



CERTIFICATE NUMBER 18-SQ1799333-PDA

EFFECTIVE DATE 30 Nov. 2018

EXPIRATION DATE 29 Nov. 2023

ABS TECHNICAL OFFICE Shanghai Engineering Department

## CERTIFICATE OF

# Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

**WENZHOU BOZHOU  
MARINE ELECTRIC CO., LTD**

Located at

**NONGMAO ROAD, PANSHI TOWN, YUEQING, CHINA**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

**Product** Lighting Fixtures

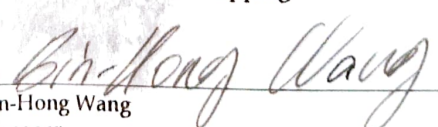
**Model** CXH Series Navigation Lights, TG/Z Series Search Lights, CXD8 Daylight Signal Light

This Product Design Assessment (PDA) Certificate remains valid until 12 Feb. 2023 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau of Shipping

  
Bin-Hong Wang  
Manager

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

**WENZHOU BOZHOU MARINE ELECTRIC CO.**

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**Tier: 2 - PDA Issued**

**Product:** Lighting Fixtures  
**Model:** CXH Series Navigation Lights  
TG/Z Series Search Lights  
CXD8 Daylight Signal Light

**Intended Service:**

ABS classed vessels and offshore facilities in accordance with the listed ABS Rules and International Standards.

**Description:**

Navigation Signal Light and Search Light.

**Rating:**

See attachment

**Service Restriction:**

- Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
- Not to be used in Hazardous Area Location.

**Comments:**

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

**Notes/Drawing/Documentation:**

- Drawing No. CXD2023, Connection Diagram, Revision: 0, Pages: 1
- Drawing No. CXH1111, Connection Diagram, Revision: 0, Pages: 1
- Drawing No. CXH4105, Connection Diagram, Revision: 0, Pages: 1
- Drawing No. TG1122, Connection Diagram, Revision: 0, Pages: 1
- Drawing No. TG1221, Connection Diagram, Revision: 0, Pages: 1
- Drawing No. TG1601, Connection Diagram, Revision: 0, Pages: 1
- Drawing No. TZ1513, Connection Diagram, Revision: 0, Pages: 1
- Drawing No. TZ1707, Connection Diagram, Revision: 0, Pages: 1
- Drawing No. TZ1717, Connection Diagram, Revision: 0, Pages: 1
- Drawing No. TZ1917, Connection Diagram, Revision: 0, Pages: 1
- Drawing No. List Diagram, Principle diagram list of the circuit, Revision: 0, Pages: 1
- Drawing No. Product List, Product List, Revision: 0, Pages: 1
- Drawing No. Appendix 2.01, CXH-101P Series Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.02, CXH-11P Series Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.03, CXH-21P Series Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.04, CXH-3P Series Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.05, CXH-CXD8 Series Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.06, TG27 Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.07, TG27-A Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.08, TG28 Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.09, TG28-A Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.10, TZ1 Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.11, TZ1 A Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.12, TZ2 Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.13, TZ2 A Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 2.14, TZ5 Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 3.01, CXH-101P&11P Series Product component functional specifications(A), Revision: 0, Pages: 1
- Drawing No. Appendix 3.01, TZ5 Product instruction book(A), Revision: 0, Pages: 1
- Drawing No. Appendix 3.02, CXH-101P&11P Series Product component functional specifications(A), Revision: 0, Pages: 1



