NEOX NETWORKS
NEXT GENERATION NETWORK VISIBILITY

Data Sheet

NEOX**PacketFalcon** Packet Capture Appliances

High-Performance Network Performance Analysis, Security Forensics, and Compliance with 10/25/40/100Gbps Sustained Full-Packet Capture-to-Disk & Up to 480TB Storage

PacketFalcon enable you to:

- Achieve full network visibility with lossless, sustained 100Gbps full-packet capture-to-disk, ensuring no traffic is missed—even in high-speed environments.
- Perform fast forensic investigations with nanosecond timestamping and FPGA-accelerated indexing for threat hunting and incident response.
- Capture data anywhere for troubleshooting with portable field, under the desk, or rack-mounted units.
- Feed security platforms with PCAP files and metadata for progressive drill-down using Wireshark.
- Analyze key network metrics and KPI quickly for SLA management with out-of-box analysis software.
- Capture critical evidence for regulatory compliance (GDPR, PCI-DSS, HIPPA).

NEOX Solution

NEOX PacketFalcon represents the pinnacle of high-speed network packet-data capture and forensic analysis, engineered to meet the demands of modern IT SecOps and NetOps teams. This industry-leading solution delivers lossless, sustained, full-packet capture at speeds of up to 10, 25, 40, and 100Gbps, ensuring no critical network data is missed—even in the most demanding high-speed environments. Built on FPGA-accelerated SmartNIC capture technology, PacketFalcon combines nanosecond-accurate timestamping, real-time indexing, and advanced filtering to enable rapid packet capture, indexing, search, and forensics. Its powerful capture cards support a wide range of network speeds, from 1G to 100G, with flexible port configurations including SFP28, QSFP+, and OSFP28. The system's intelligent buffering technology absorbs microbursts effortlessly, while FPGA-based deduplication and packet slicing optimize storage efficiency without compromising data integrity. 7TB to 480TB on-board storage options, standard (SSD) or encrypted (SED), enable days and weeks' worth of packet data archive in PCAP/PCAP-NG format, with its fast indexing and search capabilities. Intelligent Capture, Capture Compression, and Capture Filtering, further optimize and maximize the storage capacities.

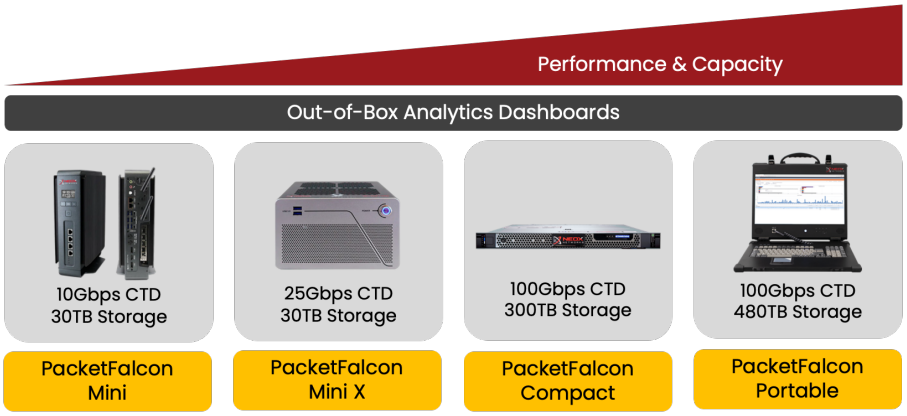

Diagram-1: PacketFalcon Models for Versatile Applications

Designed for versatility, PacketFalcon is available in multiple form factors to suit any deployment scenario. The PacketFalcon Compact model (1U rackmount) offers up to

300TB of high-speed NVMe storage, making it ideal for data centers, high-performance computing, service providers, and large-scale networks. The PacketFalcon Portable variant features a ruggedized design with hot-swappable SSDs and up to 480TB of storage, perfect for field diagnostics and remote site analysis. For lightweight deployments, the PacketFalcon Mini and PacketFalcon Mini X models provide a compact, power-efficient solution with up to 30/60TB of storage, supporting branch offices and tactical operations.

