



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx ITS 18.0049	Page 1 of 5	<u>Certificate history:</u>
Status:	Current	Issue No: 3	Issue 2 (2020-09-04) Issue 1 (2019-07-30) Issue 0 (2019-02-28)
Date of Issue:	2023-08-01		
Applicant:	Appleton Group LLC 9377 W Higgins Rd; Rosemont, IL 60018 United States of America		
Equipment:	Areamaster Generation 2 LED Luminaire, model: AMLGxyzwBUM*C Areamaster High Lumen (HL) LED Luminaire, model: AMLHxyzw BUM*C Baymaster LED Luminaire, model: BLLpxyzw*BUMC Baymaster High Lumen (HL) LED luminaire, model: BHLpxyzw*BUMC		
Optional accessory:			
Type of Protection:	Increased Safety e, Encapsulation m, Protection by Enclosure t		
Marking:	Ex ec mb IIC T3/T4/T5 Gc Ex tc IIIC T85°C/T100°C Dc Ex tb IIIC T85°C/T100°C Db (certain models only – see Annex) -40°C ≤ T _{AMB} ≤ +65°C -55°C ≤ T _{AMB} ≤ +65°C (for luminaires with Parker Hannifin gasket) IP66 / IP67(for luminaires with Parker Hannifin gasket) 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 IECEx ITS 18.0049		

Approved for issue on behalf of the IECEx
Certification Body:

R J Tunncliffe

Position:

Certification Officer

Signature:
(for printed version)

Date:
(for printed version)

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United Kingdom



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Manufacturer: **Appleton Group LLC**
9377 W Higgins Rd; Rosemont, IL 60018
United States of America

Manufacturing locations: **Appleton Group LLC**
9377 W Higgins Rd; Rosemont, IL 60018
United States of America

EGS Mexico S. de R.L. de C.V.
Via Monterrey Matamoros No. 598
Parque Industrial Milenium C.P. 66626
Apodaca, Nuevo Leon
Mexico

Emerson Climate Technologies Arabia
Building No. 7874 Unit No. 1
Dammam 34332-3620
Saudi Arabia

See following pages for more locations

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-18:2017](#) Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

[IEC 60079-31:2022](#) Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[GB/ITS/ExTR18.0053/00](#)
[GB/ITS/ExTR19.0046/01](#)

[GB/ITS/ExTR19.0028/00](#)

[GB/ITS/ExTR19.0046/00](#)

Quality Assessment Reports:

[FR/LCI/QAR07.0008/19](#)

[US/UL/QAR17.0020/06](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

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.

Ex tb IIIC T85°C/T100°C Db rating pertains to the following LED luminaire constructions only: ·

- Areamaster Gen 2/Baymaster with light engine (LED array) 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)
- Areamaster/Baymaster LED High Lumen with light engine (LED array) LLOMAGA-A4N601B (5000K-no optic), LLOMAGA-A4N601A (5000K-W), LLOMAGA-A4N201A (3000K-W), LLOMAGA-A4N604A (5000K-S), or LLOMAGA-A4N204A (3000K-S)

SPECIFIC CONDITIONS OF USE: NO



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 01 -

- Areamaster Gen 2/Baymaster with light engine (LED array) 59660049001 (5000K), 59660049002 (4000K), 59660049003 (3000K)
- Areamaster Gen 2/Baymaster with light engine (LED array) 59660047001 (5000K), 59660047002 (4000K), 59660047003 (3000K)
- Areamaster/Baymaster LED High Lumen with light engine (LED array) 59660048001 (5000K), 59660048002 (4000K), 59660048003 (3000K)
- Areamaster/Baymaster LED High Lumen with light engine (LED array) 59660046001 (5000K), 59660046002 (4000K), 59660046003 (3000K)

All light engines (LED arrays) have been evaluated with secondary LED array optics (lens).

Also, the above specified LED array models introduce 4000K color temperature option to the luminaire construction.

Issue 02 -

1) Addition of the Quick Connect feature to the luminaire enclosure for the purpose of pendant hood mounting. The Quick Connect assembly consists of the following:

- Pendant Hood – made out of the same aluminium material as the LED luminaire enclosure. Each Pendant Hood contains the same powder coating as its associated enclosure (gray for Baymaster luminaires). The Pendant Hood also houses a polymeric terminal block with copper contacts, as well as a polymeric strain relief and a grounding screw. Polymeric terminal block is secured within the Pendant Hood utilizing 2 set screws, where the strain relief is mechanically secured to the polymeric terminal block (via clips). The strain relief may or may not be utilized with this assembly. The gasket utilized with the Pendant Hood (connection between the Pendant Hood and Quick Connect Adaptor) is Parker, or Sur-Seal molded gasket, which is further secured to the Pendant Hood body via RTV seal/adhesive. Pendant Hood is connected to the power junction box (in the field) via a 3/4" threaded conduit which is also secured via a set screw.
- Quick Connect Adaptor – made out of the same aluminium material as the LED luminaire enclosure. Each Quick Connect Adaptor contains the same powder coating as its associated enclosure (gray for Baymaster luminaires). Quick Connector Adaptor also houses a polymeric connector block (for the polymeric terminal block housed within the Pendant Hood), with a copper contact which provides connection to the Pendant Hood polymeric terminal block. Polymeric connector block is secured within the Quick Connector Adaptor using 2 set screws. Quick Connector Adaptor is secured to the Pendant Hood via a mechanical retention (twist lock mechanism), as well as a set screw. Connection between the Quick Connector Adaptor and the main enclosure body is sealed via a gasket Midwest Sealing Products, closed cell silicone sponge (further secured to the enclosure body via RTV seal/adhesive and secured via 3 screws).
- Addition of assembly location:

Emerson Climate Technologies Arabia
Building No. 7874 Unit No. 1
Dammam 34332-3620, Saudi Arabia

2) Addition of the applicable control drawings to the list of the existing control drawings. Reference Annex doc for IEC Ex C of C 104044732DAL-003 for more details.

issue 03 -

- Combined critical drawings, all critical information controlled in new drawings. See below new control drawings list.
- 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
- Added new gasket, Samsung LED (LH351C), pre-certified terminals (to have dimming options) and pre-certified LED Zone 1 drivers.
- Removed "op is" protection method from certificate.
- Updated models
- Electrical rating changed from "170-300 VDC" to "125-300 VDC"
- Updated routine tests.
- Added Parker gasket for ambient -55°C to 65°C



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Additional manufacturing locations:

Emerson ATX
Balastierei, Nr. 1S (Urbano Industrial Park)
Gilau 407310
Romania

Annex:

[104590155DAL-001 - Annex for IECEx Certificate of Conformity_1.pdf](#)



Annex to IECEx Certificate of Conformity

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TITLE:	DRAWING NO.:	REV. 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.*

General product information:

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.

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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 ¾-14 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 ¼-20 x 1-¼ 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 ¼ pan SS screws and clips. The glass is additionally sealed with RTV. The frame is secured to the array board housing by four ¼-20 x 1-¼ 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.

Ex tb IIIC T85°C/T100°C Db rating pertains to the following LED luminaire constructions only:

- Areamaster Gen 2/Baymaster with light engine (LED array) 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)
- Areamaster/Baymaster LED High Lumen with light engine (LED array) LLOMAGA-A4N601B (5000K-no optic), LLOMAGA-A4N601A (5000K-W), LLOMAGA-A4N201A (3000K-W), LLOMAGA-A4N604A (5000K-S), or LLOMAGA-A4N204A (3000K-S)

Reference Intertek Test Report 103509278DAL-001 and partial IECEx ExTR GB/ITS/ExTR18.0032/00 for more information.

- Areamaster Gen 2/Baymaster with Cree light engine (LED array) 59660049001 (5000K), 59660049002 (4000K), 59660049003 (3000K)
- Areamaster Gen 2/Baymaster with Nichia light engine (LED array) 59660047001 (5000K), 59660047002 (4000K), 59660047003 (3000K)
- Areamaster/Baymaster LED High Lumen with Cree light engine (LED array) 59660048001 (5000K), 59660048002 (4000K), 59660048003 (3000K)
- Areamaster/Baymaster LED High Lumen with Nichia light engine (LED array) 59660046001 (5000K), 59660046002 (4000K), 59660046003 (3000K)

Reference Test Data within 103941167DAL-001 60079-28 checklist for more information.

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All individually approved IECEx components have been certified to the standards noted above, except for the AC/DC terminal blocks, for which the Gap analysis has been completed from IEC 60079-7:2006 to IEC 60079-7:2015 per DS 2014/001. Reference the IEC 60079-7 ExTR for more information.

The model nomenclature for the two Areamaster and two 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>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 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> <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>	

Areamaster High Lumen (HL) Model Series AMLHxyzw BUM*C LED luminaire	Baymaster High Lumen (HL) Model Series BHLpxyzw*BUMC LED luminaire
<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,</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>

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<p>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>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>	

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 tb/tc IIIC		
	100W Driver	150W Driver		100W Driver	150W Driver	
	410mA	680mA	930mA	410mA	680mA	930mA
-40°C ≤ Ta ≤ +40°C *_-	T5	T4	T3	T85°C	T85°C	T85°C
55°C ≤ Ta ≤ +40°C						
-40°C ≤ Ta ≤ +55°C *_-	T4	T3	T3	T85°C	T85°C	T100°C
55°C ≤ Ta ≤ +55°C						
-40°C ≤ Ta ≤ +65°C *_-	T4	T3	T3	T85°C	T100°C	T100°C
55°C ≤ Ta ≤ +65°C						

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*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 tb/tc IIIC		
	100W Driver	150W Driver		100W Driver	150W Driver	
	530mA	680mA	915mA	530mA	680mA	915mA
-40°C ≤ Ta ≤ +40°C * ₋	T4	T4	T3	T85°C	T85°C	T85°C
55°C ≤ Ta ≤ +40°C						
-40°C ≤ Ta ≤ +55°C * ₋	T4	T4	T3	T85°C	T100°C	T100°C
55°C ≤ Ta ≤ +55°C						
-40°C ≤ Ta ≤ +65°C * ₋	T4	T3	--	T100°C	T100°C	--
55°C ≤ Ta ≤ +65°C						

*For luminaires with Parker Hannifin gasket

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 tb/tc IIIC		
	100W Driver	150W Driver		100W Driver	150W Driver	
	530mA	680mA	915mA	530mA	680mA	915mA
-40°C ≤ Ta ≤ +40°C * ₋	T4	T4	T3	T100°C	T100°C	T100°C
55°C ≤ Ta ≤ +40°C						
-40°C ≤ Ta ≤ +55°C * ₋	T4	T4	T3	T100°C	T100°C	T100°C
55°C ≤ Ta ≤ +55°C						
-40°C ≤ Ta ≤ +65°C * ₋	T4	T3	--	T100°C	T100°C	--
55°C ≤ Ta ≤ +65°C						

*For luminaires with Parker Hannifin gasket

Certified Components (LED Luminaires, models: AREAMASTER/BAYMASTER High Lumen (HL) and AREAMASTER/BAYMASTER Gen 2/LED):



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#	Component	Manufacture and Type	Certificate Number	Standard and Edition	Ratings
1.	LED Driver	Appleton Group – ATX, APMZ100C090UD APMZ150C135UD	IECEX UL 17.0067U	IEC 60079-0:2017 IEC 60079-18:2017	Ex mb IIC Gb -55°C to +90°C
2.	LED Driver	Appleton Group – ATX, APMS100C105UD APMS150C105UD	IECEX ITS 17.0014U	IEC 60079-0:2017 IEC 60079-7:2017	Ex ec IIC Gc -40°C to +85°C
3.	Terminal Blocks (AC)	Phoenix Contact GmbH & Co. KG, GB 2,5-EX	IECEX SEV 13.0012U	IEC 60079-0:2017 IEC 60079-7:2015 (Gap analysis in Addendum)	Ex eb IIC -60°C to +110°C
4.	Screw Terminal	Phoenix Contact GmbH & Co. KG, GB 5/3-EX	IECEX PTB 06.0043U	IEC 60079-0:2017 IEC 60079-7:2017	Ex eb IIC -60°C to +110°C
5.	Terminal Blocks (UT-4, Line and Neutral, PE)	Phoenix Contact GmbH & Co. KG, UT4	IECEX KEM 06.0027U	IEC 60079-0:2017 IEC 60079-7:2017	Ex eb IIC -60°C to +110°C

#	Special Conditions and Verification of Conformance for Each Component
1.	<p>Special Conditions of Safe Use:</p> <ol style="list-style-type: none"> The equipment shall be installed in an enclosure that provides a degree of protection not less than IP54 in accordance with IEC 60079-0. End product shall be marked with the following warning: WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT A conductor used for earthing connection is provided; termination is to be determined in the end use. The service temperature range is -40°C to +90°C for LED driver models APMZ050C135UD, 50W, APMZ100C090UD, 100W and APMZ150C135UD, 150W. There are no adverse effects on the surface top of the device when intended faults are applied as compared to temperatures measured under normal conditions. Determination of the applicability of the dielectric test must be determined in the end use product. <p>Conformance of Each Condition:</p> <ol style="list-style-type: none"> Equipment is installed in an enclosure that provides a degree of protection IP54 min. End product (luminaires) marked with the warning marking: WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT Earthing connection termination of the LED driver to the enclosure exists, which is externally earthed to the surface it is installed to. Service temperature range of the LED luminaire is -40°C to +65°C. Reference Test Data for more details regarding Temperature Tests. There are no adverse effects on the surface top of the LED driver under fault operation vs.

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	<p>normal conditions.</p> <p>6. Dielectric Strength Test conducted per the requirements of IEC 60079-7. Reference Test Data for more details regarding Dielectric Strength Tests.</p>
2.	<p>Special Conditions of Safe Use:</p> <ol style="list-style-type: none"> 1. The LED Drivers of Zone 2 shall be used in accordance with the manufacturer's ratings and instructions installed inside an enclosure of the type of protection Increased Safety Ex "e" in compliance with Standard IEC 60079-7. 2. The drivers will be provided with stripped wires to a length of 9±1mm or 10±2mm, refer outline and installation dimensions for the details. Modifying the stripping length more than prescribed is strictly prohibited since this will affect the clearance and creepage distances requirements of IEC 60079-7. 3. The wires with stripped length should be fully inserted into the Ex terminal block openings and screwed firmly with proposed torque of 0.75Nm for proper connections. 4. When the components are installed in the electrical apparatus, care must be taken that the components are not directly exposed to the sun light or lights from luminaires and temperatures at the mounting place are within the temperature range of use. 5. The Drivers are factory programmed with required output current within the 'settable output current' range mentioned on the driver label. Programming the drivers on field is strictly prohibited. 6. The temperature Tc (T case) point must not be exceeded of the LED Drivers. <p>Conformance of Each Condition:</p> <ol style="list-style-type: none"> 1. The LED Drivers for Zone 2 (100W and 150W) are used in accordance with the manufacturer's ratings and installed in an IP66 enclosure of the type of protection per the requirements of IEC 60079-7. 2. The drivers are provided with stripped wires to a length of 9±1mm or 10±2mm, refer outline and installation dimensions for the details. Modifying the stripping length more than prescribed is strictly prohibited since this will affect the clearance and creepage distances requirements of IEC 60079-7. Noted information is outlined within the Instruction Manual(s). 3. The wires with stripped length are fully inserted into the Ex terminal block openings and screwed firmly with proposed torque of 0.75Nm for proper connections. Noted information is outlined within the Instruction Manual(s). 4. The LED drivers are installed within an enclosure compartment which can only be accessed with an assistance of a tool. The LED driver compartment is not be opened in direct sunlight or while under any other UV exposure. The ambient temperature within the LED compartment (-40°C to +65°C) is within the operating temperature range of the LED drivers (-40°C to +70°C). Noted information is outlined within the Instruction Manual(s). 5. The Drivers are factory programmed with required output current within the 'settable output current' range mentioned on the driver label. Programming the drivers in the field is strictly prohibited. Noted information is outlined within the Instruction Manual(s). 6. The maximum temperature measured at the LED Driver is +89°C at maximum ambient temperature of +65°C which is within the specified Tc limit of the LED driver (90°C). Reference SIRA IECEx Test Report R70142112A for more details.
2.	<p>Special Conditions of Safe Use:</p> <ol style="list-style-type: none"> 1. The terminal blocks of the MUT series are to be installed in enclosures that meet the



