



Marine & Offshore

Certificate number: 22561/C0 BV

File number: AP 4069

Product code: 4483H

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

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TYPE APPROVAL CERTIFICATE*This certificate is issued to***Litemax Electronics Inc.**

New Taipei City - TAIWAN

*for the type of product***DISPLAY MONITORS / VIDEO SCREENS / TERMINALS**

NavPixel Series Sunlight Readable Maritime Displays

Models: NPD0835, NPD1236/1268, NPD1555/1568, NPD1744/1768, NPD1954/1968, NPD2115/2118 and NPD 2425.

Requirements:BUREAU VERITAS Rules for the Classification of Steel Ships.
IEC 60945 (2002), incl. Corr.1 (2008)

EC Code: 31B

*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.***This certificate will expire on: 07 Jul 2025****For Bureau Veritas Marine & Offshore,**

At BV TAIPEI, on 07 Jul 2020,

R.c. YIN



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 Marine & Offshore. 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 & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore 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.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 7 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Product description or type designation:

NPD0835, NPD1236/1268, NPD1555/1568, NPD1744/1768, NPD1954/1968, NPD2115/2118 and NPD 2425

Product model:

Maritime Displays **NavPixel NPD series** comprises the following models:

1.1 - Common characteristics:

LCD Type:	Color LCD - LED Backlight
Signal Terminals: (Depending on Model)	DVI (x1 or x2 or None) VGA (x1 or x2) RGB (x3 or None) USB (x1 or None) RS232 (x1 or None)
Power Supply:	DC Powered through AC/DC Adapter Model KPA-060F manufactured by ISO (for NPD0835) Model PAA060F manufactured by CWT (for other Display Models) 100-240 VAC, 50/60 Hz
Ingress Protection Index:	IP 65 (Front), IP68 (NPD0835)
Operating Temperature:	-25 °C to +55°C

1.2 - Specific characteristics:

Model Name	Size	Pixel Number	Contrast Ratio
NPD0835	8.4 "	800x600 (SVGA)	600:1
NPD1236	12.1 "	1024x768 (XGA)	800:1
NPD1555	15.0 "	1024x768 (XGA)	700:1
NPD1744	17.0 "	1280x1024 (SXGA)	1000:1
NPD1954	19.0 "	1280x1024 (SXGA)	900:1
NPD2115	21.5 "	1920x1080 (FHD)	1000:1
NPD2425	24.0 "	1920x1080 (FHD)	3000:1

1.3 - Hardware / Firmware:

Model Name	Part no	F/W or H/W	Version
NPD0835	NPD0835-ETAW-A01	Hardware	Ver:01
NPD0835	990200150801	Firmware	Ver:2.1
NPD1236	NPD1236-ETAW-G01	Hardware	Ver:01
NPD1236	990006231202	Firmware	Ver:2.3
NPD1268	NPD1268-ETAW-G01	Hardware	Ver:01
NPD1268	990006231201	Firmware	Ver:2.0
NPD1555	NPD1555-EGAW-G011	Hardware	Ver:01
NPD1555	990206221501	Firmware	Ver:2.2
NPD1568	NPD1568-ETAW-G01	Hardware	Ver:01
NPD1568	990006231502	Firmware	Ver:2.3
NPD1744	NPD1744-ETAW-H01	Hardware	Ver:01
NPD1744	990007131700	Firmware	Ver:1.3
NPD1768	NPD1768-ETAW-J01	Hardware	Ver:01
NPD1768	990021101700	Firmware	Ver:1.0
NPD1954	NPD1954-EGAW-H011	Hardware	Ver:01
NPD1954	990007131900	Firmware	Ver:1.3
NPD1968	NPD1968-ETAW-J01	Hardware	Ver:01
NPD1968	990021101900	Firmware	Ver:1.0
NPD2115	NPD2115-ETAW-H011	Hardware	Ver:01
NPD2115	990007132100	Firmware	Ver:1.3
NPD2118	NPD2118-ETAW-J01	Hardware	Ver:01
NPD2118	990021102100	Firmware	Ver:1.0
NPD2425	NPD2425-ETAW-H011	Hardware	Ver:01
NPD2425	990007132400	Firmware	Ver:1.3
NPD2425	NPD2425-ETAW-J01	Hardware	Ver:01
NPD2425	990021102400	Firmware	Ver:1.0

2. DOCUMENTS AND DRAWINGS:**LiteMAX Electronics Inc.:**

Specifications dated 2008

Description of Hardware (Unreferenced and undated document)

User Manuals NPD0835 1st Ed. dated 9/8/2008, NPD1236 1st Ed. dated 3/2/2009, NPD1555 1st Ed. dated 3/2/2009, NPD1744 1st Ed. dated 3/2/2009 and NPD1954 1st Ed. dated 3/2/2009.

