



PRODUCT SAFETY DATA SHEET

PRODUCTS: DAN M3/MR3/ML3/W3/WR3/WL3

SECTION 1: IDENTIFICATION

PRODUCT NAME	Marine Safety Light Systems DAN M3/MR3/ML3/W3/WR3/WL3
MANUFACTURERS NAME	DANIAMANT A/S
DESCRIPTION	Lithium powered marine safety light systems are designed to be stored for up to five years before use. The battery cells are hermetically sealed. Pressurised primary lithium/sulphur dioxide and as supplied are electronically protected by a fuse and 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
Carbon Black	1333-86-4	215-609-9	2.25%		
Lithium Metal	7439-93-2	231-102-5	3.24%	N/A	N/A
Manganese Dioxide	1313-13-9	215-202-6	40.56%	5 mg/m3	5 mg/m3
Propylene Carbonate	108-32-7	203-572-1	6.75%	N/A	N/A
1.2 Dimethoxyethane	110-71-4	203-794-9	5.78%	N/A	N/A
Lithium Perchlorate	7791-03-9	232-237-2	1.53%	N/A	N/A
Tetrahydrofuran	109-99-9	203-726-8	5.89%	200 ppm	200 ppm
Reference : Sax's dangerous properties of industrial materials.					
NOTE: These products do not contain asbestos.					

SECTION 3: HAZARD IDENTIFICATION

LITHIUM METAL:	This is flammable when in contact with water. It reacts violently to produce hydrogen and lithium hydroxide. Use only soda ash, sodium chloride or graphite to extinguish flames.
MANGANESE DIOXIDE:	Poison by intravenous and intratracheal routes moderately toxic by subcutaneous route. Experimental reproductive effects. A powerful oxidiser, flammable by chemical reaction. Must not be heated or rubbed in contact with easily oxidizable matter.
1.2 Dimethoxyethane:	Experimental teratogen. Other experimental reproduction effects readily forms an explosive peroxide. A very dangerous fire hazard when exposed to flame, heat or oxidisers. When heated to decomposition it emits acrid smoke and fumes.
Lithium Perchlorate	Moderately toxic. Skin, eye and mucous membrane irritant an oxidiser which is incompatible with nitromethane acetone hydrogen and oxygen. When heated to decomposition it emits very toxic fumes.

SECTION 4: FIRST AID MEASURES

EYES:	Irrigate thoroughly with water for at least 15 minutes. Obtain medical attention.
INHALATION:	Remove from exposure, rest and keep warm. In severe cases, or if exposure has been great, obtain medical attention.
SKIN:	Drench the skin thoroughly with water. Remove contaminated clothing and wash before re-use. Unless contact has been slight, obtain medical attention.
INGESTION:	Wash out mouth thoroughly with water and give plenty of water to drink. Obtain medical attention.
FURTHER TREATMENT:	All cases of eye contamination, persistent skin irritation and casualties who have swallowed this substance or been affected by breathing its vapours should be seen by a doctor.
EMERGENCY AND FIRST AID PROCEDURES:	If cell vents, personnel should be evacuated from contaminated areas. Other materials are either inert or have low hazard associated with their exposure.

SECTION 5: FIRE FIGHTING MEASURES

If cells are directly involved in fire, DO NOT USE SAND, DRY POWDER OR SODA ASH, GRAPHITE, METAL CLASS D EXTINGUISHERS OR A FIRE BLANKET. Copious quantities of a water based foam is the only recommended extinguishing media for fires involving cells. If a fire is in an adjacent area, and cells are packed in their original containers, the fire can be fought based on fuelling material e.g. paper and plastic products. Avoid fume inhalation.

In the case where significant quantities of Lithium / Manganese Dioxide batteries have been involved in a fire, account must be taken of the possibility that flammable gases might be evolved should water come into contact with the cold battery residues. These gases might include Acetylene, Hydrogen and Cyanide. It is recommended that ventilation should be maximised should this scenario be realised.

EXTINGUISHING MEDIA: Copious quantities of a water based foam.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Do not breathe vapours or touch liquid with bare hands. If the skin has come into contact with the electrolyte it should be washed thoroughly with water. Earth or sand should be used to absorb the exudation, seal leaking battery and earth in a heavy-duty polythene bag and dispose of as special waste.

