



UK Approved Body Authorised
by the MCA

Certificate number: 74185/A0 UK

File number: LSA 2477/02

Item number: UK/1.2c

This certificate is not valid when presented without the full attached schedule composed of 7 sections

Approved Body 8517 - UNITED KINGDOM MARINE EQUIPMENT APPROVAL

UK TYPE-EXAMINATION (MODULE B) CERTIFICATE

This is to certify that Bureau Veritas SA UK Branch Office did undertake the relevant type approval procedures for the type of equipment identified below which was found to be in compliance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended, subject to any conditions in the schedule attached hereto.

This certificate is issued to:

ACR ELECTRONICS INC.

Fort Lauderdale, FL - UNITED STATES OF AMERICA

for the type of product

POSITION-INDICATING LIGHTS FOR LIFEJACKETS

FIREFLY PRO SOLAS, FIREFLY PRO Waterbug

Requirements:

SOLAS 74 Convention, as amended, Regulations III/4, III/7, III/22, III/26, III/32, III/34, X/3
IMO Res. MSC.48(66) -(LSA Code)- amended by MSC.207(81), MSC.218(82), MSC.272(85), MSC.293(87), MSC.320(89),
MSC.368(93), MSC.425(98), MSC.459(101) and MSC.485(103) I, II
IMO Res. MSC.36(63) -(1994 HSC Code)- as amended, 8
IMO Res. MSC.97(73) -(2000 HSC Code)- as amended, 8
IMO Res. MSC.81(70) amended by MSC.200(80), MSC.226(82), MSC.274(85), MSC.295(87), MSC.321(89), MSC.323(89),
MSC.378(93), MSC.427(98), MSC.472(101) and MSC.488(103)
IEC 60945:2002 incl. IEC 60945 Corr.1:2008
ISO 24408:2005
IMO MSC.1/Circ.1628

The attached (schedule of approval) forms part of this certificate.

This certificate remains valid unless suspended, expired or withdrawn, provided the conditions in the attached schedule are complied with.

This certificate will expire on: 13 Jul 2028

Issued by Bureau Veritas SA UK Branch Office

(Approved Body 8517)

At BV PORT EVERGLADES CENTRE, on 13 Jul 2023,

Flavio Rosas

This certificate was created electronically and is valid without signature



Note 1: This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.

Note 2: During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved Body.

Note 3: "The Mark of Conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an approved body."

Note 4: In case limitations of use apply, these should be indicated in the Annex.

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Trademark	ACR ELECTRONICS INC.
Type	FIREFLY PRO SOLAS P/N : 3970.3 (Carded) / 3970.4(Bulk) FIREFLY PRO Waterbug P/N : 3971.3 (Carded) / 3971.4(Bulk)

Dimensions	Weight without batteries
11.7cm X 5.7 cm X 2.8 cm	68g

As per the information transmitted by the applicant.

2. DOCUMENTS AND DRAWINGS :

- Manufacturer's specification and drawings:

Code	Title	Revision	Date
A3-06-2806-	Final Assembly MS-2000 LED	E	06/12/23
A1-18-2337-	Main Housing Decal, MS-2000 LED	F	04/08/16
A1-15-0276-	Housing, Main	W	12/06/22
A1-05-0630-	Ultrasonic Insert	A	08/08/94
A1-05-0001-	"O" Ring	CH	10/19/22
A2-09-0087	Lubrificant, Silicone	A	04/29/97
A1-17-1235	External Water Contact	C	09/20/04
A3-06-2777-	PCB Assembly, Complete MS-2000 LED	D	07/24/15
A1-18-1532-	Lens, Dome	C3	03/07/08
A3-06-1964-	Battery Door Assembly	L	12/02/09
A1-17-1246-	Switch Plate	D1	10/02/02
A3-06-1965	Switch Assembly	C	02/20/03
A1-18-1331-	Switch Stop	M	03/31/21
A3-06-2691-	Lanyard, Cut, Tied, Double Overhand Knot	D	11/05/15
A1-20-1746-	Label, MFGDate	A	11/27/13
A1-18-0688-	Fasterner Hook Velcro, Modified	K	11/15/13

- Markings:

Code	Title	Revision	Date
A1-20-1733-	Decal Artwork, Front Side MS-2000 LED	B	10/27/21
A1-20-1734-	Decal Artwork, Back Side Housing MS-2000 LED	P	05/04/2023
A1-20-2130	Label, Temp, Lithium Batt, MS-2000	A	----

- Manuals for installation, use and maintenance:

Code	Title	Revision	Date
Y1-06-0292	Operating Instructions - Firefly Pro Waterbug	D	---
Y1-06-0290	Operating Instructions - Firefly Pro	D	---

No departure from the drawings shall be made without the prior consent of the Society.

