[1]

UNITED KINGDOM CONFORMITY ASSESSMENT

TYPE EXAMINATION CERTIFICATE

[2]

Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended by UKSI 2019:696)

[3] Type Examination Certificate No.: **UL21UKEX2135X Rev. 0**

[4] Product: **Audible and/or Visual Signalling Devices Type E2xB05*, E2xB10*, E2xBL*, E2xS1*, E2xS2*, E2xC1*, E2xL15*, E2xL25***

[5] Manufacturer: **European Safety Systems Limited**

[6] Address: **Impress House, Mansell Road, Acton, London W3 7QH United Kingdom**

[7] This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

[8] UL International (UK) Ltd certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations. The examination and test results are recorded in the confidential report **UKRCC-4789853593.1.**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 EN IEC 60079-7: 2015 +A1:2018 EN 60079-31:2014

Except in respect of those requirements listed at section 19 of the schedule to this certificate.

[10] If the sign “X” is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

[11] This TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the product shall include the following:

Ex II 3 G Ex ec IIC T4…T2 Gc

Ex II 3 D Ex tc IIIC T85°C…T120°C Dc

Certification Manager
David Lloyd

This is to certify that the sample(s) of the Product described herein (“Certified Product”) has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the UKEx Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL’s prior written approval.

Date of issue: 2022-03-23

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[13] [14]

Schedule
TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2135X Rev. 0

[15] Description of Product

Audible and/or Visual Signalling Devices, Type E2x followed by suffixes as detailed in the annex, covering Xenon Beacons, LED Beacons, Combined Sounder Beacons and Loudspeakers.

The E2xC1* Combined Sounder Beacon units employ a combined Sounder Beacon housing, incorporating components of the E2xS1* Sounder and components of the E2xB* Beacon.

The E2xS* Sounders or E2xC1* Combined Sounder Beacon assemblies are suitable for miscellaneous type general signalling functions.

The devices are to be mounted using the rotating bracket attached to the device only.

The Beacon and combined Sounder Beacon devices employ a glass lens, and have a stainless steel cage installed around it for use as a guard. There may be a non-metallic lens cover / diffuser provided between the lens and the guard.

The Beacon light source is a xenon flash tube or LED stack.

The E2xL* loudspeakers are intended for general signalling, commercial, and professional (non-fire) use only. The external housings with screwed cover are made of plastic suitable of outdoor use.

The horns available for Sounders, Combined Sounder Beacons and loudspeakers are either Flare (E2x…F…) or Radial (E2x…R…).

Electrical data

Xenon Beacons

Model Number	Voltage (Volts)	Frequency (Hz)	Current (mA)	Energy
E2xB05DC012	12	DC	520	5J
E2xB05DC024	24	DC	275	5J
E2xB05DC048	48	DC	145	5J
E2xB05AC115	115 - 120	50 / 60	80	5J
E2xB05AC230	220 - 230	50 / 60	30	5J
E2xB10DC024	24	DC	560	10J
E2xB10DC048	48	DC	260	10J
E2xB10AC115	115 - 120	50 / 60	185	10J
E2xB10AC230	220 - 230	50 / 60	107	10J

LED Beacons

Model Number	Voltage (Volts)	Frequency (Hz)	Current (mA)	Power (Watts)
E2xBL2DC024	18 - 54	DC	346	6.21
E2xBL2AC115	115 – 120	50 / 60	102.4	7.95
E2xBL2AC230	220 - 230	50 / 60	49.4	8.19

Sounders

Model Number	Voltage (Volts)	Frequency (Hz)	Current (mA)
E2xS1FDC024 E2xS1RDC024	24	DC	284
E2xS1FDC048 E2xS1RDC048	48	DC	146
E2xS1FAC115 E2xS1RAC115	115 – 120	50 / 60	104
E2xS1FAC230 E2xS1RAC230	220 - 230	50 / 60	54
E2xS2FDC024 E2xS2RDC024	24	DC	280
E2xS2FDC048 E2xS2RDC048	48	DC	215
E2xS2FAC115 E2xS2RAC115	115 – 120	50 / 60	142
E2xS2FAC230 E2xS2RAC230	220 - 230	50 / 60	76

[13]

[14]

Schedule

TYPE EXAMINATION CERTIFICATE No.

