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 UL 18.0115X**

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Certificate history:
Issue 1 (2019-04-26)
Issue 0 (2018-12-21)

Status: **Current**

Issue No: 2

Date of Issue: 2020-02-24

Applicant: **Banner Engineering Corporation**
9714 10th Ave. North
Minneapolis, MN 55441
United States of America

Equipment: **LED Luminaires, Model HLS27**

Optional accessory:

Type of Protection: **Increased Safety "ec", Dust Ignition Protection by Enclosure "tc"**

Marking: Ex ec IIC T4 Gc

Ex tc IIIC T85°C Dc

Dual and Single Color models: -40°C ≤ Ta ≤ +50°C

Segmented and 3 or 5 Color models: -35°C ≤ Ta ≤ +50°C

Approved for issue on behalf of the IECEx Certification Body: **Katy A. Holdredge**

Position: **Senior Staff Engineer**

Signature: (for printed version)

Date: 2020-02-24

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

UL LLC
333 Pfingsten Road
Northbrook IL 60062-2096
United States of America

BANNER P/N
2082 REV. B

ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

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Certificate No.: **IECEx UL 18.0115X**

Date of issue: 2020-02-24

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Manufacturer:
Banner Engineering Corporation
9714 10th Ave. North
Minneapolis, MN 55441
United States of America

Additional manufacturing locations:

Banner Engineering de Mexico, S. de R.L. de C.V.
Calle Uno. No. 275
Parque Industrial Millennium
San Luis Potosi. SLP. CP
Mexico

Banner Engineering Corporation
99 15th Street Northwest
Huron, SD 57350
United States of America

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 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

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:

US/UL/ExTR18.0134/00
US/UL/ExTR18.0134/01
US/UL/ExTR18.0134/02
US/UL/ExTR18.0134/03

Quality Assessment Report:

GB/FME/QAR13.0015/05

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Luminaire models HLS27 Series are linear LED luminaires intended for adjustable wall or ceiling mounting. The luminaires are provided in different lengths and different LED colors. Mounting brackets are provided for proper installation.

The luminaires are only to be powered by a Class 2, or SELV power supply.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:
Clean the equipment with only a damp cloth

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 1: Addition of alternate LEDs and external connector and minor clerical updates to drawings.

Issue 2: Addition of alternate model LED boards and LED's in different configurations and drawing updates.

Annex:

Annex to IECEx UL 18.0115X Issue 2.pdf

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Certificate No.: IECEx UL 18.0115X

Issue No.: 2

TYPE DESIGNATION

Nomenclature:

HLS27 – Single Color Luminaires

I.	Series Designation: HLS27 – Basic series designation for single color luminaires
II.	Protection D = Enhanced Protection
III.	LED Color W = Cool White WW = Warm White DW = Daylight White R = Red G = Green B = Blue Y = Yellow I = Infrared UV365 = UV with 365mm Wavelength UV395 = UV with 395mm Wavelength
IV.	Luminaire Length 0145 = 145mm 0285 = 285mm 0430 = 430mm 0570 = 570mm 0710 = 710mm 0850 = 850mm 0990 = 990mm 1130 = 1130mm
V.	Window C = Clear
VI.	Control Blank = Hi/Low/Off PWM = Pulse Width Modulation
VII.	Construction Blank = 2m ITC-ER 3 wire cable with unterminated tinned leads W/xx – xx are numeric digits denoting the length of cable provided up to 40ft. QP – Mini style QD QPXX – Mini style QD provided with cable length of 30 ft max.

HLS27 - Dual Color Luminaires

I.	Series Designation: HLS27 – Basic series designation for dual color luminaires
II.	Protection D = Enhanced Protection
III.	LED Color 1 W = Daylight White WW = Warm White R = Red G = Green B = Blue Y = Yellow
IV.	Density D1 Blank = 100% 2 = 50% 3 = 33%
V.	LED Color 2 W = Daylight White WW = Warm White R = Red G = Green B = Blue Y = Yellow
VI.	Density D2 Blank = 100% 2 = 50% 3 = 33%
VII.	Luminaire Length 0145 = 145mm 0285 = 285mm 0430 = 430mm 0570 = 570mm 0710 = 710mm 0850 = 850mm 0990 = 990mm 1130 = 1130mm
VIII.	Window C = Clear

IX.	Construction Blank = 2m ITC-ER 3 wire cable with unterminated tinned leads W/xx – xx are numeric digits denoting the length of cable provided up to 40ft. QP – Mini style QD QPXX – Mini style QD provided with cable length of 30 ft max.

