

<b>QTY</b>	<b>Description</b>	<b>Part Number</b>
8	Normally Open (NO) two-way EV valves (24v) with flying leads	ETN-2M-24
1	EV/ET 8-valve manifold for Clippard EV Valves	15482-8
2	Hose Swivel, 1/16"	ST0-2002-PKG
2	10-32-1/16" barbed fittings	11752-5-ENP-PKG
1	1/16" polyurethane tubing, 8 - tubing ribbon (50ft)	URH8-0402-02T-050
2	Valve Driver Chip (Micrel MIC2981/82YN	998-MIC2981/82YN
2	20-pin DIP socket	AE9998-ND
2	Terminal Board for Driver/Chip Connections	DTA3520-DIN
1	Aalborg (500ml/min) Mass Flow Controller GFC	GFC17A-TBL6-A0
1	Alicat (500 sccm) Mass Flow Controller	N/A
2	Flowtube with needle valve, 0 - 10 L/min	PMR1-012676
2	Tripod Stands for Flowtubes	163632
1	Air pump to produce 3 L/min flow:	EG Danner 40528 Supr
1	BEX Mini Tank mixing eductor, 0.59" orifice	62386
2	4-valve, NC teflon valve manifold	161T082
1	Inert Fittings for TGB109 tubing (pk/50)	102P109-50
1	PTFE Plug for end of manifold	FITM128
1	PTFE Tubing (50ft)	TGB109
1	National Instruments USB-6001	782604-01
1	Raspberry Pi 4 8GB	N/A
1	24 V DC Power Source	S35739
1	Nylon Barbed Luer Fitting 1/16" male luer	LM2131
1	Nylon Barbed Luer Fitting 1/16" female luer	LF2131
8	Odor Bottle Ported and Valved Caps	EW-21943-02
1	Pyrex 100ml bottle	1395-100
1	Articulated base for olfactometer	TRB2
1	Rubber Mount for articulated base	5823K22

Supplier	link	Price Each	Included QTY	Qty to order	Item Total
Clippard	<a href="https://www">https://www</a>	52.06	1	1	416.48
Clippard	<a href="https://clip">https://clip</a>	22.04	1	1	22.04
Clippard	<a href="https://clip">https://clip</a>	45.85	5	2	91.7
Clippard	<a href="https://clip">https://clip</a>	12.25	10	1	12.25
Clippard	<a href="https://clip">https://clip</a>	128.11	1	1	128.11
Mouser	<a href="https://www">https://www</a>	2.80	1	2	5.6
DigiKey	<a href="https://www">https://www</a>	0.37	1	2	0.74
Winford Engineer	<a href="https://www">https://www</a>	12.85	1	2	25.7
Aalborg	<a href="https://www">https://www</a>	941.00	1	1	941
Alicat	<a href="https://sto">https://sto</a>	1635.00	1	0	0
Aalborg	<a href="https://www">https://www</a>	121.00	1	2	121
Aalborg	<a href="https://www">https://www</a>	52.00	1	2	104
Amazon	<a href="https://www">https://www</a>	131.00	1	1	131
USPlastics	<a href="https://www">https://www</a>	16.53	1	1	16.53
NR Research	<a href="https://nre">https://nre</a>	268.05	1	2	536.10
NR Research	<a href="https://nre">https://nre</a>	161.68	50	1	161.68
NR Research	<a href="https://nre">https://nre</a>	1.56	4	4	5.96
NR Research	<a href="https://nre">https://nre</a>	1.49	1	50 feet	74.5
DigiKey	<a href="https://www">https://www</a>	428.65	1	0	0
Amazon	<a href="https://www">https://www</a>	100	1	1	100
Fisher Sci	<a href="https://www">https://www</a>	181.99	1	1	181.99
Fresh Water Syste	<a href="https://www">https://www</a>	29.97	100	1	29.97
Fresh Water Syste	<a href="https://www">https://www</a>	20.15	100	1	20.15
Cole Parmer	<a href="https://www">https://www</a>	177.00	1	8	1416
Corning	<a href="https://eca">https://eca</a>	115.62	10	10	115.62
Thor Labs	<a href="https://www">https://www</a>	66.11	1	1	77.45
McMaster Carr	<a href="https://www">https://www</a>	10.33	1	1	10.33

	Total
1 Assemblies	\$ 4,745.00

## Comments

\$900 is approx price for cheaper MFCs (Aalborg). Alicat is 2x more \$\$ but higher quality

Orifice size impacts odorant duration ratio and kinetics of mixing. We have tested all sizes and 0.59 (red c  
This is for control of flow through odor reservoirs. We prefer these Teflon valves for ease of cleaning in ca  
Per foot price. Other brands for .0625" OD PTFE tubing also OK.

Ballpark price. need 16 digital TTL channels to switch valves, and 1 analog out channel to control MFC

Used to supply power to valves. Nearly any desktop DC converter is OK

|