



Whether you are looking to beautify or add a sense of security and well-being to your outdoor space, the highly configurable Hadco LED refractive post tops paired with the latest LumiLock light engine GX4 will help you achieve your goals. A multitude of exterior luminaire styles allow you to create promenades and areas exuding timeless, historical charm both day and night. The configurable LED light engine GX4 is an ideal alternative to HID sources, providing you with significant energy savings, and more choices for light levels, optics and controls. Includes Service Tag, Hadco's innovative way to provide assistance throughout the life of the product.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lamps: _____ Qty: _____
 Notes: _____

Ordering guide

Example: CL32 M D K A 1 A S N W A 3 N N CLO N SP

Series	Pod	Roof	Cage	Brim	Fastener	Finish	Optic	Pod Photo Control (location inside of pod)
CL32 Narrow Body Type 3	M ¹ Contemporary smooth tapered cone fitter	D Short H Round	K Cage 4 legs L Cage 8 legs	A ² Brim N None	1 Hex head 2 Allen head	A Black B White G Verde H Bronze J Green	S Short W Wide	E 120 VAC Button Eye H 208/240/277 Button Eye R ³ 43 Pin Receptacle N None
CL52 Narrow Body Type 5	P ¹ Contemporary round fitter R Contemporary smooth tapered fitter	J Flat K Cone	N None					

Optional programs

Color Temp	Voltage	Drive Current	Integral Control Options	Option 1	Option 2	Option 3	Surge Protection
W 3000K N 4000K	A 120- 277 VAC B 347- 480 VAC	2 ⁷ 200mA 3 350mA 4 ⁷ 450mA 5 530mA	Dynadimmer ⁵ DA 4 Hrs 25% Reduction DB 4 Hrs 50% Reduction DC 4 Hrs 75% Reduction DD 6 Hrs 25% Reduction DE 6 Hrs 50% Reduction DF 6 Hrs 75% Reduction DG 8 Hrs 25% Reduction DH 8 Hrs 50% Reduction DJ 8 Hrs 75% Reduction DL ⁵ DALI S ⁸ FAWS Switch N None	AST ⁵ Adjustable start up time N None	CLO ⁵ Constant light output N None	OTL ⁵ Over the life N None	SP1 10kV/10kA Surge Protector SP2 ⁶ 20kV/10kA Surge Protector

- 1 Fits 4" O.D. post top tenon.
- 2 Must be used with (K) or (L) cage.
- 3 Twistlock photocell receptacle (R) only available in (M) pod.
- 4 Use of photoelectric cell or shorting cap is required to ensure proper illumination. When (R) option is selected, product will ship with shorting cap installed.
- 5 Optional Dynadimer dimming schedules, DALI, AST, CLO, and OTL not available with 347-480 VAC.
- 6 When SP2 option is selected, luminaire will be fitted with SP2 instead of SP1.
- 7 Not available with B 347-480 voltage.
- 8 FAWS not available with CLO.

CL32/CL52 Refractive Globe with LumiLock LED engine GX4

Narrow Body Type 3 - Metal Roof

Short

Wide

Catalog Logic	LED QTY	System Current (mA)	Color Temperature	Avg System Wattage ¹ (W)	Lumen Output	Efficacy (Lm/W)	BUG rating	Lumen Output	Efficacy (Lm/W)	BUG rating
CL32-D-x-W-2	64	200	3000	39	4874	124	B2-U3-G3	4571	116	B1-U3-G4
CL32-D-x-W-3	64	350	3000	69	8224	119	B2-U4-G4	7714	112	B2-U4-G5
CL32-D-x-W-4	64	450	3000	88	10051	115	B3-U5-G4	9429	108	B2-U4-G5
CL32-D-x-W-5	64	530	3000	104	11680	112	B3-U5-G5	10956	105	B2-U4-G5