UL21UKEX2135X Rev. 0

Combined Sounder Beacons (Xenon)

Model Number	Voltage (Volts)	Frequency (Hz)	Current (mA)	
			Beacon	Sounder
E2xC1X05FDC024 E2xC1X05RDC024	24	DC	275	284
E2xC1X05FDC048 E2xC1X05RDC048	48	DC	145	146
E2xC1X05FAC115 E2xC1X05RAC115	115 – 120	50 / 60	80	104
E2xC1X05FAC230 E2xC1X05RAC230	220 - 230	50 / 60	30	54

Combined Sounder Beacons (LED)

Model Number	Voltage (Volts)	Frequency (Hz)	Current (mA)	
			Beacon	Sounder
E2xC1LD2FDC024 E2xC1LD2RDC024	18 – 30	DC	346	284
E2xC1LD2FDC048 E2xC1LD2RDC048	48	DC	115	146
E2xC1LD2FAC115 E2xC1LD2RAC115	115 – 120	50 / 60	102.4	104
E2xC1LD2FAC230 E2xC1LD2RAC230	220 – 230	50 / 60	49.4	54

Loudspeakers

Model Number	Voltage (Volts)	Power (Watts)	Input Impedance (Ohms)
E2xL15FR008 E2xL15RR008	-	15	8
E2xL15FR016 E2xL15RR016	-	15	16
E2xL15FV070 E2xL15RV070	70	15	-
E2xL15FV100 E2xL15RV100	100	15	-
E2xL25FR008 E2xL25RR008	-	25	8
E2xL25FR016 E2xL25RR016	-	25	16
E2xL25FV070 E2xL25RV070	70	25	-
E2xL25FV100 E2xL25RV100	100	25	-

Temperature rating

The maximum ambient temperature range is -20°C ≤ T_{amb} ≤ +55°C, refer to the table below for specific details of Temperature Code and Temperature Marking.

Xenon Beacons

Model Number	Group II (Gases and vapours)	Group III (Dust)
E2xB05DC012	-20°C ≤ T_{amb} ≤ +40°C -- T3 -20°C ≤ T_{amb} ≤ +55°C -- T2	-20°C ≤ T_{amb} ≤ +40°C -- T85 °C -20°C ≤ T_{amb} ≤ +55°C -- T100 °C
E2xB05DC024		
E2xB05DC048		
E2xB05AC115		
E2xB05AC230		
E2xB10DC024	-20°C ≤ T_{amb} ≤ +55°C -- T2	-20°C ≤ T_{amb} ≤ +40°C -- T105 °C -20°C ≤ T_{amb} ≤ +55°C -- T120 °C
E2xB10DC048		
E2xB10AC115		
E2xB10AC230		

[13]

[14]

Schedule
TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2135X Rev. 0

LED Beacons

Model Number	Group II (Gases and vapours)	Group III (Dust)
E2xBL2DC024 E2xBL2AC115 E2xBL2AC230	-20°C ≤ T_{amb} ≤ +55°C -- T4	-20°C ≤ T_{amb} ≤ +55°C -- T85 °C

Sounders

Model Number	Group II (Gases and vapours)	Group III (Dust)
E2xS1FDC024 E2xS1RDC024	-20°C ≤ T_{amb} ≤ +55°C -- T4	-20°C ≤ T_{amb} ≤ +55°C -- T85 °C
E2xS1FDC048 E2xS1RDC048		
E2xS1FAC115 E2xS1RAC115		
E2xS1FAC230 E2xS1RAC230		
E2xS2FDC024 E2xS2RDC024		
E2xS2FDC048 E2xS2RDC048		
E2xS2FAC115 E2xS2RAC115		
E2xS2FAC230 E2xS2RAC230		