Enterprise-Grade High-Speed Network Packet Capture, Analytics, & Forensics

The NEOX PacketFalcon is engineered to meet the rigorous demands of modern cybersecurity operations, network performance monitoring, and regulatory compliance demands. At the heart of PacketFalcon lies its FPGA-accelerated hyperconverged architecture, which combines a high-performance capture SmartNIC card, advanced packet processing, and high-performance solid-state storage, along with NEOX proprietary enterprise-grade analysis software. Engineered for seamless integration into existing security ecosystems, PacketFalcon exports industry-standard PCAP/PCAP-NG files compatible with tools like Wireshark. Nanosecond-accurate timestamping (IEEE 1588v2 PTP) with hardware-optimized deduplication, and packet slicing maximizes storage efficiency without sacrificing forensic integrity. The system's intelligent filtering capabilities, powered by Berkeley Packet Filter (BPF) and customizable rule sets, allow precise traffic capture based on VLAN, MAC, IP, port, or application-layer parameters—ensuring security teams focus only on the most critical data. For comprehensive threat analysis.

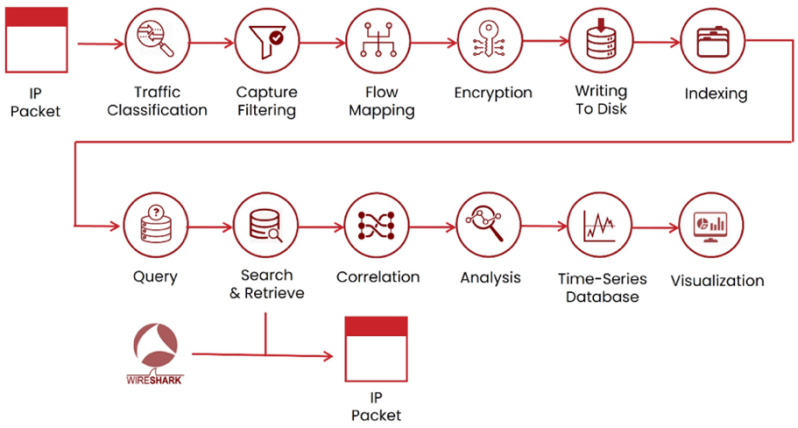

Diagram-2: Operation of PacketFalcon Packet Capture Appliances

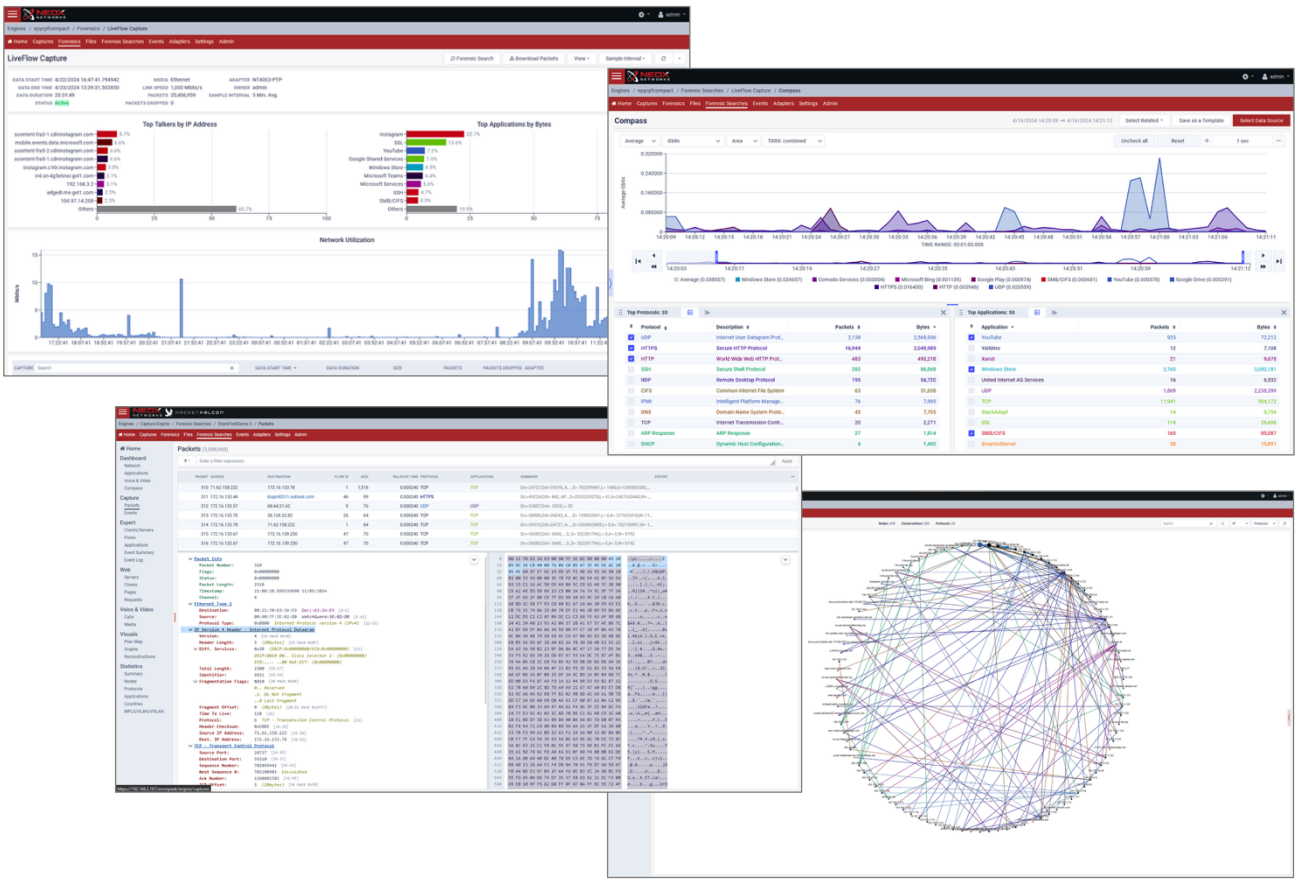

Diagram-3: PacketFalcon Analytics Dashboard Examples

With a scalable architecture that spans compact field-deployable units to data center-class rackmount systems, PacketFalcon adapts to diverse environments. Ruggedized portable models offer enterprise-grade capture capabilities in remote locations, while the 1U rackmount variant delivers high-density storage for large-scale deployments. All configurations are managed through an intuitive web interface.

Key Benefits

Deep Network Observability & Analysis for SLA Management