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**Tier: 2 - PDA Issued**

Pages: 1

Drawing No. Appendix 3.03, CXH-3P Series Product component functional specifications(A), Revision: 0, Pages: 1  
Drawing No. Appendix 3.04, CXD8 Product component functional specifications(A), Revision: 0, Pages: 1  
Drawing No. Appendix 3.05, TG27 Product component functional specifications(A), Revision: 0, Pages: 1  
Drawing No. Appendix 3.06, TG27-A Product component functional specifications(A), Revision: 0, Pages: 1  
Drawing No. Appendix 3.07, TG28 Product component functional specifications(A), Revision: 0, Pages: 1  
Drawing No. Appendix 3.08, TG28-A Product component functional specifications(A), Revision: 0, Pages: 1  
Drawing No. Appendix 3.09, TZ1 Product component functional specifications(A), Revision: 0, Pages: 1  
Drawing No. Appendix 3.10, TZ1-A Product component functional specifications(A), Revision: 0, Pages: 1  
Drawing No. Appendix 3.11, TZ2 Product component functional specifications(A), Revision: 0, Pages: 1  
Drawing No. Appendix 3.12, TZ2 A Product component functional specifications(A), Revision: 0, Pages: 1  
Drawing No. Appendix 3.13, TZ5 Product component functional specifications(A), Revision: 0, Pages: 1  
Drawing No. Appendix 4.01, Navigation signal light production flow chart, Revision: 0, Pages: 1  
Drawing No. Appendix 4.02, Daylight signal light production flow chart, Revision: 0, Pages: 1  
Drawing No. Appendix 4.03, Searchlight production flow chart, Revision: 0, Pages: 1  
Drawing No. Appendix 5.01, Navigation signal light logic flow chat, Revision: 0, Pages: 1  
Drawing No. Appendix 5.02, Daylight signal light logic flow chart, Revision: 0, Pages: 1  
Drawing No. Appendix 5.03, Searchlight logic flow chart, Revision: 0, Pages: 1  
Drawing No. LCS180822009BS, Type Test Report (2018-09-14), Revision: 0, Pages: 1, Shenzhen Southern LCS Compliance Testing Laboratory Ltd.  
Drawing No. LCS180822010BS, Type Test Report (2018-09-14), Revision: 0, Pages: 1, Shenzhen Southern LCS Compliance Testing Laboratory Ltd.  
Drawing No. LCS180822011BS, Type Test Report (2018-09-14), Revision: 0, Pages: 1, Shenzhen Southern LCS Compliance Testing Laboratory Ltd.  
Drawing No. LCS180822012BS, Type Test Report (2018-09-14), Revision: 0, Pages: 1, Shenzhen Southern LCS Compliance Testing Laboratory Ltd.  
Drawing No. LCS180801073BS, TG27-A 60598 Type Test Report (2018-09-20), Revision: 0, Pages: 1, Shenzhen Southern LCS Compliance Testing Laboratory Ltd.  
Drawing No. LCS180801074BS, CXD8 60598 Type Test Report (2018-09-20), Revision: 0, Pages: 1, Shenzhen Southern LCS Compliance Testing Laboratory Ltd.  
Drawing No. LCS180801073BS, CXH1-101P-60598 (2018-09-20), Revision: 0, Pages: 1, Shenzhen Southern LCS Compliance Testing Laboratory Ltd.  
Drawing No. LCS180801073BS, CXH1-21P-60598 (2018-09-20), Revision: 0, Pages: 1, Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

**Terms of Validity:**

This Product Design Assessment (PDA) Certificate 18-SQ1799333-PDA, dated 30/Nov/2018 remains valid until 29/Nov/2023 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

**STANDARDS**

**Product Design Assessment (PDA) Certification  
Attachment for Listing**

PDA Cert. No.: 18-SQ1799333-PDA

NO.	Name	Type	Lamp holder	Power	Protection grade	Standard
1	Daylight signal light	CXD8	G6.35	24V/60W	IP44	EC 60598-2-4:2017 used in conjunction IEC60598-1:2014 A1: 2017

**Table 3 Searchlight**

NO.	Name	Type	voltage	Power	Luminous (flux)	Lamp holder	light source	Protection grade	Standard	Intended service	Manual / Auto.
1	Search light	TG27	220V/50HZ 220V/60HZ	1000W	23000	GY9.5	halogen tungsten lamp	IP66	IEC 60598-2-2:1979 (First Edition)+A1: 1987 used in conjunction IEC60598-1:2014 (Eighth Edition)	Deck	Manual
2	Searchlight	TG27-A	220V/50HZ 220V/60HZ	1000W	23000	GY9.5	halogen tungsten lamp	IP66		Deck	Automatic
3	Searchlight	TG28	220V/50HZ 220V/60HZ	2000W	53000	GY16	halogen tungsten lamp	IP66		Deck	Manual
4	Searchlight	TG28-A	220V/50HZ 220V/60HZ	2000W	53000	GY16	halogen tungsten lamp	IP66		Deck	Automatic
5	Searchlight	TZ1	DC110V AC220V	1000W	60000	dedicated	spherical mercury xenon lamp	IP55		Deck	Manual
6	Searchlight	TZ1-A	DC110V AC220V	1000W	60000	dedicated	spherical mercury xenon lamp	IP55		Deck	Automatic
7	Searchlight	TZ2	DC110V AC220V	2000W	60000	dedicated	spherical mercury xenon lamp	IP55		Deck	Manual
8	Searchlight	TZ2-A	DC110V AC220V	2000W	60000	dedicated	spherical mercury xenon lamp	IP55		Deck	Automatic
9	Searchlight	TZ5	220V/50HZ 220V/60HZ	2000W 3000W	53000	GY16	halogen tungsten lamp	IP55		Deck	Manual

