



1 **TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres 2014/34/EU

3 Certificate Number: **Sira 17ATEX3241** Issue: **1**

4 Equipment: **Areamaster Generation 2 and Baymaster series LED Luminaires**

5 Applicant: **Appleton Group LLC**

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

7 This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of Category 3 equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to European Union Directive 2014/34/EU of the European Parliament and of the Council, 26 February 2014.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN 60079-0:2012/A11:2013 EN 60079-7:2015 EN 60079-31:2014

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use specified in the schedule to this certificate.

11 This Type Examination Certificate relates only to the design of the specified equipment, and not to specific items of equipment subsequently manufactured.

12 The marking of the equipment shall include the following:

Refer to the Schedule.

Project Number 70170699


C Ellaby
Deputy Certification Manager

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**Sira 17ATEX3241
Issue 1**

13 **DESCRIPTION OF EQUIPMENT**

"Areamaster Generation 2" Model Series AMLGxyzwBU LED Luminaire
"Baymaster" Model Series BLLxyzb-BU LED Luminaire



II 3GD

Ex ec IIC T5...T3 Gc

Ex tc IIIC T85°C...T100°C Dc

Ambient Temp.	Ex ec IIC			Ex tc IIIC		
	100W Driver	150W Driver		100W Driver	150W Driver	
	410mA	680mA	930mA	410mA	680mA	930mA
$-40^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$	T5	T4	T3	T85°C	T85°C	T85°C
$-40^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$	T4	T3	T3	T85°C	T85°C	T100°C
$-40^{\circ}\text{C} \leq T_a \leq +65^{\circ}\text{C}$	T4	T3	T3	T85°C	T100°C	T100°C

IP66

The temperature code table immediately below applies to all Areamaster Generation 2 HL and Baymaster HL models except those identified in the table further below:



II 3GD

Ex ec IIC T5...T3 Gc

Ex tc IIIC T85°C...T100°C Dc

Ambient Temp.	Ex ec IIC			Ex tc IIIC		
	100W Driver	150W Driver		100W Driver	150W Driver	
	530mA	680mA	915mA	530mA	530mA	680mA
$-40^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$	T4	T4	T3	T85°C	T85°C	T85°C
$-40^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$	T4	T4	T3	T85°C	T100°C	T100°C
$-40^{\circ}\text{C} \leq T_a \leq +65^{\circ}\text{C}$	T4	T3	--	T100°C	T100°C	-----

IP66

For models with the 3 x 3 beam pattern; Areamaster High Lumen, w = 3, where AMLHxyzwBvoo and for the Baymaster High Bays, n = V, where BHLijkqnNBvoo)



II 3GD

Ex ec IIC T5...T3 Gc

Ex tc IIIC T85°C...T100°C Dc

Ambient Temp.	Ex ec IIC			Ex tc IIIC		
	100W Driver	150W Driver		100W Driver	150W Driver	
	530mA	680mA	915mA	530mA	680mA	915mA
$-40^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$	T4	T4	T3	T100°C	T100°C	T100°C
$-40^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$	T4	T4	T3	T100°C	T100°C	T100°C
$-40^{\circ}\text{C} \leq T_a \leq +65^{\circ}\text{C}$	T4	T3	--	T100°C	T100°C	-----

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The Areamaster Generation 2, Areamaster Generation 2 High Lumen, 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 joints on the housing are sealed by a Silicone Sponge O-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, compartment 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 Sponge O-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 are secured by mechanical means.

The LED Array board housing is made 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 Sponge O-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 (five or twelve 4-40 SS screws).

The glass cover frame is made is made from Cast Aluminum, Alloy. The frame is fitted with either a clear or diffused (Frosted) in either 174.24mm x 174.24mm or 231.14mm x 220.98mm size tempered glass lens. 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 Sponge O-ring joined by vulcanization which is secured in position in a groove by RTV sealant.

The only difference between the Areamaster Generation 2, Areamaster Generation 2 High Lumen and the Baymaster, Baymaster High Lumen is the colour of the painted parts, Areamaster Generation 2, Areamaster Generation 2 High Lumen are Bronze in colour and the Baymaster, Baymaster High Lumen are Light Grey in colour.