Narrow Body Type 5 - Metal Roof

Short

Wide

Catalog Logic	LED QTY	System Current (mA)	Color Temperature	Avg System Wattage ¹ (W)	Lumen Output	Efficacy (Lm/W)	BUG rating	Lumen Output	Efficacy (Lm/W)	BUG rating
CL52-D-x-W-2	64	200	3000	39	4825	123	B2-U3-G2	4486	115	B3-U3-G3
CL52-D-x-W-3	64	350	3000	69	8142	119	B3-U4-G3	7570	110	B3-U3-G4
CL52-D-x-W-4	64	450	3000	87	9950	114	B3-U4-G3	9252	106	B3-U4-G4
CL52-D-x-W-5	64	530	3000	104	11563	112	B3-U5-G4	10752	104	B3-U4-G5

Narrow Body Type 3 - Metal Roof

Short

Wide

Catalog Logic	LED QTY	System Current (mA)	Color Temperature	Avg System Wattage ¹ (W)	Lumen Output	Efficacy (Lm/W)	BUG rating	Lumen Output	Efficacy (Lm/W)	BUG rating
CL32-D-x-N-2	64	200	4000	39	5260	134	B2-U4-G3	4933	126	B1-U3-G4
CL32-D-x-N-3	64	350	4000	69	8879	129	B2-U4-G4	8328	121	B2-U4-G5
CL32-D-x-N-4	64	450	4000	88	10847	124	B3-U5-G4	10174	116	B2-U4-G5
CL32-D-x-N-5	64	530	4000	104	12612	121	B3-U5-G5	11831	114	B3-U4-G5

Narrow Body Type 5 - Metal Roof

Short

Wide

Catalog Logic	LED QTY	System Current (mA)	Color Temperature	Avg System Wattage ¹ (W)	Lumen Output	Efficacy (Lm/W)	BUG rating	Lumen Output	Efficacy (Lm/W)	BUG rating
CL52-D-x-N-2	64	200	4000	39	5207	133	B2-U3-G3	4842	124	B3-U3-G3
CL52-D-x-N-3	64	350	4000	69	8790	128	B3-U4-G3	8173	119	B3-U3-G4
CL52-D-x-N-4	64	450	4000	87	10738	123	B3-U5-G3	9985	115	B3-U4-G4
CL52-D-x-N-5	64	530	4000	104	12486	121	B3-U5-G4	11610	112	B4-U4-G5

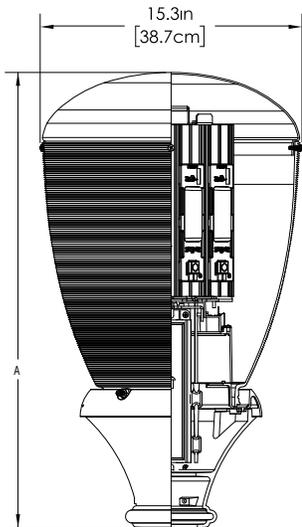
Values from photometric tests performed in accordance with IESNA LM-79 and are representative of the configurations shown. Actual performance may vary due to installation and environmental variables, LED and driver tolerances, and field measurement considerations. It is highly recommended to confirm performance with a photometric layout.

NOTE: Some data may be scaled based on tests of similar (but not identical) luminaires. Contact factory for configurations not shown.

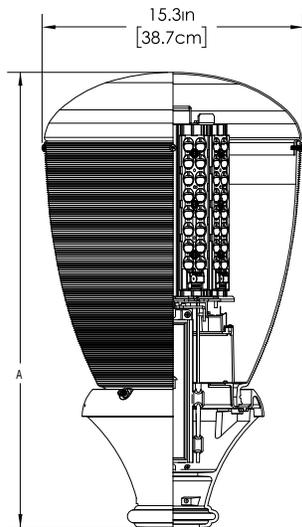
CL32/CL52 Refractive Globe with LumiLock LED engine GX4

