

Power Budget					
Component	Voltage (V)	Current (A)	Power (W)	Quantity	Total Power (W)
Movement Module					
Stepper Motor (max usage per phase)	48 V	2.8 A	134.4 W	2	268.8 W
Stepper motor Driver	24-50 V (48 V)	0.5 A	~24 W	2	~48 W
Effector Module					
Electromagnet	24 V DC	1.12 A	26.88 W	1	26.88 W
Electromagnet Driver	5 V	~0.07 – 0.1 A	~0.5 W	1	~0.5 W
Relays when powered	5 V	0.07 – 0.1 A	~0.35 – 0.5 W	2	~0.7–1 W
Sensor Module					
ToF sensor	2.8 – 3.3 V	0.019 A	~0.063 W	1	~0.063 W
Communications Module					
Ethernet Module	3.3 V	0.132 A	~0.436 W	1	~0.436 W
Processing Module					
STM32 (at max rate)	3.3/5 V	~0.1 A	~0.33W	1	~0.33 W
Buffer ICs	5 V	~2μA	~0.00001 W Negligible	1	~0.00001 W Negligible
Total Operational Power				332.6 W	