3. TEST REPORTS :

FIREFLY PRO Waterbug

Date	Test report	
04/05/2004	16437-1	Solas Approval Tests of Firefly 3
08/12/2016	19833-2B*	Solas Certification Tests for MS-2000 With LED Light Source and Water Activated Switch
02/28/2020	20-21516-2**	Additional type test according IMO requirements
04/18/2023	Y1-13-0532 rev.A	Additional type test according ISO 24408:2005

FIREFLY PRO SOLAS

Date	Test report	
04/05/2004	16437-1	Solas Approval Tests of Firefly 3
08/12/2016	19833-3B*	Solas Certification Tests for MS-2000 With LED Light Source and Manual Activation Switch
02/28/2020	20-21516-1**	Additional type test according IMO requirements
04/18/2023	Y1-13-0531 rev.A	Additional type test according ISO 24408:2005

*Type tests have been performed with 2 AA 1.5 alkaline batteries:

Manufacturer	Energizer
Item Number	ENERGIZER E91
Designation	ANSI-15A, IEC-LR6

**Type tests have been performed with 2 AA 1.5 VDC Lithium batteries:

Manufacturer	Energizer
Item Number	ENERGIZER L91
Designation	AINSI 15-LF .IEC-FR14505 (FR6)

4. APPLICATION / LIMITATION :

4.1 - The scope of the appraisal made by Bureau Veritas to issue this certificate is strictly restricted to the relevant requirements stated on the front page of this certificate.

4.2 - Each position-indicating light for lifejackets will be supplied with its instructions for use, inspections and on-board maintenance complying with Regulations stated on the front page of this certificate.

4.3 - Position-indicating lights for lifejackets using disposable batteries as power source, batteries shall be changed annually.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - This certificate alone does not allow the applicant to issue the UK Declaration of Conformity and to affix the mark of conformity (United Kingdom conformity mark) to the products corresponding to this type. To this end, the production-control phase module D Production Quality Assurance or module E Product Quality Assurance or module F Product Verification of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended, is to be complied with and controlled by a written inspection agreement with an Approved Body.

5.2 - The manufacturer shall institute a quality control procedure to ensure that position indicating lights are produced to the same standard as the approved prototype and shall keep records of any production tests carried out.

5.3 - Each position indicating Light intended to be fitted onboard a United Kingdom ship shall be delivered with a United Kingdom Declaration of Conformity.

5.4 - Each equipment, or batch of equipment, is to be supplied with its Manual(s) for installation, use and maintenance.

5.5 - For information concerning the production phase modules, **ACR Electronics, Inc, USA** has declared the following manufacturing site(s):

ACR Electronics Inc.
5757 Ravenswood Road
Fort Lauderdale, FL, 33312

6. MARKING OF PRODUCT :

The position-indicating light shall be permanently and legibly marked with:

- Approval information : 74185/ A0 UK
- Any operational restrictions,
- Date of manufacture (also to be considered as the lot or batch number) and date of expiry
- Precise definition of intended use (e.g. "Position Indicating Light for lifejacket"),
- Identification of the Manufacturer,
- Easy understandable symbols for on/off switching,
- Model Designation, and
- Information on proper battery disposal by the words "DO NOT INCINERATE/DO NOT RECHARGE/DO NOT TAMPER".
- SOLAS approved

Reference is made to the Merchant Shipping (Marine Equipment) Regulations 2016, as amended, Part 3:

In particular Article 15.3 specifies that the United Kingdom conformity mark shall be followed by the identification number of the Approved Body involved in the production control phase (module D, E or F) and by the year in which the mark is affixed (4

digits or last 2 digits).

7. OTHERS :

It is **ACR Electronics, Inc, USA** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

***** END OF CERTIFICATE *****