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	<p>requirements of the standards IEC/EN 60079-0 and IEC/EN 60079-7 (for gas atmospheres) and IEC/EN 60079-31 (for dust atmospheres).</p> <ol style="list-style-type: none"> When installing the terminal blocks, clearances and creepage distances according to the standard IEC 60079-7 must be observed, as well as reduced current ratings when multiple terminals are installed, according to the rating of the enclosure explained in sub-clauses 5.8, 6.7 and Annex E. Service temperature range: -60°C ... +110°C. <p>Conformance of Each Condition:</p> <ol style="list-style-type: none"> The terminal blocks are mounted within an enclosure that is evaluated per IEC 60079-7 and IEC 60079-31. The enclosure has been successfully tested for IP64/66/67 per IEC 60079-0. Clearances and creepages are satisfied per the requirements of IEC 60079-7. Reference the applicable checklist for more information. Service temperature range of the LED luminaire is -40°C to +65°C. Reference Test Data for more details regarding Temperature Tests.
3.	<p>Special Conditions of Safe Use:</p> <ol style="list-style-type: none"> The terminal shall be mounted in an enclosure that meets the requirements of an approved type of protection as specified in IEC 60079-0, section 1. For combustible dust and the enclosure shall satisfy the requirements according to the applicable/relevant standards of IEC 60079-series e.g. IEC 60079-31, type protection "t". When installing the terminals in an enclosure designed to Increased Safety "e" type of protection as specified in IEC 60079-7, the clearances and creepage distances shown in table 1 shall be duly considered. If accessories are used, the instructions for installation provided by the manufacturer shall be observed. Installation of electrical components requires a further assessment by an ExCB. <p>Conformance of Each Condition:</p> <ol style="list-style-type: none"> The terminal blocks are mounted within an enclosure that is evaluated per IEC 60079-7 and IEC 60079-31. The enclosure has been successfully tested for IP64/66/67 per IEC 60079-0. See item #1 above. Clearances and creepages are satisfied per the requirements of IEC 60079-7. Reference the applicable checklist for more information. Manufacturer is responsible for following the installation of electrical components per IEC 60079-14.
4.	<p>Special Conditions of Safe Use:</p> <ol style="list-style-type: none"> The Terminal Blocks, the Protective Conductor Terminal Blocks and the Pick-off Terminal Blocks shall be mounted in a certified enclosure that meets the requirements of a type of protection as specified in IEC 60079-0 clause 1, with a degree of protection at least as required for Ex e. When assembling with other certified series and sizes and using the associated accessories, the required creepage distances and clearances have to be observed. The installation instruction of the manufacturer shall be followed e.g. for the use of cover, jumpers, end brackets. The data regarding current and associated temperature rise shall be used as guideline for the given conductor cross sections. The cross section has influence on the temperature rise which shall be assessed in the end application. If the Terminal Blocks and Pick-off Terminal Blocks are used in electrical equipment of temperature classes T1 up to T5, the highest temperature of the insulating material shall not

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	<p>exceed the maximum value of the operating temperature range.</p> <p>5. If the Terminal Blocks and Pick-off Terminal Blocks are used in electrical equipment of temperature classes T6 the permissible ambient temperature range is $-60\text{ }^{\circ}\text{C} < T_{amb} < +40\text{ }^{\circ}\text{C}$.</p> <p>6. The electrical data per Annex 1 applies.</p>
	Conformance of Each Condition:
	<ol style="list-style-type: none"> 1. Terminal Blocks inside of the Ex e enclosure. 2. Creepage and clearances meet the requirement, which is larger than 6.3mm. Material Group I, 300V max. 3. Installation followed by manufacture’s instruction. 4. Meet service temperature and T-code requirement. 5. Product ambient $-60\text{ }^{\circ}\text{C} < T_{amb} < +40\text{ }^{\circ}\text{C}$, T6, meet the terminal blocks requirement. 6. Noted. Installation followed by manufacture’s instruction, used within the electrical range.

Routine Tests:

1. Routine Dielectric Strength testing of the LED luminaires per IEC 60079-7:2017, 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.