

Re: Another Novice Q. – recharging – Volts and Amps

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- *From:* Kris Krieger <me@xxxxxxxxxx>
 - *Date:* Mon, 23 Jun 2008 22:46:24 –0500
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"Tom Biasi" <tombiasi***@optonline.net> wrote in
news:SN6dnboY57y6pf3VnZ2dnUVZ_gCdnZ2d@xxxxxxxxxxxxxx:

"Kris Krieger" <me@xxxxxxxxxx> wrote in message
news:X9udnZAE58IEr_3VnZ2dnUVZ_jmdnZ2d@xxxxxxxxxxxxxxxxxx

"Tom Biasi" <tombiasi***@optonline.net> wrote in
news:CrydnV3Ospmxm_3VnZ2dnUVZ_vninZ2d@xxxxxxxxxxxxxx:

"Kris Krieger" <me@xxxxxxxxxx> wrote in message
news:HN6dnUa5Bpt2esLVnZ2dnUVZ_h3inZ2d@xxxxxxxxxxxxxxxxxx

Apologies in advance if this is a dopey question, but, when it comes to recharging batteries, and using a solar cell to do that, what I've been assuming, based on th info that peopl ehere have kindly provided, and also that I've foind on–line, is that teh mA output of the solar cells should not exceed 2/10ths to maybe 3/10ths of the battery's mA rating, and teh voltage produced by the solar cells should be as close as possible to the total voltage of the battery or batteries. But I wanted to check whether that assumption is correct, becasue I think I'm getting closeto getting some parts and trying a couple of assemblies.

Thanks In Advance!

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– Kris

Hi Kris,
Different batteries need different charging conditions.
Look at the specs for your batteries.
The charging requirements will be discussed.
Some batteries may say: Charge at .1c for 10 Hrs.
This means to charge them at one tenth the AH rating for 10 Hours.
The VPC (volts per cell) will also be specified.
For example: NiCads are about 1.2 VPC and can charge at about
1.3–1.5 VPC (follow manufacturers specs) at .1 –.3 c.
(again, follow specs.).

Ah, OK, that at least gives me a ballpark figure – thanks :) !

(I do try looking all these things up via Google before posting questions, but often, I don't know the terms that will get me the correct *type* of answer – IOW, if I want info about charging, I don't want to look at endless lists of people selling battery chargers, but the latter is the sort of thing I've been having to trudge through...so even just getting the right terminology has been a huge help).

So if you have a 12 volts NiCad pack that would be a 10 cell NiCad battery. If you are using lead acid cells, the numbers are different. Keep in mind that photo cell manufactures inflate their specs by using bright sunlight averages.

Tom

The Max I'll use will be 4 1.2V NiMH batteries, for small lighting units. What I'm trying to figure out is how to avoid "cooking" the batteries ;) by putting in *too much* voltage, but I also want to take into account the very thing that you mentioned, i.e. the "brightest possible sunlight" rating for the cells.

I had bought some Malibu NiMH batteries at WalMart, but now i'm looking at ordering something more along the lines of Energizers (for example,

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http://www.rei.com/product/719570?cm_mmc=cse_froogle--datafeed--product--na&mr:trackingCode=B42A264C-BE3F-DD11-98CA-001422107090&mr:referralID=NA or these

<http://www.circuitcity.com/ssm/Duracell-AA-Rechargeable-Batteries-4-Pack-DC1500B4/sem/rpsm/oid/52666/catOid/0/rpem/ccd/productDetail.do>) or one of the other known/name brands, because just today I read some cautions regarding "bargain" batteries.

I at least found some interesting LEDs at <http://www.optekinc.com/viewparts.aspx?categoryID=53>, some of them claim to put out 18,000umc average using 20mA and typical "forward" voltage of 3.4, so that I can run off of a reasonable LED driver (considering some Maxim items, or the "Micro-Puck").

ANYway, I'll look around and see whether there is info about recharging. THIS is good to know because, assuming I can do what I'm intending, and call sell the units, I can also include customer info as to the best replacement batteries, should replacements be necessary.

Thanks again :)

– Kris

When you search you may try something like "solar battery charging tutorial" When you add 'tutorial' you will get better hits on your search. BTW: NiMH have very fussy charging characteristics.

Thanks!, I'll try that.

May I suggest deep cycle sealed lead acid.

Tom

My main question is, are they easily replaceable? They do seem to be easier to deal with, but these units are going into things that I'll (hopefully!) be selling, so I need to make it all as easy as possible, and I know that people can buy the NiMH batteries pretty easily. That's the only reason I've sort-of "fixated" on them. That, and it's easy to get the mA ratings that will drive the LEDs I want to use (found one that uses 20 mA, and 3.4V average, but gives out an amazing (to me) average of 18,000micro-candela, which is 226 lumens, which is a bit more than is given

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off by a 20-watt incandescent bulb (220 lumens). With the LED driver (I think it was you who'd recommended those), that should work out well and I could, I think, use two such LEDs, which should be about the lumens produced by a 40 watt incandescent bulb – which would be super!

Anyway, I haven't seen any drivers that I can recall reference running off of anything other than NiCad, NiMH, or Lithium-Ion batteries, so my impression was that those are the only two that have both enough voltage, and generate enough current, to run the drivers. I've also used store-bought solar lights, which had either NiCad or NiMH (depending upon the type), so I know those will work when left outdoors.

So, it might very well be that rechargeable lead-acid batteries can perform similarly, it's just that I don't know anything about them...

– Kris