

MARINE DIVISION

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Certificate number: 09807/B0 EC

File number : NAV 02/24647/01

Annex A1 Item number : A.1/4.3

USCG approval category : 165.103

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

EC TYPE EXAMINATION CERTIFICATE

*as per Module B of European Union Council Directive 96/98/EC on marine equipment
as last amended by Commission Directive 2002/75/EC of 2 September 2002*

This certificate is issued to

iXSea

Marly-le-Roi - FRANCE

for the type of product

GYRO COMPASS

OCTANS - Fiber-Optic Gyrocompass with Integral Motion Sensor

Regulations and standards :

SOLAS 74, as amended (last amendment). Regulations V/19.2.5.1 - IMO Resolutions A.424(XI), A.694 (17), IEC 60945(2002) - IEC 61162 - ISO 8728(1997).

This certificate is issued under the French Maritime Authority to attest that BUREAU VERITAS did undertake the relevant type-examination procedures for the product identified above which was found to comply with the relevant requirements of the Council Directive 96/98/EC of 20 December 1996 as amended



This certificate is valid until : 22 Dec 2010

At Paris la Défense, on : 22 Dec 2005

For BUREAU VERITAS, Notified Body N°0062
By order of the Secretary

Approval office

Local office : BV NANTES
Surveyor : J. Gaurin


J. BENOIT



This certificate does not allow to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark) to the products corresponding to this type. To this end, the production-control phase module (D, E or F) of Annex B of the Directive is to be complied with and controlled by a written inspection agreement with a notified body.

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 will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. BUREAU VERITAS S.A. is designated by the French Maritime Authority as a "notified body" under the terms of the French Regulations Division 140 Chapter 140-2. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS 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 :

OCTANS
Fiber-Optic Gyrocompass
with Integral Motion
Sensor

Specifications:

1. PERFORMANCES

Gyro Compass & motion sensor Technical Performances

Accuracy (whatever sea-state):	0.1° Secant latitude
Settling time (static conditions):	< 1 mn
Full accuracy settling time (all conditions):	< 5 mn
Resolution:	0.01°
Heave, surge and sway accuracy:	5 cm or 5% (whichever is highest)
Roll, Pitch:	
Dynamic Accuracy:	0.01° (for ± 90 deg. amplitude)
Range:	no limitation (-180° to 180°)
Resolution:	0.001°

2. ENVIRONMENT

Environmental Specifications

Operating/storage temperature:	-40°C to +60°C/ +80°C
Shocks (operating/survival):	30 g in 6 ms/50 g in 11 ms
Vibrations:	1 g sine (5 to 50 Hz)
Follow-up speed:	up to 750°/s
MTBF:	30 000 hours
No warm-up effects, insensitive to thermal shocks	
No latitude or speed limitation	

3. INTERFACE

Outputs protocols:	NMEA 0183 , binary
Serial I/O:	RS232 or RS422
Baud rates :	600 bauds to 115 kbauds
Output frequency:	0.001 Hz to 100 Hz

Installation Software :

Octans is delivered with a powerful and easy-to-use installation software, which allows a complete configuration (choice of baudrates and frequencies, data frame protocols, scale factors for analog I/O, lever arms, filtering parameters...)

4. HOUSING

Dimensions & Material

	OCTANS
Shape:	rectangular box
Dimensions:	(L x W x H, in mm): 280 x 136 x 150
Weight:	4.8 kg
Material:	Aluminium
Mounting/connectors:	3 off M6 holes/ souriau military
Inputs:	3 serial/2 pulses
Outputs:	3 serial/ 4 analogue / 2 pulses
Water proof:	IP 66
Power supply/consumption:	24V DC/11W

5. SOFTWARE :

- Loader 2.0
- Firmware 10.64.28.52
- IMO Repeater 3.5
- iXRepeater 2.0.0.1

2. DOCUMENTS AND DRAWINGS :

2.1 - In accordance with the manufacturer's drawings and documents:

- Octans III specifications ref: OCTA0503/2005
- MU/OCTIII/001/B: General Introduction
- MU/OCTIII/002/C: Part 1 - Introduction
- MU/OCTIII/003/D: Part 2 - Octans Surface
- MU/OCTIII/010/A: Part 3 - iXRepeater
- MU/OCTIII/005/D: Part 4 - library
- MU/OCTIII/006/B: Part 5 - Advanced Configuration
- MU/OCTIII/004/C: Addendum - IMO Repeater

2.2 - Manufacturing documentation: to be approved by the Society prior to EC  marking authorization.

2.3 - Manual(s) for installation, use and maintenance:

- to be stamped by a Society's Surveyor,
- to be available in one of the IMO languages, in addition to the ship's flag language.

3. TEST REPORTS :

3.1 - Test report N° 51048/00/NAV/CI ed. 1, issued on 27/07/00 by DGA-DCE- LRBA (Laboratoire de Recherches Balistiques et Aérodynamique), Vernon - France.

3.2 - Test report N° LV29994/2 issued by SOPEMEA on 28/08/2000.

3.3 - Test report N° 00.5081 issued by ALSTOM on 06/07/2000.

3.4 - Test report N° RC-03-40439/PC/SG issued by EMITECH on 01/08/03.

3.5 - Test report N° RC-05-40702-1 issued by EMITECH On 09/11/05.

4. APPLICATION / LIMITATION :

4.1 - IBM PC compatible computer used as "Repeater Software" according to BV Rules for the Classification of Steel Ships and IEC 60945.

4.2 - In order to comply with SOLAS Regulations V/19 intended for Ships of 1600 gross tonnage and upwards, the Gyro-compass OCTANS should be fitted with Gyro interface and Bearing repeater type approved by the Society.

4.3 - Only Hardware and Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The Manufacturer shall have a quality control system audited by a competent authority to ensure continuous compliance with the type approval conditions.

5.2 - The production conformity assessment Module shall be "D" Production-Quality Assurance.

5.3 - Each Gyro-compass intended to be fitted on board a ship registered with a national register adhering to the Directive shall be delivered with a Declaration of Conformity, which shall be signed by the manufacturer.

5.4 - Each equipment is to be supplied with manual (s) for installation, use and maintenance (cf. 2.3 above).

6. MARKING OF PRODUCT :

6.1 - Maker's name or trade mark,

- Serial number of the units,
- Equipment type number or model identification under which it was type-tested,
- Minimum safe distance at which the equipment may be mounted from a standard and a steering magnetic compass,
- * conformity mark and number of the Notified Body undertaking surveillance module (where BV, 0062),
- Last two digits of year mark affixed.

6.2 - Markings as detailed in article 11 of the Directive, must not be applied until the relevant module 'D' certificate has been issued to the manufacturing works by the notified body.

6.3 - Alternatively, the marking may be presented on a display at equipment start-up.

6.4 - The title and version of each software element included in the installed software system shall be either marked or displayed on command on the equipment.

6.5 - When the marking and the title and version of the software are displayed only on the display, such information shall also be included in the equipment manual.

In pursuance of the EU/US MRA+, and in accordance with the Council Decision 2004/425/EC of 21 April 2004, the manufactured item(s) can be affixed with the USCG conformity marking, subject to the authorization of the Conformity Assessment Body undertaking surveillance module.

7. OTHERS :

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the **GYRO COMPASSES** at any time, and that **IXSea, Marly-le-Roi - FRANCE**, will accept the responsibility for informing shipbuilders or their sub-contractors of the proper methods of use and general maintenance of **GYRO COMPASSES** and the conditions of this approval.

7.2 - This certificate supersedes EC Type Examination Certificate N° 09807/A1 EC issued on 07/08/2003 by the Society.

*** END OF CERTIFICATE ***