



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
WG25PTB00001

型式认可证书
CERTIFICATE OF TYPE APPROVAL

兹证明本证书所述制造厂具备按照下列标准的要求生产本证书所列产品的能力和条件。

This is to certify that the manufacturer stated in the certificate meets the requirements of the standards listed below and is available with the ability and conditions to produce the products described in the certificate.

制造厂/Manufacturer

Navico Inc.

地址/Address

4500 S 129th East Ave. Ste 200, Tulsa, OK 74134, USA

产品名称/Product

船用雷达
Marine Radar

附加标志/Notations

无/Nil.

认可标准/Approval Standard

1. 中华人民共和国海事局《船舶与海上设施法定检验规则 — 沿海小型船舶检验技术规则》（2016）第8章和第12章
Chapter 8 and Chapter 12 of China MSA Regulation for Statutory Survey of Ships and Offshore Installations - Regulation for Survey of Coastal Boats 2016
2. 中华人民共和国海事局《游艇法定检验暂行规定》（2013）第1篇第5章
Chapter 5, Part One of China MSA Provisional Regulation for Statutory Survey of Yachts 2013
3. 中华人民共和国海事局《船舶与海上设施法定检验规则 — 国内航行海船法定检验技术规则》（2020）及其修改通报第4篇第5章
Chapter 5, Part Four of China MSA Regulation for Statutory Survey of Ships and Offshore Installations - Regulation for Statutory Survey of Sea-Going Ships Engaged in Domestic Voyages 2020 and its Amendments
4. ETSI EN 302 248 V2.1.1 (2016-11) 用于非SOLAS船舶的导航雷达
ETSI EN 302 248 V2.1.1 (2016-11) Navigation radar for use on non-SOLAS vessels
5. IEC 60945:2002/COR1:2008《船用航行和无线电通信设备及系统-通用要求-试验方法和试验结果的要求》
IEC 60945:2002/COR1:2008 Maritime Navigation and Radiocommunication Equipment and Systems - General Requirements - Methods of Testing and Required Test Results

证书有效期至/This Certificate is valid until 2027年12月11日/ Dec. 11,2027

发证机构/中国船级社上海办事处
Issued by CCS Shanghai Office

签发日期 2025年08月28日
Date Aug. 28,2025

本证书根据中国船级社规范和相关规定签发。所有证书页为一个整体，必须同时使用。纸质证书每页均须由本社盖章方为有效，电子证书含数字签名方为有效，本证书复印件无效。任何单位和个人均不应摘录或节选本证书的部分内容。有关方对所持证书的真实性有疑问时，可以向本社检验机构咨询。本证书凡是未注明版本的规范，其（发证时）最新版本适用于本证书。
This Certificate is issued pursuant to the Rules of the Society and related regulation. All pages of the certificate are taken as a whole and are used simultaneously. No paper certificate page is valid without bearing the stamp of the Society, no electronic certificates is valid without the digital signature, and no copied form of the certificate is regarded as valid. Any part of the certificate is not to be extracted or abridged by any unit or individual in any form. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices. **For Rules with no version indication, their latest version (at the time of issuance of the certificate) applies to the certificate.**

Form No: T01.

联系方式/Contact Us, 见本社官方网站/See official web site of the Society (<http://www.ccs.org.cn>)



UTN:P025-21032532

用于/Intended for

沿海小型船舶/Coastal boats; 24米以下游艇/Yachts of less than 24m in length; 300总吨及以下海上航行船舶/Sea-going ships of not greater than 300 gross tonnage; 其他非SOLAS和非国内法规要求的船舶配备/Other Ships Installations for non-SOLAS and non-MSA required

产品明细/Product Description**雷达设备/Radar Equipment (M0001)**

名称/Name	属性(值)/Value	单位/Unit
型号/Type	见附页 See additional pages	

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No. : NP23PPP02673, DL25PPP20635

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No. : 1833CUT19TestReport Rev1