Dimensions

CL32 - Type 3

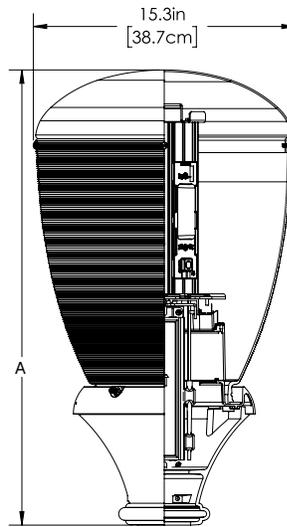


CL32RHNNxxW configuration shown

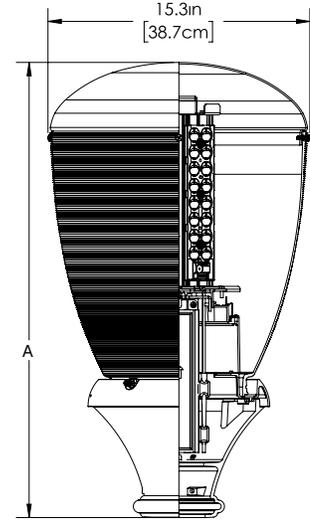


CL32RHNNxxS configuration shown

CL52 - Type 5



CL52RHNNxxW configuration shown



CL52RHNNxxS configuration shown

Roof	Dimension "A"	
	(in)	(cm)
D Short	28.9	73.5
H Round	26.5	67.4
J Flat	27.6	70.0
K Cone	30.4	77.2

EPA: 2.08 sq. ft. (Varies depending on options selected)
Weight: 55lbs (maximum)

Dimensions will vary when other pod, cage and brim options are specified.
 See specification text on pages 5 and 6 for option dimensions.

Housing Options

Body Globe



Narrow Body
CL32/CL52

Fitter/Pod Options



M Smooth
Tapered Cone

R Smooth
Tapered

Roof Options



H Round



J Flat



K Cone



D Short

Cage Options



K 4 Legs



L 8 Legs

Brim



A Brim



P Round

CL32/CL52 Refractive Globe with LumiLock LED engine GX4

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L70 is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L70 hours limited to 6 times actual LED test hours.

Driver mA	Optic	Ambient Temperature °C	Calculated L ₇₀ Hours	L ₇₀ per TM-21 (Hours)	Lumen Maintenance % at 60,000 hrs
530	Wide	25	>85,000	>60,000 hours	>88%
530	Short	25	>100,000	>54,000 hours	>98%
450	Wide	25	>100,000	>60,000 hours	>93%
450	Short	25	>100,000	>54,000 hours	>98%
350	Wide	25	>100,000	>60,000 hours	>94%
350	Short	25	>100,000	>54,000 hours	>98%
200	Wide	25	>100,000	>60,000 hours	>94%
200	Short	25	>100,000	>54,000 hours	>98%

Field Adjustable Wattage (FAWS) Multiplier Chart

All 350, 450, and 530 mA Configurations

FAWS Position	Typical Delivered Lumens Multiplier	Typical System wattage and typical current
1	0.30	0.28
2	0.53	0.48
3	0.62	0.56
4	0.73	0.67
5	0.78	0.73
6	0.83	0.78
7	0.87	0.85
8	0.91	0.89
9	0.95	0.93
10	1.00	1.00

All 200mA Configurations

FAWS Position	Typical Delivered Lumens Multiplier	Typical System wattage and typical current
1	0.30	0.35
2	0.50	0.55
3	0.59	0.62
4	0.69	0.72
5	0.77	0.80
6	0.83	0.85
7	0.88	0.90
8	0.93	0.92
9	0.96	0.97
10	1.00	1.00

Note: Typical value accuracy +/- 5%

CL32/CL52 Refractive Globe with LumiLock LED engine GX4

Specifications

Housing

Optional Pods:

M: Contemporary smooth tapered cone fitter is constructed of 356 HM High-Strength cast aluminum, low copper for high resistance to corrosion. Accepts standard Hadco twistlock LumiLock LED light engine GX4 assemblies. Wiring terminal block accepts three #8 solid or stranded wires. Optional internal twist-lock photo eye receptacle or button eye photocell. Tool-less access to photo eye through the door on the pod. Heavy cast aluminum post fitter utilizes three 5/16-18 black cadmium stainless steel set screws (Hex head or Allen head as specified) for mounting to 4" O.D. post tenon. Globe holder has an internal water trap to prevent water from entering the driver compartment. Globe is held by utilizing four 5/16-18 black cadmium stainless steel fasteners (Hex head or Allen head as specified). All hardware to be stainless steel and captive. Pod height is 11" and width is 10-1/2".

P: Contemporary round fitter is constructed of 356 HM High-Strength cast aluminum, low copper for high resistance to corrosion. Accepts standard Hadco twistlock LumiLock LED light engine GX4 assemblies. Wiring terminal block accepts three #8 solid or stranded wires. Optional internal button eye photocell. Heavy cast aluminum post fitter utilizes three 5/16-18 black cadmium stainless steel set screws (Hex head or Allen head as specified) for mounting to 4" O.D. post tenon. Globe holder has an internal water trap to prevent water from entering the driver compartment. Globe is held by utilizing four 5/16-18 black cadmium stainless steel fasteners (Hex head or Allen head as specified). All hardware to be stainless steel and captive. Pod height is 9-1/2" and width is 10-1/2".

R: Contemporary smooth tapered fitter is constructed of 356 HM High-Strength cast aluminum, low copper for high resistance to corrosion. Accepts standard Hadco twistlock LumiLock LED light engine GX4 assemblies. Wiring terminal block accepts three #8 solid or stranded wires. Optional internal button eye photocell. Heavy cast aluminum post fitter utilizes three 5/16-18 black cadmium stainless steel set screws (Hex head or Allen head as specified) for mounting to 3" O.D. post tenon. Globe holder has an internal water trap to prevent water from entering the driver compartment. Globe is held by utilizing four 5/16-18 black cadmium stainless steel fasteners (Hex head or Allen head as specified). All hardware to be stainless steel and captive. Pod height is 8" and width is 10".

Roof

D: Roof is 0.090" thick spun aluminum. 6-1/2" height and 15-3/16" width. The roof and bottom globe sections are secured in a slip-fit, 1/2" overlap design and use four #10-24 stainless steel pan head screws with four aluminum nutserts providing a mechanical lock and enabling easy future replacement of either the roof or bottom globe section if required.

H: Roof is 0.090" thick spun aluminum. 4" height and 15" width. The roof and bottom globe sections are secured in a slip-fit, 1/2" overlap design and use four #10-24 stainless steel pan head screws with four aluminum nutserts providing a mechanical lock and enabling easy future replacement of either the roof or bottom globe section if required.

J: Roof is 0.090" thick spun aluminum. 5" height and 15-5/8" width. The roof and bottom globe sections are secured in a slip-fit, 1/2" overlap design and use four #10-24 stainless steel pan head screws with four aluminum nutserts providing a mechanical lock and enabling easy future replacement of either the roof or bottom globe section if required. Finish is polyester thermoset powdercoat.

K: Roof is 0.090" thick spun aluminum. 8" height and 15" width. The roof and bottom globe sections are secured in a slip-fit, 1/2" overlap design and use four #10-24 stainless steel pan head screws with four aluminum nutserts providing a mechanical lock and enabling easy future replacement of either the roof or bottom globe section if required.

Cage

K: Cage for narrow globe (15" dia.). Constructed of 360 aluminum alloy, low copper for high resistance to corrosion. Cage has 4 curved legs, attached by a solid band. Height of cage is 16-7/8" and width of cage is 16-5/8".

L: Cage for narrow style globes (15" dia.). Constructed of 360 aluminum alloy, low copper for high resistance to corrosion. Cage has 8 curved legs, attached by a solid band. Height of cage is 16-7/8" and width of cage is 16-5/8".