Combined Sounder Beacons (Xenon)

Model Number	Group II (Gases and vapours)	Group III (Dust)
E2xC1X05FDC024 E2xC1X05RDC024	-20°C ≤ T_{amb} ≤ +40°C -- T3 -20°C ≤ T_{amb} ≤ +55°C -- T2	-20°C ≤ T_{amb} ≤ +40°C -- T85 °C -20°C ≤ T_{amb} ≤ +55°C -- T100 °C
E2xC1X05FDC048 E2xC1X05RDC048		
E2xC1X05FAC115 E2xC1X05RAC115		
E2xC1X05FAC230 E2xC1X05RAC230		

Combined Sounder Beacons (LED)

Model Number	Group II (Gases and vapours)	Group III (Dust)
E2xC1LD2FDC024 E2xC1LD2RDC024	-20°C ≤ T_{amb} ≤ +55°C -- T3	-20°C ≤ T_{amb} ≤ +40°C -- T90 °C -20°C ≤ T_{amb} ≤ +55°C -- T105 °C
E2xC1LD2FDC048 E2xC1LD2RDC048		
E2xC1LD2FAC115 E2xC1LD2RAC115		
E2xC1LD2FAC230 E2xC1LD2RAC230		

[13] [14]

Schedule
TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2135X Rev. 0

Loudspeakers

Model Number	Group II (Gases and vapours)	Group III (Dust)
E2xL15FR008 E2xL15RR008	-20°C ≤ T_{amb} ≤ +55°C -- T4	-20°C ≤ T_{amb} ≤ +55°C -- T85 °C
E2xL15FR016 E2xL15RR016		
E2xL15FV070 E2xL15RV070		
E2xL15FV100 E2xL15RV100		
E2xL25FR008 E2xL25RR008	-20°C ≤ T_{amb} ≤ +55°C -- T2	-20°C ≤ T_{amb} ≤ +40°C -- T85 °C -20°C ≤ T_{amb} ≤ +55°C -- T100 °C
E2xL25FR016 E2xL25RR016		
E2xL25FV070 E2xL25RV070		
E2xL25FV100 E2xL25RV100		

Routine tests

The xenon lamp assembly shall be routinely dielectrically strength tested.
Tests shall be performed as described in EN 60079-7 clause 6.1.

Performance testing

The optical radiation output of the product with respect to explosion protection, according to Schedule 1 clause 16 of the Regulation 2016 No. 1107 (as amended by UKSI 2019:696) is not covered in this certificate.

[16] Test Report No. (associated with this certificate issue)
DK/ULD/ExTR14.0013/02.

[17] Specific conditions of use:

- When used for a Group III application, the surface of the enclosure may store electrostatic charge and become a source of ignition in applications with a low relative humidity <~40% relative humidity where the surface is relatively free of surface contamination such as dirt, dust, or oil.
- Guidance on protection against the risk of ignition due to electrostatic discharge can be found in EN TR50404 and IEC TR60079-32-1.
- Cleaning of the surface should only be done with a damp cloth.
- The equipment incorporates metal parts isolated from earth, having capacitance values exceeding the limits permitted in the standards of certification. Mounting bracket – 10.33pF; Lens guard – 12.33pF.

Specific Conditions of Use for E2xB2L2***** and E2xC1LD2******

- The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1.

[18] Conditions of certification:
None

[19] Essential Health and Safety Requirements (Regulations Schedule 1)
In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.

Additional information
The [Product] has in addition passed the tests for Ingress Protection to IP64 in accordance with EN60529:1991+A1:2000+A2:2013.

The trademark e2S warning signals will be used as the company identifier on the marking label.

