The Neutron Series
Distributed Network Management Solution

Flexible, Scalable, Enterprise-Class Management for Networks Both Large and Small

Today’s networks must be flexible, robust and as effective as the organizations they serve. Often comprised of different sizes, infrastructures and locations, these distributed networks can place an enormous burden on in-house IT personnel or managed service providers looking to manage, monitor and upgrade a potentially vast number of Access Points and Switches.

Fortunately, EnGenius has the answer: the Neutron Series Distributed Network Management Solution.

This highly flexible, scalable, fully integrated solution offers simplified configuration and management with enterprise-class performance, feature-rich Managed Access Points, WLAN Controller Switches and ezMaster™ Centralized Network Management, at an incredible price point – with NO AP licensing, subscription or tech support fees.

The Neutron Series is ideal for deploying into:

- Managed Service Providers (MSPs)
- The Public Sector
- School Districts
- Large, Geographically Diverse Organizations
- Healthcare Facilities
- Hotels & Resorts

Features and Benefits

- Complete Scalability
  - Manage 1 – 1,000+ APs & Switches
  - 10,000+ Concurrent Users
  - Unlimited Number of Distributed Networks
- Unlimited Flexibility
  - Operate Neutron APs Standalone or Managed
  - Locally Manage up to 50 APs per Switch
  - Manage Unlimited APs & Switches with ezMaster™
  - Deploy ezMaster via Cloud-Based* Service, on a Remote or Local Server
- Greater Affordability
  - NO AP Licensing, NO Annual Subscriptions, NO Technical Support Fees
  - Affordable Hardware
  - Save Time & Resources
  - Lower TCO per Deployment
- Neutron Series Distributed Network Management
  - Centralized Management with ezMaster
  - Full Featured WLAN Controller Switches
  - Versatile Access Point Portfolio
- Optimize Wireless Performance
- Create Secure, Branded Captive Portals
- Simplified Deployment & Provisioning
- Comprehensive Network Protection
- Rich Reporting & Analytics
- Enterprise-Class Performance
- Comprehensive Pre/Post Sales & Customer Support

The EnGenius® Neutron™ Series Distributed Network Management Solution includes:

- Neutron Managed Access Points
- Neutron WLAN Controller Switches
- ezMaster™ Network Management Software

*Feature available 2016
Complete Scalability Regardless of Size
Want to start small or go big? You can do both with the Neutron Series. The Solution makes it easy to deploy and manage a few or 1,000+ APs, and

Unlimited Flexibility
No matter what your business size, the Neutron Series is flexible enough to meet the needs of your network. Operate Neutron APs alone or manage up to 50 per Neutron Controller Switch; and centrally manage an unlimited number of APs and Switches via ezMaster locally, remotely or via the Cloud.
**Enjoy Lower Capital & Operating Expenses**

Many competing solutions require costly hardware, per AP licensing, and annual subscription and tech support fees. Not with the Neutron Series.

Since it's also easy to deploy, manage and operate, you'll save valuable time and resources, all translating to affordable, predictable costs — and a lower TCO per deployment.

**The Price Paid Over One Year for 25 APs**

<table>
<thead>
<tr>
<th></th>
<th>EnGenius Hybrid Solution</th>
<th>Controller-based Vendor</th>
<th>Cloud-based Vendor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Points</td>
<td>11ac 3x3 : 3 Streams</td>
<td>11ac 3x3 : 3 Streams</td>
<td>11ac 3x3 : 3 Streams</td>
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<tr>
<td>EWS360AP</td>
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<td>0</td>
<td>$3,750 per year</td>
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<tr>
<td>License</td>
<td>0</td>
<td>$4,000</td>
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<tr>
<td>Firmware Upgrade</td>
<td>0</td>
<td>$3,600</td>
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<tr>
<td><strong>Total Cost (USD)</strong></td>
<td><strong>$14,975</strong></td>
<td><strong>$27,475</strong></td>
<td><strong>$38,725</strong></td>
</tr>
</tbody>
</table>

**Features & Benefits**

The Neutron Series delivers enterprise-class features that simplify deployment and management, maximizing wireless performance for any size network, no matter where it's located.

**Optimized Wireless Performance**

Continuously monitor the RF environment, including neighboring APs, with Background Scanning, and enable automatic control of AP transmission power and channel allocation ensuring optimized RF coverage and wireless performance. Configure multiple APs for Fast Roaming, securing seamless connectivity as mobile users move between Access Points.

Provide for maximum client performance as Band Steering automatically directs clients to the appropriate RF channel, while Band Balancing intelligently works to maintain a balanced number of clients per AP.

**Distributed Control, Centralized Management with ezMaster™**

Centrally manage an unlimited number of independent distributed networks from a single, at-a-glance dashboard, no matter where they're located. Manage 1,000 Neutron APs and Controller Switches and 10,000+ concurrent users.

EzMaster makes centralized network management easy through bulk configuration, provisioning and monitoring; rich analytics, reporting, and much more. Monitor APs with or without an onsite Controller Switch, and have the flexibility to deploy ezMaster on a local or remote server or via a Cloud-based service.

**Simplified Deployment & Provisioning**

Save time and resources with Neutron Series' easy-to-use web interface, simplified management and one-click updates. Automated AP provisioning and intuitive configuration tools help streamline mass AP deployments. And since the Neutron Series is easy to deploy, manage and operate, with no extensive learning curve, you’ll spend less on administrative overhead, travel costs and training.
Neutron Controller Switches, A Full-Featured WLAN Platform

A powerful, full-featured platform capable of managing up to 50 Neutron APs each, Neutron Controller Switches offer redundant management between APs and ezMaster with SmartSync Redundancy*; and future expandability for broader device connectivity and management. Neutron Switches also act as a wireless controller, giving IT administrators visibility into all connected Neutron devices and a full array of Layer 2 management tools.

