



# Product Selection Guide

Data Center Accelerator Cards



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*Breathe New Life  
into Your Data Center*

	Alveo U200	Alveo U250	Alveo U280	Alveo U50	
Dimensions	Width	Dual Slot	Dual Slot	Dual Slot	Single Slot
	Form Factor, Passive Form Factor, Active	Full Height, ¾ Length Full Height, Full Length	Full Height, ¾ Length Full Height, Full Length	Full Height, ¾ Length Full Height, Full Length	Half Height, ½ Length
Logic Resources <sup>1</sup>	Look-Up Tables	1,182K	1,728K	1,304K	872K
	Registers	2,364K	3,456K	2,607K	1,743K
	DSP Slices	6,840	12,288	9,024	5,952
DRAM Memory	DDR Format	4x 16GB 72b DIMM DDR4	4x 16GB 72b DIMM DDR4	2x 16GB 72b DIMM DDR4	–
	DDR Total Capacity	64GB	64GB	32GB	–
	DDR Max Data Rate	2400MT/s	2400MT/s	2400MT/s	–
	DDR Total Bandwidth	77GB/s	77GB/s	38GB/s	–
	HBM2 Total Capacity	–	–	8GB	8GB
	HBM2 Total Bandwidth	–	–	460GB/s	316GB/s <sup>4</sup>
Internal SRAM	Total Capacity	43MB	57MB	43MB	28MB
	Total Bandwidth	37TB/s	47TB/s	35TB/s	24TB/s
Interfaces	PCI Express®	Gen3 x16	Gen3 x16	Gen3 x16, 2xGen4 x8, CCIX	Gen3 x16, 2xGen4 x8, CCIX
	Network Interface	2x QSFP28	2x QSFP28	2x QSFP28	U50 <sup>2</sup> - 1x QSFP28 U50DD <sup>3</sup> - 2x SFP-DD
Power and Thermal	Thermal Cooling	Passive, Active	Passive, Active	Passive, Active	Passive
	Typical Power	100W	110W	100W	50W
	Maximum Power	225W	225W	225W	75W
Time Stamp	Clock Precision	–	–	–	IEEE Std 1588
Tool Support	Vitis Developer Environment	Yes	Yes	Yes	Yes
Solutions	Solutions & Libraries	<a href="#">Acceleration Application Libraries and Solutions</a>			

Alveo™ Data Center Accelerator Cards

1. Logic resources shown without shell usage; refer to card user guides for shell resource usage
2. U50 is a production qualified card for volume deployment
3. U50DD is an engineering sample card not for volume production
4. A-U50DD-P00G-ES3-G and A-U50-P00G-PQ-G measured 316 GB/s peak HBM

Product Name		Alveo U25
Dimensions	Width	Single Slot
	Form Factor	Half Height, ½ Length
Logic Resources <sup>1</sup>	Look-Up Tables	523K
	Registers	1,045K
DRAM Memory	DDR Format	- 1x 2GB x 40 DDR4-2400 - 1x 4GB x 72 DDR4-2400
Interfaces	PCI Express®	1x/2x PCIe Gen 3 x8 (Gen 3 x16 connector in bifurcated mode)
	Link Speeds	10/25GbE
	Network Interface	2x SFP28
Power and Thermal	Thermal Cooling	Passive
	Typical Power	55W
	Maximum Power	75W
Networking	Ethernet Controller	Solarflare XtremeScale™ 10/25GbE
	Stateless Offloads	Yes
	Tunneling Offloads	VXLAN, Geneve, Custom
	SR-IOV	Yes
	Advanced Packet Filtering	Yes
	Acceleration	DPDK, Onload®
Time Stamp	Hardware Timestamping	Yes (optional)
Manageability	PMCI Protocols	NC-SI, PLDM Monitoring and Control, PLDM MCTP
	PMCI Transports	MCTP SMBus, MCTP PCIe VDM
	Boot Support	PXE and UEFI
Tool Support	Vitis Developer Environment	Yes
Solutions	Acceleration Solutions	Open vSwitch (OVS), IPSEC

Alveo™ SmartNIC Data Center Accelerator Cards

Notes:

1. Logic resources shown without shell usage; refer to card user guides for shell resource usage.

# Alveo Data Center Accelerator Cards Ordering Information



<b>A</b>	<b>U###yy</b>	<b>P</b>	<b>64G</b>	<b>PQ</b>	<b>G</b>
<b>Product Name</b> Alveo	<b>Card Name</b> U200 U250 U280 U50 / U50DD U25	<b>Cooling</b> P: Passive A: Active	<b>DDR Memory</b> 00G: 0GB 06G: 6GB 32G: 32GB 64G: 64GB	<b>Solution Qualification</b> ESx: Engineering sample, not qualified for volume production PQ: Fully qualified for volume production	<b>RoHS Indicator</b> G: RoHS 6/6

U### - 3 Digits for ¾ or Full Length  
U## - 2 Digits for Half Length  
yy - Feature Option

For valid ordering codes (SKUs), go to the product data sheet(s): <http://www.xilinx.com/alveo>

XMP451 (v1.5)

Verify all data in this document with the device data sheets or product guides found at [www.xilinx.com](http://www.xilinx.com)