PC system reviews

GAMING PC

CyberPower Hyper Liquid 100 / **£1,999** inc VAT

SUPPLIER www.cyberpowersystem.co.uk

We'd usually point towards the components when a machine arrives with new, high-end gear inside, but the CyberPower Hyper Liquid 100 has a disarmingly distracting cooling system. It's a custom CPU cooling loop, and it's filled with neon green coolant. The bright liquid flows into the see-through Phobya UC-2 CPU waterblock, then to an Alphacool NexXxos ST30 240mm radiator hidden in the NZXT Manta's roof. The Alphacool Coolplex Pro reservoir decorates the front of the case, with the Phobya pump positioned beneath the PSU shroud.

It's an impressive amount of cooling hardware to fit inside a mini-ITX case, even if the Manta is larger than your average mini-ITX chassis. CyberPower has used the white version of the case, making its subtly curved side panels stand out. It's sturdy, and CyberPower has matched the green coolant with green-ringed LEDs to make the theme consistent.

The Hyper Liquid 100 is tidy too. Cables at the front are tucked away neatly or hidden beneath a raised, covered area in the middle of the Manta, bringing the water-cooling system to the fore, making for a great view through the side window.

CyberPower's PC only has a couple of minor problems. It isn't too neat around the rear, with cables loosely held together – the rear section just doesn't look as slick as Scan's regimented 3XS Z170 Nanu Vengeance Fluid (see Issue 157, p62), which was also built into a Manta case. As ever for a mini-ITX build, there's very little upgrade room too, with only a couple of awkward 2.5in mounts at the front available.

This machine holds a formidable amount of hardware already though. The Core i7-6700K has been overclocked from 4GHz to 4.4GHz, and it runs alongside 16GB of 3000MHz memory. CyberPower has also installed an Nvidia Founders Edition GTX 1080 card running at stock speed, with the core at 1607MHz and memory at 10GHz (effective). As with the Chillblast Fusion Platinum (see p62), though, it's a shame the GPU isn't water-cooled and overclocked as well as the CPU.

Scan's 3XS Z170 Nanu Vengeance Fluid is significantly more expensive than the CyberPower, but it has more power in several areas. There's an extra 200MHz of CPU speed as well as a GPU overclock, and the Scan's 512GB SSD is twice as large as the CyberPower's boot drive too.

There's very little to choose between the two PCs' motherboards though. The Gigabyte Z170-WIFI inside the CyberPower has dual-band 802.11ac Wi-Fi, dedicated audio circuitry, USB 3.1 Type-C and no free slots. Scan's machine has many of the same features, even if its Asus board looks a little more outlandish. Both boards also have M.2 slots, and are inaccessible behind the motherboard tray.

There's barely any breathing room between the PSUs either. Both machines have modular Corsair CX-branded units with 80 Plus Bronze ratings, and the CyberPower's 600W PSU offers 50W more power than the Scan's box.

The two machines also have three year warranties, although Scan's is slightly better. The CyberPower offers three years of labour coverage and two years of parts protection, but Scan provides three years of parts and labour coverage, with the first year on site.

Performance

The CyberPower's GTX 1080 never dropped below 87fps at 1080p, and it managed at least 56fps in every 2,560 x 1,440 benchmark. It performed respectably at 4K too. Its best result was a 45fps minimum in The Witcher 3, and its lowest minimum was 26fps in Fallout 4 – just over our marker for a playable game, and easily improved by dropping the detail from Ultra to High. Scan's machine was a tad quicker in games thanks to its GPU overclock though.

Meanwhile, the CyberPower's CPU overclock helped it to deliver a decent benchmark score of 142,132. That result shows it has enough power to handle virtually any work task without breaking a sweat, but it isn't quite as quick as the Scan, which used its extra 200MHz of processing power to score 147,947 in the same test. The CyberPower's NVMe

CPU 4GHz Intel Core i7-6700K overclocked to 4.4GHz

Motherboard Gigabyte Z170N-WIFI

Memory 16GB Corsair Vengeance LPX 3200MHz DDR4

Graphics Nvidia GeForce GTX 1080 8GB

Storage 256GB Samsung SM951 M.2 SSD; 2TB Seagate Barracuda hard disk

Case NZXT Manta White

Cooling CPU: Alphacool NexXxos ST30 240mm radiator with 2 x 120mm fans, Alphacool Coolplex Pro 15 LT reservoir, Phobya UC-2 waterblock, Phobya DC12-260 pump; GPU: 1 x 70mm fan; top: 2 x 120mm fans; rear: 1 x 120mm fan

PSU Corsair CX600M

Ports Front: 2 x USB 3, 2 x audio; rear 4 x USB 3, 1 x USB 3.1 Type-C, 1 x PS/2, 2 x Gigabit Ethernet, 1 x optical S/PDIF, 5 x audio

Operating system Microsoft Windows 10 Home 64-bit

Warranty Two years parts and labour return to base, with first month collect and return, followed by one year labour only

ELITE
NEW ENTRY
P 66

1
The neon green liquid flows into a see-through Phobya UC-2 waterblock

2
An Nvidia Founders Edition GeForce GTX 1080 card handles gaming duties

3
A 240mm Alphacool NexXxos ST30 radiator sits in the NZXT Manta's roof

SSD is fast too, clocking up sequential read and write speeds of 2,000MB/sec and 1,315MB/sec respectively.

