



# Certificate of Compliance

**Certificate:** 70073613

**Master Contract:** 164460

**Project:** 80002498

**Date Issued:** 2019-08-16

**Issued To:** Appleton Group Ltd.  
9377 W Higgins Rd  
Rosemont, Illinois, 60018  
United States

**Attention:** Ajay Tripathi

*The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.*

**Issued by:** *Don Verbeem*  
Don Verbeem



## **PRODUCTS**

CLASS - C342883 - FIXTURES AND FITTINGS For Hazardous Locations-Certified to U.S. Standards

CLASS - C342803 - FIXTURES AND FITTINGS For Hazardous Locations

**Class I, Division 2, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III; Tcoded per table below; Type 3R, 4 and 4X; IP66, 67; Marine Outside Type (Salt Water) for USA only**

- LED luminaires for use in hazardous locations, Series AMLH or Series BHL, rated 120-277 VAC max, 125 -300 VDC, 347VAC to 480VAC, 315 Watts max, 50/60Hz. Tambient – 40 °C to +65 °C per table and note below.



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Series Number	Min Supply Wire (C°)	Max Driver Current (mA)	Max Ambient Temperature (C°)	Class I Division 2 Groups A, B, C and D	Class I, Zone 2, Group IIC	Class II, Division 1, Groups E, F and G	Zone 20, Group IIIC	Class I, Division 2 & Class II, Division 1
AMLHL1***BH** BHL*L1****BH**	90	530	40	T4A	T4	T6/T5^	T6/T5^	T4A
			55	T4A	T4	T6/T5^	T6/T5^	T4A
			65	T4	T4	T5	T5	T4
AMLHL1***BU** BHL*L1****BU**	90	530	40	T4A	T4	T6/T5^	T6/T5^	T4A
			55	T4A	T4	T6/T5^	T6/T5^	T4A
			65	T4	T4	T5	T5	T4
AMLHL2***BH** BHL*L2****BH**	90	680	40	T4	T4	T6/T5^	T6/T5^	T4
			55	T4	T4	T5	T5	T4
			65	T3C	T3	T5	T5	T3C
AMLHL2***BU** BHL*L2****BU**	90	680	40	T4	T4	T6/T5^	T6/T5^	T4
			55	T4	T4	T5	T5	T4
			65	T3C	T3	T5	T5	T3C
AMLHL3***BH** BHL*L3****BH**	90	915	40	T3C	T3	T6/T5^	T6/T5^	T3C
			55	T3C	T3	T5	T5	T3C
			65	---	---	---	---	---
AMLHL3***BU** BHL*L3****BU**	90	915	40	T3C	T3	T6/T5^	T6/T5^	T3C
			55	T3C	T3	T5	T5	T3C
			65	---	---	---	---	---

**Ex ec IIC T-coded per table below Gc;**  
**Class I, Zone 2, AEx ec IIC T-coded per table below Gc;**  
**Ex tb IIIC T-coded per table below Db;**  
**Zone 21, AEx tb IIIC T-coded per table below Db;**

- LED luminaires for use in hazardous locations, Series AMLH or Series BHL, rated 120-277 VAC max, 125 -300 VDC, 315 Watts max, 50/60Hz. Tambient – 40 °C to +65 °C per table and note below.

Series Number	Min Supply Wire (C°)	Max Driver Current (mA)	Max Ambient Temperature (C°)	Ex ec IIC; Class I, Zone 2, AEx ec IIC	Ex tb IIIC; Zone 21, AEx tb IIIC
AMLHL1***BU BHLL1***BU	90	530	40	T4	T85°C/T100°C^^
			55	T4	T85°C/T100°C^^
			65	T4	T100°C



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AMLHL2***BU BHLL2***BU	90	680	40	T4	T85°C/T100°C^^
			55	T4	T100°C
			65	T3	T100°C
AMLHL3***BU BHLL3***BU	90	915	40	T3	T85°C/T100°C^^
			55	T3	T100°C
			65	--	--

**Conditions of Acceptability:**

1. \*\*\* Series model AMLH or series model BHL is followed with alphanumeric suffixes to denote electrical and mechanical variations. Refer to nomenclature for details.
2. ^ T5 is maximum allowed Temperature Code when model number includes 3 x 3 optic (Beam Pattern model designator “3” for Areamaster and “V” for Baymaster).
3. ^^ is maximum allowed Temperature when model number includes 3 x 3 optic (Beam Pattern model designator “3” for Areamaster and “V” for Baymaster).
4. Marine Outside Type (Salt Water) rating is for installation in the USA only.
5. Only certain models are valid for the Ex and/or AEx markings per catalogue nomenclature noted above for Types of Protection “ec” and/or “tb”. Models with options such as quick connect pendant, polycarbonate lens, fusing or BH driver are not valid for these types of protection.
6. For input voltages of 125-169 VDC, an ambient temperature exceeding 55 °C is not permitted.

