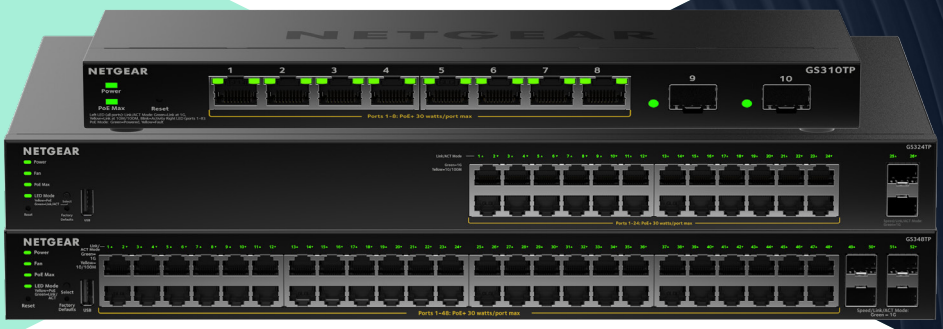
GS310TPv2, GS324TPv2, GS348TPv2 | Datasheet

S350v2 Smart Managed Essentials Series

NETGEAR ESSENTIALS



Flexible and cost-effective solution for SME data, voice and video converged network

- 8/24/48 Gigabit 10/100/1000BASE-T RJ-45 ports
- 55W (GS310TP), 190W (GS324TP), or 380W (GS348TP) PoE budget across 8, 24, or 48 Gigabit PoE+ ports (IEEE802.3at)
- Dedicated SFP fiber ports: 2 on GS310TP/GS324TP and 4 on GS348TP
- Non-blocking switching with 20Gbps to 104Gbps line rate fabric
- Fan-less design on GS310TP, GS324TP and GS348TP have max acoustic noise level at 26.1dB and 36.3dB respectively under 25°C (77°F) ambient

Powerful connectivity and security features

- Advanced VLAN support for better network segmentation
- L2/L3/L4 Access control lists (ACLs) for granular network access control including 802.1x port authentication
- QoS (Quality of Service) for traffic prioritization including port-based, 802.1p and L2/L3/L4 DSCP-based
- Auto “denial-of-service” (DoS) prevention
- IGMP Snooping and Querier for multicast optimization
- Rate limiting and priority queuing for better bandwidth allocation
- Port mirroring for network monitoring
- Energy Efficient Ethernet (IEEE 802.3az) for maximum power savings
- Easy-to-use Web browser-based management GUI available in English, German and Japanese
- SNMP v1, v2c, v3 and RMON remote monitoring

Smart IT, not Big IT

- Easy to manage via web-Based Management GUI or Smart Control Center (Windows PC required) for multi-switch deployment
- Smart Control Center, a powerful tool for multi-switch discovery, deployment, monitoring and firmware upgrade
- Dual firmware images, improving reliability and uptime to your network

NETGEAR quality and reliability

- Industry-leading 3-year Limited Hardware Warranty*
- Get 90-days Free Advanced Technical Support with device registration

DATASHEET

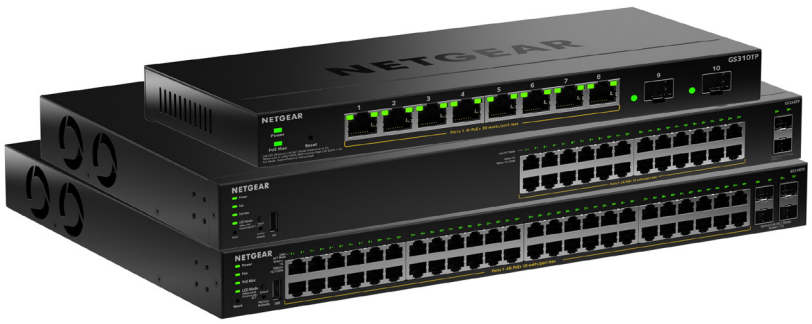
Why is the NETGEAR S350 Series Gigabit Ethernet Smart Switch the right choice for SME?

