Type Examination Certificate   CML 15ATEX4101X   Issue   4

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

2   Equipment   **WM4L/VM4L/EN2N Series LED Luminaires**

3   Manufacturer   **Killark, a Division of Hubbell Inc. (Delaware)**   **Chalmit, A Division of HUBBELL INCORPORATED**

4   Address   2112 Fenton Logistics Park Blvd.   Fenton, MO 63026, USA   388 HILLINGTON ROAD, GLASGOW, G52 4BL, UK

5   The equipment is specified in the description of this certificate and the documents to which it refers.

6   CML B.V., Chamber of Commerce No 6738671, Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II of Directive 2014/34/EU.

The examination and test results are recorded in the confidential reports listed in Section 12.

7   If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.

8   This Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Annex VIII apply to the manufacture of the equipment or component and are separately certified.

9   Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN 60079-0:2012 + A11:2013   EN 60079-15:2010

10   The equipment shall be marked with the following:

⟨Ex⟩ II 3 G

Ex nA IIC T* Gc

Ta= -40°C to +40/55°C**

* T4 or T140°C depending on model, power rating and ambient temperature.

** Ambient temperature limit details are shown in the description. The emergency (battery back-up) versions have a reduced ambient range, defined in the manufacturer's documentation.

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A Snowdon
A Snowdon
Assistant Certification Manager

11   Description

WM4L / VM4L /EC2N Series LED Luminaires, with heat sink: Bulb or Concave, follow by: light source output: 40 - 130 Watts or 6-18 (thousand) lumens. Rated input voltage 100-277 V, 50/60 Hz, or 105-250 VDC, Optional battery backup up to 90 Min, Mounting Splice Boxes: A, B, X, C, D, S followed by: 2, 3, 4, 5, 6, 7, 8, 9. Optics – (GL)VMG25, (R5) VMR255, (R1)VMR251, (R3) VMR253, (S5)VZRG4050, (S2)VMRG4020, (ER)VMER40, (GF)VZRGF 12, Followed by G or N, and options of color temperature, TURTLE-Amber colored LEDs , or PCAMBER-Amber colored through Phosphor Coating.

Accessories: Adapter for use with WM4L/VM4L Series LED Luminaires Models: VMCHVM, VMCHVM-DEEP, VMGEH2, VMHLDS, VMHPP2, VMM2LP, VMM3KP, SPL26748 and VMRS6470-12/13.

Note: The KILLARK's fixture mount adaptor VM series has no effect on the temperature classification of the WM4L/VM4L series LED luminaire when used together.

The following model numbers are covered by this certificate:

Item	Detail
Type identification	Series VM4L B 130 30 0 0 00 0 00 (Sample)

WM4L/V4ML/EC2N	B	130	_/E2	30	0	0	00	0	0
1	2	3	4	5	6	7	8	9	10

1: Housing Series <u>Killark's Model</u>: WM4L or VM4L. or <u>Chalmit's Model</u>: EC2N

2: Type of heat sink: **B**: Bulb, or C: Concave (Killlark's Only)

3: Rated light Wattage:

Killark's Rating option	Chalmit's rating option
18 or 130 = 130 Watts	16L
14 or 105 = 105 Watts	--
120 = 120 Watt	--
100 = 100 Watts	--
12 or 090 = 90 Watts	12L
080 = 80 Watts	--
070 = 70 Watts	--
9 or 065 = 65 Watts	09L
055 = 55 Watts	--
7 or 050 = 50 Watts	--
6 or 040 = 40 Watts	06L

4: Battery Backup model: (blank No backup Mode) / E2 – Battery Backup

5: Input Voltage: Killark: **30**: 100-277 Vac, or **34**: 105-250Vdc or Chalmit's: 'LE'. 100-277 Vac

6: Mounting Type:

