aleoblue™

Project	
Type	Date
Cat. No.	

AB-BGW-G1E

AleoBlue™ Wireless Bluetooth® BACnet Gateway

DESCRIPTION

The AB-BGW-G1E connects an AleoBlue™ Bluetooth® NLC lighting network to a Building Management System (BMS) over BACnet/IP. Operating on-premise, it aggregates luminaire and sensor data at the zone level and exposes it as standard BACnet objects, while accepting BMS commands to set zone light levels and recall up to four predefined scenes. All lighting logic remains configured and managed in AleoBlue Commissioning — the gateway adds supervisory visibility and control without modifying the lighting system.

APPLICATIONS

Indoor commercial and institutional buildings integrating lighting with BMS / building automation: Offices, Healthcare, Education (K-12 and Higher Ed), Retail, Hospitality, Warehouse and Industrial, Government, Mixed-use facilities.

SPECIFICATION FEATURES

OVERVIEW

- Bluetooth® NLC to BACnet/IP gateway
- BTL Listed, BACnet/IP (Annex J), B-ASC profile
- Up to ~200 Bluetooth® Mesh devices and 100 lighting zones per gateway
- PoE (IEEE 802.3af) or 5VDC micro-USB power
- Operates on the local network — no internet connectivity required
- Change-of-Value (COV) reporting; Structured View topology
- Multi-color LED status ring with 17+ defined operating and diagnostic states

WARRANTY

5-Year Limited Warranty – Covers defects in material and workmanship. See warranty documentation for details.

BENEFITS

- Single source of truth — lighting logic stays in AleoBlue™ Commissioning
- Zone-level monitoring of occupancy, light level, ambient light, energy use, and health
- BMS-driven scene recall and target light-level control across any zone
- Offline, USB-based commissioning workflow for secure building environments
- Self-contained — no cloud dependency, no central controller, no single point of failure on the lighting side

ORDERING INFORMATION

EXAMPLE: AB-BGW-G1E

AB	BGW	G1E
Series	**Type**	**Hardware**
AB AleoBlue™	**BGW** BACnet Gateway	**G1E** Minew G1-E hardware

Specifications and Dimensions subject to change without notice.

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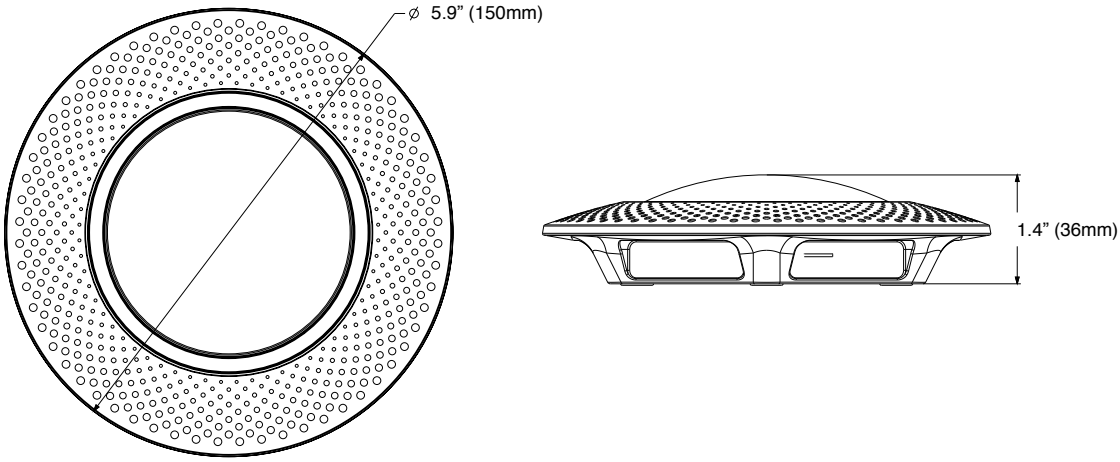
PERFORMANCE SUMMARY

Application	On-premise integration of Bluetooth® NLC lighting with BMS
Network Protocol	BACnet/IP 1.30 (Annex J, non-BBMD)
Capacity	Up to ~200 Bluetooth® Mesh devices per gateway
Mesh Throughput	Up to ~200 mesh messages / second
Bluetooth® Frequency	2.4–2.4835 GHz
Power Supply	5 VDC ±5%, 1A, micro-USB
Ports	1× RJ45 10/100 Ethernet (PoE), 1× USB 2.0 Type-A
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Environment Type	Indoor (IP20)
Internet Required	No — operates entirely on local network
Certifications	BTL Listed (BACnet Testing Laboratories)
Color	White

Communication Protocol	Bluetooth® Low Energy (2.4 GHz)
BACnet Profile	B-ASC (Application Specific Controller)
Zones	Up to 100 lighting zones per gateway (1 area / gateway)
Mesh Coverage Radius	Up to 100m (open space)
Max. Emitting Power	18 dBm
Power over Ethernet	48 VDC, 0.1A (IEEE 802.3af)
Operating System	Linux-based OpenWrt 23.05.4
Operating Humidity	5% to 95%, non-condensing
Status Indicator	Multi-color LED ring (see LED States, page 4)
FCC ID	2ABU6-G1-E
Character Set	ISO 10646 (UTF-8)
Warranty	5 Years Limited

PRODUCT DIMENSIONS



Net Weight: 0.34 lbs (155g)

Specifications and Dimensions subject to change without notice.

