

# N3K-C3064PQ-10GX Datasheet

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## Overview

N3K-C3064PQ-10GX is the Nexus 3064-X, 48 SFP+ and 4 QSFP+ ports, with enhanced scale, low latency. The Cisco Nexus 3064-X, 3064-T, and 3064-32T Switches are high-performance, high-density Ethernet switches that are part of the Cisco Nexus 3000 Series Switches portfolio. These compact one-rack-unit (1RU) form-factor 10 Gigabit Ethernet switches provide line-rate Layer 2 and 3 switching. They run the industry-leading Cisco® NX-OS Software operating system, providing customers with comprehensive features and functions that are widely deployed globally. They support both forward and reverse airflow schemes with AC and DC power inputs. The Cisco Nexus 3064 switches are well suited for data centers that require cost-effective, power-efficient, line-rate Layer 2 and 3 top-of-rack (ToR) switches.

## Quick Specs

Table 1 shows the Quick Specs.

<b>Product Code</b>	N3K-C3064PQ-10GX
<b>Physical</b>	<ul style="list-style-type: none"><li>• 1RU fixed form factor</li><li>• Cisco Nexus 3064-X: 64 10 Gigabit Ethernet ports (48 SFP+ and 4 QSFP+)<ul style="list-style-type: none"><li>◦ 48 SFP ports support 1 and 10 Gigabit Ethernet</li><li>◦ 4 QSFP ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet each</li></ul></li><li>• 2 redundant power supplies</li><li>• 1fan tray with redundant fans</li><li>• 1 I/O module with management, console, and USB flash memory ports</li></ul>
<b>Performance</b>	<ul style="list-style-type: none"><li>• 1.28-Tbps switching capacity</li><li>• Forwarding rate of 950 mpps</li><li>• Line-rate traffic throughput (both Layer 2 and 3) on all ports</li><li>• Configurable maximum transmission units (MTUs) of up to 9216 bytes (jumbo frames)</li></ul>
<b>Physical dimensions (H x W x D)</b>	1.72 x 17.3 x 19.7 in. (4.4 x 43.9 x 50.5 cm)
<b>Weight</b>	20.5 lb (9.3 kg)

## Product Details

The Cisco Nexus 3064 switches provides the following main benefits:

- Wire-rate Layer 2 and 3 switching on all ports
  - The Cisco Nexus 3064 switches provide Layer 2 and 3 switching of up to 1.2 terabits per second (Tbps) and more than 950 million packets per second (mpps) in a compact 1RU form factor.
- Ultra-low latency
  - The Cisco Nexus 3064 switches deliver ultra-low nominal latency that allows customers to implement high-performance infrastructure for high-frequency trading (HFT) workloads.
- Purpose-built on Cisco NX-OS operating system with comprehensive, proven innovations
  - Virtual PortChannel (vPC) provides Layer 2 multipathing through the elimination of Spanning Tree Protocol and enables fully utilized bisectional bandwidth and simplified Layer 2 logical topologies without the need to change the existing management and deployment models.
  - PowerOn Auto Provisioning (POAP) enables touchless bootup and configuration of the switch, drastically reducing provisioning time.
  - Cisco Embedded Event Manager (EEM) and Python scripting enable automation and remote operations in the data center.
  - Advanced buffer monitoring reports real-time buffer use per port and per queue, which allows organizations to monitor traffic bursts and application traffic patterns.
  - The 64-way equal-cost multipath (ECMP) routing enables Layer 3 fat tree designs and allows organizations to prevent network bottlenecks, increase resiliency, and add capacity with little network disruption.
  - EtherAnalyzer is a built-in packet analyzer for monitoring and troubleshooting control-plane traffic and is based on the popular Wireshark open source network protocol analyzer.
  - Precision Time Protocol (PTP; IEEE 1588) provides accurate clock synchronization and improved data correlation with network captures and system events.
  - Full Layer 3 unicast and multicast routing protocol suites are supported, including Border Gateway Protocol (BGP), Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Routing Information Protocol Version 2 (RIPv2), Protocol Independent Multicast

sparse mode (PIM-SM), Source-Specific Multicast (SSM), and Multicast Source Discovery Protocol (MSDP).

- Network traffic monitoring with Cisco Nexus Data Broker

• Build simple, scalable and cost-effective network tap or Cisco Switched Port Analyzer (SPAN) aggregation for network traffic monitoring and analysis.

## The Accessories

Table 2 shows the supported accessories.