A—Pendant, **B**—Wall Bracket

C—Cone Top, **D**—Stanchion 25°

X—Ceiling, **S**—Stanchion Straight 90°

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Item	Detail
	7: Conduit Entry: 2—3/4" NPT (A,B,C,X) 3—1" NPT (A,B,C,X) 4—1 1/4" NPT (D,S), 5—1 1/2" NPT (D,S) 6—3/4" NPT 5-Hub (X), 7 --1" NPT 5-Hub (X) 8—M20 4-Hub (X), 9 --M25 5-Hub (X) **8: Optic:** **GL** = Glass Globe (VMG25) **GG** = Globe and Guard **R5** = Refractor type 5 (VMR255) **R3** = Refractor type 3 (VMR253) **R1** = Refractor type 1 (VMR251) **ER** = Enclosed Reflector (VMER40) **S5** = 12" Spin top refractor type 5(VZRG4050) **S2** = 12" Spin top refractor type 2(VMRG4020) **GF** – 12" Spin-top Flat Glass Optic (VZRGF12) **9– Guard** **G** = Guard, **N** = No Guard **10- Options** **XXXX** - Four digit number referring to correlated color temperature and the color rendering Index **TURTL**E-Amber colored LEDs primarily used to protect wildlife **PCAMBER**-Amber colored LEDs that provide the amber color through **P**hosphor **C**oating.

Temperature classes

Catalog Number	Rated Ambient Temp °C	LED Type	LED Watts	"nA" IIC	"td" IIIC	Supply Wire Temp Deg C
				Globe/Refractor w/ Reflector		
VM4L(B/C)13030	40	D/E/**G**	130	T4	83˚C	75
VM4L(B/C)13030	55	D/E/**G**	130	T140˚C	83˚C	90
VM4L(B/C)10530	40	C/F/**G**	105	T4	83˚C	75
VM4L(B/C)10530	55	C/F/**G**	105	T140˚C	83˚C	90
VM4L(B/C)10534	40	C	105	T4	83˚C	75
VM4L(B/C)10534	55	C	105	T140˚C	83˚C	90
VM4L(B/C)10030	40	D/E/**F/G**	100	T4	83˚C	75
VM4L(B/C)10030	55	D/E/**F/G**	100	T4	83˚C	90
VM4L(B/C)09030	40	D/E/**G/H/I**	90	T4	83˚C	75
VM4L(B/C)09030	55	D/E/**G/H/I**	90	T4	83˚C	90
VM4L(B/C)08030	40	C/**G/H/I**	80	T4	83˚C	75
VM4L(B/C)08030	55	C/**G/H/I**	80	T4	83˚C	90
VM4L(B/C)07030	40	D/E/**G/H/I**	70	T4	83˚C	75
VM4L(B/C)07030	55	D/E/**G/H/I**	70	T4	83˚C	90
VM4L(B/C)06530	40	D/E/**G/H/I**	65	T4	83˚C	75
VM4L(B/C)06530	55	D/E/**G/H/I**	65	T4	83˚C	90
VM4L(B/C)05530	40	C/D/**E/G/H/I**	55	T4	83˚C	75

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Catalog Number	Rated Ambient Temp °C	LED Type	LED Watts	"nA" IIC	"td" IIIC	Supply Wire Temp Deg C
				Globe/Refractor w/ Reflector		
VM4L(B/C)05530	55	C/D/**E/G/H/I**	55	T4	83°C	90
VM4L(B/C)05030	40	D/E/**G/H/I**	50	T4	83°C	75
VM4L(B/C)05030	55	D/E/ **G/H/I**	50	T4	83°C	90
VM4L(B/C)04030	40	C/ **G/H/I**	40	T4	83°C	75
VM4L(B/C)04030	55	C/ **G/H/I**	40	T4	83°C	90

LED Types:

A) Nichia, white, LED Model: NS9W153MT - (W = 3.675 Watts) (Rjs = 10 °C/W)

B) Nichia, white, LED Model: NS9W153AMT - (W = 3.5 Watts) (Rjs = 10 °C/W)

C) Nichia, white, LED Model: Nichia NVSW219B – (W = 2.19 Watts) (Rjs = 6 °C/W)

D) Cree, white, LED Model: Cree XML – (W = 2.03 Watts) (Rjs = 2.5 °C/W)

E) Cree, white, LED Model: Cree XML2– (W= 2.03 Watts) (Rjs = 2.5°C/W)

F) Cree, white, LED Model: Cree XP-L- (W=2.03W) (Rjs = 2.1°C/W)

G) Cree, white, LED Model: Cree XP-G3–(W = 2.0 W)(Rjs=3 °C/W)

H) Cree, amber, LED Model: Cree XP-E2–(W = 1.8 W)(Rjs=7 °C/W)   (TURTLE)

I) Cree, PC Amber, LED Model: Cree XP-E2–(W = 2.3 W)(Rjs=9 °C/W) (PCAMBER)

