

# ICON 3100-SX+

60

CPU  
CORES

4.2

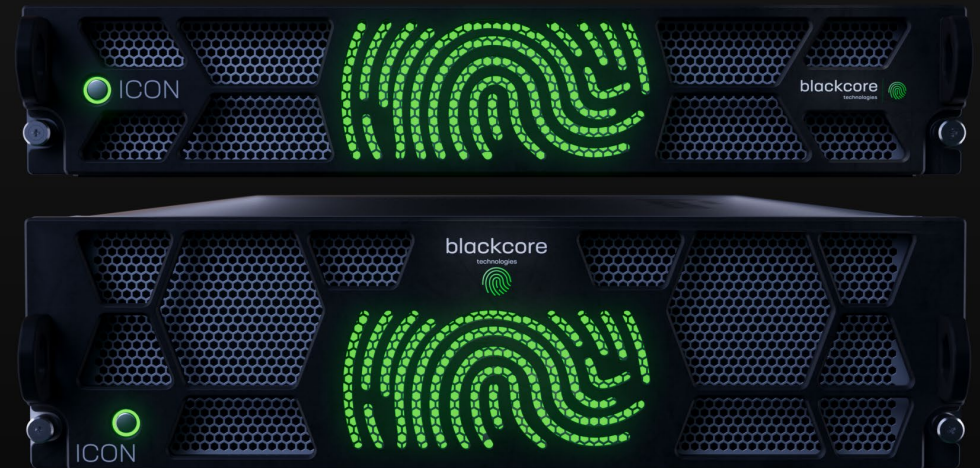
GHz  
CLOCKSPEED

1

TB  
RAM

The Blackcore ICON range is an overclocked, liquid-cooled server platform for Intel CPUs. Generating ultimate performance for low latency use cases.

Featuring the Intel® Xeon-W 3595X - based on the popular “Sapphire Rapids” architecture - this is a refresh to our extreme core-count “SPR-X” system, which gained popularity for replacing dual-socket systems with a single overclocked NUMA. Now boasting 60 cores.



