



DET NORSKE VERITAS

TYPE EXAMINATION CERTIFICATE

CERTIFICATE NO. A-10782
This Certificate consists of 3 pages

This is to certify that the
Protective Capsule for VDR

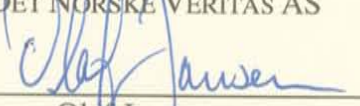
with type designation
HVR03

Manufactured by
L3 communications Aviation Recorders
SARASOTA, FL 34230, United States

is found to comply with

- IMO Res. A.694(17) General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids
- IEC 61996-2 Maritime navigation and radiocommunication equipment and systems - Simplified Shipborne Voyage Data Recorder (S-VDR) - Methods of testing and required test results
- IEC 60945 Ed. 4 (2002-08) Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results
- IEC 61996 ED. 1.0 (2000-07) Maritime navigation and radiocommunication equipment and systems - Shipborne Voyage Data Recorder (VDR) - Methods of testing and required test results

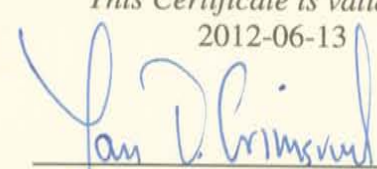

Place and date
Høvik, 2008-06-13
for DET NORSKE VERITAS AS


Olaf Jansen
Head of Section



Local Office
DNV Miami

This Certificate is valid until
2012-06-13


Jan Tore Grimsrud
Surveyor 

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Examination Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: A-10782
File No.: 849.81
Job Id No.: 262.1-005136-1

Product description

The L3 protective capsule consists of the following components;

- L3 HVR03 Protective Capsule
- Dukane Model DK120 Underwater Location Beacon

Application/Limitation

The L3 protective capsule is intended to be integrated into a full third party manufactured VDR or S-VDR system to provide all functionality required by IEC 61996 or IEC 61996-2 for recording, protecting and survival of the recorded data in its final recording media.

The VDR/S-VDR system is to supply two hours of reserve power to the Protective Capsule.

The L3 HVR03 Protective Capsule can be configured to contain up to 4-Gigabyte flash memory chips.

Note

The HVR03-xxx-xx fulfils the requirement of a fixed Data Protective Capsule as a part of a VDR. The entire functionality of a VDR, with this Data Protective Capsule has to be evidenced for each VDR. VDR systems already certified with capsule HVR02-xxx-xx may include HVR03-xxx-xx in their system without repeating the functional tests.

Type Approval documentation

- L3 Installation and Operation Instruction Manual Hardened Voyage Recorder (HVR), 165M1016-00 Rev. 01, May. 13/08
- L3 Environmental Test Report, Climatic, Vibration, EMC – Doc. No. ENV161
- L3 Environmental Test Report, Incident Survival – Shock, Fire, Penetration – Doc. No. ENV188
- L3 Environmental Test Report, Incident Survival – Immersion – Doc. No. ENV162
- L3 Environmental Test Report, Extreme Power Supply – Doc. No. ENV170
- L3 Environmental Test Report, Rain Spray – Doc. No. ENV189
- L3 Environmental Test Report, Label Adhesion – Doc. No. ENV190
- BSH Compass Safe Distance Test Report – Report No. 46161 / 515 0560 / 07





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Tests carried out

The following IEC 61996 tests have been carried out;
6.1.13.4, 6.1.13.5, 6.1.13.6, 6.1.13.8,

Environmental testing according to IEC 60945

Marking of product

The product is to be marked L3 HVR03-xxx-xx.

Certificate retention survey

The retention survey is to be performed at renewal of this certificate.

The scope of the retention/renewal survey is to verify that the conditions stipulated for the type approval area complied with and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

END OF CERTIFICATE