**APPLICABLE REQUIREMENTS**

CAN/CSA C22.2 No. 0-10	-	General requirements — Canadian Electrical Code, Part II
CAN/CSA C22.2 No. 94.2-15	-	Enclosures for electrical equipment, environmental considerations
CAN/CSA C22.2 No. 137-M1981	-	Electric Luminaires for Use in Hazardous Locations
CAN/CSA C22.2 No. 250.0-08	-	Luminaires
CAN/CSA C22.2 No. 250.13-14	-	Light emitting diode (LED) equipment for lighting applications
CAN/CSA C22.2 No. 60529:05	-	Degrees of protection provided by enclosures (IP Code)
CAN/CSA E60598-1:16	-	Luminaires — Part 1: General requirements and tests
CAN/CSA-C22.2 No. 60079-0:15	-	Explosive atmospheres — Part 0: Equipment — General requirements
CAN/CSA-C22.2 No. 60079-7:16	-	Explosive atmospheres — Part 7: Equipment protection by increased safety “e”
CAN/CSA-C22.2 No. 60079-31:15	-	Explosive atmospheres — Part 31: Equipment dust ignition protection by enclosure “t”
UL 50E, Second Edition	-	Enclosures for electrical equipment, environmental considerations
UL 844, Thirteenth Edition	-	Luminaires for Use in Hazardous (Classified) Locations
UL 1598, Third Edition	-	Luminaires
UL 8750, Second Edition	-	Light Emitting Diode (LED) Equipment for Use in Lighting Products
UL 60079-0, Sixth Edition	-	Explosive Atmospheres – Part 0: Equipment – General Requirements



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UL 60079-7, Fifth Edition	-	Standard for Explosive Atmospheres – Part 7: Equipment Protection by Increased Safety "e"
UL 60079-31, Second Edition	-	Explosive Atmospheres – Part 31: Equipment Dust Ignition Protection by Enclosure "t"



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## **MARKINGS**

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

- a) Manufacturer's name, trademark or tradename
- b) Catalogue, style, model or other type designation
- c) Rated input voltage
- d) Frequency in Hertz
- e) Rated input in amperes, watts and if applicable power factor
- f) Hazardous locations designation
- g) Optional Zone equivalency marking per CEC/NEC
- h) Temperature Codes as applicable
- i) May be marked with IP66 (optional), IP67 (optional), Type 3, 4, 4X (optional) ratings
- j) The phrase : "MARINE OUTSIDE TYPE (SALT WATER) For Installation in the USA Only" (optional)
- k) Operating ambient temperature ; -40°C to 40 °C or -40°C to 55 °C or -40°C to 65 °C, however there is an accompanying caution statement:

**CAUTION: FOR INPUT VOLTAGES OF 125-169 VDC, AMBIENT TEMPERATURE EXCEEDING 55 °C IS NOT PERMITTED.**

**ATTENTION: POUR LES TENSIONS D'ENTRÉE DE 125-169 Vcc, LA TEMPERATURE D'AMBIENT EXCÉDANT 55 °C N'EST PAS AUTORISÉE.**

- l) When luminaire is disconnected or connected the following bilingual warning shall apply:

**CAUTION: TO REDUCE THE RISK OF IGNITION OF HAZARDOUS ATMOSPHERES, DISCONNECT THE LUMINAIRE FROM THE SUPPLY CIRCUIT BEFORE OPENING. KEEP TIGHTLY CLOSED WHEN IN OPERATION.**

**ATTENTION: MISE EN GARDE: POUR REDUIRE LE RISQUE D'INFLAMMATION/EXPLOSION EN ATMOSPHERES EXPLOSIBLES, ISOLER LE LUMINAIRE DU CIRCUIT D'ALIMENTATION AVANT L'OUVERTURE. VEILLEZ À CE**



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QUE LE LUMINAIRE SOIT CORRECTEMENT FERME AVANT LA MISE SOUS TENSION.

m) Fused marking the following warning shall apply:

CAUTION: REPLACE ONLY WITH FUSE RATED 5A, 600 VAC. REPLACEMENT FUSE MUST BE NON-ARCING (FILLED), NON-INDICATING, AND CURRENT LIMITING. FUSE IS FOR SUPPLEMENTARY PROTETION ONLY.

Or (as applicable)

CAUTION: REPLACE ONLY WITH FUSE RATED 3A, 600 VAC. REPLACEMENT FUSE MUST BE NON-ARCING (FILLED), NON-INDICATING, AND CURRENT LIMITING. FUSE IS FOR SUPPLEMENTARY PROTETION ONLY.

**Nameplate adhesive label material approval information:**

Labels indicated in drawings 603285, 663474, 663475, 663492, 663493, and 663647 all use the same material (Note: material callout in 000035-206 and 000035-159 listed in the drawings refer to the same material but are different cut sizes): THERMLfilm NEXgen 23120 consisting of 2.0 mil gloss top-coated silver matte polyester (film 2.0 mils, adhesive 0.8-0.9 mils, liner 3.1 mils) manufactured by Flexcon. cUL recognized under file PGJI8.MH16635 and PGJI2.MH16635 for the US.



## Supplement to Certificate of Compliance

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*The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.*

### Product Certification History

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Project	Date	Description
80002498	2019-08-16	Update Report 70073613 to add alternate suppliers Cree (XPL2 series) and Nichia (319BT series) for the LED chips.
000070189743	2019-01-23	Update Report 70073613 to make the following changes: a) Add the Zones methods of protection for “ec”, “tc” and “tb” and related AEx and Ex markings. b) Investigate the addition of adding new approved labels. c) Investigate the expansion of the DC rating of models from 170 – 300 VDC to 125 – 300 VDC. d) Update to include use of thermal pad
000070186838	2018-06-14	Update Report 70073613 to add additional surge protection devices.
000070174007	2018-05-23	Update to Report 70073613 to add alternate construction for the Quick Connect part for LED luminaires, Series BHL.
000070160792	2018-01-17	Update to Report 70073613 to include new 3 x 3 secondary optic made from Lexan PC 2180T.
000070124257	2017-07-20	Update report 70073613 to add Baymaster series of LED luminaires with quick connect adapter and an additional mounting option.
000070111356	2017-01-19	Update report 70073613 and associated Certification Records under Master Contract number 164460 to update temperature code table
000070073613	2016-11-18	North America certification for AREAMASTER LED SERIES- Hi lumen