## Review: Nitecore UM10 and UM20 li-ion chargers

After only recently releasing updates to their multi-chemistry chargers in the form of the D2 and D4 Digi chargers, NITECORE have now released two new li-ion chargers which are designed to integrate into our everyday lives thanks to being powered by the USB chargers we all use to charge our smart-phones.


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**Author's Statement for Transparency and Disclosure**

**The test sample/s featured in this article were provided for technical testing and review by "NITECORE". Test samples are retained by the reviewer following publication of the completed review for the purposes of long term testing and product comparisons.**

**All output figures and test results published in this review are the sole work of the reviewer, and are carried out independently and without bias. Test results are reported as found, with no embellishments or alteration. Though best endeavours are made to maintain the accuracy of test equipment, the accuracy of these results is not guaranteed and is subject to the test equipment functioning correctly.**

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## Taking a look around:

Both chargers come in blister style packaging.


Each one comes with a multi-lingual set of instructions.


These chargers are designed to be neat and convenient and here you can see the winder plates on the underneath of the chargers lifted up to reveal the USB output port and supplied cable.

And here with the cable removed. (If you use an Apple product, here you can use your lightning cable and use the supplied cable to connect the UM10 or UM20 to the USB power source)

The base plates, folded back down.

And here is the UM20's main trick, the ability to use a single USB power source to charge both a li-ion cell and a smart-phone.


The UM10 performing the same trick.


## Modes and User Interface:

Both the UM10 and UM20 have very simple modes of operation. There is only one switch, and this sliding switch sets the charger's priority of either the li-ion cell or the phone.

The simple backlit display shows the cell state of charge as a percentage, and if the USB output port is active.

Both are powered by plugging a micro-USB cable into the top of the unit from a USB power source.

# The UM10 / UM20 in use

Testing of these chargers has been a mixed bag. When trying to incorporate USB ammeters into the circuit (for input to the chargers and output from the chargers), the behaviour became unpredictable, so unfortunately I cannot provide any feedback on actual currents used for the li-ion charging and for the USB output.

It is important to clarify straight away that NITECORE really missed out on a great feature here by NOT making these act like powerbanks. You CANNOT use a charged li-ion cell to power a USB device using the UM10 or UM20. USB output is only enabled when the UM10 or UM20 is itself plugged into a USB power source.

Initially results with both chargers were not reliable, however with further testing (and after quite a bit of plugging and unplugging of both USB connections), things seem to settle. I suspect the connectors were dirty/corroded and after a lot of plugging and unplugging the connections got cleaned up.

One of these initial peculiarities involved the UM20 stopping at 94% and 98% and wouldn't go above this. After powering off the UM20 (unplugging it), and then plugging it back in again, it did finish the charge.

Termination voltages (when showing 100%) seem to vary between 4.16V and 4.20V, so the UM10 and UM20 are not like the D2 and D4 that finish on a rock solid 4.20V

Connecting a smart-phone to the USB output on both chargers does then charge the phone, but there is a 'feature' you need to be aware of.

Once the current draw on the secondary device (smart-phone etc) drops low enough, the UM10/20 starts to turn the USB output on-off-on-off again resulting in that device thinking you are repeatedly plugging in and unplugging the charger. This is not a very healthy state to leave things, as the phone, once fully charged, sits there flashing the screen on and off as the UM10/20 keeps turning on and off its USB output.

If you are there to catch it doing this, no harm will be done, but if you left it for a long period I would be concerned about bump-topping-up the battery and damaging it.

Of course regarding cell charging current, this is essentially limited by your USB charger itself. The UM10 and UM20 will work with anything from a standard computer USB port (typically limited to 500mA) to a dedicated high current USB charger.

NITECORE state that both units are capable of data-pass-though to the smart-phone when using a computer USB port. I've not tested this feature as so far I've not needed this functionality.

A note for iphone users, you can still use these chargers as all you need to do is take your lightning cable, and plug this into the USB socket underneath the UM10/20 and the cable that comes with the UM10/20 between your USB charger and the UM10/20. This assumes you are using a charger which has a USB socket in it rather than a fixed cable type of charger.

# Review Summary

| Things I like | What doesn't work so well |
|---|---|
| Charge a li-ion cell with your phone charger | Termination voltage ranges between 4.16V-4.20V |
| Charge your phone at the same time | No Powerbank function |
| Small and light – good for travelling | USB output switches on and off repeatedly once the phone is charged |
| Neat integral cable winder | Charge speed limited by USB power source |
| Selectable priority of phone/li-ion charging | |
| Simple to use | |
| USB data pass-through | |

Reserved for updates...

1. Data pass through feature now tested with successful transfer of files to and from Android devices.

2. When using a computer USB port to power the UM10/20, it appears to then keep the USB output on even when the phone has finished charging.
- CORRECTION - If you have no security lock on the device, and you have an explorer window open to the device, the USB output is 'kept alive' so keeping the USB output ON. If you have a security code/pattern to access the device, this will eventually lock, and once the device is fully charged, the USB output again goes on-off-on-off.....

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Link:
http://www.candlepowerforums.com/vb/showthread.php?395078-Flash-Review-Nitecore-UM10-and-UM20-li-ion-chargers

More info and video please click here:
UM10: http://www.nitecore.com/productDetail.aspx?id=130
UM20: http://www.nitecore.com/productDetail.aspx?id=131