As a leading provider of network equipment for SME, NETGEAR® understands the importance of reliable and high performance networks that are SME budget aware. With the growth of virtualization, cloud-based services and applications like VoIP, video streaming and IP surveillance, SME networks need to extend beyond simple reliability to performance and security. The NETGEAR S350 Gigabit Smart Switch series is tailored to these essential network needs of your business; delivering unprecedented non-blocking Gigabit bandwidth and solid network security at an affordable cost. The NETGEAR Smart S350v2 series consists of three switch models, including 8-, 24- and 48-port Gigabit Ethernet PoE+ switches with 2 or 4 SFP ports for fiber uplinks, offering powerful Layer 2 features, enhanced performance and ease of use. They are purposely designed for converged networks where voice, video, data are all carried on a single network platform. Advanced features such as L2/L3/L4 Access Control Lists (ACLs), Quality of Service (QoS), Link Aggregation Control Protocol (LACP) and Spanning Tree Protocol (STP) will ensure a high-speed and highly secured network environment for your business.

The 8-port S350 series switch models are in small “desktop” form factors, which will not take much space to place. The 24- and 48-port models are also rack-mountable. All models include Kensington lock slot to physically secure your switch in open space. The fan-less 8-port model will operate silently, ideal for the noise-sensitive environment. The 24-port and 48-port models also work under 36.3 dBA acoustic level. All NETGEAR S350 Series switches support IEEE 802.3az Energy Efficient Ethernet mode, caring power saving for your business.

What you can expect from NETGEAR S350 Series Switches:

- One-wire installation with 8, 24, or 48 Gigabit ports with PoE+ options (55W, 190W or 380W PoE total budget), and 2 or 4 SFP ports options provide not only redundant uplinks, but also build dual redundancy by a trunked uplink with link aggregation and failover redundancy.
- Quiet and Cost-effective Smart L2/L2+ switches with essential business class network needs, ideal for voice, video and data convergence in office application
- Smart switch features include VLAN, ACL, QoS, IGMP Snooping, LACP Link aggregation, STP and SNMP for enhanced security and reliability
- Easy-to-use Web browser-based management GUI and full control through NETGEAR Smart Control Center, no need for an IT expert
- 3-year hardware warranty with 90-day free technical support



Hardware at a Glance

	FRONT				REAR	SIDE
Model Name	Form-Factor	10/100/1000 Base-T RJ45 Ports	1000BASE-X Fiber SFP Ports	PoE+ 802.3at Ports (Budget)	Power Supply	Fans
GS310TPv2	Desktop	8	2	8 PoE+ (55W)	1 external PSU, DC 54V 1.25A	Fan-less
GS324TPv2	Rackmount	24	2	24 PoE+ (190W)	1 internal PSU, fixed	2 internal fans, fixed
GS348TPv2	Rackmount	48	4	48 PoE+ (380W)	1 internal PSU, fixed	2 internal fans, fixed

Software at a Glance

LAYER 2+ / LAYER 3 Lite FEATURES							
Management	IPv4 ACL and QoS	PoE Control Features	IPv4/IPv6 Multicast Filtering	Auto-VOIP/ Auto Video	IEEE (802.3az) Energy Efficient Ethernet	MAC VLANs	Convergence Advanced Features
Web Browser-based GUI (HTTP/HTTPS), PC-Based Smart Control Center Utility (SCC) RMON, SNMP	L2, L3, L4, ingress	PoE on/off, Dynamic PoE budget allocation, PoE power priority setting, PoE Power Usage Metering, PoE scheduling	IGMP Snooping, Querier	Yes	Yes	8K or 16K Max MAC 64 or 256 VLANs Static, Dynamic, VoIP, Voice	LLDP-MED RADIUS 802.1X LACP, STP, SNMP

