

10/01/14

Hivetool Hive Instrumentation Package

Version 0.3

- Notes:**
1. These prices do **NOT** include shipping or sales tax.
 2. Many items are purchased in bulk. If you build just one scale, the cost may be significantly higher.
 3. There are two load cell mounting options: Aluminum/Stainless Steel and Galvanized Steel. The aluminum is easier to cut and drill. Aluminum is more expensive but if the unit will be shipped, the savings in using steel will be lost in increased shipping.
 4. The basic scale package will monitor, log, and transmit hive weight data through the internet.
 5. Options include video camera, temperature and humidity sensors (TEMPerHUM) inside and outside the hive, rain gauge, lumens.
 6. Internet connectivity can be via Wi-Fi or Ethernet. If just Wi-Fi, use the Model A+ Pi (\$20) plus Wi-Fi adapter.
 7. Strut should be available locally but can be ordered from McMaster-Carr. 5 foot lengths of strut and cover can be shipped UPS.

	Price Bulk	Quantity Bulk	Price Each	Quantity Used	Price Total	Part Number	Supplier
Scale:							
Either	Aluminum/SS Mount						
	\$47.50	6	\$7.92	2	\$15.83		Electrical Supply
	\$26.79	3	\$8.93	2		3230T65	mcmaster.com
	\$9.50	50	\$0.19	8	\$1.52	91287A139	mcmaster.com
	\$4.86	100	\$0.05	8	\$0.39	93475A250	mcmaster.com
	\$3.56	100	\$0.04	8	\$0.28	92148A180	mcmaster.com
	\$9.98	50	\$0.20	4	\$0.80	91828A410	mcmaster.com
	\$1.97	1	\$1.97	4	\$7.88	62805K51	mcmaster.com
	\$4.38	3	\$1.46	2	\$2.92	3204T15	mcmaster.com
	\$1.12	1	\$1.12	4	\$4.48	3312T63	mcmaster.com
					\$34.11		
or	Galvanized Steel Mount						
	\$22.40	6	\$3.73	2	\$7.47		Electrical Supply
	\$7.65	50	\$0.15	8	\$1.22	91280A338	mcmaster.com
	\$2.46	100	\$0.02	8	\$0.20	91166A250	mcmaster.com
	\$2.06	100	\$0.02	8	\$0.16	91202A234	mcmaster.com
	\$5.07	100	\$0.05	4	\$0.20	90591A161	mcmaster.com
	\$1.97	1	\$1.97	4	\$7.88	62805K51	mcmaster.com
	\$4.38	3	\$1.46	2	\$2.92	3204T15	mcmaster.com
	\$1.12	1	\$1.12	4	\$4.48	3312T63	mcmaster.com

\$24.54

plus	Load Cells and ADC							
	Load Cells	\$4.00	1	\$4.00	4	\$16.00		
	HX711 ADC board	\$5.00	1	\$5.00	1	\$5.00		
	Terminal 6 pos.	\$1.25	1	\$1.25	1	\$1.25	ED10565-ND	digikey.com
	Terminal 4 pos	\$1.00	1	\$1.00	1	\$1.00	ED10563-ND	digikey.com
						\$23.25		

Total Aluminum/SS Scale \$57.36
Total Galvanized Steel Scale \$47.79

Electronics			1					
	Raspberry Pi Model A+	20	1	\$20.00	1	\$20.00		
	SD RAM Card	8	1	\$8.00	1	\$8.00		
	Serial/USB converter cable	3	1	\$3.00	1	\$3.00		
	Power Supply							
						\$31.00		

Total with Aluminum/SS Scale \$88.36
Total with Galvanized Scale \$78.79

Options								
	USB Hub	10	1	\$10.00	1	\$10.00		
	NoIR Pi Camera	30	1	\$30.00	1	\$30.00		
	WiFi	8.5	1	\$8.50	1	\$8.50		
	USB Extension Cable	3	1	\$3.00	1	\$3.00		
	TEMPerHUM	20	1	\$20.00	2	\$40.00		
	USB Extension Cable	3	1	\$3.00	2	\$6.00		

Total with Aluminum/SS Scale \$185.86
Total with Galvanized Scale \$176.29