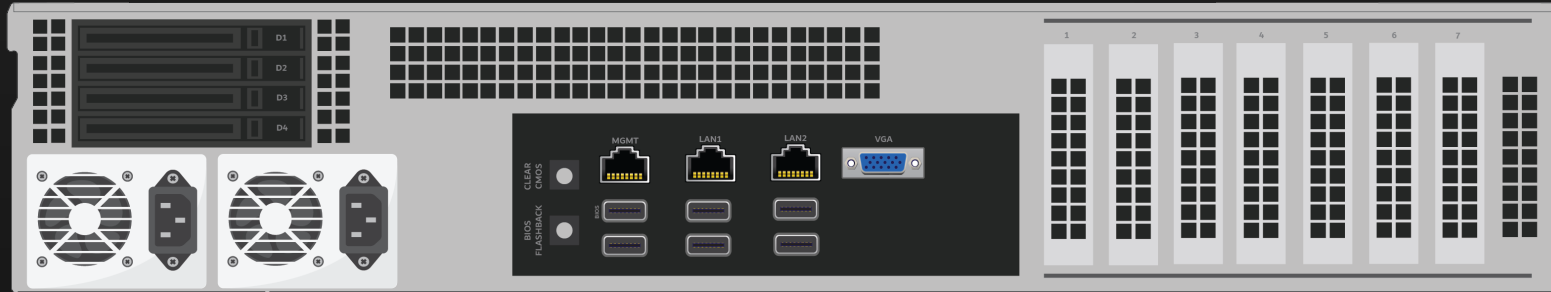
HTS-84715000  

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# ICON 3122-SX+

## 2U Vertical



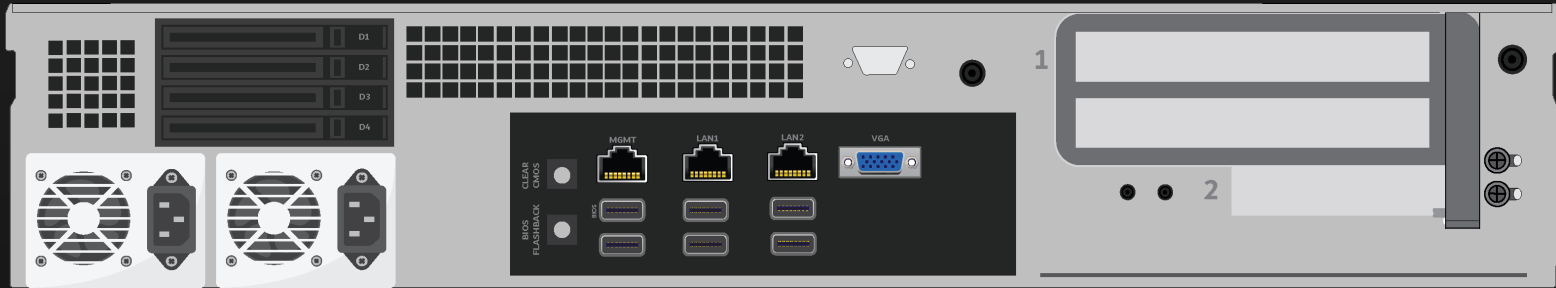
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CPU</b>           | Intel® Xeon® w9-3595X                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>CPU Frequency</b> | Up to 60 Cores @ 4.2GHz [all-core] SSE                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Cache</b>         | 112MB @ up to 2.7GHz                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Chipset</b>       | W790                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>RAM</b>           | Up to 1TB of DDR5 ECC RDIMM<br>Up to 768GB Overclocked ECC RDIMM                                                                                                                                                                                                                                                                                                                                                                |
| <b>PCIe</b>          | Slot 1 - Physical x16, Electrical x16, HHFL Single Width<br>Slot 2 - Physical x16, Electrical x16, HHFL Single Width<br>Slot 3 - Physical x16, Electrical x16, HHFL Single Width<br>Slot 4 - Physical x16, Electrical x16, HHFL Single Width<br>Slot 5 - Physical x16, Electrical x16, HHFL Single Width<br>Slot 6 - Physical x16, Electrical x8, HHFL Single Width<br>Slot 7 - Physical x16, Electrical x16, HHFL Single Width |
| <b>LAN</b>           | 2 x RJ45 Intel® X710 - 10Gb Ethernet<br>1 x RJ45 Dedicated IPMI LAN [AST 2600]                                                                                                                                                                                                                                                                                                                                                  |
| <b>Rear I/O</b>      | 1 x VGA<br>6 x USB Ports                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>RAID</b>          | Onboard RAID 0, 1, 5, 10<br>Optional Hardware RAID 0,00,1,10 - no cache<br>Optional Hardware RAID 0,00,1,10,5,6,60 - 4GB cache                                                                                                                                                                                                                                                                                                  |
| <b>Storage</b>       | 4 x 2.5" SATA <b>OR</b> 2 x 2.5" NVMe hot-swap caddy<br>3 x M.2 Socket M                                                                                                                                                                                                                                                                                                                                                        |

|                              |                                                                                                |
|------------------------------|------------------------------------------------------------------------------------------------|
| <b>OS Compatibility</b>      | Minimum - RHEL 7.8+<br>Recommended - RHEL 9.1+                                                 |
| <b>Management Tools</b>      | AMI SCE<br>Redfish                                                                             |
| <b>PSU</b>                   | 2000W Dual Redundant [1+1]<br>230-240V~ 10A MAX. 60-50Hz                                       |
| <b>Power Connectors</b>      | IEC C15/C16                                                                                    |
| <b>Avg. Power Usage</b>      | 500W [Idle]<br>1500W [Load]<br>Power draw based on synthetic load, not including add-in cards. |
| <b>Operating Temperature</b> | 10°C - 27°C (50°F - 80°F)                                                                      |
| <b>Dimensions</b>            | System: 88 x 438 x 720mm [H x W x D]<br>Boxed: 270 x 580 x 990mm [H x W x D]                   |
| <b>Chassis Weight</b>        | System: 20KG<br>Boxed: 25KG                                                                    |
| <b>Rail Kit</b>              | Premium or Short                                                                               |
| <b>Certifications</b>        | UKCA, CE                                                                                       |
| <b>Export Code</b>           | HTS-84715000                                                                                   |