Data Sheet NDP2115, dated 2012/11/16.

Data Sheet NDP2425, dated 2012/11/16.

Model Name	File Name	Version	Date
NPD0835	NPD0835 AD5621 Electronic drawing (V2.2).pdf	V 2.2	11/08/2008
NPD0835	NPD0835 LID Electronic drawing(V1.1).pdf	V 1.1	20/10/2008
NPD0835	NPD0835-Back Cover mechanical drawing 1.pdf	V0	23/07/2009
NPD0835	NPD0835-Explode mechanical drawing 2.pdf	V1	15/01/2009
NPD0835	NPD0835-Front case mechanical drawing 3.pdf	V0	23/07/2009
NPD1236	NPD1236 AD2662 Electronic drawing.pdf	V 2	29/09/2009
NPD1236	NPD1236 COM VR Electronic drawing.pdf	V A	22/09/2008
NPD1236	NPD1236 KEYPAD Electronic drawing .pdf	V A	01/12/2008
NPD1236	NPD1236 LID Electronic drawing.pdf	V1	27/02/2009
NPD1236	NPD1236-Back Cove rmechanical drawing 1.pdf	V1	04/09/2009
NPD1236	NPD1236-Explode mechanical drawing 2.pdf	V1	12/01/2009
NPD1236	NPD1236-Front Case mechanical drawing 3.pdf	V1	11/11/2009
NPD1236	NPD1236-Main Case mechanical drawing 4.pdf	V 2	12/08/2009
NPD1268	NPD1236 AD2662 Electronic drawing.pdf	V 2	29/09/2009
NPD1268	NPD1236 COM VR Electronic drawing.pdf	V A	22/09/2008
NPD1268	NPD1236 KEYPAD Electronic drawing .pdf	V1.0	20/07/2012
NPD1268	NPD1236 LID Electronic drawing.pdf	V1	18/06/2013
NPD1268	NPD1236-Back Cove rmechanical drawing 1.pdf	V1	04/09/2009
NPD1268	NPD1268-Explode mechanical drawing 2.pdf	V1	05/05/2014
NPD1268	NPD1236-Front Case mechanical drawing 3.pdf	V1	11/11/2009
NPD1268	NPD1236-Main Case mechanical drawing 4.pdf	V 2	12/08/2009
NPD1555	NPD1555 AD2662 Electronic drawing.pdf	V 2	29/12/2009
NPD1555	NPD1555 COM VR Electronic drawing.pdf	V A	22/09/2008
NPD1555	NPD1555 KEYPAD Electronic drawing .pdf	V A	01/12/2008
NPD1555	NPD1555 LID Electronic drawing.pdf	V1	27/02/2009
NPD1555	NPD1555-Back Cover mechanical drawing 1.pdf	V1	17/12/2009
NPD1555	NPD1555-Explode mechanical drawing 2.pdf	V1	25/12/2009
NPD1555	NPD1555-Front Case mechanical drawing 3.pdf	V2	09/09/2009
NPD1555	NPD1555-Main Case mechanical drawing 4.pdf	V 2	04/09/2009
NPD1568	NPD1555 AD2662 Electronic drawing.pdf	V 2	29/12/2009
NPD1568	NPD1555 COM VR Electronic drawing.pdf	V A	22/09/2008
NPD1568	NPD1555 KEYPAD Electronic drawing .pdf	V1.0	20/07/2012
NPD1568	NPD1555 LID Electronic drawing.pdf	V1	13/08/2010
NPD1568	NPD1568-Back Cover mechanical drawing 1.pdf	V0	03/04/2014
NPD1568	NPD1568-Explode mechanical drawing 2.pdf	V1	03/04/2014
NPD1568	NPD1568-Front Case mechanical drawing 3.pdf	V0	03/04/2014
NPD1568	NPD1568-Main Case mechanical drawing 4.pdf	V0	03/04/2014
NPD1744	NPD1744 KEYPAD Electronic drawing.pdf	V A	01/12/2008
NPD1744	NPD1744 AD8668 Electronic drawing.pdf	V A	22/12/2008
NPD1744	NPD1744 COM VR Electronic drawing.pdf	V A	22/09/2008
NPD1744	NPD1744 LID Electronic drawing.pdf	V1	27/02/2009
NPD1744	NPD1744-Back_cover mechanical drawing 1.pdf	V 2	14/12/2009
NPD1744	NPD1744-Explode mechanical drawing 2.pdf	V1	25/12/2009
NPD1744	NPD1744-Front_Case mechanical drawing 3.pdf	V 2	23/12/2009
NPD1744	NPD1744-Main Case mechanical drawing 4.pdf	V 3	14/12/2009