The manufacturer shall inform the certificate issuer concerning all modifications to the technical documentation as described in Section [20] Drawings and Documents of this document.

[13] [14]

Schedule
TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2135X Rev. 0

[20] Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
E2x Sounder	D209-00-001-SC	D	2017-01-16
E2x Loudspeaker	D209-00-101-SC	C	2017-01-18
70V and 100V Line Audio Matching Transformer 25W	D209-10-102-SC	A	2016-11-10
E2x Beacon	D209-00-201-SC	C	2017-01-16
E2x Flash Tube Module Assembly Instructions	D209-15-201-SC	A	2016-11-10
E2x LED PCB Sub Assembly	D209-15-451-SC	C	2017-04-18
E2x Combo Sounder Beacon	D209-00-501-SC	D	2017-01-16
E2x LED Combo PCBA Sub Assembly	D209-15-452-SC	C	2017-04-18
Pressure Unit 8 and 16 Ohm	D209-10-001-SC	A	2016-11-10
70V and 100V Line Audio Matching Transformers 15W	D209-10-101-SC	A	2016-11-10
E2xS1 Sounder PCBA 24Vdc	D209-26-001-CL-SC	C	2017-01-18
E2xS1 Sounder PCBA 48Vdc	D209-27-001-CL-SC	C	2017-01-18
E2xS1 Sounder PCBA 115Vac	D209-36-001-CL-SC	C	2017-01-18
E2xS1 Sounder PCBA 230Vac	D209-37-001-CL-SC	C	2017-01-18
E2xS2 Sounder PCBA 24Vdc	D209-26-011-CL-SC	C	2017-01-18
E2xS2 Sounder PCBA 48Vdc	D209-27-011-CL-SC	C	2017-01-18
E2xS2 Sounder PCBA 115Vac	D209-36-011-CL-SC	C	2017-01-18
E2xS2 Sounder PCBA 230Vac	D209-37-011-CL-SC	C	2017-01-18
E2xL15 Loudspeaker PCBA 8/16Ohm	D209-45-101-CL-SC	B	2017-01-18
E2xL15 Loudspeaker PCBA 70V Line	D209-45-102-CL-SC	B	2017-01-18
E2xL15 Loudspeaker PCBA 100V Line	D209-45-103-CL-SC	B	2017-01-18
E2xL25 Loudspeaker PCBA 70V Line	D209-45-112-CL-SC	B	2017-01-18
E2xL25 Loudspeaker PCBA 100V Line	D209-45-113-CL-SC	B	2017-01-18
E2xB05DC012 5J 12V DC PCBA	D209-25-201-CL-SC	B	2017-04-07
E2xB05DC024 5J 24V DC PCBA	D209-26-201-CL-SC	C	2017-04-07
E2xB05DC048 5J 48V DC PCBA	D209-27-201-CL-SC	C	2017-04-07
E2xB05AC115 5J 115V AC PCBA	D209-36-201-CL-SC	C	2017-04-07
E2xB05AC230 5J 230V AC PCBA	D209-37-201-CL-SC	B	2017-04-07
E2xB010DC024 10J 24V DC PCBA	D209-26-211-CL-SC	B	2017-04-07
E2xB10DC048 10J 48V DC PCBA	D209-27-211-CL-SC	B	2017-04-07
E2xB10AC115 10J 115V AC PCBA	D209-36-211-CL-SC	B	2017-04-07
E2xB10AC230 10J 230V AC PCBA	D209-37-211-CL-SC	B	2017-04-07
E2x LED DC Power PCBA	D209-26-401-CL-SC	B	2017-03-20
D2x/E2x LED Controller Module PCBA	D209-26-405-CL-SC	B	2017-03-20
E2x LED 115VAC Power PCBA	D209-36-401-CL-SC	B	2017-01-18
E2x LED 230VAC Power PCBA	D209-37-401-CL-SC	B	2017-01-18
CIRCUIT/BLOCK DIAGRAM E2xS1 DC SOUNDER	D209-26-001-CD-SC	B	2016-12-05
CIRCUIT/BLOCK DIAGRAM E2xS1 AC SOUNDER	D209-36-001-CD-SC	B	2016-12-05
CIRCUIT/BLOCK DIAGRAM E2xS121 DC SOUNDER	D209-26-011-CD-SC	B	2016-12-05
CIRCUIT/BLOCK DIAGRAM E2xS2 AC SOUNDER	D209-36-011-CD-SC	B	2016-12-05
CIRCUIT/BLOCK DIAGRAM E2xL15 & L25 LOUDSPEAKER	D209-45-101-CD-SC	A	2016-11-09
E2xB05 & E2xB10 5J & 10J XENON DC BEACON CIRCUIT DIAGRAM	D209-25-201-CD-SC	A	2016-09-13
E2xB05 & E2xB10 5J & 10J XENON AC BEACON CIRCUIT DIAGRAM	D209-36-201-CD-SC	A	2016-09-13