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# ICON 3123-SX+

2U Horizontal

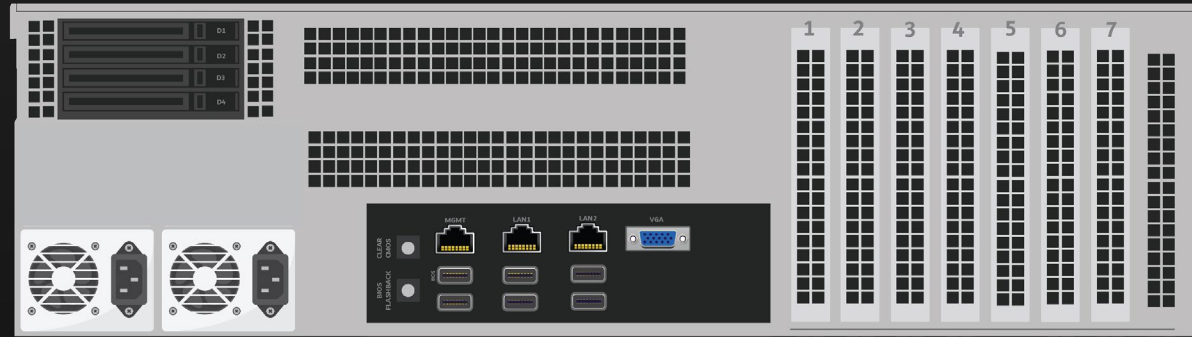


|               |                                                                                                                                |
|---------------|--------------------------------------------------------------------------------------------------------------------------------|
| CPU           | Intel® Xeon® w9-3595X                                                                                                          |
| CPU Frequency | Up to 60 Cores @ 4.2GHz [all-core] SSE                                                                                         |
| Cache         | 112MB @ up to 2.7GHz                                                                                                           |
| Chipset       | W790                                                                                                                           |
| RAM           | Up to 1TB of DDR5 ECC RDIMM<br>Up to 768GB Overclocked ECC RDIMM                                                               |
| PCIe          | Slot 1 - Physical x16, Electrical x16, FHFL Double Width<br>Slot 2 - Physical x16, Electrical x16, HHFL Double Width           |
| LAN           | 2 x RJ45 Intel® X710 - 10Gb Ethernet<br>1 x RJ45 Dedicated IPMI LAN (AST 2600)                                                 |
| Rear I/O      | 1 x VGA<br>6 x USB Ports                                                                                                       |
| RAID          | Onboard RAID 0, 1, 5, 10<br>Optional Hardware RAID 0,00,1,10 - no cache<br>Optional Hardware RAID 0,00,1,10,5,6,60 - 4GB cache |
| Storage       | 4 x 2.5" SATA <b>OR</b> 2 x 2.5" NVMe hot-swap caddy<br>3 x M.2 Socket M                                                       |

|                       |                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------|
| OS Compatibility      | Minimum - RHEL 7.8+<br>Recommended - RHEL 9.1+                                                 |
| Management Tools      | AMI SCE<br>Redfish                                                                             |
| PSU                   | 2000W Dual Redundant (1+1)<br>230-240V~ 10A MAX. 60-50Hz                                       |
| Power Connectors      | IEC C15/C16                                                                                    |
| Avg. Power Usage      | 500W [Idle]<br>1500W [Load]<br>Power draw based on synthetic load, not including add-in cards. |
| Operating Temperature | 10°C - 27°C (50°F - 80°F)                                                                      |
| Dimensions            | System: 88 x 438 x 720mm (H x W x D)<br>Boxed: 270 x 580 x 990mm (H x W x D)                   |
| Chassis Weight        | System: 20KG<br>Boxed: 25KG                                                                    |
| Rail Kit              | Premium or Short                                                                               |
| Certifications        | UKCA, CE                                                                                       |
| Export Code           | HTS-84715000                                                                                   |

