















## S1– Shopping & Machining List

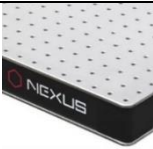


Item ID	Source	Accessibility	Description	Link	Image	Quantity
<b>General tools</b>						
a.	Thorlabs	purchase	Spanner wrench 1	<a href="#">SPW30</a>		1
b.	Thorlabs	Purchase	Fiber stripping tool	<a href="#">FTS4</a>		1
c.	Thorlabs	purchase	Fiber cleaver	<a href="#">XL411</a>		1
d.	Thorlabs	purchase	Spanner wrench 2	<a href="#">SPW602</a>		1
e.	Thorlabs	purchase	UV Curing LED system	<a href="#">CD20K2</a>		1
f.	Thorlabs	purchase	Handheld laser source (635nm)	<a href="#">HLS635</a>		1
			Single mode patch cable	<a href="#">P1-630Y-FC-2</a>		1
g.	Thorlabs	purchase	Power and energy meter	<a href="#">PM100D</a>		1
			Photodiode power sensor	<a href="#">S121C</a>		1

h.	Thorlabs	purchase	Green LED (530nm)	<a href="#">M530F2</a>		1
i.	Thorlabs	purchase	NIR detector card	<a href="#">VRC4</a>		1
j.	Thorlabs	purchase	Lens cleaning tissues	<a href="#">MC-5</a>		1
k.	RS	purchase	Foam cotton bud & swabs	<a href="#">Swabs</a>		1
l.	Thorlabs	purchase	Optical adhesive	<a href="#">NOA61</a>		1
m.	Thorlabs	purchase	Splice protector sleeve	<a href="#">SPS60</a>		1
n.	Thorlabs	purchase	Distortion grid with 50um grid spacing	<a href="#">R1L3S3P</a>		1
o.	Winjee	purchase	Silicone rubber back glue	<a href="#">704</a>		1
p.	3M	purchase	Epoxy (black)	<a href="#">DP420</a>		1
q.	Ahlsell	purchase	Heat gun	<a href="#">link</a>		1

r.	APE	purchase	Pulsed Check autocorrelator	<a href="#">APE-NX</a>		1
s.	Thorlabs	purchase	Base to fixate Pulse Check on Optical Breadboard	<a href="#">MB2025/M</a>		1
t.	Fabory	purchase	M2x5H Philips 7985225	<a href="#">M2screws</a>		>10
u.	TRfastenings	purchase	M3x3mm Pan Head Pozidriv Machine Screw DIN7985	<a href="#">M3x3</a>		>3
v.	Thorlabs	purchase	M4 capscrews kit	<a href="#">HW-KIT1/M</a>		1
w.	Elfa Distrelec	purchase	Air duster Green PRF	<a href="#">PRF 4-44</a>		1
x.	Surface Solutions	purchase	Black rubber spray	<a href="#">SS black</a>		1



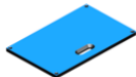








## Core optics module













### Mechanical components




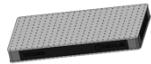


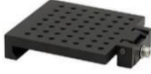




1	Thorlabs	purchase	Nexus breadboard	<a href="#">B3045L</a>		1
2	Thorlabs	purchase	Sorbothane feet	<a href="#">AV6/M</a>		1
3	Thorlabs	purchase	Fiber adapter plate	<a href="#">SM1SMA</a>		1

4	Thorlabs	purchase	Adjustable mirror mount	<a href="#">POLARIS-K05S2</a>		2
5	Thorlabs	purchase	Rotation mount & M3 screw	<a href="#">MRM05/M</a>		1
6	Thorlabs	purchase	M6 cap screws kit	<a href="#">HW-KIT2/M</a>		>20
7	Wolida	purchase	Heat shrinkage tubings Wolida Ø0.6/0.4mm 2:1 ratio 2.5mm Distrelec 3mm	<a href="#">Tube1</a> <a href="#">Tube2</a> <a href="#">Tube3</a>		3
8	Thorlabs	purchase	3 axis Microblock stage	<a href="#">MBT616D/M</a>		1
9	Thorlabs	Purchase	XYZ Translation stage & right-angle bracket	<a href="#">MT3A/M</a> <a href="#">AB90E/M</a>		1
10	Thorlabs	Purchase	Compatible flexure stage mount	<a href="#">HCS020</a>		1
11	Thorlabs	Purchase	Fiber clamp holds fiber	<a href="#">HFF001</a>		3
12	Thorlabs	purchase	Fixed mounting bracket	<a href="#">AMA007/M</a>		1
13	Thorlabs	purchase	SM05 Threaded adapter to laser source	<a href="#">AD1109F</a>		1
14	Thorlabs	purchase	Kinematic cage cube	<a href="#">DFM1T3</a>		1

