PowerSole

Specifications Sheet

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Technical Specifications

Weight Breakdown per Shoe

item	grams	lbs	oz
coil & coil housing	90	0.20	3.17
magnet	60	0.13	2.12
circuit	12.11	0.03	0.43
battery	35.33	0.08	1.25
shoe (hollowed, no outsole)	574.67	1.27	20.27
outsole (hollowed for coil)	130.00	0.29	4.59
shoe (hollowed), no components	704.67	1.55	24.86
total for prototype 3	**902.11**	**1.99**	**31.82**
total components without shoe	**197.44**	**0.44**	**6.96**
components as % of total weight	**22%**		

Component Cost[1]

Component	Estimated price per unit in US dollars
Solenoid coil and housing	$ 0.75
Main and secondary magnets	$ 3.00
Battery	$ 1.50
Integrated power management circuit	$ 5.82
USB port	$ 0.05
Epoxy	$ 0.01
USB cover	$ 0.01
total	**$ 11.14**
total per pair	**$ 22.28**

[1] Potential to decrease at scale

Energy specifications per pair of shoes (3rd Prototype)[2]

Battery (can be charged either by onboard generator or directly from wall/laptop for back up storage)	2 x 2000mAh Li-ion
Time to full reverse charge battery via USB from laptop/wall	3.5hrs
Max talk time on iPhone 4 using only pre-charged shoe battery	19.7hrs 3g, 39hrs on 2g
Light time on LED flashlight (mini treklite) using only pre-charged shoe battery	57hr
Insulin Pump (Medtronic Paradigm revel) use time on pre-charged shoe battery	**Lifetime use (over 4 years of use)**
Est. talk time on 3g mobile phone per 20 min walk time	1.54min
Est. talk time on 2g mobile phone per 20 min walk time	3.64min
Est. time listening to music on iPod nano per 20 min walk time	40min
Insulin Pump (Medtronic Paradigm revel) use per 20 min walk time	**165min (2.5 hrs)**
raw power output from generators	**90mW**
Est. generator power output net of circuit efficiency	**71mW**

Notes: figures are calculated based on power output of shoe compared to power use of devices to be powered.

For use time on pre-charged battery, this is calculated by taking the total battery capacity of the shoe, and computing the time that a device could be used if it only used power from the shoe's fully charged battery.

[2] Data is given with an estimated 79% efficiency of the micro-processing circuit that facilitates charging, actual efficiency may vary. Shoe charges devices roughly as fast as a wall outlet provided there is charge in the oboard battery.

We expect cost and weight to decrease through further R&D and volume pricing. Development is underway with a new coil design that is predicted to increase power output. With the right engineering it is physically possible to increase output by many factors and enable our users to do even more.

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