

Battery Life Test



A very high quality colored touch-screen in most products will have a very negative effect on the battery life. HP Prime proves this doesn't have to be true. And we have the test to show for it.

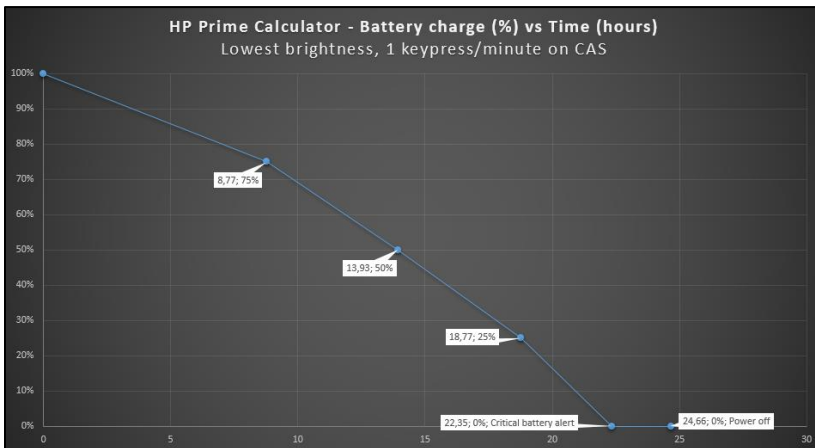
Learn more?

<http://www.hp-prime.com>

The Baseline Test

This test relates the graphical on screen battery indicator with the time the calculator can operate powered on continuously. A video of the setup can be watched here:

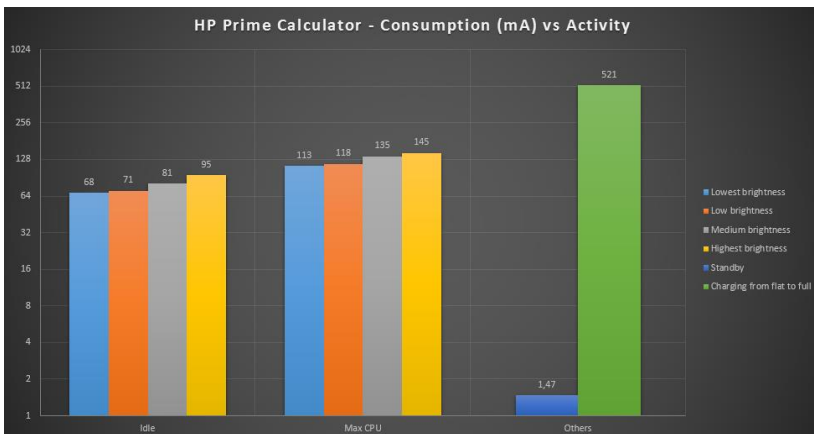
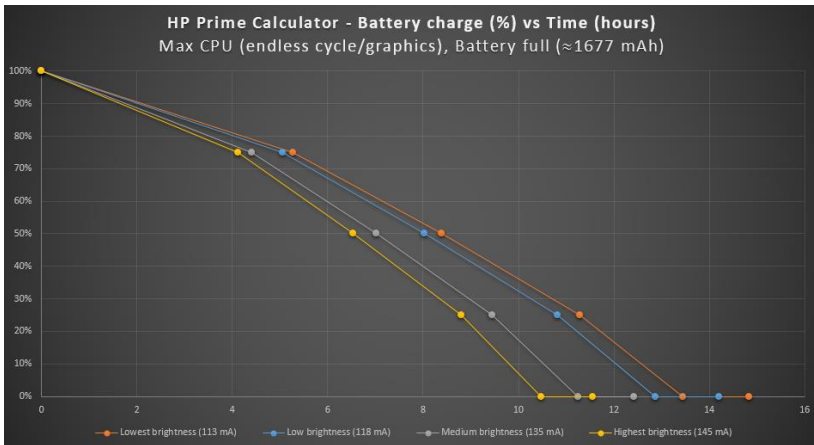
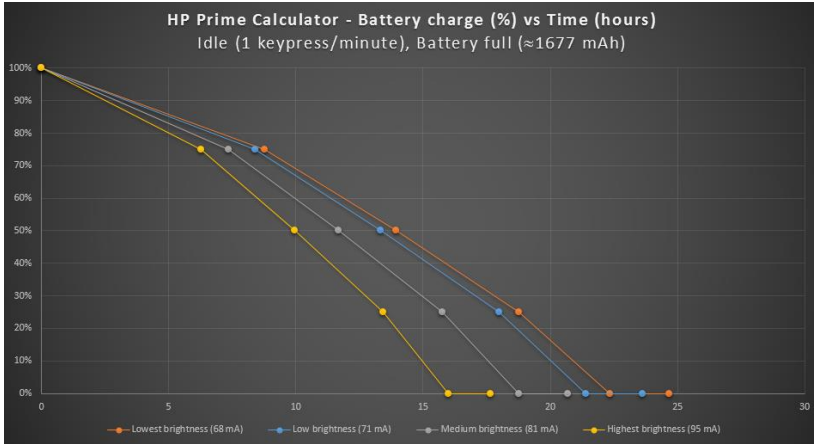
https://www.youtube.com/watch?v=sGvbxDgt_Yc



