

TYPE-EXAMINATION CERTIFICATE

1. Type-examination Certificate (Module A)
2. Equipment or Protective System intended for use in potentially explosive atmospheres (Directive 2014/34/EU)



3. Type examination certificate Nr **ITS-I 23 ATEX 29460 R.0**

4. **Product:** Areamaster Generation 2 LED Luminaire, model: **AMLGxyzwBUm**
 Areamaster High Lumen (HL) LED Luminaire, model: **AMLHxyzwBUm**
 Baymaster LED Luminaire, model: **BLLpxyzwNBUm**
 Baymaster High Lumen (HL) LED luminaire, model: **BHLpxyzwNBUm**

5. **Manufacturer 1:** Appleton Group LLC **Applicant:** Appleton Group LLC

6. **Address:** 9377 W Higgins Rd; Rosemont, IL 60018, USA **Address:** 9377 W Higgins Rd; Rosemont, IL 60018, USA

Manufacturer 2: Emerson **Manufacturer 3:** EGS Mexico S. de R.L. de C.V.

Address: Emerson Street No. 4, Parc Industrial Tetarom 2, 400641, Cluj-Napoca, Romania **Address:** Via Monterrey Matamoros No. 598 Parque Industrial Milenium C.P. 66626 Apodaca, Nuevo Leon, Mexico

7. This product and any acceptable variation thereto are specified in the schedule to this certificate and therein referred to.
8. INTERTEK ITALIA S.p.A., certifies that the equipment or protective system has been found to comply with the essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmosphere, given in Annex II of the Directive.

The examination and tests results are recorded in confidential technical evaluation Intertek Report Nr. 104590155DAL-006 Revision 0 dated 11-Aug-2023.

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2018, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1 and EN 60079-31:2014 except in respect of those requirements referred to at item 16 of the Schedule.
10. If the sign X is placed after the certificate number, it indicates that the product is subject to Special Conditions for Safe Use specified in the schedule to this certificate.
11. This Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
12. The marking of the product shall include the following:



II 3 G Ex ec IIC T3/T4/T5 Gc
 II 3 G Ex ec mb IIC T3/T4/T5 Gc
 II 3 D Ex tc IIIC T85°C/T100°C Dc
 Tamb: -40°C to +65°C
 -55°C ≤ TAMB ≤ +65°C (for luminaires with Parker Hannifin gasket)
 IP66, IP67(for luminaires with Parker Hannifin gasket)

07 September 2023

Certificate issue date



Todd Relyea
 Certification Officer
 Intertek Italia S.p.A.



This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

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13. DESCRIPTION OF THE EQUIPMENT OR PROTECTIVE SYSTEM

The Areamaster Generation 2, Areamaster High Lumen (HL), Baymaster and the Baymaster High Lumen luminaires are made up of three main body parts, the driver housing, the LED array board(s) housing and the glass cover frame. The luminaires contain an IECEx certified LED driver (either 100W or 150W), LED array and AC/DC terminal blocks. Areamaster Generation 2/Baymaster models utilize 1 LED driver, while the Areamaster/Baymaster High Lumen (HL) models utilizes 2 LED drivers. Also, the Areamaster Generation 2/Baymaster model luminaires consist of 1 LED module, while the Areamaster/Baymaster High Lumen (HL) luminaires consist of 2 LED modules. The joints on the housing are sealed by a Silicone ring joined by vulcanization which is secured in position in a groove by RTV sealant or for the window an RTV (flexible one-piece Silicone bead) seal is secured in position using clips secured by screws.

The driver housing is comprised of a two-compartment construction, where construction one is the driver housing and compartment two is the integral wiring box. The driver housing is made from Cast Aluminum Alloy, provided with cooling fins on three of the external edges and across the top of the luminaire. The wiring compartment is supplied with two or three 3/4-14 NPT threaded conduit entries (one or two sealed with a close-up plug). The cover to the wiring compartment is secured by four #8-32 x 7/8 cap pan head screws and sealed by a Silicone ring joined by vulcanization which is secured in position in a groove by RTV sealant. Inside the driver housing, the driver, wiring and terminal block(s) are secured by mechanical means.

The LED Array board housing is made from Cast Aluminum Alloy, with the external provided with cooling fins on three of the external edges. The array board housing is secured to the driver housing by four 1/4-20 x 1-1/4 cap hex head bolts and sealed by a Silicone ring joined by vulcanization which is secured in position in a groove by RTV sealant. Inside the array board housing, the LED array(s) is/are secured by mechanical means (via five or twelve 4-40 SS screws).

