



DET NORSKE VERITAS

EC TYPE EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2012/32/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. **MED-B-8995**

This is to certify that the
Electronic Chart Display and Information System (ECDIS)

with type designation(s)
Navmaster ECDIS

Issued to
John Lilley & Gillie Ltd
Birmingham, United Kingdom

is found to comply with the requirements in the following Regulations/Standards:
Annex A.1, item No. A.1/4.30 and Annex B, Module B in the Directive. IMO Resolutions A.694(17), MSC.191(79) & MSC.232(82)

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

Høvik, 2014-05-09
for Det Norske Veritas AS



This Certificate is valid until
2019-05-09


Marianne Strand Valderhaug
Head of Department

Notified Body No.: **0575**

DNV local office:
London


Steinar Kristensen
Surveyor







The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.



Certificate No.: MED-B-8995
Item No.: A.1/4.30
Job Id.: 344.1-001412-11

Product description

Navmaster ECDIS consisting of the following components:

- Computer
- Monitor
- Keyboard/Mouse
- Interface unit

For more product details see Appendix.

For the latest revision of the Appendix, see <http://exchange.dnv.com/tari>

Notes

- A dual installation of Navmaster ECDIS is found to comply with the requirements for ECDIS with Back-up arrangements.
- The Navmaster ECDIS is found to comply with the requirements for ECDIS in RCDS mode of operation when using HCRF navigational chart data format.

Application/Limitation

- The operating system is Microsoft Windows XP or Windows 7. Ref Product description in Appendix for details.
- The installation shall be installed and tested on board in accordance with the procedures stated in the Navmaster User Manual.

Type Examination documentation

See Appendix.

Tests carried out

- Performance testing, IEC 61174 Ed. 3.0 (2008)
- Environmental testing, IEC 60945 (2002)
- Serial interface testing, IEC 61162-1 (2010)
- Presentation of navigation information, IEC 62288 (2008)

Marking of product

The mark "Navmaster ECDIS" shall appear on an equipment label to be applied to the equipment in a single visible location.

Mark of Conformity

The manufacturer is allowed to affix the Mark of Conformity according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D or E or F of Annex B in the same directive is fully complied with.

Module D: The quality system for production and testing shall be approved by the Notified Body.

Module E: The quality system for inspection and testing shall be approved by the Notified Body.

Module F: Compliance of the products to type as described in this EC Type-Examination Certificate must be verified by the Notified Body who also shall issue a Certificate of Conformity.





APPENDIX REV. NO. 0 (Page 1 of 2)

Product description

Navmaster ECDIS consisting of the following components:

Hardware modules:

Navmaster 800 and 1200 systems, comprising:

Computer:

- LGP36* with Windows 7 Operating System
- Keyboard, LGKB-2
- Trackball, LGT-TB2
- NMEA breakout box , BOB PC84

Monitors:

- LGM 24 V3 (Navmaster 800 only)
- Hatteland HD19T21STD-MA1-FAGA/ HD19T21 PCS-MAE-FAGA (Navmaster 1200 only)

Navmaster 1000 system, PC and monitor combination model, comprising:

- LGS 213 * with Windows XP Operating System
- Keyboard, LGKB-2
- Trackball, LGT-TB2

* LGP36 and LGS213 bases systems may be provided with separate LG-RPU-1 Radar Processing Unit as an option.

Software modules:

- Navmaster ECDIS software ver. 7.1.0.X
- C-Map SDK ver. 5.4
- IHO presentation library ver. 3.4

Type Examination documentation

DNV No	Description:	Document no:	Rev.
20	Description: PC Maritime, S-63 Test Definitions and Scripts for Encrypted ENC		
21	Report: PC Maritime, IEC 62288 Edt 1 Test Results		
22	Report: PC Maritime, IEC 61174 Edt 3 Performance Test Results		2009-03-26
23	Report: PC Maritime, Navmaster Test Results IEC61174 edt 3		2009-03-26
57	Report: Lilley&Gillie, ECDIS Optical test report	OPT-CAL0003	
84	Report: Lilley&Gillie, NMEA Interface test report	NME-ITF-LGP30	2009-06-22
117	Report: Lilley&Gillie, Ecdis Optical Test Report for LGM24 V2	OPT-CAL0005	2009-09-29
118	Report: Lilley&Gillie, Ecdis Optical Test Report for LGM24 V2	OPT-CAL0003	2009-09-17
143	User Guide - LGS213 Monitor/CPU: NavMaster ECDIS 1000	LGS213/ug/ra/213	1
144	Report: Lilley&Gillie, Environmental and EMC test reports IEC 60945	PWS-NOR-LGS213	28-09-2010
145	Report: Lilley&Gillie, ECDIS Optical Test Report - LGS213	OPT-CAL0006	2010-09-21
146	General Connection Diagram - Navmaster ECDIS 1000 System	3448-A3-20	1
148	Manual: Jeppesen, Radar Processor Unit 1.2 - Connection Guidelines	N/A	1.0
149	Manual: Jeppesen, Radar Processor Unit 1.2, Technological Indicator, User's Manual	N/A	1.0
150	Manual: Jeppesen, Radar Processor Unit 1.2, Installation Guide	N/A	1.0
152	Report: DELTA, Test for Marine Type Approval of Radar Processor Unit, RPU-1.2	DANAK-1911050	2010-09-16
153	Report: PC Maritime, Navmaster ECDIS, Radar Processor Unit 1.2	N/A	2011-06-23