15	Thorlabs	purchase	Kinematic cage cube base	<a href="#">DFM1B</a>		1
16	Thorlabs	purchase	Lens tubes	<a href="#">SM1L05</a>		4
17	Thorlabs	purchase	End cap for machining	<a href="#">SM1CP2M</a>		1
18	Thorlabs	purchase	Coupler	<a href="#">SM1T2</a>		3
19	Thorlabs	purchase	Optical beam shutter with controller for PMT	<a href="#">SHB1</a>		1
20	Thorlabs	purchase	Post mounting adapter	<a href="#">SHM1/M</a>		1
21	Kavli NTNU	Self-made	Coupling box	Github( <i>I</i> )		1
22	Kavli NTNU	Self-made	Coupling box cup	Github( <i>I</i> )		1
23	Kavli NTNU	Self-made	Coupling holder	Github( <i>I</i> )		1
24	Kavli NTNU	Self-made	Coupling protector	Github( <i>I</i> )		1
25	Kavli NTNU	Self-made	Collimator assemble tool	Github( <i>I</i> )		1

26	Kavli NTNU	Self-made	Collimator holder	Github(1)		1
27	Kavli NTNU	Self-Made	Control box shell	Github(1)		1
28	Kavli NTNU	Self-Made	Control box cup	Github(1)		1
<b>Optical components</b>						
29	Topica	purchase	Laser source	FemtoFiber ultra 920		1
30	Schott	purchase	Tapered fiber bundle (TFB) XMLG, Ø.027"x98.4"[2.5 m] Drawing C54706.04	<a href="#">1838003</a>		1
31	NKT Photonics	purchase	Hollow-core PCF, HC-920	<a href="#">K50-060-00</a>		1
32	Fuzhou Sunlight Technology	purchase	Glass rods (ZF62)	<a href="#">GLA-10x150-AR800-1100</a>		3
33	Fuzhou Sunlight Technology	purchase	Glass flange (7mm length Inside Ø 0.155mm)	<a href="#">TUB-1.8x7-0.155</a>		2
34	Thorlabs	purchase	Prisms direct light from the seed laser up to the HC-920 fiber	<a href="#">MRA12-P01</a>		8
35	Thorlabs	purchase	Emission filter 525 nm green channel	<a href="#">MF525-39</a>		1
36	Thorlabs	purchase	Emission filter 630 nm red channel	<a href="#">MF630-69</a>		1
37	Thorlabs	purchase	Shortpass filter	<a href="#">FESH0750</a>		2
38	Thorlabs	purchase	Dichroic mirror	<a href="#">DMLP567R</a>		1

39	Thorlabs	purchase	Aspheric condenser lens	<a href="#">ACL25416 U-A</a>		3
40	Thorlabs	purchase	Coupling lens	<a href="#">C230TMD-B</a>		1
41	Thorlabs	purchase	Half-Wave plate	<a href="#">WPHSM05-915</a>		1
42	Thorlabs	purchase	Protected silver mirrors	<a href="#">PF05-03-P01</a>		2
43	Edmunds	Purchase	Collimating lens	<a href="#">#84-128</a>		1
<b>Electrical components</b>						
44	Mirrorcle Technologies	purchase	MEMS driver (controller) BDQ PicoAmp 5.4 T180	<a href="#">DR-11-055-00</a>		1
45	Digikey	purchase	BNC to SMA cables	<a href="#">CCBNS-MM-RG174-36</a>		1
46	RS	purchase	DSUB15 connector plug (male)	<a href="#">472-859</a>		2
47	RS	purchase	Backshell	<a href="#">765-9448</a>		2
48	RS		DSUB15 Connector Socket (female)	<a href="#">472-865</a>		2
49	Digikey	purchase	6-pin connector for MEMS	<a href="#">FH19C-6S-0.5SH(10)</a>		1
50	Industrifil	purchase	Single wire cables	<a href="#">link</a>		6

