



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx UL 15.0029X Issue No: 7 Certificate history:
Status: **Current** Page 1 of 5 Issue No. 7 (2019-08-12)
Date of Issue: **2019-08-12** Issue No. 6 (2019-02-12)
Applicant: **Eaton's Crouse-Hinds Business** Issue No. 5 (2018-12-03)
1201 Wolf Street Issue No. 4 (2018-09-28)
Syracuse, NY 13208 Issue No. 3 (2016-07-27)
United States of America Issue No. 2 (2016-02-09)
Issue No. 1 (2015-07-29)
Issue No. 0 (2015-05-29)

Equipment: **Luminaires, Cat. Nos. *FMV**L*Y/*******
Optional accessory:

Type of Protection: **Increased Safety "ec", Dust Ignition Protection by Enclosure "tb", Encapsulation "mb"**

Marking:
Ex ec IIC T5 Gc
Ex ec IIC T4 Gc
Ex ec mb IIC T5 Gc
Ex ec mb IIC T4 Gc
Ex tb IIIC T65°C Db
Ex tb IIIC T80°C Db
Ex tb IIIC T81°C Db
Ex tb IIIC T94°C Db

Please see Annex for Temperature Ranges

Approved for issue on behalf of the IECEx
Certification Body:

Lucy Frieders

Position:

Staff Engineer

Signature:
(for printed version)

Date:

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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

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





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Manufacturer: **Eaton Crouse-Hinds Business**
1201 Wolf Street
Syracuse, NY 13208
United States of America

Additional Manufacturing location(s):

Eaton's Crouse Hinds Business 1700 Blue Hills Drive NE, Roanoke, VA 24012 United States of America	Cooper Crouse-Hinds AV Javier Rojo Gomez No 1170, CP 09300, Mexico City Mexico	Eaton Electrical Australia Pty. Ltd. 10 Kent Road, Mascot, NSW, 2020 Australia	Cooper Electrical (Changzhou) Co. Ltd. No. 189 Liuyanghe Rd, Xinbei District, Changzhou, Jiangsu, 213031 China	Cooper Crouse Hinds S.A. Avda. Santa Eulàlia 290 ,08223 Terrassa Barcelona Spain
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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 apparatus 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 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-18 : 2017 Edition:4.1	Explosive atmospheres - Part 18: Protection by encapsulation "m"
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 electrical 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 Report:

[US/UL/ExTR15.0035/07](#)

Quality Assessment Report:

[AU/TSA/QAR06.0020/11](#)

[DE/BVS/QAR13.0001/06](#)

[GB/BAS/QAR07.0041/09](#)

[US/UL/QAR17.0013/01](#)

[US/UL/QAR17.0024/01](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Series FMV are LED floodlight luminaires intended for installation in hazardous locations. These luminaires are constructed from die-cast aluminium and are yoke mounted. The luminaire may be provided with a guard, a visor, range of discrete LEDs arranged in an array with various colors, conduit entry options and two driver options.

The FMVA3L to FMVA15L luminaires have identical construction to the FMV3L to FMV15L luminaires except for the internal LED drivers, LEDs and LED array board, LED compartment back, and electrical components utilized within the driver compartment. The FMVA3L to FMVA15L luminaires utilize an identical LED compartment back and Wago electrical components within the driver compartment as in the NFMVA20L to NFMVA50L luminaires. The LED drivers used in the FMVA3L to FMVA15L luminaires are ATEX/IECEX certified to the 'mb' protection method and the FMVA3L to FMVA15L luminaires are evaluated for protection technique 'ec mb'.

Series FMV and NFMVA luminaires are evaluated for protection technique 'ec'.

Series FMV, NFMVA, and FMVA luminaires are all evaluated for protection technique 'tb'.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD - To minimize the risk from electrostatic discharge, when cleaning, wipe the lens with a clean, damp cloth.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1: Addition of Australia manufacturing location.

Issue 2: Addition of 15L suffix and alternate internal reflector construction.

Issue 3: Addition of new LED drivers.

Issue 4: Adding Changzhou manufacturer and updates IEC 60079-31 to 2nd edition.

Issue 5: Change of protection method from type "nA" to type "ec"; addition of NFMVA20L, NFMVA25L, NFMVA40L, NFMVA50L; addition of Nema 3x3 optical beam spread and bronze and white paint color for all luminaires and low ambient changed from -30°C to -40°C.

Issue 6: Addition of a new manufacturer.

Issue 7: Addition of luminaire Models FMVA3L, FMVA5L, FMVA7L, FMVA9L, FMVA11L, FMVA13L, and FMVA15L and update to minimum wire temperature for all models.



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Additional information:

Annex:

[Annex to IECEX UL 15.0029X Issue 7.pdf](#)



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TYPE DESIGNATION

Nomenclature:

N	FMV	A	25L	C	Y	/UNV1	76	M20	S891	BZ	P62
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII

I. Indicates certifications

Blank – IEC 3L to 15L
N – IEC 20L to 50L

II. FMV – LED Floodlight Luminaire

III. Indicates generation

Blank – 3L to 15L
A – Gen 2 (3L to 50L)

IV. Indicates light source/intensity

3L – 70W equivalent
5L – 100W equivalent
7L – 175W equivalent
9L – 250W equivalent
11L – 320W equivalent
13L – 400W equivalent
15L – 500W equivalent
20L – 750W equivalent
25L – 1000W equivalent
40L – 1500W equivalent
50L – 2000W equivalent

V. Indicates LED color temperature

C – 5000K, 70 CRI (cool white)
N – 4000K, 70 CRI (neutral white) (not for use in FMVA3L to FMVA15L)
W – 3000K, 80 CRI (warm white)

VI. Indicates Mount

Y – Yoke mount

VII. Indicates input voltage

/UNV1 – 100-277 Vac, 50/60 Hz; 108-250 Vdc (for FMV3L to FMV15L only)
/UNV1 – 100-240 Vac, 50/60 Hz; 127-250 Vdc (for FMVA3L to FMVA15L only)
/UNV1 – 100-277 Vac, 50/60 Hz; 127-300 Vdc (for 20L to 50L only)
/UNV34 - 347-440 Vac, 50/60 Hz



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VIII. Indicates internal optical distribution

33 – NEMA 3x3 Beam Spread
76 – NEMA 7x6 Beam Spread

IX. Indicates entries

Blank – ¾" NPT Entry
M20 – 20 mm Entry
M25 – 25 mm Entry

X. Indicates Options

Blank – Tempered Clear Glass Window
S891 – Tempered Diffused Glass Window
S903 – Clear Polycarbonate Window
BR – Other certifications type

XI. Indicates Paint

Blank – Gray
BZ – Bronze
WH - White

XII. Indicates Optional Accessories

DSV2 – Bolt-on Visor
P61 – Bolt-on Wire Guard



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PARAMETERS RELATING TO THE SAFETY

Rated Ambient and Code Marking

Code	Catalog Series	Ambient Temperature Range	Temperature Class
Ex ec IIC T5 Gc	FMV3L to FMV15L (without suffix "33" for Internal Optical Distribution)	-40 °C to +40 °C	T5
Ex ec IIC T4 Gc	FMV3L to FMV15L (without suffix "33" for Internal Optical Distribution")	-40 °C to +55 °C	T4
Ex ec IIC T4 Gc	FMV3L to FMV15L (with suffix "33" for Internal Optical Distribution")	-40 °C to +40 °C	T4
Ex ec IIC T4 Gc	FMV3L to FMV15L (with suffix "33" for Internal Optical Distribution")	-40 °C to +55 °C	T4
Ex ec mb IIC T5 Gc	FMVA3L to FMVA15L (without suffix "33" for Internal Optical Distribution)	-40 °C to +40 °C	T5
Ex ec mb IIC T4 Gc	FMVA3L to FMVA15L (without suffix "33" for Internal Optical Distribution")	-40 °C to +55 °C	T4
Ex ec mb IIC T4 Gc	FMVA3L to FMVA15L (with suffix "33" for Internal Optical Distribution")	-40 °C to +40 °C	T4
Ex ec mb IIC T4 Gc	FMVA3L to FMVA15L (with suffix "33" for Internal Optical Distribution")	-40 °C to +55 °C	T4
Ex ec IIC T4 Gc	NFMVA20L to NFMVA50L	-40 °C to +40 °C	T4
Ex ec IIC T4 Gc	NFMVA20L to NFMVA50L	-40 °C to +55 °C	T4
Ex tb IIIC T65°C Db	FMV3L to FMV15L and FMVA3L to FMVA15L	-40 °C to +40 °C	T65°C
Ex tb IIIC T65°C Db	FMV3L to FMV15L and FMVA3L to FMVA15L	-40 °C to +55 °C	T80°C
Ex tb IIIC T65°C Db	NFMVA20L to NFMVA50L	-40 °C to +40 °C	T81°C
Ex tb IIIC T65°C Db	NFMVA20L to NFMVA50L	-40 °C to +55 °C	T94°C