Performance at a Glance

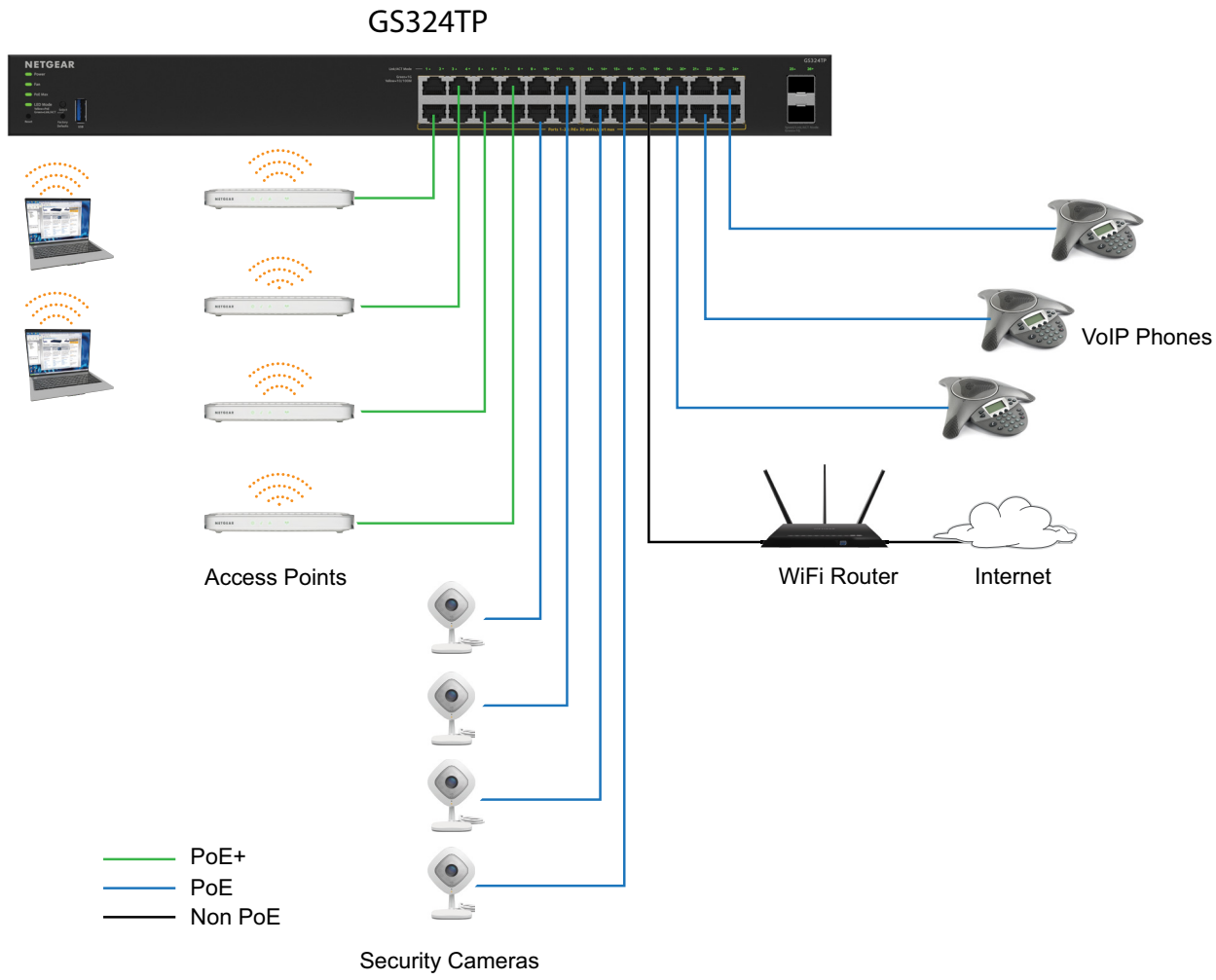
Model Name	Packet buffer	CPU	ACLs	MAC Address Table ARP Table VLANs	Fabric	Latency (64-byte packets)	Multicast IGMP Groups
GS310TPv2	512 KB	500MHz single core 128MB RAM 32MB FLASH	100 shared	8K MAC 64 VLANs	20Gbps line-rate	1G Copper: < 3.69 µs; 1G Fiber: < 3.02 µs	256
GS324TPv2	1.5MB	800MHz Single Core 512MB RAM 64MB FLASH		16K MAC 256 VLANs	52Gbps line-rate	1G Copper: < 3.75 µs; 1G Fiber: < 3.13 µs	512
GS348Tv2	1.5MB	800MHz Single Core 512MB RAM 64MB FLASH			104 Gbps line-rate	1G Copper: <3.35µs 1G Fiber: <2.5µs	