Accessories	Adapters for Ex nA IIC T140°C or T4 Gc , Ex tb IIIC T83°C Db . IP66
	The KILLARK's VM series is the compatible adapters that use with the WM4L/VM4L Series Luminaire. The VM Series fixture mount adapter model number VMCHVM, VMCHVM-DEEP, VMGEH2, VMHLDS, VMHPP2, VMM2LP, VMM3KP, SPL26748 and VMRS6470-12/13 for use with specified fixture fitting in conjunction with WM4L/VM4L series luminaire.
	• KILLARK Series VMCHVM fixture mount adaptors, model number VMCHVM and VMCHVM-deep for use with specified fixture fitting in conjunction with KILLARKS Series WM4L /VM4L series LED Luminaire. Rated input: 100-277 Vac or 105-250Vdc, with optional Backup mode. Output up to: 130 W max. May supplied with either Globe, Enclosed Reflector, or Refractor. For use with power supply wiring rated up to 90℃ Max.
	The VMCHVM fixture adaptors are for use on listed Crouse Hinds Fixtures Cat. Nos. CM2, CM3, TWM2 and TWM3 Mounting Covers
	• KILLARK Series VM Fixture Mount adaptors, Model Numbers. VMGEH2, VMHLLDS, VMHPP2, VMM2LP, VMM3KP, and SPL26748, for use with specified fixture fitting in conjunction with KILLARK Series VM fixtures, Rated input: 100-277 Vac or 105-250Vdc, with optional Backup mode. Output up to: 130 W

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max. May supplied with either Globe, Enclosed Reflector, or Refractor. For use with supply wiring rated up to 90℃ Max.

- The VM Series fixture Adaptor are for use on listed Crouse Hinds and Appleton Fixture Mounting Covers (See table below) in conjunction with Series VM fixture fitting.

- The KILLARK's VMGEH2 fixture adaptors are for use with General Electric Series H2 Fixtures Mounting Covers (See table below) in conjunction with Series VM fixture fitting.

- The KILLARK's VMHPP2 fixture adaptors are for use with Holophane Series P2 (Petrolux II) Fixtures Mounting Covers (See table below) in conjunction with Series VM fixture fitting.

- The VM to STAHL adapter (Cat. VMRS6470-12/13) adapter is to be used with R. Stahl® 6470 Series.

Killark VM Adaptor Model	For Use with
VMGEH2	GE® filtr-gard® H2; Using fixture mounts H2000-3C, H2000-4C, H2000-3F, H2000-4F, H2000-5J, H2000-6J, H2000-3P, H2000-4P, H2000-5S, H2000-6S, H2000-3W, H2000-4W, H2000-6P
VMHLDS	Thomas and Betts® Hazlite® M2, M3; Hazbatt® 2, 3; Using fixture mounts HV1, VP2, VF2, VA2, VC2. Vb2, VS5 and VL5
VMHPP2	Holophane® Petrolux® II or Petrolux®
VMM2LP	Appleton® MercMaster® II Series; Using fixture mounts LPA-75/100, LPC-75/100, LPWB-75/100, LPS-125/150.
VMM3KP	Appleton® MercMaster® III or MercMaster® LED Series; Using fixture mounts KPA-75/100/M20, KPCH-75-75/100/M20, KPC-75/100/M20, KPWB-75/100/M20, KPS-125/150, KPST-125/150.
SPL26748	Holophane® Petrolux® II-Using Ceiling mounting cover(PETLCE)
VMRS6470-12/13	Adapters are to be used with R. Stahl® 6470 Series. (VM to STAHL adapter)

Variation 1

This variation introduces the following modifications:

i. To update the certificate reference to the 2014/34/EU Directive
ii. The addition of the WM4L series models
iii. To allow alternative LED drivers to be utilised
iv. To allow an alternative heatsink design to be used
v. The addition of battery backup option
vi. To allow an alternative LED type to be used
vii. The addition of an alternative wiring and LED board scheme
viii. The addition of the WM4L/VM4L(B/C)(065/9)** model for operation at an increased +65°C ambient temperature.
ix. The description has been amended to incorporate the above modifications.

Variation 2

This variation introduces the following modification:

i. To allow compatible adapters to be used with the WM4L/VM4L Series Luminaires as accessories components. The VM fixture mount adapter model numbers VMCHVM, VMCHVM-DEEP, VMGEH2, VMHLDS, VMHPP2, VMM2LP, VMM3KP and SPL26748 for use with specified fixture fitting in conjunction with WM4L/VM4L series luminaires.

Variation 3

This variation introduces the following modifications:

i. Addition of alternative glass globe manufactured from soda lime.
ii. Change of applicant address.

