Caveatron Bill of Materials – 12m RP LIDAR Unit Date: 2019-02-12

Item	Qty	Manufacturer	Mfr. P/N	Description	Suggested Vendor Link	Photo
LIDAR	1	Slamtec	RPLIDAR A1M8	LIDAR 360 Degree Laser Range Scanner	RobotShop	
Voltage Regulator – Adjustable	ing LID#	A <i>R sensor.</i> Other n	nodels that m	Pololu Adjustable Step- Up/Step-Down Voltage Regulator S7V8A	Pololu	RPLIDAR A2M6, A2M8, and A3M1.
Notes: Power	supply	for Laser Rangefi	nder. Output i	s set so that the LIDAR is rotat	ing at about 5 Hz	z RPM (300 RPM). The voltage is typically about 3.68 V.

Item	Qty	Manufacture	Mfr. P/N	Description	Suggested	Photo
		r			Vendor Link	
LIDAR Rail	1	Weaver	49819	0.22 Caliber 1-inch Tip-Off	<u>Amazon</u>	
Mounts				Rings		

Notes: Parts for making the rail mounts. The top ring portion is cut off making a flat top and two threaded holes are machined into each ring base for attachment to bottom of LIDAR module enclosure.

LIDAR	1	Conxall/	16982-	Micro-Con-X 6 Position	Digikey	
Interface Jack		Switchcraft	6PG-522	Circular Connector Plug,		
				Male Pins Solder Cup Gold		
						0
				multiple vendors		

Notes: *Jack for LIDAR interface cable.* Available from multiple vendors.

Cable Gland	1	Many sources	PG7	Waterproof Cable Gland Wire Feedthrough	Amazon or many other sources	
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Notes: Feeds LIDAR interface cable out of LIDAR enclosure. Numerous small variations of style and color are available, so long as it is PG7 size.

Item	Qty	Manufacturer	Mfr. P/N	Description	Suggested Vendor Link	Photo
Window Material	1	Small Parts	5302441212	Acrylic Sheet, Transparent Clear, Standard Tolerance, ASTM D788, 0.118" Thickness	Amazon	

Notes: Transparent acrylic sheet for LIDAR windows on 3D Printed LIDAR Module. Requires cutting to size. Acrylic seems to be the most transparent with the least distortion and defects of the various clear plastics tested, which is important for not interfering with the LIDAR and rangefinder readings. This is a thicker window than is used on the Main body since it is used in the 3D printed enclosure as a structural piece as well. If a different enclosure design is used, the thinner material could be used instead.

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Threaded	1	Initeq	INM2504	M2.5-0.4 M2.5 Threaded Heat	<u>Amazon</u>	
Inserts for				Set Inserts for 3D Printing		
LIDAR				(Long)		
Standoffs						
1	I	1				

Notes: Heat set threaded inserts used in 3D printed LIDAR enclosure for LIDAR standoffs. The standoffs that screw into these are included with the RPLIDAR.

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Threaded	1	Small Parts	STPVC-0093-F	Qty 20 M4-0.7 Threaded Heat	<u>Amazon</u>	A Marin
Inserts for				Set Inserts for 3D Printing		
Enclosure Lid				(Long)		

Notes: Heat set threaded inserts used in 3D printed LIDAR enclosure for lid screws.

Item	Qty	Manufacturer	Mfr. P/N	Description	Suggested Vendor Link	Photo	
JST Connector for LIDAR Motor	1	Various	N/A	JST 1.25mm pitch, 3 pin, male connector	<u>Amazon</u>		
Notes: Connector for LIDAR Motor.							
JST Connector for LIDAR Sensor	1	Various	INM2504	JST 1.25mm pitch, 4 pin, male connector	<u>Amazon</u>		

Notes: Connector for LIDAR Sensor

M4x12 Screws for Lid, Hook up wire, 4 conductor cable to connect LIDAR to main enclosure

Notes: For assembly and electrical interconnections