Features and Benefits

Hardware Features	
Dedicated SFP Fiber Uplinks	Dedicated SFP ports provides fiber uplinks without sacrificing any downlink Gigabit port. Up to 4 SFP ports provide not only redundant uplinks, but can also build dual redundancy by a trunked uplink with link aggregation and failover, the dual-redundancy, a powerful design for the network virtualization
PoE+ Support on all Ethernet ports	Flexible to plug-in or change into high-power PD devices on any port without worrying which one port to plug in and whether it will be running out of PoE+ ports.
Low Acoustics	Fan-less design on GS310TP, and maximum acoustic noise level at 26.1dB for GS324TP and 36.3dB GS348TP respectively under 25°C (77°F) ambient for quieter office environment
Energy Efficient Ethernet (IEEE 802.3az)	Maximum power reduction for ongoing operation cost savings.
Software Features	
Advanced per port PoE controls	Remote power management of PoE connected devices including operation scheduling (e.g. Wireless APs, IP security cameras, secure access door locks, IoT devices...)
ACL filtering to permit or deny traffic based on	Provide granular network access control including L2/L3/L4 access control lists (ACLs).
Robust security features: • 802.1x authentication (EAP) • Port-based security by locked MAC • DHCP Snooping	Build a secured, converged network with all types of traffic by preventing external attacks and blocking malware, while allowing secure access for authorized users with RADIUS 802.1x port authentication.
Comprehensive QoS features: • Port-based or 802.1p-based prioritization • Layer 3-based (DSCP) prioritization • Port-based ingress and egress rate limiting	Advanced controls for optimized network performance and better delivery of mission-critical traffic such as voice and video.
Auto-VoIP, Auto-Voice VLAN, and Auto-Video VLAN	Automatic Voice over IP prioritization (Auto-VoIP) simplifies most complex multi-vendor IP telephone deployments either based on protocols (SIP) or on OUI bytes (default database and user-based OUIs) in the phone source MAC address, providing the best class of service to VoIP streams (both data and signaling) over other ordinary traffic by classifying traffic, and enabling correct egress queue configuration. Similarly, Auto-Video VLAN enables IGMP snooping to minimize broadcast streams.
IGMP Snooping	Facilitate fast receiver joins and leaves for multicast streams. Save cost and improve network efficiency by ensuring multicast traffic only reaches designated receivers without the need of an extra multicast router
Protected Ports	Ensure no exchange of unicast, broadcast, or multicast traffic between the protected ports on the switch, thereby improving the security of your converged network. This allows your sensitive phone conversations to stay private and your surveillance video clips can be forwarded to their designated storage device without leakage or alteration.
DHCP Snooping	Ensure IP address allocation integrity by only allowing DHCP messages from trusted DHCP servers and dropping malformed DHCP messages with a port or MAC address mismatch.
Dynamic VLAN Assignment (RADIUS)	IP phones and PCs can authenticate on the same port but under different VLAN assignment policies. Users are free to move around and enjoy the same level of network access regardless of their physical location on the network.
Dual Firmware Images	Dual firmware images for transparent firmware updates with minimum service interruption.

Example Application

Network Convergence



Technical Specifications

Technical Specifications	GS310TPv2	GS324TPv2	GS348TPv2
10M/100M/1G RJ-45 copper ports	8	24	48
PoE / PoE+ ports	8 PoE+ (55W PoE budget)	24 PoE+ (190W PoE budget)	48 PoE+ (380W PoE budget)
1G SFP (fiber) ports	2 (dedicated)	2 (dedicated)	4 (dedicated)
Performance Specification			
CPU	500MHz 128MB RAM 32MB FLASH	800MHz 512MB RAM 64MB FLASH	800MHz 512MB RAM 64MB FLASH
Packet buffer memory (Dynamically shared across only used ports)	512KB	1.5MB	1.5MB
Forwarding modes	Store-and-forward	Store-and-forward	Store-and-forward
Bandwidth	20 Gbps	52 Gbps	104 Gpbs
Priority queues	8	8	8
Priority queuing	Weighted Round Robin (WRR) or Strict Priority	Weighted Round Robin (WRR) or Strict Priority	Weighted Round Robin (WRR) or Strict Priority
MAC address database size (48-bit MAC addresses)	8K	16K	16K
Multicast groups	256	512	512
Number of VLANs	64	256	256
Number of DHCP snooping bindings	256	256	256
Access Control Lists (ACLs)		100 shared for MAC (ingress)	
Packet forwarding rate (64 byte packet size) (Mpps)	14.8	38.6	77.38
Jumbo frame support (bytes)	10K	10k	10k
Acoustic noise level @ 25°C (dBA) (ANSI-S10.12)	Fan-less	26.1dBA	36.3dBA
Mean Time Between Failures (MTBF) @ 25°C	1,200,041 hrs (137 yrs)	1,784,610 hrs (203.7 yrs)	1,410,340 hrs (160.9 yrs)
1G Copper Latency (64-byte; 1518-byte; 9216-byte frames)	3.693µs; 3.897µs; 3.616µs	3.956µs; 4.394µs; 4.691µs	3.861µs; 4.266µs; 4.417µs
1G Fiber Latency (64-byte; 1518-byte; 9216-byte frames)	3.023µs; 3.237µs; 2.959µs	1.842µs; 1.878 µs; 1.891 µs	3.786µs; 4.198µs; 4.214µs
L2 Services - VLANs			
IEEE 802.1Q VLAN tagging		Yes	
IP-based VLANs		Yes	
MAC-based VLANs		Yes	
Auto-Voice VLAN	Yes, based on OUI bytes (default database and user-based OUIs) in the phone source MAC address		
Auto-VoIP	Yes, based on protocols (SIP). Prioritzes traffic to a higher queue		
Voice VLAN	Yes, based on either VLAN ID or 802.1p priority, packets are passed onto the connecting VoIP phone using LLDP-MED.		
Auto-Video VLAN	Yes		

Technical Specifications

L2 Services - Availability	GS310TPv2	GS324TPv2	GS348TPv2
Broadcast, multicast, unknown unicast storm control		Yes	
IEEE 802.3ad - LAGs (LACP)		Yes	
IEEE 802.3x (full duplex and flow control)		Yes	
IEEE 802.1D Spanning Tree Protocol		Yes	
IEEE 802.1w Rapid Spanning Tree Protocol		Yes	
IEEE 802.1s Multiple Spanning Tree Protocol		Yes	
L2 Services - Multicast Filtering			
IGMP snooping (v1, v2, and v3)		Yes	
IGMP snooping querier		Yes	
DHCP Services			
DHCP client		Yes	
DHCP snooping		Yes	
Number of DHCP snooping bindings		256	
Link Aggregation			
IEEE 802.3ad - LAGs (LACP)		Yes	
Manual Static LAG		Yes	
# of Static or LACP LAGs/# of Members in each LAG		8 LAGs with max 8 members in each LAG	
L3 Services - Routing			
IPv4 static routing	32	NA	32
IPv6 static routing	NA	NA	32
VLAN routing	Yes	NA	Yes
Host ARP table (number of entries)	512	NA	512
ICMP Router Discovery Protocol (IRDP)	Yes	NA	Yes
Network Monitoring and Discovery Services			
802.1ab LLDP		Yes	
SNMP		v1, v2c, v3	
RMON group 1,2,3,9		Yes	
Network Security			
IEEE 802.1x		Yes	
Guest VLAN		Yes	
RADIUS-based VLAN assignment via .1x		Yes	
MAC-based .1x		Yes	
RADIUS accounting		Yes	
Access Control Lists (ACLs)		L2 / L3 / L4 ingress	
IP-based ACLs (IPv4 and IPv6)		IPv4	

Technical Specifications

Network Security	GS310TPv2	GS324TPv2	GS348TPv2
MAC-based ACLs		Yes	
TCP/UDP-based ACLs		Yes	
MAC lockdown		Yes	
MAC lockdown by the number of MACs		Yes	
Control MAC # Dynamic learned entries		4096	
Control MAC # Static entries		48	
IEEE 802.1x RADIUS port access authentication		Yes	
Port-based security by locked MAC addresses		Yes	
Broadcast, multicast, unknown unicast storm control		Yes	
DoS attacks prevention		Yes	
Quality of Service (QoS)			
Port-based rate limiting	Ingress and egress	Egress	Egress
Port-based QoS		Yes	
DiffServ QoS		Yes	
IEEE 802.1p COS		Yes	
Destination MAC and IP		Yes	
IPv4 and v6 DSCP		Yes	
IPv4 and IPv6 ToS		Yes	
Weighted Round Robin (WRR)		Yes	
Strict priority queue technology		Yes	
Auto-VoIP VLAN / Auto-Voice VLAN	Yes, based on OUI bytes (default database and user-based OUIs) in the phone source MAC address		
Auto-VoIP	Yes, based on protocols SIP, H323 and SCCP. Prioritzes traffic to a higher queue		
Voice VLAN	Yes, based on either VLAN ID or 802.1p priority, packets are passed onto the connecting VoIP phone using LLDP-MED		
Auto-Video VLAN	Yes		

IEEE Network Protocols

- IEEE 802.3 Ethernet
- IEEE 802.3u 100BASE-T
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3af PoE
- IEEE 802.3at PoE+
- IEEE 802.3az Energy Efficient Ethernet (EEE)
- IEEE 802.3ad Dynamic Link Aggregation (LACP)
- IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX
- IEEE 802.3x Full-Duplex Flow Control
- IEEE 802.1Q VLAN Tagging
- IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED)
- IEEE 802.1p Class of Service (CoS)
- IEEE 802.1D Spanning Tree Protocol (STP)
- IEEE 802.1s Multiple Spanning Tree (MSTP)
- IEEE 802.1w Rapid Spanning Tree (RSTP)
- IEEE 802.1x RADIUS Network Access Control