Model Code Options:

"Areamaster Generation 2" Model Series AMLGxyzwBU LED Luminaire:	"Baymaster" Model Series BLLxyzwNBU LED Luminaire:
Model code breakdown: AMLGxyzwBU x=Lumens (L6=9000 lumens, L7=15000 Lumens, or L8=19000 Lumens) y=Correlated Color Temperature – CCT (C=5000K or W=3000K) z=Glass Type (G=Clear Glass or F=Frosted Glass) w=Beam Pattern (6=(no optic) or 7=(with optic))	Model code breakdown: BLLxyzwNBU x=Lumens (L6=9000 lumens, L7=15000 Lumens, or L8=19000 Lumens) y=Correlated Color Temperature – CCT (C=5000K or W=3000K) z=Glass Type (G=Clear Glass or F=Frosted Glass) w=Beam Pattern (A=Aisle(with optic), M=Medium(no optic), W=Wide(with optic))
Note: Option L6 utilizes the 100W driver and L7 and L8 utilize the 150W driver.	

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Sira Certification Service

Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3US, United Kingdom

Tel: +44 (0) 1244 670900
 Fax: +44 (0) 1244 681330
 Email: ukinfo@csagroup.org
 Web: www.csagroupuk.org



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Issue 1**

"Areaster Generation 2 HL" Model Series AMLHxyzwBU LED Luminaire	"Baymaster HL" Model Series BHLxyzwNBU LED Luminaire
Model code breakdown: AMLHxyzwBU x=Lumens (L1=24000 lumens, L2=30000 Lumens, or L3=38000 Lumens) y=Correlated Color Temperature – CCT (C=5000K or W=3000K) z=Glass Type (G=Clear Glass or F=Frosted Glass) w=Beam Pattern (3=Very Narrow (with Optic) 5=Narrow (with Optic) 6=(no optic) 7=wide (with optic))	Model code breakdown: BHLxyzwNBU x=Lumens (L1=24000 lumens, L2=30000 Lumens, or L3=38000 Lumens) y=Correlated Color Temperature – CCT (C=5000K or W=3000K) z=Glass Type (G=Clear Glass or F=Frosted Glass) w=Beam Pattern (W=Wide (with optic), M=Medium(no optic), N=Narrow (with optic) V=Very Narrow (with optic))
Note: Option L1 utilizes the 100W drivers and L2 and L3 utilize the 150W drivers.	

Variation 1 - This variation introduced the following changes:

- i. Addition of the "Areaster Generation 2 HL " Model Series AMLHxyzwBU LED Luminaires and "Baymaster HL" Model Series BHLxyzwNBU LED Luminaires for "Ex ec" and Ex "tc" applications. The model code options and description were amended to recognise these new models.
- ii. The use of a thermal pad in place of thermal grease between the Printed Circuit Board (PCB) and Housing Heatsink (all models).

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	08 January 2018	R70142112A	The release of the prime certificate.
1	02 July 2018	R70170699A	The introduction of Variation 1.

15 SPECIFIC CONDITIONS OF USE

None.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed reports listed in Section 14.2.

17 CONDITIONS OF MANUFACTURE

17.1 A dielectric strength test shall be carried out for at least 60 seconds without dielectric breakdown occurring in accordance with EN 60079-7:15 clause(s) 6.1 and 7.1.

A test voltage shall be applied between L & N to Earth ground at 1560Vrms.

A test voltage shall be applied between (+) and (-) (red and blue output wires from LED driver) to Earth ground at 1560Vrms.

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Alternatively, a D.C. test is permitted as an alternative to the specified a.c. test voltage and shall be 140% of the specified a.c. r.m.s. test voltage.

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

- 17.2 The luminaires covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacture to continually monitor the status of the certifications associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of their products.