Model name	File name	Version	Date
NPD1768	NPD1744 KEYPAD Electronic drawing.pdf	V1.0	20/07/2012
NPD1768	NPD1768 AD5827 Electronic drawing.pdf	V2	21/01/2015
NPD1768	NPD1744 COM VR Electronic drawing.pdf	V A	22/09/2008
NPD1768	NPD1768 LID Electronic drawing.pdf	V2	11/02/2015
NPD1768	NPD1768-Back_cover mechanical drawing 1.pdf	V0	06/02/2015
NPD1768	NPD1768-Explode mechanical drawing 2.pdf	V0	06/02/2015
NPD1768	NPD1768-Front_Case mechanical drawing 3.pdf	V0	06/02/2015
NPD1768	NPD1768-Main Case mechanical drawing 4.pdf	V0	06/02/2015
NPD1954	NPD1954 KEYPAD Electronic drawing.pdf	V A	01/12/2008
NPD1954	NPD1954 AD8668 Electronic drawing.pdf	V A	22/12/2008
NPD1954	NPD1954 COM VR Electronic drawing.pdf	V A	22/09/2008
NPD1954	NPD1954 LID Electronic drawing.pdf	V1	27/02/2009
NPD1954	NPD1954-Back Cover mechanical drawing 1.pdf	V 1	04/09/2009
NPD1954	NPD1954-Explode mechanical drawing 2.pdf	V1	25/12/2009
NPD1954	NPD1954-Front_Case mechanical drawing 3.pdf	V 1	09/09/2009
NPD1954	NPD1954-Main Case mechanical drawing 4.pdf	V 2	04/09/2009
NPD1968	NPD1954 KEYPAD Electronic drawing.pdf	V1.0	20/07/2012
NPD1968	NPD1968 AD5827 Electronic drawing.pdf	v2	21/01/2015
NPD1968	NPD1954 COM VR Electronic drawing.pdf	V A	22/09/2008
NPD1968	NPD1954 LID Electronic drawing.pdf	V1	30/05/2013
NPD1968	NPD1968-Back Cover mechanical drawing 1.pdf	V 1	05/02/2015
NPD1968	NPD1968-Explode mechanical drawing 2.pdf	V0	05/02/2015
NPD1968	NPD1954-Front_Case mechanical drawing 3.pdf	V 1	09/09/2009
NPD1968	NPD1968-Main Case mechanical drawing 4.pdf	V0	05/02/2015
NPD2115	NPD2115 KEYPAD Electronic drawing.pdf	V A	01/12/2008
NPD2115	NPD2115 AD8668 Electronic drawing.pdf	V A	22/12/2008
NPD2115	NPD2115 COM VR Electronic drawing.pdf	V A	22/09/2008
NPD2115	NPD2115 LID Electronic drawing.pdf	V1	27/02/2009
NPD2115	NPD2115-Back Cover mechanical drawing 1.pdf	V 1	17/11/2010
NPD2115	NPD2115-Explode mechanical drawing 2.pdf	V1	07/09/2010
NPD2115	NPD2115-Front_Case mechanical drawing 3.pdf	V 1	17/11/2010
NPD2115	NPD2115-Main Case mechanical drawing 4.pdf	V1	06/12/2010
NPD2118	NPD2115 KEYPAD Electronic drawing.pdf	V1.0	20/07/2012
NPD2118	NPD2118 AD5827 Electronic drawing.pdf	v2	21/01/2015
NPD2118	NPD2115 COM VR Electronic drawing.pdf	V A	22/09/2008
NPD2118	NPD2115 LID Electronic drawing.pdf	v2	13/03/2014
NPD2118	NPD2118-Back Cover mechanical drawing 1.pdf	V0	19/01/2015
NPD2118	NPD2118-Explode mechanical drawing 2.pdf	V1	19/01/2015
NPD2118	NPD2118-Front_Case mechanical drawing 3.pdf	V0	19/01/2015
NPD2118	NPD2118-Main Case mechanical drawing 4.pdf	V0	19/01/2015
NPD2425	NPD2425 KEYPAD Electronic drawing.pdf	V1.0	20/07/2012
NPD2425	NPD2425 AD5827 Electronic drawing.pdf	v2	21/01/2015
NPD2425	NPD2425 COM VR Electronic drawing.pdf	V A	22/09/2008
NPD2425	NPD2425 LID Electronic drawing.pdf	V2	09/09/2014
NPD2425	NPD2425-Back Cover mechanical drawing 1.pdf	V0.1	30/01/2015
NPD2425	NPD2425-Explode mechanical drawing 2.pdf	V0	05/02/2015
NPD2425	NPD2425-Front_Case mechanical drawing 3.pdf	V 1	17/07/2012
NPD2425	NPD2425-Main Case mechanical drawing 4.pdf	V1.2	22/05/2015

