Battery & Budget

My device is mainly used to monitor and record the daily work of freelance artists.Since the device runs while the user is working, its operating time is around 8 to 10hours per day. I believe that as long as the battery can support 10 hours of usage per day, it will be enough. The battery can be removed and recharged daily. This form shows my battery consumption estimate.

I aim for a compact enclosure size. My final battery choice is a LiPo battery, as the customized size will better fit my enclosure. I need to ensure the battery is protected from compression to prevent swelling.

My total budget expenditure was $71.37, excluding small components sourced from GIX (such as switches, buttons, and LEDs), as well as PCB printing and 3D printing costs.

	Component	Power Consumption (mA)	Duty Cycle (%)	Active Time (h/day)	Energy Use (mAh/day)
1	Xiao Esp32 S3 (Display)	240	100	10	2400
2	I2C Screen	70	100	10	700
3	Step Motor	300	30	10	900
4	LED	20	50	10	100
5	Bluetooth Transmission	20	50	10	100
	Total				4200
1	Xiao Esp32 S3 (Sensor)	240	100	10	2400
2	Camera	125	50	10	625
3	Bluetooth Transmission	20	50	10	100
	Total				3125

Name	Quantity	Total Price
Xiao Esp32 S3 (Display)	2	47.98
I2C Screen	1	14.9
Lipo Battery 1400 mA	1	8.49