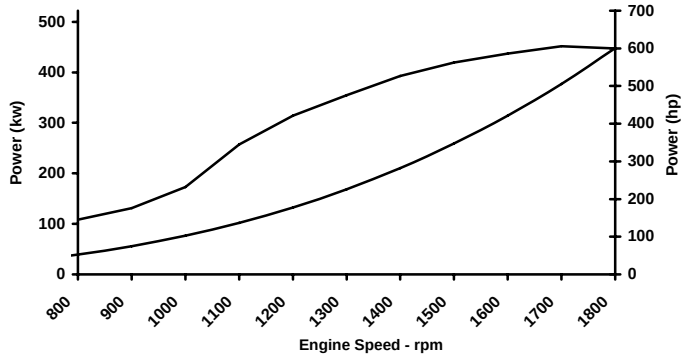
CUMMINS INC. Columbus, IN 47201	Basic Engine Model	Curve Number:	
Marine Performance Curves	**KTA19-M3**	**M-4197**	
	Engine Configuration	CPL Code:	Date:
	D193080MX02	**4150**	**24-Oct-07**

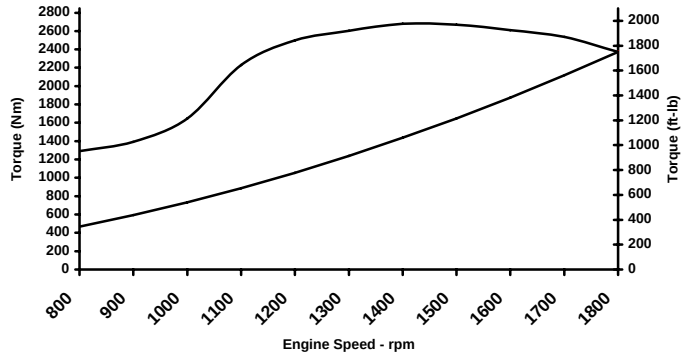
Displacement:	**19 Liter**	**[1150 in³]**	kW [bhp] @ rpm	
Bore:	**159 mm**	**[6.25 in]**	Advertised Power:	**447[600]@1800**
Stroke:	**159 mm**	**[6.25 in]**		
Fuel System:	**PT**		Aspiration:	**Turbocharged/aftercooled**
Cylinders:	**6**		Rating Type:	**Continuous Duty**

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



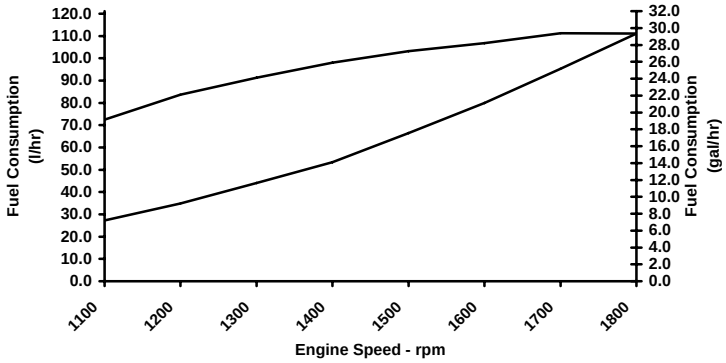
RATED POWER OUTPUT CURVE

rpm	kw	bhp
1800	447	600
1600	437	586
1400	393	527
1300	355	475
1100	257	345
1000	173	232
900	131	176
800	108	145



FULL LOAD TORQUE CURVE

rpm	N-m	ft-lb
1800	2374	1751
1600	2610	1925
1400	2680	1977
1300	2604	1921
1100	2230	1645
1000	1649	1216
900	1394	1028
800	1291	952



FUEL CONSUMPTION - PROP CURVE

rpm	l/hr	gal/hr
1800	111.1	29.4
1700	95.3	25.2
1600	79.9	21.1
1500	66.5	17.6
1400	53.4	14.1
1300	44.0	11.6
1200	34.8	9.2
1100	27.3	7.2

Rated Conditions: Ratings are based upon ISO 8665 and SAE J1228 reference conditions; air pressure of 100 kPa [29.612 in Hg], air temperature 25deg. C [77 deg. F] and 30% relative humidy. Power is in accordance with IMCI procedure. Member NMMA.

Rated Curves (upper) represents rated power at the crankshaft for mature gross engine performance capabilities obtained and corrected in accordance with ISO 3046. Propeller Curve (lower) is based on a typical fixed propeller demand curve using a 3.0 exponent. Propeller Shaft Power is approximately 3% less than rated crankshaft power after typical reverse/reduction gear losses and may vary depending on the type of gear or propulsion system used.

Fuel Consumption is based on fuel of 35 deg. API gravity at 16 deg C [60 deg. F] having LHV of 42,780 kj/kg [18390 Btu/lb] and weighing 838.9 g/liter [7.001 lb/U.S. gal].

Continuous Rating (CON): Intended for continuous use in applications requiring uninterrupted service at full power. This rating is an ISO 3046 standard power rating.