Brim

A: Brim is 0.090" thick spun aluminum. Height is 3-1/2" and width is 28-3/8". The brim is only available with the cage option (K or L) and is attached to the cage via stainless steel fasteners.

Fasteners

Used to secure post fitter to post tenon and globe to globe holder.

- 1: Hex Head Bolts: Black cadmium stainless steel.
- 2: Allen Head Bolts: Black cadmium stainless steel.

Light engine

GX4 is composed of four main components: Heat Sink, LED, Optical System, and Driver. Electrical components are RoHS compliant.

Entire luminaire is rated for operation in ambient temperature of -40°C / -40°F up to +40°C / +104°F. B Voltage configurations rated for operation in ambient temperature of -40°C / -40°F up to +35°C / +95°F.

LED & Optics

Composed of 64 high power LEDs. LED board substrate is MCPCB (Metal Core Printed Circuit Board), designed to minimize thermal resistance from LED junction to heat sinks, ensures greater heat transfer and longer lifespan. Color temperature as per ANSI/NEMA bin Neutral White, 4000 Kelvin nominal (3985K +/- 275K or 3710K to 4260K) or Warm White, 3000 Kelvin nominal (3045K +/- 175K or 2870K to 3220K). CRI 70 Min. 75 Typical.

(W) Wide and (S) Short Optic choices are available. Both optics are made of optical grade PC and have been optimized to achieve maximum spacing, target lumens, and a superior lighting uniformity.

Wide Optics – Superior performance and light level uniformity for applications where typical pole spacing is approximately six times mounting height of luminaire.

Short Optics – Superior performance and light level uniformity for applications where typical pole spacing is approximately five times mounting height of luminaire. Provides higher illumination levels under pole area, ideal for increased security and applications requiring superior facial recognition.

Type 3 and Type 5 distribution choices are available.

NOTE: Distribution can easily be changed in the field simply by loosening two screws (and removing top bracket with twistlock receptacle, if applicable), then moving two of the light bars – see instructions for details.

LEDs and optics (S) Short or (W) Wide form an IP66 light engine to ensure complete environmental protection against water and dust ingress and corrosion, critical to long term LED reliability. All wiring is full copper, with 105C rated insulation. LED modules are secured to heatsinks using #8 stainless steel hardware, guaranteeing construction rigidity and vibration resistance.

Heat sinks

LED Engine construction consists of four 6063-T5 aluminum heat sinks, clear anodized to MIL-A-8625 specifications for excellent corrosion resistance and surface finish. Fin spacing has been optimized for maximum convective heat transfer under natural convection conditions, maximizing LED life and efficiency. Heat sinks provide greater than 700 sq. in. of convective surface area total, ensuring proper junction temperature control, lumen maintenance, and system reliability. Extruded heatsinks meet or exceed tolerances as specified by AEC (Aluminum Extruders Council) standards and have been designed to provide superior surface flatness, ensuring excellent contact between heatsinks and LEDs. Product does not use any cooling device with moving parts (passive cooling only).

Heat sinks are secured using galvanized steel brackets and stainless steel hardware to provide additional corrosion resistance.

Globe Assembly

Narrow globe is constructed of clear injection molded U.V. stabilized acrylic. A two-piece (Globe and Roof) slip-fit, 1/2" overlap, design utilizes nutserts and stainless steel fasteners, which eliminates a seam appearance.

The optical section of the globe has a neck opening of 7-3/8" and an outside neck diameter of 8". Globe (less the roof) has a 15-1/2" height and 15" width at the top with 114 horizontal prisms and 360 highly polished vertical prisms.

Driver

Driver comes standard with 0-10V dimming capability. High power factor of 95%. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max. Driver operating ambient temperature range is -40F (-40C) to +130F (+55C). Certified in compliance to UL1310 cULus requirement (dry and damp location). Assembled on a LumiLock twistlock removable cover with Tyco quick disconnect plug resisting to 221°F (105°C). The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short

CL32/CL52 Refractive Globe with LumiLock LED engine GX4

Specifications (continued)

circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min). Due to the inrush current that occurs with electronic drivers, recommend using a time-delay or slow blow fuse to avoid unwanted fuse blowing (false tripping) that can occur with normal or fast acting fuses.