试验报告日期/ Test Report Date : 2019-10-14

试验报告编号/ Test Report No. : Halo 20/20+ RED EIGERSUND

试验报告日期/ Test Report Date : 2019-08-26

试验报告编号/ Test Report No. : DRP-AU-ME-20181025-01

试验报告日期/ Test Report Date : 2018-10-25

试验报告编号/ Test Report No. : DRP-AU-ME-20181030-01

试验报告日期/ Test Report Date : 2018-10-30

试验报告编号/ Test Report No. : 21584VIB19019 Rev1

试验报告日期/ Test Report Date : 2019-07-25

试验报告编号/ Test Report No. : 1023NAVHalo20 529

试验报告日期/ Test Report Date : 2019-10-23

试验报告编号/ Test Report No. : 190703.1

试验报告日期/ Test Report Date : 2019-08-13

试验报告编号/ Test Report No. : Technical Report 30265

试验报告日期/ Test Report Date : 2019-11-08

试验报告编号/ Test Report No. : 1833AUT19 MPE TestReport Rev1

试验报告日期/ Test Report Date : 2018-07-23

试验报告编号/ Test Report No. : 1128UT18TestReport Rev1

试验报告日期/ Test Report Date : 2018-08-07

试验报告编号/ Test Report No. : Halo 24 TESTING EIGERSUND

试验报告日期/ Test Report Date : 2018-08-24

试验报告编号/ Test Report No. : DRP-AU-ME-20181010-01

试验报告日期/ Test Report Date : 2018-10-10

试验报告编号/ Test Report No. : 21584VIB18021

试验报告日期/ Test Report Date : 2018-11-16

试验报告编号/ Test Report No. : 0907NAVHalo24 529

试验报告日期/ Test Report Date : 2018-09-07

试验报告编号/ Test Report No. : 180607.1

试验报告日期/ Test Report Date : 2018-07-24

试验报告编号/ Test Report No. : Technical Report 21476

试验报告日期/ Test Report Date : 2018-11-05

试验报告编号/ Test Report No. : 988AUT18 MPE TestReport Rev2

试验报告日期/ Test Report Date : 2018-08-24

试验报告编号/ Test Report No. : MFD NSS 4 & ZEUS SR test reports

试验报告日期/ Test Report Date : 2025-02-18

认可后的产品检验方式/ Method of Product Inspection after Approval

按规范认可后应进行产品检验的产品/The product should be inspected in term of the rules:

认可后的产品检验应由本社验船师根据本社规范规定按批准的产品检验计划进行检验, 经检验合格后由本社颁发船用产品证书。

After approval, product inspection should be carried out by the Surveyor of the Society in accordance with the approved product inspection scheme, and the Marine Product Certificate will be issued by the Society upon satisfactory inspection.

认可保持条件/ Maintenance Requirements of Approval

1. 型式认可后, 如果产品及其重要零部件的设计、所用材料或制造方法有所改变, 且影响到产品的主要特性、特征; 或产品的性能指标有所更改, 且超过认可的范围, 则有关图纸和文件应经检验机构审批。并在检验机构认为必要时, 经本社检验人员见证有关试验和进行检查, 其结果应能证实仍符合认可条件。

After type approval, if there are changes to the design, materials used or manufacturing method of the product and important components and such changes affect major characteristics and properties of the product, or property indexes of the product are changed and exceed the scope of approval, related drawings and documents are to be examined and approved by the concerned survey office. Where deemed necessary by the survey office, the surveyor to the Society will go to witness relevant tests and conduct inspection and the results should be able to demonstrate compliance with the approval conditions.

2. 工厂的质量管理体系应保持有效运行, 并且与认可时一致。如果质量管理体系发生改变, 应经原体系认证机构审核并报本社批准。

The quality management system of the factory shall be ensure effective operation, and shall be the same as the situation of approval. If there are any changes to the quality management system, auditing of the original certification organization for quality management system and the society's approval shall be obtained.

3. 认可证书有效期内, 如果出现可能导致本社取消认可的情况, 工厂应及时采取有效的纠正措施。

Within the validity of the approval certificate, if cases occur that may cause the Society to withdraw the approval, the manufacturer should take corrective actions in a prompt and effective manner.

