

Part Name	Part Number	Count	Unit Price	Price	Vendor	Notes
0.5 Inch 10 Inch Posts	<u>TR10</u>	1	\$10.76	\$10.76	Thorlabs	
Right-Angle 0.5 Inch Post to 6mm Post	<u>RA90TR</u>	2	\$17.82	\$35.64	Thorlabs	
8 Inch Cage Assembly Rod	<u>ER8</u>	2	\$12.65	\$25.30	Thorlabs	
4-40 to 8-32 Adapter	<u>AP8E4E</u>	2	\$2.26	\$4.52	Thorlabs	
Slip Ring for 1 Inch Lens Tube	<u>SM1RC</u>	2	\$27.02	\$54.04	Thorlabs	
Slotted Lens Tube	<u>SM1L20C</u>	1	\$71.34	\$71.34	Thorlabs	
Diffuser	<u>DG10-220</u>	1	\$17.36	\$17.36	Thorlabs	
Retaining Rings	<u>SM1RR</u>	2	\$4.87	\$9.74	Thorlabs	
IR Condenser Lens	<u>ACL25416U-B</u>	1	\$31.45	\$31.45	Thorlabs	
LED Mount	<u>S1LEDM</u>	1	\$37.80	\$37.80	Thorlabs	
IR LED	<u>LED760L</u>	1	\$10.40	\$10.40	Thorlabs	
White Delrin	<u>8573K284</u>	1	\$14.96	\$14.96	McMaster	Alternative for row 8

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250mm C-Beam Linear Actuator Industrial Black Bundle with Nema 23 Motor	995-Bundle	2	\$151.99	\$303.98	OpenBuilds	
250mm C-Beam Linear Double Wide Gantry Actuator Industrial Black Bundle with Nema 23 Motor	2640-Bundle	1	\$177.99	\$177.99	OpenBuilds	
Slim Right-Angle Bracket	AB90H	2	\$29.98	\$59.96	Thorlabs	
250mm Industrial Black V-Slot 20x40 Linear Rail	285-LP	1	\$4.49	\$4.49	OpenBuilds	
Mini V Gantry Kit	1185-Set	1	\$34.99	\$34.99	OpenBuilds	
Mini V Wheel Precision Shim	170	4	\$0.22	\$0.88	OpenBuilds	
Aluminum Breadboard	MB18	1	\$312.10	\$312.10	Thorlabs	
Dovetail Optical Rail	RLA150/M	1	\$49.20	\$49.20	Thorlabs	
T-Nuts M5	536-Pack	2	\$2.99	\$5.98	OpenBuilds	
Low Profile M5 Screws 10mm	878-pack	2	\$1.09	\$2.18	OpenBuilds	
Low Profile M5 Screws 15mm	922-pack	1	\$1.19	\$1.19	OpenBuilds	
3/4" 1/4-20 Cap Screws	SH25S075	1	\$10.13	\$10.13	Thorlabs	
3/8" 1/4-20 Cap Screws Low Profile	SH25LP38	1	\$27.02	\$27.02	Thorlabs	
0.5 Inch Post 4"	TR4	1	\$6.67	\$6.67	Thorlabs	
0.5 Inch post 1"	TR1	1	\$5.38	\$5.38	Thorlabs	
Plate Holder	FP02	1	\$86.17	\$86.17	Thorlabs	
Sorbothane Feet	AV5	1	\$31.15	\$31.15	Thorlabs	
Glass Plate 5 x 5 x 1/8	8476k15	1	\$12.91	\$12.91	McMaster	
0.5 Inch Post 6" (for black non transparent cover)	TR6-P5	1	\$36.37	\$36.37	Thorlabs	
0.5 Inch Post 12" (for black non transparent cover)	TR12	4	\$12.55	\$50.20	Thorlabs	
Ultra low M4 screws 12mm	90358A007	4	\$4.29	\$17.16	McMaster	
M4 square nuts	97258A102	1	\$12.40	\$12.40	McMaster	
3/8" 8-32 Cap Screw	90357A003	1	\$4.03	\$4.03	McMaster	
Low Profile M5 Screws 20mm	750-pack	1	\$1.29	\$1.29	OpenBuilds	Alt for row 12
Aluminum Spacer 3mm	175-pack	4	\$2.49	\$9.96	OpenBuilds	Alt for row 12

Part Name	Part Number	Count	Unit Price	Price	Extra Count	Vendor
10X Long Distance Objective	<u>L Plan</u>	1	\$165.98	\$165.98	0	BoliOptics
Locking Ring	<u>SM1NT</u>	1	\$7.44	\$7.44	0	Thorlabs
Objective Adapter	<u>SM1A3</u>	1	\$19.43	\$19.43	0	Thorlabs
Turning Mirror Cube	<u>CCM1-P01</u>	1	\$182.02	\$182.02	0	Thorlabs
Cube Connector	<u>CM1-CC</u>	1	\$52.42	\$52.42	0	Thorlabs
Dichroic Cage Cube	<u>CM1-DCH</u>	1	\$188.67	\$188.67	0	Thorlabs
GCaMP Excitation Dichroic	<u>FF495-Di03-25x36</u>	1	\$305.00	\$305.00	0	Semrock
Dovetail Rail Carrier	<u>RC4</u>	1	\$28.99	\$28.99	0	Thorlabs
3/8" 8-32 Cap Screw	<u>90357A003</u>	1	\$4.03	\$4.03	0	McMaster
End Cap	<u>SM1CP2</u>	1	\$20.27	\$20.27	0	Thorlabs
Tube Coupler	<u>SM1T2</u>	1	\$23.18	\$23.18	0	Thorlabs
Slotted Lens Tube	<u>SM1L20C</u>	1	\$71.34	\$71.34	0	Thorlabs
GCaMP LED	<u>M470L5</u>	1	\$239.32	\$239.32	0	Thorlabs
Diffuser	<u>DG10-220</u>	1	\$17.36	\$17.36	0	Thorlabs
Condenser Lens	<u>ACL25416U-A</u>	1	\$31.45	\$31.45	0	Thorlabs
Retaining Ring	<u>SM1RR</u>	2	\$4.87	\$9.74	0	Thorlabs
Construction Rods 1/4 Inch	<u>ER025</u>	4	\$5.46	\$21.84	0	Thorlabs
Zoom Housing Plate	<u>CP37</u>	1	\$22.50	\$22.50	0	Thorlabs
GCaMP Excitation Filter	<u>FF01-470/28-25</u>	1	\$455.00	\$455.00	0	Thorlabs
SM1 to SM05	<u>SM1A6</u>	1	\$22.37	\$22.37	0	Thorlabs

