Control-Lab-in-a-Box (CLB) Parts/Components Details

1.0 Storage Box

ID	Component	Unit Cost, Ex VAT [£]	Quantity	Total Cost, Ex VAT [£]	Source
1.1	Compartment storage box (60 x 340 x 250mm)	5.98	1	5.98	CPC
1.2	Assorted storage cases, set of 4 (310 x 377 x 265mm)	24.95	1	24.95	CPC

2.0 Electronic Components

ID	Component	Unit Cost, Inc VAT, 20% [£]	Unit Cost, Ex VAT, 20% [£]	Quantity	Total Cost, Ex VAT, 20% [£]	Source
2.10	Orangepip Mega2560 Arduino Mega2560	35.8	29.8	1.0	29.8	Rapid
2.20	USB cable (Male USB A to Male USB B)	3.1	2.6	1.0	2.6	RS Components
2.30	L298N dual H-bridge motor driver	9.3	7.8	1.0	7.8	Rapid
2.40	170 tie-points mini breadboard (6 pack), required: 1	7.0	5.6	0.2	0.9	Amazon UK
2.50	Brushed geared DC motor with encoder	10.8	8.7	1.0	8.7	Amazon UK
2.60	Brushed geared DC motor	13.6	11.3	1.0	11.3	RS Components
2.70	Brushless DC motor cooling fan	7.4		1.0	0.0	Amazon UK
2.80	HC-SR04 ultrasonic sensor	2.5	2.1	1.0	2.1	RS Components
2.90	TMP36 temperature sensor	3.0	2.4	1.0	2.4	Amazon UK
2.10	220 Ohm resistor (pack of 10), required: 3	1.3	1.1	0.3	0.3	RS Components
2.11	2.9 V LED 5mm (pack of 5), required: 3	1.8	1.5	0.6	0.9	RS Components
2.12	9V power jack	0.6	0.5	1.0	0.5	RS Components
2.13	9V rechargeable battery with micro-c cable (pack of 2), required: 1	14.0	11.2	0.5	5.6	Amazon UK
2.14	Male-to-male breadboard wires (pack of 10), required: 8	1.0	0.8	0.8	0.6	RS Components
2.15	Male-to-female breadboard wires , required: 6	1.0	0.8	0.6	0.5	RS Components
Total					**74.10**	

3.0 Rapid Prototyping

ID	Component	Unit Cost, Ex VAT [£]	Quantity	Total Cost, Ex VAT [£]	Manufacturing method
3.1	Base 1 (acrylic), 98 x 54 x 3mm	0.15	1	0.15	Laser cutter
3.2	Base 2 (acrylic), 209 x 70 x 3mm	0.45	1	0.45	Laser cutter
3.3	DC motor mount (PLA)	0.05	1	0.05	3D printer
3.4	Wheel (PLA)	0.17	1	0.17	3D printer
3.5	Ultrasonic sensor and LEDs mount (PLA)	0.15	1	0.15	3D printer
3.6	Legs (PLA)	0.07	2	0.14	3D printer
	Total			**1.11**	

4.0 Nuts and Bolts

ID	Component	Required	Unit Cost, Ex VAT, 20% [£]	Quantity	Total Cost, Ex VAT, 20% [£]	Source
4.10	Hex threaded Spacer, M3 12mm (pack of 25)	12.00	11.55	0.48	5.54	Rapid
4.20	Hex Threaded Spacer, M3 x 30mm	4.00	0.26	4.00	1.04	CPC
4.30	Nylon locking nut, M3 (order of 6)	4.00	0.24	4.00	0.96	Accu
4.40	Bolt, 6mm, M3 (pack of 100)	18.00	4.45	0.18	0.80	Rapid
4.50	Bolt, 10mm, M3 (pack of 100)	8.00	2.68	0.08	0.21	Rapid
4.60	Bolt,16mm, M3 (pack of 100)	8.00	2.07	0.08	0.17	CPC
4.70	Nuts, M3 (pack of 100)	4.00	1.26	0.04	0.05	Rapid
4.80	Bolt, 10mm, M1.4	4.00	0.62	4.00	2.48	Accu
4.90	Nuts, M1.4 (pack of 250)	4.00	143.19	0.02	2.29	RS Components
Total					**13.55**	

5.0 Primary Tools

ID	Component	Unit Cost [£]	Quantity	Total Cost, Ex VAT [£]	Source
1	Philips screwdriver (75mm x No 0)	2.50	1	2.50	Rapid
2	Flat bladed screwdrvier (75 x 3mm)	2.23	1	2.23	Rapid
3	Hexagon nut driver, 5.5mm tip	7.74	1	7.74	RS Components
Total				12.47	

6.0 Additional Tools

ID	Component	Unit Cost [£]	Quantity	Total Cost, Ex VAT [£]	Source
1	Wire cutters	8.19	1	8.19	RS Components
2	Soldering iron	15.91	1	15.91	RS Components
3	Solder	2.77	1	2.77	RS Components
4	Heat shrink tubing (1.6mm)	1.24	1	1.24	RS Components
Total				28.11	