

NVIDIA PROFESSIONAL GRAPHICS SOLUTIONS

NVIDIA professional laptop GPUs power the world's most advanced thin and light mobile workstations and unique compact devices to meet the visual computing needs of professionals across a wide range of industries. The latest generation of NVIDIA RTX professional laptop GPUs, built on the NVIDIA Ampere architecture combine the latest advancements in real-time ray tracing, advanced shading, and AI-based capabilities to tackle the most demanding design and visualization workflows on the go. With the latest graphics technology, enhanced performance, and added compute power, NVIDIA professional laptop GPUs give designers, scientists, and artists the tools they need to work efficiently from anywhere.



GPU SPECIFICATIONS													PERFORMANCE		OPTIONS					
NVIDIA CUDA® Processing Cores¹	NVIDIA RT Cores	Tensor Cores	GPU Memory	Peak Memory Bandwidth*	Memory Type	Memory Interface	TGP Max Power Consumption²	DisplayPort³	Open GL⁴	Shader Model	DirectX	PCIe Generation	Single Precision Floating-Point Performance [TFLOPS; Peak]⁵	Tensor Performance [TFLOPS; Peak]⁵	NVIDIA FXAA™ / TXAA™ Anti-Aliasing	NVIDIA RTX Desktop Manager	Vulkan Support	NVIDIA Optimus®	3rd Gen MAX-Q Technology	NVENC / NVDEC

Laptop GPUs

	NVIDIA RTX A5000	NVIDIA RTX A4000	NVIDIA RTX A3000	NVIDIA RTX A2000	NVIDIA T1200	NVIDIA T600	NVIDIA T500	Quadro RTX™ 6000	Quadro RTX 5000	Quadro RTX 4000	Quadro RTX 3000	Quadro T2000	Quadro T1000	Quadro P620	Quadro P520
NEW	6,144	5,120	4,096	2,560	1,024	896	896	4,608	3,072	2,560	1,920	1,024	896	512	384
	48 [2nd Gen]	40 [2nd Gen]	32 [2nd Gen]	20 [2nd Gen]				72	48	40	30				
	192 [3rd Gen]	160 [3rd Gen]	128 [3rd Gen]	80 [3rd Gen]				576	384	320	240				
	16 GB	8 GB	6 GB	4 GB	4 GB	4 GB	2 GB or 4 GB	24 GB	16 GB	8 GB	6 GB	4 GB	4 GB	4 GB	2 GB or 4 GB
	448 GB/s	384 GB/s	264 GB/s	192 GB/s	192 GB/s	160 GB/s	80 GB/s	672 GB/s	448 GB/s	448 GB/s	336 GB/s	128 GB/s	128 GB/s	96 GB/s	48 GB/s
	GDDR6	GDDR6	GDDR6	GDDR6	GDDR6	GDDR6	GDDR6	GDDR6	GDDR6	GDDR6	GDDR6	GDDR6	GDDR6	GDDR5	GDDR5
	256-bit	256-bit	192-bit	128-bit	128-bit	128-bit	64-bit	384-bit	256-bit	256-bit	192-bit	128-bit	128-bit	128-bit	64-bit
	80 - 165 W*	80 - 140 W*	60-130 W*	35-95 W*	35-95 W*	25 W [TDP]	18 - 25 W [TDP]	250 W	80 - 110 W	80 - 110 W	60 - 80 W	40 - 60 W	40 - 50 W	25 W [TDP]	18 - 25 W [TDP]
	1.4	1.4	1.4	1.4	1.4	1.4		1.4	1.4	1.4	1.4	1.4	1.4	1.4	
	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.5	4.5
	7.0	7.0	7.0	7.0	7.0	7.0	7.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
	12 Ultimate	12 Ultimate	12 Ultimate	12 Ultimate	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
	4	4	4	4	4	4	4	3	3	3	3	3	3	3	3
	21.7	17.8	12.8	9.3	3.7	2.5	3.0	14.9	9.4	8.0	5.4	3.5	2.6	1.5	1.1
	174.0	142.5	102.2	74.7				119.4	75.2	63.9	42.9				
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Peak possible results vary by OEM system configuration. Check with your provider for system-specific information.

1. CUDA parallel processing cores cannot be compared between GPU generations due to several important architectural differences that exist between streaming multiprocessor designs.

2. Power is TDP-based for NVIDIA T600, T500, P620 and P520. GPUs with asterisked ranges include possible maximum power consumption including the Dynamic Boost 2.0 algorithm. For system specific GPU TGP, please consult your OEM/solution provider.

3. Adaptors available for DVI-SL, DVI-DL, HDMI, and VGA.

4. Product is based on a published Khronos Specification and is expected to pass the Khronos Conformance Testing Process when available. Current Conformance status can be found at, www.khronos.org/conformance

5. F16 matrix multiply with FP16 or FP32 accumulate and effective TFLOPS using the sparsity feature for NVIDIA Ampere architecture-based GPUs.

For more information on NVIDIA mobile products, visit www.nvidia.com/en-us/design-visualization/rtx-professional-laptops/

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