The glass cover frame is made from Cast Aluminum Alloy. The frame is fitted with either a clear or diffused (frosted) tempered low iron float glass lens, in either 174.24mm x 174.24mm or 231.14mm x 220.98mm size. The glass is secured with four #6-32 x 1/4 pan SS screws and clips. The glass is additionally sealed with RTV. The frame is secured to the array board housing by four 1/4-20 x 1-1/4 cap hex head bolts and sealed by a Silicone ring joined by vulcanization which is secured in position in a groove by RTV sealant.

The only difference between the Areamaster Generation 2, Areamaster High Lumen, Baymaster, and the Baymaster High Lumen is the enclosure powder coating, where the Areamaster luminaires are bronze and Baymaster luminaires are gray in color.

The model nomenclature for the Areamaster and Baymaster LED luminaires is shown below:

Areamaster Generation 2 Model Series AMLGxyzwBUM*C LED luminaire	Baymaster Model Series BLLpxyzw*BUMC LED luminaire
<p>Model code breakdown for AMLGxyzwBUM*C:</p> <p>x = Lumens (L6=9000 lumens, L7=15000 Lumens or L8=19000 Lumens)</p> <p>y = Correlated Color Temperature – CCT (C=5000K, W=3000K, N=4000K, A=Amber, S=1800K, H=2200K, M=3500K, R=4500K)</p> <p>z = Glass Type (G=Clear Glass, F=Frosted Glass)</p> <p>w = Beam Pattern (6=NEMA 7x7 (non-optic) or 7=(NEMA 7x6)</p>	<p>Model code breakdown for BLLpxyzw*BUMC:</p> <p>p = Pendant Mount (P = Quick Connect Pendant mount provided, Blank = no QC Pendant mount)</p> <p>x = Lumens (L6=9000 lumens, L7=15000 Lumens or L8=19000 Lumens)</p> <p>y = Correlated Color Temperature – CCT (C=5000K, W=3000K, N=4000K, A=Amber, S=1800K, H=2200K, M=3500K, R=4500K)</p> <p>z = Glass Type (G=Clear Glass, F=Frosted Glass)</p>



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<p>M = Metric M20 adaptor optional (M=M20 adaptor included or Blank without adaptor)</p> <p>* = Standard (Architectural Bronze) or Housing Paint Color (any letter representing the color of the luminaire)</p> <p>C = Cold Temperature Options: C (-55 degrees C) or Blank (-40 degrees C)</p>	<p>w = Beam Pattern (A=Aisle(with optic), M=Medium(no optic), W=Wide(with optic))</p> <p>* = Standard (Architectural Gray) or Housing Paint Color (any letter representing the color of the luminaire)</p> <p>M = Metric M20 adaptor option (M=M20 adaptor included)</p> <p>C = Cold Temperature Options: C (-55 degrees C) or Blank (-40 degrees C)</p>
<p>Note: Option L6 utilizes the 100W driver and L7 and L8 utilize the 150W driver.</p>	

<p>Areamaster High Lumen (HL) Model Series AMLHxyzw BUM*C LED luminaire</p>	<p>Baymaster High Lumen (HL) Model Series BHLpxyzw*BUMC LED luminaire</p>
<p>Model code breakdown for AMLHxyzwBUM*C:</p> <p>x= Lumens (L1=24000 lumens, L2=30000 Lumens or L3=38000 Lumens)</p> <p>y = Correlated Color Temperature – CCT (C=5000K, W=3000K, N=4000K, A=Amber, S=1800K, H=2200K, M=3500K, R=4500K)</p> <p>z = Glass Type (G=Clear Glass, F=Frosted Glass)</p> <p>w = Beam Pattern (3= NEMA 3x3, 5= NEMA 5x5, 6=NEMA 7x7 (non-optic) or 7= NEMA 7x6)</p> <p>M = Metric M20 adaptor optional (M=M20 adaptor included or Blank without adaptor)</p> <p>* = Standard (Architectural Bronze) or Housing Paint Color (any letter representing the color of the luminaire)</p> <p>C = Cold Temperature Options: C (-55 degrees C) or Blank (-40 degrees C)</p>	<p>Model code breakdown for BHLpxyzw*BUMC:</p> <p>p = Pendant Mount (P = Quick Connect Pendant mount provided, Blank = no QC Pendant mount)</p> <p>x= Lumens (L1=24000 lumens, L2=30000 Lumens or L3=38000 Lumens)</p> <p>y = Correlated Color Temperature – CCT (C=5000K, W=3000K, N=4000K, A=Amber, S=1800K, H=2200K, M=3500K, R=4500K)</p> <p>z = Glass Type (G=Clear Glass, F=Frosted Glass)</p> <p>w = Beam Pattern (V=Very Narrow(with optic), N=Narrow(with optic), M=Medium(no optic), W=Wide(with optic))</p> <p>* = Standard (Architectural Gray) or Housing Paint Color (any letter representing the color of the luminaire)</p> <p>M = Metric M20 adaptor option (M=M20 adaptor included)</p> <p>C = Cold Temperature Options: C (-55 degrees C) or Blank (-40 degrees C)</p>
<p>Note: Option L1 utilizes the 100W drivers and L2 and L3 utilize the 150W drivers.</p>	