# ICON 3132-SX+

## 3U Vertical



|               |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU           | Intel® Xeon® w9-3595X                                                                                                                                                                                                                                                                                                                                                                                                           |
| CPU Frequency | Up to 60 Cores @ 4.2GHz (all-core) SSE                                                                                                                                                                                                                                                                                                                                                                                          |
| Cache         | 112MB @ up to 2.7GHz                                                                                                                                                                                                                                                                                                                                                                                                            |
| Chipset       | W790                                                                                                                                                                                                                                                                                                                                                                                                                            |
| RAM           | Up to 1TB of DDR5 ECC RDIMM<br>Up to 768GB Overclocked ECC RDIMM                                                                                                                                                                                                                                                                                                                                                                |
| PCIe          | Slot 1 - Physical x16, Electrical x16, FHFL Single Width<br>Slot 2 - Physical x16, Electrical x16, FHFL Single Width<br>Slot 3 - Physical x16, Electrical x16, FHFL Single Width<br>Slot 4 - Physical x16, Electrical x16, FHFL Single Width<br>Slot 5 - Physical x16, Electrical x16, FHFL Single Width<br>Slot 6 - Physical x16, Electrical x8, FHFL Single Width<br>Slot 7 - Physical x16, Electrical x16, FHFL Single Width |
| LAN           | 2 x RJ45 Intel® X710 - 10Gb Ethernet<br>1 x RJ45 Dedicated IPMI LAN (AST 2600)                                                                                                                                                                                                                                                                                                                                                  |
| Rear I/O      | 1 x VGA<br>6 x USB Ports                                                                                                                                                                                                                                                                                                                                                                                                        |
| RAID          | Onboard RAID 0, 1, 5, 10<br>Optional Hardware RAID 0,00,1,10 - no cache<br>Optional Hardware RAID 0,00,1,10,5,6,60 - 4GB cache                                                                                                                                                                                                                                                                                                  |

|                       |                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------|
| Storage               | 4 x 2.5" SATA <b>OR</b> 2 x 2.5" NVMe hot-swap caddy<br>3 x M.2 Socket M                       |
| OS Compatibility      | Minimum - RHEL 7.8+<br>Recommended - RHEL 9.1+                                                 |
| Management Tools      | AMI SCE<br>Redfish                                                                             |
| PSU                   | 2000W Dual Redundant (1+1)<br>230-240V~ 10A MAX. 60-50Hz                                       |
| Power Connectors      | IEC C15/C16                                                                                    |
| Avg. Power Usage      | 500W [Idle]<br>1500W [Load]<br>Power draw based on synthetic load, not including add-in cards. |
| Operating Temperature | 10°C - 27°C (50°F - 80°F)                                                                      |
| Dimensions            | System: 132 x 438 x 720mm [H x W x D]<br>Boxed: 270 x 580 x 990mm [H x W x D]                  |
| Chassis Weight        | System: 25KG<br>Boxed: 30KG                                                                    |
| Rail Kit              | Premium or Short                                                                               |
| Certifications        | UKCA, CE                                                                                       |
| Export Code           | HTS-84715000                                                                                   |

# Specification Comparison

|                           | ICON 3122-SX+                 | ICON 3123-SX+                                    | ICON 3132-SX+                 |
|---------------------------|-------------------------------|--------------------------------------------------|-------------------------------|
| Form Factor               | 2U                            | 2U                                               | 3U                            |
| Dimensions<br>(H x W x D) | 88 x 438 x 720mm              | 88 x 438 x 720mm                                 | 132 x 438 x 720mm             |
| PCIe Compatibility        | 7* x16 (Physical) HHFL        | 1* x16 (Physical) FHFL<br>1* x16 (Physical) HHFL | 7* x16 (Physical) FHFL        |
| PCIe Orientation          | Vertical                      | Horizontal                                       | Vertical                      |
| PSU                       | 2000W                         | 2000W                                            | 2000W                         |
| Clock Speed               | Up to 60 Cores @ 4.2GHz (SSE) | Up to 60 Cores @ 4.2GHz (SSE)                    | Up to 60 Cores @ 4.2GHz (SSE) |

# Benchmarks

|                                                           | 128GB, 4.18 Kernel | 3595X<br>Stock | 3595X<br>Blackcore |
|-----------------------------------------------------------|--------------------|----------------|--------------------|
| mlc -r --latency_matrix (ns)<br>[Lower is better]         |                    | 119.6          | 92.9               |
| L2->L2 HIT (ns)<br>[Lower is better]                      |                    | 88.6           | 77.0               |
| PCIe Latency - slot1 (ns)<br>[Lower is better]            |                    | 507            | 447                |
| All-core Clock-speed (SSE, GHz)<br>[Higher is better]     |                    | 2.5            | 4.2                |
| Peak IPC (prime95, SSE, per thread)<br>[Higher is better] |                    | 2.3            | 4.9                |

"Stock" is Intel's default specification with no adjustments. This includes HT on.