

Acer Chromebook C720

There's never enough Google in your life. Says Google. So it's a good job that you (and **Graham Morrison**) can install something else on this great little Chromebook.

DATA

Web
<http://www.acer.co.uk>
Developer
 Acer
Price
 £199

SUNSPIDER 1.0.2 BENCHMARKS

C720 with Chrome OS:
 411.4ms
Firefox/Ubuntu LTS:
 315ms
Intel 2.4GHz i5 (4258U):
 168.2ms

Not many of us would have thought that a laptop with little more than a web browser would be useful. How can you build things? Or edit anything other than text? Or put together a magazine, or play games?

However, portable computing has become more divergent than we could ever have imagined when we wanted our netbooks to do everything. We're now productive with smartphones and tablets, despite neither being capable of running a virtual machine nor a compiler, and the typical Chromebook is an extension of that idea. It's a low-powered laptop that boots quickly into Google's Chrome OS, a Linux-based operating system that's basically nothing more than the Chrome browser running in fullscreen mode. There's no support for applications other than the web-based ones you can download through Chrome. There's no command line, and there's very little scope for customisation.

What you do get is online and offline access to Google's carefully crafted suite of productivity applications; word processing, spreadsheets and presentation creation alongside YouTube, Maps, Keep and anything else you install through Google's web store. It all works extremely well, and the lack of the usual clutter that comes with an operating system helps to keep you focused – that is, until you install Command & Conquer. There's very little to be said about Chrome OS, which is a good thing for certain



There's a USB 2 port and a USB 3 port, plus an SDCARD reader – but there's only 10GB of usable local storage.

scenarios. There is a small task manager bar at the bottom of the screen, and a launch menu on the right for the Google apps and other apps you may install. Configuration is through Chrome's settings panel, which is augmented for Chrome OS with options to change the background image, network management, and touchpad control – both for sensitivity and for reverse (labelled 'Australian!') scroll settings, which is a mode we're ashamed to admit we now prefer.

Chronos

Acer's C720 is better than the average Chromebook. It has a 1.4GHz Intel Celeron CPU descended from the current Haswell range, which is a massive step up from the ARM CPUs used by many chromebooks. It's a processor that has far more in common with the CPUs found on more general-use laptops and desktops, even if you can't take advantage of its particulars from Chrome OS. It does, however, help Chrome OS feel extremely slick. Wireless internet resumes within seconds of lifting the lid, and it deals with complex websites, WebGL, HD Adobe Flash and HTML playback with ease.

There's very little local storage – around 9GB to play with, but Google obviously wants you to use its own cloud product and Chrome OS plugs directly into your Drive account, as well as offering a deal on 100GB cloud storage for 2 years. Google's video conferencing app, Hangouts, is a good example of whatever hardware acceleration Chrome OS must be leveraging, as we had our best experience on the C720 after trying many devices, from the Nexus 5 and



Acer's Chromebook is surprisingly light, yet despite that it feels like it could withstand the bumps and knocks of travelling to a thousand geek conferences.

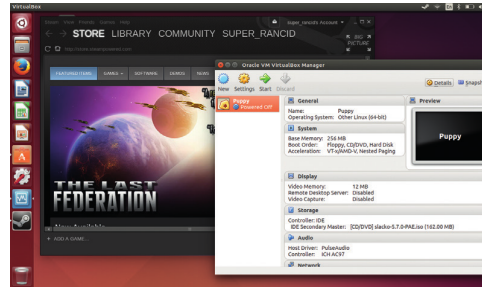
Running Ubuntu

What many Linux users really want to know is how the laptop performs if you install a different flavour of Linux into it. We installed Ubuntu 14.04 with relative ease, but this was mainly thanks to ChrUbuntu, a series of scripts that automatically handle the re-partitioning and downloading of the required packages. All you need to do is go through the slightly convoluted procedure of entering developer mode and making sure that every command you type looks sensible.

The main problem with running Ubuntu rather than Chrome OS is that a default installation requires around 4.5GB of space, leaving you with only a few precious GB for your own data if you keep Chrome OS installed alongside – which we'd recommend. Ubuntu ran brilliantly on the C720, and running a full-fat Linux distribution on the Chromebook felt very liberating. Overall performance, for a 1.4GHz CPU, was fantastic. We even installed Steam to play a few games, and the 3D acceleration in the CPU was more than adequate for many of the less demanding games in our collection. Unfortunately, it's the 2GB of RAM that's the biggest limitation. There's theoretically a 4GB version of the same laptop, but we've not been able to find UK stock, but that would make life a lot easier for other distributions.

Thanks to a VT-x enabled CPU, we even had VirtualBox up and running with a couple of Linux distributions. The biggest

limitation was storage and RAM, but it's still an impressive feat and genuinely useful for running small or server-oriented distributions. Battery performance under Ubuntu was about the same as Chrome OS, but there were a few hiccups that would probably flummox a lot of users. The touchpad stopped working with a kernel upgrade, for example, and we couldn't get Wi-Fi to resume from suspend or the USB 3 port to work without a little script tinkering.



Ubuntu runs brilliantly on the Chromebook – it was possible to run OpenGL Steam games and VirtualBox.


Nexus 10 to quad-core 16GB desktops and laptops. We also had almost two weeks standby time and a typical battery life of 7–8 hours, depending again on whether we launched Command & Conquer.

We were disappointed by the screen, as this hasn't moved with the times. It could be argued that a 1366x768 resolution on a 11.6" screen is acceptable when all you're doing is running a full-screen browser, but we're growing increasingly used to the high DPIs found in phones and tablets. It also lacks punch when compared with IPS displays and has a woeful range of viewing angles. The screen, along with the gun-grey plastic case design helps to make the C720 feel rather more utilitarian than it should. We also wish there were more options for storage. We understand that the tiny SSD is there to keep costs down and perhaps to limit its use outside of Chrome OS, but we'd like the option of adding more. Watching a film or managing anything more than a few albums is going to be impossible without a great data connection. Fortunately, while we've not tried it ourselves, it looks relatively straightforward to replace the SSD with a

larger unit, even if it does invoke the use of a small plastic wedge. We did like the keyboard, however, and the Chrome OS specific keys – backwards, forwards, task switching, and refresh – made us miss their inclusion on many post-Windows 98 keyboards.

You can work and type very effectively from the Acer and we were able to write many words for this very issue from its keyboard. It's also light enough (1.3kg)

and small enough (19mm thick) to throw into almost any bag, and as long as you can offer some kind of networking connectivity, it's the perfect travelling companion for people who need to do some work.

We like the C720 a lot, mainly because of its price, portability and relative power. At just less than £200 in the UK, it could be the perfect laptop to give to family or friends who aren't too confident with computers, where you know the limited options of Chrome OS are going to be all they'll ever need. But it also makes an extremely good low-cost travelling companion, especially if you put another Linux distro onto it. If you can find a compatible SSD, it makes a great machine for hacking about on and for throwing into a rucksack for LUG meetings or hacker sessions. 

“The C720 Chromebook makes an extremely good low-cost travelling companion.”



Many games are playable though the Chrome web store, and it's surprising just how powerful the average web browser has become.

LINUX VOICE VERDICT

Excellent value for money and perfect for non-technical relatives, corporate deployment and expert Linux tinkerers.