NEOX PacketFalcon is a powerful network analysis probe designed to extract metadata from rich packet data and perform historic analysis, delivering actionable insights and detailed network metrics that reflect overall network health. These metrics include top talkers, top applications and protocols, bandwidth usage by IP, MAC, or port, inter-node communication, activity timelines, one-way latency, asymmetric routing, TCP behavior, and voice/video quality scores. Multiple PacketFalcon appliances can be deployed to perform advanced analyses, such as multi-segment latency tracking for end-to-end path visibility. Users can search, retrieve, and drill down into specific packets related to conversations or transactions, enabling fast root cause analysis, troubleshooting, and evidence collection for incident reports and trouble tickets. The PacketFalcon Portable and Mini/Mini X models are ideal for field use in remote branch offices, industrial environments, or mobile cell sites, supporting on-demand capture and discard operations by Site Reliability Engineers. The PacketFalcon Compact is tailored for data center and service provider networks, offering remote troubleshooting capabilities that reduce truck rolls and support SLA assurance.

Historic Packet Data for Forensic Investigation and Evidence

NEOX PacketFalcon continuously records and retains network packet data, like a DVR (digital video recorder), preserving a complete historical record of network activity down to the finest detail—until the data is overwritten or intentionally erased. Packets are captured in real time, including pre- and post-event data, providing comprehensive visibility before, during, and after a security incident or Indicator of Compromise (IOC). This persistent capture capability delivers critical forensic evidence for Security Analysts, SOC teams, and Law Enforcement under Lawful Intercept (LI), supporting deep investigations and legal proceedings. With high-capacity onboard storage, PacketFalcon allows you to look back into network history over extended periods as needed. Captured data in PCAP or PCAP-NG format can be quickly searched using NEOX's fast-query engine and easily downloaded. This empowers teams to identify network vulnerabilities, detect suspicious activity, uncover rogue devices, and expose shadow IT operations—enabling faster incident detection, containment, and response.

