DNV·GL

Certificate No:
TAM000009K

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Diesel Engine

with type designations(s)
QSB7-DM

Issued to
Cummins Inc.
IN CHARLESTON, United States

is found to comply with
DNVGL Rules for Classification: Ships/ High Speed and Light Craft, DNV GL Offshore Standard DNVGL-OS-D101, Marine and machinery systems and equipment

Application:

auxiliary / emergency

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

This Certificate is valid until **6th December, 2021**
Issued at **Hamburg** on **7th December, 2016**

DNV GL local station: New York

for **DNV GL**

Approval Engineer: Ralph Michael

Frank Lutz
Head of Section

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.

Product description

four stroke, in-line engine, trunk-piston, with supercharging, with charge air cooling, direct injection, injection operation electronically controlled, valve operation by cams, liquid fuel

Cylinder bore: 107 mm
Piston stroke: 124 mm

Additional place of production

Cummins Engines Co. Ltd., Darlington, United Kingdom

Application / Limitation

Rated power [kW/cyl.]	35	31	23.67	21.67	18.67	27.33	20.33
Rated speed [rpm]	1800	1800	1800	1800	1800	1500	1500
Mean effective pressure [bar]	20.9	18.5	14.2	13	11.2	19.6	14.6
Max. firing pressure [bar]	148	148	148	148	148	120	120
Definition	-	-	-	-	-	-	-

Type Approval documentation

11-076808, 11-140458, 12-028188, 12-077314, 262.1-012107-2

Tests carried out

Documentation:

Test report titel	Test Plan QSB7-DM
Test report reference	11-140458, 2011-11-09
Place of test	CTC, Charleston Test Cell 10
Date of test	2011-10-17 until 2011-10-21

Test engine:

Model	QSB7-DM
Serial no.	21857367
No. of cylinders	6
Power [kW/cyl.]	35
Speed [rpm]	1800

Marking of product

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

Periodical assessment

For retention of the Type Approval, DNV GL shall perform a Periodical Assessment every second year and before the expiry date of this certificate.

The objective of the Periodical Assessment is to verify that the conditions for the Type Approval are not altered since the Type Approval certificate was issued.

In case 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

Engine safety, control and monitoring systems, including sensors, cables and actuators are not covered by this type approval certificate. Documentation for engine safety, control including speed governing and monitoring systems shall be submitted for approval according to DNV GL Rule Pt.4 Ch.9 Sec.1

Exhaust gas turbochargers are not covered by this type approval certificate. Documentation shall be submitted for approval according to DNV GL Rule Pt.4 Ch.3 Sec.1/ Item 11

The flame resistant hoses with couplings shall DNV GL approved according to DNV GL Rule Pt.4 Ch.6 Sec.9/ Item 4-4.1.3

All connections of pipes carrying lubrication oil or fuel oil have to be provide with re-assembly screening connections in piping P > 1.8 bar according to DNV GL Rule Pt.4 Ch.3 Sec.1/ Item 2-2.6

The turbo water pipe has to be made of metal-based material.

END OF CERTIFICATE