux IN-C33CTNU2, SMD3535	4	Digikey	24.56	
4 Position Header Connector Male Pin Tin	3	Digikey	2.49	
NeoPixel Stick - 8 x 5050 RGBW LEDs - Cool White, DigiKey No. 1528-1595-ND	2	DigiKey	15.08	
Glass filter Hebo HU02, 50 mm x 25 mm, 3 mm thick	2	hebo-glass.com	38.00	
Inspired LED 12V-MB-CW-12M, cool white, cut tape, DigiKey No. 1647-12V-MB-CW-12MCT-ND	8	Digikey	2.56	
<b>Electronics</b>				
Electronic board	1	Electronic workshop JLU	252.10	252.10084
Power supply, Meanwell GST160A12-R7B, 12 V, 160 W	1	https://www.meanwell-web.com	49.90	
Power Cord Black CEE 7/7 To IEC 320-C13, 18 AWG (0.8 mm2), Digikey No. 993-1038-ND	1	Digikey	5.49	
DHT22 AM2302 Temperature and humidity sensor	1	az-delivery.de	7.13	
8 (2 x 4) Position Shunt Connector Black Open Top 0.100" (2.54mm) Gold, DigiKey No., 732-13623-ND	1	Digikey	0.43	
6 (2 x 3) Position Shunt Connector Black Open Top 0.100" (2.54mm) Gold, DigiKey No. 732-13622-ND	5	Digikey	2.15	

<b>Mini-Incubator</b>			
Aluminum plate, 110 x 110 x 2 mm	2	xometry.eu/en/	4.72
Thermo TECH Polyester Heating foil self-adhesive, 12 V/DC, 12 V/AC, 15 W, Ø 90 mm	2	www.conrad.de	30.24
NTC Thermistor, 100 kΩ, DigiKey No. 495-2143-ND	1	Digikey	3.00
DHT22 AM2302 Temperature and humidity sensor	1	az-delivery.de/en	7.13
7 Conductor Multi-Conductor Cable Black 22 AWG 3.28' (1.00m)	1	Digikey	4.71
4 Rectangular Connectors - Housings Receptacle Natural 0.079" (2.00mm)	1	DigiKey	0.10
Socket Contact Tin 24-28 AWG Crimp	4	Digikey	0.36
<b>Nebulizer</b>			
Ultrasonic Piezo Atomizer 16 mm 108 kHz 5 µm pore size	2	piezoelements.com	4.00
Ultrasonic Piezo Atomizer 16 mm 108 kHz 11 µm pore size	2	piezoelements.com	4.00
JST PH 2 PIN CABLE MALE HEADER 2	1	DigiKey	0.69
<b>3D Print</b>			
Filaments			124.00
Print service			540.00
		<b>Total</b>	<b>3463.78</b>
			<b>4121.90</b> <b>incl. Tax</b>
<b>Option</b>			
<b>Mini-Shaker</b>			
<u>Base</u>			
Modelcraft gear motor RB350050-0A101R, 12 V 1:50, 120 rpm (Conrad No. 227552)	1	conrad.de	17.64
TRU COMPONENTS 1587515 rocker switch TC-R13-66A-02 (Conrad No. 857475210)	1	conrad.de	0.39
DC Chassis mount socket, 5.5/2.1 mm (Conrad No. 1582319)	1	conrad.de	0.79
Screw M3x8, DIN 7984	15	dold-mechatronik.de/ local workshop	2.65
Screw M3x10, DIN 7984	14	dold-mechatronik.de / local workshop	2.47
Screw M3x16, DIN 7984	4	dold-mechatronik.de / local workshop	1.11
Nut M3	6	dold-mechatronik.de / local workshop	0.48
Ball bearings 8 mm x 22 mm x 7 mm, pack of 10 (Amazon No. B07XHTFJ3V), 5 needed	1	amazon.de	6.55
Extension spring, 50 mm => 200 mm (Sodemann No. E02400182000S)	2	sodemann-federn.de	11.40
Cable Assembly 2.1mm ID, 5.5mm OD Plug to Plug Flat 6.0' (1.83m) (Digikey No. 839-1381-ND) <sup>1)</sup>	1	Digikey	5.39
Self-Adhesive Elastic Buffer Square 12.5 x 12.5 mm, Pack of 40, 4 needed (Amazon No. B06X3T5Z3D)	1	amazon.de	4.99
<u>Heatable hood</u>			
Thermo TECH Polyester Heizfolie self-adhesive 12 V/DC, 12 V/AC 15 W, Ø 90 mm (Conrad No. 189177 )	1	www.conrad.de	15.12
DEBO XH-W1209 T Developer Boards - Thermostat, 12 V	1	www.reichelt.de / amazon.de	3.15
ONPIRA Power distributor, 8 A, 2 x 6 positions (Amazon No. B077BQW5Q5)	1	amazon.de	3.25
SUN EE40101S1-1 Axial fan, 40x40x10 mm, 12V, 13,9m³/h, 28,2dBA	1	www.reichelt.de	1.60
Receptacle, 5 poles female to 22 AWG leads 50 cm (Digikey No. WM21514-ND)	1	Digikey	5.98
5-Pin plug male to 22 AWG wire leads 50 cm (Digikey No. 839-10-04495-ND)	1	Digikey	10.05
Eurostyle terminal strip with screws, 12 positions, 0.5 - 1.5 mm <sup>2</sup>	1	conrad.de / local workshop	2.09
<b>3D Print</b>			
Filament			12.00
Print service			40.00
		<b>Total</b>	<b>147.10</b>
			<b>175.04</b> <b>incl. Tax</b>
<sup>1)</sup> If the mini-skaker is to be operated as a stand-alone device, a separate power supply is needed.			
Power supply, 12 V, 5 A, plug 5.5/2.1 mm (Amazon No. B0C7Z639BD)	1	amazon.de	12.17