

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 Page 1 of 4 <u>Certificate history:</u>

 Status:
 Current
 Issue 1 (2019-04-26)

 Issue 0 (2018-12-21)

Katy A. Holdredge

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: $-40^{\circ}C \le Ta \le +50^{\circ}C$

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

Approved for issue on behalf of the IECEx

Certification Body:

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





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Date of issue: 2020-02-24 Issue No: 2

Manufacturer: **Banner Engineering Corporation**

9714 10th Ave. North Minneapolis, MN 55441 **United States of America**

Additional manufacturing Banner Engineering de Mexico, S. de R.L. Banner Engineering Corporation

de C.V. Calle Uno. No. 275

locations: Parque Industrial Millennium

San Luis Potosi. SLP. CP

Mexico

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

Edition:7.0

Explosive atmospheres - Part 0: Equipment - General requirements

IEC 60079-31:2013

Edition:2

Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

IEC 60079-7:2017

Edition:5.1

Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

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

US/UL/ExTR18.0134/02

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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TYPE DESIGNATION

Nomenclature:

HLS27 – Single Color Luminaires

I.	Series Designation:			
	HLS27 – Basic series designation for single color luminaires			
II.	Protection			
	D. Fahanaad Drataation			
III.	D = Enhanced Protection LED Color			
'''.	LED GOIOI			
	W = Cool White			
	WW = Warm White			
	DW = Daylight White			
	R = Red G = Green			
	B = Blue			
	Y = Yellow			
	I = Infrared			
	UV365 = UV with 365mm Wavelength			
n.,	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			
VI.	C = Clear Control			
VI.	Control			
	Blank = Hi/Low/Off			
	PWM = Pulse Width Modulation			
VII.	Construction			
	Dlonk Om ITO ED 2 wire cable with			
	Blank = 2m ITC-ER 3 wire cable with unterminated tinned leads			
	unterminated timied 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.			



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HLS27 - Dual Color Luminaires

	- Duai Color Lullillalles
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
IV.	Y = Yellow Density D1
10.	Bollotty B1
	Blank = 100%
	2 = 50% 3 = 33%
V.	LED Color 2
	W = Daylight White WW = Warm White
	R = Red
	G = Green
	B = Blue
VI.	Y = Yellow Density D2
V 1.	Density D2
	Blank = 100%
	2 = 50%
VII.	3 = 33% Luminaire Length
	•
	0145 = 145mm 0285 = 285mm
	0430 = 430mm
	0570 = 570mm
	0710 = 710mm
	0850 = 850mm 0990 = 990mm
	1130 = 1130mm
VIII.	Window
	C = Clear



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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

	5
I.	Series Designation:
	HLS27 – Basic series designation for
	segmented luminaires
II.	Protection
	D = Enhanced Protection
III	LED Color 1
	225 60:01 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
\ /II	3s = 3 segment
VII	Luminaire Length
	-285 = 285mm
	-430 = 430mm
	-570 = 570mm
	-850 = 850mm
VIII.	Window
V 111.	· · · · · · · · · · · · · · · · · · ·
	C = Clear
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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



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VII	LED Color 5
	W = Daylight White
	R = Red
	G = Green
	Y = Yellow
	B = Blue
VIII.	X = no LED 3 = 3 color
VIII.	5 = 5 color
IX.	Luminaire Length
17.	Luminaire Length
	145 = 145mm
	285 = 285mm
	430 = 430mm
	570 = 570mm
	710 = 710mm
	850 = 850mm
	990 = 990mm
	1130 = 1130mm
Χ.	Window
VI	C = Clear
XI	Voltage
	24 24vde
XII.	24 = 24vdc Construction
AII.	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	Voltage					
mm	12 Vdc		24 Vdc		30 Vdc	
	Current	Watt	Current	Watt	Current	Watt
	Α	W	Α	W	Α	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



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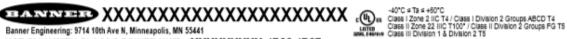
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Segmented Color Models					
Light Length (mm)	Rated Voltage (V dc)	Maximum Rated Current (A)			
285	24Vdc (+20%/-10%)	0.4 A			
430		0.6 A			
570		0.8 A			
850		1.2 A			

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:



USE ONLY WITH CLASS 2 POWER UNIT XXXXXXXX IP66, IP67

SUITABLE FOR WET LOCATIONS LOW VOLTAGE LUMINAIRE



This device omplies with part 16 of the FCC Rules and CAN ICE I-3 (BINMB-3(B). Operation is subject to the following two conditions.

(1) This device may not course harmful interference, and (2) This device must accept any infertenese received. Including Infertenese that may cause undesired operation.

WARNING: The huministries is not servicate, be not afternot to open or remove any components from this unit.

WARNING: Potential electrostatic charging hazard - see instructions. Clean only with a damp cloth. MIN. 90°C SUPPLY CONDUCTORS

AVERTISSEMENT: Danger potential de charge électrostatique - voir instructions. Nettoyez uniquement avec un chiffron humide. CONDUCTEURS D'ALIMENTATION 56°C SUPPLY CONDUC MIN.

Banner Engineering: 9714 10th Ave N, Minneapolis, MN 55441 USE ONLY WITH CLASS 2 POWER UNIT XXXXXXXXX IP66, IP67

SUITABLE FOR WET LOCATIONS LOW VOLTAGE LUMINAIRE



-35°C ≤ Ta ≤ +50°C
Libre | 10cm 2 | IC T4 / Class | Division 2 Groups ABCD T4
Libre | 10cm |



This device complies with part 16 of the FCC Rules and CAN ICE I-3 (EINME-3:E). Operation is subject to the following two or (1) This device may not cause harmful inferierence, and (2) This device must accept any interference received, including inte WAFNING: The luminate is not serviceble. Do not attempt to open or remove any components from this unit.

WARNING: Potential electrostatic charging hazard - see instructions. Clean only with a damp cloth. MIN. 90°C SUPPLY CONDUCTORS

AVERTISSEMENT: Danger potential de charge électrostatique – voir instructions. Nettoyez uniquement avec un chiffron humide. CONDUCTEURS D'ALIMENTATION 90°C SUPPLY CONDUC MIN.

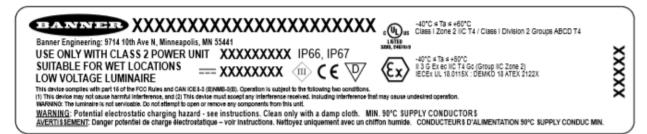


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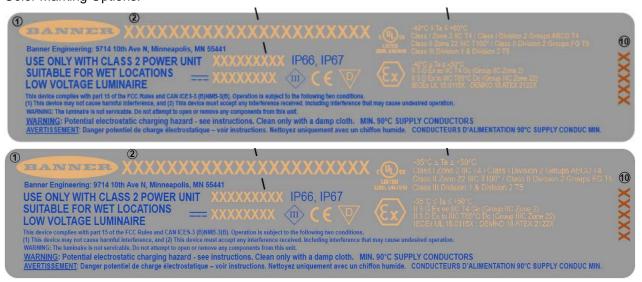
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Marking for Models Using Pigtail Connector:



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.