SECTION 7: HANDLING AND STORAGE

Handle and store in cool, well-ventilated area. Keep out of direct sunlight.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

HANDLING:	Do not short circuit or expose to temperatures above the temperature rating of the battery. Do not recharge, over-discharge, force discharge, immerse, puncture or crush.
STORAGE:	Store in a cool place but prevent condensation on cells and batteries. Elevated temperatures can result in shortened battery life and degrade performance. Do not store batteries in high humidity environments for long periods. 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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Light in a plastic housing.
ODOUR:	If leaking, smells of medical ether.
STABILITY IN WATER:	Product is waterproof.
REACTION WITH WATER:	Only if damaged.
FLASH POINT:	Not applicable unless individual components exposed.
FLAMMABILITY:	Not applicable unless individual components exposed.
RELATIVE DENSITY:	Not applicable unless individual components exposed.
SOLUBILITY IN WATER:	Not applicable unless individual components exposed.
SOLUBILITY OTHER:	Not applicable unless individual components exposed.

SECTION 10: STABILITY AND REACTIVITY

Hazardous materials are housed within a hermetically sealed unit, under normal conditions this unit is Non-Hazardous.

HAZARDOUS REACTIONS	Lithium metal reacts with water to produce highly flammable gasses.
HAZARDOUS DECOMPOSITION REACTIONS	Toxic fumes and may form peroxides.

SECTION 11: TOXICOLOGICAL INFORMATION

SIGNS & SYMPTOMS	NONE, unless battery ruptures. In the event of exposure to internal contents, corrosive fumes will be very irritating to skin, eyes and mucous membranes. Over-exposure can cause symptoms of non-fibrotic lung injury and membrane irritation.
INHALATION	Lung irritation.
SKIN CONTACT	Skin irritation.
EYE CONTACT	Eye irritation.
INGESTION	Poisoning if swallowed.
MEDICAL CONDITIONS GENERALLY AGGREGATED BY EXPOSURE.	In the event of exposure to internal contents, eczema, skin allergies, lung injuries, asthma and other respiratory disorders may occur.

SECTION 12: ECOLOGICAL INFORMATION

MAMMALIAN EFFECTS	None known if used / disposed of correctly.
ECO-TOXICITY	None known if used / disposed of correctly.
BIOACCUMULATION POTENTIAL	Slowly bio-degradable.
ENVIRONMENTAL FATE	None known if used / disposed of correctly.

SECTION 13: DISPOSAL

DISPOSAL	DO NOT INCINERATE or subject cells to temperatures in excess of 90°C. Such abuse can result in loss of seal, leakage, and/or cell explosion. Dispose only through a recognised disposer. DO NOT ATTEMPT TO DISMANTLE THIS PRODUCT.
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SECTION 14: TRANSPORT INFORMATION

UN Hazard Code	Class 9
UN Number	3091
UN Proper Shipping Name	Lithium Metal Batteries Contained in Equipment.
IATA Packing Instructions for air	970, Section II
IMDG Packing instructions for road and sea	Special Provision 188 & 230
Lithium Content	0.54g (\leq 1 gram lithium metal cell)
Total Battery Weight	28g (Weight of Individual Cell 28g)
Labelling	As per IATA, IMDG & ADR requirements - Precautionary label
Battery Test Criteria	Tested to UN ST/SG/AC.10/11/Rev.5/Amend.1 Criteria III Section 38.3. (Test Certificate available on request). Each cell and battery incorporates a safety venting device. Each cell and battery is equipped with an effective means of preventing external short circuits and reverse current flow.

