

Energizer Data Chart

(For explanation of columns and values see opposite page.)

			①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩c	⑩w	⑪c	⑪w	⑫c	⑫w
	Product Number	Price	Max. stored joules	Max. output joules released	Moist soils joules	Dry soils joules	Fence load LED	Min. ground rods(ft)	draw watts/hour	Batt Charge LED	Hi-lo output	Batt amp per hr. clean(a)	Batt amp per hr. weedy(b)	days/charge clean(a)	days/charge weedy(b)	Solar panel clean(a)	Solar panel weedy(b)
6 volt battery																	
	IntelliShock 12B	117500	\$126	0.14	0.13	0.02	0.04	•	built-in		•	6	6	410	410	n/a	n/a
9 volt battery																	
	IntelliShock 20B	117310	\$199	0.28	0.27	0.21	0.25	•	built-in	•		10	33	250	75	1	3.0
	Kube 250	115120	\$168	0.30	0.29	0.16	0.2		built-in			26	26	80	80	3.0	3.0
	HotShock B4	117350	\$230	0.40	0.35	0.19	0.17	•	built-in	•		32	32	75	75	3.0	3.5
12 volt battery																	
	IntelliShock 12B	117500	\$126	0.14	0.13	0.02	0.04	•	built-in		•	7	7	350	350	n/a	n/a
	Patriot PS15 (solar)	115025	\$198	0.20	0.15	0.06	0.15		1			14	14	175	175	built-in	built-in
	IntelliShock 20B	117310	\$199	0.28	0.27	0.24	0.29	•	built-in	•		10	30	250	75	1	3.0
	Kube 250	115120	\$168	0.30	0.29	0.26	0.31		built-in			37	37	65	65	3.0	3.0
	HotShock B4	117350	\$230	0.40	0.35	0.26	0.27	•	built-in	•		43	43	60	60	3.0	3.5
	Patriot P5 (DC/AC)	115000	\$79	0.7	0.5	0.4	0.2		1.5	4.5		42	42	59	59	6	6
	Gallagher B100 (solar)	117000	\$361	0.8	0.55	0.5	0.5		2			60	60	40	40	built-in	built-in
	IntelliShock 42B	116900	\$244	1.4	0.9	0.8	0.3	•	3		•	30	100	83	25	4	10 - 15
	Patriot P10 (DC/AC)	115010	\$97	1.3	1.0	0.8	0.3		3	4.5		87	87	28	28	10	10
	HotShock A15	118022	\$214	1.6	1.0	1.1	0.3		3		•	135	135	18	18	15-20	15-20
	IntelliShock 52B	116850	\$298	2.4	2.0	2.0	0.4	•	6		•	30	200	83	12	4	20 - 30
	IntelliShock 55B	116800	\$320	2.4	2.0	1.8	0.4	•	6		•	35	260	71	9	5	18 - 30
	Patriot P20 (DC/AC)	115020	\$120	2.7	2.0	1.6	0.4		6	4.5		163	163	15	15	20	20
	HotShock A50	118021	\$258	4.2	3.0	3.1	0.8		9		•	400	390	6	6	40-60	40-60
	Patriot P30	115030	\$157	4.6	3.0	2.3	0.5		9			210	210	12	12	20-30	20-30
	HoriSmart A50	118020	\$468	5.0	4.5	2.5	0.65		12		•	400	400	6	6	40-60	40-60
	IntelliShock 77B	116700	\$468	7.0	6.0	3.0	0.6	•	18		•	35	440	71	5	5	40 - 60
110 volt plug-in																	
	Patriot P5 (AC/DC)	115000	\$79	0.7	0.5	0.4	0.2		1.5	4.5		42	42	59	59	6	6
	Patriot P10 (AC/DC)	115010	\$97	1.3	1.0	0.8	0.3		3	4.5		87	87	28	28	10	10
	Kube 3000	115100	\$105	1.5	1.1	0.9	0.8		3	2.5							
	HotShock 150	114200	\$105	1.5	1.2	1.2	0.4		3	3							
	Patriot P20 (AC/DC)	115020	\$120	2.7	2.0	1.6	0.4		6	4.5		163	163	15	15	20	20
	Kube 4000	115110	\$129	3.0	2.3	2.3	1.4		5	4.5							
	HotShock 300	113900	\$125	3.0	2.4	2.3	0.4		8	4							
	IntelliShock 284	113800	\$249	3.5	2.8	2.6	1.0	•	5	6							
	Patriot P30 (AC/DC)	115030	\$157	4.6	3.0	2.3	0.5		9			210	210	12	12	20-30	20-30
	Gallagher M600	113710	\$309	6.0	4.5	4.7	1.6		13.5	8.5							
	HotShock N50	118003	\$274	6.0	5.0	3.0	0.5		15	9							
	HotShock 600	113700	\$249	6.0	5.0	4.0	0.5		16	8							
	IntelliShock 506	113600	\$529	6.5	5.0	4.7	4.5	•	8	22							
	HoriSmart N100	118001	\$519	8.0	6.0	3.3	1.5		18	12							
	HoriSmart N140	118000	\$564	12.0	8.0	2.6	0.4		24	13							
	HotShock 1000	113550	\$395	15.0	10.0	8.5	0.7		30	20							