51	Thorlabs	purchase	$\mu$ TLENS Driver	<a href="#">KPZ101</a>		1
52	Thorlabs	purchase	PMT	<a href="#">PMT2101/M</a>		2
53	Thorlabs	purchase	Controller for shutter	<a href="#">SHB1T</a>		1
<b>Scope mounting module</b>						
<b>Mechanical components</b>						
54	Thorlabs	Purchase	Aluminum optical breadboard	<a href="#">B3060A</a>		1
55	Thorlabs	Purchase	Sorbothane feet	<a href="#">AV6/M</a>		1
56	Thorlabs	Purchase	One-sided construction rail Black Anodized (95x500 mm)	<a href="#">XT95SD-500</a>		2
57	Thorlabs	purchase	Rail carriage suitable for sliding onto item 58	<a href="#">XT95RC4/M</a>		2
58	Thorlabs	Purchase	Precision construction rail L=400mm	<a href="#">XT95B-400</a>		1
59	Thorlabs	purchase	Post Mounting Clamp	<a href="#">C1545/M</a>		1
60	Thorlabs	purchase	Manual Rotation Stage	<a href="#">RP03/M</a>		1
61	Thorlabs	Purchase	Base for item 58	<a href="#">XT95P3</a>		1




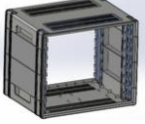















62	Thorlabs	purchase	Optical post	<a href="#">TR75/M</a>		2
63	Thorlabs	modify	Running wheel hardboard	Github, <a href="#">TB4</a>		1/4
64	Thorlabs	purchase	M6 spacers & washers	<a href="#">W25S050</a>		>4
65	Thorlabs	purchase	Spacer on both sides of wheel	<a href="#">PS1M</a>		2
66	SKF	purchase	Bearing OD 19mm ID 6mm	<a href="#">626-2Z</a>		1
67	Thorlabs	purchase	Right-angle clamp	<a href="#">RSA90/M</a>		1
68	Thorlabs	purchase	Pillar posts	<a href="#">RS50/M</a>		2
69	Thorlabs	purchase	Universal post holder	<a href="#">UPH100/M</a>		3
70	Thorlabs	purchase	Locking Ball and Socket Mount; to support LEDs near Tracking Camera	<a href="#">TRB1/M</a>		8
71	Thorlabs	purchase	Adapter camera-lens	<a href="#">SM1A10Z</a>		2
72	Kavli NTNU	Self-made	MINI2P Holder P1	Github( <i>I</i> )		1
73	Kavli NTNU	Self-made	MINI2P Holder P2	Github( <i>I</i> )		1
74	Kavli NTNU	Self-made	MINI2P Holder P3	Github( <i>I</i> )		1

75	Kavli NTNU  TRfastenings	Self-made	MINI2P Holder P4 & screw  M2.5x5 cap head hexagon socket drive screw, DIN912	Github(1)  <a href="#">M2.5cap</a>		1  1
76	Kavli NTNU	Self-made	Wheel Holder	Github		1
77	Kavli NTNU  TRfastenings	Self-made	Headbar holder & screw  M3x3mm Pan Head PoziDriv Machine Screw, zinc & clear, DIN7985	Github  <a href="#">M3x3</a>		1  2
<b>Optical and electrical components</b>						
78	Thorlabs  RS	purchase	LED & Accessories  850nm IR LED Array Light Source  LED 5m cable  Adapter  Supply Power for LED	<a href="#">LIU850A</a>  <a href="#">780-0087</a>  <a href="#">301-29-731</a>  <a href="#">136-1345</a>	  	1  1  1  1
79	Thorlabs	purchase	Zelux 1.6 MP Monochrome CMOS Camera  & adapter SM1 to C-Mount	<a href="#">CS165MU/M</a>  <a href="#">SM1A10Z</a>	 	1  1
80	Edmund Optics	purchase	Lens focal length 4.5mm Or 8.5mm for lateral and frontal camera to control head fixation	<a href="#">4.5mm</a>  <a href="#">8.5mm</a>		1
81	Edmund Optics	purchase	Basler camera for Animal Tracking	<a href="#">acA2040-90um</a>		1
82	Physik Instrumente (PI)	purchase	DC Motors	<a href="#">M-112.2DG</a>		3


## Mobile cart and controlling system

### Mechanical and electrical components

83	Thorlabs	Purchase	Mobile cart	<a href="#">POC001</a>		1
84	Thorlabs	Purchase	Optical breadboard 600x900x55mm	<a href="#">PBG52506</a>		1
85	Thorlabs	Purchase	Optional drawer	<a href="#">POD001</a>		1
86	Schroff	Purchase	19-inch rack	<a href="#">Ref 721-2708</a>		1
87	McMASTER-CARR	Purchase	Span-in nuts	<a href="#">90680A729</a>		10
88	Dell	Purchase	Workstation is an Intel core i9 with operating windows 10 Pro	<a href="#">7080</a>		1
89	Dell	Purchase	(32"to 49") curved LED-backlit LCD5K2K monitor	<a href="#">Monitor</a>		1
90	Vidrio Technologies LLC	Purchase	vDAQ card provides data acquisition and control of Laser, $\mu$ TLens, shutter, among others	<a href="#">V-vDAQ.R1</a>		1
91	Vidrio Technologies LLC	Purchase	vDAQ breadboard	<a href="#">V-vDAQ.R1</a>		1
92	Physik Instrumente (PI)	Purchase	Motion controller for PI motors	<a href="#">C-884.4DC</a>		1
93	Toptica	Purchase	Controller for 920nm laser	<a href="#">FFUltra920</a>		1
94	Dustin	Purchase	USB-hub (7) ports	<a href="#">Deltaco</a>		1

