



**CHONGQING CUMMINS ENGINE  
PERFORMANCE CURVE**

Engine Model <b>KTA38-D(M)</b>	Curve No. <b>D(M)-647</b>	
Configuration <b>D233036MX02</b>	CPL Code <b>CQ608</b>	Date <b>11-Dec-08</b>

Displacement: **38L [2300 in.<sup>3</sup>]**  
 Bore: **159mm [6.25 in.]**  
 Stroke: **159mm [6.25 in.]**  
 Fuel System: **PT**  
 Cylinders: **12**

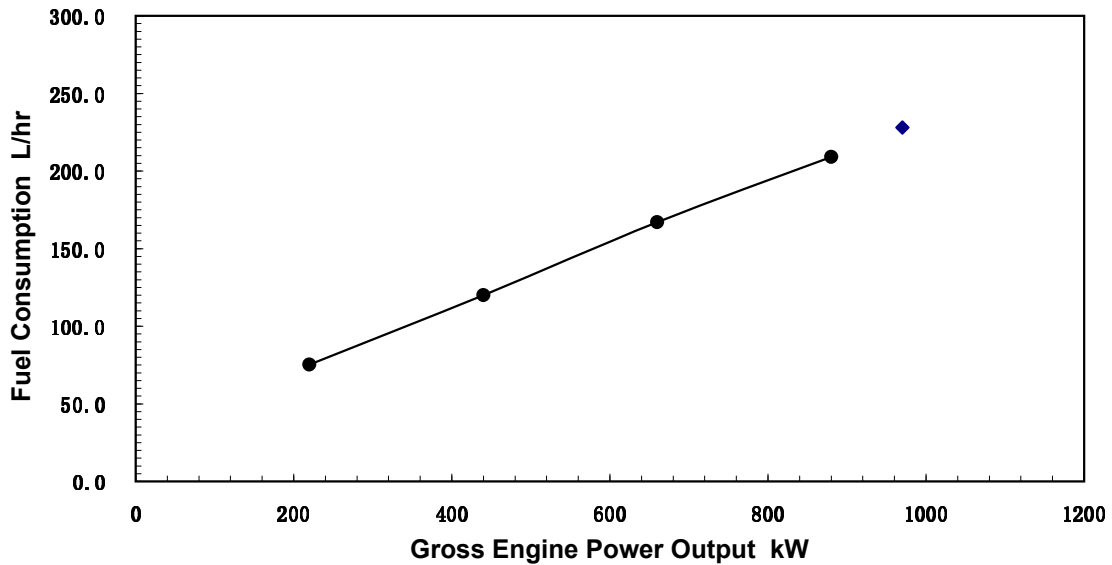
Prime Power: **880 [1180] @1500 kW [HP]**  
 Aspiration: **Turbocharged/Aftercooled**  
 Exhaust: **Dry**

CERTIFIED: This marine diesel engine complies with or is certified to the:  
 IMO-NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13

Engine Speed	Overload Capacity		Prime Power	
r/min	kW	bhp	kW	bhp
1500	970	1300	880	1180

**Engine Performance Data @ 1500 r/min**

OUTPUT POWER			FUEL CONSUMPTION			
%	kW	bhp	kg/kW.h	lb/bhp.h	l/hr	gal/hr
<b>10% Overload Capacity</b>						
110	970	1300	0.200	0.328	228.0	60.0
<b>Prime Power</b>						
100	880	1180	0.202	0.332	209.0	55.2
75	660	885	0.215	0.354	166.9	44.1
50	440	590	0.232	0.382	120.1	31.7
25	220	295	0.291	0.479	75.3	19.9



**Rating Conditions:** Ratings are in accordance with ISO-3046 reference conditions; air pressure at 100 kPa (29.61.in Hg.), air temperature 25°C (77°F), and 30% relative humidity. The fuel consumption data is based on GB252 No.0 diesel fuel (No. 2 diesel fuel in U.S.) weight at 0.85 kg/litre (7.1 lb/U.S. gal). Power output curves are based on the engine operating with fuel system, water pump, and lubricating oil pump; not included are battery charging alternator, fan, optional equipment, and driven components. Operation at Elevated Temperatures for sustained operation above 40°C (104°F), derate 2% per 11°C (1% per 10°

**Prime Power Rating** is applicable for supplying continual electrical power at varied load. The following are the Prime Rating parameters:

- \* Prime Power is available for an unlimited number of hours per year in a variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 250 hours.
- \* The total operating time at 100% Prime Power shall not exceed 500 hours per year.
- \* There is a 10% overload capability for a period of 1 hour within a 12 hour period of operation. Total operating time at 10% overload shall not exceed 25 hours per year.



