



## PRODUCT SAFETY DATA SHEET PRODUCTS: DAN M4-A / W4-A

### SECTION 1: IDENTIFICATION

<b>PRODUCT NAME</b>	Marine Safety Light Systems DAN M4-A / W4-A
<b>MANUFACTURERS NAME</b>	<b>DANIAMANT A/S</b>
<b>DESCRIPTION</b>	Alkaline cell powered marine safety light system. The battery cells are hermetically sealed pressurised primary Alkaline Manganese Dioxide and as supplied are protected from external environment by a moulded plastic casing. In this state the units constitute no definable hazard to health. However disassembly, abuse or destruction of the battery cell will expose the contents and the following Health and Safety Hazards.

### SECTION 2: INFORMATION OF INGREDIENTS

	HAZARDOUS COMPONENTS:				
	CAS NUMBER	EC Number	% OPTIONAL	OSHA/PEL	ACGIH TLV 5 TEL
Manganese Dioxide	1313-13-9	215-202-6	35-40%	N/A	N/A
Zinc	7440-66-6	231-175-3	10-25%	N/A	N/A
Potassium Hydroxide (35%)	1310-58-3	215-181-3	5-10%	N/A	N/A
	Reference : Sax's dangerous properties of industrial materials.  NOTE: This product does not contain asbestos.				

### SECTION 3: HAZARD IDENTIFICATION

<b>Critical Hazards to man:</b>	If battery leaking, exposure to caustic ingredients may occur.
<b>Critical Hazards to the environment:</b>	Dispose of battery properly (See Section 13). Contains mercury compounds which may present a hazard to aquatic environments.
<b>Other information:</b>	Keep batteries away from small children.

### SECTION 4: FIRST AID MEASURES

In the unlikely event of the battery becoming damaged the user may come into contact with the above components.

<b>GENERAL ADVICE:</b>	These chemicals and metals are contained in a sealed can. Potential for exposure should not exist unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Contains concentrated (35%) potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size. A similar amount of zinc/zinc oxide may also leak.
<b>INHALATION:</b>	If inhaled respiratory and eye irritation may occur if fumes are released due to heat or an abundance of leaking batteries. Remove to fresh air. Contact physician if irritation persists.
<b>SKIN:</b>	Irritation, including caustic burns/injury, may occur following exposure to a leaking battery. Irrigate exposed skin with copious amounts of clear, tepid water for at least 15 minutes. If irrigation, injury or pain persists, consult a physician.
<b>INGESTION:</b>	Not anticipated due to size of batteries; choking may occur with the smaller AAA battery. Irritation, including caustic burns/injury may occur following exposure to a leaking battery. Rinse the mouth and surrounding area with clear, tepid water for at least 15 minutes. Consult a physician immediately for treatment and to rule out involvement of the oesophagus and other tissues.
<b>NOTES TO PHYSICIAN:</b>	The primary acutely toxic ingredient is concentrated (35%) potassium hydroxide. Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size. Other materials are either inert or have low hazard associated with their exposure.

### SECTION 5: FIRE FIGHTING MEASURES

<b>Extinguishing Media:</b>	As appropriate for adjacent fire.
<b>Special Fire Fighting Procedures:</b>	In fires involving large quantities of product, use self-contained breathing apparatus and full protective clothing.
<b>Further information:</b>	Hazardous decomposition products may be produced.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	Notify safety personnel of large spills. Caustic potassium hydroxide may be released from leaking or ruptured batteries. Avoid eye or skin contact and inhalation of vapours. Increase ventilation. Clean up personnel should wear appropriate protective gear.
<b>Environmental Precautions:</b>	Not applicable.
<b>Methods for cleaning up:</b>	Not applicable.

## SECTION 7: HANDLING AND STORAGE

Handle and store in cool, well-ventilated area. Keep out of direct sunlight and away from heat sources. DO NOT short or install cells incorrectly. Batteries may explode, pyrolyze or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. Do not mix battery systems, such as alkaline and zinc carbon, in the same equipment. Replace all batteries in equipment at the same time. Do not carry batteries loose in pocket or bag.

## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

External corrosion of the Nickel plated can and tags could result in the formation of toxic metal salts. Avoid ingestion. Observe personal hygiene. Wash hands after contact. Use neoprene, rubber or nitrile gloves and safety glasses when handling leaking batteries.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE</b>	Light in a plastic housing.
<b>STABILITY IN WATER</b>	Product is waterproof.
<b>REACTION WITH WATER</b>	Only if damaged.
<b>BOILING POINT</b>	N/A
<b>VAPOUR PRESSURE mm/hg</b>	N/A
<b>VAPOUR DENSITY</b>	N/A
<b>SOLUBILITY IN WATER</b>	Not soluble in water
<b>APPEARANCE &amp; ODOUR</b>	N/A
<b>SPECIFIC GRAVITY</b>	N/A
<b>MELTING POINT</b>	N/A
<b>EVAPORATION POINT</b>	N/A

## SECTION 10: STABILITY AND REACTIVITY

<b>HAZARDOUS DECOMPOSITION REACTIONS</b>	Thermal degradation may produce hazardous fumes of zinc and manganese; hydrogen gas; caustic vapours of potassium hydroxide and other toxic by-products.
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## SECTION 11: TOXICOLOGICAL INFORMATION

NONE, unless battery ruptures, then see Section 2.

