

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND
CERTIFICATE OF TYPE APPROVAL

Applicant:-
Oxley Developments Company Ltd.
Priory Park
Ulverston
LA2 9QG

Manufacturer:-
Oxley Developments Company Ltd.
Priory Park
Ulverston
LA2 9QG

This is to certify that the applicant has submitted details of:-

Marine Navigation Lights

Of a type known and designated as:-

Oxley, - OXLELEDCPXXXXX series LED Navigation Lights

(Details for individual models of lights included are described in schedule attached) and that these have been assessed and tested, and are CERTIFIED as complying with:-

Appropriate parts of Annex 1 of UK Merchant Shipping Notice M.1781;
The Merchant Shipping (Distress Signals and Prevention of Collisions) Regulation 1996
as relavent to the technical requirements for navigation lights

(the above regulation is the UK implementation of the International Maritime Organisation's Convention on the International Regulations for preventing Collisions at Sea (COLREG), 1972, and Published by the Maritime and Coastguard Agency).

Naval equipment Standard 1004, " Environmental Requirements for Marine Equipment"
Defence Standard (DEF STAN) 59-41, "EMC Requirements"

As relavent to the environmental and EMC requirements for equipment installed on naval vessels.

Being Climatic, durability and EMC test standards suitable for exposed equipment for operation on naval vessels. These lights are purpose designed for integration into naval warships and the durability requirements are appropriate for this environment.

SIGNED:



DATE of ISSUE:

26th January 2007

DATE of EXPIRY :

25th January 2012

P J Goddard

Authorised Signatory

Certificate Number:

QQ-TAN-09/06-01R

This Certificate is Valid until expiry date shown, subject to the standard conditions of issue printed on the attached schedule

QinetiQ
Cody Technology Park
Ively Road, Farnborough
Hampshire. GU14 0LX



Maritime and Coastguard Agency
The MCA is an Executive Agency of
the Department for Transport

The QinetiQ Group PLC (formerly known as DERA) is specified as a "person" under the terms of The Merchant Shipping (Delegation of Equipment Approval) Regulations 1996, and this certificate is issued under the authority given in Merchant Shipping Notice No MSN 1735.

Certificate of Type Approval - Schedule 1

Oxley Development – LED Navigation Lights

The applicant declared that the following units are operational Marine Navigation Light suitable for usage on appropriate naval vessels. The units below have been assessed & tested and satisfactory details of these units are included in the technical file.

Description*1	Product Number	Colour *2	Light*3 Angle	Vertical Sector	Visibility *4 Range (Min)
Starboard Sidelight	OXLELEDCP36122	Green	112.5°	±7.5°	3nm
Port Sidelight	OXLELEDCP36123	Red	112.5°	±7.5°	3nm
Stern light	OXLELEDCP36121	White	135°	±7.5°	3nm
Masthead light	OXLELEDCP36124	White	225°	±7.5°	6nm

----- End of List -----

NOTES:-

- 1 These Navigation lights comprises an Nato coded enclosure and lens unit that had been previously approved with incandescent bulbs in which the bulb is replaced with the Oxley LED array
- 2 The Colour was measured by a Spectrometer for chromaticity co-ordinates according to the CIE 1931 chromaticity diagram and these lie within the appropriate corner co-ordinates published in Annex 1, paragraph 7. of MSN M.1781. Details shown in table below.
- 3 All lights require suitable installation alignment to ensue COLREG 'abaft of beam' and 'Foreward cut-off of sidelights' requirements relative to ship heading are met.
- 4 Visibility range is assessed according to the measured luminous intensity equalling or exceeding the Candela rating published in Annex 1, paragraph 8.(b) of MSN M.1781.

Technical Characteristics

*Note:- Where appropriate results taken from supplied Type Test Report.

Parameter	Measured*	Comment
Luminous Intensity	6nm =>94cd, 3nm =>12cd	The minimum candela reading is maintained to ±5° vertical sector
Colour Specification – Red LED	'x' = 0.692 'y' = 0.307	Radiometric W/L: 625nm
Colour Specification – Green LED	'x' = 0.069 'y' = 0.444	Radiometric W/L: 490nm
Colour Specification – White LED	'x' = 0.319 'y' = 0.329	Radiometric W/L: 562nm (phosphor)
Temperature Range	-30°C to +45°C	Operational Temperature NWS 1004 test. WSA.DLO
Power Source	115V AC, Nominal	Internal PSU provides a DC constant current to the LED elements.

Conditions of Issue of this certificate are printed the reverse of this sheet.

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Hampshire. GU14 0LX

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Certificates of Type Approval
Conditions of Issue

1. Each Certificate will be used in its entirety and not reproduced in part.
2. This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested.
3. This certificate remains valid for a period of 5 years unless cancelled or revoked, provided any conditions contained in the schedule are complied with and the equipment remains satisfactory in service.
4. The approval status conferred by each certificate will apply only to the aspects of the equipment's performance defined by, and tested to, the specifications printed on that certificate.
5. Each unit of apparatus forming part of an equipment will have prominently marked on it the description given to it in the Certificate.
6. Each unit of an equipment will be marked with the minimum safe distance at which it should be mounted from a standard magnetic compass.
7. No unit of apparatus shall be advertised or labelled as "approved" or "certified" on behalf of the Maritime and Coastguard Agency (MCA), Department of Transport, DERA or QinetiQ in any sense other than that it is a type that has been assessed as satisfactory against the specification;

The manufacturer must advise QinetiQ of any future changes to the design or production of the equipment which might affect the equipment performance.

For minor modifications to the equipment, factory test results provided to QinetiQ by the manufacturer can be considered on a case-by-case basis. These test results will be reviewed by the QinetiQ, in consultation with the test facility which conducted the original Type Approval tests on the equipment.

QinetiQ will advise the manufacturer if there is a need for further testing.

If an equipment manufacturer wishes to have the type approved equipment designated under alternative names (e.g. agent/distributor's name and model number), a separate application should be completed and sent to QinetiQ.

QinetiQ Ltd
Marine Approval and Testing Service
Cody Technology Park, Room 1005/A5
Ively Road, Farnborough
Hants, GU14 0LX
United Kingdom