

Bill of Materials										
Air Quality Monitoring & Filtration System Generated: Feb 2026 Prices subject to change										
Item #	Item Name	Description	Vendor	Vendor Part #	Product Link	Unit Price (USD)	Qty	Line Total (USD)	Notes	BELS Comments
1	Arctic P-12 Max Fan	120mm high-performance PWM case fan, dual ball bearings, 200-3300 RPM, optimized for static pressure	Arctic / Newegg	95IA8N2KPF7893	https://www.newegg.com/p/1YF-000P-00314	\$30.01	2	\$60.02	Airflow for filtration enclosure	
2	HEPA H13 2-in-1 Carbon/VOC Filter	True HEPA H13 filter combined with activated carbon for VOC removal, 99.97% particle capture at 0.3 microns	Alveo3D	HEPA-H13-P3D	https://www.alveo3d.com/en/product/hepa-h13-filter-p3d/	\$19.99	1	\$19.99	Replacement consumable; verify fitment for enclosure	
3	Plantower PMS5003	Digital PM2.5 air quality sensor with laser scattering, measures PM1.0/PM2.5/PM10 concentrations	Walmart (3rd-party seller)	PMS5003	https://www.alibaba.com/pla/High-Precision-PM25-Laser-Sensor-PMS5003_1600801995170.html?mark=google_shopping&biz=pla&searchText=sensors&product_id=1600801995170&material=Ha4be8ed4	\$16.58	1	\$16.58	Laser scattering particle sensor module	
4	ESP32-C3-DevKit-RUST-1	ESP32-C3 RISC-V dev board, 4MB flash, Wi-Fi + BLE, built-in IMU, temp/humidity sensor, USB-C	Espressif / Mouser	ESP32-C3-DEVKIT-RUST-1	https://www.mouser.com/ProductDetail/Espressif-Systems/ESP32-C3-DevKit-RUST-1?qs=4ASi3YUao0WwXQj9TGjU2A%3D%3D	\$19.80	1	\$19.80	Discontinued by Espressif; successor is RUST-2. Check stock.	checkouted by -Ryan Dong
5	Sensirion SEN54	Environmental sensor node: PM, relative humidity, temperature, and VOC measurements	Sensirion AG	SEN54-SDN-T	https://sensirion.com/products/catalog/SEN54	\$26.85	1	\$26.85	Multi-parameter environmental sensing; direct from manufacturer	
6	Raspberry Pi 4 Model B - 2GB	Single-board computer, quad-core ARM Cortex-A72, 2GB LPDDR4 RAM, dual micro-HDMI, USB 3.0	CanaKit	SC0193	https://www.canakit.com/raspberry-pi-4.html	\$55.00	1	\$55.00	Prices rising due to memory costs; verify current price	checkouted by -Ryan Dong
7	Mean Well GST60A12-P1J Power Supply	AC/DC desktop power supply, ITE, single output, 60W, 12V, 5A, 2.1mm barrel plug	Mean Well / Newark	GST60A12-P1J	https://www.newark.com/mean-well/gst60a12-p1j/adaptor-ac-dc-12v-5a/dp/44AC5178	\$29.18	1	\$29.18	Newark part #44AC5178	
8	Female DC Power Adapter	2.1mm DC barrel jack to 2-position screw terminal block, positive-tip configuration	Adafruit Industries	ADA-368	https://www.adafruit.com/product/368	\$2.00	1	\$2.00	Mates with GST60A12 barrel connector	checkouted by -Ryan Dong
9	Adafruit USB Type C Breakout Board	USB Type C downstream connection breakout board for prototyping	Adafruit Industries	ADA-4090	https://www.adafruit.com/product/4090	\$2.95	1	\$2.95	Downstream connection variant	checkouted by -Ryan Dong
10	Pololu D24V50F5 Step-Down Regulator	5V 5A step-down voltage regulator, input 6-38V, ~90% efficiency, compact 0.7x0.8 in	Pololu Corporation	POL-2851	https://www.pololu.com/product/2851	\$14.95	1	\$14.95	Regulates 12V input to 5V for PII/sensors	
TOTAL							11	\$247.32		
Summary										
Total Unique Items:			10							
Total Components:			11							
Estimated Total Cost:			\$247.32							