*Red numbers are results that stand out from the norm for "similar" energizers.

Explanation of columns and values in chart

1. A popular method of rating energizers that, like miles of fence, is very misleading. Sales people who use this number are either ignorant or duplicitous. More accurate is the output in joules for conditions in your area (columns 2, 3 and 4).
2. Indicates energizer's ability to cope with high levels of green vegetation contacting the energized wires (higher numbers are better). Also misleading, unless the data in columns 3 and 4 are considered. Note the HotShock 300 and IntelliShock 284. Though similar in maximum output, the 284 is 2.5 times better in dry soils. But in moist soils they are very similar. Compare also the 284 and Kube 4000 with the HotShock 600.
3. Predicts probable pulse size for clean wire fences in joules for fences above moist soils (enough for green grass) and typical animals (cattle). Units with larger numbers will energize more miles or cope with more weeds per 1000 ft.
4. Predicts probable pulse size for clean wire fences in dry (but not arid), snow-covered or rocky soils. Units with large numbers can effectively energize more miles of fence in these conditions.
5. When available, these LED lights indicate if fence voltage and energy levels are enough to stop most animals. If not lit, check the fence.
6. Normal total ground rod requirements. More may help in certain conditions.
7. 110v AC input. Indicates expected draw in watts.
8. Has LED lights that indicate when a 12v battery needs to be recharged.
9. Has switch to reduce both output energy and battery input demand.
10. Expected milliampere (mA) drain by energizer from battery per hour at high output levels for clean and weed-laden fences.
Predicts how large a battery (or solar panel) you need and how often you will need to recharge it. (Large numbers mean larger panels and more frequent recharges.)
Note that milliampere draw of Kube 250 and Patriot units is the same for both clean and weedy fences. However, for IntelliShock units, when a fence is clean (no green weeds or shorts), the mA draw is low. When a fence is weedy, the mA draw of IntelliShock energizers is higher. Therefore, battery and solar panel requirements (columns 11 and 12) are higher and lower.
With EzePower dry batteries, all the stored energy (55, 75, 120 or 165 amp hours) is available for use, but they are not rechargeable. A 165 amp hour EzePower battery has 165,000 mA. Thus, this battery might run a 20B energizer for 16,000 hours (660 days) on a totally clean fence, but only 5000 hours (200 days) on a weedy fence.
11. Predicts when a 12v 100 ampere hour *deep cycle* battery will need recharging under both clean and weedy conditions. Assumes being drawn down to 40% between recharges. (An equal size vehicle battery must be recharged 3 times more often to prevent damage to battery.)
12. Predicts solar panel size (in watts) advised for each energizer under both clean and weedy fence conditions. The low number of a range assumes 6 average solar insolation hours per day (southern USA or summer in north). The high number assumes only 4 insolation hours per day. Using a larger panel allows a smaller battery to be used and vice versa.