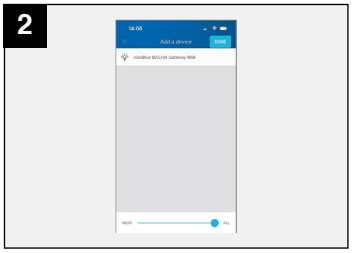
BACNET OBJECTS EXPOSED

Object	Type	I/O	Reporting Interval
Group Health Status	Multi-state	Input	Real-time
Group Occupancy Status	Binary	Input	Real-time
Group Energy Use	Analog	Input	15 minutes
Group Scene Recall	Multi-state	Output	Real-time (writable)
Group Ambient Light Level	Analog	Input	Real-time
Group Light On Status	Binary	Input	Real-time
Group Light Level Set	Analog	Output	Real-time (writable)
Group Light Level Status	Analog	Input	Real-time
Device Health Status	Multi-state	Input	Real-time

NOTE: All readable objects support COV (Change of Value) subscription. Group Scene Recall supports up to four predefined scenes per zone.

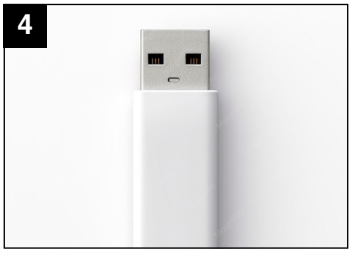
MOUNTING & COMMISSIONING

Install - Mount the gateway near the geometric center of the lighting network, away from sources of RF interference. Connect via Ethernet with PoE (IEEE 802.3af) or via 5VDC micro-USB power.



Provision - In the AleoBlue™ mobile app (iOS/iPadOS), open the project and area, create a dedicated zone for the gateway, and add the gateway to that zone. The LED ring confirms successful provisioning.

Configure - In the AleoBlue™ web app, enter the BACnet Device ID, BACnet port (default 47808), BACnet password, and IP method (DHCP or static). Download the configuration .hex file.



Deploy - Copy the .hex file to a FAT32-formatted USB drive, insert it into the gateway, then power-cycle. After ~30 seconds the gateway restarts, applies the configuration, and becomes available to the BMS on the local network.

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ADDITIONAL INFORMATION

State	LED Pattern
No power	All LEDs off
System loading	Multi-color ring rotating
Unprovisioned	Solid orange ring
Provisioned (mesh-connected)	Solid light green ring
Idle (normal operation)	Dim light green ring
New configuration applied / restarting	Solid purple ring with rotating arc

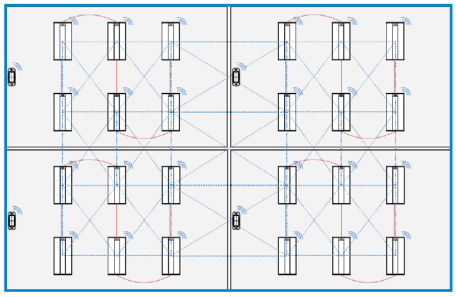
Reset & maintenance

- Press-and-release reset button: copies diagnostic logs to USB drive
- Press-and-hold reset button (5+ sec): restores system defaults
- BACnet Cold Start / Warm Start: password-protected service restart and log copy
- Software update: copy update.bin to FAT32 USB drive and power-cycle

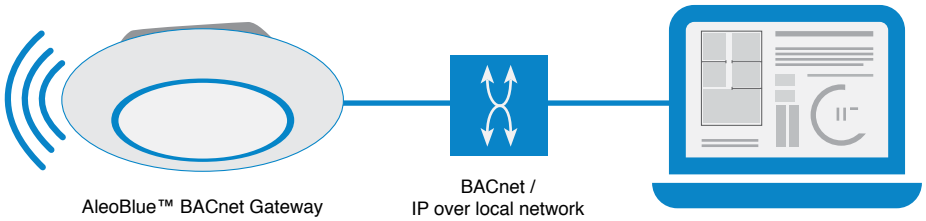
Important notes

- Do not place the gateway near high-power electrical equipment, transmitters, or building features that block radio signal.
- The gateway must be installed within radio range of at least one mesh relay device.
- If the BMS manages schedules, do not create scheduling events in AleoBlue™ Commissioning.
- All device configuration changes that require running the Configure function in the area generate a new configuration file that must be re-deployed via USB.