HLS27 – Segmented Color Luminaires

I.	Series Designation: HLS27 – Basic series designation for segmented luminaires
II.	Protection D = Enhanced Protection
III	LED Color 1 W = Daylight White R = Red G = Green Y = Yellow B = Blue
V	LED Color 2 W = Daylight White R = Red G = Green Y = Yellow B = Blue
IV	LED Color 3 W = Daylight White R = Red G = Green Y = Yellow B = Blue X = no LED
VI	2s = 2 segment 3s = 3 segment
VII	Luminaire Length -285 = 285mm -430 = 430mm -570 = 570mm -850 = 850mm
VIII.	Window C = Clear

IX.	Voltage 24 = 24vdc
X.	Construction Blank = 2m ITC-ER 4 wire cable with unterminated tinned leads W/xx – xx are numeric digits denoting the length of cable provided up to 40ft.

HLS27 – 3 or 5 Color Luminaires

I.	Series Designation: HLS27 – Basic series designation for 3 or 5 color luminaires
II.	Protection D = Enhanced Protection
III	LED Color 1 W = Daylight White R = Red G = Green Y = Yellow B = Blue X = no LED
V	LED Color 2 W = Daylight White R = Red G = Green Y = Yellow B = Blue X = no LED
IV	LED Color 3 W = Daylight White R = Red G = Green Y = Yellow B = Blue X = no LED
VI	LED Color 4 W = Daylight White R = Red G = Green Y = Yellow B = Blue X = no LED

VII	LED Color 5 W = Daylight White R = Red G = Green Y = Yellow B = Blue X = no LED
VIII.	3 = 3 color 5 = 5 color
IX.	Luminaire Length 145 = 145mm 285 = 285mm 430 = 430mm 570 = 570mm 710 = 710mm 850 = 850mm 990 = 990mm 1130 = 1130mm
X.	Window C = Clear
XI	Voltage 24 = 24vdc
XII.	Construction Blank = 2m ITC-ER 4 wire cable with unterminated tinned leads W/xx – xx are numeric digits denoting the length of cable provided up to 40ft.

PARAMETERS RELATING TO THE SAFETY

Electrical Ratings

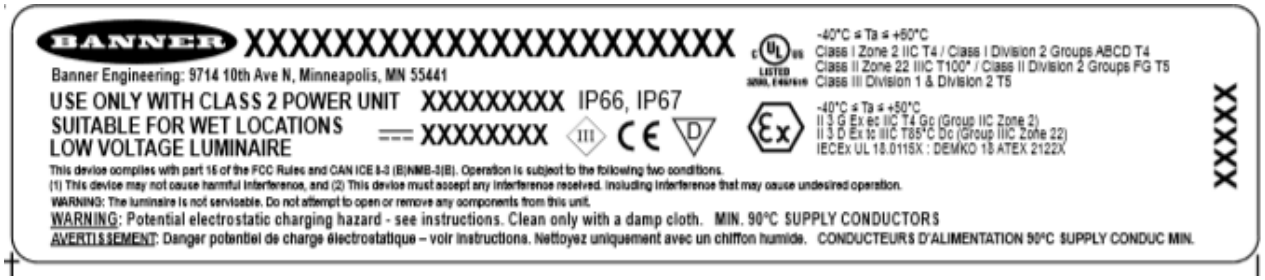
Single and Dual Color Models						
Light Length mm	Voltage					
	12 Vdc		24 Vdc		30 Vdc	
	Current A	Watt W	Current A	Watt W	Current A	Watt W
145	0.4	4.8	0.2	4.8	0.16	4.8
285	0.8	9.6	0.4	9.6	0.3	9.6
430	1.2	14.4	0.6	14.4	0.5	14.4
570	1.6	19.2	0.8	19.2	0.6	19.2
710	2	24	1	24	0.8	24
850	2.4	28.8	1.2	28.8	0.9	28.8
990	2.8	33.6	1.4	33.6	1.1	33.6
1130	3.2	38.4	1.6	38.4	1.2	38.4

Segmented Color Models		
Light Length (mm)	Rated Voltage (V dc)	Maximum Rated Current (A)
285	24Vdc (+20%/-10%)	0.4 A
430		0.6 A
570		0.8 A
850		1.2 A

3 or 5 Color Models 24Vdc (+20%/-10%)		
Light Length (mm)	Max Current (A)	Max Watts (W)
145	0.2	5.76
285	0.4	11.52
430	0.6	17.28
570	0.8	23.04
710	1.0	28.8
850	1.2	34.56
990	1.4	40.32
1130	1.6	46.08

MARKING

Marking has to be readable and indelible; it has to include the following indications:





Marking for Models Using Pigtail Connector:



Color Marking Options:





ROUTINE EXAMINATIONS AND TESTS

Dielectric Test according to Clause 6.1 of IEC 60079-7:
500Vac applied between the input terminals and the luminaire housing.