

## Some Sample Tools for Determining Optimal Grid Configuration

*Refer to the CUDA or OpenCL Documentation for a more complete list*

	CUDA <sup>3</sup>	OpenCL
Total global memory	<code>dp.totalGlobalMem</code>	<code>CL_DEVICE_GLOBAL_MEM_SIZE</code> <sup>1</sup>
Shared memory required per thread		<code>CL_KERNEL_LOCAL_MEM_SIZE</code> <sup>2</sup>
Max shared memory per block	<code>dp.sharedMemPerBlock</code>	<code>CL_DEVICE_LOCAL_MEM_SIZE</code> <sup>1</sup>
Max shared memory per SM	<code>dp.sharedMemPerMultiprocessor</code>	<code>CL_DEVICE_LOCAL_MEM_SIZE</code> <sup>1</sup>
Num registers required per thread	From: <code>nvcc -Xptxas -v</code>	<code>CL_KERNEL_PRIVATE_MEM_SIZE</code> <sup>2a</sup>
Max registers per block	<code>dp.regsPerBlock</code>	?
Max registers per SM	<code>dp.regsPerMultiprocessor</code>	?
Warp size	<code>dp.warpSize</code>	<code>CL_KERNEL_PREFERRED_WORK_GROUP_SIZE_MULTIPLE</code> <sup>2</sup>
Max threads per block	<code>dp.maxThreadsPerBlock</code>	<code>CL_KERNEL_WORK_GROUP_SIZE</code> <sup>2</sup>
Max threads per SM	<code>dp.maxThreadsPerMultiProcessor</code>	<code>CL_DEVICE_MAX_WORK_GROUP_SIZE</code> <sup>1</sup>

Number multiprocessors	<code>dp.multiProcessorCount</code>	<code>CL_DEVICE_MAX_COMPUTE_UNITS</code> <sup>1</sup>
Number warp schedulers	Determined from compute capability: ( <code>dp.major</code> , <code>dp.minor</code> )	?

<sup>1</sup> - `clGetDeviceInfo`

<sup>2</sup> - `clGetKernelWorkGroupInfo`

(a) Amount of private memory used in bytes

<sup>3</sup> - `cudaDeviceProp dp;`

`cudaGetDeviceProperties(&dp, 0); // device 0`