Variation 4

This variation introduces the following modifications:

i. Addition of Chalmit's model EC2N Series -16L, -12L, -09L and -06L LED Luminaires.
ii. Addition of alternate LEDs
   - Cree's XP-G3 Series: XPGDWT-01-0000-00KE7 -- 5000K, and XPGDWT-01-000-00K7E -- 3000K
   - Cree's XP-E2 Series: XPEBPA-L1-0000-00D01 --PC Amber and XPEBAM-L1-0000-00901 -- Amber Turtle
iii. Add on VM to STAHL adapter (Cat. VMRS6470-12/13) to the compatible adapter for use with WM4L/VM4L series luminaires.
iv. Amendment to product description in accordance with the above modifications.
v. To recognise the previous transfer of the certification from Eurofins E&E CML Limited (CML UK) to CML B.V., on this certificate.

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12   Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	22 Dec 2015	R707A/00	Issue of prime certificate
1	17 May 2017	R1587A/00	Introduction of Variation 1
2	30 Apr 2018	R11689A/00	Introduction of Variation 2
3	19 Mar 2020	R13045A/00	Introduction of Variation 3
4	15 Jun 2021	R14194A/00	Introduction of Variation 4

Note: Drawings that describe the equipment or component are listed in the Annex.

13   Conditions of Manufacture

None

14   Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or use of the equipment.

14.1   The luminaire shall only be installed where there is a low risk of mechanical damage.

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Certificate Annex

Certificate Number   CML 15ATEX4101X

Equipment   WM4L/VM4L/EN2N Series LED Luminaires

Manufacturer   Killark, a Division of Hubbell Inc. (Delaware) /

Chalmit, A Division of HUBBELL INCORPORATED

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No.	Sheets	Rev	CML Approved Date	Title
C-24483	1 of 2	1	22/12/015	Assembly, VM4LB Luminaire
C-24483	2 of 2	1	22/12/015	Assembly, VM4LB Luminaire
C-20797	1 of 2	D	22/12/015	Mount, Rigid Pendent Casting
C-20797	2 of 2	C	22/12/015	Mount, Rigid Pendent Casting
C-20799	1 of 3	D	22/12/015	Housing Casting VM/KH Series-7 ¾"Optic
C-20799	2 of 3	B	22/12/015	Housing Casting VM/KH Series-7 ¾"Optic
C-20799	3 of 3	C	22/12/015	Housing Casting VM/KH Series-7 ¾"Optic
B-14806	1 of 1	E	22/12/015	Gasket VM
C-20810	1 of 2	E	22/12/015	Mount, Ceiling, Casting VMX series
C20810	2 of 2	A	22/12/015	Mount, Ceiling, Casting VMX series
C-20822	1 of 2	C	22/12/015	Mount, Stanchion Casting
C-20822	2 of 2	B	22/12/015	Mount, Stanchion Casting
C-20823	1 of 1	C	22/12/015	Mount, Stanchion, Machining VMD-series
C-21398	1 of 2	A	22/12/015	Flex pendant splice box
C-21398	2 of 2	A	22/12/015	Flex pendant splice box
C-20828	1 of 3	B	22/12/015	Casting, Wall mount VMB Series
C-20828	2 of 3	B	22/12/015	Casting, Wall mount VMB Series
C-20828	3 of 3	B	22/12/015	Casting, Wall mount VMB Series
C-21459	1 of 1	A	22/12/015	APUN-TOP Refractor Assembly
C-20806	1 of 1	B	22/12/015	8"wire guard(Low)-VMAG25S(72/3"Optics)
D-21167	1 of 8	D	22/12/015	Globe – VMG25
D-21167	3 of 8	B	22/12/015	8"Optics, VM
B-14805	1 of 1	E	22/12/015	VM low Tank Globe Gasket
D-13423	1 of 1	F	22/12/015	12 in. Refractor guard
D-14759	1 of 2	F	22/12/015	Cone pendant splice box
D-14759	2 of 2	B	22/12/015	Cone pendant splice box
D-18237	1 of 2	F	22/12/015	Straight Stan. splice Box
D-18237	2 of 2	G	22/12/015	Straight Stan. splice Box
D15441	1 of 1	C	22/12/015	VMPA-17 30˚ Angle Plastic Reflectors