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Zoom Housing	<u>SM1NR1</u>	1	\$231.76	\$231.76	0	Thorlabs
Tube Lens	<u>AC254-200-AB</u>	1	\$110.86	\$110.86	0	Thorlabs
Zoom Housing Extension	<u>SM1L03</u>	3	\$13.15	\$39.45	0	Thorlabs
Dichroic Cage Cube	<u>CM1-DCH</u>	3	\$188.67	\$566.01	0	Thorlabs
Cube Connector	<u>CM1-CC</u>	2	\$52.42	\$104.84	0	Thorlabs
GCaMP Emission Dichroic	<u>DMLP550R</u>	1	\$273.69	\$273.69	0	Thorlabs
Optogenetics Dichroic	<u>FF685-Di02-25x36</u>	1	\$305.00	\$305.00	0	Semrock
Dovetail Rail Carrier	<u>RC4</u>	1	\$28.99	\$28.99	0	Thorlabs
Tube Coupler	<u>SM1T2</u>	1	\$23.18	\$23.18	0	Thorlabs
Slotted Lens Tube	<u>SM1L20C</u>	1	\$71.34	\$71.34	0	Thorlabs
Optogenetic LED	<u>M595L4</u>	1	\$269.06	\$269.06	0	Thorlabs
Diffuser	<u>DG10-220</u>	1	\$17.36	\$17.36	0	Thorlabs
Condenser Lens	<u>ACL25416U-A</u>	1	\$31.45	\$31.45	0	Thorlabs
Retaining Ring	<u>SM1RR</u>	3	\$4.87	\$14.61	0	Thorlabs
End Cap	<u>SM1CP2</u>	4	\$20.27	\$81.08	0	Thorlabs
Rotating Plate	<u>CPU1</u>	2	\$178.19	\$356.38	0	Thorlabs
High-Precision Zoom Housing	<u>SM1ZM</u>	2	\$189.84	\$379.68	0	Thorlabs
Construction Rods	<u>ER025</u>	8	\$5.46	\$43.68	0	Thorlabs
GCaMP Emission Filter	<u>FF02-525/40-25</u>	1	\$405.00	\$405.00	0	Semrock
Behavior Filter	<u>et655lp</u>	1	\$325.00	\$325.00	0	Chroma
Camera Adapter	<u>SM1A39</u>	2	\$22.27	\$44.54	0	Thorlabs
Blackfly USB3	<u>BFLY-U3-23S6M-C</u>	2	\$595.00	\$1,190.00	0	Avsupply
Optogenetics Filter	<u>AF01-584/40-25</u>	1	\$395.00	\$395.00	0	Semrock
3/8" 8-32 Cap Screw	<u>90357A003</u>	1	\$4.03	\$4.03	0	McMaster

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Motor Driver	drv8825	3	\$20.49	\$61.47	Pololu	
Teensy LC	teensy lc	1	\$30.40	\$30.40	Amazon	
Power Jack	PJ-102BH	1	\$0.82	\$0.82	Digikey	not needed if you have the PCB board
Jumper Wires 20cm	EDGELEC	1	\$6.99	\$6.99	Amazon	
Jumper Wires 30cm	EDGELEC	1	\$8.99	\$8.99	Amazon	
Power Adapter	12V 5A	1	\$11.69	\$11.69	Amazon	
Micro USB	Myfon 6ft	1	\$5.49	\$5.49	Amazon	
Camera Cable	Locking Cable 1m	2	\$43.90	\$87.80	Flir	
LED driver	LEDD1B	2	\$348.22	\$696.44	Thorlabs	
LED drvier power adapter	KPS201	2	\$39.54	\$79.08	Thorlabs	
M5 15mm(for mounting PCB)	2190-pack	1	\$1.09	\$1.09	OpenBuilds	
BNC to wire Leads	4970	2	\$15.19	\$30.38	Digikey	
Xbox Controller with Adaptre	xbox controllre	1	\$92.99	\$92.99	Amazon	
Soldering Iron kit	Soldering Kit	1	\$14.85	\$14.85	Amazon	not needed if you have the PCB board
Allen Wrench Set	InPower	1	\$16.99	\$16.99	Amazon	
8mm Spanner Wrench	2265	1	\$2.99	\$2.99	OpenBuilds	
Black Nylon	BK5	1	\$62.13	\$62.13	Thorlabs	
Fluroescent Slide (Green)	FSK2	1	\$5.54	\$5.54	Thorlabs	
Spanner Wrench SM1	SPW602	1	\$30.54	\$30.54	Thorlabs	
AmScope Calibration Slide	MR095	1	\$13.99	\$13.99	Amazon	
PCB	JCLPCB	1	\$20.00	\$20.00	JLPCB	