



Certificate no.:
TAA00003U2

TYPE APPROVAL CERTIFICATE

This is to certify:
that the Window Wipers

with type designation(s)
CLEANAV

issued to
Jung Gong Ind. Co., Ltd.
Busan, 11, Korea, Republic of

is found to comply with
DNV rules for classification – Ships
IMO Res. A.694(17) General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Busan** on **2026-02-06**

This Certificate is valid until **2031-02-05**.

for **DNV**

DNV local unit: **Busan, CMC Korea**

Approval Engineer: **Geun Young Park**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

Window wiper system, CLEANAV, consists of following components.

Component	Description	Environment	Stroke	Blade	Arm
Straight Line Window Wiper (Single blade)	SL1B	Exposed	1540 mm	800 mm	700 mm
Straight Line Window Wiper (Twin blade)	SL2B - ①		2745 mm		
	SL2B - ②		1065 mm		
AC 220V Motor Drive Module (for SL1B)	Motor (120 W)	Exposed	1540 mm		
	Case Heater (384 W)				
AC 220V Motor Drive Module (for SL2B - ①)	Motor (120W)	Exposed	2745 mm		
	Solenoid Unit (50 W)				
	Case Heater (684 W)				
AC 220V Motor Drive Module (for SL2B - ②)	Motor (120 W)	Exposed	1065 mm		
	Solenoid Unit (50 W)				
	Case Heater (276 W)				
AC 220V Window Wiper Controller	W400	Protected	-		

Application/Limitation

- For marine and offshore applications.
- Installation to be performed according to the manufacturer's Installation and operation manual.
- When installed on ships with class notation NAUT(OC/AW/OSV), the window wiper system shall comply with the minimum blade coverage and speed/frequency requirements described in the relevant class notation rules.
- The wiper operates within a temperature range of -25°C to 70°C.

Type Approval documentation

Tests carried out

- Environmental testing: DNV-CG-0339 (2021 Aug.)
IEC 60945 (2002) incl. Corr.1 (2008)
- Performance testing: ISO 17899 (2004)

Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and supply voltage.

Periodical assessment

DNV's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Class Program DNV-CP-0338, Section 4.

The scope of the periodical/renewal assessment is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.