

MARINE DIVISION

67/71 Boulevard du Château
92200 Neuilly-sur-Seine - France

Tel. 33 1 55 24 70 00
Fax. 33 1 55 24 70 45
www.veristar.com



Certificate number: 20681/A1 BV

File number : AP 3920

Product code : 4483H

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

TYPE APPROVAL CERTIFICATE

This certificate is issued to

Hatteland Display AS

Nedre Vats - NORWAY

for the type of product

DISPLAY MONITORS / VIDEO SCREENS / TERMINALS

Series 1 - Maritime Multi Displays (MMD) & Military Displays (MIL)

Regulations and standards :

BUREAU VERITAS Rules for the Classification of Steel Ships.
IEC 60945 - 4th Edition - 2002.

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements of the Regulations and standards mentioned above.

This certificate is valid until : 27 Jun 2013

At Neuilly, on : 19 Dec 2008

For BUREAU VERITAS,
By order of the Secretary

Approval office

Local office : BV OSLO
Surveyor : R. Marstein

L. COURREGELONGUE



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. 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 :

Series 1 - Maritime Multi Displays (MMD) and Military (MIL) comprises the following models:

JH 15T15 MMD-xx1-Axxx and JH 15T17 MMD-xx1-Axxx - 15.0 " LCDs

JH 19T12 MMD-xx1-Axxx and JH 19T14 MMD-xx1-Axxx and JH 19T14 STD - 19.0 " LCDs

JH 20T17 MMD-xx1-Axxx and HM 20T07 MIL-E1 - 20.0 " LCDs

JH 23T12 MMD-xx1-Axxx - 23.1 " LCD

JH 27T11 MMD-xx1-Axxx - 27.0 " LCD

Note: See 1.3 for BV Approved MMD Versions.

1.1 - Common characteristics:

LCD Type:	Color TFT - 16.7 millions colors Max.
Signal Terminals: (Depending on Model / Version)	DVI-I Signal IN - 1x29p DVI Female RGB Signal IN - 1x15p HD D-Sub Female RGB Signal OUT - 1x15p HD D-Sub Female HATTELAND® I/O - 1x160p HD D-Sub Female USB I/O - 1xType B Female Connecteur
Power Terminals: (Depending on the Version)	AC Power IN - 1x Std IEC Inlet AC Power OUT - 1x Std IEC Outlet DC Power IN - 1x2p D-Sub Male Connector
Ingress Protection Index:	IP 66 (Front)

1.2 - Specific characteristics:

	Pixel Number	Response Time (ms)	Contrast Ratio	Light Intensity (cd/m²)
JH 15T15 MMD	1024x768 (XGA)	25	400:1	250
JH 15T17 MMD	1024x768 (XGA)	25	400:1	250
JH 19T12 MMD	1280x1024 (SXGA)	15	700:1	300
JH 19T14 MMD / STD	1280x1024 (SXGA)	12	900:1	300
JH 20T17 MMD	1600x1200 (UXGA)	12	900:1	300
HM 20T07 MIL-E1	1600x1200 (UXGA)	20	500:1	250
JH 23T12 MMD	1600x1200 (UXGA)	20	500:1	250
JH 27T11 MMD	1920x1200 (WUXGA)	6	1000:1	500

1.3 - MMD displays - BV Approved Versions Identification:

Version Identification	Meaning of ID Letter
Power Input ID: xxD-yxx-Axxx	y = A: 115/230 V - 50/60 Hz only y = D: 24 VDC only y = M: 115/230 V - 50/60 Hz + 24 VDC
Optical Enhancement ID: xxD-xxx-Ayxx	y = A: No Optical Bonding y = O: Optically Bonded
User Control Functionality ID: xxD-xxx-Axyx	y = A: Push Buttons y = B: Retractable Potmeter Control & Push Buttons
Touch Screen ID: xxD-xxx-Axxy	y = A: No factory mounted Screen y = C: Capacitive Touch Screen

x = Any characters or numbers according to Type Number Overview, Doc. IND100780-1-Rev 05 dated 04 Mar. 2008.

2. DOCUMENTS AND DRAWINGS :

HATTELAND:

User Manual, Series 1 - Maritime Multi Display Models, Doc. INB100036-2 (Rev. 1), dated 06 Feb. 2008.

Data Sheets:

JH 15T15 MMD-xxx-Axxx, Doc Rev. 07 dated 01 Apr 2008

JH 15T17 MMD-xxx-Axxx, Doc Rev. 01 dated 06 Oct 2008

JH 19T12 MMD-xxx-Axxx, Doc Rev. 07 dated 01 Apr 2008

JH 19T14 MMD-xxx-Axxx, Doc Rev. 02 dated 11 Sep 2008

JH 19T14 STD Doc Rev. 02 dated 10 Sep 2008

JH 20T17 MMD-xxx-Axxx, Doc Rev. 02 dated 11 Sep 2008

HM 20T07 MIL, Doc Rev. 04 dated 30 Jun 2008

JH 23T12 MMD-xxx-Axxx, Doc Rev. 08 dated 01 Apr 2008

JH 27T11 MMD-xxx-Axxx, Doc Rev. 06 dated 16 Oct 2008

Series 1 MMD Displays - Type Number Overview, Doc. IND100780-1-Rev 05 dated 04 Mar. 2008.

Note: CD ROM containing here above documents and test reports is filed in AP 3920.

3. TEST REPORTS :

Model	DNV Test Reports
JH 15T15 MMD	Report n° 2008-3076, Rev. 01 dated 2008-02-07
JH 15T17 MMD	Report n° 2008-3324, Rev. 01 dated 2008-10-13
JH 19T12 MMD	Report n° 2008-3143, Rev. 01 dated 2008-03-11 Report n° 2008-3146, Rev. 01 dated 2008-03-11 Report n° 2008-3190, Rev. 02 dated 2008-04-16
JH 19T14 MMD	Report n° 2008-3528, Rev. 01 dated 2008-10-31
JH 20T17 MMD	Report n° 2008-3511, Rev. 02 dated 2008-10-16
HM 20T07 MIL-E1	Report n° 2007-3008, Rev. 01 dated 2007-03-13
JH 23T12 MMD	Report n° 2008-3142, Rev. 01 dated 2008-03-11 Report n° 2008-3207, Rev. 01 dated 2008-04-16
JH 27T11 MMD	Report n° 2008-3464, Rev. 02 dated 2008-09-18

Note: Above equipment was tested and Approved according to EN 60945 4th edition (excluding salt mist test).

4. APPLICATION / LIMITATION :

4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.

4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-POR and AUT-IMS.**

4.3 - BUREAU VERITAS Environmental Category, **EC Code: 21**

4.4 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zone.

4.5 - Only flush mounting is allowed.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The above **Maritime Multi Displays** and **Military Displays** are to be manufactured, examined and tested by **Hatteland Display AS** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **Hatteland Display AS** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **Hatteland Display AS** has declared to Bureau Veritas that the type of product described in this certificate are manufactured at the following production site:

Hatteland Display AS
Åmsosen
N-5578 Nedre Vats
NORWAY

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

6. MARKING OF PRODUCT :

According to IEC 60945.

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 units at any time, and that:

Hatteland Display AS
Åmsosen
N-5578 Nedre Vats
NORWAY

will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This Certificate supersedes the Type Approval Certificate n° 20681/A0 issued on 27/06/2008 by the Society.

*** END OF CERTIFICATE ***