Conclusion: A new fully charged HP Prime should last about **24.66 hours** constantly powered on, with minimum use of the CPU. The warning message about the low battery appears 2.31 hours before the charge gets completely depleted.

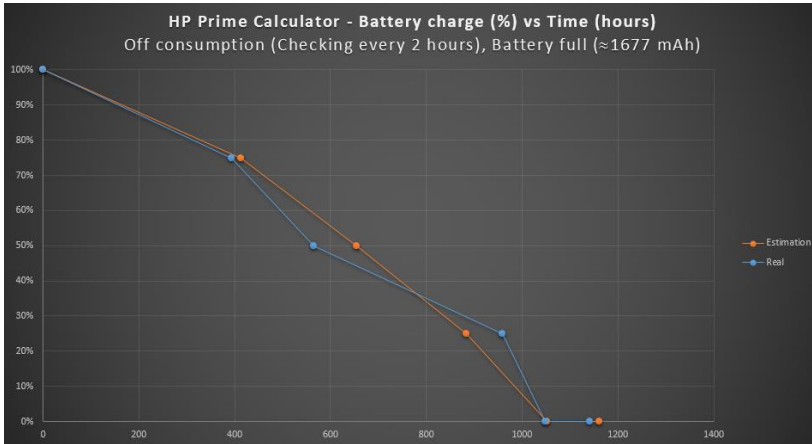
Power Consumption Test

Using the Baseline Test as reference, we can relate this result to the real consumption of the device. Using the Baseline Test, all the data is extrapolated using the captured data from the average consumption over a minute.



Standby/Off Consumption

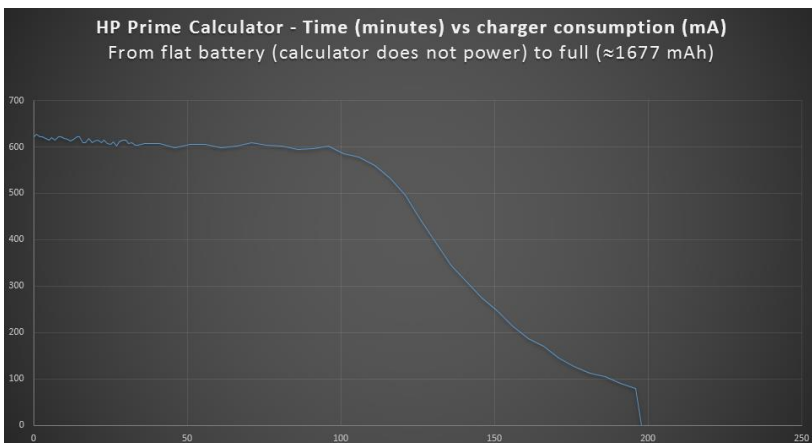
Measuring the standby consumption is tricky. The calculator goes to a very low power consumption state (under 1 mA) with eventual spikes (every couple minutes). Going back to the first approach, the calculator will be fully charged and then checked every hour until the device does not power on anymore to get the real standby current consumption over time. The results are shown in the below graph:



Conclusion: A battery in standby will last for about 1141 hours (47,5 days). The warning about low battery will appear after 43,7 days of standby.

Charging the calculator/Charger efficiency

After discharging the battery we can now test the charging procedure. Using the same energy consumption meter USB dongle that we used in the Power consumption test, we can monitor the charging stages until it goes to the same Standby/Off consumption pattern.



Conclusion: The optimal charge rate occurs in the first 100-110 minutes (less than 1:50 hours) of charge. The calculator is fully charged after exactly 198 minutes (3:18 hours).