# Chongqing Cummins Engine Co. Ltd.

## Auxiliary Marine Engine Performance Data

**Curve No.:** D(M)-647  
**DS:** DS-4983  
**CPL:** CQ608  
**DATE:** 11-Dec-08

### General Engine Data<sup>1</sup>

Engine Model.....	KTA38-D(M)	
Rating Type .....	Prime Power	Overload
Rated Engine Power..... hp [kW]	1180 [ 880 ]	1300 [ 970 ]
Governed Engine Speed..... rpm	1500	
Rated HP Production Tolerance.....	±2%	
Rated Engine Torque.....lb. ft. [N·m]	4131 [ 5602 ]	4554 [ 6175 ]
Idle Speed Range..... rpm	725-775	
Brake Mean Effective Pressure..... psi [kPa]	269 [ 1853 ]	296 [ 2042 ]
Compression Ratio .....	14.5:1	
Piston Speed..... ft/min [m/sec]	1565 [ 7.95 ]	
Friction Power..... hp [kW]	115 [ 86 ]	

### Fuel System<sup>1</sup>

Fuel Consumption.....gal/hr [l/hr]	55.2 [ 209 ]	60 [ 228 ]
Approximate Fuel Flow to Pump.....gal/hr [l/hr]	80 [ 303 ]	85 [ 322 ]
Maximum Allowable Fuel Supply to Pump Temperature.....°F [°C]	140 [ 60 ]	140 [ 60 ]
Approximate Fuel Flow Return to Tank..... gal/hr	25 [ 94 ]	25 [ 93 ]
Fuel Rail Pressure.....psi [kPa]	152 [ 1047 ]	168 [ 1158 ]

### Weight <sup>1</sup>

Dry - Engine Only .....	lb. [kg]	9474 [ 4301 ]
Dry - Engine With Heatexchanger .....	lb. [kg]	9914[ 4501 ]
Installation Diagram No.....		4061308
Hookup Diagram & Drawing, electrical circuit No.....		4061349, 4061350

### Air System<sup>1</sup>

Intake Manifold Pressure.....in. Hg [kPa]	N.A.	65
Intake Air Flow.....cfm [l/sce]	2415 [ 1140 ]	2569 [ 1213 ]
Heat Rejection to Ambient.....BTU/min [kW]	7115 [ 125 ]	7798 [ 137 ]

### Exhaust System<sup>1</sup>

Exhaust Gas Flow.....cfm [l/sec]	6462 [ 3051 ]	7002 [ 3306 ]
Exhaust Gas Temperature (Turbine Out).....°F [°C]	930 [ 499 ]	955 [ 513 ]
Heat Rejection to Exhaust.....BTU/min [kW]	30964 [ 544 ]	33583 [ 590 ]

### Cooling System<sup>1</sup>

Coolant Flow to Engine Heat Exchanger/Keel Cooler		
Jacket Water Aftercooled Engines (JWAC)		
Coolant Flow to Main Cooler (with open thermostat).....l/min [gal/min]	409 [108 ]	
Standard Thermostat Operating Range (Min).....°F [°C]	180 [ 82 ]	
Standard Thermostat Operating Range (Max).....°F [°C]	199 [ 93 ]	
Heat Rejection to Engine Coolant <sup>3</sup> .....BTU/min [kW]	30680 [ 539 ]	33810 [ 594 ]
Heat Rejection to LTA Coolant <sup>3</sup> .....BTU/min [kW]	N.A.	
Sea Water Flow @ 10 psi Pump Discharge Pressure .....	l/min [gal/min]	N.A.
Pressure Cap Rating (With Heat Exchanger Option).....psi [kPa]	7 [ 50 ]	

TBD = To Be Determined

N/A = Not Applicable

N.A. = Not Available

1. All Data at Rated Conditions.
2. Consult Installation Direction Booklet for Limitations.
3. Heat rejection to coolant values are based on 50% water/50% ethylene glycol mix and do NOT include fouling factors. If sourcing your own cooler, a service fouling factor should be applied according to the cooler manufacturer's recommendation.
4. Consult option notes for flow specifications of optional Cummins seawater pumps (if applicable).

## CHONGQING CUMMINS ENGINE CO. LTD.

CHONGQING, P.R.CHINA, 400031

All Data is Subject to Change Without Notice - contact CCEC for most recent data .