



CERTIFICATE NUMBER	23-2372520-PDA
EFFECTIVE DATE	28-Apr-2023
EXPIRY DATE	27-Apr-2028
ABS TECHNICAL OFFICE	Houston ESD - Electrical

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

APPLETON GROUP

located at

**9377 WEST HIGGINS ROAD, , ROSEMONT, IL, United States,
60018**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Lighting Fixtures, LED, Hazardous Area
Model: AMLH Series
Endorsements:
Tier: 2 - PDA Issued

This Product Design Assessment (PDA) Certificate remains valid until 27/Apr/2028 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Soheni Haque

Soheni Haque,Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

APPLETON GROUP

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Tier: 2 - PDA Issued

Product: Lighting Fixtures, LED, Hazardous Area**Model:** AMLH Series**Endorsements:****Intended Service:**

Marine & Offshore Applications - LED luminaires (floodlights) used in hazardous Areas

Description:

AMLH Series is Areamaster Generation 2 Series LED Floodlight - High Lumen Model for use in hazardous Areas. The product consists of aluminum housing and lens cover, clear or frosted glass lens, silicone rubber gaskets, zinc plated steel yoke and aluminum visor.

AMLH is followed by L1, L2 or L3 (lumens); followed by C, N or W (correlated color temperature); followed by G or F (diffusion); followed by 3, 5, 6 or 7 (beam spread); followed by BU or BH (voltage); may be followed by F (fusing); may be followed by S (10KV surge protection); may be followed by M (M20 metriac cable entry adapter).

* Refer to Appleton Document "Areamaster Generation 2 and High Lumen LED Series Luminaires" (AMLH Series) attached for catalog numbering details.

Rating:

Rated Voltage: 120 – 277 VAC 50/60 Hz & 125-300 VDC (BU)

347 – 480 VAC 50/60 Hz (BH)

Maximum Input Power: 317 W

Maximum Input Current: 2.67A

Maximum Ambient Temperature Range: -40 °C to +65 °C (-40 °F to +149 °F)

-40 °C to +55 °C (-40 °F to +131 °F) (Lumen Level: L3)

Degree of Ingress Protection: IP66, IP67

AMLH Series certified by Intertek for use in hazardous areas

Class I, Division 2, Groups A, B, C, D, T3C, T4, T4A (Voltage Range: BH/BU)

Class II, Division 1, Groups E, F, G, T5, T6 (Voltage Range: BH/BU)

Class I, Zone 2, AEx ec IIC Gc, T3, T4 (Voltage Range: BU)

Service Restriction:

1) Unit Certification is not required for this product.

2) If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

3) Dielectric Voltage Withstand Test and Grounding Continuity Test are to be conducted by the manufacturer per Sec. 11.0 of Intertek Report No. 104364582DAL-001, Listing Constructional Data Report (CDR) - LED Luminaires (for use in hazardous area), Issued: 11-Apr-2022.

4) For voltages of 125-169 VDC, ambient temperature exceeding 55 °C (131 °F) is not permitted per Sec. 6.0 of Intertek Report No. 104364582DAL-001, Listing Constructional Data Report (CDR) - LED Luminaires (for use in hazardous area), Issued: 11-Apr-2022.

Comments:

1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

2) Installation in hazardous area is to be verified in accordance with Marine Vessels Rules 4-8-3/13, 4-8-4/27 and Mobile Offshore Units Rules 4-3-3/9.1, 4-3-3/9.3 as well as Equipment Marking/Special Condition of Use listed in the valid Ex-certification issued by a competent, independent testing laboratory.

3) The accessories of the lighting and external electrical cables are not covered in the subject PDA certificate.

Notes/Drawing/Documentation:

Intertek Report No. 104364582DAL-001, Listing Constructional Data Report (CDR) - LED Luminaires (for use in

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hazardous area), Issued: 11-Apr-2022, Revised: None

Intertek Authorization To Mark (ATM) for Report 104364566CHI-001, Luminaires, Issued: 26-Mar-2021

Intertek Authorization To Mark (ATM) for Report 104364566CHI-002, Marine Luminaires, Issued: 26-Mar-2021

Intertek Authorization To Mark (ATM) for Report 104364582DAL-001, LED Luminaires (for use in hazardous area), Issued: 11-Jul-2022

Appleton Document, Areamaster Generation 2 and High Lumen LED Series Luminaires, September 2022

Appleton Gas Analysis for UL 1598, CSA C22.2 No.250.0, CSA C22.2 No.137

Terms of Validity:

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STANDARDS**ABS Rules:**

2023 Rules for Conditions of Classification, Part 1, 1-1-4/7.7, 1-1-A3, 1-1-A4, which cover the following:

2023 Marine Vessel Rules: 4-8-3/1.3, 4-8-3/1.7, 4-8-3/1.9, 4-8-3/1.11, 4-8-3/1.17, 4-8-3/Table 2, 4-8-3/13, 4-8-4/1.3, 4-8-4/11.1.1, 4-8-4/27

2023 Rules for Conditions of Classification, Part 1 - Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which cover the following:

2023 Mobile Offshore Units Rules: 4-3-1/9, 4-3-1/11, 4-3-1/15, 4-3-1/17, 4-3-3/3.1, 4-3-3/Table 1, 4-3-3/3.17, 4-3-3/9.1, 4-3-3/9.3

National:

UL 844 Luminaires for Use in Hazardous (Classified) Locations, Edition 13

UL 1598 Luminaires, Edition 5

UL 1598A Supplemental Requirements for Luminaires for Installation on Marine Vessels, Edition 1

International:

CSA C22.2 No. 250.0:21 Luminaires

CSA C22.2 No. 137-18 Electric luminaires for use in hazardous locations

Government:

NA

EUMED:

NA

OTHERS:

NA