Modern CSD Capabilities for ML Workloads

CSD Type	Compute Architecture	Peak Performance (GOPS)	Power (W)	Power Efficiency (GOPS/W)	Storage (TB)	Memory BW (GB/s)	PCIe BW (GB/s)	Cost/TB ($)	Encoding Throughput (ops/s)	ML Optimized
Samsung SmartSSD	FPGA	160	25	6.4	8.0	14.0	8.0	800	727	Yes
SK Hynix CSD	ARM	210	15	14.0	4.0	12.8	8.0	600	955	Yes
Xilinx Alveo CSD	FPGA	3700	150	24.7	16.0	77.0	32.0	2,000	16818	Yes
AMD Versal CSD	FPGA	1800	75	24.0	8.0	58.6	32.0	1,500	8182	Yes
Future ARM CSD	ARM	420	5	84.0	2.0	25.6	16.0	300	1909	Yes
Custom ASIC CSD	ASIC	5000	200	25.0	32.0	100.0	64.0	3,000	22727	Yes
Traditional SSD	None	N/A	8	N/A	8.0	0.0	8.0	100	N/A	No