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Electrical Ratings

Catalog Series/Voltage Suffix	Input Ratings	
	Voltage	Current (A)
FMV3L/UNV1	100-277 AC 50/60 Hz	0.28
	108-250 DC	0.28
FMVA3L/UNV1	100-240 AC 50/60 Hz	0.27
	127-250 DC	0.23
FMV3L/UNV34	347-440 AC 50/60 Hz	0.08
FMV5L/UNV1	100-277 VAC, 50/60 Hz	0.45
	108-250 VDC	0.46
FMVA5L/UNV1	100-240 AC 50/60 Hz	0.41
	127-250 DC	0.34
FMV5L/UNV34	347-440 VAC, 50/60 Hz	0.13
FMV7L/UNV1	100-277 VAC, 50/60 Hz	0.62
	108-250 VDC	0.65
FMV7L/UNV1	100-240 AC 50/60 Hz	0.56
	127-250 DC	0.46
FMV7L/UNV34	347-440 VAC, 50/60 Hz	0.17
FMV9L/UNV1	100-277 VAC, 50/60 Hz	0.42
	108-250 VDC	0.43
FMVA9L/UNV1	100-240 AC 50/60 Hz	0.78
	127-250 DC	0.70
FMV9L/UNV34	347-440 VAC, 50/60 Hz	0.23
FMV11L/UNV1	100-277 VAC, 50/60 Hz	0.96
	108-250 VDC	0.39
FMVA11L/UNV1	100-240 AC 50/60 Hz	0.84
	127-250 DC	0.84
FMV11L/UNV34	347-440 VAC, 50/60 Hz	0.28



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Catalog Series/Voltage Suffix	Input Ratings	
	Voltage	Current (A)
FMV13L/UNV1	100-277 VAC, 50/60 Hz	1.33
	108-250 VDC	1.37
FMVA13L/UNV1	100-240 AC 50/60 Hz	0.95
	127-250 DC	0.95
FMV13L/UNV34	347-440 VAC, 50/60 Hz	0.32
FMV15L/UNV1	100-277 VAC, 50/60 Hz	1.36
	108-250 VDC	1.39
FMVA15L/UNV1	100-240 AC 50/60 Hz	1.12
	127-250 DC	1.12
FMV15L/UNV34	347-440 VAC, 50/60 Hz	0.27
NFMV20L/UNV1	100-277 VAC, 50/60 Hz	1.76
	127-300 VDC	1.37
NFMV20L/UNV34	347-440 VAC, 50/60 Hz	0.52
NFMV25L/UNV1	100-277 VAC, 50/60 Hz	2.18
	127-300 VDC	1.74
NFMV25L/UNV34	347-440 VAC, 50/60 Hz	0.63
NFMV40L/UNV1	100-277 VAC, 50/60 Hz	3.35
	127-300 VDC	2.67
NFMV40L/UNV34	347-440 VAC, 50/60 Hz	1.24
NFMV50L/UNV1	100-277 VAC, 50/60 Hz	4.14
	127-300 VDC	3.22
NFMV50L/UNV34	347-440 VAC, 50/60 Hz	1.54

Table 3 – FMVA3L to FMVA15L Driver Specification

Driver Model Numbers and Ratings					
Item No.	Manufacturer	Manufacturer Part Number	Input Rating	Output Rating	Catalog Usage
1	Inventronics Inc.*	EUD-060S120DT-FTxx	100-240 VAC; 50/60Hz 127-250 VDC	25-86 VDC 1.2 A	FMVA3L to FMVA7L UNV1
2	Inventronics Inc.*	EUD-096S105DTAFTxx	100-240 VAC; 50/60 Hz 127-250 VDC	48-137 VDC, 1.05 A	FMVA9L to FMVA15L UNV1

* - Driver is certified under IECEx TPS 19.0009U; Ex mb IIC.



