



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 ULD 19.0006X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 3	Issue 2 (2024-05-28)
Date of Issue:	2024-08-02		Issue 1 (2019-06-14)
Applicant:	European Safety Systems Limited Impress House Mansell Road Acton London W3 7QH United Kingdom		Issue 0 (2019-05-03)
Equipment:	D1xB2X – Xenon Beacons, D1xB2LD – LED Beacons, D1xJ2 – Junction Boxes, D1xH1-A/H/E – Heat Detectors and D2xH1-I/IR - Heat Detectors.		
Optional accessory:			
Type of Protection:	Flameproof "db", Increased Safety "eb", Intrinsic Safety "ia", Dust Ignition Protection by Enclosure "tb"		
Marking:	Ex db IIC T6...T3 Gb (D1xB2) Ex db IIC T6...T4 Gb (D1xH1-A/H, D1xJ2) Ex eb IIC T6...T5 Gb (D1xJ2-E) Ex db eb IIC T6...T5 Gb (D1xH1-E) Ex ia IIC T6 Ga (D2xH1-I) Ex ia IIC T4 Ga (D2xH1-IR) Ex tb IIIC T85 °C ...T169°C Db (D1xB2, D1xJ2, D1xH1, D2xH1) -55°C to +125°C (or as specified in the Annex) For Intrinsic Safety models D2xH1-I and D2xH1-IR: -40°C to +50°C. Please see Annex for additional Temperature information		

Approved for issue on behalf of the IECEx
Certification Body:

Lucy Frieders

Position:

Staff Engineer

Signature:
(for printed version)

Date:
(for printed version)

2024-08-02

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Certificate issued by:

UL Solutions (Demko)
Borupvang 5A
Ballerup DK-2750
Denmark





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Manufacturer: **European Safety Systems Limited**
Impress House
Mansell Road
Acton
London W3 7QH
United Kingdom

Manufacturing locations: **European Safety Systems Limited**
Impress House
Mansell Road
Acton
London W3 7QH
United Kingdom

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 60079-1:2014](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

[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:

[DK/ULD/ExTR19.0006/00](#)
[DK/ULD/ExTR19.0006/03](#)

[DK/ULD/ExTR19.0006/01](#)

[DK/ULD/ExTR19.0006/02](#)

Quality Assessment Report:

[GB/SIR/QAR06.0020/12](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

D1xB2 series are a range of Electronic Strobe Beacons housed in a flameproof / dust protected aluminium enclosure that are intended to be used as visual warning / signalling devices. The enclosure is accessible via the threaded cover which incorporates a glass dome, the glass dome is cemented into the cover. A stainless steel lens guard and non-metallic lens diffuser are optional. Additionally the 5J, 10J and 15J 24VDC models may be fitted with an additional PCB for SIL monitoring. The range is supplemented by a D1xJ2 Junction Box which is based on the D1xB2 Series enclosure, D1xH1 Heat Detector and D2xH1 Heat Detector. The Junction Box and Heat Detector are closed with a single piece moulded threaded cover instead of the beacon lens and may be fitted with optional indicator LED module (except for Ex eb models).

The intrinsically safe heat detector consists of the D2xJ1 enclosure, heat detector and wiring terminals. D2xH1-IR models may also be fitted with optional EOL Series devices including optional LED module.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The enclosure coating is non-conducting and may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.
- Repair of the flamepaths is not permitted.

For Ex ia Intrinsically Safe installation of models D2xH1-I and D2xH1-IR:

- End user shall adhere to the manufacturer's installation and instruction when performing housekeeping to avoid the potential for hazardous electrostatic charges during cleaning, by using a damp cloth.
- The equipment does not provide 500V isolation between the intrinsically safe circuit and parts which may be earthed. This shall be considered in the end-use application to ensure the possibility of an earth connection will not compromise intrinsic safety. Refer to IEC 60079-14.
- Avoid impact or friction with the equipment.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1: Added D1xJ2 Junction Box models and updated all existing Beacon Models and new Junction box models to IEC 60079-0, 7th Edition.

Issue 2: Added Increased Safety Protection method for Junction Boxes (D1xJ2-E), Alternate threaded entries for Junction Box enclosure (D1xJ2), Added Heat Detectors D1xH1-A/H/E, D2xH1-I and D2xH1-IR models.