# Product Design Assessment (PDA) Certification Attachment for Listing

PDA Cert. No.: 18-SQ1799333-PDA

**DA Certificate No.:** 18-SQ1799333-PDA  
**Entry Date:** 30 Nov. 2018  
**Expire Date:** 29 Nov. 2023  
 (subject to the condition stated on the DA Certificate)  
**Name of Manufacturer:** Wenzhou Bozhou marine Electric Co., Ltd.  
**Address:** Nongmao Road, Panshi Town,  
**City:** Yueqing, China  
**Zip:** 325600  
**Country:** P. R. China  
**Telephone:** 013868795175  
**Fax:** 0577-62831570  
**Email:** [82121273@qq.com](mailto:82121273@qq.com)  
**Contact Person:** Mr. He, Wen Bin  
**Product:** Lighting Fixture  
**Model:** Navigation Signal Light and Search Light

**Product List**  
**Table 1 Navigation Signal Light**

NO.	Category	Name	Type	Lamp holder	Power	Protection grade	Standard	Intended service	Light Color
1	Navigation signal light	starboard light	CXH1-101P	P28S	220V/2*60W	IP66	IEC 60598-2-2:1979 (First Edition)+A1:1987 used in conjunction IEC60598-1:2014 (Eighth Edition)	Mast	green
					110V/2*60W				
					24V/2*60W				
2	Navigation signal light	port light	CXH2-101P	P28S	220V/2*60W	IP66		Mast	Red
					110V/2*60W				
					24V/2*60W				
3	Navigation signal light	masthead light	CXH3-101P	P28S	220V/2*60W	IP66		Mast	white
					110V/2*60W				
					24V/2*60W				
4	Navigation signal light	stern light	CXH4-101P	P28S	220V/2*60W	IP66		Mast	white
					110V/2*60W				
					24V/2*60W				
5	Navigation signal light	all-round light	CXH6-101P	P28S	220V/2*60W	IP66	Mast	white	
					110V/2*60W				
					24V/2*60W				
6	Navigation signal light	starboard light	CXH1-11P	P28S	220V/2*60W	IP66	Mast	green	
					110V/2*60W				
					24V/2*60W				
7	Navigation signal light	port light	CXH2-11P	P28S	220V/2*60W	IP66	Mast	Red	
					110V/2*60W				



**Product Design Assessment (PDA) Certification  
Attachment for Listing**

PDA Cert. No.: 18-SQ1799333-PDA

NO.	Category	Name	Type	Lamp holder	Power	Protection grade	Standard	Intended service	Light Color
					24V/2*60W				
8	Navigation signal light	masthead light	CXH3-11P	P28S	220V/2*60W 110V/2*60W 24V/2*60W	IP66		Mast	white
9	Navigation signal light	stern light	CXH4-11P	P28S	220V/2*60W 110V/2*60W 24V/2*60W	IP66		Mast	white
10	Navigation signal light	all-round light	CXH6-11P	P28S	220V/2*60W 110V/2*60W 24V/2*60W	IP66		Mast	white
11	Navigation signal light	starboard light	CXH1-21P	BAY15d	12V/25W 24V/25W	IP66		Mast	green
12	Navigation signal light	port light	CXH2-21P	BAY15d	12V/25W 24V/25W	IP66		Mast	Red
13	Navigation signal light	masthead light	CXH3-21P	BAY15d	12V/25W 24V/25W	IP66		Mast	white
14	Navigation signal light	stern light	CXH4-21P	BAY15d	12V/25W 24V/25W	IP66		Mast	white
15	Navigation signal light	all-round light	CXH6-21P	BAY15d	12V/25W 24V/25W	IP66		Mast	white
16	Navigation signal light	starboard light	CXH1-3P	B15d	12V/25W 24V/25W	IP66		Mast	green
17	Navigation signal light	port light	CXH2-3P	B15d	12V/25W 24V/25W	IP66		Mast	Red
18	Navigation signal light	masthead light	CXH3-3P	B15d	12V/25W 24V/25W	IP66		Mast	white
19	Navigation signal light	stern light	CXH4-3P	B15d	12V/25W 24V/25W	IP66		Mast	white
20	Navigation signal light	all-round light	CXH6-3P	B15d	12V/25W 24V/25W	IP66		Mast	white

IEC 60598-2-2:1979 (First Edition)+A1:1987 used in conjunction IEC60598-1:2014 (Eighth Edition)

**Table 2 Daylight signal light**

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**Tier: 2 - PDA Issued**

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**ABS Rules:**

Rules for Conditions of Classification, Part 1 - 2018 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2018 Steel Vessels: 4-8-3/1.11.1, 4-8-3/1.7, 4-8-4/1.3

Rules for Conditions of Classification, Part 1 - 2018 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2018 Mobile Offshore Drilling Units: 4-3-1/11, 4-3-1/15, 4-3-3/3.1.1(a)

**National:**

IEC 60598-2-1:1979 (First Edition)+A1:1987 used in conjunction with IEC 60598-1:2014 (Eighth Edition)

IEC 60598-1:2014

**International:**

NA

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA