



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 Limited

Type LIFERAFT LIGHTS

Description Manually controlled flashing position indicating lights for survival craft - Type:
"Rescue-Master 2B, Rescue-Master 3B and Rescue-Master 12V"

Specified Standards IMO Resolution MSC.81 (70), Part 1, as amended by Resolution
MSC.226(82), MSC.200(80) & MSC. 323(89)

**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 22 November 2016 Expiry date 21 November 2021

Certificate No. LRTC 0000115 Signed 

Sheet No 1 of 3 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.



Page 2 of 3
Document number LRTC 0000115
Issue number 1

DESIGN APPRAISAL DOCUMENT

Date 22 November 2016	Quote this reference on all future communications SOUTSO/SFS/TA/MM/LT/WP27423868
--------------------------	---

ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LRTC 0000115

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.

APPROVAL DOCUMENTATION

<u>Plan/Doc No.:</u>	<u>Revision</u>	<u>Title or Description</u>
TF-DK-07	02	Technical File

Installation and Maintenance Instructions, Rescue Master 2B/Rescue Master 3B Liferaft Light, 23-712, Issue 04 (C6495)
Installation and Maintenance Instructions, Rescue-Master 12V, 23-714 Issue 05 (C6468)

TEST REPORTS

Force Institute, test report No. 117524/m1445-527, dated 06-09-1999.
Temperature cycling and light output test, Force Institute, File No. 110984/m1445-481.b, dated 18-03-1999.
Temperature cycling and light output test, Force Institute, File No. 123175/m1445-575 rev.1, dated 29-09-1999 (5.3V battery).
Light output test, Force Institute, File No. 1445-184090, dated 15-08-2002 (12V).
Fire test report, Danish Institute of Fire Technology, File No. F101719, dated 19-04-1999.
Measurement of Chromaticity, test report No. DANAK-KAP724037-1304, dated 04-05-1999.
Vibration test, test report No. K251078, dated 03-06-1999.

CONDITIONS OF CERTIFICATION

1. The "Rescue Master 12V" position indicating lamp is to be connected to the crafts 12V electrical system. The survival craft is to have a fuel tank capacity for 12 hours operation
2. Lights powered by batteries shall be marked with a means of determining their age or the date by which they are to be replaced
3. Each light is to be marked with the information required by the LSA Code Paragraph 1.2.2.9 and 1.2.3
4. Lights which have reached their date of replacement shall be disposed of safely with due regard to their lithium batteries
5. For compliance with SOLAS Regulation III/35 and III/36, fully detailed operations and maintenance manuals shall be supplied with each light
6. The arrangements and installation of the lights on survival crafts are not part of this design appraisal or certificate and are to be to the satisfaction of the Surveyors attending on board
7. 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
8. 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



Page 3 of 3
Document number LRTC 0000115
Issue number 1

DESIGN APPRAISAL DOCUMENT

Date 22 November 2016	Quote this reference on all future communications SOUTSO/SFS/TA/MM/LT/WP27423868
--------------------------	---

ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LRTC 0000115

9. 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
10. 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
11. 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

PLACES OF PRODUCTION

Daniamant Limited

Daniamant ApS



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).



Product Service

Choose certainty.
Add value.

COMMERCIAL-IN-CONFIDENCE

STATEMENT OF TEST

CLIENT Daniamant Limited

DOCUMENT

75932845 THC 01 Issue 3

CLIENT'S ORDER NUMBER

PC0001574, dated 26.11.2015

INCOMING RELEASE NOTE

Not Released

DATE OF RECEIPT

3 December 2015

EQUIPMENT UNDER TEST (EUT)

Survivor Location Lights as stated below.

1. Rescue Master 12 V External Liferaft Light
2. Rescue Master 12 V Internal Liferaft Light

SERIAL NUMBERS(S)

External Lights: 37, 38, 39, 40 (x4 units tested)
Internal Lights: 43, 44, 45, 46 (x4 units tested)

TEST SPECIFICATION / ISSUE

1. IMO document MSC 70/23/Add.1 Annex 6, clauses 10.1.3 (Thermal Cycling); 10.1.4 (operation in cold air/flash rate); 10.4.9 and 10.4.10 Light Tests.
2. IMO document MSC/Circ.980/Add.1 Annex, Section 4.3.6 (Survival Craft).