Technical Specifications

Management	GS310TPv2	GS324TPv2	GS348TPv2
Password management		Yes	
Configurable management VLAN		Yes	
Admin access control via RADIUS and TACACS+		Yes	
SNTP client over UDP port 123		Yes	
SNMP v1/v2c		Yes	
SNMP v3 with multiple IP addresses		Yes	
RMON group 1,2,3,9		Yes	
Port mirroring		Yes ingress and egress	
Many-to-one port mirroring	10	26	52
Web browser-based graphical user interface (GUI)		Yes	
Smart Control Center (SCC) for multi-switch management		Yes	
Dual software (firmware) image		Yes	
Cable test utility	Yes	No	Yes
TLS/HTTPS Web-based access (version)		Yes (v1.2)	
File transfers (uploads, downloads)		TFTP / HTTP	
HTTP upload/download (firmware)		Yes	
Syslog (RFC 3164)		Yes	
LEDs			
Per port	Speed, Link/ Activity, or PoE in different mode	Speed, Link/ Activity, or PoE in different mode	Speed, Link/ Activity, or PoE in different mode
Per device	Power, PoE Max	Power, Fan, PoE Max	Power, Fan, PoE Max
Physical Specifications			
Dimensions (W x D x H)	236 x 101 x 30 mm (9.3 x 4.0 x 1.2 in)	440x257x43mm (17.3x10.2x1.7in)	440x316x43mm 17.3x12.4x1.7in)
Weight	0.61kg (1.34 lb)	3.53kg (7.78lb)	4.05kg (9.92lb)
Power Consumption			
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	69.5W	208.7W	431.0W
Max power without PoE (worst case, all ports used, line-rate traffic) (Watts)	12.5W	19.4W	45.0W
Iddle power consumption (all ports link-down standby) (Watts)	4.3W	11.1W	23.0W
Heat Dissipation (worst case, all ports used, full PoE, line-rate traffic) (BTU/hr)	Max: 237.38 BTU/hr; Min: 14.53 BTU/hr	Max: 713.75 BTU/hr; Min: 38.13 BTU/hr	Max: 1474.02 BTU/hr; Min: 78.66 BTU/hr
Energy Efficient Ethernet (EEE) IEEE 802.3az		Yes (deactivated by default)	
Fan	Fan-less	2	2

Technical Specifications

Environmental Specifications	GS310TPv2	GS324TPv2	GS348TPv2
Operating			
Operating temperature	0° to 40° C (32° to 104° F)	0° to 50° C (32° to 113° F)	
Humidity (relative)	95% maximum relative humidity (RH), non-condensing		
Altitude	10,000 ft (3,000 m) maximum		
Storage			
Storage temperature	-20° to 70°C (– 4° to 158°F)		
Humidity (relative)	95% maximum relative humidity (RH), non-condensing		
Altitude	10,000 ft (3,000 m) maximum		
Electromagnetic Emissions and Immunity			
Certifications	CE: EN 55032:2012+AC:2013/CISPR 32:2012, EN 610003-2:2014, Class B, EN 61000-3-3:2013, EN 55024:2010 VCCI: VCCI-CISPR 32:2016, Class A RCM: AS/NZS CISPR 32:2013 Class A CCC: GB4943.1-2011; YD/T993-1998; GB/T9254-2008 (Class A) FCC: 47 CFR FCC Part 15, Class A, ANSI C63.4:2014 ISED: ICES-003:2016 Issue 6, Class A, ANSI C63.4:2014 BSMI: CNS 13438 Class A		
Safety			
Certifications	CB report / certificate IEC 60950-1:2005 (ed.2) + A1:2009 + A2:2013 UL listed (UL 1950)/cUL IEC 950/EN 60950 CE LVD: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 RCM (AS/NZS) 60950.1:2015 CCC (China Compulsory Certificate): GB4943.1-2011; YD/T993-1998; GB/T9254-2008 (Class A) BSMI: CNS 14336-1		
Warranty and Support			
Hardware Limited Warranty	3 years (switch) 2 years (power adapter)	3 years	3 years
Technical support via phone	90 days free from date of purchase*		
Package Contents			
Smart Switch	✓	✓	✓
Power Adapter	✓		
Power Cord (localized to region of sale)	✓	✓	✓
Rackmount Kit		✓	✓
Rubber footpads for tabletop installation	✓	✓	✓
Download Center Sheet (QR code)	✓	✓	✓

Ordering Information

Ordering Information
GS310TP-200NAS North America
GS310TP-200EUS Europe
GS324TP-200NAS North America
GS324TP-200EUS Europe
GS348TP-200NAS North America
GS348TP-200EUS Europe
Optional Modules and Accessories
AGM731F
AGM732F
AGM734-10000S

*This product comes with a limited warranty that is valid only if purchased from a NETGEAR authorized reseller, and covers unmodified hardware, fans and internal power supplies – not software or external power supplies, and requires product registration within 90 days of purchase; see https://www.netgear.com/about/warranty for details. Intended for indoor use only.

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