Model	Description
QSFP-4SFP10G-CU5M	QSFP to 4xSFP10G passive copper splitter cable, 5m
QSFP-4SFP10G-CU3M	QSFP to 4xSFP10G passive copper splitter cable, 3m
QSFP-4SFP10G-CU1M	QSFP to 4xSFP10G passive copper splitter cable, 1m
QSFP-H40G-ACU10M	Cisco 40GBASE-CR4 QSFP+ direct-attach copper cable, 10m, active
QSFP-H40G-ACU7M	Cisco 40GBASE-CR4 QSFP+ direct-attach copper cable, 7m, active
QSFP-H40G-CU5M	40GBASE-CR4 passive copper cable, 5m
QSFP-H40G-CU3M	40GBASE-CR4 passive copper cable, 3m
QSFP-H40G-CU1M	40GBASE-CR4 passive copper cable, 1m
QSFP-40G-SR4	40GBASE-SR4 QSFP transceiver module with MPO connector
QSFP-40G-CSR4	Cisco 40GBASE-CSR4 transceiver module, MPO, 300m
QSFP-40GE-LR4	QSFP 40GBASE-LR4 QSFP+ module for SMF
SFP-10G-SR	10GBASE-SR SFP+ module (multimode fiber [MMF])
SFP-10G-LR	10GBASE-LR SFP+ module (single-mode fiber [SMF])
SFP-10G-ER	Cisco 10GBASE-ER SFP+ module for SMF
SFP-10G-ZR	Cisco 10GBASE-ZR SFP+ module for SMF
GLC-T	1000BASE-T SFP
GLC-SX-MM	GE SFP, LC connector SX transceiver (MMF)
GLC-LH-SM	GE SFP, LC connector LX/LH transceiver (SMF)
GLC-T	1000BASE-T SFP
N3K-C3064-FAN	Nexus 3064 Fan Module, Forward airflow (port side exhaust)
N3K-C3064-FAN-B	Nexus 3064 Fan Module, Reversed airflow (port side intake)
N2200-PAC-400W	N2K/3K 400W AC Power Supply, Forward airflow (port side exhaust)
N2200-PAC-400W-B	N2K/3K 400W AC Power Supply, Reversed airflow (port side intake)
NXA-PAC-500W	Nexus 3064-T 500W AC PSU, Forward airflow (port side exhaust)
N2200-PDC-400W	N2K/3K 400W DC Power Supply, Forward airflow (port side exhaust)
N3K-PDC-350W-B	N3K Series 350W DC Power Supply, Reversed airflow (port side intake)
L-N3K-LAN1K9=	Nexus 3000 LAN Enterprise License, eDelivery

## Compare to Similar Items

Table 3 shows the comparison.

<b>Product Code</b>	<b>N3K-C3132Q-V</b>	<b>N3K-C3064PQ-10GX</b>
<b>Ports</b>	<ul style="list-style-type: none"> <li>◦ 32 QSFP 40 Gbps Ports.</li> <li>◦ Each QSFP port supports 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet</li> </ul>	<ul style="list-style-type: none"> <li>◦ 48 SFP ports support 1 and 10 Gigabit Ethernet</li> <li>◦ 4 QSFP ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet each</li> </ul>
<b>Physical dimensions (H x W x D)</b>	1.72 x 17.3 x 19.7 in. (4.4 x 43.9 x 50.5 cm)	1.72 x 17.3 x 19.7 in. (4.4 x 43.9 x 50.5 cm)
<b>Weight</b>	18.8 lb (8.5 kg)	20.5 lb (9.3 kg)