## SECTION 12: ECOLOGICAL INFORMATION

<b>MAMMALIAN EFFECTS</b>	None known if used / disposed of correctly.
<b>ECO-TOXICITY</b>	None known if used / disposed of correctly.
<b>BIOACCUMULATION POTENTIAL</b>	None known if used / disposed of correctly.
<b>ENVIRONMENTAL FATE</b>	None known if used / disposed of correctly.

## SECTION 13: DISPOSAL

<b>DISPOSAL</b>	Dispose in accordance with appropriate regulations. Do not incinerate, since batteries may explode at excessive temperatures.
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## SECTION 14: TRANSPORT INFORMATION

<b>UN Hazard Code</b>	Not applicable.
<b>UN Number</b>	Not applicable.
<b>UN Name</b>	Not applicable.
<b>Other information for air transport (IATA)</b>	Not restricted as per special provision A123 must be marked on the AWB (8.2.6.1)
<b>Total Battery Weight</b>	23.2g (Weight of Individual Cell 11.6g)

## SECTION 15: REGULATORY INFORMATION

<b>Classification</b>	Not controlled under ADNR (Europe)
<b>Hazard Symbol</b>	None.
<b>Risk Phrases</b>	This product is not classified according to the EU regulations.

## SECTION 16: OTHER INFORMATION

	N/A
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The above information is given based on the present state of our knowledge of this product and is, to the best of our knowledge and belief, accurate at the time of publication. No warranty given, either express or implied, with respect to the accuracy, reliability or completeness of the information contained herein and we will assume no liability resulting from its use. The users must satisfy themselves that the information provided is entirely suitable for their particular use.

**07 October 2019**

# TYPE APPROVAL CERTIFICATE

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**This is to certify:**

**That the Position-indicating light**

with type designation(s)  
**M4-A and W4-A**

Issued to

**Daniamant ApS**  
**Slangerup, Denmark**

is found to comply with  
**DNV GL rules for classification – Ships and offshore units**

**Application :**

**This certificate is recognized by Transport Canada.**

**Vibration class A (equiv 60945)**  
**Enclosure class IP67/68**

This Certificate is valid until **2021-03-31**.

Issued at **Høvik** on **2016-04-01**

DNV GL local station: **Copenhagen**

Approval Engineer: **Marta Alonso Pontes**

for **DNV GL**

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**Marit Laumann**  
**Head of Section**

Job Id: **262.1-021579-1**  
Certificate No: **TAE0000103**

## Product description

Daniamant lifejacket lights M4-A (manually activated) and W4-A (automatically activated)

Technical data:

Weight:	42g
Battery:	Alkaline – Type AAA 2x1,5V
Lamp:	White flashing LED
Flashing rate:	50 to 70 flashes per minute
Storage temperature:	-30 °C to +65 °C -1 °C to +30 °C
Enclosure class:	IP67/IP68

Dimensions:

Height:	60,9 mm
Width:	29,9 mm
Depth:	17,2 mm

## Application/Limitation

Instructions from maker given in the instruction manual to be followed.

This approval doesn't include the attachment to the lifejacket. It is responsibility of the lifejacket manufacturer to ensure that the light is attached securely and in the correct position.

## Type Approval documentation

Docs listed in app. Letters with ref:

MCANO381/PONT/262.1-021579-J-17 dated 2016-02-08

MCANO381/PONT/262.1-021579-J-22 dated 2016-02-17

Test report DELTA-L102798-4719 dated 2016-03-21

Videos for drop test and switch arrangement test (262.1-021579-1 J 21)

## Tests carried out

Tested in accordance with the requirements of TP14475/IMO Resolution MSC.81 (70), as amended.

## Marking of product

- Intended use (Lifejacket light)
- Serial number and manufacturing date
- Manufacturer identification
- Easily understandable symbols for on/off switching
- Expiry date\*
- TC XXXX (Transport Canada approval)
- Marking on the battery: BAT MM/YY (expiry date)

\* The expiring date shall be marked in accordance with the LSA Code, item 1.2.3 as amended by IMO Res. MSC 48(66).

## Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.



Job Id: **262.1-021579-1**  
Certificate No: **TAE0000103**

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed at least every second year.