Issue 3: Corrections to typographical errors. Updates to label drawings to correct the typographical errors.

Annex:

[Annex to IECEx ULD 19.0006X Issue 3.pdf](#)



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TYPE DESIGNATION

Nomenclature (Beacons):

Model	Beacon energy	Voltage	Suffixes
D1xB2X	05	DC012	Up to 4 alpha numeric characters, not associated with equipment certification
		DC024	
		DC048	
		AC115	
		AC230	
D1xB2X	10	DC024	
		DC048	
		AC115	
		AC230	
D1xB2X	15	DC024	
		DC048	
		AC115	
		AC230	
D1xB2X	21	DC024	
		DC048	
		AC115	
		AC230	
D1xB2LD2 (LED beacon)	-	DC024	
	-	AC115	
	-	AC230	

Nomenclature (Junction boxes):

Model	Suffix
D1xJ2	T01 = Terminal block
	D01 = Din Rail AKZ
	M01 = Module mounted on internal
	-E = Increased safety

Nomenclature (Heat Detectors):

Model	Suffix
D1xH1-	A = Ex db / Ex tb model
	H = Ex db / Ex tb high temperature model
	E = Ex db eb / Ex tb model
D2xH1-	I = Ex ia model / Ex tb model
	IR = Ex ia, with resistor model / Ex tb with resistor model



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Temperature ratings (Beacons):

Model	Type of protection	Temperature Class	Associated Maximum Ambient Temperature
D1xB2X05DC012	Ex db IIC	T4	-55°C to +80°C
D1xB2X05DC024		T5	-55°C to +75°C
D1xB2X05DC048		T6	-55°C to +60°C
D1xB2X05DC048	Ex tb IIIC	T104°C	-55°C to +80°C
D1xB2X05AC115	Ex db IIC	T4	-55°C to +80°C
D1xB2X05AC230		T5	-55°C to +50°C
D1xB2X05AC230	Ex tb IIIC	T116°C	-55°C to +70°C
D1xB2X10DC024	Ex db IIC	T4	-55°C to +80°C
D1xB2X10DC048		T5	-55°C to +45°C
D1xB2X10DC048	Ex tb IIIC	T135°C	-55°C to +80°C
D1xB2X10AC115	Ex db IIC	T3	-55°C to +70°C
D1xB2X10AC230		T4	-55°C to +65°C
D1xB2X10AC230	Ex tb IIIC	T139°C	-55°C to +70°C
D1xB2X15DC024	Ex db IIC	T3	-55°C to +80°C
D1xB2X15DC048		T4	-55°C to +65°C
D1xB2X15DC048	Ex tb IIIC	T146°C	-55°C to +80°C
D1xB2X15AC115	Ex db IIC	T3	-55°C to +70°C
D1xB2X15AC230		T4	-55°C to +65°C
D1xB2X15AC230	Ex tb IIIC	T139°C	-55°C to +70°C
D1xB2X21DC024	Ex db IIC	T3	-55°C to +80°C
D1xB2X21DC048		T4	-55°C to +45°C
D1xB2X21DC048	Ex tb IIIC	T169°C	-55°C to +80°C
D1xB2X21AC115	Ex db IIC	T3	-55°C to +60°C
D1xB2X21AC230		T4	-55°C to +50°C
D1xB2X21AC230	Ex tb IIIC	T141°C	-55°C to +60°C
D1xB2LD2	Ex db IIC	T5	-55°C to +80°C
		T6	-55°C to +70°C
	Ex tb IIIC	T95°C	-55°C to +80°C

Temperature ratings (Junction Boxes):

Model	Type of protection	Temperature Class	Associated Maximum Ambient Temperature
D1xJ2***	Ex db IIC	T4	-55°C to +80°C
		T5	-55°C to +70°C
		T6	-55°C to +55°C
D1xJ2***	Ex tb IIIC	T106°C	-55°C to +80°C
D1xJ2-E	Ex eb IIC	T5	-55°C to +80°C
		T6	-55°C to +75°C
	Ex tb IIIC	T85°C	-55°C to +80°C



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Temperature ratings (Heat Detectors):

Model	Type of protection	Temperature Class	Associated Maximum Ambient Temperature
D1xH1-A	Ex db IIC	T4	-55°C to +80°C
		T5	-55°C to +70°C
		T6	-55°C to +55°C
	Ex tb IIIC	T106 °C	-55°C to +80°C
D1xH1-H	Ex db IIC	T4	-55°C to +125°C
		T5	-55°C to +90°C
		T6	-55°C to +75°C
	Ex tb IIIC	T130 °C	-55°C to +125°C
		T85 °C	-55°C to +80°C
D1xH1-E	Ex db eb IIC	T5	-55°C to +80°C
		T6	-55°C to +75°C
		T85°C	-55°C to +80°C
D2xH1-I	Ex ia IIC	T6	-40°C to +50°C
	Ex tb IIIC	T75°C	-40°C to +50°C
D2xH1-IR	Ex ia IIC	T4	-40°C to +50°C
	Ex tb IIIC	T75°C	-40°C to +50°C

Electrical Data (Beacons):

Model	Voltage DC	Voltage AC	Freq. Hz	Maximum Current mA
D1xB2X05DC012	10-14	-	-	600
D1xB2X05DC024	20-28	-	-	350
D1xB2X05DC048	42-54	-	-	150
D1xB2X05AC115	-	110-120	50/60	200
D1xB2X05AC230	-	220-240	50/60	100
D1xB2X10DC024	20-28	-	-	710
D1xB2X10DC048	42-54	-	-	250
D1xB2X10AC115	-	110-120	50/60	300
D1xB2X10AC230	-	220-240	50/60	180
D1xB2X15DC024	20-28	-	-	920
D1xB2X15DC048	42-54	-	-	360
D1xB2X15AC115	-	110-120	50/60	420
D1xB2X15AC230	-	220-240	50/60	230
D1xB2X21DC024	20-28	-	-	1240
D1xB2X21DC048	42-54	-	-	560
D1xB2X21AC115	-	110-120	50/60	530
D1xB2X21AC230	-	220-240	50/60	270



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D1xB2LD2DC024	18-54	-	-	500
D1xB2LD2AC115	-	110-120	50/60	180
D1xB2LD2AC230	-	220-240	50/60	100

Electrical Data (Junction Boxes):

Model	Voltage DC	Voltage AC	Freq. Hz	Maximum power Watts	Maximum Current Amps
D1xJ2***	60VDC Max	260VAC Max	50/60	10 Watts	-
D1xJ2-E	60VDC Max	260VAC Max	50/60	-	5A

Electrical Data (Heat Detectors):

Model	Voltage DC	Voltage AC	Freq. Hz	Maximum power Watts	Maximum Current A
D1xH1-A	125Vdc	125Vac	50/60	10 Watts	-
D1xH1-H				1.25 Watts	-
D1xH1-E	24Vdc	-	--	-	2A
	32Vdc	-	-	-	1A
	-	32Vac	50/60	-	5A

For Intrinsic Safety models D2xH1-I and D2xH1-IR:

$U_i = 30V$

$I_i = 500mA$

$P_i = 1100mW$

$C_i = 0$

$L_i = 0$



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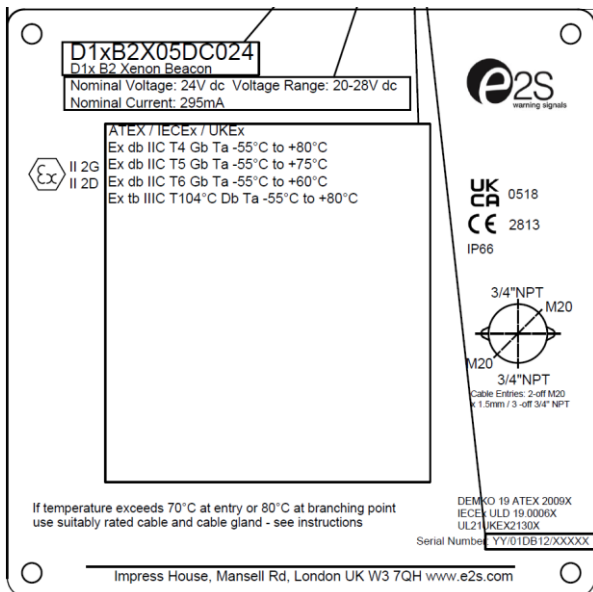
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MARKING