Certificate Annex

Certificate Number CML 15ATEX4101X

Equipment WM4L/VM4L/EN2N Series LED Luminaires

Manufacturer Killark, a Division of Hubbell Inc. (Delaware) /

Chalmit, A Division of HUBBELL INCORPORATED

Drawing No.	Sheets	Rev	CML Approved Date	Title
D-15442	1 of 1	B	22/12/015	VMPSD-17 VM Dome Plastic Reflectors
C-19776	1 of 1	B	22/12/015	Reflector, Assy Sealed (VMER40)
C-22179	1 of 1	B	22/12/015	Bracket, Ballast Mounting VE4Q Series
C-22926	1 of 2	A	22/12/015	VM4L LED Mounting (Bulb)
C-22926	2 of 2	A	22/12/015	VM4L LED Mounting (Bulb)
C-23361	1 of 2	C	22/12/015	Heat Sink, Machined, VM4LC Series
C-23361	2 of 2	A	22/12/015	Heat Sink, Machined, VM4LC Series
B-23548	1 of 1	A	22/12/015	S/A Flat 12"Spintop VZRPF12/VZRGF12
C-23550	1 of 1	B	22/12/015	Housing, Machin, VM4LB & VM4LC
B-24635	1 of 1	B	22/12/015	NAMEPLATE, PRODUCT, IECEx, VM4L SERIES

Issue 1

Drawing No	Sheets	Rev	CML Approved date	Title
C - 25017	1 of 1	1	17/05/2017	Heat Sink, Mach. and Painted, VM4LB
C - 25042	1 of 1	2	17/05/2017	Heat Sink, Painted, VM4LC
B - 24635	1 of 4	B	17/05/2017	Nameplate, IECEx, ATEX VM4L, Non Emergency
B - 24635	2 of 4	B	17/05/2017	Nameplate, IECEx, ATEX VM4L, Emergency
B - 24635	3 of 4	B	17/05/2017	Nameplate, Product, IECEx, ATEX VM4L, Chalmit, Non Emergency
B - 24635	4 of 4	B	17/05/2017	Nameplate, Product, IECEx, ATEX VM4L, Chalmit, Emergency
24635AABM	1 to 3	-	17/05/2017	24635AABM Nameplate Data – Non Emergency. 24635AABM Nameplate Data – Emergency

Certificate Annex

Certificate Number   CML 15ATEX4101X

Equipment   WM4L/VM4L/EN2N Series LED Luminaires

Manufacturer   Killark, a Division of Hubbell Inc. (Delaware) /

Chalmit, A Division of HUBBELL INCORPORATED

Issue 2

Drawing No	Sheets	Rev	Issued date	CML Approved date	Title
E18131-3	1 of 1	F	2018-02-07	30 Apr 2018	18131 NAMETAG For VMCHVM
E22920-1	1 of 1	C	2018-02-07	30 Apr 2018	Label, VM adapter
E18466	1 of 1	C	2009-08-06	30 Apr 2018	VMCHVM Adapter (As Cast)
E18467-1	1 of 1	B	2009-08-06	30 Apr 2018	VMCHVM adapter
E23294	1 of 1	A	2011-11-07	30 Apr 2018	CVR BLST WALLPACK
E23302	1 of 1	A	2012-08-27	30 Apr 2018	VMCHVM Deep Adapter
E25166-1A	1 of 2	A	2016-07-22	30 Apr 2018	GE 2 to VM Adapter
E25166-2A	2 of 2	A	2016-07-22	30 Apr 2018	GE 2 to VM Adapter

Issue 3

Drawing No	Sheets	Rev	CML Approved date	Title
D-21167	1 of 8	G	19/03/2020	8” Optic, VM

Issue 4

Drawing No.	Sheets	Rev	Approved /issued date	Title
B-24635	1 of 4	D	15 Jun 2021	Nameplate, Product, IECEx, ATEX VM4L, Non Emergency
B-24635	2 of 4	B	15 Jun 2021	Nameplate, Product, IECEx, ATEX VM4L, Emergency
B-24635	3 of 4	A	15 Jun 2021	Nameplate, Product, IECEx, ATEX VM4L, Chalmit, Non Emergency
B-24635	4 of 4	A	15 Jun 2021	Nameplate, Product, IECEx, ATEX VM4L, Chalmit, Emergency
51876	1 of 2	A	15 Jun 2021	Adapter, Cast, VM to Stahl
52089	1 of 1	A	15 Jun 2021	Label, Nameplate, VMRS6470-12/13
C-15722	1 of 2	AC	15 Jun 2021	15722 O-ring Chart

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