## Get More Information

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## Specification

<b>N3K-C3064PQ-10GX Specification</b>		
<b>Physical</b>	<ul style="list-style-type: none"> <li>• 1RU fixed form factor</li> <li>• Cisco Nexus 3064-X: 64 10 Gigabit Ethernet ports (48 SFP+ and 4 QSFP+)</li> <li>◦ 48 SFP ports support 1 and 10 Gigabit Ethernet</li> <li>◦ 4 QSFP ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet each</li> <li>• 2 redundant power supplies</li> <li>• 1 fan tray with redundant fans</li> <li>• 1 I/O module with management, console, and USB flash memory ports</li> </ul>	
<b>Performance</b>	<ul style="list-style-type: none"> <li>• 1.28-Tbps switching capacity</li> <li>• Forwarding rate of 950 mpps</li> <li>• Line-rate traffic throughput (both Layer 2 and 3) on all ports</li> <li>• Configurable maximum transmission units (MTUs) of up to 9216 bytes (jumbo frames)</li> </ul>	
<b>Hardware tables and scalability</b>	MAC addresses	128,000
	Number of VLANS	4096
	Spanning-tree instances	<ul style="list-style-type: none"> <li>• Rapid Spanning Tree Protocol (RSTP): 512</li> <li>• Multiple Spanning Tree (MST) Protocol: 64</li> </ul>
	ACL entries	<ul style="list-style-type: none"> <li>• 2000 ingress</li> <li>• 1000 egress</li> </ul>
	Routing table	<ul style="list-style-type: none"> <li>• 16,000 prefixes and 16,000 host entries</li> <li>• 8000 multicast routes</li> </ul>
	Number of EtherChannels	64 (with vPC)
	Number of ports per EtherChannel	32
	Buffers	9 MB shared
	Boot flash memory	2 GB
<b>Power</b>	Number of power supplies	2 <ul style="list-style-type: none"> <li>• Cisco Nexus 3064-X: Redundant for AC and DC power</li> </ul>
	Power supply types	<ul style="list-style-type: none"> <li>• AC (forward and reversed airflow)</li> <li>• DC (forward and reversed airflow)</li> </ul>
	Typical operating power	<ul style="list-style-type: none"> <li>• Cisco Nexus 3064-X</li> <li>◦ 143 watts (W; 64p with Twinax at 100% load; 2 power supply units [PSUs])</li> <li>◦ 177W (64p with SR optics at 100% load; 2 PSUs)</li> </ul>

	Maximum power	<ul style="list-style-type: none"> <li>• Cisco Nexus 3064-X: 199W</li> </ul>
	AC PSUs <ul style="list-style-type: none"> <li>• Input voltage</li> <li>• Frequency</li> <li>• Efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• 100 to 240 VAC</li> <li>• 50 to 60 Hz</li> <li>• 89 to 91% at 220V</li> </ul>
	DC PSUs <ul style="list-style-type: none"> <li>• Input voltage</li> <li>• Maximum current</li> <li>• Efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• -40 to -72 VDC</li> <li>• 33A</li> <li>• 85 to 88%</li> </ul>
	Typical heat dissipation	<ul style="list-style-type: none"> <li>• Cisco Nexus 3064-X <ul style="list-style-type: none"> <li>◦ 488 BTU/hr (64p with Twinax at 100% load; 2 PSUs)</li> <li>◦ 605 BTU/hr (64p with SR optics at 100% load; 2 PSUs)</li> </ul> </li> </ul>
	Maximum heat dissipation	<ul style="list-style-type: none"> <li>• Cisco Nexus 3064-X: 683 BTU/hr</li> </ul>
<b>Cooling</b>	<p>Forward and reversed airflow schemes:</p> <ul style="list-style-type: none"> <li>• Forward airflow: Port-side exhaust (air enters through fan-tray and power supplies and exits through ports)</li> <li>• Reversed airflow: Port-side intake (air enters through ports and exits through fan-tray and power supplies)</li> </ul> <p>Single fan tray with redundant fans Hot swappable (must swap within 1 min)</p>	
<b>Sound</b>	Measured sound power (maximum) <ul style="list-style-type: none"> <li>• Fan speed: 40% duty cycle</li> <li>• Fan speed: 60% duty cycle</li> <li>• Fan speed: 100% duty cycle</li> </ul>	<ul style="list-style-type: none"> <li>• 59.7 dBA</li> <li>• 66.4 dBA</li> <li>• 71.0 dBA</li> </ul>
<b>Environment</b>	Dimensions (height x width x depth)	<ul style="list-style-type: none"> <li>• Cisco Nexus 3064-X: 1.72 x 17.3 x 19.7 in. (4.4 x 43.9 x 50.5 cm)</li> </ul>
	Weight	<ul style="list-style-type: none"> <li>• Cisco Nexus 3064-X: 20.5 lb (9.3 kg)</li> </ul>
	Operating temperature	32 to 104°F (0 to 40°C)
	Storage temperature	-40 to 158°F (-40 to 70°C)
	Operating relative humidity	<ul style="list-style-type: none"> <li>• 10 to 85% noncondensing</li> <li>• Up to 5 days at maximum (85%) humidity</li> <li>• Recommend ASHRAE data center environment</li> </ul>
	Storage relative humidity	5 to 95% noncondensing
	Altitude	0 to 10,000 ft (0 to 3000m)

## Download Resource

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### Support and Resources

 [Cisco Nexus 3064-X, 3064-T, and 3064-32T Switches Datasheet](#)

### Transition Guide

 [Select and Upgrade Cisco Data Center Switch](#)

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