Certificate Annexe



Certificate Number: Sira 17ATEX3241
Equipment: AreaMaster Gen 2 and BayMaster series
 LED Luminaires
Applicant: Appleton Group LLC

Issue 0

Drawing no.	Sheets	Rev.	Date(Sira stamp)	Description
609160	1 to 2	N	08 Dec 17	Terminal Box Cover
609172	1 to 2	K	08 Dec 17	Housing Heat Sink Casting
609173	1 to 3	P	08 Dec 17	Housing Driver Casting
609174	1 to 2	K	08 Dec 17	Cover Casting
609204	1 of 1	D	08 Dec 17	Clear Tempered AR Coating Glass
609205	1 of 1	F	08 Dec 17	Cover Sub-Assembly
615044	1 to 4	C	08 Dec 17	Areamaster LED Generation 2- assembly
615064	1 to 4	A	08 Dec 17	Baymaster LED – assembly
615025	1 of 1	C	08 Dec 17	Diffused Tempered AR Coating Glass
615060	1 of 1	B	08 Dec 17	Gasket, O-ring, Dia. 0.26
615057	1 of 1	A	08 Dec 17	Gasket Silicone Hollow O-ring
299707455	1 of 1	03	08 Dec 17	LED Driver 100 Watt 120-277 V
299707456	1 of 1	03	08 Dec 17	LED Driver 150 Watt 120-277 V
603278	1 of 1	C	08 Dec 17	LED Array - 3000K Wide Optics
603279	1 of 1	C	08 Dec 17	LED Array - 5000K Aisle – with optics
603280	1 of 1	C	08 Dec 17	LED Array - 3000K Aisle – with optics
609175	1 of 1	C	08 Dec 17	LED Array - 5000K Wide Optics
609207	1 of 1	B	08 Dec 17	LED Array - 5000K No Optics
615038	1 of 1	A	08 Dec 17	LED Array - 5000K Aisle Wide Optics
615039	1 of 1	A	08 Dec 17	LED Array - 3000K Aisle Wide Optics
634611	1 of 1	A	08 Dec 17	LED Array Board Schematic
637008	1 of 1	A	08 Dec 17	Areamaster/Baymaster LED Array Board Layout
503712	1 of 1	C	08 Dec 17	Close-up Plug
609194	1 of 1	C	08 Dec 17	Terminal
609197	1 of 1	B	08 Dec 17	Terminal
609198	1 of 1	B	08 Dec 17	Terminal - Ground
609199	1 of 1	B	08 Dec 17	Terminal - End clamp
609196	1 of 1	B	08 Dec 17	Modular Terminal Block Bridge
669014	1 of 1	M	08 Dec 17	Silicone Adhesive - RTV
669166	1 of 1	A	08 Dec 17	Conductive Grease
663474	1 of 1	C	08 Dec 17	Areamaster LED – Nameplate Label – Ratings
663475	1 of 1	B	08 Dec 17	Baymaster LED – Nameplate Label – Ratings
663476	1 of 1	A	08 Dec 17	Areamaster LED – Nameplate Label – Main
663477	1 of 1	A	08 Dec 17	Baymaster LED – Nameplate Label – Main
663570	1 of 1	A	08 Dec 17	Areamaster LED – Nameplate Label – Serial Number
650525-001	1 to 14	C	08 Dec 17	Instruction Sheet – Areamaster
650547-001	1 to 11	B	08 Dec 17	Instruction Sheet – Baymaster
MS4002	1 of 1	B	08 Dec 17	Paint – Bronze Spec
MS4003	1 of 1	D	08 Dec 17	Paint – Grey Spec

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Certificate Annexe



Certificate Number: Sira 17ATEX3241
Equipment: AreaMaster Gen 2 and BayMaster series
LED Luminaires
Applicant: Appleton Group LLC

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
606204	1 to 2	C	08 Jun 18	Thermal Pad for AMLED Gen2 Zone 2
606206	1 to 2	C	08 Jun 18	Thermal Pad for AMLED HL Zone 2
609191	1 of 1	F	08 Jun 18	Cover Subassembly Areamaster LED High Lumen
609254	1 of 1	B	08 Jun 18	Heatsink Housing & Gasket Subassembly Areamaster LED High Lumen
609255	1 of 1	B	08 Jun 18	Driver Housing & Gasket Subassembly Areamaster LED High Lumen
609257	1 of 1	C	08 Jun 18	LED Engine Subassembly Areamaster/Baymaster LED High Lumen
609354	1 to 4	B	08 Jun 18	Baymaster LED High Lumen Assembly
615043	1 to 4	B	08 Jun 18	Areamaster LED High Lumen Assembly
650525-000	1 to 13	D	08 Jun 18	Instruction Sheet Areamaster LED High Lumen Yoke Mount
650547-000	1 to 12	B	08 Jun 18	Instruction Sheet Baymaster LED High Lumen No Mount

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