SECTION 15: REGULATORY INFORMATION

Classification	Class 9	
Hazard Symbol	N/A	
Risk Phrases	R8 R11 R14/15 R17 R19 R20 R22 R34 R36/37/38 R41	Contact with combustible material may cause fire. Highly flammable. Reacts violently with water liberating extremely flammable gasses. Spontaneously flammable in air. May form explosive peroxides. Harmful by inhalation. Harmful if swallowed. Causes burns. Irritating to eyes, respiratory system and skin. Risk of serious damage to the eyes.
Safety Phrases	S1/2 S8 S16 S17 S24/25 S26/27 S29 S33 S36 S37 S38 S43 S45	Keep locked up and out of the reach of children. Keep away from moisture. Keep away from sources of ignition – no smoking. Keep away from combustible material. When using do not eat drink or smoke. In case of contact with eyes, rinse immediately with plenty of water. Do not empty into drains. Take precautionary measures against static discharges. Wear suitable protective clothing. Wear suitable gloves. In case of insufficient ventilation wear suitable respiratory equipment. In case of fire, see fire fighting precautions. In case of incident, seek medical attention.

SECTION 16: OTHER INFORMATION

Disclaimer

This PSDS is provided for information only. The information and recommendations set forth herein are made in good faith and are believed to be accurate as of the date of preparation. However, the company makes no warranty, either expressed or implied with respect to this information and disclaims all liability from reliance on. It is the shippers responsibility to ensure that they are trained and competent in handling and shipping lithium batteries by all transport modes.

07 October 2019

TEST CERTIFICATE

CLIENT: TÜV SÜD Product Service CERTIFICATE NUMBER 14109/02 Issue 01
 CUSTOMER ORDER NUMBER 10011893
 TÜV REFERENCE 75932441

DATE OF RECEIPT 20 November 2015

EQUIPMENT SUPPLIER Daniamant Survival Lights

TEST ITEM(S)

TSR	Identity	Description	Qty	PTL ID
025	M3	Lifejacket Light	1	17627
026	W3	Lifejacket Light	1	17628
027	MR3	Lifejacket Light	1	17629
028	WR3	Lifejacket Light	1	17630
029	ML3	Lifejacket Light	1	17631
030	WL3	Lifejacket Light	1	17632
031	M4-A	Lifejacket Light	1	17633
032	W4-A	Lifejacket Light	1	17634

TEST SPECIFICATION / ISSUE BS EN 60529:1989 +A1:1999 +A2:2013 IP6X Category 1

DATE OF TEST 25 November 2015

TEST(S) APPLIED

Protection Against Solid Foreign Objects, Dust-Tight

Initially the units were examined for apertures and openings allowing penetration of a 1mm diameter probe applied with a force of 1N,

Prior to testing a functional assessment was performed by turning on each of the units to ensure proper operation. A vacuum of 19.9 mbar was then applied to each of the units individually and the airflow was below measurable, therefore an 8 hour test was required. During testing a vacuum was applied to all of the units. The test conditions were as follows:

Dust Grade: BS EN 60529 Talc Test Dust
 Concentration: 2 kg/m³
 Duration: 8 hrs
 Temperature/Humidity: 19.2 °C / 58% rh

TEST CERTIFICATE

CLIENT: TÜV SÜD Product Service

CERTIFICATE NUMBER 14109/02 Issue 01

CUSTOMER ORDER NUMBER 10011893

TÜV REFERENCE 75932441

RESULT(S) OF TEST

IP6X


There were no apertures permitting entry with a 1mm diameter probe when using a force of 1N.

On completion of the dust test excess dust was removed by light brushing, no conspicuous damage was noticed on the exterior of the unit. A functional assessment was performed by turning on each of the units to ensure proper operation.

The units were opened to allow inspection, there was no visible dust ingress.

COMPLIANCE

The Lifejacket Lights conform to the standard required by BS EN 60529:1989 +A1:1999 +A2:2013 IP6X Category 1.

Approved by 
G J Spicer, MEng
Managing Director

Date: 27 November 2015

COMMERCIAL-IN-CONFIDENCE

STATEMENT OF TEST

CLIENT Daniamant Limited

DOCUMENT

75932441 THC 01 Issue 1

CLIENT'S ORDER NUMBER

PC0001564, dated 27.10.2015

INCOMING RELEASE NOTE

Not Released

DATE OF RECEIPT

28 October 2015

EQUIPMENT UNDER TEST (EUT)

Survivor Location Lights, as stated below (x10 units tested)

MODEL/PART NUMBERS(S)

	Description	Model	TSR No *
1	External Liferaft Light	RL5 (external)	001
2	Internal Liferaft Light	RL5 (internal)	004
3	Lifejacket Light	M3	007
4	Lifejacket Light	W3	009
5	Lifejacket Light	MR3	011
6	Lifejacket Light	WR3	013
7	Lifejacket Light	ML3	015
8	Lifejacket Light	WL3	017
9	Lifejacket Light	M4-A	019
10	Lifejacket Light	W4-A	021

* Test Sample Registration Number

TEST SPECIFICATION / ISSUE

EN 60529:1992. Table III, Table VIII and clause 14.2.7.

