DNV·GL

Certificate No:
MEDB00000K0

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2014/93/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Electronic chart display and information system (ECDIS)

with type designation(s)
Navmaster 800 ECDIS, Navmaster 1000 ECDIS, Navmaster 1200 ECDIS

Issued to
PC Maritime Ltd.
PLYMOUTH DEVONPORT, 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.

This Certificate is valid until **2016-04-30**.

Issued at **Høvik** on **2016-01-28**

for **DNV GL AS**

DNV GL local station:
Southampton

Approval Engineer:
Steinar Kristensen

Notified Body
No.: **0575**

Vidar Dolonen
Head of Notified Body

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Job Id: **344.1-001412-16**
Certificate No: **MEDB00000K0**

Product description

Navmaster 800, 1000 and 1200 ECDIS consist of the following modules:

- Computer
- Monitor
- Keyboard
- Trackball
- Interface unit

Hardware modules:

Navmaster 800 and 1200 systems, comprising:

- Computer: LGP36* with Windows 7 Operating System
- Keyboard: LGKB-2
- Trackball: LGT-TB2
- Interface unit: 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:

- Computer with integrated monitor: LGS 213* with Windows XP Operating System
- Keyboard, LGKB-2
- Trackball, LGT-TB2
- Interface unit: NMEA breakout box BOB PC84

* 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

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.
- The installation shall be installed and tested on board in accordance with the procedures stated in the Navmaster User Manual.

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, EN 62288 (2008)

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Type Examination documentation

DNV GL 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
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 acess 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

DNV GL No	Description:	Document no:	Rev.
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

Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location and in addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage