

List of Lego bricks used in the prototypes.

Some bricks may not be available in your country, but there are always alternative implementations in the world of Lego bricks. Also, there are probably many different ways of building a similar or better modules than I designed. So, use your imagination and order extra bricks from different kinds in case you may want to modify something.

Keep in mind that some parts are required to be glued to a bigger piece for better mechanical stability.

I appreciate if you also keep in mind that this is a research prototype originated from my hobby, not a product. There are probably many things that could have been done better, so consider the documents as a guideline but not as a product manual. Please let me know if you spot an error or have suggestions for improvements.

<https://www.lego.com/en-us/page/static/pick-a-brick>

Module	Lego design name	Lego design ID	Quantity per unit	Quantity total	Purpose	Page # in the instructions	Comments
Base	1 unit						
	Baseplate 32x32		1	1	base	32	needs to be fixed to a rigid substrate
Linear actuators	4 units						
	PLATE 6x16	3027	1	4	main plate for the linear stage	5	
	SLIDING PIECE 1x4	2653	8	32	sliding guides on the sides	5	
	PLATE 1x2 WITH SLIDE	32028	2	8	sliding pieces	7	
	PLATE 2x4	3020	1	4	moving plate	7	
	PLATE 2x6	3795	1	4	mechanical stability	6	
	PLATE 6x8	3036	1	4	motor plate	6	
	BRICK CORNER 1x2x2	2357	2	8	mechanical stability	6	
	PLATE 2x4	3020	1	4	motor Lego adapter	9	
Camera module	1 unit						in addition to one linear stage
	WALL ELEMENT 1x4x3, ABS	60581	8	8	sidewalls	18	
	PLATE 6x16	3027	1	1	top cover	19	
	ANGLE PLATE 1x2 / 2x4	21731	1	1	top cover connection	19	
	ANGULAR PLATE 1.5 BOT. 1x2 2/2	99207	1	1	camera Lego adapter	15	
	PLATE 6x6	3958	1	1	front cover	19	
	FRAME 1x4x3	60594	2	2	Camera-Z connection spacer	58	
	PLATE 2x4	3020	1	1	Camera-Z connection spacer	57	
Rotaty stage (option 1)	1 unit						
	10x10 OCTAGONAL PLATE	89523	1	1	stage	25	
	PROFILE BRICK Ø15.83 W. CROSS	92947	1	1	connection to the motor	25	
	PLATE 2x4	3020	1	1	motor Lego adapter	25	
Rotaty stage (option 2)	1 unit						preferred, better precision
	PLATE 4x12	3029	1	1	stage base	26	
	LIGHT SWORD - BLADE	21462	1	1	pivot rod	26	
	NOSE CONE 2x2x2	14918	1	1	support for the rod	26	
	PLATE 2x4	3020	1	1	mechanical stability	26	
	PLATE 2x4	3020	1	1	motor Lego adapter	25	
Vertical supports	3 units						tilt mechanism and illumination
	BRICK 1x16	2465	2	6	pillar	30	
	PLATE 2x16	4282	1	3	pillar	30	
	FRAME PLATE 4x4	64799	1	3	pillar support	30	
	ANGULAR PLATE 1.5 BOT. 1x2 2/2	99207	1	3	connection	30	
	BRICK CORNER 1x2x2	2357	4	12	connection	30	
	PLATE 1x4	3710	4	12	connection	30	
	PLATE 1x2	3023	4	12	connection	30	
Tilt mechanism	1 unit						
	TECHNIC BRICK 1x2, Ø4.9	3700	2	2	camera stage	31	
	CONN.BUSH W.FRIC./CROSSALE	43093	2	2	camera stage	31	
	PLATE 2x8	3034	2	2	camera stage	31	
	BRICK 2x6	44237	1	1	camera stage	31	
	PLATE 2x4	3020	3	3	mechanical stability	34-37	
	PLATE 2x4	3020	1	1	motor Lego adapter	34-37	
	PROFILE BRICK Ø15.83 W. CROSS	92947	5	5	spacer	34-37	
	TURN PLATE 2x2, LOWER PART	3680	2	2	rotation	34-37	
	TURN PLATE 2x2, UPPER PART	3679	2	2	rotation	34-37	
Illumination	1 unit						in addition to one vertical support
	CONN.BUSH W.FRIC./CROSSALE	43093	4	4	connection to the stage	42-44	for bottom illumination
	BRICK 1x16	2465	2	2	horizontal connection	43	
	PLATE 2x16	4282	1	1	horizontal connection	43	
	BRICK 2x2 W. BALL Ø 10.2	57909	1	1	hinge	43	for top illumination
	BRICK 2x2 W. CUP FOR BALL	92013	1	1	hinge	43	for top illumination
OPTIONAL							
HQ camera (experimental)	1 unit						Optional. Refer to the Instructions_HQ.pdf
linear actuator	PLATE 8x16	92438	1	1	main plate	4	
linear actuator	PLATE 6x8	3036	1	1	motor plate	4	
linear actuator	PLATE 2x8	3034	1	1	mechanical stability	4	
linear actuator	PLATE 2x6	3795	1	1	moving plate	4	same as camera v2
linear actuator	PLATE 1x2 WITH SLIDE	32028	2	2	sliding pieces	4	same as camera v2
linear actuator	BRICK CORNER 1x2x2	2357	2	2	mechanical stability	4	same as camera v2
linear actuator	PLATE 2x4	3020	1	1	motor Lego adapter	4	same as camera v2
linear actuator	SLIDING PIECE 1x4	2653	8	8	sliding guides on the sides	4	same as camera v2
camera module	ANGULAR PLATE 1.5 BOT. 1x2 2/2	99207	1	1	camera Lego adapter	6	same as camera v2
camera module	PLATE W. BOW 2x2x2/3	15068	1	1	mechanical stability	7	
camera module	WALL ELEMENT 1x4x3, ABS	60581	8	8	sidewalls	9	same as camera v2
camera module	BRICK 1x16	2465	4	4	additional height	9	
camera module	ANGLE PLATE 1x2 / 2x4	21731	1	1	top cover connection	10	same as camera v2
camera module	PLATE 8x16	92438	1	1	top cover	10	
camera module	PLATE 8x8	41539	1	1	front cover	10	
tilt mechanism	PLATE 4x8	3035	2	2	camera stage top and bottom plate	13	wider stage
tilt mechanism	TECHNIC BRICK 1x2, Ø4.9	3700	2	2	camera stage	13	same as camera v2
tilt mechanism	CONN.BUSH W.FRIC./CROSSALE	43093	2	2	camera stage	13	same as camera v2
tilt mechanism	BRICK 1x8	3008	2	2	camera stage	13	
tilt mechanism	PLATE 2x6	3795	1	1	camera stage	13	