END OF CERTIFICATE



# EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Position indicating lights for life-saving appliances: (c) for lifejackets

with type designation(s)  
M4-A and W4-A

Issued to  
**Daniamant A/S**  
Slangerup, Denmark

is found to comply with the requirements in the following Regulations/Standards:  
Regulation (EU) 2019/1397,  
item No. MED/1.2c. SOLAS 74 as amended, Regulation III/4, III/7, III/22, III/26, III/32,  
III/34 & X/3, LSA Code, 2000 HSC Code 8

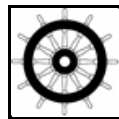
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until 2024-10-10.

Issued at Hamburg on 2019-10-11

DNV GL local station:  
Denmark CMC

Approval Engineer:  
Nicolay Horn



Notified Body  
No.: 0098

for DNV GL SE

Gerhard Aulbert  
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment", signed February 27th, 2004.

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-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU. This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled. Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

Job Id: 344.1-009909-1  
Certificate No: MEDB000060K

### Product description

Position-indication lights for life jackets – Type M4-A, W4-A

### Application/Limitation

Lights powered by batteries shall be marked with means of determining their age or the date by which they are to be replaced.

For compliance with SOLAS Regulation III/35 and III/36, fully detailed operations and maintenance manuals shall be supplied with each light.

### Type Examination documentation

Daniamant Technical file TF-DK-20, M4-A and W4-A Lifejackets Light – Revision 01  
Installation and Maintenance Instruction for Dan M4-A and W4-A lifejacket light, Issue 04 (D0647)

### Test reports:

Report No	Title	Date
4-2015	Evaluation and Test Report for Lifejackets lights M4-A and W4-A	2015-04-19
Appendix to 4-2015	Evaluation and Test Report for Lifejackets lights M4-A and W4-A	
DELTA-L102798-4719	Determination of (x,y) colour coordinates and determination of luminous light distribution emitted from lifesaving device	2016-03-21

### Tests carried out

-IMO Resolution MSC.81(70), part 1, as amended by Resolution MSC.200(80), Resolution MSC 226(82) and Resolution MSC.323(89)

-IEC 60945:2002 incl. IEC 60945 Corr. 1 (2008)

### Marking of product

To be marked with information requested by the LSA Code Paragraph 1.2.2.9 and 1.2.3

- Manufacturer name
- Type identification
- Serial or Lot number
- Date of expiry
- USCG Approval Number: USCG 161.112/EC0098/ MEDB000060K

END OF CERTIFICATE



U. S. Department of Homeland Security  
**United States Coast Guard**  
**Certificate of Approval**

Coast Guard Approval Number: 161.012/103/0

Expires: 16 November 2020

PERSONAL FLOTATION DEVICE LIGHT

DANIAMANT APS

W4-A flashing, auto/manually activated lifejacket light and M4-A flashing, manually activated lifejacket light.

W4-A light is activated by manual operation of a button switch or by immersion in water detected by conduction across shorted contacts. M4-A is activated by manual operation of a button switch.

Continuous emission water-activated personal floatation device light. Device uses clear incandescent filament bulb.

Power source is alkaline battery to be replaced by expiration date printed on battery by battery manufacturer, or replaced annually if undated alkaline batteries are used.

Acceptable for use on all U.S. registered vessels not on international voyages. Also approved under approval number 161.112/100/0 for use on vessels subject to SOLAS.

Identifying data: General arrangement drawing 25-050-XXXD dated 27 February 2015, and drawing 25-051-XXXD dated 23 April 2015. Laboratory test reports dated 26 March, 2015, 16 April 2015, 17 April 2015, 19 April 2015, and 29 April 2015.

Approval valid only for equipment produced at the above manufacturing location.

Production test report in accordance with 46 CFR 159.007-11 and 161.012-13 due annually in November.

\*\*\* End \*\*\*

THIS IS TO CERTIFY THAT the above named manufacturer has submitted to the undersigned satisfactory evidence that the item specified herein complies with the applicable laws and regulations as outlined on the reverse side of this Certificate, and approval is hereby given. This approval shall be in effect until the expiration date hereon unless sooner canceled or suspended by proper authority.

GIVEN UNDER MY HAND THIS 16<sup>th</sup> DAY OF  
NOVEMBER 2015, AT WASHINGTON D.C.

B. A. BALDWIN  
Chief, Lifesaving and Fire Safety Division  
BY DIRECTION OF THE COMMANDANT



TERMS: The approval of the item described on the face of the Certificate has been based upon the submittal of satisfactory evidence that the item complies with the applicable provisions of the navigation and shipping laws and the applicable regulations in Title 33 and/or Title 46 of the Code of Federal Regulations. The approval is subject to any conditions noted on this Certificate and in the applicable laws and regulations governing the use of the item on vessels subject to Coast Guard inspection or on other vessels and boats.

Consideration will be given to an extension of this approval provided application is made 3 months prior to the expiration date of this Certificate.

The approval holder is responsible for making sure that the required inspections or tests of materials or devices covered by this approval are carried out during production as prescribed in the applicable regulations.

The approval of the item covered by this certificate is valid only so long as the item is manufactured in conformance with the details of the approved drawings, specifications, or other data referred to. No modification in the approved design, construction, or materials is to be adopted until the modification has been presented for consideration by the Commandant and confirmation received that the proposed alteration is acceptable.

NOTICE: Where a manufacturer of safety-at-sea equipment is offering for sale to the maritime industry, directly or indirectly, equipment represented to be approved, which fails to conform with either the design details or material specifications, or both, as approved by the Coast Guard, immediate action may be taken to invoke the various penalties and sanctions provided by law including prosecution under 46 U.S.C. 3318, which provides:

"A person that knowingly manufactures, sells, offers for sale, or possesses with intent to sell, any equipment subject to this part (*Part B. of Subtitle II of Title 46 U.S.C.*) and the equipment is so defective as to be insufficient to accomplish the purpose for which it is intended, shall be fined not more than \$10,000, imprisoned for not more than 5 years or both."



U. S. Department of Homeland Security  
**United States Coast Guard**  
**Certificate of Approval**

Coast Guard Approval Number: 161.112/100/0

Expires: 16 November 2020

LIFEJACKET LIGHT (SOLAS)

W4-A flashing, auto/manually activated lifejacket light and M4-A flashing, manually activated lifejacket light.

W4-A light is activated by manual operation of a button switch or by immersion in water detected by conduction across shorted contacts. M4-A is activated by manual operation of a button switch.

Continuous emission water-activated personal floatation device light. Device uses clear incandescent filament bulb.

Power source is alkaline battery to be replaced by expiration date printed on battery by battery manufacturer, or replaced annually if undated alkaline batteries are used.

Evaluated, tested and found to be in compliance with the IMO LSA Code (Res. MSC.48(66)), as amended through Res. MSC.218(82). Must be marked: 161.012/103/0, 161.112/100/0, and "SOLAS".

Identifying data: General arrangement drawing 25-050-XXXD dated 27 February 2015, and drawing 25-051-XXXD dated 23 April 2015. Laboratory test reports dated 26 March, 2015, 16 April 2015, 17 April 2015, 19 April 2015, and 29 April 2015.

Approval valid only for equipment produced at the above manufacturing location.

\*\*\* End \*\*\*

THIS IS TO CERTIFY THAT the above named manufacturer has submitted to the undersigned satisfactory evidence that the item specified herein complies with the applicable laws and regulations as outlined on the reverse side of this Certificate, and approval is hereby given. This approval shall be in effect until the expiration date hereon unless sooner canceled or suspended by proper authority.

GIVEN UNDER MY HAND THIS 16<sup>th</sup> DAY OF  
NOVEMBER 2015, AT WASHINGTON D.C.

B. A. BALDWIN  
Chief, Lifesaving and Fire Safety Division  
BY DIRECTION OF THE COMMANDANT



TERMS: The approval of the item described on the face of the Certificate has been based upon the submittal of satisfactory evidence that the item complies with the applicable provisions of the navigation and shipping laws and the applicable regulations in Title 33 and/or Title 46 of the Code of Federal Regulations. The approval is subject to any conditions noted on this Certificate and in the applicable laws and regulations governing the use of the item on vessels subject to Coast Guard inspection or on other vessels and boats.

Consideration will be given to an extension of this approval provided application is made 3 months prior to the expiration date of this Certificate.

The approval holder is responsible for making sure that the required inspections or tests of materials or devices covered by this approval are carried out during production as prescribed in the applicable regulations.

The approval of the item covered by this certificate is valid only so long as the item is manufactured in conformance with the details of the approved drawings, specifications, or other data referred to. No modification in the approved design, construction, or materials is to be adopted until the modification has been presented for consideration by the Commandant and confirmation received that the proposed alteration is acceptable.

NOTICE: Where a manufacturer of safety-at-sea equipment is offering for sale to the maritime industry, directly or indirectly, equipment represented to be approved, which fails to conform with either the design details or material specifications, or both, as approved by the Coast Guard, immediate action may be taken to invoke the various penalties and sanctions provided by law including prosecution under 46 U.S.C. 3318, which provides:

"A person that knowingly manufactures, sells, offers for sale, or possesses with intent to sell, any equipment subject to this part (*Part B. of Subtitle II of Title 46 U.S.C.*) and the equipment is so defective as to be insufficient to accomplish the purpose for which it is intended, shall be fined not more than \$10,000, imprisoned for not more than 5 years or both."