Versatile AP Portfolio Features High-Capacity 11ac

Neutron's versatile line of high-performance, managed, indoor ceiling-mount and outdoor ruggedized APs range from Single-Band 11n models to high-capacity 3x3 Dual-Band 11ac versions, all featuring Power-over-Ethernet (PoE) convenience. For added versatility, Neutron APs can operate as a standalone device, be managed through a Neutron Controller Switch or centrally managed via ezMaster software.

Create Secure, Branded Captive Portals

Organizations that offer Internet access to patrons or visitors – notably hotels, retail shops and restaurants – will appreciate Neutron’s Captive Portal and Guest Network capabilities.

Establish a secure Guest Network that blocks access to main corporate computers and create separate Virtual LANs for increased security, network reliability and bandwidth conservation.

Comprehensive Network Protection

With the Neutron Series, your network is protected from attacks at multiple levels through advanced wireless encryption standards such as Wi-Fi Protected Access Encryption and authentication database, 802.1X with RADIUS server. Network threats are quickly detected and avoided through rogue AP detection, email alerts and real-time wireless invasion monitoring, allowing for immediate action to divert network hacks and other security threats.

Rich Reporting & Analytics

A wealth of invaluable reporting, analytics and real-time monitoring tools, with email alerts, give IT management instant insight into system efficiencies and issues. With tools like wireless client monitoring, and traffic and usage statistics, potential problems can be pinpointed and addressed before they effect users. Neuron provides centralized network visibility in areas such as traffic flow, demand, network topology and more.

Perfect Flexibility for Managed Service Providers

If you’re a managed service provider (MSP) the EnGenius Neutron Series is ideal for you. Easily provision, configure, manage and update network devices for all of your customers – from a single console and login, regardless of network size, location, infrastructure or ISP. Saving you a tremendous amount of time, travel and cost.

*Feature available Q1 2016
Flexible Distributed Network Management

EzMaster Network Management Software expands the flexibility and scalability of Neutron Series Managed Access Points and WLAN Controller Switches.

EzMaster allows organizations, such as branch offices and managed service providers, to easily and affordably deploy, monitor and manage a large number of Neutron APs and Controller Switches across geographically diverse properties. Centrally manage an unlimited number of independent distributed networks in the same subnet or cross-subnet from a single, at-a-glance network dashboard, no matter where they’re located.

Deploy ezMaster locally, remotely or via a Cloud-based service with or without an onsite WLAN Controller Switch.

Powerful, Scalable Options

EzMaster scales with your growing business needs. Manage 1,000+ Neutron Access Points and Controller Switches and 10,000+ concurrent users. Together, Neutron APs, Switches and ezMaster provide a flexible, fully integrated solution with redundancy support and future expandability for broader device connectivity.

Simplified Device Management

EzMaster Network Management Software makes centralized device management easy. How? Through centralized bulk configuration, provisioning and monitoring, a comprehensive at-a-glance network dashboard, rich analytics and reporting, and much more.

ezMaster™ Software Features

> Centralized Management
  - Configure, Managed & Monitor 1,000+ Neutron Devices
  - Cross-Network AP Management
  - AP Group Configuration

> Access Point Configuration & Management
  - Auto Channel Selection
  - Auto Tx Power
  - Background Scanning
  - Band Steering (Auto Band Steering & Band Balancing)
  - Client Isolation
  - Client Limiting
  - Fast Roaming
  - L2 Isolation
  - LED On/Off Control
  - Multiple SSID
  - RSSI Threshold
  - Secure Guest Network
  - Traffic Shaping
  - VLAN Isolation
  - VLAN Tag

> Comprehensive Monitoring
  - Device Status Monitoring
  - Floor Plan View
  - Map View
  - Rogue AP Detection
  - System Status Monitoring
  - Visual Topology View
  - Wireless Client Monitoring
  - Wireless Coverage View
  - Wireless Traffic & Usage Statistics

> Management & Maintenance
  - Bulk Firmware Upgrade
  - Captive Portal
  - Email Alert
  - ezRedundancy (coming 2016)
  - Kick/Ban Clients
  - One-Click Update
  - Remote Logging
  - Seamless Migration
  - SmartSync Redundancy (coming 2016)
  - Syslog

System Requirements

Recommended environment for managing up to 500 APs
- **CPU:** Intel® Core™ i3 3.6 GHz dual-core or above
- **RAM:** 4 GB minimum
- **HDD:** 500 GB (actual requirement dependent on log size)
- **OS:** Microsoft® Windows® 7 or later + VMware® Player 7.0 or compatible virtualization software

Recommended environment for managing up to 1,000+ APs
- **CPU:** Intel® Core™ i5 3.2 GHz quad-core or above
- **RAM:** 4 GB minimum
- **HDD:** 500 GB (actual requirement dependent on log size)
- **OS:** Microsoft® Windows® 7 or later + VMware® Player 7.0 or compatible virtualization software

Browser Requirements
- Internet Explorer 10 or better
- Firefox 34.0 or better
- Chrome 31.0 or better
- Safari 8.0 or better

Network Topology Requirements
- At sites where APs are deployed: A DHCP-enabled network for APs to obtain an IP address
### Managed Access Points