2. DOCUMENTS AND DRAWINGS (to be continued):**Modification for B0 version:****Litemax Electronics Inc.:**

- Navpixel User Manual 12" -15"-17"-19"-21.5"-24"series 1st Ed. dated June 24, 2015.

3. TEST REPORTS:**Litemax Electronics Inc.:**

Unreferenced and undated Product Test Plan

Engineering Verification Test Reports NPD0835 dated 2009/02/25, NPD1236 dated 2009/03/27, NPD1555 dated 2009/03/31, NPD1744 dated 2009/03/30 and NPD1954 dated 2009/03/17.

Interocean EMC Technology Corp.:

Test Reports No. 9A073003C-1 (NPD0835), No. 9A061703C-1 (NPD1555) and 9A073004C-1 (NPD1954) all dated 2010/02/05.

CCS Inc.:

Test Report No. T120823W01-E (NPD2425), dated November 29, 2012.

Test Report No. T120823W01-RL-1 (NPD2115), dated November 21, 2012.

Test Report No. T120823W01-RL (NPD2425), dated November 21, 2012.

Modification for B0 version:**Bureau Veritas Consumer Products Services (H.K.) Ltd:**

- Compass Safe Distance Test Report No. IM140903C17, dated Sep. 11, 2014, witnessed by Bureau Veritas Surveyor.

- Compass Safe Distance Test Report No. IM140903C27, dated Sep. 11, 2014, witnessed by Bureau Veritas Surveyor.

- Compass Safe Distance Test Report No. IM140903C28, dated Sep. 11, 2014, witnessed by Bureau Veritas Surveyor.

- Environmental Test Report No. TD140903C29, dated Jun. 06, 2015, witnessed by Bureau Veritas Surveyor.

- EMC Test Report No. CE140903C29, dated Jun. 09, 2015, witnessed by Bureau Veritas Surveyor.

- Environmental Test Report No. TD140903C35, dated Jun. 06, 2015, witnessed by Bureau Veritas Surveyor.

Modification for C0 version:**Bureau Veritas Consumer Products Services (H.K.) Ltd:**

- EMC Test Report No. CE140903C28A, dated 04-06-2020.

- EMC Test Report No. CE140903C35B, dated 04-06-2020.

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-PORT and AUT-IMS.**

4.3 - BUREAU VERITAS Environmental Category, **EC Code: 31B.**

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

4.5 - Only flush mounting is allowed.

4.6 - For use in Navigation (Display not covered by IEC 62288), Control, Loading Instrument & General Purpose Applications (except ECDIS).

4.7 - The minimum safe distance at which the equipment may be mounted from a standard or a steering magnetic compass is not to be less than 1.2 m.

4.8 - To be only used with AC/DC Adapters, Model KPA-060F manufactured by ISO or Model PAA060F manufactured by CWT.

4.9 - The product complies with the test requirements of IACS E10 Rev.7.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The NavPixel™ NPD Series Displays are to be supplied by **Litemax Electronics Inc.** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320.

5.3 - **Litemax Electronics Inc.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **Litemax Electronics Inc.** has declared to Bureau Veritas the following production site(s):

Litemax Electronics Inc.
7F-1, No. 135, Lane 235,
Bau-chiau Rd., Shin-dian Dist.,
NewTaipei City,
23145 TAIWAN

6. MARKING OF PRODUCT:

Manufacturer's name and Trademark

Type and model number

Date of manufacture and serial number

Equipment type or model identification under which it was type-tested.

7. OTHERS:

7.1 - It is **Litemax Electronics Inc.**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate No. 22561/B0 BV issued on 31 Jul 2015 by the Society.

*** END OF CERTIFICATE ***