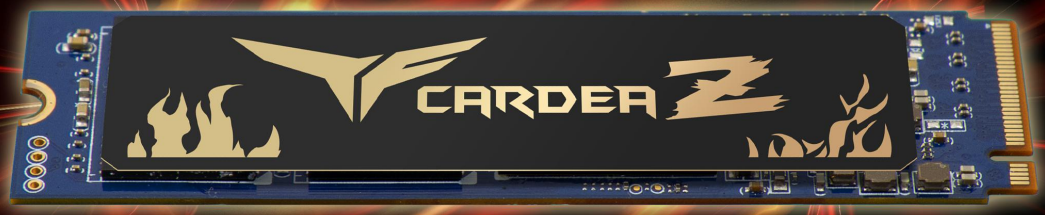
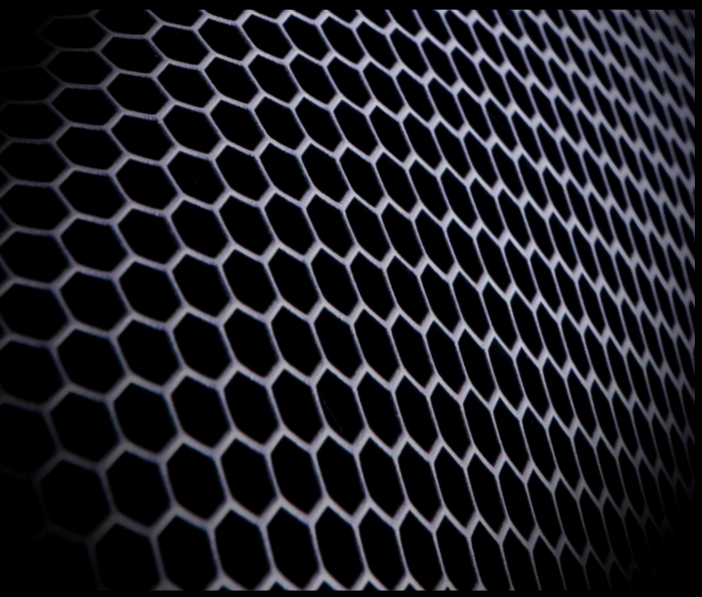


SSD GAMING CARDEA Zero

T-FORCE
GAMING SSD CARDEA ZERO



The first patented graphene SSD module

Team Group gaming has released the M.2 PCIe SSD – CARDEA ZERO. With special superposition method, CARDEA ZERO has combined graphene, copper foil and insulation to provide an excellent heat dissipation effect. CARDEA ZERO is the first super slim M.2 PCIe SSD on the market that is built specifically for gaming laptop/high- performance tablet PC. Using Team Group's patented graphene copper foil cooling module, it allows natural convection or forced air cooling (e.g. fan) to fully enhance the heat dissipation effect.

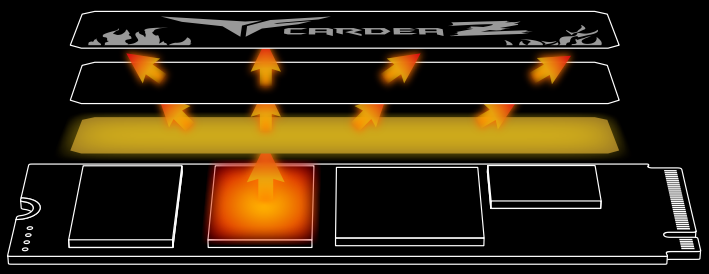
M.2 PCIe SSD Temperature Test		Controller			DRAM IC	Flash IC
Measurement position		Up	Center	Down		
M.2 PCIe SSD without heat sink	Power ON/Idle(°C)	43.5	37.9	33.6	44.2	41.3
	Burn In Test/1HR(°C)	78.7	76.6	63.2	64.7	57.5
	Burn In Test/2HR(°C)	80.5	79.3	59.6	71.5	56.3
	Burn In Test/3HR(°C)	77.3	79.9	61.9	66.4	61.4
M.2 PCIe SSD with CARDEA ZERO	Power ON/Idle(°C)	41.1	41.8	37.0	42.5	40.3
	Burn In Test/1HR(°C)	67.2	70.7	65.2	62.5	57.5
	Burn In Test/2HR(°C)	68.7	70.4	64.0	61.4	61.0
	Burn In Test/3HR(°C)	70.6	70.3	66.1	63.5	64.3

High-performance heat dissipation increased by more than 8%

T-FORCE M.2 PCIe SSD – CARDEA ZERO has passed our long and rigorous and burn-in test by T-Force Lab. After testing combinations of different proportions of graphene and copper foil, Team Group's patented graphene copper foil heat spreader is created through many times of verifications. In a closed space, the temperature can be cooled down about 9°C. With graphene's excellent horizontal thermal conductivity and a better heat dissipation factor copper foil has compared to aluminum, CARDEA ZERO is built to fit any laptop/tablet PC, and also prolongs the service life.

*All temperature data are tested according to the hardware of Team Group's internal laboratory. The measured data is for reference only.