Audit Trail for Industry and Government Regulatory Compliance

NEOX PacketFalcon captures and records every network flow and transaction—at speeds up to 100 Gbps—with complete packet fidelity, including both headers and payloads, ensuring zero packet loss. This high-performance, lossless packet capture capability helps enterprises, service providers, and public sector organizations meet strict data retention and monitoring requirements across highly regulated industries. By providing full-fidelity network visibility, PacketFalcon enables organizations to strengthen their security posture, ensure audit readiness, and support forensic investigations. This includes Financial Services (FINRA, PCI DSS, SOX, MiFID II, SEC Rule 17a-4), Healthcare (HIPPA), GDPR, ISO/IEC 27001, Critical Infrastructure (NERC CIP, NIST 800-53, NIST CSF), Defense and Government (FISMA, CJIS). Most organizations are also required to maintain an audit trail of activities, which includes not only security incidents but also the actions taken in response to them. These audit trails are used to demonstrate compliance with industry and federal cybersecurity regulations The audit trail includes actions taken during a cyber incident (e.g., which users accessed which systems and when), decisions made during the incident response process, and whether security controls were followed as intended. This comprehensive record-keeping is essential for future auditing, ensuring organizations adhere to cybersecurity best practices, and enabling better decision-making in subsequent responses to incidents.

Deployment

NEOX PacketFalcon packet capture and analysis appliances offer exceptional performance and versatile deployment options across a wide range of environments. A common use case is in enterprise and service provider data centers or high-performance compute clusters (HPCCs), where PacketFalcon captures north-south traffic at 40/100Gbps and east-west traffic at 10/25Gbps with precision.
A scalable and effective data center visibility architecture typically begins with the deployment of network TAPs at key monitoring points to mirror live traffic (see NEOX Network Traffic Tapping solutions for available TAP options). While TAPs can feed traffic directly into PacketFalcon, a more optimized approach involves routing TAP output through a Network Packet Broker (NPB). NPBs can aggregate, filter, and distribute traffic to multiple monitoring tools—including PacketFalcon—for more efficient traffic management (see NEOX Network Traffic Brokering solutions for NPB options).
The PacketFalcon Compact, with its 1RU rackmount design, front-to-back airflow, and support for 10/25/40/100Gbps SR, LR, and ER connectivity, is ideally suited for high-density, high-performance deployments in modern data center environments.

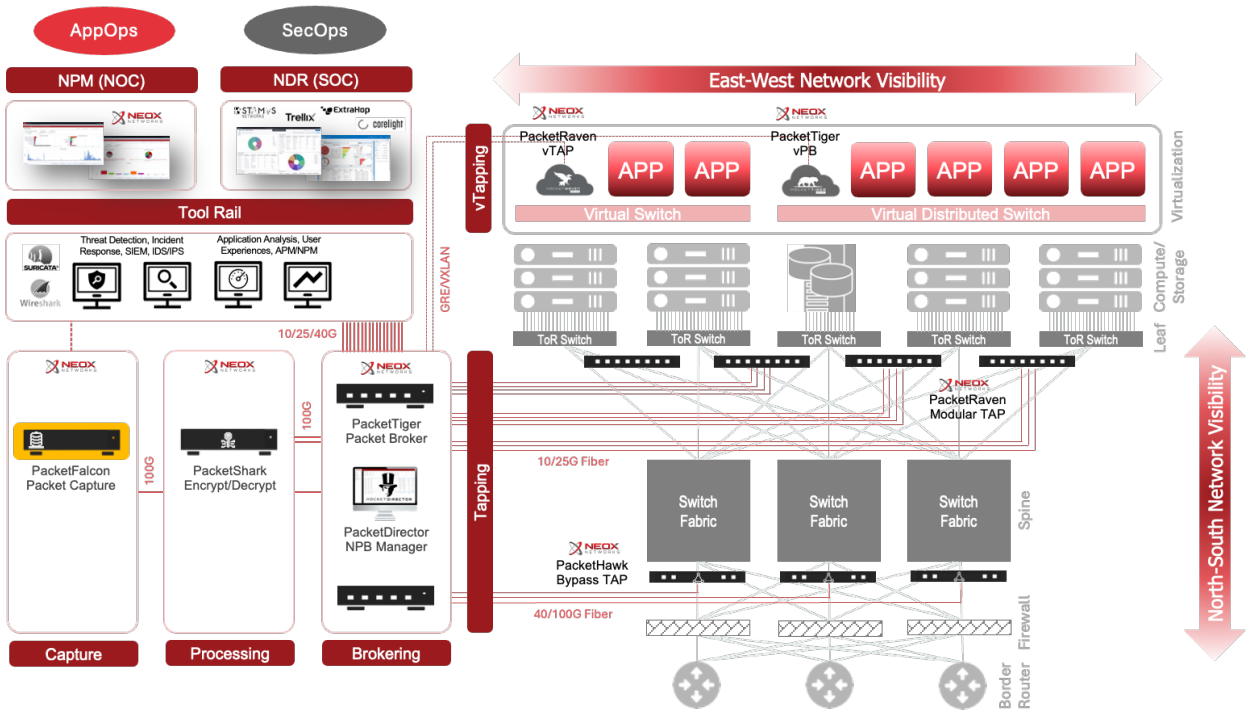

Diagram-4: NEOX PacketFalcon Compact Deployment in the Data Center

The PacketFalcon Portable, with its robust design, side-to-side airflow, and support for 10/25/40/100Gbps SR, LR, and ER connectivity, is ideally suited for mobile deployments such as remote cell-site operations for mobile service providers, remote industrial sites, defense filed operations, and even the data centers.