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Electrical parameters/ratings for the above luminaire models is shown below:

120 – 277 VAC, 50/60 Hz

125-300 VDC

150 W (max), 1.8A (max) for AMLG and BLL models

315 W (max), 2.7A (max) for AMLH and BHL models

Temperature codes assigned to each model type based on driver current is shown below:

Areamaster Generation 2 and Baymaster models for Gas/Dust atmospheres with the following light engines (LED arrays):

- LLOMAFF-A3N201A (3000K-W), LLOMAFF-A3N602A (5000K-A), LLOMAFF-A3N202A (3000K-A), LLOMAFF-A3N601A (5000K-W), LLOMAFF-A3N601B (5000K-no optic), LLOMAFF-A3N604A (5000K-S), or LLOMAFF-A3N204A (3000K-S), 59660049001 (5000K), 59660049002 (4000K), 59660049003 (3000K), 59660047001 (5000K), 59660047002 (4000K), 59660047003 (3000K)

Ambient temperature	Ex ec IIC/Ex ec mb IIC			Ex tc IIC		
	100W Driver	150W Driver		100W Driver	150W Driver	
	410mA	680mA	930mA	410mA	680mA	930mA
-40°C ≤ Ta ≤ +40°C *-55°C ≤ Ta ≤ +40°C	T5	T4	T3	T85°C	T85°C	T85°C
-40°C ≤ Ta ≤ +55°C *-55°C ≤ Ta ≤ +40°C	T4	T3	T3	T85°C	T85°C	T100°C
-40°C ≤ Ta ≤ +65°C *-55°C ≤ Ta ≤ +40°C	T4	T3	T3	T85°C	T100°C	T100°C

*For luminaires with Parker Hannifin gasket

Areamaster High Lumen and Baymaster High Lumen models for Gas/Dust atmospheres with the following light engines (LED arrays):

- LLOMAGA-A4N601B (5000K-no optic), LLOMAGA-A4N601A (5000K-W), LLOMAGA-A4N201A (3000K-W), LLOMAGA-A4N604A (5000K-S), or LLOMAGA-A4N204A (3000K-S), 59660048001 (5000K), 59660048002 (4000K), 59660048003 (3000K), 59660046001 (5000K), 59660046002 (4000K), 59660046003 (3000K)

Ambient temperature	Ex ec IIC/Ex ec mb IIC			Ex tc IIC		
	100W Driver	150W Driver		100W Driver	150W Driver	
	530mA	680mA	915mA	530mA	680mA	915mA
-40°C ≤ Ta ≤ +40°C *-55°C ≤ Ta ≤ +40°C	T4	T4	T3	T85°C	T85°C	T85°C
-40°C ≤ Ta ≤ +55°C *-55°C ≤ Ta ≤ +40°C	T4	T4	T3	T85°C	T100°C	T100°C
-40°C ≤ Ta ≤ +65°C *-55°C ≤ Ta ≤ +40°C	T4	T3	--	T100°C	T100°C	--

*For luminaires with Parker Hannifin gasket



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Areamaster High Lumen and Baymaster High Lumen models for Gas/Dust atmospheres where very narrow optic (3 x 3 beam) is used (AMLHxyz3BU and BHLxyzVNBU):