[13]

[14]

Schedule

TYPE EXAMINATION CERTIFICATE No.

UL21UKEX2135X Rev. 0

Title:	Drawing No.:	Rev. Level:	Date:
E2x LED Beacon Power Supply PCBA	D209-26-401-CD-SC	A	2016-05-18
E2x LED Beacon Controller Module PCBA	D209-26-405-CD-SC	A	2016-05-18
PCB BARE BOARD LAYOUT E2x / D2x BEACON DC	D209-20-201-SC	B	2017-04-07
PCB BARE BOARD LAYOUT E2x / D2x BEACON AC	D209-21-201-SC	B	2017-04-07
UL PCB BARE BOARD LAYOUT D2x/E2x LED TOWER PCB'S	D209-20-401-SC	A	2016-05-09
UL PCB BARE BOARD LAYOUT D2x/E2x LED CONTROLLER MODULE PCB	D209-20-405-SC	A	2016-05-09
UL PCB BARE BOARD LAYOUT D2x / E2x LED POWER/INPUT PCB	D209-22-401-SC	B	2017-04-24
E2xS1 & E2xS2 DC SCHEDULED PCB BARE BOARD LAYOUT	D209-20-001-SC	B	2016-12-05
E2xL15 & E2xL25 SCHEDULED PCB BARE BOARD LAYOUT	D209-45-101-SC	A	2016-11-25
E2Xs1 & S2 AC SCHEDULED PCB BARE BOARD LAYOUT	D209-21-001-SC	B	2016-12-05
INSTRUCTION MANUAL E2xS1R & E2xS1F Sounder For use in Hazardous Locations	D209-00-001-IS-SC-UK	A	2022-03-01
INSTRUCTION MANUAL E2xS2R & E2xS2F Sounder For use in Hazardous Locations	D209-00-011-IS-SC-UK	A	2022-03-01
INSTRUCTION MANUAL E2xL15R, E2xL15F, E2xL25R, E2xL25F Loudspeakers For use in Hazardous Locations	D209-00-101-IS-SC-UK	A	2022-03-01
INSTRUCTION MANUAL E2xB05 & E2xB10 Xenon Beacons For use in Hazardous Locations	D209-00-201-IS-SC-UK	A	2022-03-01
INSTRUCTION MANUAL E2xBL2 LED Beacons For use in Hazardous Locations	D209-00-401-IS-SC-UK	A	2022-03-01
INSTRUCTION MANUAL E2xC1X05R & E2xC1X05F Combined Sounder & Beacon For use in Hazardous Locations	D209-00-501-IS-SC-UK	A	2022-03-01
INSTRUCTION MANUAL E2xC1LD2R & E2xC1LD2F Combined Sounder & Beacon For use in Hazardous Locations	D209-00-511-IS-SC-UK	A	2022-03-01
E2x SCHEDULED PRODUCT LABELS	D209-99-001-SC-UK	A	2022-03-01