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EWS300AP</td>
<td>Single-Band 11n 2x2:2 2.4 GHz Ceiling-Mount Wireless Managed Indoor Access Point</td>
</tr>
<tr>
<td>EWS310AP</td>
<td>Dual-Band 11n 2x2:2 Ceiling-Mount Wireless Managed Indoor Access Point</td>
</tr>
<tr>
<td>EWS320AP</td>
<td>Dual-Band 11n 3x3:3 Ceiling-Mount Wireless Managed Indoor Access Point</td>
</tr>
<tr>
<td>EWS350AP</td>
<td>Dual-Band 11ac 2x2:2 Ceiling-Mount Wireless Managed Indoor Access Point</td>
</tr>
<tr>
<td>EWS360AP</td>
<td>Dual-Band 11ac 3x3:3 Ceiling-Mount Wireless Managed Indoor Access Point</td>
</tr>
<tr>
<td>EWS500AP</td>
<td>Single-Band 11n 2x2:2 Wall Plate Wireless Managed Indoor Access Point / Switch</td>
</tr>
<tr>
<td>EWS510AP</td>
<td>Dual-Band 11n 2x2:2 Wall Plate Wireless Managed Indoor Access Point / Switch</td>
</tr>
<tr>
<td>EWS650AP</td>
<td>Dual-Band 11ac 2x2:2 Wireless Managed Outdoor Access Point</td>
</tr>
<tr>
<td>EWS660AP</td>
<td>Dual-Band 11ac 3x3:3 Wireless Managed Outdoor Access Point</td>
</tr>
<tr>
<td>EWS860AP</td>
<td>Dual-Band 11ac 3x3:3 Wireless Ruggedized Managed Outdoor Access Point</td>
</tr>
</tbody>
</table>

### WLAN Controller Switches

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EWS2910P</td>
<td>8-Port GigE 61W PoE WLAN Controller/Switch – Manage up to 20 Access Points</td>
</tr>
<tr>
<td>EWS2910P-KIT-300</td>
<td>WLAN Starter Kit (1) 8-Port GigE 61W PoE WLAN Controller/Switch – Manage up to 20 APs; (2) EWS300AP Single-Band 11n 2x2:2, 2.4 GHz Ceiling-Mount Wireless Access Points</td>
</tr>
<tr>
<td>EWS5912FP</td>
<td>8-Port GigE 130W PoE+ WLAN Management Controller / Switch - Manage up to 50 Access Points</td>
</tr>
<tr>
<td>EWS7928P</td>
<td>24-Port GigE 185W PoE+ WLAN Management Controller / Switch - Manage up to 50 Access Points</td>
</tr>
<tr>
<td>EWS7928FP</td>
<td>24-Port GigE 370W PoE+ WLAN Management Controller / Switch - Manage up to 50 Access Points</td>
</tr>
<tr>
<td>EWS7952FP</td>
<td>48-Port GigE 740W PoE+ WLAN Management Controller / Switch - Manage up to 50 Access Points</td>
</tr>
</tbody>
</table>
## Key Features

- Access Point Auto Discovery & Provisioning
- Access Point Auto IP-Assignment
- Access Point Cluster Management
- Visual Topology View
- Floor Plan & Map View
- Wireless Coverage Display
- Access Point Status Monitoring
- Wireless Client Monitoring
- Wireless Traffic & Usage Statistics
- Real-time Throughput Monitoring
- Bulk Firmware Upgrade Capability
- Remote Access Point Rebooting
- Fast Roaming
- Fast Handover
- Band Steering
- Traffic Shaping
- Intelligent Diagnostics
- Access Point Device Name Editing
- Access Point Radio Settings
- Access Point Client Limiting
- Wireless Security (WEP, WPA/WPA2 Enterprise, WPA/WPA2 PSK)

## Neutron Series WLAN Controller Switches

### A Full-Featured Platform

EnGenius Neutron Series Controller Switches are a powerful, full-feature platform capable of managing up to 50 Neutron Managed Access Points per Switch, while providing future expandability for broader device connectivity and redundant management between Neutron APs and ezMaster with SmartSync Redundancy.

Acting as a wireless network controller, Neutron Controller Switches give IT administrators visibility into all Neutron Series connected devices. This allows them to be grouped into clusters with the same settings and policies applied automatically.

Available in 8-, 24- and 48-port models, each Neutron Series Controller Switch supports Power-over-Ethernet (PoE), delivering up to 30 watts per port for powering devices like APs, IP Cameras, and VoIP (Voice-over-IP) phone systems. Neutron Controller Switches also provide improved network efficiency, security, and AP management through full Layer 2 management tools.

When combined with ezMaster, Neutron Controller Switches support SmartSync Redundancy, which stores network analytic data even when Internet connectivity is not available. Once connectivity is restored, the Controller Switch will automatically re-sync and send analytics to ezMaster, meanwhile, the network itself would remain running the entire time.

### Models

<table>
<thead>
<tr>
<th>Models</th>
<th>EWS7952FP</th>
<th>EWS7928FP</th>
<th>EWS7928P</th>
<th>EWS5912FP</th>
<th>EWS2910P</th>
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<tbody>
<tr>
<td>Supported EWS AP</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>10/100/1000 Base-T, PoE+</td>
<td>48</td>
<td>24</td>
<td>24</td>
<td>8</td>
<td>8</td>
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<tr>
<td>Total PoE Budget</td>
<td>740W</td>
<td>370W</td>
<td>185W</td>
<td>130W</td>
<td>61.6W</td>
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<tr>
<td>PoE+ Capable Port</td>
<td>1-48</td>
<td>1-24</td>
<td>1-24</td>
<td>1-8</td>
<td>1-8 (802.3af only)</td>
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<tr>
<td>Rackmount</td>
<td>19”1U</td>
<td>19”1U</td>
<td>19”1U</td>
<td>13”1U</td>
<td>9.45” (desktop)</td>
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<tr>
<td>SFP Ports</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Auto Uplink Gigabit Ports</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>●</td>
<td>-</td>
</tr>
<tr>
<td>RJ45 Console Port</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Annual License Fee Per AP</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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</tbody>
</table>
Technical Specifications

Switching Capacity
EWS2910P: 20 Gbps
EWS5912FP: 24 Gbps
EWS7928P: 56 Gbps
EWS7928FP: 56 Gbps
EWS7952FP: 104 Gbps

Forwarding Mode
Store and Forward

SDRAM
256MB

Flash Memory
32MB

Port Functions
EWS2910P
8 x 10/100/1000 Mbps Ports in the front panel
2 x 100/1000 Mbps SFP Slot
EWS5912FP
8 x 10/100/1000 Mbps Ports in the front panel
2 x 100/1000 Mbps SFP Slot
2 x Gigabit Uplink Ports
1 x RJ45 Console Port
EWS7928FP / EWS7928P
24 x 10/100/1000 Mbps Ports in the front panel
4 x 100/1000 Mbps SFP Slot
1 x RJ45 Console Port
EWS7952FP
48 x 10/100/1000 Mbps Ports in the front panel
4 x 100/1000 Mbps SFP Slot
1 x RJ45 Console Port

PoE Capability
EWS2910P
PoE Standard: Ports 1~8 Support IEEE 802.3af
EWS5912FP
PoE Standard: Ports 1~8 Support IEEE 802.3at/af
EWS7928FP / EWS7928P
PoE Standard: Ports 1~24 Support IEEE 802.3at/af
EWS7952FP
PoE Standard: Ports 1~48 Support IEEE802.3at/af

PoE Capable Ports
EWS2910P
Ports 1~8 Can Output Up to 15W
EWS5912FP
Ports 1~8 Can Output Up to 30W
EWS7928FP
All Gigabit Ethernet Ports / Up to 30W
EWS7928FP
All Gigabit Ethernet Ports / Up to 30W
EWS7952FP
All Gigabit Ethernet Ports / Up to 30W

LED Indicators
1 x Power LED
1 x Fault LED
1 x PoE Max LED
1 x LAN Mode LED
1 x PoE Mode LED
Copper Ports: LAN/PoE Mode, Link/Act
SFP Ports: Link/Act, Speed (EWS2910P & EWS7952FP only)

Wireless Management Features (with Neutron Series Access Points & ezMaster)
EWS2910P: Manages up to 20 Neutron Series APs
EWS5912FP / EWS7952FP / EWS7928P / EWS7928FP: Manages up to 50 Neutron Series APs
Access Point Auto Discovery and Provisioning
Access Point Auto IP Assignment
Access Point Cluster Management
Remote Access Point Rebooting
Access Point Device Name Editing
Access Point Radio Settings
Band Steering
Traffic Shaping
Fast Handover
Fast Roaming
Access Point Client Limiting
Client Fingerprinting
Wireless Security
(WEP, WPA/WPA2 Enterprise, WPA/WPA2 PSK)
AP VLAN Management
VLANs for Access Point- Multiple SSIDs
Secured Guest Network
Captive Portal
Access Point Status Monitoring
Rogue AP Detection
Wireless Client Monitoring
Background Scanning
Email Alert
Wireless Traffic & Usage Statistics
Real-time Throughput Monitoring
SmartSync REDUNDANCY
Visual Topology View
Floor Plan View
Map View
Wireless Coverage Display
Secure Control Messaging (SSL Certificate)
Local MAC Address Database
Remote MAC Address Database (RADIUS)
Unified Configuration Import / Export
Bulk Firmware Upgrade Capability
One-Click Update
Intelligent Diagnostics
Kick/Ban Clients

L2 Features
802.3ad Link Aggregation
Port Trunking
Spanning Tree Protocol
802.1D Spanning Tree (STP)
802.1w Rapid Spanning Tree (RSTP)
802.1s Multiple Spanning Tree (MSTP)
IGMP Snooping v1/v2/v3
IGMP Fast Leave
VLAN Group
Voice VLAN
MIB Snooping
Bandwidth Control
Queue
802.1w Rapid Spanning Tree (RSTP)
CoS-based on 802.1p Priority
CoS-based on 802.3 clips
CoS-based on DSCP
CoS-based on Physical Port
802.1X Port-based Access Control
802.1X Guest VLAN
Port Security
Storm Control
Port Isolation
Attack Prevention
Access Control List (ACL)
PoE Management
Power On/Off Per Port
Power Class Configuration
Power Feeding with Priority
User Defined Power Limit
IEEE 802.3az (Energy Efficient Ethernet)
SSH Server
Telnet Server
TFTP Client
TFTP Upgrade
BootP/DHCP Client
Web-based Support
SNMP v1/ v2c / v3 Support
Command Line Interface (CLI)
SNTP
RMONv1
SYNLOG
Cable Diagnostics
MI8 Support
RFC1213 / RFC1493 / RFC1757 / RFC2674
### Technical Specifications continued

<table>
<thead>
<tr>
<th>Temperature Range</th>
<th>EWS2910P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating: 32°F to 104°F (0°C to 40°C)</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature: -40°F to 158°F (-40°C to 70°C)</td>
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</tr>
<tr>
<td>EWS5912FP / EWS7928P / EWS7928FP / EWS7952FP</td>
<td></td>
</tr>
<tr>
<td>Operating: 32°F to 122°F (0°C to 50°C)</td>
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</tr>
<tr>
<td>Storage Temperature: -40°F to 158°F (-40°C to 70°C)</td>
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</tr>
</tbody>
</table>

| Humidity (non-condensing) |          |
| Operating: 5% - 95% |          |

| Certifications |          |
| FCC, IC, CE |          |

<table>
<thead>
<tr>
<th>Device Dimensions and Weights</th>
<th>EWS2910P</th>
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<tbody>
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<td>Width: 9.45&quot; (240 mm)</td>
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<td>Length: 4.13&quot; (105 mm)</td>
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<td>Height: 1.06&quot; (27 mm)</td>
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<table>
<thead>
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<th>Device Dimensions and Weights</th>
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<td>Length: 9&quot; (228.60 mm)</td>
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<tr>
<td>Height: 1.73&quot; (43.94 mm)</td>
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<table>
<thead>
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<th>Device Dimensions and Weights</th>
<th>EWS7928P</th>
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<td>Weight: 7.82 lbs. (3.5 kg)</td>
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<tr>
<td>Width: 17.3&quot; (439 mm)</td>
<td></td>
</tr>
<tr>
<td>Length: 10.24&quot; (260 mm)</td>
<td></td>
</tr>
<tr>
<td>Height: 1.73&quot; (44 mm)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Device Dimensions and Weights</th>
<th>EWS7928FP</th>
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</thead>
<tbody>
<tr>
<td>Weight: 10.36 lbs. (4.7 kg)</td>
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<td>Width: 17.3&quot; (439 mm)</td>
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<tr>
<td>Length: 12.2&quot; (310 mm)</td>
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</tr>
<tr>
<td>Height: 1.73&quot; (44 mm)</td>
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<table>
<thead>
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<th>EWS7952FP</th>
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</thead>
<tbody>
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<td>Weight: 14.15 lbs. (6.4 kg)</td>
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<tr>
<td>Width: 17.32&quot; (439.9 mm)</td>
<td></td>
</tr>
<tr>
<td>Length: 16.14&quot; (409.9 mm)</td>
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</tr>
<tr>
<td>Height: 1.73&quot; (43.9 mm)</td>
<td></td>
</tr>
</tbody>
</table>

| Warranty |          |
| 1-Year Standard |          |
EnGenius Neutron Series Indoor Managed Access Points

### Key Features
- Sectorized 3D Antenna (selected models)
- Dynamic Channel Optimization
- Dual-Band (selected models)
- Band Steering (Dual-Band models)
- Seamless Roaming, Fast Handover
- Supports Connectivity of 100+ Users
- 16 SSIDs (8 SSIDS per frequency band)
- Wireless Traffic Shaping
- QoS
- SSID-to-VLAN Mapping
- Email Alert
- Wi-Fi Scheduler
- Auto-Reboot
- AP Detection

### Versatile Portfolio of Managed Access Points

EnGenius offers one of the broadest Access Point portfolios available. The Neutron Series’ versatile line of high-performance, managed indoor and outdoor APs range from affordable, Single-Band 11n models to high-capacity 3x3 Dual-Band 11ac versions, all with Power-over-Ethernet (PoE) convenience.

Neutron Access Points include sleek, low profile Indoor Ceiling-Mount APs and Wall Plate AP/Switches that provide an all-in-one communications hub for hotel guest rooms, and multi-tenant dwellings to powerful, slim line, IP-rated Outdoor and industrial, ruggedized APs that extend the network beyond. Neutron Managed APs are sure to meet a variety of application needs for both large and small networks alike.

For added versatility, deploy as a standalone Access Point or part of a scalable Neutron Solution managed via a Neuron Controller Switch or centrally managed with ezMaster software.

### Models

#### EnGenius Neutron Series Models

<table>
<thead>
<tr>
<th>Models</th>
<th>EWS360AP</th>
<th>EWS350AP</th>
<th>EWS320AP</th>
<th>EWS310AP</th>
<th>EWS300AP</th>
<th>EWSST10AP</th>
<th>EWS500AP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards</td>
<td>802.11a/b/g/n/ac</td>
<td>802.11a/b/g/n/ac</td>
<td>802.11a/b/g/n</td>
<td>802.11a/b/g/n</td>
<td>802.11a/b/g/n</td>
<td>802.11a/b/g/n</td>
<td>802.11a/b/g/n</td>
</tr>
<tr>
<td>Frequency</td>
<td>2.4 &amp; 5 GHz</td>
<td>2.4 &amp; 5 GHz</td>
<td>2.4 &amp; 5 GHz</td>
<td>2.4 &amp; 5 GHz</td>
<td>2.4 GHz</td>
<td>2.4 &amp; 5 GHz</td>
<td>2.4 GHz</td>
</tr>
<tr>
<td>2.4 GHz Max. Data Rate</td>
<td>450 Mbps</td>
<td>300 Mbps</td>
<td>450 Mbps</td>
<td>300 Mbps</td>
<td>300 Mbps</td>
<td>300 Mbps</td>
<td>300 Mbps</td>
</tr>
<tr>
<td>5 GHz Max. Data Rate</td>
<td>1,300 Mbps</td>
<td>867 Mbps</td>
<td>450 Mbps</td>
<td>300 Mbps</td>
<td>N/A</td>
<td>300 Mbps</td>
<td>300 Mbps</td>
</tr>
<tr>
<td>Radio Chains/Streams</td>
<td>3 x 3:3</td>
<td>2 x 2:2</td>
<td>3 x 3:3</td>
<td>2 x 2:2</td>
<td>2 x 2:2</td>
<td>2 x 2:2</td>
<td>2 x 2:2</td>
</tr>
<tr>
<td>RF Output Power (2.4 GHz)</td>
<td>28 dBm</td>
<td>26 dBm</td>
<td>28 dBm</td>
<td>29 dBm</td>
<td>29 dBm</td>
<td>20 dBm</td>
<td>20 dBm</td>
</tr>
<tr>
<td>RF Output Power (5 GHz)</td>
<td>28 dBm</td>
<td>26 dBm</td>
<td>28 dBm</td>
<td>26 dBm</td>
<td>N/A</td>
<td>20 dBm</td>
<td>N/A</td>
</tr>
<tr>
<td>Ethernet Ports</td>
<td>1 x Gig Port (PoE+)</td>
<td>1 x Gig Port (PoE+)</td>
<td>1 x Gig Port (PoE+)</td>
<td>1 x Gig Port (PoE+)</td>
<td>1 x Gig Port (PoE+)</td>
<td>1 x 10/100 Mbps Access Port (PoE+)</td>
<td>1 x 10/100 Mbps Access Port (PoE+)</td>
</tr>
<tr>
<td>Power Consumption (Peak)</td>
<td>22.8W</td>
<td>18W</td>
<td>18.2W</td>
<td>15.6W</td>
<td>9.6W</td>
<td>9.6W</td>
<td>10.8W</td>
</tr>
<tr>
<td>110 Punch Down Block</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Power-over-Ethernet</td>
<td>802.3at</td>
<td>802.3at</td>
<td>802.3at</td>
<td>802.3af/at</td>
<td>802.3af</td>
<td>802.3af/at</td>
<td>802.3af/at</td>
</tr>
<tr>
<td>Integrated Antenna</td>
<td>6 x 5 dBi</td>
<td>4 x 5 dBi</td>
<td>6 x 5 dBi</td>
<td>4 x 5 dBi</td>
<td>2 x 5 dBi</td>
<td>2 x 4 dB (2.4 GHz)</td>
<td>2 x 5 dB (5 GHz)</td>
</tr>
</tbody>
</table>

### EnGenius Neutron Series Indoor Managed Access Points

Supports Connectivity of 100+ Users
- Supports Connectivity of 100+ Users
- 16 SSIDs (8 SSIDS per frequency band)
- Wireless Traffic Shaping
- QoS
- SSID-to-VLAN Mapping
- Email Alert
- Wi-Fi Scheduler
- Auto-Reboot
- AP Detection

### Neutron Series Managed Access Points

For added versatility, deploy as a standalone Access Point or part of a scalable Neutron Solution managed via a Neuron Controller Switch or centrally managed with ezMaster software.
Technical Specifications

Frequency

**EWS300AP / EWS320AP / EWS350AP / EWS360AP / EWS510AP**
2.4 and 5 GHz Frequency Bands

**EWS300AP / EWS500AP**
2.4 GHz Frequency Band

Standards

**EWS300AP / EWS500AP**
IEEE 802.11a/b/g/n

**EWS310AP / EWS320AP / EWS510AP**
IEEE 802.11a/b/g/n/60/g

**EWS350AP / EWS360AP**
IEEE 802.11a/b/g/n/60

Radio I

**11b/g/n**: 2.412–2.484 GHz

Radio II (Dual-Band models only)

**11a/n**: 5.15–5.245 & 5.25–5.325 & 5.3–5.55 & 5.75–5.825 GHz

Data Rates

**EWS300AP / EWS500AP** Up to 300 Mbps in 2.4 GHz frequency band

**EWS310AP / EWS510AP** Up to 300 Mbps in both frequency bands

**EWS320AP** Up to 450 Mbps in both frequency bands

**EWS350AP** Up to 300 Mbps in the 2.4 GHz frequency band, Up to 867 Mbps in the 5 GHz band

**EWS360AP** Up to 450 Mbps in the 2.4 GHz frequency band, Up to 1300 Mbps in the 5 GHz band

Memory

**EWS300AP** 64MB

**EWS310AP / EWS320AP / EWS350AP / EWS360AP / EWS500AP / EWS510AP** 128MB

Flash Memory

16MB

Power Consumption

**EWS300AP** Up to 9.6W

**EWS310AP** Up to 15.6W

**EWS320AP** Up to 18.2W

**EWS350AP** Up to 18W

**EWS360AP** Up to 22.8W

**EWS500AP** Up to 7.5W

**EWS510AP** Up to 10.8W

Antennas

**EWS300AP**
2 x 5 dBi Internal High Gain Antennas

**EWS310AP / EWS350AP**
2 x 5 dBi 2.4 GHz Internal Antennas
2 x 5 dBi 5 GHz Internal Antennas

**EWS320AP**
3 x 3 dBi 2.4 GHz Internal Antennas
3 x 5 dBi 5 GHz Internal Antennas

**EWS360AP**
3 x 5 dBi 2.4 GHz Internal Antennas
3 x 5 dBi 5 GHz Internal Antennas

**EWS500AP**
2 x 4 dBi Internal Antennas

**EWS510AP**
2 x 4 dBi 2.4 GHz Internal Antennas
2 x 5 dBi 5 GHz Internal Antennas

Physical Interface

1 x RJ45 Gigabit Ethernet 10/100/1000 — PoE Capable
1 x Reset Button, 1 x Power Connector

**EWS310AP / EWS320AP / EWS350AP / EWS360AP**
1 x 10/100/1000 Mbps Uplink Port with 802.3af/at PoE
3 x 10/100 Mbps Access Ports
1 x 10/100 Mbps Access Port with PoE Output (support 802.3at output when PoE input is 802.3at)
2 x R45 Pass Through Ports
1 x 110 Punch Down Block
1 x DC Power Connector
1 x Reset Button

LED Indicators

**EWS300AP**
1 x Power
1 x WLAN
1 x LAN
1 x 2.4 GHz

**EWS310AP / EWS320AP / EWS350AP / EWS360AP**
1 x Power
1 x WLAN (Wireless Connection)
1 x LAN
1 x 2.4 GHz
1 x 5 GHz

**EWS500AP / EWS510AP**
1 x Power
1 x WAN
1 x 2.4 GHz
1 x 5 GHz (EWS510AP only)
1 x LAN 1-4

Power Requirements

Power Supply: 100 to 240 VDC ± 10%, 50/60 Hz (depends on different countries)

**Active Ethernet** (Power-over-Ethernet, IEEE 802.3at/af)

**EWS300AP** Power-over-Ethernet, IEEE 802.3af
12V/1A

**EWS310AP / EWS320AP / EWS350AP / EWS360AP**
12V/2A

**EWS500AP / EWS510AP** 48V/0.8A

Modulations

OFDM: BPSK, QPSK, 26-QAM, 64-QAM, DBPSK, DQPSK, CCK

Operating Channels

2.4 GHz
US/Canada 1-11

5 GHz (Dual-Band models only): Country dependent for the following ranges:

Operation Modes

**Access Point**

**Multiple BSSID**
Supports up to 8 SSIDs Per Radio

SSID-to-VLAN Tagging
Supports 802.1q SSID-to-VLAN Tagging

Spanning Tree
Supports 802.1d Spanning Tree Protocol

Wireless

**EWS300AP / EWS500AP**
Wireless Mode: 11b/11g/11n

**EWS310AP / EWS320AP / EWS510AP**
Wireless Mode: 11a/11b/11g/11n

**EWS350AP / EWS360AP**
Wireless Mode: 11a/11b/11g/11n/11ac

Channel Selection (settings vary by country)

Channel Bandwidth (Auto, 20 MHz, 40 MHz, 80 MHz)

Transmission Rate

2.4 GHz
11n only, 11b/11g/n mix, 11b only, 11b/g, 11g only

5 GHz (Dual-Band models only): 11a/c only, 11n only, 11a/n mix, 11a only
## Technical Specifications

### QoS
- **WMM** (Wireless Multimedia)

### Wireless Management Features (with ezMaster & Neutron Switch)
- Access Point Auto Discovery and Provisioning
- Access Point Auto IP Assignment
- Access Point Cluster Management
- Remote Access Point Rebooting
- Access Point Device Name Editing
- Access Point Radio Settings
- Band Steering (Dual Band models only)

### Traffic Shaping
- Fast Handover
- Fast Roaming
- RSSI Threshold

### Reset Setting
- Reboot (press and hold for 2 seconds)
- Reboot to Factory Default (press and hold for 10 seconds)

### Auto-Channel Selection
- Automatically Selecting Least Congested Channel

### Bandwidth Measurement
- IP Range and Bandwidth Management

### Schedule Reboot
- Reboot Access Point by Minute, Hour, Day, or Week

### Backup and Restore
- Save and Restore Settings via Web Interface

### CLI
- Supports Command Line Interface

### Diagnosis
- IP Ping/ing Statistics

### Log
- SysLog and Local Log Support

### LED Control
- On/Off

### AP Detection
- Scanning for Available EnGenius APs

### Wireless Security
- WPA/WPA2 Personal (WPA-PSK using TKIP or AES)
- WPA/WPA2 Enterprise (WPA-EAP using TKIP)
- 802.1X RADIUS Authenticator: MD5/TLS/TTLS, PEAP
- SSID Broadcast Enable/Disable
- MAC Address Filtering, Up to 50 Entries
- L2 Isolation (Access Point mode)

### QoS (Quality of Service)
- **WMM** (Wireless Multimedia)

### Temperature Range
- Operating: 32º to 104ºF (0 to 40ºC)
- Storage temperature: -4ºF to 140ºF (-20ºC to 60ºC)

### Humidity (non-condensing)
- Operating: 90% or less
- Operating: 90% or less

### Physical Security
- Kensington Security Slot (N/A for EWS500AP/EWS510AP)

### Certifications
- FCC, IC, CE

### Device Dimensions and Weights

<table>
<thead>
<tr>
<th>Model</th>
<th>Weight (lbs)</th>
<th>Length (in)</th>
<th>Width (in)</th>
<th>Height (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EWS300AP</td>
<td>0.45</td>
<td>204.1</td>
<td>37.0</td>
<td>110.0</td>
</tr>
<tr>
<td>EWS310AP</td>
<td>0.80</td>
<td>161.5</td>
<td>161.5</td>
<td>41.6</td>
</tr>
<tr>
<td>EWS320AP</td>
<td>0.80</td>
<td>165.1</td>
<td>165.1</td>
<td>41.6</td>
</tr>
<tr>
<td>EWS350AP / EWS360AP</td>
<td>0.80</td>
<td>165.1</td>
<td>165.1</td>
<td>41.6</td>
</tr>
<tr>
<td>EWS500AP / EWS510AP</td>
<td>0.65</td>
<td>296.0</td>
<td>37.0</td>
<td>130.0</td>
</tr>
</tbody>
</table>

### Warranty
- 1-Year Standard
<table>
<thead>
<tr>
<th>Models</th>
<th>EWS660AP</th>
<th>EWS650AP</th>
<th>EWS860AP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards</td>
<td>802.11a/b/g/n/ac</td>
<td>802.11a/b/g/n/ac</td>
<td>802.11b/g/n/ac</td>
</tr>
<tr>
<td>Frequency</td>
<td>2.4 &amp; 5 GHz</td>
<td>2.4 &amp; 5 GHz</td>
<td>2.4 &amp; 5 GHz</td>
</tr>
<tr>
<td>2.4 GHz Max. Data Rate</td>
<td>450 Mbps</td>
<td>450 Mbps</td>
<td>300 Mbps</td>
</tr>
<tr>
<td>5 GHz Max. Data Rate</td>
<td>1,300 Mbps</td>
<td>1,300 Mbps</td>
<td>867 Mbps</td>
</tr>
<tr>
<td>Radio Chains/Streams</td>
<td>3 x 3:3</td>
<td>3 x 3:3</td>
<td>2 x 2:2</td>
</tr>
<tr>
<td>RF Output Power</td>
<td>29 dBi</td>
<td>29 dBi</td>
<td>27 dBi</td>
</tr>
<tr>
<td>Ingress Protection Rating</td>
<td>68</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Primary Ethernet Port</td>
<td>1 x Gigabit Port</td>
<td>1 x Gigabit Port</td>
<td>1 x Gigabit Port</td>
</tr>
<tr>
<td>Secondary Ethernet Port</td>
<td>1 x Gigabit Port (PoE Output)</td>
<td>1 x Gigabit Port</td>
<td>1 x Gigabit Port</td>
</tr>
<tr>
<td>PoE Compliant</td>
<td>802.3at (PoE+)</td>
<td>802.3at (PoE+)</td>
<td>802.3at (PoE+)</td>
</tr>
<tr>
<td>Power Consumption (Peak)</td>
<td>35.7W</td>
<td>23W</td>
<td>23W</td>
</tr>
<tr>
<td>Integrated Antennas</td>
<td>N/A</td>
<td>6 x 5 dBi</td>
<td>2 x 5 dBi</td>
</tr>
<tr>
<td>External Antennas</td>
<td>2.4 GHz: 3 x 5 dBi, 5 GHz: 3 x 7 dBi</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Key Features**

