



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

23-2495841-PDA
29-Dec-2023
28-Dec-2028
CN DL Bureau China DL Eng

CERTIFICATE OF Product Design Assessment

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

ZHEJIANG BOZHOU MARINE ELECTRIC TECHNOLOGY CO., LTD

located at

**HEBEI VILLAGE, WEICHENG NORTH VILLAGE, YUEQING CITY,
ZHEJIANG,, ,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

Endorsements:
Tier: **2 - PDA Issued**

This Product Design Assessment (PDA) Certificate remains valid until 28/Dec/2028 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

Yu Geng,Engineer/Consultant

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)

ZHEJIANG BOZHOU MARINE ELECTRIC TECHNOLOGY CO., LTD

HEBEI VILLAGE, WEICHENG NORTH VILLAGE, YUEQING CITY, ZHEJIANG,

China

Telephone: 86-13868795175

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Email: 82121273@qq.com

Web: <http://www.bozhouchina.com/>

Tier: 2-PDA Issued

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

Endorsements:

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

ZHEJIANG BOZHOU MARINE ELECTRIC TECHNOLOGY CO., LTD
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Tier: 2-PDA Issued

Drawing No. Appendix 3.02, CXH-101P&11P Series_Product component functional specifications(A), Revision: 0, 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.
Drawing No. WTD23D12259168L_CXD8, Test Report (2023-12- 14), Revision: 0, Pages: 1, Waltek Testing Group Co., Ltd
Drawing No. WTD23D12259170L_CXH1-21P, Test Report (2023-12- 14), Revision: 0, Pages: 1, Waltek Testing Group Co., Ltd
Drawing No. WTD23D12259191L_CXH1-101P, Test Report (2023- 12- 14), Revision: 0, Pages: 1, Waltek Testing Group Co., Ltd
Drawing No. WTD23D12259192L_TG27-A, Test Report (2023-12- 14), Revision: 0, Pages: 1, Waltek Testing Group Co., Ltd
Drawing No. WTD23D11249870L CXD8, Test Report (2023-12-14), Revision: 0, Pages: 1, Waltek Testing Group Co., Ltd
Drawing No. WTD23D11249871L CXH1-21P, Test Report (2023-12-14), Revision: 0, Pages: 1, Waltek Testing Group Co., Ltd
Drawing No. WTD23D11249886L CXH1-01P, Test Report (2023-12-14), Revision: 0, Pages: 1, Waltek Testing Group Co., Ltd
Drawing No. WTD23D11249887L TG27, Test Report (2023-12-14), Revision: 0, Pages: 1, Waltek Testing Group Co., Ltd

Terms of Validity:
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Tier: 2-PDA Issued

(whichever occurs first).

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

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STANDARDS

ABS Rules:
Rules for Conditions of Classification, Part 1 - 2023 Marine Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:
2023 Marine Vessels Rules: 4-8-3/1.11.1, 4-8-3/1.7, 4-8-4/1.3

Rules for Conditions of Classification, Part 1 - 2023 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:
2023 Mobile Offshore Units: 4-3-1/11, 4-3-1/15, 4-3-3/3.1.1(a)