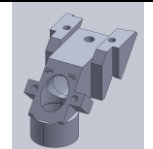
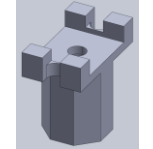
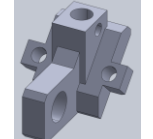
95	Thorlabs	Purchase	BNC Male to BNC Male & BNC adapters Female-Female	<a href="#">CA3136</a> <a href="#">T3283</a>		>10 >10
96	Thorlabs	Purchase	BNC to SMA Male Connector	<a href="#">CA2848</a>		2
97	Thorlabs	Purchase	SMC connector	<a href="#">PAA101</a>		2
98	Thorlabs	Purchase	SMA-to- SMA cable	<a href="#">CA2912</a>		2
99	Thorlabs	Purchase	Power supply for $\mu$ TLENS driver	<a href="#">TPS002</a>		1

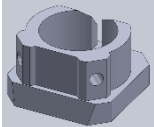
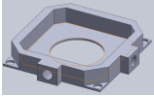

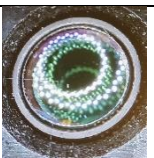




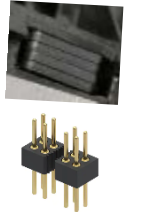


## Software

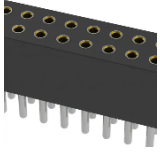
100	Vidrio Technologies LLC	Purchase	Open-source software for the whole system	<a href="#">ScanImage 2021</a>		1
101	Others	Free or purchase	See Protocol S4	NA	NA	1

## MINI2P miniscope

### Mechanical components

102	Kavli NTNU	Self-made	Scope Body P1	GitHub		1
103	Kavli NTNU	Self-made	Scope Body P2	GitHub		1
104	Kavli NTNU	Self-made	Scope Body P3	GitHub		1

105	Kavli NTNU	Self-made	Stitching Adapters	GitHub		25
106	Kavli NTNU	Self-made	Baseplate	GitHub		10
107	Kavli NTNU	Self-made	Alignment Tool	GitHub		1
108	FandWay TRfastenings	Purchase	Screws for MINI2P: M1.2 x 3.0/4.0 pan head M1.6x 2.5 DIN916 – 45H (black)	<a href="#">M1.2cap</a> <a href="#">M1.6set</a>	NA	>10
<b>Optical components</b>						
109	Domilight	Purchase	Scan Lens	<a href="#">D0166</a>		1
110	Fuzhou Sunlight Technology	Purchase	Dichroic Mirror	<a href="#">DMSP0405</a>		1
111	Domilight	Purchase	Objective1 Water+glass	<a href="#">D0213-3X</a>		1
112	Domilight	Purchase	Objective2 Air	<a href="#">D0254-3X</a>		1
113	Domilight	Purchase	Objective3 Water/air+glass	<a href="#">D0277-3X</a>		1
114	Polight	Purchase	$\mu$ TLENS & accessories 4 Stacked $\mu$ TLENS  Male-pin	<a href="#"><math>\mu</math>TLENS-NIR-D-45</a> <a href="#">Mill-max1</a>		1 1
<b>Electrical components</b>						
115	Mirrorcle	Purchase	FAST MEMS (MEMS-F)	<a href="#">A7M10.2-1000AL</a>		1
116	Mirrorcle	Purchase	Large-angle MEMS (MEMS-L)	<a href="#">A3I12.2-1200AL</a>		1

117	Kavli NTNU Digi-key	Purchase	MEMS PCB & others Female-pin	<a href="#">Mill-max2</a>		1 1
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*Note on the 3D Model & 2D Drawings connected to the Machining & Price List above:*

In the attached files are the 3D drawings in STEP format that can be opened in multiple programs where three-dimensional data is represented. These 3D models are available for all the components of the MINI2P platform (both in-house and items bought). However, the 2D drawings given in DWG format are only for home-made components, whereas a link is provided to the 2D drawings of all the other bought components, which are accessible on the supplier's website.