DEVIATIONS FROM THE STANDARD

None

DATE OF TEST

2 November 2015

TEST(S) DESCRIPTION

Protection Against Ingress by Immersion in Water (IPX7)

The following test was required by the specification:

1. Immediately prior to the test examine each EUT. Manually switch each EUT to ON and OFF.
2. Immerse each EUT in water so that the lowest point of the EUT is 1000 mm below the surface of the water, and for a duration of 30 mins.
3. On completion of the test re-examine the units. Note any conspicuous ingress of water. Manually switch each EUT to ON and OFF.

RESULT(S) OF TEST

The test requirements were satisfied. No water ingress, other damage or detrimental effects were observed or reported during or on completion of the test. When switched ON after the test all lights operated and/or flashed satisfactorily as required and as compared to the operation prior to the test. Items 1 and 2 are interdependent units and were interconnected during the test.

This certificate relates only to the actual item/items tested.

Approved by



G M Stephens
Authorised Signatory



Date 25 November 2015

COMMERCIAL-IN-CONFIDENCE

STATEMENT OF TEST

CLIENT Daniamant Limited

DOCUMENT

75932441 THC 02 Issue 1

CLIENT'S ORDER NUMBER

PC0001564, dated 27.10.2015

INCOMING RELEASE NOTE

Not Released

DATE OF RECEIPT

28 October 2015

EQUIPMENT UNDER TEST (EUT)

Survivor Location Lights, as stated below (x10 units tested)

MODEL/PART NUMBERS(S)

	Description	Model	TSR No *
1	External Liferaft Light	RL5 (external)	002
2	Internal Liferaft Light	RL5 (internal)	005
3	Lifejacket Light	M3	008
4	Lifejacket Light	W3	010
5	Lifejacket Light	MR3	012
6	Lifejacket Light	WR3	014
7	Lifejacket Light	ML3	016
8	Lifejacket Light	WL3	018
9	Lifejacket Light	M4-A	020
10	Lifejacket Light	W4-A	022
* Test Sample Registration Number			

TEST SPECIFICATION / ISSUE

EN 60529:1992. Table III, Table VIII and clause 14.2.8.

DEVIATIONS FROM THE STANDARD

None

DATE OF TEST

2 November 2015

TEST(S) DESCRIPTION

Protection Against Ingress by Immersion in Water (IPX8)

The following test was required by the specification:

1. Immediately prior to the test examine each EUT. Manually switch each EUT to ON and OFF.
2. Immerse each EUT in water and within a pressure vessel. Pressurise the water surface to an equivalent depth of 5 metre, and for a duration of 30 mins.
3. On completion of the test re-examine the units. Note any conspicuous ingress of water. Manually switch each EUT to ON and OFF.

RESULT(S) OF TEST

The test requirements were satisfied. The highest point of the EUT was 10 mm below the water surface and the air pressure applied was 0.49 bar. No water ingress, other damage or detrimental effects were observed or reported during or on completion of the test. When switched ON after the test all lights operated and/or flashed satisfactorily as required and as compared to the operation prior to the test. Items 1 and 2 are interdependent units and were interconnected during the test. All the EUT were preconditioned prior to the test so that their temperature was within 5°C of the water temperature.

This certificate relates only to the actual item/items tested.

Approved by



G M Stephens
Authorised Signatory



Date 25 November 2015



Lloyd's
Register

Transport
Canada
Safety and Security



CERTIFICATE OF TYPE APPROVAL ISSUED ON BEHALF OF TRANSPORT CANADA

This is to certify that

The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations with regards to the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by Transport Canada to issue the relevant certificates, licences, permits etc.

