



Certificate no.:
TAM00001CR

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Reduction Gear for Propulsion Turbine**

with type designation(s)

Solar Mars 50Hz, Solar Mars 60Hz

issued to

Lufkin Gears France SAS

Fougerolles St Valbert, Haute Saone, France

is found to comply with

DNV rules for classification – Ships

Application:

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

Type	Input torque	Input speed
Solar Mars 50Hz	13.62 kNm	8625 rpm
Solar Mars 60Hz	13.71 kNm	8568 rpm

Issued at **Høvik** on **2024-01-15**

This Certificate is valid until **2029-01-14**.

for **DNV**

DNV local unit: **France CMC**

Approval Engineer: **Terje Ingvar Arvidsen**

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 300,000 USD.



Form code: TA 251

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Page 1 of 2

Product description

One stage epicyclic gear for Solar Mars gas turbine

Application/Limitation

Input power:	12304 kW
Input speed (50 Hz):	8625 rpm
Gear ratio (50Hz):	5.75
Input speed (60 Hz):	8568 rpm
Gear ratio (60 hz):	4.76

Type Approval documentation

Tests carried out

Marking of product

The product is to be marked with the manufacturer's name or trademark and type number designation.

Periodical assessment

For retention of the Type Approval, a DNV surveyor shall perform an assessment after 2 years and after 3.5 years to verify that the conditions of the type approval are complied with. A renewal assessment will be performed at renewal of the certificate.

In cases where the Type Approved product is manufactured at other companies, the Periodical Assessment shall verify that the Type Approval applicant has a quality control system for consistent production at their licensees/subcontractors. Furthermore Periodical Assessment shall be carried out randomly at these companies.

Other conditions

The type approval does not cover:

- Electric wiring, instrumentation and automation
- Lubrication system
- Connection to external shaft components.
- Fastening and foundation of the gearbox including chocking calculations

END OF CERTIFICATE