National:
IEC 60598-2-1:2020
IEC 60598-1:2020

International:
NA

Government:
NA

EUMED:
NA

OTHERS:
NA

Product Design Assessment (PDA) Certification
Attachment for Listing

PDA Cert. No.: 23 - 2495841-PDA

DA Certificate No.: 23-2495841-PDA
Entry Date: 29 Dec. 2023
Expire Date: 28 Dec. 2028
(subject to the condition stated on the DA Certificate)
Name of Manufacturer: Zhejiang Bozhou Marine Electric Technology Co., Ltd.
Address: Hebei village, Weicheng North Village,
City: Yueqing, China
Zip: 325600
Country: P. R. China
Telephone: 013868795175
Fax: 0577-62831570
Email: 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	IP56	IEC 60598-2-1;2020 IEC 60598-1;2020	Mast	green
					110V/2*60W				
					24V/2*60W				
2	Navigation signal light	port light	CXH2-101P	P28S	220V/2*60W	IP56		Mast	Red
					110V/2*60W				
					24V/2*60W				
3	Navigation signal light	masthead light	CXH3-101P	P28S	220V/2*60W	IP56		Mast	white
					110V/2*60W				
					24V/2*60W				
4	Navigation signal light	stem light	CXH4-101P	P28S	220V/2*60W	IP56		Mast	white
					110V/2*60W				
					24V/2*60W				
5	Navigation signal light	all-round light	CXH6-101P	P28S	220V/2*60W	IP56	Mast	white	
					110V/2*60W				
					24V/2*60W				
6	Navigation signal light	starboard light	CXH1-11P	P28S	220V/1*60W	IP56	Mast	green	
					110V/1*60W				
					24V/1*60W				
7	Navigation signal light	port light	CXH2-	P28S	220V/1*60W	IP56	Mast	Red	

Product Design Assessment (PDA) Certification
Attachment for Listing

PDA Cert. No.: 23 - 2495841-PDA

NO.	Category	Name	Type	Lamp holder	Power	Protection grade	Standard	Intended service	Light Color
			11P		110V/1*60W				
					24V/1*60W				
8	Navigation signal light	masthead light	CXH3-11P	P28S	220V/1*60W	IP56		Mast	white
					110V/1*60W				
					24V/1*60W				
9	Navigation signal light	stem light	CXH4-11P	P28S	220V/1*60W	IP56		Mast	white
					110V/1*60W				
					24V/1*60W				
10	Navigation signal light	all-round light	CXH6-11P	P28S	220V/1*60W	IP56		Mast	white
					110V/1*60W				
					24V/1*60W				
11	Navigation signal light	starboard light	CXH1-21P	BAY15d	12V/25W	IP56		Mast	green
					24V/25W				
12	Navigation signal light	port light	CXH2-21P	BAY15d	12V/25W	IP56		Mast	Red
					24V/25W				
13	Navigation signal light	masthead light	CXH3-21P	BAY15d	12V/25W	IP56		Mast	white
					24V/25W				
14	Navigation signal light	stem light	CXH4-21P	BAY15d	12V/25W	IP56		Mast	white
					24V/25W				
15	Navigation signal light	all-round light	CXH6-21P	BAY15d	12V/25W	IP56		Mast	white
					24V/25W				
16	Navigation signal light	starboard light	CXH1-3P	B15d	12V/25W	IP56		Mast	green
					24V/25W				
17	Navigation signal light	port light	CXH2-3P	B15d	12V/25W	IP56		Mast	Red
					24V/25W				
18	Navigation signal light	masthead light	CXH3-3P	B15d	12V/25W	IP56		Mast	white
					24V/25W				
19	Navigation signal light	stem light	CXH4-3P	B15d	12V/25W	IP56		Mast	white
					24V/25W				
20	Navigation signal light	all-round light	CXH6-3P	B15d	12V/25W	IP56		Mast	white
					24V/25W				

Table 2 Daylight signal light

Product Design Assessment (PDA) Certification
Attachment for Listing

PDA Cert. No.: 23 - 2495841-PDA

NO.	Name	Type	Lamp holder	Power	Protection grade	Standard
1	Daylight signal light	CXD8	G6.35	24V/60W	IP44	IEC 60598-1;2020 IEC 60598-2-4;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	IP56	IEC 60598-2-1;2020 IEC 60598-1;2020	Deck	Manual
2	Searchlight	TG27-A	220V/50HZ 220V/60HZ	1000W	23000	GY9.5	halogen tungsten lamp	IP56		Deck	Automatic
3	Searchlight	TG28	220V/50HZ 220V/60HZ	2000W	53000	GY16	halogen tungsten lamp	IP56		Deck	Manual
4	Searchlight	TG28-A	220V/50HZ 220V/60HZ	2000W	53000	GY16	halogen tungsten lamp	IP56		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	IP56		Deck	Manual