Manufacturer Daniamant A/S


Type **POSITION INDICATING LIGHTS**

Description Position indicating flashing lights for lifejackets – Type "M3, W3, W3-1, W3-2"

Specified Standard IMO Resolution MSC.81(70), Part 1, as amended
TP 14475E

**The attached Design Appraisal Document forms part of this certificate.
This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.**

Date of issue 29 January 2018 Expiry date 9 May 2022

Certificate No. LRTC 0000143/M2 Signed 

Sheet No 1 of 4 Name L. Thomas
Surveyor to Lloyd's Register EMEA
A Member of the Lloyd's Register Group

Note:

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.



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Document number LRTC 0000143/M2
Issue number 1

DESIGN APPRAISAL DOCUMENT

Date 29 January 2018	Quote this reference on all future communications SOUTSO/SFS/TA/LT/WP31529766
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LRTC 0000143/M2

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

EXAMINED DOCUMENTATION

Technical File – TF-DK-16, Revision 04

Installation and Maintenance Instruction for Dan M3 lifejacket light, M3-Instruction Issue 04 (D0230)

Installation and Maintenance Instruction for Dan W3 lifejacket light, W3-Instruction Issue 05 (D0230)

Installation and Maintenance Instruction for Dan W3-1 lifejacket light, W3-1 Instruction Issue 04 (D0230)

Installation and Maintenance Instruction for Dan W3-2 lifejacket light, W3-2 Instruction Issue 03 (D0230)

TEST REPORTS

<u>Report No.:</u>	<u>Report Title or Test Description:</u>	<u>Date:</u>
12-2010	Evaluation and Test Report for Lifejacket Lights DANM3,MR3, W3 and WR3	23.12.2010
12-DK04	DAN W3-1, W3-2,WR3-2 and WR3-1 Automatic Lifejacket Light Evaluation and Test Report	01.05.2012
15256,15256-2	Mould growth test	22.12.2010
DANAK-19/11871	Type approval testing of M3	17.02.2012
01-2015	Evaluation and Test Report for Lifejacket Lights DANM3,MR3, W3 and WR3	22.07.2015
DELTA-L102765-4624	Determination of (x,y) Chromatic Colour Coordinates and determination of luminous light distribution from lifesaving device	18.09.2015
DANAK-1911204	Type approval testing of M2,M3 rint2, Rext and L6	22.12.2010
DANAK-19/1309511204	Type testing of M2 and M3	15.05.2013
75927471	Temperature cycling and vibration testing of M3 and W3 ER14250/ER14250M variant lifejacket light and battery	08.12.2014
DANAK-19/15427	Vibration test of Daniamant lights	02.07.2015
DELTA-L102765-4592	Determination of (x,y) Chromatic Colour Coordinates and determination of luminous light distribution from lifesaving device	03.07.2015

CONDITIONS OF CERTIFICATION

1. Each light shall be clearly marked with:
 - a) The manufacturer's name or trademark, the model designation and lot number
 - b) Transport Canada approval number assigned to the light
 - c) Instructions on how to activate the light
2. Lights powered by batteries shall be marked permanently and legibly with the month and year of manufacture and its expiration
3. Lights powered by batteries shall be marked with a means of determining their age or the date by which they are to be replaced
4. Each light is to be marked with the information required by the LSA Code Paragraph 1.2.2.9 and 1.2.3

DESIGN APPRAISAL DOCUMENT

Date 29 January 2018	Quote this reference on all future communications SOUTSO/SFS/TA/LT/WP31529766
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LRTC 0000143/M2