DEVIATIONS FROM THE STANDARD

The Thermal Cycling Test cold test level specified as -30°C was altered to be a more severe condition at -52°C.

DATE OF TEST

7 December 2015 to 27 January 2016

TEST(S) DESCRIPTION

Temperature and Light Tests on the Rescue Master 12 V Liferaft Lights

The following tests were required by the specification:

Test	Description	Test Parameters	Operation
1	Thermal Cycling	x10 cycles between -52°C to +65°C 8h at each temperature condition	The units are switched OFF during the test and are examined /operated before and after the test.
2	One Day Life and Flash Test at -52°C.	Stabilise the External and Internal units at -52°C. Maintain the units at -52°C for a minimum period of 12 h.	Switch ON all lights at -52°C. Determine the flash rate of the External lights before and after the test at laboratory ambient conditions and at -52°C.
3	Light Tests	One light is tested for Luminous Intensity & Flash Rate at ambient temperature. Four lights are tested for Chromaticity.	The tests are carried out at the laboratory of OptiConsulting Ltd, Buxton SK17 6UG, UK.

The External and Internal Lights do not include a power supply and this was provided by laboratory power supply units at 12 Vdc.

RESULT(S) OF TEST

The test requirements were satisfied for all tests, as stated below.

Thermal Cycling: A visual examination and performance assessment after the test was reported as satisfactory.

One Day Life & Flash Rate: A visual examination and performance assessment after the test was reported as satisfactory. The External lights flash rate of all units was between 62 to 70 flashes per minute at laboratory ambient and at -52°C.

Light Tests: The lights met the acceptance criteria for Luminous Intensity, Chromaticity and Flash rate. OptiConsulting report OC-0576-03 refers.

This certificate relates only to the actual item/items tested. Note: THC01 up-issued to Issue 3 to correct typographic error.

Approved by

G M Stephens
Authorised Signatory



Date 25 February 2016

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: (a) for survival craft and rescue boats

with type designation(s)

Rescue-Master 2B, Rescue-Master 3B and Rescue-Master 12V

Issued to

Daniamant Ltd

Portsmouth, Hampshire, United Kingdom

is found to comply with the requirements in the following Regulations/Standards:

Regulation (EU) 2019/1397,

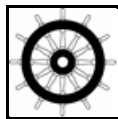
item No. MED/1.2a. SOLAS 74 as amended, Regulation III/4, III/34 & X/3, LSA Code I & IV, 1994 HSC Code 8, 2000 HSC Code 8

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



for DNV GL SE

Approval Engineer:
Nicolay Horn

Notified Body
No.: 0098

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: 344.1-009936-1
Certificate No: MEDB000061F

Product description

Manually controlled flashing position indication lights for survival craft – Type Rescue-Master 2B, Rescue-Master 3B and Rescue-Master 12V

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.

The "Rescue Master 12V position indication lamp is to be connected to the craft 12V electrical system.
The survival craft is to have a fuel tank capacity for 12 hours operation.

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 doc. No. TF-DK-07, revision 02

Installation and Maintenance Instruction, Rescue-Master 12V 23-714, Issue 05 (C6468).

Installation and Maintenance Instruction Rescue-Master 2B / Rescue-Master 3B Liferaft Lift, 23-712 Issue 04 (C6495)

Test report No	Title	Date
1445-184090	Light output test (12V)	2002-08-15
117524/m1445-527	Test report, Force Institute	1999-09-06
110984/ m1445-481.b	Temperature cycling test carried out at Force Institute	1999-03-18
123175/m1445-575 rev.1	Temperature cycling test carried out at Force Institute (5.3V)	1999-09-29
F10719	Fire test report, Danish Institute of Fire Technology	1999-04-19
DANAK-KAP724037-1304	Measurement of Chromaticity	1999-05-04
K251078	Vibration test	1999-06-03

Tests carried out

-IMO Resolution MSC.81(70), part 1, as amended by Resolution MSC.226(82), MSC.200 and 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 161.101/EC0098/ MEDB000061F

END OF CERTIFICATE