- (a) Fence that has no contact with green/wet weeds.
(b) Wires in contact with green weeds 6 in. from soil (causes 7 times more energy drain than wires contacting weeds 30 in. from soil).

What's total fence circuit resistance?

The size of the pulse that travels from an energizer's fence terminal to its earth terminal varies in volts and joules **according to the total of the resistances in the path between these points.**

These resistances in ohms () include:

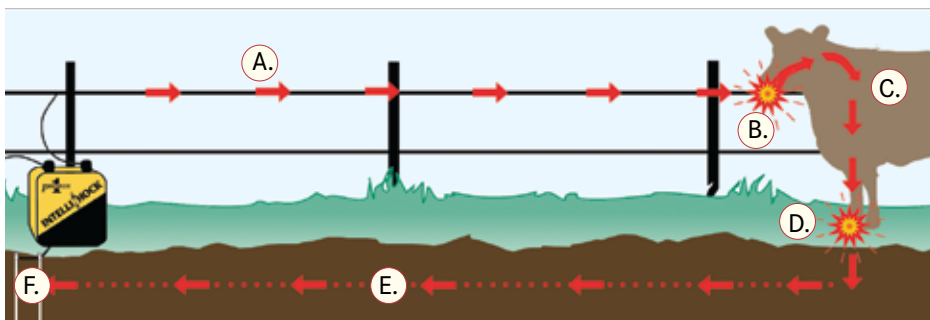
- A. Resistance of wire/rope/polywire/tape (100 to 10,000 /mile).
- B. Resistance of animal's fur, hair, nose at the point of contact (50 to 2,000).
- C. Internal resistance of the animal's body (100 to 500).
- D. Resistance at the point of contact with the soil (grass, leaves, dry hooves).
- E. Resistance of the soil (20 to 50,000) if it's not a Pos/Neg-wired fence system.
- F. Resistance of the ground rod system and the soil around it.
- G. Resistance of weeds (25 to 50,000). It is not included in the diagram below. It fits in "parallel" with B, C and D.

The total resistance of a fence varies enormously by the hour, day and week. The primary factor is moisture change in the soil, air, plants and in the animal's nose, hide and feet. These change depending upon dew, rain, type of vegetation, wind, etc. The only constant is the conductor.

Therefore, the resistance of a mile of single-strand, weed-free cattle/deer/horse fence may vary from 600 to 10,000 throughout the season. But an extra mile may add only 10 to either total (because the other factors don't change).

The circuit resistance of 1500 ft of weed-free, temporary electric-netting sheep fence varies from 200 to 10,000 depending on the soil moisture. Again, adding an extra 1500 ft of ElectroNet may add only 50 .

A Pos/Neg fence (alternating hot/ground) is a useful option when the soil and animal resistances exceed 5,000 .

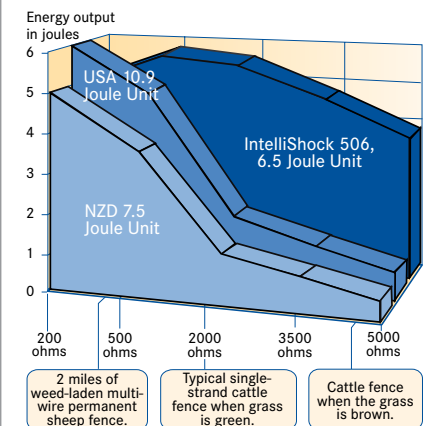


Wide vs. High vs. Low Impedance Energizers

The first fence chargers were high-impedance units. Their maximum effect occurred when the fence was weed-free. They could cope with drier soils better than low-impedance units but were very vulnerable to weed contact. Most were too small in output to be effective against difficult animals.

Low-impedance energizers cope with high weed contact but not with dry soils or poor conductors.

"Wide-impedance" is Premier's term for the capability of some units to perform well in **both** dry and wet soils; with poor and good conductors; and in green and brown grass.



Output of wide-impedance 5-joule energizer compared with 2 larger low-impedance energizers.