NVIDIA RTX™ Professional Graphics Cards

NVIDIA RTX™ Ada Generation
Professional Desktop Graphics Cards



NVIDIA RTX™ 2000
Ada Generation



NVIDIA RTX™ 2000E
Ada Generation



NVIDIA RTX™ 4000 SFF
Ada Generation



NVIDIA RTX™ 4000
Ada Generation



NVIDIA RTX™ 4500
Ada Generation



NVIDIA RTX™ 5000
Ada Generation



NVIDIA RTX™ 6000
Ada Generation

Features

- NVIDIA Ada Lovelace Architecture
- The 4th-gen Tensor Cores
- The 3rd-gen RT Cores
- PCI Express Gen 4.0 Support
- GDDR6 memory with ECC
- NVIDIA GPUDirect Remote Direct Memory Access (RDMA) Support

Ordering Information

NVIDIA RTX™ 2000 Ada	PCIe Gen4x8, 4x mDP 1.4, 2.7” H x 6.6” L, dual slot, half height
NVIDIA RTX™ 2000E Ada	PCIe Gen4x8, 4x mDP 1.4, 2.7” H x 6.6” L, single slot, half height
NVIDIA RTX™ 4000 SFF Ada	PCIe Gen4x16, 4x mDP 1.4, 2.7” H x 6.6” L, dual slot, half height
NVIDIA RTX™ 4000 Ada	PCIe Gen4x16, 4x DP 1.4, 4.4” H x 9.5” L, single slot, full height
NVIDIA RTX™ 4500 Ada	PCIe Gen4x16, 4x DP 1.4, 4.4” H x 10.5” L, dual slot, full height
NVIDIA RTX™ 5000 Ada	PCIe Gen4x16, 4x DP 1.4, 4.4” H x 10.5” L, dual slot, full height
NVIDIA RTX™ 6000 Ada	PCIe Gen4x16, 4x DP 1.4, 4.4” H x 10.5” L, dual slot, full height

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Specifications






Model Name	NVIDIA RTX 2000 Ada	NVIDIA RTX 2000E Ada	NVIDIA RTX 4000 Ada SFF	NVIDIA RTX 4000 Ada
Graphic Core				
Graphic Architecture	NVIDIA Ada Lovelace AD107	NVIDIA Ada Lovelace AD107	NVIDIA Ada Lovelace AD104	NVIDIA Ada Lovelace AD104
GPU	RTX 2000 Ada	RTX 2000E Ada	RTX 4000 Ada SFF	RTX 4000 Ada
Memory	16GB GDDR6 memory, 128-bit, Bandwidth: Up to 224 GB/s	16GB GDDR6 memory, 128-bit, Bandwidth: Up to 224 GB/s	20GB GDDR6 memory, 160-bit, Bandwidth: Up to 280 GB/s	20GB GDDR6 memory, 160-bit, Bandwidth: Up to 360 GB/s
ECC	Yes	Yes	Yes	Yes
GPGPU Computing				
CUDA® Cores	2,816 CUDA® Cores, 12 TFLOPS SP Peak	2,816 CUDA® Cores, 8.9 TFLOPS SP Peak	6,144 CUDA® Cores, 19.2 TFLOPS SP Peak	6,144 CUDA® Cores, 26.7 TFLOPS SP Peak
Tensor Cores	88 192 AI TFLOPS	88 71 AI TFLOPS	192 307 AI TFLOPS	192 428 AI TFLOPS
RT Cores	22	22	48	48
Compute API	CUDA® Toolkit 11.6, Direct Compute, OpenCL™ 3.0			CUDA® Toolkit 12.2, Direct Compute, OpenCL™ 3.0
Graphics API	Shader Model 6.6, OpenGL® 4.6, DirectX 12, Vulkan® 1.3			Shader Model 6.7, OpenGL® 4.6, DirectX 12, Vulkan® 1.3
Display				
Display Outputs	4x mDP 1.4 digital video outputs (DP++), 4x 4096 x 2160 @120Hz 4x 5120 x 2880 @60Hz 2x 7680 x 4320 @60Hz			4x DP 1.4 digital video outputs (DP++), 4x 4096 x 2160 @120Hz 4x 5120 x 2880 @60Hz 2x 7680 x 4320 @60Hz
Interface	PCIe Gen4 x8*	PCIe Gen4 x8*	PCIe Gen4 x16	PCIe Gen4 x16
Mechanicals				
Dimensions (inch)	2.7” x 6.6”, dual slot	2.7” x 6.6”, single slot	2.7” x 6.6”, dual slot	4.4” x 9.5”, single slot
Form Factor	Half Height, Half Length			Full Height, Medium Length
Environmental				
Operating Temperature	0˚C – 45˚C			
Storage Temperature	-40˚C – 75˚C			
Module Power Consumption	70W	50W	70W	130W
SW Support				
OS Support	Windows 10/11, Server 2019/2022			

*Utilizes a full-length PCIe x8 interface

Specifications





Model Name	NVIDIA RTX 4500 Ada	NVIDIA RTX 5000 Ada	NVIDIA RTX 6000 Ada
Graphic Core			
Graphic Architecture	Ada Lovelace AD104	Ada Lovelace AD102	Ada Lovelace AD102
GPU	RTX 4500 Ada	RTX 5000 Ada	RTX 6000 Ada
Memory	24GB GDDR6 memory, 192-bit, Bandwidth: Up to 432 GB/s	32GB GDDR6 memory, 256-bit, Bandwidth: Up to 576 GB/s	48GB GDDR6 memory, 384-bit, Bandwidth: Up to 960 GB/s
ECC	Yes	Yes	Yes
GPGPU Computing			
CUDA® Cores	7,680 CUDA® Cores, 39.9 TFLOPS SP Peak	12,800 CUDA® Cores, 65.3 TFLOPS SP Peak	18,176 CUDA® Cores, 91.1 TFLOPS SP Peak
Tensor Cores	240 643 TFLOPS	400 1044 TFLOPS	568 1457 TFLOPS
RT Cores	60	100	142
Compute API	CUDA® Toolkit 12.2, Direct Compute, OpenCL™ 3.0		
Graphics API	Shader Model 6.6, OpenGL® 4.6, DirectX 12, Vulkan® 1.3		
Display			
Display Outputs	4x DP 1.4 digital video outputs (DP++), 4x 4096 x 2160 @120Hz 4x 5120 x 2880 @60Hz 2x 7680 x 4320 @60Hz		
Interface	PCIe Gen4 x16		
Mechanicals			
Dimensions (inch)	4.4” x 10.5”, dual slot		
Form Factor	Full Height, Full Length		
Environmental			
Operating Temperature	0˚C – 45˚C		
Storage Temperature	-40˚C – 75˚C		
Module Power Consumption	210W	250W	300W
SW Support			
OS Support	Windows 11, 10, Server 2019/2022		

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