Driver Options

AST: Pre-set driver for progressive start-up of the LED module(s) to optimize energy management and enhance visual comfort at start-up.

CLO: Pre-set driver to manage the lumen depreciation by adjusting the power given to the LEDs offering the same lighting intensity during the entire lifespan of the LED module.

OTL: Pre-set driver to signal end of life of the LED module(s) for better fixture management.

Dimming Options

DA: 4 Hrs 25% Reduction

DB: 4 Hrs 50% Reduction

DC: 4 Hrs 75% Reduction

DD: 6 Hrs 25% Reduction

DE: 6 Hrs 50% Reduction

DF: 6 Hrs 75% Reduction

DG: 8 Hrs 25% Reduction

DH: 8 Hrs 50% Reduction

DJ: 8 Hrs 75% Reduction

DAL: Pre-set driver compatible with DALI logarithmic control system.

FAWS

Field Adjustable Wattage Selector, pre-set to the highest position, can be easily switched in the field to the required position. This reduces total luminaire wattage consumption and reduces the light level – see the FAWS multiplier chart for more details.

Note: It is not recommended to use FAWS with other dimming or controls; if you do, set the switch to position 10 (maximum output) to enable the other dimming or controls. Switching FAWS to any position other than 10 will disable the other dimming or controls.

Surge Protection

Surge protector tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line Ground, Line Neutral and Neutral Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid State Street Lighting Consortium) model specification for LED roadway luminaires electrical immunity requirements for High Test Level 10kV / 10kA. Optional SP2: 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

Finish

Color in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with \pm 1 mils / 24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard. The surface treatment achieves a minimum of 2000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

Luminaire Useful Life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, exclusive Signify System Reliability Tool, Advance driver data and LED manufacturer LM-80/TM-21 data, expected to reach 100,000+ hours with >L70 lumen maintenance @ 25°C. 530mA configurations with short optics expected to reach 95,000+ hours with >L70 lumen maintenance @ 25°C. 530mA configurations with wide optics expected to reach >75,000 hours with >L70 lumen maintenance @ 25°C. Luminaire useful life accounts for LED lumen maintenance AND all of these additional factors including: LED color shift, LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion. Lifetime statements do not include the use of controls, including networked controllers.

LED products manufacturing standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Quality Control

The manufacturer must provide a written confirmation of its ISO 9001 2008 and ISO 14001 2004 International Quality Standards Certification.

Vibration Resistance

Meets the ANSI C136.31 2001, American National Standard for Roadway Luminaire Vibration specifications for Normal applications, tested by a certified lab over 100,000 cycles in all three axes.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed inside the luminaire, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the app and register your product right away.

For more details visit: signify.com/servicetag

Certifications and Compliance

cETLus Listed for Canada and U.S. to the UL 1598 and UL8750 standards, suitable for Wet Locations. The quality systems of the facility where manufactured have been registered by UL to the ISO 9001 series standards. LM80 & LM79 tested. Configurations are DesignLights Consortium qualified, consult DLC QPL Qualified Products List for more details.

IP Ratings

IP66 rated LED light engine.

Warranty

5-year limited warranty. Options available for extended warranties – contact factory.

See signify.com/warranties for details and restrictions.

Buy American Act of 1933 (BAA):

This product is manufactured in one of our US factories and, as of the date of this document, this product was considered a commercially available off-the-shelf (COTS) item meeting the requirements of the BAA.

This BAA designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed as a condition of receiving funds administered by the Department of Transportation or other federal agencies. Prior to ordering, please visit www.signify.com/baa to view a current list of BAA-compliant products to confirm this product's current compliance.