Noise is always a potential downside to having so much hardware inside such a small space, though, and here the CyberPower falls down a little. Its cooling gear churns out a noticeable low rumble at all times, whether idle or stress-tested. Thankfully, the noise never modulated nor become louder, but it's definitely noticeable; the Scan is quieter. Temperatures were always good though. The water-cooled CPU topped out with a delta T of 51°C, while the GPU peaked at 59°C, neither of which is cause for concern
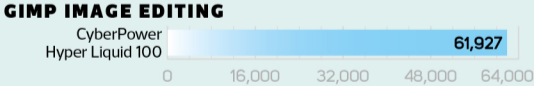
Conclusion

The overclocked Core i7 processor and stock-speed GTX 1080 deliver impressive power inside the CyberPower's modest chassis. The CPU has enough grunt for any home application or games, while the GTX 1080 can handle 2,560 x 1,440 gaming with ease, and it can even cope with some 4K gaming smoothly. The Hyper Liquid 100 pairs its good components with a bright, effective water-cooling system, and the rest of the build is neat and tidy too.

Scan's similar system is a little quicker in benchmarks, has a bigger SSD, is a tad quieter and has a more generous warranty. It's also much more expensive, and that's the main benefit of the CyberPower – it offers a very similar machine, with a few drawbacks, but a much cheaper price. If your budget is limited to £2,000, few mini PCs offer more power while looking quite so good.
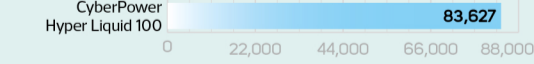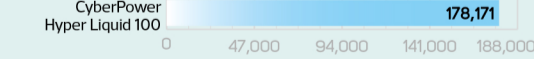
MIKE JENNINGS

CPC REALBENCH 2015

GIMP IMAGE EDITING

CyberPower Hyper Liquid 100	61,927

0   16,000   32,000   48,000   64,000

HANDBRAKE H.264 VIDEO ENCODING

CyberPower Hyper Liquid 100	311,708

0   90,000   180,000   270,000   360,000

LUXMARK OPENCL

CyberPower Hyper Liquid 100	83,627

0   22,000   44,000   66,000   88,000

HEAVY MULTITASKING

CyberPower Hyper Liquid 100	178,171

0   47,000   94,000   141,000   188,000

SYSTEM SCORE

CyberPower Hyper Liquid 100	142,132

0   38,000   76,000   114,000   152,000

INTEL REFERENCE: 142.19%

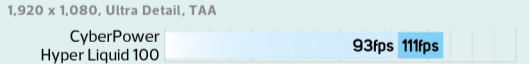| SPEED 22/25	DESIGN 22/25	OVERALL SCORE 90%
HARDWARE 23/25	VALUE 23/25	

VERDICT
Loads of gaming power in a well-built system with a striking water-cooling system.

FALLOUT 4

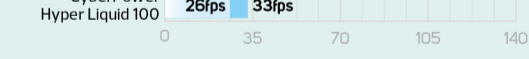1,920 x 1,080, Ultra Detail, TAA

CyberPower Hyper Liquid 100	93fps	111fps

0   35   70   105   140

2,560 x 1,440, Ultra Detail, TAA

CyberPower Hyper Liquid 100	56fps	70fps

0   35   70   105   140

3,840 x 2,160, Ultra Detail, TAA

CyberPower Hyper Liquid 100	26fps	33fps

0   35   70   105   140

THE WITCHER 3: WILD HUNT

1,920 x 1,080, High Detail, AA on

CyberPower Hyper Liquid 100	110fps	134fps

0   35   70   105   140

2,560 x 1,440, High Detail, AA on

CyberPower Hyper Liquid 100	79fps	92fps

0   35   70   105   140

3,840 x 2,160, High Detail, AA on

CyberPower Hyper Liquid 100	45fps	49fps

0   35   70   105   140

CRYSIS 3

1,920 x 1,080, Very High Detail, 0x AA

CyberPower Hyper Liquid 100	87fps	136fps

0   35   70   105   140

2,560 x 1,440, Very High Detail, 0x AA

CyberPower Hyper Liquid 100	56fps	84fps

0   35   70   105   140
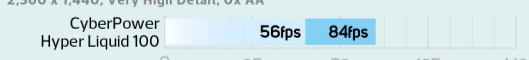
3,840 x 2,160, Very High Detail, 0x AA

CyberPower Hyper Liquid 100	29fps	37fps

0   35   70   105   140

■ Minimum ■ Average