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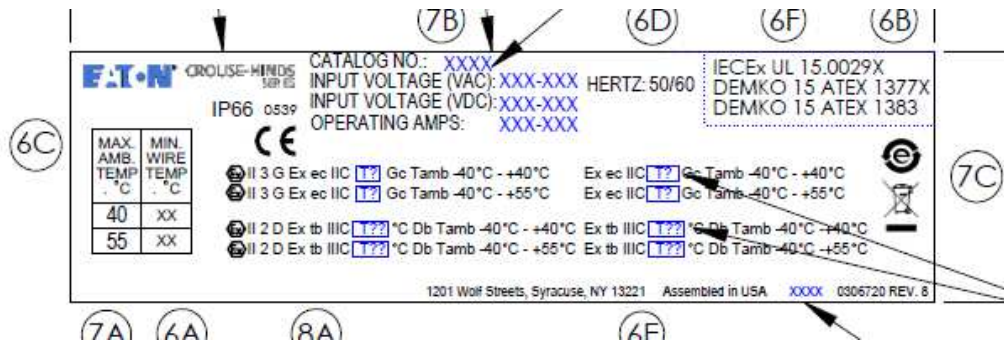
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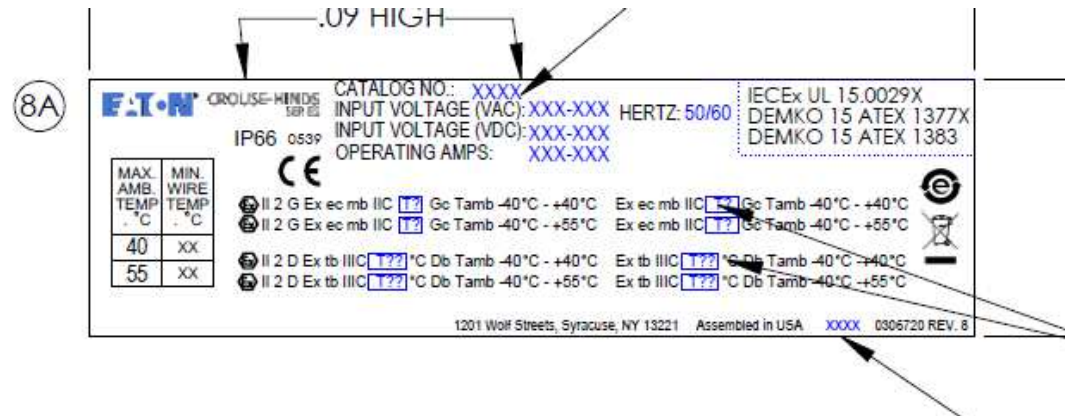
MARKING

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

Models FMV/NFMVA:



Models FMVA3L to FMVA15L:



ROUTINE EXAMINATIONS AND TESTS

Routine dielectric testing is to be performed on the FMVA3L to FMVA15L models as follows per 7.1 of IEC 60079-7:

1. Input Wiring of Driver and Enclosure (FMVA3L to FMVA15L): 1500 VAC for 60s or 1800 VAC for 100ms.
2. LED PCB (FMVA3L to FMVA7L): Between input wiring of LED array and aluminum substrate, voltage of 500 VAC for 60s or 600 VAC for 100ms.
3. LED PCB (FMVA9L to FMVA15L): Between input wiring of LED array and aluminum substrate, voltage of 1500 VAC for 60s or 1800 VAC for 100ms.

OR

Routine dielectric testing is to be performed on the FMVA3L to FMVA15L models per the relevant industrial standard UL 1598.



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LIST OF CERTIFIED COMPONENTS

The following additional previous editions of Standards noted under the "Standards" section of this Certificate were applied to integral Components as itemized below. There are no significant safety related changes between these previous editions and the editions noted under the "Standards" section.

Product	Certificate Number	Standards
Cable Gland, Part Nos. ADE 1F No. 6 M20, ADE 1F No. 6 M25 and ADE 1F No. 6 ¾, manufactured by Crouse-Hinds by Eaton – Cooper Capri S.A.S	IEC INE 12.0025X	IEC 60079-0:2011 IEC 60079-1:2014-06 IEC 60079-7: 2015 IEC 60079-15:2010 IEC 60079-31: 2013
Stopping Plug, Part No. CY, manufactured by EX Innovations Limited Trading as Raxton	IEC SIR 07.0009X	IEC 60079-0:2007-10 IEC 60079-1:2007-04 IEC 60079-7:2006-07 IEC 60079-31:2008
LED Drivers, Models EUD-060S120DT-FTxx and EUD-096S105DTAFTxx manufactured by Inventronics	IECEX TPS 19.0009U	IEC 60079-0: 2017 IEC 60079-18: 2017