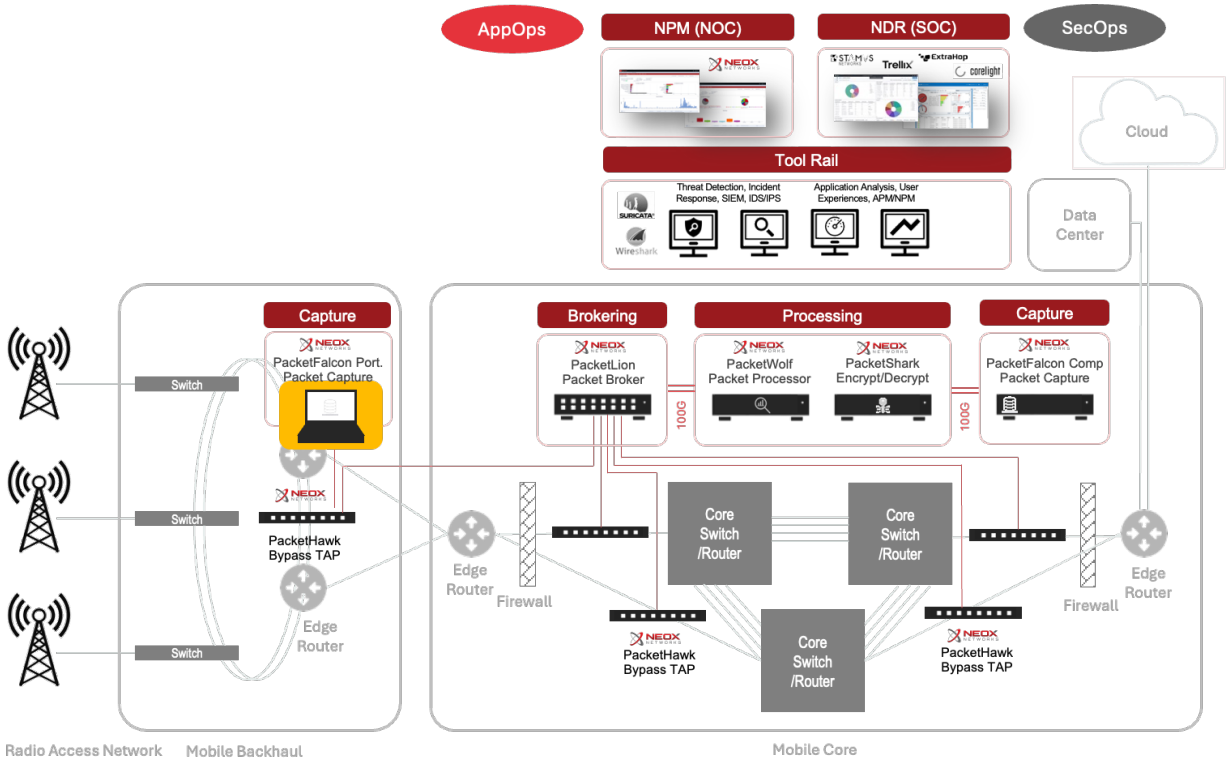

Diagram-5: NEOX PacketFalcon Portable Deployment in the Mobile Operator

NEOX PacketFalcon Mini and Mini X are compact, lightweight appliances designed for flexible, on-demand deployment virtually anywhere. They are especially well-suited for space-constrained environments or temporary setups, such as under-desk or desktop use, and are ideal for remote sites, branch offices, and field operations where top-tier capture performance isn't required and a cost-effective solution is preferred. With support for 10/25 Gbps capture speeds and compatibility with SR, LR, and ER optics, the Mini and Mini X deliver reliable performance for targeted troubleshooting, diagnostics, and network analysis in distributed environments.