CHIEF ENGINEER

Propulsion Marine Engine Performance Data

Curve No. **M-4197**
DS : **4964**
CPL : **4150**
DATE: **24-Oct-07**

General Engine Data

Engine Model		KTA19-M3
Rating Type		Continuous Duty
Rated Engine Power	kW [hp]	447 [600]
Rated Engine Speed	rpm	1800
Rated Power Production Tolerance	±%	3
Rated Engine Torque	N·m [lb·ft]	2374 [1751]
Peak Engine Torque @ 1400 rpm	N·m [lb·ft]	2680 [1977]
Brake Mean Effective Pressure	kPa [psi]	1582 [229]
Indicated Mean Effective Pressure	kPa [psi]	1823 [264]
Minimum Idle Speed Setting	rpm	650
Normal Idle Speed Variation	±rpm	25
High Idle Speed Range Minimum	rpm	1815
Maximum	rpm	2016
Maximum Allowable Engine Speed	rpm	N.A.
Maximum Torque Capacity from Front of Crank[2]	N·m [lb·ft]	2374 [1751]
Compression Ratio		13.8:1
Piston Speed	m/sec [ft/min]	9.5 [1875]
Firing Order		1-5-3-6-2-4
Weight (Dry) - Engine Only - Average	kg [lb]	2073 [4570]
Weight (Dry) - Engine With Heat Exchanger System - Average	kg [lb]	2251 [4962]
Weight Tolerance (Dry) Engine Only	3xStd Dev(±%)	10.0

Noise and Vibration

Average Noise Level - Top	(Idle)	dBA @ 1m	N.A.
	(Rated)	dBA @ 1m	N.A.
Average Noise Level - Right Side	(Idle)	dBA @ 1m	N.A.
	(Rated)	dBA @ 1m	N.A.
Average Noise Level - Left Side	(Idle)	dBA @ 1m	N.A.
	(Rated)	dBA @ 1m	N.A.
Average Noise Level - Front	(Idle)	dBA @ 1m	N.A.
	(Rated)	dBA @ 1m	N.A.

Fuel System[1]

Avg. Fuel Consumption - ISO 8178 E3 Standard Test Cycle	l/hr [gal/hr]	79.8 [21]
Fuel Consumption at Rated Speed	l/hr [gal/hr]	111.1 [29]
Approximate Fuel Flow to Pump	l/hr [gal/hr]	329.3 [87]
Maximum Allowable Fuel Supply to Pump Temperature	°C [°F]	60.0 [140]
Approximate Fuel Flow Return to Tank	l/hr [gal/hr]	218.2 [58]
Approximate Fuel Return to Tank Temperature	°C [°F]	51.7 [125]
Maximum Heat Rejection to Drain Fuel	kW [Btu/min]	1.3 [74]
Fuel Transfer Pump Pressure Range	kPa [psi]	N.A.
Fuel Pressure - Pump Out/Rail . Mechanical Gauge	kPa [psi]	1000 [145]
INSITE Reading	kPa [psi]	1103 [160]

Air System[1]

Intake Manifold Pressure	kPa [in Hg]	169 [50]
Intake Air Flow	l/sec [cfm]	538 [1140]
Heat Rejection to Ambient	kW [Btu/min]	23 [1309]

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.**
5 **May not be at rated load and speed. Maximum heat rejection may occur at other than rated conditions.**

CUMMINS ENGINE COMPANY, INC

COLUMBUS, INDIANA

Propulsion Marine Engine Performance Data

Curve No.	**M-4197**
DS :	**4964**
CPL :	**4150**
DATE:	**24-Oct-07**

Exhaust System[1]	
Exhaust Gas Flow ……l/sec [cfm]	1345 [2,850]
Exhaust Gas Temperature (Turbine Out) ….°C [°F]	436 [816]
Exhaust Gas Temperature (Manifold) ….°C [°F]	577 [1,070]
Emissions (in accordance with ISO 8178 Cycle E3)	
NOx (Oxides of Nitrogen) ……g/kw·hr [g/hp·hr]	9.08 [6.77]
HC (Hydrocarbons) ……g/kw·hr [g/hp·hr]	0.74 [0.55]
CO (Carbon Monoxide) ……g/kw·hr [g/hp·hr]	2.74 [2.04]
PM (Particulate Matter) ……g/kw·hr [g/hp·hr]	N.A.
Cooling System[1]	
Sea Water Pump Specifications ……MAB 0.08.17-07/16/2001	
Pressure Cap Rating (With Heat Exchanger Option) ……kPa [psi]	103 [15]
Engines without Low Temperature Aftercooling (LTA)	
Jacket Water Aftercooled Engine (JWAC)	
Coolant Flow to Engine Heat Exchanger ……l/min [gal/min]	644 [170]
Standard Thermostat Operating Range (Start to Open) ……°C [°F]	82 [180]
Standard Thermostat Operating Range (Full Open) ……°C [°F]	95 [202]
Heat Rejection to Engine Coolant[3] ……kW [Btu/min]	341 [19404]

TBD= To Be Determined **N/A = Not Applicable** **N.A. = Not Available**

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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.**
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