

## CHONGQING CUMMINS ENGINE PERFORMANCE CURVE

Engine Model Curve No.

KTA38-D(M) D(M)-648

Configuration CPL Code Date

D233036MX02 CQ609 17-Dec-08

Displacement: 38L [2300 in.³] kW [HP] @ r/min Bore: 159mm [6.25 in.] Prime Power: 814 [1092] @1500

Stroke: 159mm [6.25 in.]

Fuel System: PT Aspiration: Turbocharged/Aftercooled

Cylinders: 12 Exhaust: Dry

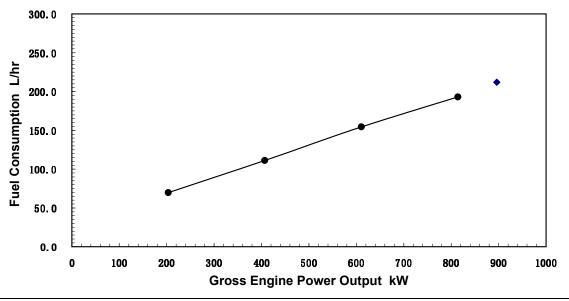
CERTIFIED: This marine diesel engine complies with or is certified to the:

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	896	1200	814	1092	

Engine Performance Data @ 1500 r/min

Engine i enemanee Bata & 1000 imm								
OUTPUT POWER			FUEL CONSUMPTION					
%	kW	bhp	kg/kW.h	lb/bhp.h	l/hr	gal/hr		
10% Overload Capacity								
110	896	1200	0.201	0.331	212.0	56.0		
Prime Power								
100	814	1092	0.202	0.332	193.0	51.0		
75	611	819	0.215	0.354	154.4	40.8		
50	407	546	0.232	0.382	111.1	29.3		
25	204	273	0.291	0.479	69.7	18.4		



**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.:

DS:

D(M)-648

DS-4983

	CPL: DATE:	CQ609 17-Dec-08	
General Engine Data <sup>1</sup>	271121	200 00	
Engine Model	. KTA38-D(M)		
Rating Type		Overload	
Rated Engine Powerhp [kW]	1092 [ 814 ]	1200 [ 896 ]	
Governed Engine Speedrpm	1500	1500	
Rated HP Production Tolerance	±2%		
Rated Engine Torquelb.·ft. [N·m]	3822 [ 5182 ]	4206 [ 5704 ]	
Idle Speed Range rpm	575-650		
Brake Mean Effective Pressurepsi [kPa]	248 [ 1714 ]	273 [ 1886 ]	
Compression Ratio	14.5:1		
Piston Speed ft/min [m/sec]	1565 [ 7.95 ]		
Friction Powerhp [kW]	115 [ 86 ]		
F1 O41			
Fuel Consumption	E4 [ 402 ]	EC [ 040 ]	
Fuel Consumption		56 [ 212 ]	
Approximate Fuel Flow to Pump		85 [ 322 ]	
Maximum Allowable Fuel Supply to Pump Temperature°F [°C]		140 [ 60 ]	
Approximate Fuel Flow Return to Tank		N.A.	
ruei Raii Piessuiepsi [kPa]	149 [ 1027 ]	164 [ 1130 ]	
Weight <sup>1</sup>			
Dry - Engine Onlylb. [kg]	9474 [ 4301 ]		
Dry - Engine With Heatexchangerlb. [kg]	9914[ 4501 ]		
Installation Diagram No	4915140		
Hookup Diagram & Drawing, electrical circuit No	4061349	4061350	
At- 041			
Air System <sup>1</sup>	N. A.	N. A	
Intake Manifold Pressurein. Hg [kPa]		N.A.	
Intake Air Flow		2376 [ 1122 ]	
Heat Rejection to AmbientBTU/min [kW]	6603 [ 116 ]	7229 [ 127 ]	
Exhaust System <sup>1</sup>			
Exhaust Gas Flowcfm [l/sec]	5977 [ 2822 ]	6477 [ 3058 ]	
Exhaust Gas Temperature (Turbine Out)°F [°C]	986 [ 530 ]	995 [ 535 ]	
Heat Rejection to ExhaustBTU/min [kW]		31078 [ 546 ]	
Cooling System <sup>1</sup>			
Coolant Flow to Engine Heat Exchanger/Keel Cooler			
Jacket Water Aftercooled Engines (JWAC)	400 5400 1		
Coolant Flow to Main Cooler (with open thermostat)			
Standard Thermostat Operating Range (Min)°F [°C]			
Standard Thermostat Operating Range (Max)°F [°C]		0404015403	
Heat Rejection to Engine Coolant <sup>3</sup>	28403 [ 499 ]	31249 [ 549 ]	
Heat Rejection to LTA Coolant <sup>3</sup>	N.A.		
Sea Water Flow @ 10 psi Pump Discharge Pressure/min [gal/min]			
Pressure Cap Rating (With Heat Exchanger Option)psi [kPa]	7 [ 50 ]		

TBD = To Be Determined

N/A = Not Applicable

N.A. = Not Avaliable

- 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 .