5. Instruction for use in both English and French shall be provided with each light as prescribed by SOLAS Regulation III/35 one or more additional copies shall be provided for inclusion in the Vessel's Training Manual. Attachment and operating instructions shall be supplied in a format suitable for insertion into the vessel's training manual
6. The lifejacket type where the subject design of light is fitted should be tested in accordance with IMO Resolution MSC.81(70), I/10.3.3 to confirm the adequacy of their means of attachment
7. For compliance with SOLAS Regulation III/35 and III/36 fully detailed operations and maintenance manuals shall be supplied with each light
8. Lights which have reached their date of replacement shall be disposed of safely with due regard to their lithium batteries
9. The arrangements and installation of the lights on the lifejacket on board are not part of this design appraisal or certificate and are to be to the satisfaction of the Surveyors attending on board
10. If the specified standards are amended during the validity of this certificate, this product type is to be re-approved prior to it being supplied to vessels to which the amended standards apply
11. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure compliance with SOLAS Regulation III/5
12. Production tests are to be conducted in accordance with the applicable requirements of IMO Resolution MSC.81 (70), Part 2 and each item, batch, or lot be delivered with an LR Certificate of SOLAS Production Testing issued by the attending LR Surveyors following their witness of the tests. This does not preclude any further testing to additional requirements of the Marine Administration of the country where the ship is registered (i.e. the flag state) or those acting on behalf of that Administration
13. All instructions or markings that accompany life-saving appliances or are printed directly on the appliances must be in both English and French, as per Canadian procedures for approval of life-saving appliances and fire safety systems, equipment and products document no. TP 14612E (05/2011) paragraph 2.2.1.3. However, independent signage can be accepted in lieu of the instructions or marking required in paragraph 2.2.1.3 if it is in both English and French, highly visible (size, colour, posting location), water and weather proof and posted at each muster station and where the appliance is stored
14. Should a change of Place of Production from that stated below be required i.e. where the stages of manufacture/assembly/testing of this product take place, the new Place of Production is to be advised to us prior to the change taking place. This Certificate will require to be updated for Approval to be maintained



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DESIGN APPRAISAL DOCUMENT

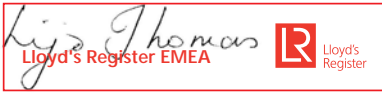
Date 29 January 2018	Quote this reference on all future communications SOUTSO/SFS/TA/LT/WP31529766
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LRTC 0000143/M2

PLACES OF PRODUCTION

Daniamant Limited

Daniamant A/S



Lijo Thomas
Senior Specialist
Statutory Fire & Safety
Southampton Technical Support Office, Marine & Offshore
Lloyd's Register EMEA

Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).

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)
M3, W3, W3-1 and W3-2

Issued to
Daniamant A/S

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

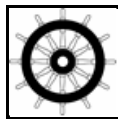
Further details of the equipment and conditions for certification are given overleaf.

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: 344.1-009911-1
Certificate No: MEDB000060N

Product description

Position-indication lights for life jackets – Type M3, W3, W3-1 and W3-2

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

Technical File – TF-DK-16, rev 04

Installation and Maintenance Instruction for Dan M3 lifejacket light, M3 Instruction Issue 07 (D0685)

Installation and Maintenance Instruction for Dan W3 lifejacket light, W3 Instruction Issue 09 (D0685)

Installation and Maintenance Instruction for Dan W3-1 lifejacket light, W3-1 Instruction Issue 07 (D0685)

Installation and Maintenance Instruction for Dan W3-2 lifejacket light, W3-2 Instruction Issue 06 (D0685)

Test reports:

Report No	Title	Date
12-2010	Evaluation and Test Report for Lifejackets lights DAN M3, MR3, W3 and WR3	2010-12-23
12-DK04	DAN W3-1, W3-2, WR3-2 and WR3-1 Automatic Lifjacket Light Evaluation and Test Report	2012-05-01
15256, 15256-2	Mould grow test	2010-12-22
DANAK-19/11871	Type testing of M3	2012-02-17
DANAK-1911204	Type testing of M2, M3 rint2, Rext and L6	2010-12-22
DANAK-19/1309511204	Type testing of M2, M3	2013-05-15
DANAK-19/15427	Vibration test of Daniamant lights	2015-07-02
DELTA-L102765-4624	Determination of (x,y) Chromatic Colour Coordinates and determination of luminous lights distribution from life saving device	2015-09-18
DELTA-L102765-4592	Determination of (x,y) Chromatic Colour Coordinates and determination of luminous lights distribution from life saving device	2015-07-03
75927471	Temperature cycling and vibration testing of M3 and W3	2014-12-08
01-2015	Evaluation and Test Report	2015-07-22

Tests carried out

-IMO Resolution MSC.81(70), part 1, as amended

-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/ MEDB000060N

END OF CERTIFICATE