



**CHONGQING CUMMINS ENGINE  
PERFORMANCE CURVE**

Engine Model  
**KTA38-D(M)**

Curve No.  
**D(M)-645**

Configuration  
**D233037MX02**

CPL Code  
**CQ607**

Date  
**11-Dec-08**

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

Prime Power: **kW [HP] @ r/min  
664 [890] @1500**

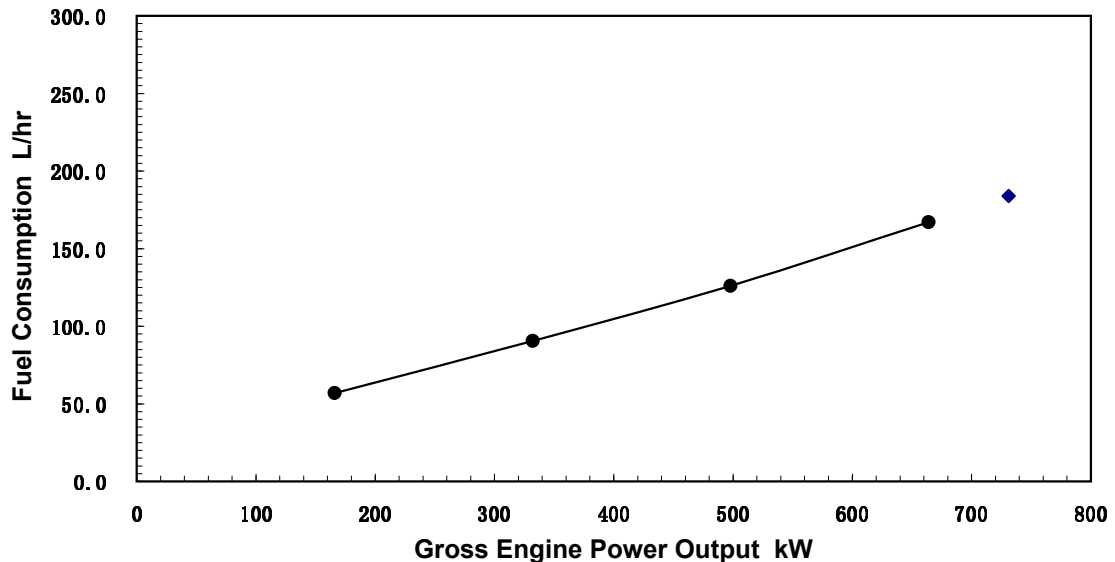
Aspiration: **Turbocharged/Aftercooled**  
 Exhaust: **Dry**

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	731	980	664	890

**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	731	980	0.214	0.355	184.0	49.0
<b>Prime Power</b>						
100	664	890	0.214	0.352	167.0	44.1
75	498	668	0.215	0.354	126.0	33.3
50	332	445	0.232	0.382	90.6	23.9
25	166	223	0.291	0.479	56.8	15.0



**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)-645  
**DS:** DS-4983  
**CPL:** CQ607  
**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]	890 [ 664 ]	980 [ 731 ]
Governed Engine Speed..... rpm	1500	1500
Rated HP Production Tolerance.....	±2%	
Rated Engine Torque.....lb. ft. [N·m]	3117 [ 4227 ]	3432 [ 4654 ]
Idle Speed Range..... rpm	725-775	
Brake Mean Effective Pressure..... psi [kPa]	203 [ 1398 ]	223 [ 1539 ]
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]	44.1 [ 167 ]	49 [ 184 ]
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	36 [ 136 ]	36 [ 138 ]
Fuel Rail Pressure.....psi [kPa]	76 [ 524 ]	86 [ 593 ]

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

Dry - Engine Only .....	lb. [kg]	8546 [ 3880 ]
Dry - Engine With Heatexchanger .....	lb. [kg]	8989[ 4081 ]
Installation Diagram No.....		4915140
Hookup Diagram & Drawing, electrical circuit No.....		4061349、4061350

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

Intake Manifold Pressure.....in. Hg [kPa]	N.A.	N.A.
Intake Air Flow.....cfm [l/sce]	1800 [ 850 ]	1949 [ 920 ]
Heat Rejection to Ambient.....BTU/min [kW]	5749 [ 101 ]	6318 [ 111 ]

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

Exhaust Gas Flow.....cfm [l/sec]	5077 [ 2397 ]	5577 [ 2633 ]
Exhaust Gas Temperature (Turbine Out).....°F [°C]	1006 [ 541 ]	1026 [ 552 ]
Heat Rejection to Exhaust.....BTU/min [kW]	29086 [ 511 ]	31648 [ 556 ]

### 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]	23166 [ 407 ]	25500 [ 448 ]
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 .