Ambient temperature	Ex ec IIC/Ex ec mb IIC			Ex tc IIIC		
	100W Driver	150W Driver		100W Driver	150W Driver	
	530mA	680mA	915mA	530mA	680mA	915mA
-40°C ≤ Ta ≤ +40°C * -55°C ≤ Ta ≤ +40°C	T4	T4	T3	T100°C	T100°C	T100°C
-40°C ≤ Ta ≤ +55°C * -55°C ≤ Ta ≤ +40°C	T4	T4	T3	T100°C	T100°C	T100°C
-40°C ≤ Ta ≤ +65°C * -55°C ≤ Ta ≤ +40°C	T4	T3	--	T100°C	T100°C	--

*For luminaires with Parker Hannifin gasket

14. DRAWINGS AND DOCUMENTS

TITLE	DOCUMENT Nr	LEVEL	DATE
*Polyester Powder Coating	DOC000117A000	01	06/May/2021
*BAYMASTER LED HIGH LUMEN IEC CERTIFICATION DRAWING	609354	D	20/MAR/23
*AREAMASTER LED GEN 2 IEC CERTIFICATION DRAWING	615044	F	20/MAR/23
*AREAMASTER LED HIGH LUMEN IEC CERTIFICATION DRAWING	615043	D	20/MAR/23
*BAYMASTER LED GEN 2 IEC CERTIFICATION DRAWING	615064	D	20/MAR/23
*BAYMASTER LED HIGH LUMEN AND GEN 2 IECEx NAMEPLATE LABEL	663477	F	24/JUL/23
*AREAMASTER LED HIGH LUMEN AND GEN 2 IECEx NAMEPLATE LABEL	663476	F	24/JUL/23
*Installation Instructions for Appleton™ Areamaster™ High Lumen LED Luminaire - Yoke Mount	650525-000	K	28/NOV/22
*Installation Instructions for Appleton™ Areamaster™ GEN 2 LED Luminaire - Yoke Mount	650525-001	I	06/FEB/23
*Installation Instructions for Appleton™ Baymaster™ HL LED Luminaire	650547-000	H	06/FEB/23
*Installation Instructions for Appleton™ Baymaster™ LED Luminaire	650547-001	H	06/FEB/23
*Appleton™ Areamaster™/ Baymaster™ LED Driver Replacement Instructions	650531-000	C	24/Feb/23
*Appleton™ Areamaster™/ Baymaster™ LED Cover Replacement for High Lumen and GEN 2 Instructions	650543-000	C	23/NOV/22

Note: An * is included before the title of documents that are new or revised.

Copies of the above listed documents are kept at Intertek Italia S.p.A. archive.



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15. SPECIAL CONDITIONS FOR SAFE USE

None.

16. ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

The relevant essential Health and Safety Requirements have been identified and assessed in Intertek Report Nr. 104590155DAL-006, date 11 April 202.

17. ROUTINE (FACTORY) TESTS

- Routine Dielectric Strength testing of the LED luminaires per EN IEC 60079-7:2015+A1:2018, Clause 7.1 is applicable. Dielectric strength shall be verified by test at the following test voltage and maintained for at least 1 min without dielectric breakdown occurring:

For other electrical equipment and Ex Components, where working voltages exceeding 90 V peak are present: $(1\ 000 + 2U)$ V r.m.s. + 5/0 % or 1 500 V r.m.s. + 5 0 %, whichever is greater, where U is the working voltage.

The LED luminaire shall be tested as follows:

- Between inputs and ground (frame of the enclosure) – 1600V r.m.s.

Alternatively, a test shall be carried out at 1.2 times the test voltage, but maintained for at least 100ms.

18. DETAIL OF CERTIFICATE CHANGES

Variation R.0 (Transfer to Italy):

Performed under Intertek Report No. 104590155DAL-006, Date 2023-08-11.

- 1) Combined critical drawings, all critical information controlled in new drawings. See below new control drawings list.
- 2) Added a technical document, which allows use of any LED Luminaire(s) powder coating color (pigment) specified within drawing "Polyester Powder Coating", drawing no: DOC000117A000, revision level: 00, revision date: 12/14/2020
- 3) Added new gasket, Samsung LED (LH351C), pre-certified terminals (to have dimming options) and pre-certified LED Zone 1 drivers.
- 4) Removed "op is" protection method from certificate.
- 5) Updated models nomenclature.
- 6) Electrical rating changed from "170-300 VDC" to "125-300 VDC".
- 7) Updated routine tests.
- 8) Added Parker gasket for ambient -55°C to 65°C.