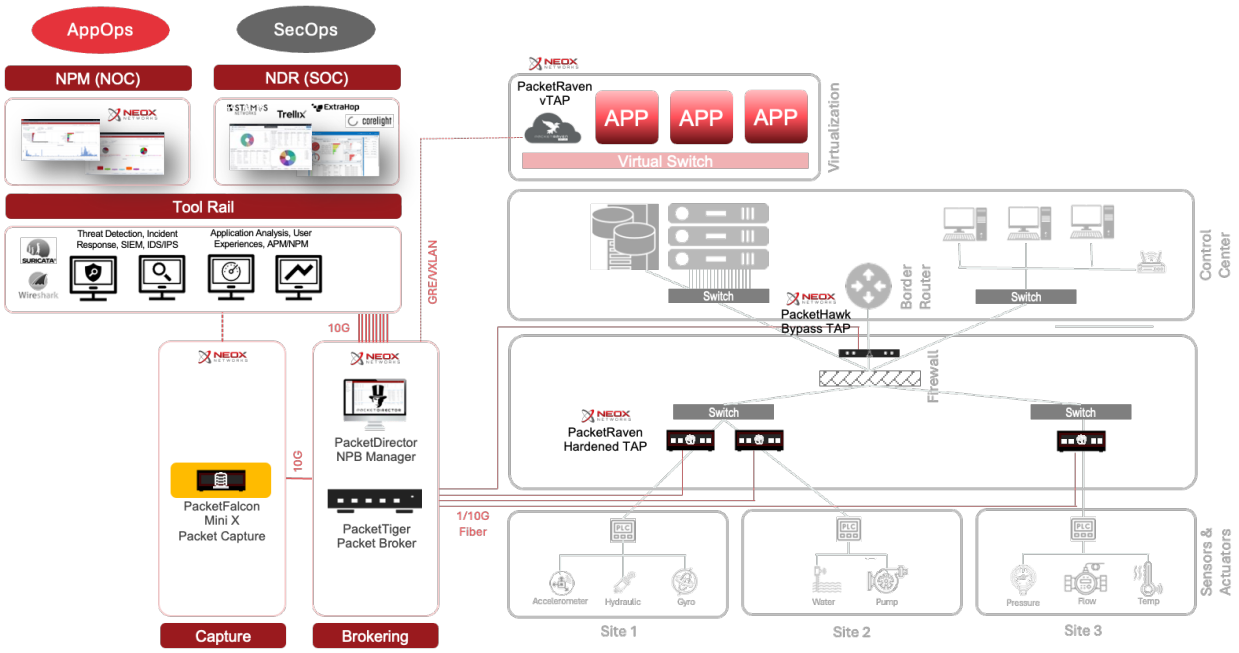

Diagram-6: NEOX PacketFalcon Mini/Mini X Deployment in the Remote Site

Technical Specifications

Key Features

Key Features	PacketFalcon Compact	PacketFalcon Portable	PacketFalcon Mini X	PacketFalcon Mini
Capture-to-Disk Rate (Max)	100Gbps	100Gbps	25Gbps	10Gbps
FPGA Capture Cards per Appliance	Up to 2 (1/10/25/40/100G)	Up to 3 (1/10/25/40/100G)	1 (1/10/25G)	1 (1/10G)
Storage Capacity (Max)	300TB	480TB	60TB	30TB
SSD/Disk Storage	30-300TB NVMe	30-480TB removable	7TB-60TB fixed	7TB-30TB fixed
Hardware RAID Options	Enterprise NVMe SSD RAID	0, 5, 6, 00, 50, 60	N/A	N/A
SED Storage (Option)	Yes	Yes	No	No
Hardware Encryption	Yes (FIPS 140-2)	Yes (FIPS 140-2)	No	No
OS Storage	RAID 1 NVMe SSD	Separate NVMe M.2 SSD	Internal SSD	Internal SSD
Hardware Buffer	8GB/12GB	8GB/12GB	4GB/8GB	4GB/8GB
NanoSec Timestamping	Yes (IEEE 1588v2)	Yes (IEEE 1588v2)	Yes (IEEE 1588v2)	Yes (IEEE 1588v2)
Intelligent Capture	Yes	Yes	Yes	Yes
Capture Compression	Yes	Yes	Yes	Yes
Capture Filters	Yes	Yes	No	No
Dynamic Packet Slicing	Yes	Yes	Yes	Yes
Deduplication	Yes	Yes	Yes	Yes

PCAP/PCAPNG Support	Yes	Yes	Yes	Yes
Expert Event Detection	Yes	Yes	Yes	Yes
VoIP/Video Analysis	Yes	Yes	Yes	Yes
Performance Tools	Yes	Yes	Yes	Yes
MTTR Acceleration	Yes	Yes	Yes	Yes
Out-of-Box Analysis SW	Yes	Yes	Yes	Yes
Wireshark Support	Yes	Yes	Yes	Yes

Connectivity

Network Options	PacketFalcon Compact	PacketFalcon Portable	PacketFalcon Mini X	PacketFalcon Mini
Wireless Adapter (WLAN)	N/A	N/A	Yes	Yes
1/10Gbps Ports	4 (SFP28) / 8 (QSFP+ Breakout)	4 (SFP28) / 8 (QSFP+ Breakout)	4 (SFP28)	4 (SFP28)
25Gbps Ports	4 (SFP28)	4 (SFP28)	4 (SFP28)	4 (SFP28)
40Gbps Ports	2 (QSFP+)	2 (QSFP+)	N/A	N/A
100Gbps Ports	2 (QSFP28)	2 (QSFP28)	N/A	N/A

Dimensions and Weight

Attributes	PacketFalcon Compact	PacketFalcon Portable	PacketFalcon Mini X	PacketFalcon Mini
Form Factor	Rackmount	Portable (trolley/case option)	Ultra-compact portable	Compact Portable
Rack Units	1U	N/A	N/A	N/A
Height	1.7" (4.3 cm)	14.7" (37.3 cm)	4.7" (12 cm)	11.8" (30 cm)
Width	19" (48.2 cm)	17.1" (43.5 cm)	7.5" (19 cm)	3.9" (10 cm)
Depth	32.4" (82.3 cm)	7.0" (17.8 cm)	7.5" (19 cm)	10.0" (25.5 cm)
Weight	39.6 lb (18 Kg)	33 lb (15 Kg)	7.2 lb (3.3 Kg)	13.4 lb (6.1 Kg)
Airflow	Front-to-Back	Side-to-Side	Passive Convection	Passive Convection
Power Redundancy	1+1 AC/DC	1+0 AC/DC	1+0 AC	1+0 AC
Power Supply	700W Titanium (100-240VAC or 240V HVDC)	1000W 80Plus Gold (100-240VAC)	150W External AC Adapter	330W External AC Adapter
Max. Power Consumption	950W	800W	120W	250W
Heat Dissipation	3241 BTU/Hr	2730 BTU/Hr	410 BTU/Hr	853 BTU/Hr
Cooling System	4 hot-swappable fans	Dual Fans	Fanless	Fanless