4. 在认可证书有效期内, 本社检验人员可在未经事先通知的情况下对工厂的产品制造过程进行审核, 以验证产品的生产是否符合业经本社批准的图纸和文件。工厂应予以配合。

Within the validity of the approval certificate, the surveyor to the Society may pay unannounced audit to the manufacturing process of the product in order to confirm whether it is in compliance with the drawings and documents approved by the Society. The factory should provide an active cooperation and necessary for the surveyor.

备注/Remarks

本证书由原型式认可证书 (No. WG23PTB00004) 变更并替代原证书。

This Certificate is modified from and supersedes the previous Type Approval Certificate No. WG23PTB00004.

产品制造厂/Product Manufactory

Electronica Lowrance de Mexico, S.A. de C.V. (Navico ENS)

Av. Reforma #1648 Fracc. Valle Verde, Ensenada, Baja California, C.P.22839, Mexico

本社已审核了产品厂无石棉声明, 但本社的审核不免除产品厂按照合同关系向订货方保证产品无石棉的责任。

The declaration of asbestos-free submitted by manufacturer has been reviewed by the Society. However, liability of the manufacturer to guarantee the products are asbestos-free to purchaser under contract will not be exempted.

中国船级社温哥华办事处

CCS Vancouver Office

注: 本证书含有附页, 共1页

Note: The certificate is attached with additional 1 page(s)

型号/ Model	Halo 20	Halo 20+	Halo 24
工作频率/ Frequency	9400-9500 MHz (X-Band)	9400-9500 MHz (X-Band)	9400-9500 MHz (X-Band)
峰值功率/ Peak Output Power	10W	25W	25W
电源/ Power Supply	12/24VDC	12/24VDC	12/24VDC
系统组成/ The System Consisting of	收发单元/TransceiverUnit 显示器/Display 天线/Antenna	收发单元/TransceiverUnit 显示器/Display 天线/Antenna	收发单元/TransceiverUnit 显示器/Display 天线/Antenna
天线长度/ Length of Antenna	20 inch	20 inch	24 inch
最小操作显示区直径/ Minimum Display Diameter	86-180mm	86-180mm	86-180mm
最小显示区域/ Minimum Display Area	86*155mm-195*195mm	86*155mm-195*195mm	86*155mm-195*195mm
罗经安全距离/ Compass Safe Distance	0.7m	0.7m	0.7m
量程/ Range Scale	0.125-24NM	0.125-36NM	0.125-48NM
软件版本号/ Software Version:	7.1.0.182	7.1.0.182	8.1.0.249
显示器型号/ Display's Type	HDS-7 Live HDS-9 Live HDS-12 Live HDS-16 Live ELITE FS 9 ELITE FS 7 HDS PRO 9 HDS PRO 10 HDS PRO 12 HDS PRO 16 R2009 R3016 NSS 9 evo3S NSS 12 evo3S NSS 16 evo3S G09 XSE NSX 3007 NSX 3009 NSX 3012 ZEUS S 7 ZEUS S 9 ZEUS S 12 NSS 4-10 NSS 4-12 NSS 4-16 ZEUS SR-10 ZEUS SR-12 ZEUS SR-16	HDS-7 Live HDS-9 Live HDS-12 Live HDS-16 Live ELITE FS 9 ELITE FS 7 HDS PRO 9 HDS PRO 10 HDS PRO 12 HDS PRO 16 R2009 R3016 NSS 9 evo3S NSS 12 evo3S NSS 16 evo3S G09 XSE NSX 3007 NSX 3009 NSX 3012 ZEUS S 7 ZEUS S 9 ZEUS S 12 NSS 4-10 NSS 4-12 NSS 4-16 ZEUS SR-10 ZEUS SR-12 ZEUS SR-16	HDS-7 Live HDS-9 Live HDS-12 Live HDS-16 Live ELITE FS 9 ELITE FS 7 HDS PRO 9 HDS PRO 10 HDS PRO 12 HDS PRO 16 R2009 R3016 NSS 9 evo3S NSS 12 evo3S NSS 16 evo3S G09 XSE NSX 3007 NSX 3009 NSX 3012 ZEUS S 7 ZEUS S 9 ZEUS S 12 NSS 4-10 NSS 4-12 NSS 4-16 ZEUS SR-10 ZEUS SR-12 ZEUS SR-16