SYSTEM DIAGRAM



AleoBlue™ Bluetooth® NLC Lighting Network



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POWER & NETWORK CONNECTIONS

Network	1× RJ45 10/100 Ethernet, BACnet/IP, IPv4 (DHCP or static)
BACnet Port	Configurable (default 47808 / 0xBAC0)
Power Option 1	Power over Ethernet — IEEE 802.3af, 48 VDC, 0.1A
Power Option 2	5 VDC ±5%, 1A via micro-USB (5.5V max.)
USB Port	1× USB 2.0 Type-A — used for configuration, software update, log retrieval
Wireless	Bluetooth® Low Energy 2.4 GHz, up to 18 dBm, ~100m open-space radius
Color	White

BACNET OBJECT DETAIL

Object	Type	Range	Units	Description
Group Health Status	Multi-state Input	1, 2, 3, 4, 5	—	Aggregate health from all zone members
Group Occupancy Status	Binary Input	0, 1	—	Occupied / Unoccupied (logical OR)
Group Energy Use	Analog Input	—	Wh	Sum of zone energy, 15-min reporting
Group Scene Recall	Multi-state Output	1, 2, 3, 4	—	Recall scenes 0–3 in zone
Group Ambient Light Level	Analog Input	—	lx	Average across zone light sensors
Group Light On Status	Binary Input	0, 1	—	On / Off (any luminaire on)
Group Light Level Set	Analog Output	0–100	%	Target light level for zone
Group Light Level Status	Analog Input	—	%	Maximum light level in zone
Device Health Status	Multi-state Input	1, 2, 3, 4	—	Per-device fault category

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aleoblue™

ALEOBLUE WIRELESS BLUETOOTH® CONTROLS

DLC LISTED

The AleoBlue is a complete solution for managing connected lighting systems using a Bluetooth® NLC lighting network. This enables seamless implementation of simple to complex lighting control scenarios without specialized training or lighting control engineering expertise.

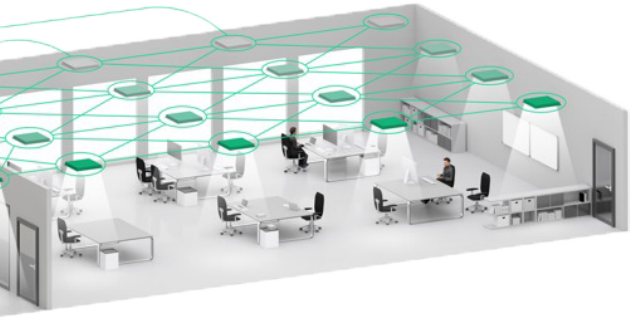
DLC NLC Qualified.

FEATURES AND BENEFITS

- Lighting Zones / Grouping
- Manual control of individual lights
- On Power up Behavior
- Zone Linking
- High-End Trim
- LLLC (Luminaire Level Lighting Controls)
- Energy Monitoring
- Optimized Energy Consumption
- Less Hassle with On-Site Adjustments
- More Savings
- Increased Safety
- More Flexibility
- Intuitive and user-friendly web and iOS apps
- No specialized training or lighting control expertise required
- Optimized for commercial spaces of any size
- No additional wiring or central control box
- Customizable lighting control parameters
- Future proof with Software Updates
- Multiple Zone Configurable
- Built-In Scenarios + Customization

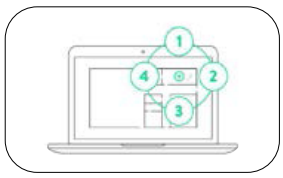
BLUETOOTH® NLC TECHNOLOGY ADVANTAGES

- The fastest low-power communication
- Scalability to thousands of devices
- The most advanced encryption standards as well as the cutting-edge device authentication
- No single point of failure (no central device)
- Compatibility with a widely available devices (smart phones & tablets – both with Bluetooth® 4.0 and Bluetooth® 5)

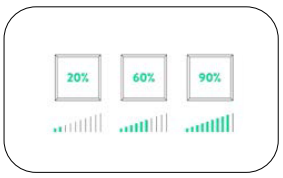


SCHEDULING

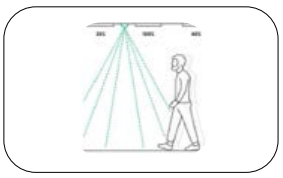
SCENES



HIGH / LOW END TRIM



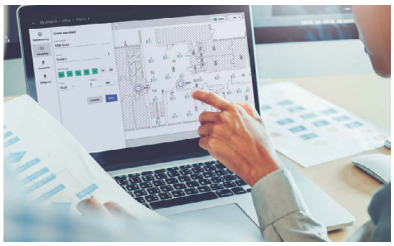
OCCUPANCY SENSING



PLANNING

Remote preparation of a retrofit project with the use of our web app. Uploading floor plans, defining individual lighting zones and choosing lighting control scenarios.

1. Import Floor Plans
2. Specify Desired Lighting Control Scenarios
3. Define Individual Lighting Zones



IMPLEMENTATION

Adding lighting devices to the Bluetooth® NLC network on-site with the use of an iOS app.

Customization and calibration of lighting control parameters during and after the commissioning process. Defining scenes for specific working activities.

1. Add Devices to Your Connected Lighting Network
2. Implement Predefined Zones and Scenarios
3. Optimize Configuration Settings if Needed

PROVISIONING / CONFIGURATIONS

The Bluetooth® NLC Node is in the Unprovisioned Mode until it is provisioned by a “Provisioner”, which typically is a smart phone with a Bluetooth® NLC compatible app.

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