

OpenWater Turbidity Meter Prototype

BOM and Cost Estimate

5/10/2022

Part Description	Manufacturer / Vendor	Part Number	UOM	Cost/UOM	Qty	Line Total
--- Parts ---						
ABS Case, 6.3"L X 3.15"W	Rose Enclosures	90816060	ea	\$18.80	1	\$18.80
Vial holder, hinge & lid (SLA)	Protolabs, Statasys	custom (3 parts)	set	\$343.43	1	\$343.43
Light-to-frequency converter	AMS	TSL237S-LF	ea	\$4.52	1	\$4.52
Capacitor - LFT decoupling, 100 uF	Kyocera AVX	TPSD107K010T0150V	ea	\$1.21	1	\$1.21
Light source, VCSEL, 850 nm	TT Electronics	OPV332	ea	\$6.11	1	\$6.11
Current source circuit - regulator	NTE Electronics	LM317T	ea	\$0.91	1	\$0.91
Current source circuit - resistor, 118 ohm	Yageo	MFR50SFTE52-118R	ea	\$0.15	1	\$0.15
Power MOSFET, 60 V, 200 mA, TO-92	onsemi	2N7000	ea	\$0.46	1	\$0.46
Reed switch	PIC GmbH	MS-210-3-1-0300	ea	\$2.72	1	\$2.72
Magnet - interlock	McMaster-Carr	5862K166	ea	\$0.45	2	\$0.90
Microcontroller w/ Bluetooth	DFRobot	DFR0267	ea	\$24.90	1	\$24.90
LCD display module	Adafruit	772	ea	\$19.95	1	\$19.95
Battery holder	DFRobot	FIT0141	ea	\$2.50	1	\$2.50
Button	E-Switch	RP8100B2M1CEBLKBLUNIL	ea	\$5.02	3	\$15.06
Switch	NKK Switches	M2011SD3W01	ea	\$4.07	1	\$4.07
Window	McMaster-Carr	1227T759	ea	\$0.09	1	\$0.09
Hinge pin	McMaster-Carr	90145A475	ea	\$0.33	1	\$0.33
Spring plunger	McMaster-Carr	8499A46	ea	\$6.96	1	\$6.96
PTFE rod, 0.070-in. diameter, 2-in long	McMaster-Carr	84935K82	ea	\$0.29	2	\$0.58
Brass press-fit insert, 6-32 thread, 1/4" long	McMaster-Carr	92395A113	ea	\$0.26	1	\$0.26
Brass press-fit insert, 4-40 thread, 1/4" long	McMaster-Carr	92395A112	ea	\$0.24	3	\$0.72
Hex standoff, female, 4-40 thread, 3/8" long	McMaster-Carr	91115A509	ea	\$2.55	4	\$10.20
Flat head screw, hex, 4-40 thread, 1/2" long	McMaster-Carr	91263A503	ea	\$0.29	3	\$0.86
Phillips head screw, 4-40 thread, 1/4" long	McMaster-Carr	91735A104	ea	\$0.09	4	\$0.37
Phillips head screw, 4-40 thread, 3/8" long, Nylon	McMaster-Carr	94735A721	ea	\$0.09	4	\$0.34
--- Supplies ---						
Batteries	Duracell	MN1500	ea	\$0.55	6	\$3.30
Sample vials	Hach	2434706	ea	\$6.67	4	\$26.68
Turbidity standards	AMCO Clear	8014	125 mL	\$64.89	1	\$64.89

Total Cost Estimate**\$561**