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

D1xB2 (Beacons) example –





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D1xJ2 (Junction Boxes) example –

Variants:
D1xJ2T01
D1xJ2D01
D1xJ2M01

D1xJ2T01 = 20A
D1xJ2D01 = 10A
D1xJ2M01 = 10A

(REF 60,0 ONLY)

D1xJ2T01
D1x J2 Junction Box
Voltage: 60V dc max / 260Vac 50/60Hz max
Max Current **20A**
Max Power: 10W

ATEX / IECEX / UKEX
Ex db IIC T4 Gb Ta -55°C to +80°C
II 2G Ex db IIC T5 Gb Ta -55°C to +70°C
II 2D Ex db IIC T6 Gb Ta -55°C to +55°C
Ex tb IIIC T106°C Db Ta -55°C to +80°C

UK CA 0518
CE 2813
IP66

3/4" NPT M20
3/4" NPT M20
3/4" NPT M20
3/4" NPT M20
Cable Entries: 2-off M20 x 1.5mm / 5-off 3/4" NPT

If temperature exceeds 70°C at entry or 80°C at branching point use suitably rated cable and cable gland - see instructions

DEMKO 19 ATEX 2009X
IECEX ULD 19.0006X
UL21UKEX2130X
Serial Number: YY1D1DJ2XXXXXX

Impress House, Mansell Rd, London UK W3 7QH www.e2s.com

D1xJ2-E JUNCTION BOX

Maximum Voltage: 60Vdc / 260Vac 50/60Hz

II 2G Ex eb IIC T5 Gb Ta. -55°C to +80°C
II 2D Ex eb IIC T6 Gb Ta. -55°C to +75°C
Ex tb IIIC T85°C Db Ta. -55°C to +80°C

CE 2813
UK CA 0518

IP64 Year / Serial No. UL21UKEX2030X
24/1D1J2E000001 IECEX ULD 19.0006X

WARNINGS:
DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
POTENTIAL ELECTROSTATIC HAZARD - SEE INSTRUCTIONS
IF TEMPERATURE EXCEEDS 70° C AT ENTRY OR 80° C AT BRANCHING POINT USE SUITABLY RATED CABLE AND CABLE GLANDS - SEE INSTRUCTIONS
2 x M20 x 1.5 ; 3 x 3/4" NPT ENTRIES

e2s European Safety Systems Ltd. www.e2s.com
Impress House, Mansell Road, London, W3 7QH

Warning label Markings, example for all Beacons and Junction Boxes –

WARNING:
DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
DO NOT OPEN WHEN ENERGISED
POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS
HIGH VOLTAGE SHOCK HAZARD. WAIT 5 MINUTES AFTER REMOVING POWER BEFORE OPENING THE ENCLOSURE



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D1xH1-E (Heat Detectors) – example –

D1xH1-E		HEAT DETECTOR	
Maximum Voltage: 32Vdc 1.0A ; 24Vdc 2A 32Vac 50/60Hz 5.0A			
Year / Serial No. 24/D1H1EXXXXXX		DEMKO 19 ATEX 2009X IECEx ULD 19.0006X UL21UKEX2130X IP66	
WARNINGS DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS IF TEMPERATURE EXCEEDS 70° C AT ENTRY OR 80° C AT BRANCHING POINT USE SUITABLY RATED CABLE AND CABLE GLANDS - SEE INSTRUCTIONS ENTRIES 2 x M20x1.5 ; 3 x 3/4" NPT			
European Safety Systems Ltd.		Impress, House, Mansell Road, London W3 7QH UK www.e2s.com	

	ATEX / IECEx / UKEx:		
	Ex db eb IIC T5 Gb (Ta -55°C to +80°C)		
	Ex db eb IIC T6 Gb (Ta -55°C to +75°C)		
	Ex tb IIC T85°C Db (Ta -55°C to +80°C)		

D1xH1-A and D1xH1-H (Heat Detectors) – example –

D1xH1-A		HEAT DETECTOR	
Maximum Wattage 10W			
Maximum Voltage: 125Vdc 0,5A ; 48Vdc 1A ; 24Vdc 2A 125vac 50/60Hz 3,0A			
Year / Serial No. 24/D1H1AXXXXXX		DEMKO 19 ATEX 2009X IECEx ULD 19.0006X UL21UKEX2130X IP6X	
WARNINGS DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS IF TEMPERATURE EXCEEDS 70° C AT ENTRY OR 80° C AT BRANCHING POINT USE SUITABLY RATED CABLE AND CABLE GLANDS - SEE INSTRUCTIONS ENTRIES 2 x M20x1.5 ; 3 x 3/4" NPT			
European Safety Systems Ltd.		Impress, House, Mansell Road, London W3 7QH UK www.e2s.com	

	ATEX / IECEx / UKEx:		
	Ex db IIC T4 Gb (Ta -55°C to +80°C)		
	Ex db IIC T5 Gb (Ta -55°C to +70°C)		
	Ex db IIC T6 Gb (Ta -55°C to +55°C)		
	Ex tb IIC T100°C Db (Ta -55°C to +80°C)		



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For models D2xH1-I and D2xH1-IR:

<p>D2xH1-IR HEAT DETECTOR</p> <p>Ui=30V Ii=500mA Pi=1100mW Ci=0 Li=0</p> <p>Year / Serial No. 24/D2H1RXXXXXX</p> <p>DEMKO 19 ATEX 2009X IECEx ULD 19.0006X IP66 UL21UKEK2130X</p> <p>WARNINGS DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS DO NOT OPEN WHEN ENERGISED POTENTIAL ELECTROSTATIC CHARGING HAZARD - CLEAN ONLY WITH A DAMP CLOTH</p> <p>AVERTISSEMENT: NE PAS OUVRIER UN PRESENCE D'ATMOSPHERE EXPLOSIVE DANGER POTENTIEL CHARGE ELECTROSTATIQUE - VOIR LES INSTRUCTIONS NE PAS OUVRIER ENERGIE DANGER POTENTIEL CHARGE ELECTROSTATIQUE - NETTOYER UNIQUEMENT AVEC UN CHIFFON HUMIDE</p> <p>ALL ENTRIES M20x1.5 - IF TEMPERATURE EXCEEDS 70° C AT ENTRY OR 80° C AT BRANCHING POINT USE SUITABLY RATED CABLE AND CABLE GLANDS - SEE INSTRUCTIONS</p> <p> European Safety Systems Ltd. <i>Impress, House, Mansell Road, London W3 7QH UK</i></p>	<p>MARK INSTALLATION TYPE</p> <p>ATEX / IECEx / UKEx: Ex ia IIC T4 Ga (Ta -40°C to +50°C) <input type="checkbox"/> CE 2813 Ex tb IIIC T75°C Db (Ta -40°C to +50°C) <input type="checkbox"/> UK CA 0518</p> <p> II 1G II 2D</p>
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PRODUCT LABEL 1 (MODEL CERT) PRODUCT LABEL 2 (RATINGS LABEL)

ROUTINE EXAMINATIONS AND TESTS

- Routine tests according to IEC 60079-1, cl. 16 are not required, as the enclosures have been successfully tested at four times the reference pressure.
- The cemented lead seal of the LED modules shall be subjected to a batch overpressure test of at least 363 psi / 25.02 bar for at least 10 s in accordance with Clause 16.6 of IEC 60079-1, 7th Edition.
- Heat Detector probe integrity of welds are to be verified by one of the inspection methods in accordance with Clause 16.3 of IEC 60079-1, 7th Edition.
- All D1xH1-E shall be routinely dielectrically strength tested between live/neutral and earth/enclosure. The tests shall be performed as described in IEC 60079-7, clause 6.1, at 500V rms for at least 1 minute (or 600V rms for at least 100 ms).



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LIST OF CERTIFIED EQUIPMENT AND/OR 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
Metallic adapters and reducers	IECEX CML 19.0022X Issue 1	IEC 60079-0:2017 (7th) IEC 60079-1:2014 (7th) IEC 60079-7:2015 (Ed 5.0) IEC 60079-31:2013 (2nd)