Operating Conditions

Attributes	PacketFalcon Compact	PacketFalcon Portable	PacketFalcon Mini X	PacketFalcon Mini
Operating Temperature	41°F-113°F (5°C-45°C)	32°F-104°F (0°C-40°C)	32°F-113°F (0°C-45°C)	32°F-113°F (0°C-45°C)
Storage Temperature	-40°F-149°F (-40°C-65°C)	-40°F-149°F (-40°C-65°C)	-40°F-149°F (-40°C-65°C)	-40°F-149°F (-40°C-65°C)
Operating Humidity	8%-90% Non-Condensing	20%-80% Non-Condensing	20%-80% 93% RH at 104°F (40°C) Non-Condensing	20%-80% Non-Condensing
Storage Humidity	5%-95% Non-Condensing	5%-95% Non-Condensing	5%-95% Non-Condensing	5%-95% Non-Condensing

Certifications

Certification Types	PacketFalcon Compact	PacketFalcon Portable	PacketFalcon Mini X	PacketFalcon Mini
Safety	EN 62368-1:2014 +A11:2017 EN IEC 62368-1:2020 +A11:2020	EN IEC 62368-1:2020 +A11:2020 EN 60335-1 EN 61010-1 EN 60204-1	IEC 62368-1:2014 EN 62368-1:2014 UL 62368-1 CAN/CSA-C22.2 No. 62368-1	EN 62368-1:2014 +A11:2017 IEC 62368-1:2014 (Ed.2)
EMC	EN 55032:2015 +A11:2020 EN 55035:2017 +A11:2020 EN 61000-3-2:2014 EN 61000-3-3:2013	EN 55032:2015 +A11:2020 Class B EN 55035:2017 +A11:2020 EN 61000-3-2:2014 Class D EN IEC 61000-3-2:2019 +A1:2021 EN 61000-3-3:2013	EN 55032:2012 Class B EN 61000-3-2:2014 EN 61000-3-3:2013 EN 55024:2010	FCC 47CFR part 15:2019 Class B EN 55032:2015 Class B EN 61000-3-2:2014 EN 61000-3-3:2013 EN 55035:2017
RoHS	EN IEC 63000:2018	EN IEC 63000:2018 2011/65/EU and (EU)2015/863	EN IEC 63000:2018	EN IEC 63000:2018
FIPS	FIPS 140-2	FIPS 140-2		
Other	FIPS 140-2 (encrypted storage models) ISO/IEC 27040 NIST 800-88	Reach Certificate 1907/2006/EU Low Voltage Directive 2014/35/EU EMC Directive 2014/30/EU	UL 62386 (TÜV)/CB/CE/FCC/UKCA IP40 (top)/IP30 (sides)	AS/NZS CISPR 32:2015 Class B ICCS-003:2017 Issue 6 Class B

Ordering Information

Ordering Guide

Pick one of the options in each category below to provide to NEOX to quote the right product SKU:
Example: PacketFalcon Mini X with 25G Capture + 15TB Packet Storage + 3 Year Software Subscription & Silver Support

Product Model (pick one)	**Capture Option** (pick one)				**Storage Option** (pick one)									**Subscription & Support Option** (pick one)		
	1/10G	**25G**	**40G**	**100G**	**7TB**	**15TB**	**30TB**	**60TB**	**120TB**	**150TB**	**240TB**	**300TB**	**480TB**	**1 Year**	**3 Year**	**5 Year**
PacketFalcon Mini	Yes				Yes	Yes	Yes							Yes	Yes	Yes
PacketFalcon Mini X	Yes	Yes			Yes	Yes	Yes	Yes						Yes	Yes	Yes
PacketFalcon Compact	Yes	Yes	Yes	Yes			Yes	Yes		Yes		Yes		Yes	Yes	Yes
PacketFalcon Portable	Yes	Yes	Yes	Yes			Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes

Note: 3 Year Software Subscription and Silver Support is default for all NEOX PacketFalcon products and can be changed as below:
1 Year @ 15% of the product cost 3 Year @ 30% of the product cost 5 Year @ 45% of the product cost

About NEOX Networks

NEOX Networks provides Next Generation Network Visibility for IT & OT Observability and Security. The result is strengthened cybersecurity, hybrid-cloud application observability, and business continuity, by integrating the network intelligence and real-time data-in-motion. Learn more at neoxnetworks.com