- Tough IP68- and IP55-Rated Housings
- 802.11ac Wireless Speeds
- Dynamic Channel Optimization
- Dual-Band
- Band Steering
- Seamless Roaming, Fast Handover
- Supports Connectivity of 100+ Users
- 16 SSIDs (8 SSIDs per frequency band)
- Wireless Traffic Shaping
- QoS
- SSID-to-VLAN Mapping
- Email Alert
- Wi-Fi Scheduler
- Auto-Reboot
- AP Detection

**Technical Specifications**

**Frequency**
- RF: 2.4 and 5 GHz Frequency Bands

**Standards**
- IEEE 802.11a/b/g/n/ac

**Radio I**
- 11b/g/n: 2.412–2.484 GHz

**Radio II**
- 11a/n: 5.18-5.24 and 5.26-5.32 and 5.5-5.7 and 5.745-5.825 GHz

**Data Rates**
- EWS650AP: Up to 300 Mbps in 2.4 GHz; up to 867 Mbps in 5 GHz
- EWS660AP / EWS860AP: Up to 450 Mbps in 2.4 GHz; up to 1300 Mbps in 5 GHz

**Memory**
- 256MB

**Flash Memory**
- 16MB

**Power Consumption**
- EWS650AP: Up to 23W
- EWS660AP: Up to 23W
- EWS860AP: Up to 34W

**Antenna Array**
- EWS650AP / EWS660AP
- Internal High Gain Antenna Array supporting both 2.4 GHz and 5 GHz
- EWS860AP
- External High Gain Antennas 3 x 5 dBi for 2.4 GHz
- External High Gain Antennas 3 x 7 dBi for 5 GHz

**Physical Interface**
- 2 x R4S Gigabit Ethernet (10/100/1000 Mbps) - PoE Capable 802.3at
- 1 x Reset Button
- 1 x Power Connector

**LED Indicators**
- 1 x Power
- 1 x 2.4 GHz
- 1 x 5 GHz
- 1 x WLAN (Wireless Connection)
- 1 x LAN

**Power Requirements**
- Power Supply: 100 to 240V DC +/-10% 50/60 Hz
- Active Ethernet (Power-over-Ethernet IEEE 802.3at)
- PoE Injector DC IN, 48V/0.8A

**Modulations**
- OFDM: BPSK, QPSK, 26-QAM, 64-QAM, DBPSK, DQPSK, CCK

**Operating Channels**
- 2.4 GHz US/Canada 1-11

**5 GHz**
- Country dependent for the following ranges: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165

**Operation Modes**
- Access Point

**Multiple BSSID**
- Supports Up to 8 SSIDs Per Radio

**SSID-to-VLAN Tagging**
- Supports 802.1q SSID-to-VLAN Tagging
Technical Specifications

**Spanning Tree**
Supports 802.1d Spanning Tree Protocol

**Wireless**
Wireless Mode: 11a/11b/11g/11n/11ac
Channel Selection (settings vary by country)
Channel Bandwidth (Auto, 20 MHz, 40 MHz, 80 MHz)

**Transmission Rate**
2.4 GHz: 11n only, 11b/b/g mix, 11b only, 11b/g, 11g only
5 GHz: 11ac only, 11n only, 11a/n mix, 11a only

**QoS**
WMM (Wireless Multimedia)

**Wireless Management Features** (with ezMaster & Neuron Switch)
Access Point Auto Discovery and Provisioning
Access Point Auto IP Assignment
Access Point Cluster Management
Remote Access Point Rebooting
Access Point Device Name Editing
Access Point Radio Settings
Band Steering
Traffic Shaping
Fast Handover
Fast Roaming
Access Point Client Limiting
Client Fingerprinting
Wireless Security (WEP, WPA/WPA2 Enterprise, WPA/WPA2 PSK)
AP VLAN Management
VLANs for Access Point - Multiple SSIDs
Secured Guest Network
Captive Portal
Access Point Status Monitoring
Rogue AP Detection
Wireless Client Monitoring
Background Scanning
Email Alert
Wireless Traffic & Usage Statistics
Real-time Throughput Monitoring
SmartSync Redundancy
Visual Topology View
Floor Plan View
Map View
Wireless Coverage Display
Secure Control Messaging (SSL Certificate)
Local MAC Address Database
Remote MAC Address Database (RADIUS)
Unified Configuration Import / Export
Bulk Firmware Upgrade Capability
One-Click Update

**LED Control**
On/Off

**AP Detection**
Scanning for Available EnGenius APs

**Wireless Security**
WPA/WPA2 Personal (WPA-PSK using TKIP or AES)
WPA/WPA2 Enterprise (WPA-EAP using TKIP)
802.1X RADIUS Authenticator: MD5/TLS/TTLS, PEAP
SSID Broadcast Enable/Disable
MAC Address Filtering, Up to 50 Entries
Guest Network
L2 Isolation (Access Point mode)

**QoS (Quality of Service)**
WMM (Wireless Multimedia)

**Temperature Range**
EWS860AP
Operating: -4ºF to 158ºF (-20ºC to 70ºC)
Storage: -22ºF to 176ºF (-30ºC to 80ºC)

**Humidity**
(Non-condensing)
Operating: 90% or less
Storage: 90% or less

**Weatherproof**
EWS860AP
IP55-Rated Enclosure
EWS650AP / EWS660AP
IP55-Rated Enclosure

**Certifications**
FCC, IC, CE

**Device Dimensions and Weights**
EWS650AP / EWS660AP
Weight: 1.89 lbs. (857.2 g)
Length: 11.97” (304 mm)
Width: 7.13” (181.1 mm)
Height: 1.81” (45.9 mm)

EWS860AP
Weight: 4.17 lbs. (1.8 kg)
Length: 11.22” (284.9 mm)
Width: 8.58” (217.9 mm)
Height: 2.10” (53.3 mm)

**Warranty**
1-Year Standard
Maximum data rates are based on IEEE 802.11 standards. Actual throughput and range may vary depending on distance between devices or traffic and bandwidth load in the network. Compliant with FCC - This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.