Certificate No.: MED-B-8995
 Item No.: A.1/4.30
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APPENDIX REV. NO. 0 (Page 2 of 2)

DNV No	Description:	Document no:	Rev.
163	CERTIFICATE: DNV, Type approval of Hatteland MMD Series X displays	A-12839	
164	REPORT: Hatteland, Conformance test report HD19T21STD-MA1-FAGA	DOC101134-1	2012-09-14
177	MANUAL: Navmaster User Guide v7.1		v7.1
179	Report: Lilley&Gillie, Damp heat test report	LGP36-ENV-DAM-1	2014-02-05
180	Report: Lilley&Gillie, Dry heat test report	LGP36-ENV-DHF-1	2014-02-07
181	Report: Lilley&Gillie, Low Temperature test report	LGP36-ENV-LOP-1	2014-02-07
182	Report: Lilley&Gillie, Vibration test report	LGP36-ENV-VIB-1	2014-02-06
183	Report: Lilley&Gillie, Excessive power supply test report	LGP36-PWS-EXC-1	2014-02-06
184	Report: Lilley&Gillie, Extreme power supply test report	LGP36-PWS-EXT-1	2014-02-04
185	Report: Lilley&Gillie, Normal power supply test report	LGP36-PWS-NOR-1	2014-02-04
186	Report: Lilley&Gillie, Protection agains accidental access to dangerous voltages test report	LGP36-SPF-ADV-1	2014-02-06
187	Report: Lilley&Gillie, Acoustic noise and signals test report	LGP36-SPT-ANS-1	2014-02-06
188	Report: Lilley&Gillie, Compass Safe distance test report	LGP36-SPT-CSD-1	2014-02-05
189	Drawing: Lilley&Gillie, General Connection Diagram Navmaster 800 ECDIS	3448-A3-32	1
190	Drawing: Lilley&Gillie, General Connection Diagram Navmaster 1200 ECDIS	3448-A3-51	1
193	Report: Lilley&Gillie, Conducted emissions test report	LGP36-EMC-COE-1	2014-02-04
194	Report: Lilley&Gillie, Conducted immunity test report	LGP36-EMC-COI-1	2014-02-05
195	Report: Lilley&Gillie, ESD immunity test report	LGP36-EMC-ESD-1	2014-02-04
196	Report: Lilley&Gillie, Immunity to fast transients test report	LGP36-EMC-FTR-1	2014-02-05
197	Report: Lilley&Gillie, Immunity to power supply failure test report	LGP36-EMC-PFA-1	2014-02-04
198	Report: Lilley&Gillie, Immunity to power supply short-term variations test report	LGP36-EMC-PSV-1	2014-02-04
199	Report: Lilley&Gillie, Radiated emissions test report	LGP36-EMC-RAE-1	2014-04-02
200	Report: Lilley&Gillie, Radiated immunity test report	LGP36-EMC-RAI-1	2014-02-04
201	Report: Lilley&Gillie, Immunity to surges test report	LGP36-EMC-SRG-1	2014-02-04
203	Report: PC Maritime, Selected performance tests for Navmaster ECDIS with LGP36 computer	LGP36-0414	2014-04-03
206	Report: Lilley&Gillie, NMEA Interface test report for ECDIS processor LGP36	LGP36-NME-ITF-1	2014-04-26
207	Report: Lilley&Gillie, NMEA Interface test report for ECDIS processor LGS213	LGS213-NME-ITF-1	2014-04-26
209	Report: PC Maritime, Selected ECDIS performance tests for new computer	LGP36-0414	2
210	Manual: Lilley&Gillie, LGP36 Processor - Navmaster ECDIS - User Guide	LGP36/UG/RA-JT/247	2
211	Manual: Lilley&Gillie, LGM24V3 Monitor - Navmaster ECDIS - User Guide	LGM24V2/UG/RA/215	2
212	Manual: Hatteland, User Manual for Series X-standard displays	INB100535-1	7

Place and date
 HØVIK, 2014-05-09

Steinar Kristensen
 Steinar Kristensen



END OF CERTIFICATE