

CLASS: 1NMCT6

NAME: Boecquaert

FIRSTNAME: Jonas

Assembly Name : Lewekas

Assembly Revision : 3

Approval Date : _____

Part Count : 44

Total Cost : €278



Part #	Part Name	Description	Revision	Qty	Supplier	also available from	Units
1	Plywood hardwood - 122 x 244 x 9mm	This is used for making the incubator-box and inside-box.	3	1	grandfather	Hardhouten multiplex 122 x 244cm 9mm Praxis. (n.d.). Retrieved June 18, 2017, from https://www.praxis.nl/bouwmaterialen/hout/multiplex/hardhouten-multiplex-122-x-244cm-9mm/5282731	1
2	Plywood hardwood - 61 x 122 x 5,5mm	This is used for making the inside-box bottom and top.	3	1	grandfather	Hardhouten multiplex 61 x 122cm 5,5mm Praxis. (n.d.). Retrieved June 18, 2017, from https://www.praxis.nl/bouwmaterialen/hout/multiplex/hardhouten-multiplex-61-x-122cm-5-5mm/5282716	1

3	Styrofoam plate	This is used to isolate the inside-box.	3	2	grandfather	STYROPOR: isomo plaat 60x120 2cm - Piepschuim - Isomo - Hobby en knutselen - Lucas Creativ Webshop. (n.d.). Retrieved June 18, 2017, from http://www.lucascreashop.be/pd/3002883/pc/4416/STYROPOR-Isomo+plaat+60x120+2cm?p=3	1
4	Plexiglass	Used to make a window in the door.	3	2	grandfather	Plexiglas. (n.d.). Retrieved March 31, 2017, from https://www.plexikopen.be/plexiglas	1
5	Hardwood batten - 10 x 15 x 500mm	This is needed to keep other pieces on there place and add support.	3	8	grandfather	Grenen lat - 50 cm, 1 x 1,5 cm. (n.d.). Retrieved June 18, 2017, from https://www.aduis.be/grenen-lat-50-cm,-1-x-1,5-cm-art802025.aspx	1
6	Hardwood batten - 15 x 15 x 500mm	This will be used to make a frame for the eggs to lay on.	3	8	grandfather	Grenen lat - 50 cm, 1,5 x 1,5 cm. (n.d.). Retrieved June 18, 2017, from https://www.aduis.be/grenen-lat-50-cm,-1,5-x-1,5-cm-art802045.aspx	1
7	Heating element	Used to heat the incubator.	3	1	grandfather	High Quality Industrial Heating Element 122*122mm Square Infrared Ceramic Heater - Buy Ceramic Heater,122*122mm Infrared Ceramic Heater,Ceramic Infrared Heater Product on Alibaba.com. (n.d.). Retrieved June 18, 2017, from //www.alibaba.com/product-detail/high-quality-industrial-heating-element-122_60148051830.html	1

8	Fan - 12V DC	Used to add some air circulation in the incubator.	3	2	grandfather	Axiaalventilator 12 V/DC 13.08 m ³ /h (l x b x h) 50 x 50 x 15 mm Sunon HA50151V4-0000-999 in de Conrad online shop 184267. (n.d.). Retrieved March 31, 2017, from http://www.conrad.be/ce/nl/product/184267/Axiaalventilator-12-VDC-1308-mh-l-x-b-x-h-50-x-50-x-15-mm-Sunon-HA50151V4-0000-999	1
9	Lightbulb	This is needed to add some light in the incubator. Also used for there massive heatloss.	3	2	Dad	Philips Gloeilamp E27 15 W Warmwit 75 mm Energielabel: E Kogel 230 V Inhoud 1 stuks in de Conrad online shop 394174. (n.d.). Retrieved March 31, 2017, from http://www.conrad.be/ce/nl/product/394174/Philips-Gloeilamp-E27-15-W-Warmwit-75-mm-Energielabel-E-Kogel-230-V-Inhoud-1-stuks	1
10	Chicken wire	Used as support for the eggs, so they can't roll.	3	1	grandfather	Handson Vogelgaas maaswijdte 6 mm 50 cm hoog 2,5 meter verzinkt Gaas Schuttingen & hekken Tuin. (n.d.). Retrieved June 18, 2017, from //assortiment/handson-vogelgaas-maaswijdte-6-mm-50-cm-hoog-2-5-meter-verzinkt/p/B536806	1
11	Raspberry Pi 3, model B	The latest Raspberry Pi to handle the electronics.	3	1	Raspberry Pi 3 B COMBO	Raspberry Pi 3 Model B, RASPBERRY-PI-3 - Antratek Electronics. (n.d.). Retrieved March 11, 2017, from https://www.antratek.be/raspberry-pi-3-model-b	1
					Behuizing € 45,95 SOSsolutions.be. (n.d.). Retrieved March 11, 2017, from https://www.sossolutions.be/3b-combo		