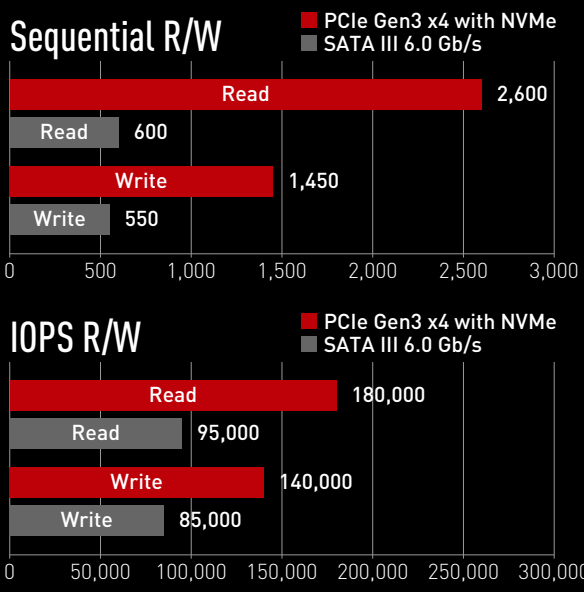
Combination of graphene and copper foil – Faster heat dissipation



T-FORCE M.2 PCIe SSD – CARDEA ZERO is using copper foil which has a fast heat absorption rate. At the very first moment, the heat at the controller can be absorbed by the copper foil, then through the horizontal superconductive graphene to spread evenly on the cooling module to speed up the heat dissipation process. To further optimize the heat dissipation performance of CARDEA ZERO, graphene, copper foil and insulation are combined together by special superposition method. After superposition, the total thickness is only 0.185mm, which is the thinnest M.2 PCIe SSD on the market. Heat can be transferred away immediately to resolve the high temperature of the SSD.

NVMe – No more lag

T-FORCE M.2 PCIe SSD – CARDEA ZERO supports the latest NVMe specification. The system communicates with it through the PCIe bus and connects to the built-in PCIe controller of the chipset or processor, so the signal transfer is as simple and precise as a point to point. It is able to reduce operating system and game/software delays while delivering the finest, smoothest gaming experience. Additionally, the T-FORCE M.2 PCIe SSD – CARDEA ZERO offers high performance during transfers while providing extreme speeds with no lag time.



Higher bandwidth – Higher performance

The transfer speed of traditional solid state drive is limited within SATA's 6Gb/s bandwidth, therefore consumers have gradually shifted to the PCIe interface, which is capable of offering higher transfer speed. Due to this fact, T-FORCE M.2 PCIe SSD – CARDEA ZERO is using PCIe high-speed transfer interface. With the support of PCIe bus bandwidth, it can offer consumers a stable transfer speed more than 1000MB/s. The transfer speed is multiple times higher than SATA 6GB/s interface and allows consumers to enjoy the high-speed multimedia entertainment experience.

Smart technology – Dependable reliability

T-FORCE M.2 PCIe SSD – CARDEA ZERO supports S.M.A.R.T function and the built-in smart algorithm management mechanism has functions such as GC (garbage collection) and TRIM command which are able to ensure operation efficiency, prolong the service life of the SSD and bring it to the maximum performance. Meanwhile, the powerful Wear-Leveling technology and ECC (Error Correction Code) function improve the accuracy and reliability of data transfer.

Main Feature

- The first super slim graphene SSD cooling module.
- The combination of graphene and copper foil can speed up the heat transfer efficiently.
- NVMe interface – Support latest NVMe specification.
- Support S.M.A.R.T. technology – Monitoring hard drive status efficiently.
- Support TRIM – Bring out its best performance on the compatible operating system.
- Product warranty – 3 years product warranty. Free technical support service.

Cool over 8%

Supports S.M.A.R.T.

Supports TRIM

Specification

Model	T-Force CARDEA ZERO	
Interface	PCIe 3.0 x4 with NVMe 1.2	
Capacity	240GB / 480GB*	
Color	Black	
Voltage	DC +3.3V	
Operation Temperature	0°C ~ 70°C	
Storage Temperature	-40°C ~ 80°C	
Terabyte Written	240GB / 335 TB 480GB / 670 TB**	
Performance	Crystal Disk Mark: 240GB Read/Write: up to 2600/1400 MB/s 480GB Read/Write: up to 2600/1450 MB/s	IOPS: 240GB Read/Write: 180K/140K IOPS Max 480GB Read/Write: 180K/150K IOPS Max***
Weight	8g	
Dimensions	80.0(L) x 22.0(W) x 3.3(H) mm	
Humidity	RH 90% under 40°C (operational)	
Vibration	80Hz~2,000Hz/20G	
Shock	1,500G/0.5ms	
MTBF	2,000,000 hours	
Operating System	System Requirements: • Windows 10, Windows 8, Windows 7, Windows Vista**** • Linux 2.6.33 or later	
Warranty	3-year limited warranty	

*1GB=1,000,000,000 Bytes. In OS system, it would be displayed as 1,000,000,000 Bytes / 1024 / 1024 / 1024 = 0.93GB
**Definition and conditions of TBW (Terabytes Written)are based on JEDEC standard
***Transmission speed will vary according to different hardware / software conditions, therefore the data can only used for basic reference.
****PCIe SSD works best under WIN8.1 and WIN10 operating system. Windows Operating Systems earlier than Windows 8.1 does not support NVMe Driver natively. Users will need to install NVMe Driver prior installing the SSD.
※We reserve the right to modify product specifications without prior notice.

Ordering Information

Description	Capacity	Team P/N
TEAM M.2-2280 PCI-E Gen3x4 240GB RETAIL W/HEAT STICKER	240GB	TM8FP2240G0C111
TEAM M.2-2280 PCI-E Gen3x4 480GB RETAIL W/HEAT STICKER	480GB	TM8FP2480G0C111

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