12	Transformer - 230V AC / 12V DC	Transformer to put 230V AC into 12V DC. Used for the fans.	3	1	<p>WAGO Epsitron Compact Power 787-1001 Din-rail netvoeding 12 V/DC 2 A 24 W 2 x in de Conrad online shop 518977. (n.d.). Retrieved June 18, 2017, from http://www.conrad.be/ce/nl/product/518977/WAGO-Epsitron-Compact-Power-787-1001-Din-rail-netvoeding-12-VDC-2-A-24-W-2-x</p> <p>Rexel. (n.d.). Retrieved June 18, 2017, from http://www2.rexel.be/nl/nl/Rexel</p>	1
13	Relaisboard	Used to make sure the Raspberry Pi doesn't get fried when connected to the heating element, lightbulbs and the fans.	3	1	<p>Relaiskaart 5V/DC 4-voudig (voor Arduino, Raspberry Pi etc.) in de Conrad online shop 095841. (n.d.). Retrieved March 31, 2017, from http://www.conrad.be/ce/nl/product/095841/Relaiskaart-5VDC-4-voudig-voor-Arduino-Raspberry-Pi-etc</p> <p>Raspberry Pi Relay Board, S3ED/103030029 - Antratek Electronics. (n.d.). Retrieved March 11, 2017, from https://www.antratek.be/raspberry-pi-relay-board</p>	1
14	Temperature - , humidity sensor (DHT22)	Used to measure the exact temperature and humidity in the incubator.	3	1	<p>Humidity and Temperature Sensor - RHT03, SFE10167 - Antratek Electronics. (n.d.). Retrieved March 11, 2017, from https://www.antratek.be/humidity-and-temperature-sensor-rht03</p> <p>Humidity and Temperature Sensor - RHT03 - SEN-10167 - SparkFun Electronics. (n.d.). Retrieved March 31, 2017, from https://www.sparkfun.com/products/10167</p>	1

15	Door switch (button)	Used to register if the door is closed or open.	3	1	Dad	LOW-COST MAGNETISCH CONTACT - HAA25 - (ALARMSYSTEMEN & CCTV - REED ALARMSCHAKELAARS). (n.d.). Retrieved March 31, 2017, from http://www.electrobron.be/alarmsystemen-en-cctv/reed-alarmschakelaars/haa25	1
16	Motion sensor	Used to detect if eggs are hatching.	3	1	PIR Motion Sensor (JST), SFE13285 - Antratek Electronics. (n.d.). Retrieved March 11, 2017, from https://www.antratek.be/pir-motion-sensor-jst	PIR Mini Sensor 28033 Parallax Inc. (n.d.). Retrieved March 31, 2017, from https://www.parallax.com/product/28033	1
17	A socket	Used to give the Raspberry Pi electricity.	3	1	Dad	Niko Stopcontact met penaarde en opbouwdoos Hubo. (n.d.). Retrieved June 18, 2017, from https://www.hubo.be/nl/p/stopcontact-met-penaarde-en-opbouwdoos/345151.html	1
18	A plug	A plug to give everthing electricity.	3	1	Dad	Eurostekker Kunststof 230 V Zwart IP20 613381 in de Conrad online shop 613381. (n.d.). Retrieved March 31, 2017, from http://www.conrad.be/ce/nl/product/613381/Eurostekker-Kunststof-230-V-Zwart-IP20-613381	1
19	Electric junction box	A box to store all the electronics.	3	1	Dad	MLA JB0010 Plastic Weatherproof Enclosure Project Case Electrical Junction Box. (n.d.). Retrieved June 18, 2017, from http://www.ebay.co.uk/itm/MLA-JB0010-Plastic-Weatherproof-Enclosure-Project-Case-Electrical-Junction-Box-/291067541802	1

20	Door hinges	To use with the door.	3	2	grandfather	GAMMA scharnier met vaste pen 20x25 mm geelverzinkt Scharnieren Scharnieren & sloten Ijzerwaren GAMMA.be. (n.d.). Retrieved June 18, 2017, from //assortiment/gamma-scharnier-met-vaste-pen-20x25-mm-geelverzinkt/p/B358457	1
21	Electric cable	Cable to connect the plug to the system.	3	1	Dad	LappKabel 49900081 Geïsoleerde kabel H03VVH2-F 2 x 0.75 mm ² Zwart Per meter in de Conrad online shop 607527. (n.d.). Retrieved March 31, 2017, from http://www.conrad.be/ce/nl/product/607527/LappKabel-49900081-Geisoleerde-kabel-H03VVH2-F-2-x-075-mm-Zwart-Per-meter	1
22	Plexiglass	To attach the electronics on in the junction box.	3	1	Dad	Plexiglas. (n.d.). Retrieved March 31, 2017, from https://www.plexikopen.be/plexiglas	1
23	Bolt lock	To lock the door.	3	2	grandfather	GAMMA schuifje messing nikkel 40x25 mm Schutting- en hekbenodigdheden Schuttingen & hekken Tuin. (n.d.). Retrieved June 18, 2017, from //assortiment/gamma-schuifje-messing-nikkel-40x25-mm/p/B704611	1
24	LCD-screen (1602) with potentiometer	To display current temperature & humidity.	3	1	A friend	Assembled Standard LCD 16x2 + extras - White on Blue ID: 1447 - \$10.95 : Adafruit Industries, Unique & fun DIY electronics and kits. (n.d.). Retrieved June 19, 2017, from https://www.adafruit.com/product/1447	1
Total			44				

Unit Cost	Max Cost	Real Cost
€ 29,99	€ 29,99	€ -
€ 7,99	€ 7,99	€ -

€ 9,20	€ 18,40	€ -
€ 2,74	€ 5,48	€ -
€ 0,60	€ 4,80	€ -
€ 0,50	€ 4,00	€ -
€ 1,30	€ 1,30	€ -

€ 7,87	€ 15,74	€ -
€ 1,99	€ 3,98	€ -
€ 11,95	€ 11,95	€ -
€ 50,00	€ 50,00	€ -

€ 89,55 € 89,55 € 89,55

€ 9,99 € 9,99 € 9,99

€ 9,95 € 9,95 € 9,95

€ 5,05	€ 5,05	€ -
€ 9,95	€ 9,95	€ 9,95
€ 15,99	€ 15,99	€ -
€ 2,99	€ 2,99	€ -
€ 16,60	€ 16,60	€ -

€ 1,29	€ 2,58	€ -
€ 0,94	€ 0,94	€ -
€ 1,69	€ 1,69	€ -
€ 5,39	€ 10,78	€ -
€ 9,77	€ 9,77	€ -
	€ 278,12	€ 119,44